When Micro-news Interacts with Macro-News: Market Reaction to Earnings Announcements on Macroeconomic News Announcement Days

Abstract

We test and provide evidence to support the hypothesis that the complementary information in macroeconomic news helps investors interpret earnings news and leads to more efficient stock valuation. Despite the fact that investors allocate relatively less attention to earnings announcements on days with important macroeconomic news announcements, market underreaction to earnings announcements with concurrent macroeconomic news announcements is significantly weaker. The post-earnings-announcement drift is reduced by up to 50% over the short horizon due to the effect of macroeconomic news. In addition, we show that the effect is stronger for firms with greater information uncertainty. Nevertheless, there is no evidence that managements time earnings announcements based on pre-scheduled macroeconomic news announcements.

Keywords: Earnings announcements; macroeconomic news announcements; investor underreaction; limited investor attention; category-learning behavior.

JEL Classification: G12, G14

I. Introduction

The literature documents strong evidence of investor underreaction to corporate events. The most well-known phenomenon is the post-earnings-announcement drift (PEAD) in stock returns (Ball and Brown, 1968; Foster, Olsen, and Shevlin, 1984; and Bernard and Thomas, 1989; 1990). That is, firms reporting positive (negative) unexpected earnings, on average, experience positive (negative) abnormal returns following the earnings announcement.[1] The literature has proposed a number of potential explanations, from both rational and behavioral perspectives, for investor underreaction. Several recent studies attribute PEAD to limited investor attention and other forms of investor cognitive constraint (e.g., Hirshleifer and Teoh, 2005; DellaVigna and Pollet, 2009; Hirshleifer, Lim, and Teoh, 2009). For example, Hirshleifer, Lim, and Teoh (2009) find that the immediate investor reaction to a firm's earnings surprise is much weaker and drift to earnings surprises is much stronger when a larger number of related companies also announce earnings on the same day. This is because investors have limited power to process large amounts of information at the same time.

In this paper, we examine the effect of concurrent macroeconomic news announcements on investor reaction to earnings news. Our study is motivated by the following theories and arguments. First, all news does not receive equal attention from investors and, in particular, macroeconomic news may receive more attention from investors than firm-specific news as a result of the attention constraint. Based on psychological evidence that attention is a limited cognitive resource, Peng (2005) and Peng and Xiong (2006) show that investors have to be conscious in allocating their limited attention capacity given the vast amount of information available in the marketplace. More specifically, Peng and Xiong (2006) show that limited

[1] Several studies also document investor underreaction to other corporate events, such as share repurchase announcements (Ikenberry, Lakonishok, and Vermaelen, 1995), dividend initiations and omissions (Michaely, Thaler, and Womack, 1995), and stock split announcements (Ikenberry and Ramnath, 2002).

investor attention leads to category-learning behavior, that is, investors tend to process information about macroeconomic fundamentals before processing firm-specific information.[2] Second, many investors, such as institutional investors, employ a "top-down" approach in their portfolio management.[3] A top-down investor first makes decisions on asset allocations with the desired risk–return trade-off based on economic outlook and macroeconomic fundamentals. Thus, it is likely that investors pay more attention to macroeconomic news.

We posit and empirically test two competing hypotheses with regard to the effect of macroeconomic news announcements on investor reaction to earnings news. On the one hand, by paying more attention to macroeconomic news, investors are distracted from earnings announcements due to the limited information processing ability. As such, the distraction will likely aggravate investor underreaction to earnings news. On the other hand, the complementary information in macroeconomic news may actually help investors interpret earnings news and lead to weaker investor misreaction. This is because macroeconomic news not only contains important information about the state of the economy but also helps disentangle the systematic component of earnings news and, as such, leads to more efficient stock valuation.[4] The argument is formally presented under the model of Vuolteenaho (2002) in Section III.B and suggests that the complementary information in macroeconomic news about updated discount rates and

[2] Attention is a constraint not only for unsophisticated individual investors but also for professional investors. For example, Sims (2003) studies the implications of information-processing constraints in a general dynamic control problem. Kacperczyk, Nieuwerburgh, and Veldkamp (2009) examine how mutual fund managers allocate their limited attention between aggregate market-level information and firm-specific information during different phases of the business cycle. Given the fact that many specialists handle multiple securities on the NYSE, Corwin and Coughenour (2008) and Chakrabarty and Moulton (2009) document the effect of the limited attention of specialists on market making.

[3] As described in Bodie, Kane, and Marcus (*Essentials of Investments*, 9th edition, 2013, McGraw-Hill/Irwin), a top–down active investment strategy involves three main steps: asset allocation, security selection, and implementation.

[4] Existing studies document evidence that macroeconomic news leads to more rational pricing of individual stocks. Savor and Wilson (2014) show that stock return patterns are much easier to reconcile with standard asset pricing theories on macroeconomic news announcement days.

earnings announcements about firm cash flows may help investors value stocks more efficiently and reduce misreaction to earnings surprises.

In this paper, we test the above hypotheses based on investor reaction to earnings announcements. Specifically, we compare the market reaction to earnings announcements with concurrent important macroeconomic news announcements with the market reaction to those without. The data used in our study includes the CRSP database for stock returns and Compustat for earnings announcements and other firm characteristics. The information on pre-scheduled macroeconomic news announcements is obtained from Bloomberg. The stock sample in our empirical analysis includes all common stocks traded on the NYSE, AMEX, or NASDAQ. Our sample period is from January 2001 to December 2013.

The main results of our study show that while there is no significant differences in immediate market reactions to earnings announcements with concurrent important macroeconomic news announcements and those without, drift following earnings announcements with concurrent important macroeconomic news announcements is significantly weaker. For instance, for earnings announcements with no concurrent macroeconomic news announcements, the average return differentials between the top and bottom SUE (standardized unexpected earnings) deciles are 1.378%, 3.004% and 3.971% over one-week, one-month, and one-quarter horizons following earnings announcements, respectively. For earnings announcements with concurrent macroeconomic news announcements, these corresponding numbers are significantly lower, at 0.632%, 1.941%, 3.022%, respectively. That is, macroeconomic news helps reduce investor underreaction to earnings surprises by up to 50% over the short horizon.

We confirm that the results are robust when we control for other firm characteristics, such as size, the book-to-market ratio, liquidity, idiosyncratic volatility, and their interactions

with SUE, as well as lagged stock returns over different horizons. Note that DellaVigna and Pollet (2009) find less immediate responses and more drift for earnings announcements on Fridays, when investor inattention is more likely, than on other weekdays. As a robustness check, we also include a day of week dummy to control for potential weekday effect in the regressions. Moreover, we divide macroeconomic news into different categories and show that the effect on investor reaction is pervasive across different types of macroeconomic news. Furthermore, we compute earnings surprises based on analyst forecasts instead of historical earnings and confirm the robustness of our main findings.

The main implication of category-learning behavior is that limited attention capacity leads investors to pay more attention to macroeconomic news and allocate relatively less attention to firm-level news. Nevertheless, it is also possible that, as macroeconomic news announcements draw investor attention to the overall market, investors may pay more attention to firm-level news as well. Therefore, the weaker market underreaction documented in our study could be attributed to increased investor attention to earnings announcements rather than information content in macroeconomic news. We empirically test the implications of category-learning behavior. First, we show that trading volume and price variation, proxies of investor attention, are higher on days with macroeconomic news announcements than on other days. Second, using the same proxies, we show that investors allocate relatively less attention to earnings announcements on days with macroeconomic news announcements than on other days. These findings are consistent with implications of category-learning behavior and suggest that it is more likely the information content of macroeconomic news contributing to weaker investor underreaction to earnings surprises on days with macroeconomic news announcements.

In addition, existing literature documents that as investors misreact to news, information uncertainty could further exacerbate such misreaction. In particular, investor underreaction to corporate events is stronger for firms with greater information uncertainty (Jiang, Lee, and Zhang, 2005; Zhang, 2006; Francis, Lafond, Olsson, and Schipper, 2007). If information in macroeconomic news helps reduce information uncertainty, we expect the effect of macroeconomic news to be stronger for firms with greater information uncertainty. Using idiosyncratic volatility and analyst coverage as proxies for information uncertainty, we show that the effect of macroeconomic news on investor reaction is indeed stronger for firms of higher idiosyncratic volatility or lower analyst coverage. For instance, for the sample of firms with high idiosyncratic volatility, macroeconomic news announcements have a significant effect on investor reaction to earnings surprises and reduce the drift following earnings announcements by over 65% over the short horizon. On the other hand, for the sample of firms with low idiosyncratic volatility, macroeconomic news has an overall weaker effect on investor reaction to earnings surprises.

Finally, given the findings that investors pay relatively less attention to earnings announcements on days with important macroeconomic news announcements, it is natural to speculate that managements may have incentives timing earnings announcements based on pre-scheduled macroeconomic news announcements. Existing literature documents evidence that managements tend to schedule earnings announcement with negative surprises during days or hours with less investor attention (Michaely, Rubin, and Vedrashko, 2013; and deHaan, Shevlin, and Thornock, 2015). Comparing variations in reporting lags and surprises for earnings announcements on days with important macroeconomic news announcements with those on days without, we find no evidence that managements time earnings announcements on

macroeconomic news announcement days. There is no evidence either that firms "hide" bad news by announcing negative earnings on days with macroeconomic news announcements or "highlight" good news by announcing positive earnings on days without macroeconomic news announcements.

Our study contributes to the following strands of the literature. First, our study contributes to the literature on investor learning behavior. We provide empirical evidence supporting the predictions of Peng and Xiong (2006) on category-learning behavior for investors with limited information processing power. Second, our study contributes to the literature on the effect of macroeconomic news on stock valuation. Savor and Wilson (2014) show that stock prices behave more rationally on days with important macroeconomic news announcements. Our study provides one setting that illustrates how macroeconomic news helps investors interpret earnings news and leads to more efficient stock prices. Third, our study sheds new light on what drives investor underreaction. Existing literature provides evidence that more information of the same type distracts investor attention and exacerbates misreaction to earnings surprises. Our study shows that information in macroeconomic news is complementary to firm-level news and actually helps reduce investor misreaction. Finally, our study provides further evidence on the effect of information uncertainty on investor reaction to news. We show that resolution in information uncertainty helps reduce investor misreaction.

The rest of the paper is structured as follows. Section II describes the data and methodology employed in our analysis. Section III presents the main empirical results with various robustness checks. Section IV performs further analysis and Section V concludes.

II. Data

The main data used in our empirical analysis includes the CRSP database for stock returns, Compustat for earnings announcements and information on other firm characteristics, the IBES database for analyst forecasts, and Bloomberg for macroeconomic news announcements. CRSP stock returns are adjusted for delistings to avoid survivorship bias, following Shumway (1997). The stock sample includes common stocks traded on the NYSE, AMEX, or NASDAQ in the CRSP database. Bloomberg provides the dates and times for almost all pre-scheduled macroeconomic news announcements. Due to data availability on macroeconomic news announcements, our sample covers the period from January 2001 to December 2013.

A. Unexpected Earnings and Firm Characteristics

We follow the literature (Foster, 1977; Foster, Olsen, and Shevlin, 1984) and construct the measure of standardized unexpected earnings (SUE) as follows:

$$E(Q_{i,t}) = Q_{i,t-4} + \phi_i (Q_{i,t-1} - Q_{i,t-5}) + \delta_i \tag{1}$$

$$SUE_{i,t} = \frac{Q_{i,t} - E(Q_{i,t})}{\sigma[Q_{i,t} - E(Q_{i,t})]} \tag{2}$$

where $Q_{i,t}$ denotes the quarterly earnings of firm *i* in quarter *t*. The parameters ϕ_i and δ_i are estimated using the most recent 20 quarters of data. Firm characteristics in the empirical analysis include size (SIZE), the book-to-market ratio (BM), momentum (MOM), the Amihud (2002) illiquid measure (ILLIQ), and idiosyncratic volatility (IVOL). All variables are constructed following convention in the literature (e.g., Fama and French, 2008), as described below:

- SIZE: the natural log of market capitalization at the end of June of a year.

- BM: the natural log of the book-to-market ratio. The book value of equity is stockholders' equity plus balance-sheet deferred taxes and investment tax credit (TXDITC, from Compustat), if available, minus preferred stock liquidating value (PSTKL), if available, or redemption value (PSTKRV), if available, or carrying value (PSTK). Depending on availability, stockholders' equity is the Compustat variable SEQ, or CEQ+PSTK, or AT-LT, in that order. All Compustat items are measured for the fiscal year ending in calendar year t - 1. The market value of equity is stock price times shares outstanding at the end of December of year t - 1, from the CRSP. We exclude firms with negative book value of equity.
- MOM: 11-month buy-and-hold return from July of year t - 1 to May of year t.
- ILLIQ: the Amihud (2002) illiquidity measure is calculated as the ratio of the absolute daily stock return divided by the daily dollar trading volume and averaged over a given period. Since trading volume is defined differently for NASDAQ stocks and NYSE/AMEX stocks, the trading volumes of NASDAQ stocks are adjusted by a factor of 0.7 (Boehmer, 2005).
- IVOL: the standard deviation of the residuals in the Fama–French (1993) three-factor model estimated from daily returns over a given period.

Table I reports the cross-sectional statistics of SUE and firm characteristics for selected years in our sample period. During our sample period, the US stock market experienced the collapse of the Internet bubble, its recovery, the financial crisis, and the post-crisis period. The statistics in the table clearly reflect the effects of these events. The average of earnings surprises (SUE) is lower in 2001 and 2009 than in 2005 and 2013, as is average firm SIZE. The negative log BM ratio indicates that the book value is, on average, below market value and the ratio, on

average, is closer to one in 2001 and 2009 than in 2005 and 2013. The median MOM is negative in 2001 and 2009 but positive in 2005 and 2013. Illiquidity (ILLIQ) peaks in 2009 during the financial crisis period and remains high even afterward, in 2013. Furthermore, average volatility (IVOL) is higher in 2001 and 2009 than in 2005 and 2013.

B. Macroeconomic News Announcements

The list of macroeconomic announcements used in our analysis includes initial jobless claims, changes in nonfarm payrolls, the Federal Open Market Committee (FOMC) rate decision, gross domestic product (GDP) growth, the consumer confidence index, the ISM Manufacturing Index, the Consumer Price Index, the University of Michigan Consumer Sentiment Index, durable goods orders, new home sales, housing starts, the unemployment rate, and retail sales. These announcements are considered important because they have significant impacts on financial markets based on the average Bloomberg relevance index during our sample period and a number of existing studies (Flannery and Protopapadakis, 2002; Gerlach, 2007; Beber and Brandt, 2009; Brenner, Pasquariello, and Subrahmanyam, 2009; Lee, 2012; Savor and Wilson, 2013, 2014, 2015).

Table II reports the list of macroeconomic news announcements. *N* denotes the total number of announcements during the period from January 2001 to December 2013. Day and time denote the weekday or day of the month and the time (ET) of announcement, respectively. Most announcements occur at either 8:30 a.m. or 10:00 a.m. except the FOMC rate decision at either 12:30 p.m. or 14:15 p.m. The table also reports the number of announcements with no surprises, that is, the actual announcement is the same as the market consensus. Other than

FOMC rate decisions, of which about 95% are consistent with market expectations, most news items have a significant portion of announcements with surprises.

III. Main Empirical Analysis

A. Market Reactions to Earnings Announcements

The literature documents that investors underreact to earnings information (e.g., Ball and Brown, 1968; Foster, Olsen, and Shevlin, 1984; Bernard and Thomas, 1989, 1990). These studies show that firms reporting positive unexpected earnings, on average, outperform those reporting negative unexpected earnings after the earnings announcement. In this section, we examine stock returns following earnings announcements in our sample period. Following the literature, each quarter stocks are assigned to deciles based on the SUE breakpoints of the previous quarter. The SUE are estimated following the procedure described in Section II.A.

Table III reports the average SUE, average cumulative abnormal returns (CARs in percentage term) for each decile portfolio, as well as spreads between the top and bottom deciles (D10-D1) over the two-day announcement window and different horizons following earnings announcements. The two-day announcement window covers the day of and the day after the earnings announcement. As documented in Michaely, Rubin, and Vedrashko (2013), about 45% of earnings announcements are made after 4:00 p.m. or after market close. For these announcements, immediate market reactions are reflected in returns over the next trading day. The five-, 10-, 21-, and 62-day horizons correspond to one-week, two-week, one-month, and one-quarter post-earnings-announcement periods. The decile D1 includes firms with the lowest SUE rank and D10 includes firms with the highest SUE rank. Abnormal daily stock return is calculated as the difference between daily stock returns and the average daily return of the

corresponding size decile portfolio formed at the beginning of each calendar year. The table also reports the *t*-statistics of the return spreads based on Newey-West (1987) standard errors that are adjusted for both heteroskedasticity and serial correlation in returns.

The results in Table III show that there is a significant immediate market reaction to earnings announcements. The abnormal returns of stocks in the top SUE decile (D10) are significantly higher than those in the bottom SUE decile (D1) with a spread of 4.312% during the two-day announcement window. More importantly, the return spreads between the top and bottom deciles are positive and highly significant over all horizons following earnings announcements. The spreads are 0.714%, 1.160%, 2.092%, and 3.183% over one-week, two-week, one-month, and one-quarter horizons, respectively. These spreads are clear evidence of market underreaction to earnings surprises during our sample period.

B. The Effect of Macroeconomic News Announcements

The main research question of our study is whether macroeconomic news aggravates or reduces PEAD. As noted in the introduction, if macroeconomic news announcements distract investor attention away from earnings announcements due to limited information processing power, this could aggravate investor underreaction to earnings surprises. The main prediction under this hypothesis is that there is a stronger correlation between earnings announcement returns and post-earnings-announcement stock returns for earnings announcements with concurrent macroeconomic news announcements:

$$E\left[r_t - E_{t-1}[r_t], r_{t+\tau} - E_t[r_{t+\tau}] \mid I_t^{EA} \cup I_t^{MAC}\right] \geq E\left[r_t - E_{t-1}[r_t], r_{t+\tau} - E_t[r_{t+\tau}] \mid I_t^{EA}\right] \qquad (3)$$

where I_t^{EA} denotes information contained in the earnings announcement, I_t^{MAC} denotes information contained in the macroeconomic news announcement, and $\tau > 0$. As such, we

expect a stronger drift following earnings announcements with concurrent macroeconomic news announcements. On the other hand, macroeconomic news may help investors interpret information contained in earnings news. The argument can be formally presented in the model of Vuolteenaho (2002) who decomposes individual stock returns into a cash-flow component and an expected-return component, namely,

$$r_t - E_{t-1}[r_t] = N_{cf,t} - N_{r,t}\,, \tag{4}$$

where N_{cf} denotes cash-flow news and N_r denotes expected-return news. Under the framework of Campbell and Shiller (1988) and Campbell (1991) for aggregate stock returns, Vuolteenaho (2000) derives an earnings-based model and decomposes the log book-to-market ratio (θ) as

$$\theta_{t-1} = \kappa_{t-1} + \sum_{j=0}^{\infty} \rho^j r_{t+j} - \sum_{j=0}^{\infty} \rho^j \left(e_{t+j} - f_{t+j}\right), \tag{5}$$

where r_t denotes the excess log stock return, e_t denotes the return on equity which is defined as the log of one plus earnings (X_t) and the book equity (B_{t-1}) ratio, f_t denotes the log of one plus the interest rate, ρ (<1) is the discount coefficient, and κ_t is a constant plus the approximation error. Taking changes in expectations from t - 1 to t (ΔE_t), the stock return can be decomposed into a cash-flow component and an expected-return component:

$$r_t - E_{t-1}[r_t] = \Delta E_t\left[\sum_{j=0}^{\infty} \rho^j \left(e_{t+j} - f_{t+j}\right)\right] + \kappa_t - \Delta E_t\left[\sum_{j=0}^{\infty} \rho^j r_{t+j}\right], \tag{6}$$

where $\kappa_t = \Delta E_t[\kappa_{t-1}]$. The first two terms capture the effect of cash-flow news ($N_{cf,t}$) and the last term captures the effect of expected-return news ($N_{r,t}$). Vuolteenaho (2002) shows that expected-return news is predominantly driven by the systematic macroeconomic component. More importantly, we note that under the model in Eq. (4), stock returns are driven not only by shocks to expected cash flows and discount rates, but also by the interaction of these two

components. As shown by Savor and Wilson (2015), earnings announcements contain information about both the prospect of issuing firms and expected aggregate cash flows. The information in macroeconomic news helps investors extract these two components and react more rationally to earnings surprises. Similarly, Li, Richardson, and Tuna (2014) show that information in macroeconomic news is also relevant in assessing future corporate earnings. Chordia and Shivakumar (2005) and Basu, Markov, and Shivakumar (2010) provide direct evidence that PEAD is related to investors underestimating the impact of expected inflation on future earnings changes. Thus, the complementary information in macroeconomic news about updated discount rates and earnings announcements about firm cash flows as well as their interactions may help investors value stocks more efficiently and reduce underreaction to earnings surprises. That is,

$$E\left[r_t - E_{t-1}[r_t], r_{t+\tau} - E_t[r_{t+\tau}] \mid I_t^{EA} \cup I_t^{MAC}\right] \leq E\left[r_t - E_{t-1}[r_t], r_{t+\tau} - E_t[r_{t+\tau}] \mid I_t^{EA}\right] \qquad (7)$$

As such, we should expect a weaker drift following earnings announcements with concurrent macroeconomic news announcements.

To test above hypotheses, each quarter we classify earnings announcements into two subsamples: those with concurrent macroeconomic news announcements and those without. An earnings announcement is classified as having a concurrent macroeconomic news announcement if there is at least one important macroeconomic news announcement on the day of or the day after the earnings announcement. This classification is consistent with the definition of earnings announcement window. That is, market reactions to earnings announced after market close occur during the next trading day. The list of important macroeconomic news announcements can be found in Section II.B. During our sample period, roughly 40% of the days have macroeconomic news announcements and earnings announcements on about 55% of the days are classified as

having concurrent macroeconomic news announcements. Based on the classification, stocks in each decile of Table III are then divided into two subsamples accordingly. Since the deciles are formed based on the SUE breakpoints of the previous quarter, this is equivalent to forming SUE decile portfolios separately within each subsample of earnings announcements.

Table IV reports earnings surprises (SUE) and cumulative abnormal returns (CARs in percentage term) of the top and bottom SUE deciles and the return differentials between the top and bottom deciles as well as their *t*-statistics for earnings announcements with concurrent macroeconomic news announcements and those without. The *t*-statistics for the differences are based on Newey-West standard errors. At the bottom of the table, we also report the differences in SUE spreads and drift between the two earnings announcement subsamples.

The results show that differences in SUE spreads between these two earnings announcement subsamples are statistically insignificant, suggesting that any differences in subsequent drift are likely driven by effects additional to earnings surprises. In our further analysis, we find no evidence that firms with positive or negative earnings surprises time earnings announcements based on pre-scheduled macroeconomic news announcement dates. Moreover, differences in immediate market reactions between these two earnings announcement subsamples during the two-day earnings announcement window are statistically insignificant, suggesting that any differences in subsequent drift are likely due to the compounding effect of macroeconomic news on investor reactions to earnings surprises rather than investor reactions to the macroeconomic news announcements.

Table IV shows that for both earnings announcement subsamples, the spreads between the top and bottom deciles (D10–D1) are positive and highly significant over all horizons following earnings announcements. That is, there is a significant drift following earnings

announcements, regardless of whether there are concurrent macroeconomic news announcements. However, the drift following earnings announcements with concurrent macroeconomic news announcements is significantly weaker. The differences in drift between two earnings announcement subsamples (*t*-statistics in absolute value) are -0.437% (2.60), -0.535% (2.73), -0.703% (2.67), and -0.805% (1.44) over one-week, two-week, one-month, and one-quarter horizons, respectively. These differences are highly significant except over the one-quarter horizon. In particular, macroeconomic news reduces the drift by up to 50% over the short horizon. Furthermore, the results reported at the bottom of the table show that the reduction of drift for earnings announcements with concurrent macroeconomic news is driven by both positive earnings surprises (D10) and negative earnings surprises (D1). That is, macroeconomic news has a significant effect on investor reaction to both positive and negative earnings surprises. These results are consistent with the conjecture that macroeconomic news helps investors interpret earnings news, leading to more efficient pricing of individual stocks.

C. Multivariate Tests: Controlling for Other Firm Characteristics

In this section, we perform multivariate tests on the effect of macroeconomic news on investor reactions by controlling for other firm characteristics. Specifically, we perform the following event-based Fama-MacBeth (1973) regression of cumulative abnormal returns (CARs) over different horizons following earnings announcements on SUE and its interaction with a macroeconomic news announcement dummy as well as other control variables:

$$\begin{aligned} CAR_{i,[t+1,t+h]} = a + \beta_0 SUE_{i,t} + \beta_1 d^{MAC} SUE_{i,t} + \beta_2 d^{MAC} + \beta_3 \mathrm{LRET}_{[t\text{-}1m,t]} + \beta_4 \mathrm{LRET}_{[t\text{-}5m,t\text{-}1m]} \\ + \beta_5 \mathrm{LRET}_{[t\text{-}11m,t\text{-}6m]} + \beta_6 \mathrm{RLAG} + \textit{Other Controls} + \varepsilon_{i,t} \end{aligned} \quad (8)$$

where $CAR_{i,[t+1,t+h]}$ denotes cumulative abnormal returns over the horizon [$t + 1$, $t + h$] for firm i with an earnings announcement on day t and d^{MAC} is a dummy variable that is set equal to 1 if the earnings announcement has concurrent macroeconomic news announcements and 0 otherwise. The main difference between an event-based Fama-MacBeth regression and a conventional Fama-MacBeth regression is that, in this setting, stock returns and lagged variables are defined on event dates instead of calendar dates. *LRET* denotes lagged cumulative stock returns over various horizons. For example, $LRET_{[t-5m,t-1m]}$ is the lagged cumulative stock return over the past five months. It is important to control for lagged returns in our analysis since Aboody, Lehavy, and Trueman (2010) show that stocks with the highest prior 12-month returns experience significantly negative market-adjusted returns immediately following earnings announcements. Following the literature (e.g., Grinblatt and Moskowitz, 2004), we include past returns over different horizons as control variables. We also include reporting lag (RLAG) in the regressions. Existing literature documents that firms tend to announce good news earlier than bad news. Other control variables include SIZE, the book-to-market ratio (BM), the Amihud (2002) illiquidity ratio (ILLIQ), idiosyncratic volatility (IVOL), and their interactions with SUE in the regression. All firm characteristics are lagged by at least one quarter. For details on the definitions of these variables, please refer to Section II.A. As noted earlier, DellaVigna and Pollet (2009) compare investors' responses to Friday earnings announcements with responses to announcements on other weekdays and find that there is more drift for earnings announced on Fridays. Their argument is that investors likely pay less attention to announcements on Fridays than announcements on other weekdays. We include a day of week dummy to control for potential weekday effect in the regressions. We also replicate the analysis by excluding earnings

announced on Fridays. The results confirm that the empirical findings in Table IV are robust to the Friday effect documented in DellaVigna and Pollet (2009).

Each quarter we perform the cross-sectional regressions in Eq. (8). Since BM is included as a control variable in Eq. (8), we exclude financial firms in the regressions. Table V reports the average coefficient estimates of the cross-sectional regressions with *t*-statistics based on Newey-West standard errors. The results show that, consistent with Aboody, Lehavy, and Trueman (2010), stock returns following earnings announcements generally have a negative relation with lagged returns. As expected, market reactions are negatively related to reporting lag. Consistent with the sorting results in Table IV, there is a significant immediate market reaction to earnings surprises and macroeconomic news announcements do not significantly affect the reaction in either direction. More importantly, the results show that, for stock returns over all horizons following earnings announcements, the coefficient estimates of the interaction term between SUE and the macroeconomic news dummy are negative and highly significant over short horizons. The results confirm that the empirical findings in Table IV are robust to controlling for other firm characteristics.

D. The Effects of Different Types of Macroeconomic News

The literature documents that not all macroeconomic news has the same effect on stock returns because the information content varies among different types of news. For instance, Flannery and Protopapadakis (2002) examine the effect of macroeconomic news on stock market returns and market return volatility. They find that six macroeconomic news announcements (three nominal and three real) are pricing factors. Bernanke and Kuttner (2005) show that the effect of unanticipated monetary policy actions on stock prices is mainly driven by changes of

expected excess returns. Boyd, Hu, and Jagannathan (2005) show that unemployment news contains information on all three primitive pricing factors: the future interest rate, the expected growth rate of corporate earnings and dividends, and the equity risk premium. They also document that the effect of the changes of unemployment rates on stock prices depends on the economic cycle. In this section, we study the effect of different types of macroeconomic news on PEAD. We classify the macroeconomic news items in our list into three categories: (1) news related to interest rate expectations or expected discount rates, including the FOMC rate decision, the Consumer Price Index, initial jobless claims, changes in nonfarm payrolls, and the unemployment rate; (2) news related to real activities, including GDP growth, the ISM Manufacturing Index, durable goods orders, the consumer confidence index, the University of Michigan Consumer Sentiment Index, and retail sales; and (3) news related to the housing market, including new home sales and housing starts. We include news on labor market conditions in the same category as the FOMC rate decision because employment is one aspect of the dual mandate (the other is inflation) of the Fed monetary policy and contains information about the future interest rate (Boyd, Hu, and Jagannathan, 2005). We confirm that the results are robust when we further classify news on labor market conditions in the second category. Flannery and Protopapadakis (2002) classify housing market news as real economic activities in their analysis but note that "the market particularly 'watches' the unemployment and housing reports." We place housing news in a separate category since the housing market is one of the most observed news announcements during the financial crisis in our sample period.

We perform the event-based Fama-MacBeth regressions of cumulative abnormal returns (CARs) following earnings announcements on SUE and its interaction with dummies of three different types of macroeconomic news announcements as well as other control variables:

$$CAR_{i,[t+1,t+h]} = a + \beta_0 SUE_{i,t} + \beta_1 d^{DR} SUE_{i,t} + \beta_2 d^{RA} SUE_{i,t} + \beta_3 d^{HM} SUE_{i,t} + \beta_4 d^{MAC} + \beta_5 \text{LRET}_{[t\text{-}1m,t]} + \beta_6 \text{LRET}_{[t\text{-}5m,t\text{-}1m]} + \beta_7 \text{LRET}_{[t\text{-}11m,t\text{-}6m]} + \beta_8 \text{RLAG} + Other\ Controls + \varepsilon_{i,t} \quad (9)$$

where $d^{DR} = 1$, $d^{RA} = 1$, and $d^{HM} = 1$ if the earnings announcement has a concurrent macroeconomic news announcement in the first, second, or third category, respectively. All other variables are the same as in Eq. (8).

Each quarter, we perform the cross-sectional regressions as specified in Eq. (9). Table VI reports the average coefficient estimates of the cross-sectional regressions with *t*-statistics based on Newey-West standard errors. The coefficient estimates of the control variables and their statistical significance are similar to those in Table V. The results in Table VI show that, the coefficient estimates of the interaction terms between SUE and the dummy variables for different types of macroeconomic news are negative over all horizons. This is evidence that macroeconomic news in all categories has a significant effect on investor reactions to earnings surprises. Judging by the significance level, as measured by the *t*-statistics of the coefficient estimates, news related to the discount rate has the strongest effect on investor reaction over short horizons, followed by news related to real activities, which is further followed by news related to the housing market. That is, among different types of news, macroeconomic news related to the discount rate seems to have an immediate effect on investor reactions to earnings surprises. This finding corroborates those in Chordia and Shivakumar (2005) and Basu, Markov, and Shivakumar (2010) that PEAD is related to investor underestimation of the impact of expected inflation on future earnings changes. Yet, our results show that the macroeconomic news effect on PEAD is pervasive and goes beyond inflation-related news.

E. Earnings Surprises Based on Analyst Forecasts

In our main empirical analysis, we compute earnings surprises (SUE) based on the seasonal random walk model in Eqs. (1) and (2) from historical earnings. The literature has also examined PEAD using earnings surprises based on analyst forecasts (e.g., Mendenhall, 2004; Livnat and Mendenhall, 2006; Francis, Lafond, Olsson, and Schipper, 2007). In this section, we follow Livnat and Mendenhall (2006) and compute SUE as follows:

$$SUE_{i,t} = \frac{(X_{i,t} - \widetilde{X}_{i,t})}{P_{i,t}} \tag{10}$$

where $X_{i,t}$ is primary earnings per share before extraordinary items for firm i in quarter t and $P_{i,t}$ is the price per share for firm i at the end of quarter t from Compustat. Both $X_{i,t}$ and $P_{i,t}$ are unadjusted for stock splits and $\widetilde{X}_{i,t}$ is the median of forecasts reported to IBES in the 90 days prior to the earnings announcement. As in Section III.A, each quarter we divide earnings announcements into deciles based on the ranks of SUE and examine post-earnings-announcement stock returns. Similar to Section III.B, we then classify earnings announcements into two subsamples: those with concurrent macroeconomic news announcements and those without. Again, we are interested in the differences in stock return drift between the two subsamples of earnings announcements.

The results reported in Table VII show that, for both subsamples of earnings announcements, there is significant PEAD. Consistent with Livnat and Mendenhall (2006), we find that PEAD based on earnings surprises computed from analyst forecasts is stronger than that based on earnings surprises computed from the seasonal random walk model. The drift in both subsamples of earnings announcements, as shown in Table VII, is larger than their respective cases in Table IV. In addition, we note that the results in Table VII are based on the sample of

stocks with analyst forecasts of next quarter's earnings. As shown in our further analysis in next section, the effect of macroeconomic news is relatively weaker for firms with high analyst coverage than for firms with low analyst coverage. Nevertheless, differences between drift following earnings announcements with macroeconomic news announcements and drift following earnings announcements without macroeconomic news announcements are negative and statistically significant over most horizons. The results confirm that our main findings are robust when earnings surprises are computed using analyst forecasts.

IV. Further Analysis

Our empirical results suggest that macroeconomic news announcement helps reduce investor misreaction to earnings surprises. In this section, we perform additional analyses to understand exactly what mechanism drives the effect of macroeconomic news announcements. First, we test the implications of category-learning behavior on the allocation of investor attention. Second, we examine whether the information content of macroeconomic news has a stronger effect on firms with greater information uncertainty. Finally, we investigate the possibility that managements may tactically time earnings announcements based on pre-scheduled important macroeconomic news announcements.

A. Investor Attention to Macroeconomic News and Earnings Announcements

The category-learning behavior of Peng and Xiong (2006) predicts that investors generally pay more attention to macroeconomic news announcements and, as a result, allocate relatively less attention to firm-level news. This prediction has direct implications on the interpretation of our findings. If investors pay relatively less attention to earnings announcements

on days with macroeconomic news announcements, then it is more likely that the information content in the macroeconomic news helps reduce misreaction to earnings surprises. On the other hand, since the announcement of macroeconomic news draws investor attention to the overall market, it is possible that investors pay more attention to earnings announcements on those days as well. The increased investor attention to earnings announcements on days with macroeconomic news announcements could help reduce investor underreaction to earnings surprises. In this section, we empirically test the implications of category-learning behavior.

First, we examine whether investors pay more attention to the overall market on days with macroeconomic news announcements than on days without. We use two variables to measure investor attention, namely excess market trading volume and absolute market returns. As pointed out in the survey by Bamber, Barron, and Stevens (2011), both trading volume and absolute price changes have been used in the literature to measure market responses to informational events. Following the literature, we define excess trading volume for day *t* as $ETV_t = \ln(TV_t / ATV_{[t-21,t-3]})$ where TV_t is the dollar trading volume on day *t* and $ATV_{[t-21,t-3]}$ denotes the average dollar trading volume over [*t* - 21, *t* - 3] or the past month. We calculate the daily market trading volume as the total dollar volume of all CRSP common stocks. We calculate absolute market daily returns using the CRSP value-weighted and equal-weighted indexes. Table VIII reports the average daily market excess trading volume and average absolute daily market returns during days with and without macroeconomic news announcements. For macroeconomic news announcement days, the results for each news item are also reported. In addition, the table reports the differences in excess trading volume and absolute returns between days with and without macroeconomic news announcements, as well as their *t*-statistics.

The results in Table VIII show that the difference in excess market trading volume between days with and without macroeconomic news announcements is 0.049 and highly significant. For most individual news items, the average excess market daily trading volume on announcement days is also significantly higher than on days with no macroeconomic news announcements. The results in Table VIII also show that average absolute daily returns for both CRSP value-weighted and equal-weighted indexes are higher on days with macroeconomic news announcements than on days without, although the differences are statistically insignificant. These findings show that investors pay more attention to the overall market on days with macroeconomic news announcements than on days without. In particular, the significantly higher trading volume on days with macroeconomic news announcements suggests that investors update their valuation of stocks and adjust their portfolios following the arrival of macroeconomic news.

Second, we examine whether investors allocate relatively less attention to earnings announcements on days with macroeconomic news announcements than on days without. Again, we use two variables to measure investor attention, namely, excess trading volume and absolute stock returns. Since we examine average trading activities across individual stocks, we use turnover instead of the dollar trading volume. Consistent with the literature (e.g., Bamber, 1987; Ajinkya and Jain, 1989), we compute average turnover over the three-day announcement window [t - 1, t + 1]. Specifically, for a stock with an earnings announcement on day t, we compute excess turnover as $ETO_t = \ln(TO_t / ATO_{[t-21,t-3]})$ where TO_t is the average daily turnover over the earnings announcement window [t - 1, t + 1] and $ATO_{[t-21,t-3]}$ denotes the average daily turnover over [t - 21, t - 3] or the past month. Note that, as shown in Table VIII, the excess trading volume on days with macroeconomic news announcements is higher than on

days without. Since our focus is the allocation of attention to firms with earnings announcements relative to other firms, we adjust the macroeconomic news announcement effect when comparing trading activities on days with macroeconomic news announcements to those on days without. Specifically, we first calculate the average daily turnover of all stocks on days with and without macroeconomic news announcements separately during each quarter. We then use the ratio of these two averages as the adjustment factor for the effect of macroeconomic news announcements. As a second measure of investor attention, we calculate the absolute daily returns (|RET|) as the average over the earnings announcement window [t - 1, t +1] for a stock with an earnings announcement on day t.

Table IX reports the average excess turnover and average absolute daily returns of stocks in each SUE decile on days with and without macroeconomic news announcements. The table also reports the averages of these variables for all stocks. The differences in average excess turnover and absolute daily returns between days with and without macroeconomic news announcements are reported in the right panel. The results show that the average absolute daily returns and excess turnover over the earnings announcement window are significantly lower on days with macroeconomic news announcements than on days without. The pattern also holds for almost all SUE deciles.

The findings in Tables VIII and IX show that investors pay more attention to the overall market on days with macroeconomic news announcements and allocate relatively less attention to firms with earnings announcements on days with macroeconomic news announcements. These findings are consistent with the category-learning behavior and suggest that it is more likely the information content in macroeconomic news rather than increased investor attention to earnings

announcements that helps reduce misreaction to earnings surprises on macroeconomic news announcement days.

B. Information Uncertainty and the Effect of Macroeconomic News

The literature documents that investors exhibit stronger behavioral biases when there is higher information uncertainty. Using several different proxies for information uncertainty, Jiang, Lee, and Zhang (2005) show that earnings momentum effects are much stronger among firms with high information uncertainty. Zhang (2006) tests the impact of information uncertainty on investor underreaction to news and finds that underreaction is stronger for firms with greater information uncertainty. Similarly, Francis, Lafond, Olsson, and Schipper (2007) find evidence that investors have more muted initial reactions to unexpected earnings signals of greater information uncertainty. Kumar (2009) provides further evidence that individual investors make larger investment mistakes and exhibit stronger behavioral biases when stocks are more difficult to value. If macroeconomic news helps interpret earnings news through the resolution of information uncertainty, it is reasonable to expect that the effect is stronger for firms with greater information uncertainty.

To test the hypothesis, we use two proxies for information uncertainty in our analysis, namely idiosyncratic volatility (IVOL) of stock returns and analyst coverage (COV). Both measures have been used in the literature as proxies for information uncertainty. Each quarter, we divide stocks into three subsamples based on IVOL or COV. We focus on the subsamples of stocks above the 60th percentile (top 40%) or below the 40th percentile (bottom 40%) of IVOL or COV. For both stock subsamples, we replicate the analysis in Table IV.

Table X reports the results for the top 40% high IVOL firms (Panel A) and the bottom 40% low IVOL firms (Panel B). Both panels report the differences between the drift following earnings announcements with concurrent macroeconomic news and the drift following those without. For robustness, we require at least 20 stocks in both the long and short portfolios each quarter. Since PEAD is stronger for the subsample of high IVOL stocks than for the subsample of low IVOL stocks, for comparison purposes we also report relative reductions in the drift due to the effect of macroeconomic news. The results in Table X show that, while there is a reduction in PEAD due to the macroeconomic news effect for both the top 40% high IVOL and bottom 40% low IVOL firms, the effect is more pronounced for the top 40% high IVOL firms based on the magnitude, statistical significance and the relative reduction. The results in Panel A show that for the top 40% high IVOL firms, the differences in drift between earnings announcements with concurrent macroeconomic news announcements and those without are significantly negative over all horizons. The relative reduction in the drift due to the effect of macroeconomic news is more than 65% over short horizons. The results in Panel B show that, for the bottom 40% low IVOL firms, the differences in drift between earnings announcements with concurrent macroeconomic news announcements and those without are only significant over the very short horizon and insignificant over longer horizons. The relative reduction in drift due to the effect of macroeconomic news is also much lower.

Table XI reports the results based on analyst coverage (COV). The results are consistent with those reported in Table X. For the sample of firms in the top 40% of analyst coverage, macroeconomic news announcements have a significant effect on investor reaction to earnings surprises only over the very short horizon and insignificant over longer horizons. On the other hand, for the sample of firms in the bottom 40% of analyst coverage, macroeconomic news has a

significant effect on investor reaction to earnings surprises over all horizons. The relative reduction in drift is more than 60% over the short horizon.

The evidence in Tables X and XI supports our conjecture that the effect of macroeconomic news on PEAD is stronger for firms of higher idiosyncratic volatility or lower analyst coverage. The evidence further supports the conjecture that the weaker PEAD on macroeconomic news announcement days is likely due to the information content in macroeconomic news. The updated information on macroeconomic fundamentals helps resolve information uncertainty associated with earnings surprises.

C. Do Managements Time Earnings Announcements Based on Pre-scheduled Macroeconomic News Announcements?

Given the fact that almost all important macroeconomic news announcements are pre-scheduled, it is natural to speculate that managements may have incentives to time earnings announcements based on macroeconomic news announcements. Existing literature has documented evidence that managements tend to schedule earnings announcement with negative surprises during days or hours with less investor attention. For instance, deHaan, Shevlin, and Thornock (2015) find evidence consistent with managers reporting bad news after market hours, on Fridays, on busy days, and with less advance notice, and with earnings receiving less attention in these settings. Moreover, their findings support the conjecture that managers "hide" bad earnings news by announcing during periods of low market attention, and conversely, managers "highlight" good earnings news by announcing earnings during periods of high market attention.

To examine whether managements time earnings announcements on macroeconomic news announcement days, we perform two sets of empirical tests. First, for each earnings

announcement, we calculate the relative change of reporting lag as the difference between current quarter's reporting lag and that of four quarters ago divided by current quarter's reporting lag. In each SUE decile, we divide earnings announcements as those with concurrent macroeconomic news and those without. For each group, we report the average absolute value of the relative change of reporting lag. If management intentionally time earnings announcements on earnings announcement days to avoid investor attention, we should see more variation in change of reporting lag for earnings announcements with concurrent macroeconomic news. Second, in each SUE decile, again we divide earnings announcements as those with concurrent macroeconomic news and those without. For each group, we report the average SUE. If firms with negative earnings surprises intentionally time earnings announcements on macroeconomic news announcement days to hide bad news, we should expect lower average of SUE in D1 for earnings announcements with concurrent macroeconomic news announcements. If firms with positive earnings surprises intentionally time earnings announcements on non-macroeconomic news announcement days to highlight good news, we should expect higher average of SUE in D10 for earnings announcements without concurrent macroeconomic news announcements.

Table XII reports average absolute relative change in reporting lag (|ΔRL|) and average SUE for the whole stock sample and stocks in each SUE decile. The results are reported separately for earnings announcements with concurrent macroeconomic news announcements and those without. The table also reports the differences in |ΔRL| and SUE between earnings announcements with concurrent macroeconomic news announcements and those without and their Newey-West *t*-statistics. The results show that the variation in reporting lag on average is actually lower for earnings announcements on days with macroeconomic news announcements. This is evidence against the conjecture that managements intentionally schedule earnings

announcements on days with macroeconomic news announcements. In addition, we find that the differences in average SUE between earnings announcements with concurrent macroeconomic news announcements and those without are insignificant not only for the whole sample but also for all SUE deciles, including both the top decile (D10) with positive surprises and bottom decile (D1) with negative surprises. The evidence fails to support the conjecture that managers intentionally "hide" bad news by announcing negative earnings during days with important macroeconomic news announcements or "highlight" good news by announcing positive earnings during days without important macroeconomic news announcements.

V. Conclusion

In this paper, we examine the allocation of investors' attention, a limited cognitive resource, to macroeconomic news versus firm-level news and the effect of macroeconomic news on investor reactions to earnings announcements. We show that investors pay more attention to the overall market on days with important macroeconomic news announcements but, due to limited attention capacity and information processing power, allocate relatively less attention to earnings announcements on those days. The evidence is consistent with predictions of category-learning behavior in Peng and Xiong (2006). Nevertheless, we provide evidence that, instead of aggravating investor misreaction to earnings announcements as a result of distraction, the information content in macroeconomic news actually helps investors interpret earnings news and reduces underreaction to earnings surprises. Our results show that the drift following earnings announcements with concurrent important macroeconomic news announcements is significantly weaker than the drift following earnings announcements with no concurrent important macroeconomic news announcements. In addition, we show that the effect of macroeconomic

news announcements is stronger for firms with greater information uncertainty. Finally, we find no evidence that managements time earnings announcements based on pre-scheduled macroeconomic news announcements. There is no evidence either that managements "hide" bad news by announcing negative earnings during days with important macroeconomic news announcements or "highlight" good news by announcing positive earnings during days without important macroeconomic news announcements.

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Table I. Summary Statistics of SUE and Firm Characteristics

This table reports the cross-sectional summary statistics of the standardized earnings surprise (SUE) and firm characteristics for selected years in our sample period. Firm characteristics include the natural log of market capitalization (SIZE), the natural log of the book-to-market ratio (BM), momentum (MOM), the Amihud (2002) illiquidity ratio, pre-multiplied by 1,000,000 (ILLIQ), and idiosyncratic volatility (IVOL). The summary statistics are reported at the end of June for selected years in our sample period from January 2001 to December 2013.

Year	Variable	5%	25%	Mean	Median	75%	95%	St Dev
2001.6	SUE	-2.13	-0.61	-0.18	-0.08	0.31	1.44	1.04
	SIZE	8.68	10.38	12.01	11.92	13.51	15.77	2.18
	BM	-2.45	-1.18	-0.47	-0.44	0.28	1.39	1.16
	MOM	-0.83	-0.42	0.01	-0.03	0.30	0.97	0.65
	ILLIQ	0.00	0.01	5.48	0.12	1.42	24.79	28.37
	IVOL	1.19	2.23	4.67	3.72	6.03	11.40	3.60
2005.6	SUE	-1.47	-0.38	-0.04	-0.01	0.33	1.34	0.87
	SIZE	9.68	11.39	12.79	12.73	14.08	16.25	1.97
	BM	-2.32	-1.38	-0.94	-0.87	-0.42	0.22	0.84
	MOM	-0.57	-0.21	0.04	0.01	0.21	0.72	0.44
	ILLIQ	0.00	0.00	1.54	0.02	0.23	4.90	11.04
	IVOL	0.83	1.42	2.62	2.10	3.16	6.00	2.10
2009.6	SUE	-2.30	-0.65	-0.17	-0.04	0.41	1.49	1.12
	SIZE	9.24	11.01	12.54	12.52	13.96	16.15	2.09
	BM	-1.81	-0.78	-0.16	-0.16	0.43	1.52	1.04
	MOM	-0.83	-0.60	-0.38	-0.40	-0.20	0.12	0.32
	ILLIQ	0.00	0.00	18.87	0.04	0.71	55.80	183.31
	IVOL	1.49	2.48	4.86	3.69	5.86	11.75	4.20
2013.6	SUE	-1.49	-0.35	-0.03	-0.01	0.32	1.29	0.83
	SIZE	9.80	11.89	13.32	13.36	14.75	16.78	2.10
	BM	-2.28	-1.17	-0.65	-0.58	-0.06	0.77	0.96
	MOM	-0.40	0.00	0.26	0.21	0.42	1.05	0.63
	ILLIQ	0.00	0.00	7.40	0.01	0.09	11.38	102.76
	IVOL	0.59	1.01	2.17	1.57	2.56	5.55	2.20

Table II. The List of Macroeconomic News Announcements

This table reports the list of macroeconomic news announcements included in our analysis. *N* denotes the total number of announcements during the period from January 2001 to December 2013. Day denotes the day of the week or month and time denotes the time of the pre-scheduled announcements. $N_{SUR=0}$ denotes the number of announcements with no announcement surprise.

News Type/News Event	N	Day	Time	$N_{SUR=0}$
Initial Jobless Claims	678	Thursday*	8:30	13
Change in Nonfarm Payrolls	156	1st Friday of the month	8:30	0
FOMC Rate Decision	104	6–8 scheduled regular meetings per year	12:30/14:15	99
GDP Growth (Annualized)	156	Around the 27th of January, April, July, October for GDP advance**	8:30	24
Consumer Confidence Index	154	Around the 25th of the month	10:00	0
ISM Manufacturing Index	155	1st business day of the month	10:00	4
Consumer Price Index	156	Around the 16th of the month	8:30	48
University of Michigan Consumer Sentiment Index	312	2nd and 4th Friday (revised) of the month	10:00	2
Durable Goods Orders	156	Around the 26th of the month	8:30	4
New Home Sales	156	17th workday of the month (around the 25th/26th)	10:00	3
Housing Starts	156	2 or 3 weeks after the reporting month	8:30	2
Unemployment Rate	156	1st Friday of the month	8:30	43
Retail Sales	156	Around the 12th of the month	8:30	16

*During our sample period, out of 678 initial jobless claims announcements, 22 occurred on a Wednesday and one on a Friday.

**The dates are around the 28th of March, June, September, and December for GDP Final and around the 29th of February, May, August, and November for GDP Preliminary.

Table III. Market Reaction to Earnings Announcements

This table reports the average abnormal stock returns (in percentage term) of all SUE decile portfolios over different horizons following earnings announcements. Each quarter, stocks are assigned to deciles using the SUE breakpoints of the previous quarter. Decile D1 includes firms with the lowest SUE rank and D10 includes firms with the highest SUE rank. The average return differentials between the top and bottom deciles, as well as their *t*-statistics, are also reported. The stock sample includes common stocks traded on NYSE, AMEX or NASDAQ and the sample period is from January 2001 to December 2013.

SUE Decile	Horizons					
	SUE	[0, 1]	[2, 6]	[2, 11]	[2, 22]	[2, 63]
D1	-2.026	-2.125	-0.418	-0.606	-1.145	-2.123
D2	-0.893	-1.553	-0.289	-0.427	-0.719	-1.677
D3	-0.488	-1.266	-0.379	-0.415	-0.423	-1.493
D4	-0.252	-0.763	-0.276	-0.276	-0.438	-1.144
D5	-0.086	-0.420	-0.203	-0.189	-0.116	-0.551
D6	0.053	0.304	-0.111	-0.092	-0.005	-0.295
D7	0.214	0.840	0.060	0.097	0.321	0.185
D8	0.445	1.273	0.164	0.266	0.383	0.365
D9	0.837	1.677	0.186	0.288	0.399	0.114
D10	1.869	2.187	0.322	0.553	0.946	1.061
D10 –D1	3.895	4.312	0.741	1.160	2.092	3.183
t-Stat		[27.2]	[5.59]	[5.84]	[7.77]	[14.66]

Table IV. Market Reaction to Earnings Announcements – The Effect of Macroeconomic News

Each quarter, we classify earnings announcements into two subsamples: those with concurrent macroeconomic news announcements and those without. Earnings announcements are classified as having concurrent macroeconomic news announcements if there is at least one important macroeconomic news announcement on the day of or the day after the earnings announcement. Stocks in each decile of Table III are then divided into two subsamples accordingly. This table reports the average returns (in percentage term) of the top and bottom deciles and the average return differentials between the top and bottom deciles as well as their *t*-statistics for both subsamples of earnings announcements. The differences in the return differential (D10–D1), returns of decile 1 (D1), and returns of decile 10 (D10) between the two subsamples are also reported. The sample period is from January 2001 to December 2013.

SUE Decile	Horizons					
	SUE	[0, 1]	[2, 6]	[2, 11]	[2, 22]	[2, 63]
Earnings Announcements with No Macro News						
D1	-2.039	-2.260	-0.684	-0.906	-1.446	-2.242
D10	1.866	2.288	0.694	1.013	1.557	1.730
D10 –D1	3.905	4.548	1.378	1.919	3.004	3.971
t -Stat	[60.09]	[13.51]	[6.81]	[7.34]	[9.46]	[9.72]
Earnings Announcements with Macro News						
D1	-2.024	-2.094	-0.375	-0.546	-1.087	-2.097
D10	1.870	2.176	0.257	0.477	0.855	0.925
D10 –D1	3.894	4.269	0.632	1.024	1.941	3.022
t -Stat	[60.27]	[27.33]	[4.64]	[5.38]	[6.73]	[12.02]
Macro News - No Macro News						
Δ(D10-D1)	-0.012	-0.279	-0.746	-0.895	-1.062	-0.949
t -Stat	[0.63]	[0.87]	[3.19]	[3.76]	[3.12]	[1.94]
ΔD1	0.015	0.166	0.310	0.360	0.359	0.145
t -Stat	[1.19]	[0.83]	[1.94]	[2.34]	[1.90]	[0.46]
ΔD10	0.004	-0.113	-0.437	-0.535	-0.703	-0.805
t -Stat	[0.32]	[0.51]	[2.60]	[2.73]	[2.67]	[1.72]
Relative Reduction			-54.16%	-46.65%	-35.37%	-23.91%

Table V. Multivariate Tests – Controlling for Other Firm Characteristics

Each quarter, we perform cross-sectional regressions of stock returns on standardized unexpected earnings (SUE) and its interaction with a macroeconomic news dummy as well as various control variables. The dummy variable is defined as $d^{MAC} = 1$ if the earnings announcement has concurrent macroeconomic news and 0 otherwise. Control variables include lagged returns (LRET) over different horizons, reporting lag (RLAG), day of the week dummy, the natural log of market capitalization (SIZE), and the natural log of the book-to-market ratio (BM), the Amihud (2002) illiquidity ratio, pre-multiplied by 1,000,000 (ILLIQ), idiosyncratic volatility (IVOL) as well as their interactions with SUE. All firm characteristics are lagged by at least one quarter. Financial firms are excluded from the regressions. This table reports the average of the coefficient estimates of quarterly regressions as well as the absolute values of their Newey-West *t*-statistics. The sample period is from January 2001 to December 2013.

	Horizons				
	[0, 1]	[2, 6]	[2, 11]	[2, 22]	[1, 63]
SUE	5.398	1.286	2.092	2.914	5.925
	[15.15]	[13.23]	[15.36]	[16.80]	[11.20]
d^{MAC} *SUE	-0.002	-0.130	-0.173	-0.160	-0.131
	[0.02]	[2.60]	[3.09]	[1.91]	[1.08]
d^{MAC}	-0.055	0.034	-0.058	0.039	-0.073
	[0.55]	[0.52]	[0.68]	[0.33]	[0.57]
$LRET_{t,t}$	-1.156	-1.251	-1.739	-3.028	-3.557
	[2.94]	[5.61]	[4.87]	[2.81]	[4.86]
$LRET_{t-5,t-1}$	-0.290	-0.485	-0.742	-0.970	-1.031
	[2.31]	[6.17]	[5.56]	[2.99]	[1.29]
$LRET_{t-11,t-6}$	-0.171	-0.372	-0.562	-0.957	-0.959
	[1.53]	[2.83]	[2.78]	[3.18]	[1.89]
RLAG	-0.679	-0.065	-0.122	-0.019	-0.065
	[5.45]	[2.53]	[1.42]	[0.18]	[0.22]
Other Controls	-	-	-	-	-
	-	-	-	-	-
Intercept	3.959	-0.060	0.186	-1.070	-2.488
	[6.15]	[0.18]	[0.25]	[0.97]	[1.09]
Adj. R^2	4.49%	1.70%	2.46%	3.35%	3.71%

Table VI. The Effects of Different Types of Macroeconomic News

Each quarter, we perform cross-sectional regressions of stock returns on standardized unexpected earnings (SUE) and its interaction with three macroeconomic news dummies as well as other control variables. The dummy variables are defined as $d^{DR}=1$ ($d^{RA}=1$ or $d^{HM}=1$) if the earnings announcement has concurrent macroeconomic news type related to the discount rate (real activities or housing market, respectively) and 0 otherwise. The control variables are the same as in Table V. All firm characteristics are lagged by at least one quarter. This table reports the average of the coefficient estimates of quarterly regressions as well as the absolute values of their Newey-West *t*-statistics. The sample period is from January 2001 to December 2013.

	Horizons				
	[0, 1]	[2, 6]	[2, 11]	[2, 22]	[1, 63]
SUE	5.289	1.333	2.098	2.752	5.663
	[14.31]	[11.59]	[15.09]	[14.90]	[11.77]
d^{DR} *SUE	0.022	-0.145	-0.188	-0.175	-0.084
	[0.22]	[3.00]	[3.67]	[1.96]	[0.84]
d^{RA} *SUE	0.000	-0.153	-0.210	-0.246	-0.230
	[0.00]	[2.55]	[3.38]	[2.75]	[1.46]
d^{HM} *SUE	0.077	-0.109	-0.142	-0.231	-0.157
	[0.58]	[1.36]	[1.85]	[2.07]	[1.39]
d^{MAC}	-0.005	0.011	-0.112	-0.003	-0.173
	[0.05]	[0.26]	[1.47]	[0.03]	[1.62]
$LRET_{t,t}$	-1.081	-1.330	-1.714	-2.886	-3.651
	[3.09]	[7.00]	[5.57]	[2.94]	[4.54]
$LRET_{t-5,t-1}$	-0.342	-0.523	-0.800	-1.038	-0.983
	[2.36]	[6.30]	[6.65]	[3.27]	[1.31]
$LRET_{t-11,t-6}$	-0.129	-0.424	-0.660	-1.107	-0.956
	[1.19]	[3.06]	[3.50]	[4.33]	[1.99]
RLAG	-0.688	-0.114	-0.199	-0.133	-0.280
	[4.85]	[2.59]	[1.68]	[0.91]	[0.85]
Other Controls	-	-	-	-	-
	-	-	-	-	-
Intercept	4.056	-0.104	0.444	-0.595	-1.190
	[5.46]	[0.24]	[0.53]	[0.43]	[0.44]
Adj. R^2	4.81%	2.39%	3.06%	3.99%	4.13%

Table VII. Robustness Check: Earnings Surprises Based on Analyst Forecasts

Each quarter, we compute earnings surprises (SUE) based on analyst forecasts and divide earnings announcements into deciles based on the rank of SUE. We classify earnings announcements into two subsamples: those with concurrent macroeconomic news announcements and those without. Earnings announcements are classified as having concurrent macroeconomic news announcements if there is at least one important macroeconomic news announcement on the day of or the day after the earnings announcement. Stocks in each SUE decile are then divided into two subsamples accordingly. This table reports the average returns (in percentage term) of the top and bottom deciles and the average return differentials between the top and bottom deciles as well as their *t*-statistics for both subsamples of earnings announcements. The differences in the return differential (D10–D1), returns of decile 1 (D1), and returns of decile 10 (D10) between the two subsamples are also reported. The sample period is from January 2001 to December 2013.

SUE Decile	Horizons					
	SUE	[0, 1]	[2, 6]	[2, 11]	[2, 22]	[2, 63]
Earnings Announcements with No Macro News						
D1	-0.096	-3.872	-0.801	-1.050	-1.228	-1.789
D10	0.029	3.457	0.818	1.441	2.254	3.650
D10 –D1	0.125	7.329	1.620	2.491	3.482	5.439
t -Stat	[3.86]	[20.74]	[8.80]	[13.38]	[8.66]	[12.67]
Earnings Announcements with Macro News						
D1	-0.069	-3.960	-0.693	-0.695	-0.878	-1.591
D10	0.029	3.687	0.568	0.923	1.761	2.463
D10 –D1	0.098	7.647	1.261	1.618	2.639	4.053
t -Stat	[8.34]	[33.03]	[5.01]	[4.44]	[9.64]	[8.68]
Macro News - No Macro News						
Δ(D10–D1)	-0.027	0.318	-0.358	-0.873	-0.843	-1.386
t -Stat	[0.91]	[0.79]	[1.71]	[2.06]	[4.26]	[2.90]
Relative Reduction			-22.13%	-35.06%	-24.22%	-25.48%

Table VIII: Investor Attention to the Overall Market on Days with Macroeconomic News Announcements vs. Days without

This table reports the average excess daily market trading volume (ETV) based on the CRSP stock sample and the absolute daily returns (|RET|) of the CRSP VW and EW indexes on days with and without macroeconomic news announcements. For macroeconomic news announcement days, we also report the results for each news item. The excess trading volume for day *t* is defined as $ETV_t = \ln(TV_t / ATV_{[t-21,t-3]})$ where TV_t is the dollar trading volume on day *t* and $ATV_{[t-21,t-3]}$ denotes the average dollar trading volume over [*t* - 21, *t* - 3] or the past month. The table also reports the differences (Diff) in excess trading volume and absolute returns between days with and without macroeconomic news announcements as well as their *t*-statistics. The sample period is from January 2001 to December 2013.

Sample Days/News Item	CRSP Trading Volume		CRSP VW Index		CRSP EW Index	
	ETV	Diff [*t*-Stat]	|RET|	Diff [*t*-Stat]	|RET|	Diff [*t*-Stat]
No Macro News Announcement Days	-0.038		0.861		0.779	
Macro News Announcement Days	0.011	0.049 [8.53]	0.882	0.022 [0.84]	0.790	0.011 [0.49]
Initial Jobless Claims	0.023	0.061 [11.25]	0.893	0.032 [0.88]	0.810	0.031 [1.01]
Change in Nonfarm Payrolls	0.006	0.045 [3.28]	0.933	0.073 [0.98]	0.802	0.023 [0.36]
FOMC Rate Decision	0.100	0.139 [8.68]	1.000	0.139 [1.74]	0.878	0.100 [1.39]
GDP Growth (Annualized)	0.020	0.058 [4.25]	0.812	-0.048 [0.80]	0.762	-0.017 [0.31]
Consumer Confidence Index	-0.024	0.015 [1.18]	0.867	0.006 [0.11]	0.717	-0.062 [1.39]
ISM Manufacturing Index	0.025	0.064 [3.81]	1.096	0.236 [3.75]	0.974	0.195 [3.34]
Consumer Price Index	0.059	0.097 [7.38]	0.875	0.015 [0.22]	0.792	0.013 [0.24]
U. of Michigan Consumer Sentiment Index	-0.019	0.019 [2.08]	0.761	-0.100 [1.98]	0.702	-0.077 [1.83]
Durable Goods Orders	-0.049	-0.011 [0.50]	0.816	-0.044 [0.77]	0.728	-0.051 [1.12]
New Home Sales	-0.055	-0.016 [1.09]	0.766	-0.094 [1.88]	0.691	-0.088 [1.98]
Housing Starts	0.055	0.093 [5.77]	0.973	0.112 [1.91]	0.871	0.092 [1.94]
Unemployment Rate	0.006	0.045 [3.28]	0.933	0.073 [0.98]	0.802	0.023 [0.36]
Retail Sales	-0.010	0.028 [2.44]	0.840	-0.020 [0.29]	0.772	-0.007 [0.11]

Table IX: Allocation of Investor Attention to Earnings Announcements with Concurrent Macroeconomic News Announcements vs. Those without

The table reports average absolute SUE, excess daily turnover, and absolute daily returns for stocks in each SUE decile. The results are reported separately for earnings announcements with macroeconomic news and those without. The excess daily turnover for an earnings announcement on day *t* is defined as $ETO_t = \ln(TO_t / ATO_{[t-21,t-3]})$, where TO_t is the average daily turnover of the stock over the earnings announcement window [-1, 1] and $ATO_{[t-21,t-3]}$ denotes the average daily turnover of the stock over [*t* - 21, *t* - 3] or the past month. Excess turnover on macroeconomic news announcement days is adjusted for the effect of macroeconomic news announcements. The absolute return (|RET|) for an earnings announcement on day *t* is calculated as the average of absolute returns over the earnings announcement window [-1, 1]. The table also reports the differences in excess daily turnover and |RET| between earnings announcements with macroeconomic news and those without for the whole stock sample and each SUE decile as well as their Newey-West *t*-statistics. The sample period is from January 2001 to December 2013.

SUE Decile	Macro News		No Macro News		Macro - No Macro	
	ETV	|RET|	ETV	|RET|	ETV [*t*-Stat]	|RET| [*t*-Stat]
D1	0.373	3.471	0.362	3.546	0.011 [0.88]	-0.075 [1.31]
D2	0.362	3.254	0.371	3.277	-0.010 [1.43]	-0.023 [0.74]
D3	0.359	3.335	0.357	3.337	0.002 [0.31]	-0.002 [0.05]
D4	0.347	3.306	0.349	3.395	-0.002 [0.17]	-0.090 [2.43]
D5	0.359	3.336	0.370	3.433	-0.010 [1.30]	-0.096 [2.18]
D6	0.369	3.292	0.389	3.396	-0.020 [1.70]	-0.104 [2.72]
D7	0.388	3.366	0.399	3.414	-0.011 [0.95]	-0.049 [0.85]
D8	0.398	3.354	0.400	3.389	-0.003 [0.32]	-0.035 [0.89]
D9	0.407	3.385	0.441	3.461	-0.034 [3.37]	-0.076 [1.61]
D10	0.453	3.668	0.484	3.740	-0.031 [2.73]	-0.072 [1.23]
All Stocks	0.381	3.377	0.392	3.439	-0.011 [2.07]	-0.062 [2.29]

Table X. The Effect of Macroeconomic News – Results Based on IVOL Subsamples

Each quarter, stocks are sorted into subsamples based on idiosyncratic volatility (IVOL) with one subsample containing high IVOL stocks above the 60th IVOL percentile (top 40%) and one subsample containing low IVOL stocks below the 40th IVOL percentile (bottom 40%). IVOL is estimated based on daily returns in the previous quarter. We replicate the analysis in Table IV for stocks in the top 40% IVOL subsample (Panel A) and those in the bottom 40% IVOL subsample (Panel B). This table reports average returns (in percentage term) of the top and bottom deciles and average return differentials between the top and bottom deciles as well as their Newey-West *t*-statistics for both subsamples. The results are reported separately for those with concurrent macro news announcements and those without. The differences in average return differentials between the two subsamples of earnings announcements are reported as well. The table also reports the relative reduction of the drift due to the effect of macroeconomic news. The sample period is from January 2001 to December 2013.

Panel A: High IVOL - Top 40%

SUE Decile	Horizons					
	SUE	[0, 1]	[2, 6]	[2, 11]	[2, 22]	[2, 63]
Earnings Announcements with No Macro News						
D1	-1.840	-3.034	-0.872	-1.397	-2.085	-3.234
D10	1.711	3.000	0.510	0.939	1.892	2.542
D10 –D1	3.551	6.034	1.382	2.335	3.977	5.776
t -Stat	[38.41]	[10.56]	[6.41]	[9.7]	[12.51]	[4.72]
Earnings Announcements with Macro News						
D1	-2.068	-3.144	-0.398	-0.496	-1.229	-2.812
D10	1.903	3.122	0.031	0.292	0.790	0.886
D10 –D1	3.972	6.265	0.429	0.788	2.018	3.698
t -Stat	[62.29]	[18.83]	[2.43]	[2.75]	[4.25]	[8.88]
Macro News - No Macro News						
Δ(D10-D1)	0.421	0.232	-0.953	-1.547	-1.959	-2.078
t -Stat	[4.97]	[0.39]	[7.52]	[6.32]	[3.38]	[1.51]
Relative Reduction			-68.94%	-66.26%	-49.25%	-35.97%

Panel B: Low IVOL - Bottom 40%

SUE Decile	Horizons					
	SUE	[0, 1]	[2, 6]	[2, 11]	[2, 22]	[2, 63]
Earnings Announcements with No Macro News						
D1	-1.851	-1.510	-0.262	-0.297	-0.529	-0.802
D10	1.631	1.301	0.754	0.893	1.255	1.208
D10 –D1	3.483	2.812	1.016	1.190	1.784	2.009
t -Stat	[41.57]	[9.86]	[11.59]	[8.37]	[9.09]	[2.78]
Earnings Announcements with Macro News						
D1	-1.975	-1.154	-0.264	-0.475	-0.833	-1.660
D10	1.834	1.437	0.388	0.664	0.751	0.894
D10 –D1	3.809	2.591	0.652	1.139	1.584	2.555
t -Stat	[58.01]	[13.76]	[6.64]	[7.22]	[7.4]	[5.21]
Macro News - No Macro News						
Δ(D10-D1)	0.326	-0.221	-0.364	-0.051	-0.199	0.545
t -Stat	[4.56]	[1.27]	[4.65]	[0.33]	[1.41]	[1.05]
Relative Reduction			-35.85%	-4.30%	-11.16%	27.14%

Table XI. The Effect of Macroeconomic News – Results Based on Analyst Coverage

Each quarter, stocks are sorted into subsamples based on analyst coverage (COV) in the previous quarter with one subsample containing high COV stocks above the 60th COV percentile (top 40%) and one subsample containing low COV stocks below the 40th COV percentile (bottom 40%). We replicate the analysis in Table IV for stocks in the top 40% COV subsample (Panel A) and those in the bottom 40% COV subsample (Panel B). This table reports average returns (in percentage term) of the top and bottom deciles and average return differentials between the top and bottom deciles as well as their Newey-West *t*-statistics for two subsamples of earnings announcements. The results are reported separately for those with concurrent macro news announcements and those without. The differences in average return differentials between the two subsamples of earnings announcements are reported as well. The table also reports the relative reduction of the drift due to the effect of macroeconomic news. The sample period is from January 2001 to December 2013.

Panel A: High Analyst Coverage - Top 40%

SUE Decile	Horizons					
	SUE	[0, 1]	[2, 6]	[2, 11]	[2, 22]	[2, 63]
Earnings Announcements with No Macro News						
D1	-1.871	-1.766	-0.279	-0.183	-0.390	-0.307
D10	1.640	1.615	0.453	0.530	0.763	0.611
D10 –D1	3.512	3.381	0.732	0.713	1.154	0.918
t -Stat	[36.35]	[8.96]	[5.37]	[5.6]	[6.24]	[1.62]
Earnings Announcements with Macro News						
D1	-2.032	-1.616	-0.043	0.015	-0.021	-0.459
D10	1.851	1.635	0.333	0.546	0.852	0.648
D10 –D1	3.883	3.252	0.376	0.531	0.872	1.107
t -Stat	[62.17]	[9.95]	[1.82]	[3.22]	[3.38]	[4.11]
Macro News - No Macro News						
Δ(D10-D1)	0.371	-0.129	-0.357	-0.182	-0.281	0.189
t -Stat	[4.84]	[0.38]	[3.03]	[1.48]	[1.58]	[0.27]
Relative Reduction		-3.82%	-48.70%	-25.57%	-24.37%	20.61%

Panel B: Low Analyst Coverage - Bottom 40%

SUE Decile	Horizons					
	SUE	[0, 1]	[2, 6]	[2, 11]	[2, 22]	[2, 63]
Earnings Announcements with No Macro News						
D1	-1.796	-2.311	-0.941	-1.486	-1.910	-4.413
D10	1.654	2.770	0.890	1.487	2.040	2.401
D10 –D1	3.450	5.081	1.831	2.973	3.949	6.815
t -Stat	[39.3]	[15.51]	[6.55]	[6.79]	[5.7]	[16.43]
Earnings Announcements with Macro News						
D1	-2.002	-2.404	-0.452	-1.032	-2.008	-4.219
D10	1.869	2.942	0.252	0.522	0.815	0.654
D10 –D1	3.871	5.346	0.705	1.554	2.823	4.873
t -Stat	[58.78]	[19.7]	[4.99]	[8.06]	[13.65]	[9.11]
Macro News - No Macro News						
Δ(D10-D1)	0.421	0.265	-1.126	-1.419	-1.126	-1.942
t -Stat	[5.03]	[0.63]	[3.72]	[3.52]	[2.02]	[3.07]
Relative Reduction		5.22%	-61.50%	-47.73%	-28.52%	-28.49%

Table XII: Variation in Reporting Lag and Earnings Surprises – Earnings Announcements with Macroeconomic News Announcement vs. Those without

The table reports average absolute relative change in reporting lag (|ΔRLAG|) and average SUE for stocks in each SUE decile. The results are reported separately for earnings announcements with concurrent macroeconomic news announcements and those without. The table also reports the differences in |ΔRLAG| and SUE between earnings announcements with concurrent macroeconomic news announcements and those without for the whole stock sample and stocks in each SUE decile as well as their Newey-West *t*-statistics. The sample period is from January 2001 to December 2013.

SUE Decile	Macro News		No Macro News		Macro - No Macro	
	|ΔRLAG|	SUE	|ΔRLAG|	SUE	|ΔRLAG| [*t*-Stat]	SUE [*t*-Stat]
D1	0.147	-2.007	0.166	-1.995	-0.019 [2.24]	-0.011 [0.53]
D2	0.134	-0.882	0.148	-0.881	-0.014 [1.93]	-0.001 [0.32]
D3	0.130	-0.484	0.138	-0.481	-0.008 [1.69]	-0.004 [1.34]
D4	0.128	-0.248	0.125	-0.247	0.003 [0.69]	-0.001 [0.41]
D5	0.124	-0.084	0.150	-0.083	-0.026 [3.26]	-0.001 [0.74]
D6	0.144	0.055	0.133	0.056	0.011 [0.63]	-0.001 [1.38]
D7	0.121	0.215	0.131	0.214	-0.010 [1.75]	0.001 [1.01]
D8	0.129	0.448	0.136	0.448	-0.007 [1.54]	0.001 [0.35]
D9	0.129	0.835	0.130	0.835	-0.001 [0.09]	0.000 [0.06]
D10	0.131	1.862	0.139	1.868	-0.007 [1.78]	-0.006 [0.55]
All Stocks	0.132	-0.029	0.140	-0.027	-0.008 [1.96]	-0.002 [0.83]