Internet Appendix for

"Determinants and Consequences of Information Processing Delay: Evidence from Thomson Reuters Institutional Brokers' Estimate System"

This document consists of three sections: Section IA.1 examines the sensitivity of our delay determinants results to an alternate hazard model specification; Section IA.2 examines the sensitivity of our price discovery results to an alternate research design which focuses on intraday forecast response coefficients; Sections IA.3 and IA.4 explore the differences in activation delay determinants (IA.3) and our post-forecast revision drift results (IA.4) between earnings and non-earnings periods.

IA.1. Sensitivity analysis of activation delay determinants: Duration analysis

The mean activation delay in our sample is 1,547 minutes while the median is 551 minutes, suggesting a left skewed delay distribution. Moreover, the histogram of the log activation delay (untabulated) points to a bimodal distribution. To the extent that the distribution of the logged activation delay deviates from the normal distribution, duration analysis provides superior estimates to those obtained through OLS. Therefore, we also estimate a Weibull hazard model. Specifically, we estimate the following model:

$$Ln(Activation\ Delay) = \beta^{*}\boldsymbol{x} + \vartheta \quad (1)$$

where $\boldsymbol{x}$ is a vector of variables comprising proxies of demand for timely processing, information processing difficulty, and limited attention and resources; $\beta^{*} = -\beta/p$ and ϑ is the error term assumed to have an extreme value distribution (Gumbel) scaled by the inverse of the shape parameter, *p*. p and β are estimated from the data using the following proportional hazards model where the hazard rate, *h(t)*, is assumed to have a *Weibull* distribution:

$$h(t) = h_0(t)\exp(\beta x), \text{ where } h_0(t) = pt^{p-1}. \quad (2)$$

The results of the Weibull hazard model are reported in Table IA1. The shape parameter, *p*, is less than 1, suggesting that the hazard rate decreases over time. The coefficients estimated from the Weibull model are largely consistent with those estimated from the log-linear specification reported in column (5) of Table 2 in the text. A few noteworthy differences are that the coefficient on *Ln(Broker Size)* is significantly negative in column (5) of Table IA1, as predicted, while the coefficients on *Large CAR[-3,0]* and *Ln(# Unactivated Earnings Ann.)* are unexpectedly negative.

Comparing all of our determinants specifications, the coefficient on *Ln(Broker Size)* is significantly positive in column (1) of Table 2, and becomes insignificant when controls are added in columns (4) and (5) of Table 2. In Table IA1, the coefficient on *Ln(Broker Size)* is significantly positive in column (1) and becomes significantly negative in columns (4) and (5). Examining this result, we find that large brokers are more likely to announce their forecasts during nontrading hours (between 8PM and 7:30AM), which are also nonbusiness hours. For example, 53.09% (16.23) of all revisions by the largest brokers are announced during nontrading (regular trading) hours. In contrast, 10.25% (45.61%) of revisions by the smallest brokers are announced during nontrading (regular trading) hours. Consistent with this, we find that broker size is either insignificant (Table 2) or negatively associated (Table IAl) with activation delay after controlling for time-of-day effects.

We find mixed results for *Large CAR[-3,0]* and *Ln(# Unactivated Earnings Ann.)*. Comparing all of our determinants specifications, the coefficient on *Large CAR[-3,0]* is significantly positive in column (2) of Table 2, and becomes insignificant when controls are added in columns (4) and (5) of Table 2. In Table IA1, the coefficient on *Large CAR[-3,0]* is significantly positive in column (2) and becomes significantly negative in column (5). The coefficient on *Ln(# Unactivated Earnings Ann.)* is significantly positive in columns (3) and (4) of Table 2, and becomes insignificant when yearly fixed effects are added in column (5) of Table 2. In Table IA1, the coefficient on *Ln(# Unactivated Earnings Ann.)* is insignificant in column (3) and becomes significantly negative in columns (4) and (5). Thus, our results for these two variables are sensitive to the model specifications used for estimation. With the exception of these two variables, all inferences from Table 2 of the text are robust to the alternate Weibull hazard model specification. Overall, our results in both Table 2 and Table IA1 strongly support our general predictions that demand for timely processing, information processing difficulty, and TR's limited attention and resources are important determinants of forecast activation delay.

IA.2. Forecast response coefficients

In Section 5, we examine the portion of the three-day cumulative announcement return realized during 30-minute intervals around forecast announcement and activation timestamps for evidence of price discovery around forecast activations. In this section, we study the relation between forecast revisions and market returns measured in 41-minute windows, [-20, +20], around I/B/E/S activation times. For comparison, we also examine the relation between forecast revisions and [-20, +20] returns centered around I/B/E/S announcement times and randomly selected placebo activation times. Specifically, we estimate multiple versions of the following regression model:

$$RET_{ijt,w} = \delta_0 + \delta_1 REVISION\_DEC_{ijt} + \varepsilon_{ijt} \tag{3}$$

where $RET_{ijt,w}$ is a return, in percent, observed over event window *w* relative to analyst *i*'s forecast for firm *j* with announcement time *t*, and $REVISION\_DEC_{ijt}$ is the decile ranking of $REVISION\_OWN_{ijt}$. Window *w* is a 41-minute window centered on: 1) the I/B/E/S activation time, 2) the I/B/E/S announcement time, or 3) a randomly selected post-activation placebo time. Consistent with Li et al. (2015), RET_{ijt} is calculated as log(1+(($PRICE_{end}$ - $PRICE_{beg}$)/$PRICE_{beg}$)) *100, where $PRICE_{end}$ is the trading price of the last transaction within the [-20, +20] minutes window and $PRICE_{beg}$ is the trading price of the immediately previous transaction before the [-20, +20] minute event window.[1] If no transaction occurs within this window, the return is set to zero. $REVISION\_DEC_{ijt}$ is formed by ranking forecasts into deciles of $REVISION\_OWN_{ijt}$ each calendar month, with decile rankings scaled to have a mean of zero and range of one.

We predict that if I/B/E/S forecast activations facilitate market price discovery, the forecast response coefficient, δ_1, will be significantly positive when estimated over the 41-minute window around I/B/E/S activation times. We compare the activation response coefficient to announcement response coefficients in order to assess economic significance, and to placebo activation response coefficients in order to preclude the hypothesis that the market response to forecast activations is a manifestation of the post-forecast drift phenomenon.

We select a placebo activation time for each forecast in our sample by adding a random delay, in minutes, to the announcement time of the forecast. The random delay time is selected by sampling, with replacement, from the true distribution of delay times for forecasts covering the same firm and announced at a similar time of day (i.e., during RTH, ETH, or NTH). Therefore, placebo activation times are selected from the same delay distribution governing actual activation times. To ensure that placebo windows do not capture activation-related price discovery, we require that each placebo activation return-window covers a 41-minute post-activation time period that does not overlap with the true 41-minute activation return window. If

[1] In untabulated tests, we confirm that all results are qualitatively similar when we delete observations where $PRICE_{end}$ occurs prior to minute zero or set returns to zero for these observations.

a randomly selected placebo time fails to meet this requirement, we re-sample, with replacement, until a suitable randomly selected placebo time is drawn.

To facilitate our intraday analysis, we restrict the overall sample of forecast revision announcements in a number of ways. First, we link our initial dataset to the TAQ database and require at least one valid TAQ trade during the 960 trading minutes (one trading day, included extended hours periods) preceding each of the announcement, activation, and placebo activation windows.[2] Second, we require all observations to have a minimum activation delay of 90 minutes to ensure non-overlapping announcement and activation windows. Finally, consistent with prior intraday studies (e.g., Altinkilic, Balashov, and Hansen, 2013; Li et al., 2015), we focus on a subset of economically meaningful forecast revisions.[3] Specifically, we examine forecast revisions accompanied by (-1, 0) size-adjusted cumulative abnormal returns with magnitude greater than 1% and of the same sign as the forecast revision. These restrictions yield a sample of 304,637 economically meaningful forecast revisions for use in our analysis.

Table IA2 presents estimated forecast response coefficients. *T*-statistics reported in parentheses are calculated using standard errors clustered by firm and event date (Hirshleifer et al., 2009; Petersen, 2009). Following Li et al. (2015), in each panel, forecast response coefficients are estimated separately for events that occur during regular trading hours (RTH), extended trading hours (ETH), and non-trading hours (NTH).

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[2] Following Li et al. (2015), for trading occurring during regular trading hours, we keep only trades that meet all of the following criteria: (1) trades occurring on the NYSE, AMEX or NASDAQ; (2) trades made under regular market conditions (i.e., COND codes *, @, E, F, and blank); (3) trades without subsequent cancellations; and (4) the transaction price and the number of shares traded were both positive. For trades during extended trading hours, we include trades with COND codes that include T or F, which represent the bulk of all extended hour trades. In terms of EX codes, we exclude "extended hour trades" in NYSE and AMEX as they are likely to represent regular session closing transactions that are reported after 4:00 p.m.

[3] This allows us to focus on a manageable sample size for our computationally intensive intraday analyses as well as focus on a sample of observations whose announcements and activations are most likely to be relevant to investors.

Panel A presents forecast response coefficients around activation and placebo activation times for the full sample of forecasts, regardless of activation delay. For comparison, we also present forecast response coefficients around I/B/E/S announcement times. The largest forecast response coefficients in Panel A are observed around I/B/E/S announcement timestamps for forecasts announced during regular trading hours. The coefficient of 0.692 (*t*-statistic of 22.18) can be interpreted as the estimated difference in 41-minute announcement-window returns between forecasts in the lowest vs. highest decile of *REVISION_OWN* (i.e., a difference of 0.692%, or 69.2 basis points).[4]

Compared with these results, forecast response coefficients around I/B/E/S activation times are smaller in magnitude, but remain significantly positive and economically meaningful during regular and extended trading hours (0.274 and 0.145, respectively, $p < 0.01$). Furthermore, the forecast response coefficients for true I/B/E/S activation times are around three times larger than those for placebo activation times. While these results are consistent with investors trading on analyst forecast information around I/B/E/S activation times, the full sample results contain a mix of forecast response coefficients estimated over differing delays following I/B/E/S announcements. Accordingly, to examine the effect of activation delay on the price discovery around I/B/E/S activations, we estimate forecast response coefficients for subsets of observations partitioned on activation delay.

Panels B – E of Table IA2 present forecast response coefficients estimated over various subsamples of forecasts partitioned on length of (true or placebo) activation delay. Panel B compares forecast response coefficients for activation and placebo times that occur between 1.5 – 4 trading hours after the I/B/E/S announcement time. Forecast response coefficients around

[4] Forecast response coefficients are smaller in magnitude but remain statistically and economically meaningful for I/B/E/S announcement times during extended and nontrading hours (0.459 and 0.245, respectively, $p < 0.01$).

I/B/E/S activations between 1.5 – 4 trading hours after I/B/E/S announcement times are highly significant and similar in magnitude to announcement-window response coefficients (52.6 and 32.8 basis points during RTH and ETH, respectively, $p < 0.01$). Furthermore, forecast response coefficients around true I/B/E/S activations are much stronger than those around placebo activations also measured over 1.5 – 4 hours after I/B/E/S announcement.[5] As expected, forecast response coefficients around I/B/E/S activations generally decrease monotonically in magnitude in Panels C – E as the length of delay increases. The difference between true and placebo activations also becomes less pronounced at longer delay magnitudes. Nevertheless, forecast response coefficients remain significantly positive and larger in magnitude than those around placebo activations at delays up to 16 trading hours from the I/B/E/S announcement time, especially for activations during regular trading hours.[6] Overall, the results in Table IA2 are consistent with I/B/E/S forecast activations playing a meaningful role in the price discovery process following I/B/E/S forecast announcements.

IA.3. Determinants of I/B/E/S activation delay during earnings vs. non-earnings periods

In section 3 of the text, we predict and find evidence of an increase in activation delay during the five-day period following firms' quarterly earnings announcements. The five-day period after earnings announcements poses unique processing challenges for TR not only because TR must process approximately half of all analyst forecast revisions during that period but also because TR must process arguably the most critical piece of information for corporate

[5] Around twice as large in magnitude, with differences that are statistically significant at the 1% and 5% level during RTH and ETH, respectively.
[6] Differences remain significant up to an 8 trading hour delay during extended trading hours.

valuation — earnings.[7] Earnings must be processed so that the earnings surprise, the difference between reported earnings and the I/B/E/S consensus, becomes a meaningful measure of performance. If a firm reports only GAAP earnings, TR specialists must determine whether the GAAP numbers need further adjustments to conform to the majority basis. If a firm also reports operating earnings, those earnings must still be evaluated by TR specialists for consistency with the majority basis. When processing is complete, the earnings figure is activated on I/B/E/S—that is, it is included in TR's products and services.

Panel A of Table IA3 provides univariate comparisons of activation delay and its determinants between earnings and non-earnings periods. The observations in our sample are roughly evenly split between earnings periods (50.2%) and non-earnings periods (49.8%). Consistent with earnings periods presenting unique processing challenges for TR, Panel A of Table IA3 shows that the mean activation delay for revisions announced during earnings periods is 1,804 minutes, which is 516 minutes longer than the mean delay for non-earnings periods. While the univariate descriptive statistics suggest that the two periods are identical with respect to proxies for demand for timely processing, they differ with respect to proxies for limited attention and resources and information processing difficulty. In particular, the number of concurrent unactivated forecasts and earnings announcements are significantly higher during earnings periods compared to non-earnings periods. Moreover, forecast revisions in the earnings period are more likely to be preceded by large CARs and management guidance.

[7] In our sample, 50.2% of forecast revisions are announced within five days after a quarterly earnings announcement (Table 1). Univariate results, tabulated in the Internet Appendix, show that the mean activation delay in this period is 516 minutes longer than the mean delay outside this period, statistically significant at the 1% level based on a two-tailed Satterthwaite t-test.

Panel A in Table IA3 characterizes the earnings period as a time of high information arrival and sharp increase in analyst activity, which might explain the larger average activation delay during that period. In other words, given the notable differences in the values of a number of determinants between the periods, longer activation times could obtain during earnings-periods without any changes in TR's prioritization weights between periods, implying no differences in the coefficients in equation (1) of section 3.4 in the text between earnings and non-earnings periods.[8]

Accordingly, in this section, we examine more specifically whether processing of earnings information affects the processing of forecast revisions. Consistent with theories of limited attention and resources (Hirshleifer et al., 2009), we hypothesize that the task of processing earnings takes away resources from the task of processing forecast revisions, resulting in an incremental delay.

Empirically, we estimate equation (1) of section 3.4 in the text, augmented to include measures of ongoing processing of earnings and earnings processing difficulty, using a sample of analyst forecast revisions announced in the five-day post-earnings announcement period. Our measure of ongoing earnings processing is the indicator *Earnings Not Activated*, which equals one if TR has not yet activated earnings (or actuals as referred to in I/B/E/S products and services) and zero otherwise.[9] Our measure of earnings processing difficulty is *Abs Earnings*

[8] For example, in Table 2 in the text, we find positive and highly significant coefficients on the variables capturing the number of concurrent unactivated forecasts across the same firm as well as all firms. Therefore, it is possible that the average delay during earnings periods simply increases because there are more unactivated forecasts during the earnings period, while the higher numbers are multiplied by the same coefficients.
[9] The I/B/E/S academic detail files include earnings announcement and earnings activation timestamps; the definitions of these terms mirror those of earnings forecast announcement and activation timestamps.

Surprise — the difference between reported quarterly earnings and earnings four quarters ago, divided by stock price one month before the earnings announcement date.[10]

Columns (1) and (2) in Panel B, Table IA3, present the results from estimating equation (1) of section 3.4 using the sample of 493,516 revisions announced during the five calendar days following quarterly earnings announcements. The coefficient estimates in column (1) are generally consistent with those reported in Table 2 in the text where we use the full sample of forecast revisions. In column (2) we add our measures of processing difficulty specific to the earnings announcement period, *Abs Earnings Surprise* and *Earnings Not Activated*. These two variables have economically large effects on the activation delay, as suggested by the statistically significant coefficients of 2.99 and 0.799, respectively. In particular, a one standard deviation increase in the absolute value of the earnings surprise is associated with a 2.34% increase in the activation delay. More strikingly, it takes TR 122.38% longer to activate a given forecast if the actual earnings have not yet been activated. These findings are consistent with the idea that the processing of earnings delays the processing of analyst forecast revisions.

In column (3) of Panel B, Table IA3, we estimate equation (1) of section 3.4 using the sample of 489,618 revisions announced during non-earnings periods and in column (4) we compare coefficients obtained from the earnings period and non-earnings period regressions. We interpret differences in coefficients between these two periods as evidence of shifts in TR's prioritization weights. Comparisons of the estimated coefficients are performed using a full-sample pooled regression where all the determinants are interacted with an indicator variable,

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[10] In untabulated analyses, we find similar results when we measure the earnings surprise as the absolute value of the three-day cumulative earnings announcement return or the absolute value of the difference between I/B/E/S actual earnings before extraordinary items per share minus the analyst consensus estimate, deflated by stock price one month before the earnings announcement date. Our results are robust to defining the analyst consensus as the mean or median forecast across all forecasts issued during the three-month period before the earnings announcement date.

Earnings Announcement, which equals one if the forecast revision was made in the earnings period.

Several notable differences emerge between the earnings and non-earnings periods with respect to the association between the activation delay and its determinants. First, during earnings periods, forecast revisions of firms with higher analyst following are processed and activated faster. This result is intuitive given the fact that analyst forecasting activity spikes during earnings periods, and, in response, TR shifts resources to accommodate this spike. Second, forecasts by more experienced analysts are processed faster during non-earnings periods, consistent with these analysts being viewed as more reliable particularly during periods where forecast revisions are more likely based on private information. Third, forecast revision magnitude is more strongly associated with activation delay during earnings periods, consistent with it taking TR longer to follow up with analysts issuing larger/extreme revisions during this busy period. Finally, the relationships between the activation delay and concurrent forecast and earnings announcements are almost the same across the earnings and non-earnings periods.

IA.4. Unexpected activation delay and post-forecast revision drift during earnings vs non-earnings periods

In this section we explore whether the relation between unexpected forecast activation delay and post-forecast revision drift is stronger for forecast revisions announced in the five-day period following earnings announcements compared to other revisions. Theories of limited attention and resources predict that investors' ability to process information in this period is particularly strained as both firms and analysts disclose a vast amount of information; firms provide information about earnings components, sales, revenues, and cash flows, many of which are forecasted by the analysts. We are also motivated to focus on this period because it is associated with greater trading (Chae, 2005; Frazzini and Lamont, 2007) and because many market anomalies are especially pronounced around earnings announcements (Engelberg, McLean, and Pontiff, 2016).

We repeat our drift analysis (see Table 4 in the text) for forecast revisions that occur in the post-earnings announcement period and for revisions that occur outside this period. Recall that our primary result is that in a regression of post-forecast revision returns on forecast revisions, the slope coefficient is higher for forecast revisions in the highest tercile of unexpected activation delay (T3) than for revisions in the lowest tercile (T1). Now we test whether the same difference, T3-T1, is larger for revisions announced in the post-earnings announcement period than for other revisions. In other words, we test whether mispricing associated with unexpected activation delay is greater in the period that immediately follows earnings announcements than at other times. This test follows the same methodology used to test for differences in our results between highly followed and neglected stocks in Section 4.2 of the text.

The results are presented in Table IA4. Within the sample of forecast revisions that occur immediately after earnings announcements, the difference between the slope coefficients, T3-T1, is 2.028% per month and significant at the 1% level (t value = 3.03). The corresponding difference for other revisions is only 0.51% (t value= 2.02). The gap of 1.518% is economically large and statistically significant at the 1% level. We conclude that unexpected activation delay is associated with greater mispricing in the period after earnings announcements than at other times.

Table IA1: Survival rate analysis of the I/B/E/S activation delay

This table reports coefficient estimates from the following accelerated failure time model:

$$Ln(Activation\ Delay) = \beta^{*}\boldsymbol{x} + \vartheta$$

where **x** is a vector of variables; $\beta^{*} = -\beta/p$ and ϑ is the error term assumed to have an extreme value distribution (Gumbel) scaled by the inverse of the shape parameter, *p*. p and β are estimated from the data using the following proportional hazards model where the hazard rate, *h(t)*, is assumed to have a *Weibull* distribution: $h(t) = h_0(t)\exp(\beta x)$, where $h_0(t) = pt^{p-1}$. Activation delay is the time (in minutes from the announcement time to the activation time of a forecast revision. The sample includes 983,134 forecast revisions announced between January 2003 and December 2013 on 5,378 unique firms. Variable definitions are provided in the Appendix. Standard errors are clustered by firm. *t* statistics are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	Predicted Sign	(1)	(2)	(3)	(4)	(5)
Demand for timely processing						
Ln(Market Value)	-	-0.086***			-0.033***	-0.030***
		(-12.63)			(-6.16)	(-5.37)
Ln(1+IO)	-	-0.067*			-0.039	-0.059**
		(-1.87)			(-1.59)	(-2.46)
Ln(Analyst Following)	-	-0.039**			-0.115***	-0.108***
		(-2.32)			(-10.05)	(-9.27)
S&P 500	-	-0.078***			-0.080***	-0.100***
		(-3.38)			(-4.91)	(-6.01)
Ln(Broker Size)	-	0.015***			-0.017***	-0.020***
		(4.98)			(-5.84)	(-6.44)
All Star Rank	-	-0.030***			0.021**	0.035***
		(-3.14)			(2.49)	(4.20)
Ln(Firm Spec. Exp.)	-	0.006**			-0.011***	-0.014***
		(2.18)			(-5.26)	(-6.65)
Information processing difficulty						
Abs_Rev_Own	+		6.785***		4.649***	4.361***
			(23.14)		(20.81)	(19.45)
Abs_Rev_Cons	+		0.255***		0.191***	0.096
			(3.13)		(3.19)	(1.62)
Ln(Abs_Exclusions)	+		0.093***		0.078***	0.084***
			(8.97)		(9.42)	(10.23)
M&A Ann	+		0.039		0.119***	0.128***
			(1.61)		(5.41)	(5.89)
Stock Split	+		0.107		0.316***	0.289***
			(1.08)		(3.39)	(3.33)
EPS Guidance	-		-0.057***		-0.205***	-0.205***
			(-4.12)		(-16.85)	(-17.07)
Large CAR[-3,0]	+		0.142***		-0.015	-0.030***
			(12.57)		(-1.57)	(-3.12)
Forecast Excluded	+		0.432***		0.422***	0.430***
			(54.66)		(56.11)	(56.73)
Analyst Excluded	+		0.197***		0.192***	0.165***
			(29.00)		(32.93)	(28.68)

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Table IA1 Cont'd.

	Predicted Sign	(1)	(2)	(3)	(4)	(5)
<u>Limited attention and resources</u>						
Ln(#Unactivated Fcasts-Same Firm)	+			-0.016**	0.059***	0.044***
				(-2.04)	(10.17)	(7.92)
Ln(#Unactivated Fcasts-All Firms)	+			0.458***	0.418***	0.345***
				(77.76)	(75.46)	(52.41)
Ln(# Unactivated Earnings)	+			-0.003	-0.019***	-0.017***
				(-0.89)	(-5.45)	(-4.25)
Earnings Announcement	+			0.017	0.029***	0.100***
				(1.62)	(3.03)	(11.01)
Friday	+			0.256***	0.267***	0.290***
				(27.56)	(30.10)	(33.07)
Weekend	+			0.227***	0.223***	0.215***
				(18.01)	(18.17)	(17.48)
RTH	-			-0.439***	-0.521***	-0.514***
				(-46.68)	(-55.88)	(-55.96)
ETH	-			-0.239***	-0.293***	-0.296***
				(-41.86)	(-51.83)	(-52.08)
Constant		8.330***	6.724***	4.167***	5.286***	5.499***
		(105.54)	(657.01)	(126.17)	(69.48)	(69.75)
Year Fixed Effects		No	No	No	No	Yes
Shape Parameter		0.625***	0.629***	0.649***	0.656***	0.656***
Log pseudo-likelihood (in 1000s)		-2.005	-1.997	-1.972	-1.952	-1.946
Observations		983,134	983,134	983,134	983,134	983,134

Table IA2: 41-minute forecast revision response coefficients for influential EPS forecasts

This table presents the results from OLS regressions in which the dependent variables are 41-minute logged stock returns (in percent) and the independent variables are decile ranks of *REVISION_OWN* (standardized to have a mean of zero and range of one). Stock returns are calculated as log(1+(($PRICE_{end}$ - $PRICE_{beg}$)/$PRICE_{beg}$))*100, where $PRICE_{end}$ is the trading price of the last transaction within the [-20, +20] minutes window and $PRICE_{beg}$ is the trading price of the immediately previous transaction before the [-20, +20] minute event window. If no transaction occurs within the [-20, +20] minutes window, the return is set to zero. An intercept term is included in each regression but not reported for brevity. The coefficients reported in the table report the results of estimating the model over different event windows and for events that occur during different types of trading hours. The three types of event windows presented (Announcement, Activation, and Placebo) identify 41-minute stock returns around the forecast announcement time, activation time, and a placebo activation time, respectively. Placebo activation times are non-activation times randomly selected from the same delay distribution as true activation times. See Section IA.2 for a full description of the placebo selection procedure. All regression samples include observations for which events occur during the same type of trading-hours, where trading hours are either regular trading hours (*RTH*), extended trading hours (*ETH*), or non-trading hours (*NTH*). See the Appendix in the text for definitions of each type of trading-hours. *t*-statistics based on standard errors clustered by firm and announcement date are reported below the coefficient estimates. The number of observations included in each regression sample is provided below each *t*-statistic. *t*-statistics from Wald tests of the differences between activation-window coefficients and placebo-window coefficients are based on standard errors clustered by firm and announcement date from interacted pooled regressions of activation and placebo samples. *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Forecast Revisions (N=304,637)		
	RTH	ETH	NTH
Panel A: Overall comparison of announcement, activation, and placebo windows			
Announcement	0.692***	0.459***	0.245***
	(22.18)	(16.73)	(8.81)
	78,514	126,268	99,855
Activation	0.274***	0.145***	-0.001
	(17.12)	(9.71)	(-0.08)
	171,666	103,364	29,607
Placebo	0.093***	0.049***	-0.002
	(9.47)	(4.60)	(-0.16)
	112,847	92,020	99,770
Difference	0.181***	0.096***	0.001
(Activation – Placebo)	(10.01)	(5.22)	(0.05)

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Table IA2 Cont'd.

	RTH	ETH	NTH
Panel B: Activation vs placebo windows, 1.5 – 4 trading hour delay			
Activation	0.526***	0.328***	0.006
	(16.30)	(8.69)	(0.24)
	43,905	22,656	2,681
Placebo	0.285***	0.157**	-0.127
	(5.86)	(2.17)	(-1.45)
	5,282	2,417	526
Difference	0.241***	0.170**	0.133
	(4.17)	(2.07)	(1.46)
Panel C: Activation vs placebo windows, 4 – 8 trading hour delay			
Activation	0.328***	0.247***	-0.002
	(11.19)	(6.87)	(-0.06)
	54,174	22,593	3,567
Placebo	0.211***	0.148***	-0.033
	(9.02)	(3.63)	(-0.50)
	22,310	8,456	3,798
Difference	0.117***	0.099*	0.031
(Activation – Placebo)	(3.29)	(1.88)	(0.44)
Panel D: Activation vs placebo windows, 8 – 16 trading hour delay			
Activation	0.208***	0.099***	-0.000
	(6.79)	(4.41)	(-0.02)
	35,143	29,973	13,335
Placebo	0.146***	0.090***	-0.001
	(6.74)	(3.89)	(-0.04)
	22,534	27,654	29,740
Difference	0.062*	0.009	0.000
(Activation – Placebo)	(1.66)	(0.27)	(0.01)
Panel E: Activation vs placebo windows, >16 trading hour delay			
Activation	0.032	0.007	-0.004
	(1.37)	(0.38)	(-0.38)
	38,444	28,142	10,024
Placebo	0.029**	0.012	0.000
	(2.38)	(0.99)	(0.05)
	62,721	53,493	65,706
Difference	0.004	-0.005	-0.004
(Activation – Placebo)	(0.14)	(-0.22)	(-0.31)

Table IA3: Determinants of I/B/E/S activation delay during earnings and non-earnings periods

This table explores the relationship between the I/B/E/S activation delay and its determinants separately for forecast revisions made during earnings periods and non-earnings periods. A forecast falls in the earnings period if the firm announced official earnings during the [-5,0] calendar window relative to the forecast revision announcement day. Panel A reports univariate comparisons for the two samples of revisions, with Sattherwaite t-statistic (assuming unequal variance across groups) reported in the rightmost column. Panel B report coefficient estimates from the following regression run separately for the earnings period (Columns 1 and 2) and non-earnings period (Column 2):

$$Ln(Activation\ Delay) = \beta_1 Demand\ for\ timely\ processing + \beta_2 Information\ processing\ difficulty + \beta_3 Limited\ attention/resources + \varepsilon$$

Activation delay is the time (in minutes) from the announcement time to the activation time of a forecast revision. Column 4 reports whether the coefficients in columns 1 and 3 are different from each other. Tests of the differences in coefficients are conducted using the full sample and by modifying the above regression to include all the determinants and their interactions with a dummy variable (*Earnings Announcement*) that is set to 1 if the forecast revision was preceded by an official earnings announcement during the [-5,0] calendar window. Standard errors are clustered by firm and calendar month. T-statistics are in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

Panel A: Univariate comparison of earnings period and non- earnings period forecast revisions

	Earnings Period N=493,516	*Non-Earnings Period N=489,618*	*Difference in Means*	
	Mean	Mean	Difference	t-stat
Activation Delay				
Activation Delay	1,804	1,288	516	109.53
Demand for timely processing				
Market Value	4,399	4,314	85	0.20
IO	59.50%	58.50%	1.00%	1.16
Analyst Following	10.60	10.48	0.12	0.54
S&P 500	0.15	0.15	0.00	0.16
Broker Size	18	17	1.00	0.35
All Star Rank	0.06	0.06	0.00	0.00
Firm Spec. Exp.	1146	1084	62	1.66*
Information processing difficulty				
Abs(Revision_Own)	0.009	0.008	0.001	14.88***
Abs(Revision_Cons)	0.016	0.016	-0.001	-5.49***
GAAP_Diff	0.803	0.913	-0.110	-10.21***
M&A Announcement	0.016	0.020	-0.003	-13.11***
Stock Split	0.000	0.001	-0.001	-16.80***
EPS Guidance	0.307	0.054	0.253	346.38***
Large Car[-3,0]	0.151	0.086	0.065	101.04***
Forecast Excluded	0.120	0.121	-0.001	-1.66*
Analyst Excluded	0.400	0.451	-0.052	-51.78***

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Table IA3 Cont'd.

	Earnings Period N=493,516	*Non-Earnings Period N=489,618*	*Difference in Means*	
	Mean	Mean	Difference	t-stat
Limited attention and resources				
Unactivated Fcasts-Same Firm	1.78	0.26	1.52	27.89***
Unactivated Fcasts-All Firms	594	544	50	3.85***
Unactivated Earnings Announcements	62	57	5	2.37**
Friday	0.244	0.174	0.070	85.80***
Weekend	0.009	0.020	-0.011	-46.12***
RTH	0.277	0.306	-0.028	-31.08***
ETH	0.406	0.391	0.015	15.63***

Panel B: Multivariate comparison of earnings period and non- earnings period forecast revisions

	Predicted Sign	*Earnings Period*		*Non-Earnings Period*	*Difference*
		(1)	(2)	(3)	(4) (1-3)
Demand for timely processing					
Ln(Market Value)	-	-0.038***	-0.033***	-0.054***	0.016
		(-3.91)	(-3.44)	(-7.06)	(1.64)
Ln(1+IO)	-	-0.044	-0.043	-0.114***	0.069*
		(-1.22)	(-1.20)	(-3.91)	(1.94)
Ln(Analyst Following)	-	-0.205***	-0.230***	-0.006	-0.199***
		(-10.52)	(-11.95)	(-0.37)	(9.63)
S&P 500	-	-0.109***	-0.121***	-0.085***	-0.024
		(-3.62)	(-4.02)	(-3.86)	(0.91)
Ln(Broker Size)	-	-0.008	-0.01	-0.022*	0.014
		(-0.47)	(-0.60)	(-1.84)	(1.17)
All Star Rank	-	0.027	0.019	0.027	0.00
		(1.46)	(1.01)	(1.42)	(0.02)
Ln(Firm Spec. Exp.)	-	-0.004	-0.005	-0.026***	0.022***
		(-0.78)	(-0.95)	(-5.30)	(3.57)
Information processing difficulty					
Abs_Rev_Own	+	5.682***	4.641***	4.083***	1.599***
		(7.59)	(6.16)	(8.15)	(2.74)
Abs_Rev_Cons	+	0.116	-0.04	-0.009	0.125
		(1.22)	(-0.45)	(-0.12)	(1.21)
Ln(Abs_GAAP_Diff)	+	0.118***	0.113***	0.059***	0.060***
		(8.55)	(8.07)	(5.01)	(3.84
M&A Ann	+	0.090**	0.093**	0.185***	-0.095**
		(2.30)	(2.37)	(6.78)	(2.24)
Stock Split	+	0.281	0.271	0.373***	-0.092
		(1.21)	(1.18)	(4.05)	(0.36)
EPS Guidance	-	-0.189***	-0.175***	-0.165***	-0.024
		(-5.44)	(-5.07)	(-6.32)	(0.68)
Large CAR[-3,0]	+	-0.022	-0.025*	-0.025	0.003
		(-1.51)	(-1.70)	(-1.25)	(0.13)
Forecast Excluded	+	0.548***	0.545***	0.488***	0.060**
		(14.19)	(14.15)	(16.98)	(1.97)
Analyst Excluded	+	0.173***	0.171***	0.150***	0.022
		(9.99)	(9.79)	(9.41)	(1.49)
			(10.29)		

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Table IA3 Cont'd.

	Predicted Sign	*Earnings Period*		*Non-Earnings Period*	*Difference*
		(1)	(2)	(3)	(4) (1-3)
Limited attention and resources					
Ln(#Unactivated Fcasts-Same Firm)	+/-	0.142***	0.179***	0.167***	-0.025
		(12.38)	(14.78)	(11.77)	(-1.59)
Ln(#Unactivated Fcasts-All Firms)	+	0.390***	0.387***	0.340***	0.05
		(11.64)	(11.71)	(8.96)	(1.27)
Ln(# Unactivated Earnings)	+	0.016	0.017	-0.031	0.047*
		(0.59)	(0.64)	(-1.40)	(1.69)
Friday	+	0.087***	0.102***	0.199***	-0.112
		(3.91)	(4.64)	(8.44)	(-4.21)
Weekend	+	0.078**	0.111***	0.187***	-0.11
		(2.13)	(3.21)	(4.88)	(-2.31)
RTH	-	-0.771***	-0.789***	-1.308***	0.537
		(-17.85)	(-17.38)	(-25.57)	(15.59)
ETH	-	-0.499***	-0.497***	-0.705***	0.206
		(-28.61)	(-27.69)	(-26.13)	(8.58)
Earnings announcement period-specific variables					
Abs Earnings Surprise	+		2.990***		
			(7.80)		
Earnings Not Activated	+		0.799***		
			(10.29)		
Constant		4.491***	4.527***	5.233***	-0.667***
		(12.08)	(20.99)	(28.66)	(-3.18)
Year FE		Yes	Yes	Yes	Yes
# of observations		493,516	493,516	489,618	983,134
Adjusted R^2		17.97%	18.54%	15.72%	18.10%

Table IA4: Unexpected I/B/E/S activation delay and post-forecast revision drift: Revisions made during the post-earnings announcement period vs. revisions made at other times

This table presents results from the following monthly cross-sectional (Fama-MacBeth) regressions:

$$CAR[2,23] = \beta_0 + \beta_1 Revision\_Own + \beta_2 Size + \beta_3 BM + \beta_4 MOM + \beta_5 IO + \varepsilon$$

estimated separately for forecast revisions issued during earnings periods (*Post-Earnings Announcement Period Revisions*) and non-earnings periods (*Other Revisions*) and for each tercile of the unexpected I/B/E/S activation delay. Earnings period is defined as the five-calendar-day window following an earnings announcement. Unexpected activation delay is the residual from the full determinants model as estimated in column (5) of Table 2. $CAR[2,23]$ is the compounded return over the [+2, +23] window minus the corresponding NYSE size decile portfolio return. *Revision_Own* is the forecast revision relative to the analyst's prior forecast. All dependent and independent variables are as defined in Table 6. *Size*, *BM*, *MOM*, and IO are included in the regressions but not reported for brevity. Newey-West t-statistics (adjusted for heteroscedasticity and autocorrelation of up to twelve months) are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	Post-Earnings Announcement Revisions				*Other Revisions*				*Test of difference in [T3-T1] between the two samples*
	T1	T2	T3	T3-T1	T1	T2	T3	T3-T1	Difference in T3-T1
Revision_Own	-0.658	0.335	1.370***	2.028***	0.560*	0.4	1.070***	0.510**	1.518**
	(-1.01)	(1.5)	(4.38)	(3.03)	(1.92)	(1.61)	(5.53)	(2.02)	(2.17)
Adjusted R^2	8.20%	7%	8.10%		4.20%	4%	4%		
# of observations	121,575	162,198	121,589		118,324	157,864	118,338		