

Pricing Repurchase Promises: Expected Execution and Investor Beliefs

Review of Quantitative Finance and Accounting

Online Resource 1

This supplement contains the formal model, variable construction, institutional background, and additional empirical evidence for *Pricing Repurchase Promises: Expected Execution and Investor Beliefs*.

A Expectations, Execution, and Valuation

The model contains four distinct objects: expected execution, belief about firm type, posterior revision, and delayed price incorporation. Expected Execution measures the first object. The following results connect these objects.

A.1 Announcement Value and the No-Announcement Path

Let $\theta_i \in \{0, 1\}$ denote a type associated with higher follow-through and let

$$\pi_i^A = \Pr(\theta_i = 1 \mid H_i, X_i, A_i), \quad (\text{A.1})$$

where A_i contains current plan terms, H_i summarizes historical conduct, and X_i contains other information available at announcement. The prior lies strictly between zero and one. Conditional on the plan and the firm's current opportunity set, let μ_j be expected execution for type j , with $\mu_1 > \mu_0$. I suppress these conditioning variables in the notation and hold the type-specific means fixed in the following comparative statics. The announcement-date execution expectation is

$$q_i^A = \mathbb{E}[e_i \mid H_i, X_i, A_i] = \mu_0 + (\mu_1 - \mu_0)\pi_i^A. \quad (\text{A.2})$$

The price response is $B_i + \pi_i^A V_i$, where $B_i \in \mathbb{R}$ is the expected short-window adjustment without an announcement and $V_i > 0$ is the incremental value associated with high follow-through. Consequently,

$$\frac{\partial CAR_i^A}{\partial q_i^A} = \frac{V_i}{\mu_1 - \mu_0} > 0. \quad (\text{A.3})$$

This relation maps an execution forecast into announcement value while allowing historical conduct and current plan conditions to contain distinct information about the same latent type.

The derivative holds the no-announcement adjustment and the type-specific value fixed. It therefore describes how a change in expected follow-through affects the price of an otherwise comparable promise. Across firms, expected execution can also change because plan terms alter μ_0 , μ_1 , or V_i . This distinction gives the joint forecast-history comparison its role: it separates empirical information sources, while the theoretical derivative characterizes the valuation margin conditional on the opportunity set.

For the specialization $V_i = \kappa_i D_i$, where $D_i > 0$ denotes a preceding loss, the short- and wider-window returns are

$$\begin{aligned} CAR_i^A &= B_i + \pi_i^A \kappa_i D_i, \\ CAR_i^W &\approx -(1 - \pi_i^A \kappa_i) D_i + B_i + L_i. \end{aligned} \quad (\text{A.4})$$

Thus $CAR_i^A > 0$ requires $B_i + \pi_i^A \kappa_i D_i > 0$. The wider return is negative when $B_i + L_i < (1 - \pi_i^A \kappa_i) D_i$. Neither sign follows from $0 < \pi_i^A \kappa_i < 1$ alone. Conditional on B_i , V_i , and the remaining information,

$$\frac{\partial CAR_i^A}{\partial \pi_i^A} = V_i > 0. \quad (\text{A.5})$$

An earlier price loss can contain fundamental news, so the value associated with execution can reverse only part of that loss.

A.2 Forecast Errors and Posterior Revisions

Let $f_j(e)$ be the continuously differentiable density of execution for type j , with both densities positive on their common support. Bayes' rule gives

$$\pi_i^1(e) = \frac{\pi_i^A f_1(e)}{\pi_i^A f_1(e) + (1 - \pi_i^A) f_0(e)}. \quad (\text{A.6})$$

Writing $\ell(e) = \log f_1(e) - \log f_0(e)$ yields

$$\frac{\partial \pi_i^1(e)}{\partial e} = \pi_i^1(e) [1 - \pi_i^1(e)] \ell'(e). \quad (\text{A.7})$$

The derivative is positive wherever $\ell'(e) > 0$. The posterior exceeds the prior if and only if $\ell(e) > 0$. This likelihood threshold need not equal expected execution.

For a transparent example, let e be a standardized execution signal and suppose $e \mid \theta = j \sim N(\mu_j, \sigma^2)$, $\mu_1 > \mu_0$, and $\sigma > 0$. The Gaussian approximation describes the signal, whose support differs from that of a raw nonnegative purchase quantity. Then

$$\ell(e) = \frac{\mu_1 - \mu_0}{\sigma^2} \left(e - \frac{\mu_1 + \mu_0}{2} \right), \quad m_i = \pi_i^A \mu_1 + (1 - \pi_i^A) \mu_0. \quad (\text{A.8})$$

A positive forecast error means $e > m_i$; an upward belief revision means $e > (\mu_1 + \mu_0)/2$. Their thresholds coincide only when $\pi_i^A = 1/2$. When the prior is below one-half, an observation can exceed its forecast yet lower the posterior relative to the prior. Figure A.1 makes the distinction visible.

For fixed execution, the forecast shortfall $m_i - e$ increases with the prior:

$$\frac{\partial(m_i - e)}{\partial \pi_i^A} = \mu_1 - \mu_0 > 0. \quad (\text{A.9})$$

The same observation need not produce a larger absolute posterior decline for every prior. The empirical disappointment interaction concerns the forecast shortfall and later earnings, not a universally ordered posterior change.

A.3 Public Revelation, Prices, and Earnings

Let d_i be the date at which investors observe the relevant execution signal, not its purchase date. Measure V_i in the same return units as announcement CAR, relative to a fixed reference price. Public revelation changes conditional value in those units by $V_i(\pi_i^1 - \pi_i^A)$. Let $\rho_i \in [0, 1]$ be the fraction incorporated at disclosure. The component remaining for subsequent incorporation is

$$R_i^{\text{info}} = (1 - \rho_i) V_i (\pi_i^1 - \pi_i^A). \quad (\text{A.10})$$

For $\rho_i = 1$, this component vanishes. A forecast error predicts later returns through this channel only when the public signal changes the posterior and incorporation is incomplete. Returns starting after a purchase-measurement cutoff can also include the initial public revelation at d_i .

Suppose subsequent earnings news satisfies $SUE_i = a + b\theta_i + \eta_i$, with $b > 0$ and $\mathbb{E}[\eta_i | \theta_i, e_i, \mathcal{I}_i^A] = 0$. Then

$$\begin{aligned}\mathbb{E}[SUE_i | e_i, \mathcal{I}_i^A] &= a + b\pi_i^1(e_i), \\ \frac{\partial \mathbb{E}[SUE_i | e_i, \mathcal{I}_i^A]}{\partial e_i} &= b\pi_i^1(e_i)[1 - \pi_i^1(e_i)]\ell'(e_i) > 0.\end{aligned}\tag{A.11}$$

The strict inequality uses $\ell'(e_i) > 0$ and holds conditional on announcement information. Under the conditional mean restriction, execution changes expected SUE through the posterior type probability, yielding the directional prediction evaluated by the earnings regressions.

A.4 External Information and Enforcement

Suppose investors begin with prior mean m_0 and precision τ_0 , then observe a firm-specific execution signal s_H with precision τ_H and a current-disclosure signal s_A with precision τ_A . Under independent Gaussian noise,

$$\mathbb{E}[v | s_H, s_A] = \frac{\tau_0 m_0 + \tau_H s_H + \tau_A s_A}{\tau_0 + \tau_H + \tau_A}, \quad w_H = \frac{\tau_H}{\tau_0 + \tau_H + \tau_A},\tag{A.12}$$

and

$$\frac{\partial w_H}{\partial \tau_A} = -\frac{\tau_H}{(\tau_0 + \tau_H + \tau_A)^2} < 0.\tag{A.13}$$

Higher precision in the current statement reduces the valuation weight on firm-specific execution information, holding the other precisions fixed. Here, s_A represents information in the statement beyond that summarized by s_H ; the independent-noise assumption applies to these distinct signals. Disclosure liability can raise τ_A when unsupported statements become more costly. If enforcement also increases τ_H , the net change depends on both precision responses. The Kangmei comparison evaluates the corresponding relative pricing change across exposure groups, and the negative-slope prediction follows under the substitution condition.

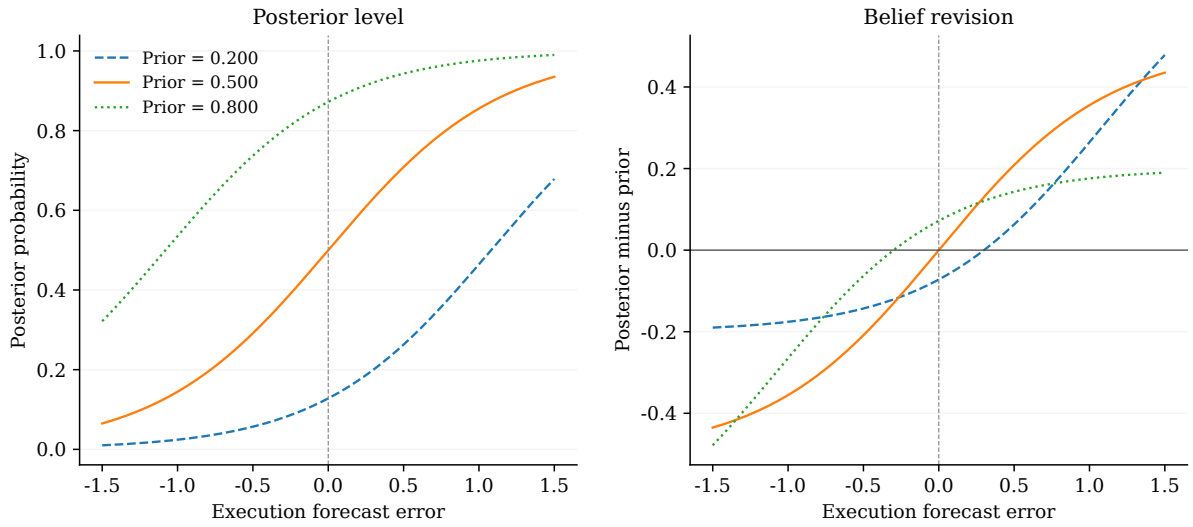
More generally, let λ index enforcement strength and hold τ_0 fixed. If both signal precisions respond, the total change in the weight on firm-specific information is

$$\frac{dw_H}{d\lambda} = \frac{(\tau_0 + \tau_A)\tau_H'(\lambda) - \tau_H\tau_A'(\lambda)}{(\tau_0 + \tau_H + \tau_A)^2}.\tag{A.14}$$

Substitution requires $\tau_H\tau_A'(\lambda) > (\tau_0 + \tau_A)\tau_H'(\lambda)$. Thus stronger enforcement lowers the forecast's relative weight when the improvement in current-statement precision outweighs the corresponding improvement in firm-specific information. This condition connects the negative empirical slope change to a specific information mechanism.

Fig. A.1 Execution Forecast Errors and Belief Updating

The figure illustrates the equal-variance Gaussian model with $\mu_0 = 0$, $\mu_1 = 1$, and $\sigma = 0.750$. Curves correspond to announcement-date priors of 0.200, 0.500, and 0.800. The horizontal axis is realized execution minus its prior conditional mean. The left panel shows posterior probability; the right panel shows posterior minus prior probability. The horizontal zero line in the right panel marks no belief revision. Parameters illustrate the model and are not estimated from the repurchase sample.



B Additional Variable Construction

B.1 Expanding Expected Execution

Expected Execution is an expanding forecast of recorded 90-day execution. For an event announced in year y , define the training cutoff as

$$c_y = \text{January } 1_y - 90 \text{ calendar days}, \quad \mathcal{T}_y = \{s : A_s \leq c_y\}. \quad (\text{B.1})$$

The cutoff separates announcements by 90 calendar days; maturity of a trading-day execution label also depends on its trading-calendar endpoint. Each annual estimation requires at least 500 observable 90-day execution indicators.

The target is $Act90_s$, an indicator for measured execution within 90 days of training announcement s . I group the predictors as

$$\mathbf{Z}_s = ((\mathbf{X}_s^F)', (\mathbf{X}_s^M)', (\mathbf{X}_s^P)')', \quad (\text{B.2})$$

where $\mathbf{X}_s^F$ contains size, book-to-market, ROA, leverage, cash, Tobin's Q, state ownership, and financing constraints; $\mathbf{X}_s^M$ contains momentum and volatility; and $\mathbf{X}_s^P$ contains purpose indicators, announced amount, plan scale, and the large-program indicator. Purpose contains the cancellation, incentive, mixed, and stabilization indicators. Annual firm variables precede the announcement, momentum and volatility close before it, and plan variables become observable with the announcement. Missing predictor values receive the median from $\mathcal{T}_y$. Industry enters through indicator variables.

I estimate the linear probability model

$$(\hat{\alpha}_y, \hat{\beta}_y) = \arg \min_{\alpha, \beta} \sum_{s \in \mathcal{T}_y} [Act90_s - \alpha - \mathbf{Z}_s' \beta]^2. \quad (\text{B.3})$$

For current event t , the raw fitted propensity is

$$\hat{m}_{i,t} = \hat{\alpha}_y + \mathbf{Z}_{i,t}' \hat{\beta}_y. \quad (\text{B.4})$$

Let $\hat{m}_{s,y}$ denote fitted values for training observations. Expected Execution is

$$EE_{i,t} = \frac{\hat{m}_{i,t} - \overline{\hat{m}_{\mathcal{T}_y}}}{s(\hat{m}_{\mathcal{T}_y})}. \quad (\text{B.5})$$

The scaling uses training fitted values. Firm characteristics, pre-announcement market conditions, and current plan terms determine the score. Annual accounting inputs use the preceding fiscal year. The disclosure-aligned specification in Appendix D.6 additionally selects reports and execution labels by their actual publication dates.

B.2 Historical Execution Reputation

The clean alternative removes current plan terms, current price conditions, ownership, and accounting characteristics. For each current event, let $\overline{Act30}_{i,t-1}$ and $\overline{Act90}_{i,t-1}$ denote the

firm's mean historical indicators for any execution within 30 and 90 trading days. Let $\overline{Ex30}_{i,t-1}$ and $\overline{Ex90}_{i,t-1}$ denote mean historical execution intensity over the same horizons, and let $N_{i,t-1}^{Hist}$ denote the number of earlier programs whose 90-trading-day measurement window and final status disclosure precede the current announcement. These timing conditions apply to every component of Historical Execution Reputation. The unscaled index is

$$H_{i,t-1}^{Clean} = \frac{1}{5} [z(\overline{Act30}_{i,t-1}) + z(\overline{Act90}_{i,t-1}) + z(\overline{Ex30}_{i,t-1}) + z(\overline{Ex90}_{i,t-1}) + z(\log(1 + N_{i,t-1}^{Hist}))]. \quad (\text{B.6})$$

I standardize this index over the eligible event sample:

$$HRep_{i,t-1} = \frac{H_{i,t-1}^{Clean} - \overline{H}^{Clean}}{s(H^{Clean})}. \quad (\text{B.7})$$

The four historical execution statistics use standardization among events with historical records; log experience uses the full event sample. The composite uses the historical-record sample. Equal weights determine the index before its relation to announcement returns is estimated.

B.3 Price-State-Adjusted Expected Execution

The residual measure removes the component of the main prior associated with the current pre-announcement price state and observable firm attributes. I estimate

$$EE_{i,t} = \alpha + \beta_1 CAR_i[-10, -1] + \beta_2 CAR_i[-20, -1] + \gamma' \mathbf{C}_{i,t-1} + \delta' \mathbf{Purpose}_{i,t} + v_{i,t}. \quad (\text{B.8})$$

Price-State-Adjusted Expected Execution equals $\hat{v}_{i,t}$. Thus, it retains score variation orthogonal to the two pre-announcement CARs, the nine baseline controls, current purpose indicators, industry indicators, and announcement-year indicators.

B.4 U-Index, EPS Pressure, and EPS-Linked Incentives

Following Peyer and Vermaelen (2009), let $Q_{i,y}^{BM}$, $Q_{i,y}^{Size}$, and $Q_{i,y}^{Ret6}$ denote within-announcement-year quintile scores from one to five. The return score uses the compounded stock return over the six calendar months before the announcement and requires at least four valid monthly returns. The raw U-index is

$$U_{i,t}^{Raw} = Q_{i,y(t)}^{BM} + (6 - Q_{i,y(t)}^{Size}) + (6 - Q_{i,y(t)}^{Ret6}) + Motive_{i,t}, \quad (\text{B.9})$$

where *Motive* equals five for valuation programs, one for nonvaluation incentive programs, and three otherwise. I standardize U^{Raw} over the event sample. Higher values combine value characteristics, smaller size, a weaker preceding return, and an undervaluation motive.

Let $N_{i,t}$ indicate negative EPS in fiscal year $t-1$, $D_{i,t}$ indicate an EPS decline from fiscal year $t-2$, $G_{i,t}$ indicate EPS growth below the announcement-year median, and $Z_{i,t}$ indicate absolute EPS in the bottom announcement-year quartile. Let $\mathcal{J}_{i,t}$ contain the available indicators among

$\{N, D, G, Z\}$. With $z(\cdot)$ denoting event-sample standardization, the raw EPS pressure index is

$$EPSP_{i,t}^{Raw} = \frac{1}{|\mathcal{J}_{i,t}|} \sum_{j \in \mathcal{J}_{i,t}} z(I_{i,t}^j). \quad (\text{B.10})$$

EPS Pressure Score standardizes $EPSP_{i,t}^{Raw}$ over the event sample. Higher values indicate more severe pre-announcement pressure on reported EPS.

Motivated by the EPS incentives in Cheng et al. (2015), for each equity-incentive plan p , let D_p^{EPS} denote the first disclosure date on which its grant or exercise conditions mention EPS or earnings per share. Let D_p^{Top} denote the first disclosure date on which a CEO, general manager, or president appears as an incentive recipient. Let D_p^{Cancel} be the cancellation date and V_p the stated validity in years. For repurchase event t , I define

$$EPSActive_{i,t} = \mathbf{1} \left\{ \begin{array}{l} \exists p : D_p^{EPS} < A_{i,t}, \\ 0 \leq (A_{i,t} - FirstDate_p)/365.25 \leq V_p, \\ D_p^{Cancel} \text{ is missing or } A_{i,t} < D_p^{Cancel} \end{array} \right\}, \quad (\text{B.11})$$

where a missing cancellation date means that the plan remains uncanceled. CEO EPS-Linked Incentive imposes the additional condition $D_p^{Top} < A_{i,t}$. Exact-title matching excludes vice general managers and vice presidents. These filters use only plan terms and participant records disclosed before the repurchase announcement.

B.5 Execution Intensity and Execution Surprise

For event t , let $\Delta b_{i,t,\tau}$ denote the incremental repurchase scale relative to market value, in %, reported for trading day τ . I aggregate these increments over trading days $[0, 30]$, divide by 100, and assign zero to events with no recorded purchase:

$$Ex30_{i,t}^{Raw} = \frac{1}{100} \sum_{\tau=0}^{30} \Delta b_{i,t,\tau}. \quad (\text{B.12})$$

The empirical variable standardizes $Ex30_{i,t}^{Raw}$ across events with execution data. Fast First Execution equals one when the reported first implementation date falls within the same trading-day window.

For programs with final implementation records, define the amount- and share-based completion ratios as

$$\begin{aligned} r_{i,t}^{amt} &= \frac{FinalPurchaseAmount_{i,t}}{PlanAmountUpper_{i,t}}, \\ r_{i,t}^{shr} &= \frac{FinalPurchaseShares_{i,t}}{PlanSharesUpper_{i,t}}. \end{aligned} \quad (\text{B.13})$$

Program Completion Rate uses $r_{i,t}^{shr}$ when $r_{i,t}^{amt} > 1$ and the share ratio is observed; it otherwise uses $r_{i,t}^{amt}$. I bound the selected ratio between zero and one. The resulting measure records completion relative to the matched plan ceiling on a common unit-interval scale.

Execution Surprise uses a separate expanding prediction. For announcement year y , I fit

the following model only on events from years before y :

$$Ex30_s = \alpha_{<y} + \beta_{<y} EE_s + \gamma'_{<y} \mathbf{C}_{s-1} + \delta'_{<y} \mathbf{Purpose}_s + \varepsilon_s, \quad y(s) < y. \quad (\text{B.14})$$

The model includes industry indicators, replaces missing continuous predictors with medians estimated from prior years, and requires at least 500 observable prior events. The fitted value for current event t is $\widehat{Ex30}_{i,t}^{(<y)}$. I define

$$Surp30_{i,t} = Ex30_{i,t} - \widehat{Ex30}_{i,t}^{(<y)}, \quad NegSurp30_{i,t} = \max\{-Surp30_{i,t}, 0\}. \quad (\text{B.15})$$

The benchmark uses execution from earlier announcement years. Positive values indicate stronger-than-predicted early execution; $NegSurp30$ isolates the magnitude of execution shortfalls.

B.6 Fama–MacBeth Return Panel

The two-step procedure follows Fama and MacBeth (1973). Let $T_{i,t}^{30}$ denote trading day 30. I set the signal date to $\max\{T_{i,t}^{30}, A_{i,t} + 45 \text{ calendar days}\}$ and define its month as $m_{i,t}^A$. The maximum rule prevents the holding panel from starting before the execution measurement window closes. For holding horizon $H \in \{3, 6\}$, event t contributes stock-month observations for $m = m_{i,t}^A + 1, \dots, m_{i,t}^A + H$. If multiple announcements map to the same stock-month, I retain the latest eligible announcement. Monthly excess return is

$$R_{i,m}^e = R_{i,m} - R_{f,m}. \quad (\text{B.16})$$

Execution Surprise and Low Disappointment, $-NegSurp30$, are winsorized at the 1st and 99th percentiles and standardized before the monthly panel expands. The execution-surprise regressions include Expected Execution, so their coefficient measures execution innovation conditional on the announcement-date prior.

Each monthly cross-section controls for size, book-to-market, momentum, volatility, and industry indicators. Months require at least 20 eligible stocks. Step 2 averages the monthly signal coefficients with Newey–West lag two for three-month signals and lag five for six-month signals, as described in Appendix D.2.

B.7 Future Earnings News

I match semiannual earnings news by publication date. Let $UE_{i,s} = AdjEPS_{i,s} - AdjEPS_{i,s-2}$ and $SUE_{i,s} = UE_{i,s}/\sigma_{i,s}$, where $s-2$ denotes the same report type in the preceding fiscal year and $\sigma_{i,s}$ is the sample standard deviation of the current and preceding four unexpected-earnings

observations. Define the eligible-release set as

$$\begin{aligned} \mathcal{S}_{i,t} &= \left\{ s : D_{i,t}^{Signal} < ReleaseDate_{i,s} \leq A_{i,t} + 365 \right\}, \\ D_{i,t}^{Signal} &= \max \{ T_{i,t}^{30}, A_{i,t} + 45 \}, \\ AvgSUE_{i,t} &= \frac{1}{K_{i,t}} \sum_{k=1}^{K_{i,t}} SUE_{i,s_{(k)}}, \quad K_{i,t} = \min\{2, |\mathcal{S}_{i,t}|\}, \end{aligned} \quad (\text{B.17})$$

where $s_{(k)}$ is the k th eligible release by publication date. Average Future SUE is defined for $K_{i,t} \geq 1$: it averages the first two eligible releases and uses the available release when only one qualifies. Events without an eligible release have a missing value. The release-date restriction places reported earnings after the early-execution window.

B.8 Investor Horizon

Let $S_{f,j,q}$ denote shares of stock j held by fund f at quarter-end q , and let $P_{j,q}$ denote the corresponding price. For positions observed in consecutive quarters, define the average position value

$$V_{f,j,q}^{Avg} = \frac{S_{f,j,q}P_{j,q} + S_{f,j,q-1}P_{j,q-1}}{2}. \quad (\text{B.18})$$

Quarterly purchase and sale values are

$$Buy_{f,j,q} = \max(S_{f,j,q} - S_{f,j,q-1}, 0)P_{j,q}, \quad Sell_{f,j,q} = \max(S_{f,j,q-1} - S_{f,j,q}, 0)P_{j,q}. \quad (\text{B.19})$$

I aggregate across portfolio stocks and scale by average portfolio value:

$$BuyChurn_{f,q} = \frac{\sum_j Buy_{f,j,q}}{\sum_j V_{f,j,q}^{Avg}}, \quad SellChurn_{f,q} = \frac{\sum_j Sell_{f,j,q}}{\sum_j V_{f,j,q}^{Avg}}. \quad (\text{B.20})$$

Following Starks et al. (2026), adjusted churn removes one-sided portfolio expansion or contraction:

$$AChurn_{f,q} = \min\{BuyChurn_{f,q}, SellChurn_{f,q}\}, \quad AChurn4_{f,q} = \frac{1}{4} \sum_{h=0}^3 AChurn_{f,q-h}. \quad (\text{B.21})$$

Long-Horizon Fund equals one for funds in the bottom tercile of $AChurn4$ within quarter q ; Short-Horizon Fund equals one for the top tercile. The middle tercile does not enter the horizon comparison.

B.9 Fund Trading Response

The 30-day execution measurement window closes on trading day 30, and the response clock starts on the next trading day. The pre-window position comes from the most recent quarter-end before that date. The response position comes from the first quarter-end at least 30 calendar

days later. Let $S_{f,i,t}^-$ and $S_{f,i,t}^+$ denote these positions. I define

$$\begin{aligned} Sell_{f,i,t} &= \mathbf{1}(S_{f,i,t}^+ < S_{f,i,t}^-), \\ DisclosedExit_{f,i,t} &= \mathbf{1}(S_{f,i,t}^- > 0, S_{f,i,t}^+ = 0), \\ Buy_{f,i,t} &= \mathbf{1}(S_{f,i,t}^+ > S_{f,i,t}^-). \end{aligned} \tag{B.22}$$

The matched panel retains funds with a positive pre-window position. When several announcements for the same stock map to the same response quarter, the earliest eligible window enters the panel, so each quarterly position change appears once.

B.10 Cross-Sectional Information Conditions

R&D creates assets whose value is difficult to observe from conventional accounting information (Chan et al. 2001). Let $RD_{i,s}$ denote firm i 's annual R&D expense ratio in fiscal year s . For an announcement in year t , Lagged R&D Intensity uses $RD_{i,t-1}$. Let $W_{1,99}(x)$ denote winsorization at the event-sample 1st and 99th percentiles. The standardized measure is

$$RDZ_{i,t-1} = \frac{W_{1,99}(RD_{i,t-1}) - \overline{W_{1,99}(RD)}}{s[W_{1,99}(RD)]}. \tag{B.23}$$

This construction uses only the preceding fiscal year's accounting information.

Economic links transmit public information across firms (Cohen and Frazzini 2008). For Listed-Customer Information, I use consolidated annual records for the five largest customers. Let $SalesShare_{ik,s}$ denote customer k 's share of firm i 's sales and let $Listed_{ik,s}$ equal one when that customer is publicly listed. I calculate

$$LC_{i,s} = \frac{\sum_{k=1}^5 SalesShare_{ik,s} Listed_{ik,s}}{\sum_{k=1}^5 SalesShare_{ik,s}}. \tag{B.24}$$

The ratio uses disclosed top-five-customer sales and measures the public-information composition of the major-customer network.

I apply a reporting-lag rule. For an announcement in calendar month m of year t , the matched fiscal year is

$$s(t, m) = \begin{cases} t - 2, & m \leq 4, \\ t - 1, & m \geq 5. \end{cases} \tag{B.25}$$

January–April announcements use the fiscal-year record from two years earlier, while May–December announcements use the preceding fiscal-year record. Listed-Customer Information applies the winsorization and standardization in Equation (B.23) to $LC_{i,s(t,m)}$. The customer measure applies this reporting-lag convention; R&D intensity uses the preceding fiscal year.

Table B.1: Variable Definitions

Variable	Measurement
Panel A . Dependent Variables	
Event-Window CARs	Winsorized FF5-adjusted CARs. Announcement: $[0, +1]$; pre-announcement: $[-20, -1]$ or $[-10, -1]$. Units are %.
Recovery Measures	Recovery Fraction is announcement CAR divided by Pre-Announcement Loss, bounded to $[0, 1]$; Remaining Fraction is one minus this value. Incomplete Recovery equals one when announcement CAR falls below that loss.
Post-Execution-Window Return	FF5-adjusted return over trading days $[31, 180]$, in decimal units.
Program Completion Rate	Final completion ratio bounded to $[0, 1]$; share completion replaces an amount ratio above one when available.
Average Future SUE	Mean SUE from up to two reports released after both trading day 30 and calendar day 45, within 365 calendar days of the announcement.
Fund Trading Indicators	Sell and Buy indicate a decrease and an increase in disclosed shares. Disclosed Exit indicates disappearance from disclosed holdings after the execution measurement window.
Panel B . Independent Variables	
Pre-Announcement Price Measures	Negative Pre-Announcement CAR flags $CAR[-20, -1] < 0$. Pre-Announcement Loss is its absolute value for negative-CAR events. Pre-Announcement Decline equals $-CAR[-20, -1]$ for all events. CAR-based magnitudes are in %.
Expected Execution	Standardized expanding forecast of 90-day execution using firm characteristics, market conditions, plan terms, and industry. Price-State-Adjusted Expected Execution removes its relation to pre-announcement returns, control variables, purposes, industry, and year.
Historical Execution Measures	Historical Execution Reputation combines past execution incidence, intensity, and experience; both the 90-day window and final-status disclosure precede the announcement. Bayesian Historical Prior is a standardized Beta(1, 1) posterior using prior 30-day windows that close before the announcement. Both measures are standardized.
Plan Scale and Large Program	Announced Plan Scale is 100 times the upper announced amount divided by event-matched market value, both in renminbi. Large Announced Program flags values at or above the annual median.
Early Execution Indicators	30-Day Execution flags any purchase in trading days $[0, 30]$. Weak 30-Day Execution flags no purchase. Fast First Execution flags a reported first implementation date within 30 trading days.
30-Day Execution Intensity	Standardized sum of incremental monthly purchase-scale-to-market-value ratios over $[0, 30]$; no execution equals zero.

Variable	Measurement
Execution Surprise and Disappointment	Execution Surprise equals realized 30-day execution minus its expanding prior-year prediction. Negative Execution Surprise is the absolute shortfall, zero otherwise. Low Disappointment is its negative, standardized for Fama–MacBeth tests.
High-Expectation Indicators	High Expected Execution flags the top 30% of the annual forecast distribution where available. High-Expectation Weak Execution interacts this indicator with Weak 30-Day Execution.
Fund Horizon	Adjusted Churn averages minimum purchase-sale churn over four quarters. Long- and Short-Horizon Fund indicate its bottom and top quarterly terciles; the latter is the reference group.
Information Conditions	Lagged R&D Intensity is the prior-year R&D expense ratio. Listed-Customer Information is the publicly available listed-customer share of top-five customer sales. Both are winsorized and standardized.
U-Index	Standardized sum of book-to-market, inverse-size, inverse-prior-return, and repurchase-motive scores.
EPS Incentives	EPS Pressure Score combines negative EPS, declining EPS, low EPS growth, and near-zero EPS into a standardized pre-announcement index. CEO EPS-Linked Incentive flags an active, publicly disclosed EPS-conditioned equity plan involving the CEO or general manager.
Kangmei Exposure and Timing	No Public D&O Insurance Record flags explicit nonpurchase or no public insurance disclosure in an observable 2020 annual record. Post Judgment begins in December 2021; November is excluded. Event quarters use months $[-3, -1]$ as the reference period.
Panel C. Control Variables	
Control Variables	Prior-year log market value, book-to-market, ROA, leverage, cash holdings, Tobin's Q, and state ownership; pre-announcement momentum and volatility.
Early Price Path	Stock return, market return, and abnormal-return volatility during the execution window.
Earnings Information Screens	Indicators for forecasts, preliminary earnings reports, and periodic reports released on the announcement date, within one calendar day, or in the preceding ten trading days.
Panel D. Other Variables and Design Features	
Matched Non-Repurchaser	Same-year, same-industry nearest neighbor on pre-event CAR, size, book-to-market, momentum, and volatility. No active plan at the pseudo-event date or repurchase lifecycle disclosure within 45 calendar days on either side.
Announcement Purpose Indicators	Cancellation, incentive, mixed, and stabilization indicators in the execution-forecast and price-state-adjustment models.

C The Kangmei Judgment and Exposure Comparisons

C.1 The Legal Event

Kangmei Pharmaceutical is a listed traditional-medicine producer and distributor. The case concerns large-scale financial-statement misrepresentation during 2016–2018. Under China’s special representative securities-litigation procedure, an investor-protection institution represents affected investors through an opt-out action. The procedure aggregates claims that individual investors would otherwise find costly to pursue.

On 16 April 2021, the court converts the case into China’s first special representative securities action. On 12 November 2021, the Guangzhou Intermediate People’s Court awards approximately 2.459 billion renminbi (RMB) to 52,037 investors and imposes joint liability on responsible executives, directors, and other parties. Some responsible individuals bear liability within 5%, 10%, or 20% of investor losses. The judgment gives concrete monetary force to disclosure responsibility, including for directors who sign financial reports without directly participating in the misstatement.¹

The transmission to repurchase valuation operates through the commitment value of public statements. Securities liability changes the incentives behind a discretionary authorization and the information investors extract from its terms. Hypothesis 3 in the article predicts substitution when this channel improves the information or commitment value of the statement independently of the firm’s execution forecast.

The case demonstrates the operation of representative litigation and personal liability under a common securities-law framework. Its connection to repurchases lies in the incentives behind public authorizations. The judgment supplies a common enforcement event, and the D&O comparison supplies variation in exposure.

Two economic forces can therefore differ. More credible current disclosure can substitute for firm-specific expectations, reducing the forecast’s pricing weight. Enforcement can also improve the reliability of those expectations, creating complementarity. The triple interaction distinguishes the relative slope predictions of these channels through investors’ pricing of the execution forecast.

C.2 Exposure and Sample Composition

Exposure uses insurance disclosures for the 2020 reporting year. Public Insurance Record identifies an established disclosed D&O insurance practice. No Public Insurance Record includes explicit nonpurchase and observable annual records without a public insurance disclosure. An absent annual classification remains missing. The classification captures the public insurance record that investors can use before the judgment.

The nine-month comparison contains 95 Public Insurance Record events before the judgment and 110 afterward. The corresponding No Public Insurance Record counts are 718 and 818. Thus the public-record group contributes 205 of 1,741 events. Table 5 in the article compares

¹China Securities Regulatory Commission, *Judgment in the Kangmei Pharmaceutical Special Representative Securities Action* ([litigation timeline](#)); Supreme People’s Court, *Ten Major Commercial Cases of 2021*, Kangmei securities-misrepresentation case ([case account](#)); China Securities Investor Services Center, *Announcement on Not Appealing the Kangmei First-Instance Judgment*, 3 December 2021 ([judgment and award](#)).

pre-judgment characteristics within the estimation sample. Expected Execution is similar across groups, with a standardized mean difference of 0.044. Public-record firms are larger, have higher book-to-market ratios, and are more often state-owned; the corresponding standardized differences are 0.624, 0.412, and 0.397. Firm-level entropy weights align the nine control-variable means and leave the Expected Execution difference small. The weighted comparison covers firms observed before the judgment, producing 1,261 observations across the two periods. On this same sample, the unweighted and weighted triple differences are -2.576 and -2.520 ; their similarity shows that reweighting has little effect within the common sample. Comparing this unweighted estimate with the full-sample estimate separately describes the change associated with sample composition.

C.3 Slope Changes and Timing

The full interaction model includes Expected Execution, exposure, the post indicator, and every two-way interaction. The triple coefficient is the no-public-record slope change less the public-record slope change. The nine-month estimate is -3.142 with standard error 0.920. The no-public-record group’s own change is -0.987 with standard error 0.380.

The six-month window yields a triple-interaction estimate of -2.925 with standard error 1.033, compared with -3.142 and 0.920 over nine months. Table C.1 reports the complete interaction coefficients for both windows. Announcement-month fixed effects yield -3.268 with standard error 0.932 by absorbing common shocks at the frequency of the enforcement comparison. The negative relative slope change therefore appears across window and time-control specifications.

The stage comparison uses the 16 April 2021 conversion to special representative litigation as an intermediate event. Relative to the pre-litigation period, the execution-pricing-slope difference changes by 1.060 during litigation and by -2.119 after judgment. Their difference is -3.178 with standard error 1.027. The timing separates anticipation of representative litigation from the court’s monetary assignment of liability.

Two exposure checks use the detailed insurance announcement history. Restricting the public-record group to firms with a 2019 or 2020 insurance-year record approved by shareholders before the litigation begins produces -3.442 with standard error 1.239. Restricting it to supporting disclosures dated from 2020 through the eve of judgment produces -3.052 with standard error 1.255. The industry-stratified permutation reassigns exposure at the firm level while preserving each industry’s public-record count and yields a studentized p-value of 0.006.

Table C.1: Kangmei Estimates across Event Windows

	Six Months	Nine Months
Expected Execution	−0.095 (0.513)	−0.147 (0.467)
No Public Record	−1.115* (0.675)	−0.674 (0.549)
Post	−0.645 (0.803)	−0.576 (0.674)
Expected Execution × No Public Record	1.518** (0.671)	1.802*** (0.546)
Expected Execution × Post	2.166** (0.886)	2.155** (0.840)
No Public Record × Post	0.992 (0.837)	0.384 (0.676)
Expected Execution × No Public Record × Post	−2.925*** (1.033)	−3.142*** (0.920)
Control Variables	Yes	Yes
Industry / Year Fixed Effects	Yes / Yes	Yes / Yes
Firm Clustering	Yes	Yes
R-squared	0.081	0.074
N	1,142	1,741

This table reports triple-difference regressions within six or nine months on each side of November 2021, excluding the judgment month. The dependent variable is Fama–French five-factor (FF5)-adjusted cumulative abnormal return (CAR) over days $[0, +1]$, in %. No Public Record uses the 2020 directors' and officers' (D&O) insurance classification; Post denotes months after November 2021. Controls include log market value, book-to-market, return on assets, leverage, cash holdings, Tobin's Q, state ownership, pre-announcement momentum, and pre-announcement volatility. Both models absorb industry and announcement-year fixed effects. CAR and continuous controls are winsorized at the 1st and 99th percentiles. Firm-clustered standard errors appear in parentheses. *, **, and *** denote significance at 10%, 5%, and 1%.

D Supplementary Evidence

D.1 Historical Calibration and Announcement Sorts

Table D.1 compares the historical Beta-binomial score with current measured execution and announcement returns. Table D.2 reports announcement quintiles for Expected Execution and its price-state-adjusted counterpart. These comparisons describe historical persistence and high-minus-low return differences across the forecast measures.

The historical calibration coefficient of 0.067 for execution incidence means that a one-unit increase in the standardized historical score corresponds to a 6.700-percentage-point higher probability of recorded early execution. The positive intensity and announcement-return coefficients connect persistence in buying to the market response. This is the reputational comparison against which the current-information forecast adds its distinct content.

The announcement sorts reveal where the return spread appears in the forecast distribution. Expected Execution produces a 1.980% high-minus-low announcement spread; the corresponding price-state-adjusted spread is 1.270%. The upper forecast group receives the largest immediate response in each sort. Intermediate groups do not produce uniformly ordered returns across both windows and both measures, so the economically relevant comparison is the separation at the high end. These grouped returns complement the conditional announcement regressions by displaying the distribution of the pricing relation.

Table D.1: Calibration of the Bayesian Historical Prior

	30-Day Execution (Indicator)	30-Day Execution Intensity (Standardized)	Announcement CAR [0, +1] (%)
	(1)	(2)	(3)
Bayesian Historical Prior	0.067*** (0.006)	0.069*** (0.015)	0.124** (0.056)
Controls	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
SE Clustered by Firm	Yes	Yes	Yes
R-squared	0.339	0.307	0.060
N	6,136	6,136	6,136

This table tests whether the standardized Bayesian Historical Prior predicts current follow-through and announcement cumulative abnormal return (CAR). The prior applies a Beta-binomial update to earlier 30-trading-day execution windows that close before the current announcement and is standardized within announcement year. The sample requires at least one eligible historical window. Controls include log market value, book-to-market, return on assets, leverage, cash holdings, Tobin's Q, state ownership, pre-announcement momentum, pre-announcement volatility, Announced Plan Scale, and CAR[−10, −1]. All models absorb industry and announcement-year fixed effects. Event-window CARs and continuous controls are winsorized at the 1st and 99th percentiles. Firm-clustered standard errors appear in parentheses. *, **, and *** denote significance at 10%, 5%, and 1%.

D.2 Monthly Return Comparisons

Step 1 estimates a cross-sectional excess-return regression each month using the latest eligible execution signal, lagged characteristics, and industry indicators. Step 2 averages the signal coefficients and uses Newey–West standard errors with lag two or five for three- or six-month signal horizons. Table D.3 reports both signal horizons under the same characteristic specification.

The construction dates each signal at the later of trading day 30 and 45 calendar days after announcement, and monthly returns begin in the following month. Firm-specific progress disclosures can arrive at different dates, so these regressions measure return predictability after the execution window. The disclosure-aligned event tests provide the corresponding publication-ordered evidence.

With characteristic controls, the six-month signal specifications associate a one-standard-deviation increase in Execution Surprise with a 0.298% higher monthly excess return and a one-standard-deviation increase in Low Disappointment with a 0.315% higher return. These monthly comparisons complement the event regressions by asking whether execution information predicts returns across stocks in the same month. They connect the paper to return predictability while preserving the distinction between purchases measured by a fixed window and information publicly released by a known date.

Table D.2: Execution-Score-Sorted Announcement Returns

Portfolio	CAR[0, +1] (%)	CAR[0, +10] (%)
Panel A. Expected Execution		
Q1 (Low Score)	0.054 [0.530]	0.242 [1.073]
Q2	0.220** [2.328]	0.220 [1.022]
Q3	0.221** [2.283]	-0.005 [-0.028]
Q4	1.008*** [10.738]	1.487*** [7.665]
Q5 (High Score)	2.033*** [19.938]	2.483*** [13.763]
Q5 – Q1	1.980*** [13.882]	2.242*** [7.748]
Panel B. Price-State-Adjusted Expected Execution		
Q1 (Low Score)	0.433*** [4.572]	1.062*** [5.201]
Q2	0.437*** [4.549]	0.585*** [3.059]
Q3	0.389*** [3.943]	0.356* [1.875]
Q4	0.462*** [4.522]	0.483** [2.102]
Q5 (High Score)	1.703*** [15.016]	1.831*** [8.909]
Q5 – Q1	1.270*** [8.636]	0.770*** [2.671]

This table reports event-time portfolios sorted by announcement-date execution priors. Within each announcement year, observations are ranked by the stated prior measure and assigned to five near-equal groups; tied values are ordered by within-year rank. Q1 is Low Score and Q5 is High Score. Returns are in %. CAR denotes cumulative abnormal return. CAR[0, +1] and CAR[0, +10] are Fama–French five-factor (FF5)-adjusted CARs. High – Low is Q5 minus Q1. Event-level returns are winsorized at the 1st and 99th percentiles. The portfolio design uses within-announcement-year sorting without regression controls or fixed effects. Firm-clustered t-statistics appear in brackets. *, **, and *** denote significance at 10%, 5%, and 1%.

D.3 Early Purchases and Disclosed Fund Holdings

Table D.4 relates early purchases to later returns and program completion. The return regression connects early implementation to subsequent valuation. The completion regression describes how early purchases track total implementation over the program’s life. Since total completion includes early purchases, this second relation combines the early contribution to completion with the association between early and later buying.

The intensity coefficient of 0.009 implies a 0.900% difference in later returns per unit of standardized execution intensity. Fast First Execution corresponds to a 2.000% higher later return. The completion coefficient of 0.021 is a 2.100-percentage-point difference in the bounded final completion ratio. Early buying therefore accompanies both later valuation and a larger realized fraction of the plan. Execution Surprise sharpens this comparison by subtracting the purchase intensity predicted at authorization.

Table D.5 compares changes in disclosed holdings across horizon groups, using the adjusted-churn approach of Starks et al. (2026). A lower four-quarter average of minimum purchase-sale churn identifies a longer horizon. Fund-by-quarter effects absorb contemporaneous fund trading conditions; stock-by-quarter effects absorb stock information shared across funds. The coefficient describes relative trading after firms experience execution shortfalls. Disclosed Exit records disappearance from reported positions rather than complete liquidation. The response quarter aligns each position change with the corresponding execution measurement window.

The economic comparison is within the same stock and quarter: funds with different horizons face the same company information but adjust their disclosed positions differently. The stronger reduction by long-horizon funds links disappointment to the investors most accustomed to holding through short-term fluctuations. This complements the information-assessment argument in Starks et al. (2026), whose long-horizon investors distinguish temporary earnings disappointments from adverse corporate conduct. Here, failure to meet the execution forecast provides the conduct-related comparison. The holdings evidence connects verification to investor demand alongside the main earnings evidence.

Table D.3: Two-Step Fama–MacBeth Pricing after the Early Execution Window

Signal	3-Month Horizon	6-Month Horizon
Execution Surprise (% per month)	0.367** [2.031]	0.298** [2.267]
Low Disappointment (% per month)	0.403*** [2.964]	0.315*** [2.752]
Characteristic Controls	Yes	Yes
Industry Indicators	Yes	Yes
N Months	82	82
Average Stocks per Month	300.900	569.400

This table reports two-step Fama–MacBeth regressions in %. In the first step, I estimate a cross-sectional return regression in each month. In the second step, I average the monthly coefficients. The signal date is the later of trading day 30 and 45 calendar days after the repurchase announcement, and monthly returns begin in the following month. Signals remain active for three or six months. Execution Surprise specifications include Expected Execution. Controls include lagged log market value, book-to-market, momentum, volatility, and industry indicators. Execution Surprise and Low Disappointment are winsorized at the 1st and 99th percentiles before standardization. Newey–West t-statistics appear in brackets and use lag two for three-month signals and lag five for six-month signals. *, **, and *** denote significance at 10%, 5%, and 1%.

Table D.4: Early Execution Verification

Dependent Variable	Execution Signal	Estimate	R-squared	N
Return [31, 180]	30-Day Execution Intensity	0.009*** (0.003)	0.242	9,845
Return [31, 180]	Fast First Execution	0.020** (0.008)	0.242	9,845
Program Completion Rate	30-Day Execution Intensity	0.021*** (0.006)	0.348	7,084

This table tests whether early execution confirms the repurchase promise. The first two rows use the Fama–French five-factor (FF5)-adjusted return over trading days [31, 180]; the third row uses Program Completion Rate. Return models control for log market value, book-to-market, return on assets, leverage, cash holdings, Tobin’s Q, state ownership, pre-announcement momentum, and pre-announcement volatility. The completion model also controls for Announced Plan Scale and cumulative abnormal return (CAR) over $[-10, -1]$. All models absorb industry and announcement-year fixed effects. Execution is measured during the first 30 trading days. Event-level returns and continuous controls are winsorized at the 1st and 99th percentiles. Return and completion-rate coefficients are in decimal units. Firm-clustered standard errors appear in parentheses beneath coefficients. *, **, and *** denote significance at 10%, 5%, and 1%.

D.4 Information Conditions and Alternative Specifications

Research-and-development intensity and listed-customer information describe two conditions under which an execution forecast may carry different pricing weight. R&D-intensive firms derive more of their prospects from investments whose value is difficult to assess from current earnings. In that setting, the feasibility of a discretionary cash commitment can be especially informative. Listed customers provide another public source of information about the firm’s commercial relationships and demand. Such information can reduce reliance on the execution forecast. Table D.6 reports a more positive Expected Execution slope with R&D intensity and a less positive slope with listed-customer information. The contrasting signs align with the information-substitution mechanism developed for announcement pricing. Investment opportunities and linked-firm fundamentals also enter these comparisons, which describe the conditions under which the baseline association varies.

The interaction coefficients quantify changes in the execution-pricing slope. A one-unit increase in standardized R&D intensity increases that slope by 0.184% per unit of Expected Execution. A one-unit increase in standardized Listed-Customer Information reduces it by 0.217%. These are differences in the slope on the forecast, not direct estimates of the value of R&D expenditure or a customer relationship. Their opposite signs distinguish two information environments: greater valuation uncertainty and an additional source of public information.

Table D.7 examines alternative event screens, fixed effects, motives, forecast transformations, and return windows. The U-index follows Peyer and Vermaelen (2009); EPS incentive measures distinguish per-share reporting motives from expected implementation. Appendix B defines these measures. Tail treatments assess the influence of extreme scores produced by standardization against earlier fitted values. Distant pre-event windows examine prior price movements, while shifted announcement windows assess the timing of the immediate response.

Table D.5: Investor Horizon and Trading Responses to Execution Disappointment

Panel A. Long-Horizon Fund Indicator			
	Sell	Disclosed Exit	Buy
Execution Disappointment $\times$ Long-Horizon Fund	0.027*** (3.984)	0.026** (2.222)	-0.016*** (-2.715)
Fund $\times$ Quarter FE	Yes	Yes	Yes
Stock $\times$ Quarter FE	Yes	Yes	Yes
SE Clustered by Stock	Yes	Yes	Yes
R-squared	0.533	0.659	0.516
N	303,543	303,543	303,543
Panel B. Continuous Fund Horizon			
	Sell	Disclosed Exit	
Execution Disappointment $\times$ Adjusted Churn	-0.087*** (-5.220)	-0.083** (-2.534)	
Fund $\times$ Quarter FE	Yes	Yes	
Stock $\times$ Quarter FE	Yes	Yes	
SE Clustered by Stock	Yes	Yes	
R-squared	0.533	0.659	
N	303,543	303,543	

This table compares long- and short-horizon mutual funds after the 30-day execution measurement window closes. Long- and short-horizon funds lie in the bottom and top terciles of the quarterly four-quarter adjusted-churn distribution. Execution Disappointment is Negative Execution Surprise. Sell equals one when the fund reduces shares, Disclosed Exit equals one when a previously disclosed position disappears, and Buy equals one when shares rise. Panel **A** interacts disappointment with the long-horizon indicator; Panel **B** interacts disappointment with continuous adjusted churn. The models absorb fund-by-quarter and stock-by-quarter fixed effects. These fixed effects control for fund-level trading conditions within each quarter and for stock-level signals and characteristics shared by funds in the same stock-quarter. Negative Execution Surprise follows the event-level 1st- and 99th-percentile winsorization; adjusted churn retains its original scale. Coefficients are changes in probability in decimal units. Stock-clustered t-statistics appear in parentheses. *, **, and *** denote significance at 10%, 5%, and 1%.

Table D.6: Information Conditions and the Pricing of Expected Execution

Conditioning Information	Lagged R&D Intensity	Listed-Customer Information
Expected Execution	1.018*** (14.255)	1.002*** (10.950)
Conditioning Variable	0.104 (1.439)	−0.078* (−1.681)
Expected Execution × Conditioning Variable	0.184** (2.363)	−0.217*** (−3.790)
Controls	Yes	Yes
Industry FE	Yes	Yes
Year FE	Yes	Yes
SE Clustered by Firm	Yes	Yes
R-squared	0.047	0.050
N	8,280	6,665

This table tests whether information conditions change the association between Expected Execution and Announcement-Window cumulative abnormal return (CAR). The dependent variable is the Fama–French five-factor (FF5)-adjusted CAR over days $[0, +1]$, in %. Column (1) interacts Expected Execution with lagged research and development (R&D) intensity. Column (2) interacts Expected Execution with Listed-Customer Information, the publicly available share of top-five customer sales attributable to listed customers. Each regression includes both constituent terms. Controls include log market value, book-to-market, return on assets, leverage, cash holdings, Tobin’s Q, state ownership, pre-announcement momentum, and pre-announcement volatility. Both conditioning variables, the dependent CAR, and continuous controls are winsorized at the 1st and 99th percentiles; the conditioning variables are then standardized. All models absorb industry and announcement-year fixed effects. Firm-clustered t-statistics appear in parentheses. *, **, and *** denote significance at 10%, 5%, and 1%.

Table D.7: Robustness Checks

Panel A . Price Pressure and the Execution Forecast				
Prior Specification	Expected Execution	Historical Prior	Price-State-Adjusted Prior	Expected Execution with Price Decline
Execution Prior	0.953*** (13.614)	0.228*** (3.563)	0.824*** (12.299)	0.939*** (14.969)
Pre-Announcement Decline				0.024*** (4.249)
Expected Execution $\times$ Pre-Announcement Decline				0.019*** (2.973)
Pre-Announcement Price Term	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
SE Clustered by Firm	Yes	Yes	Yes	Yes
R-squared	0.047	0.028	0.039	0.048
N	9,351	6,414	9,351	9,351

This table reports robustness checks for Fama–French five-factor (FF5)-adjusted cumulative abnormal returns (CARs). Panel **A** controls for the pre-announcement price state. Pre-Announcement Decline equals $-CAR[-20, -1]$; the interaction includes both constituent terms. Panel **B** varies fixed effects and event screens. No Same-Day and No ± 1 Day exclude earnings forecasts, preliminary earnings reports, and periodic reports on the announcement date or within one calendar day. Nonoverlap 180 requires more than 180 calendar days since the preceding repurchase announcement. Panel **C** considers earnings forecasts during the preceding ten trading days and excludes prior earnings disclosures during that interval or on the announcement date. Panel **D** adds the Peyer and Vermaelen (2009) U-index, earnings-per-share (EPS) Pressure Score, and chief executive officer (CEO) EPS-Linked Incentive. The U-index combines within-year book-to-market, inverse size, weak prior returns, and repurchase-motive scores. EPS Pressure Score combines negative or declining EPS, low EPS growth, and near-zero EPS. CEO EPS-Linked Incentive requires an active EPS-based equity plan and CEO participation disclosed before the announcement. Panel **E** varies the forecast and window: winsorization at the 1st and 99th percentiles, capping at $[-3, 3]$, annual percentile ranks, $CAR[+1, +2]$, and $CAR[-60, -41]$. Controls include log market value, book-to-market, return on assets, leverage, cash holdings, Tobin’s Q, state ownership, pre-announcement momentum, and pre-announcement volatility. All models absorb industry and announcement-year fixed effects except Panel B Column (1), which absorbs firm and year effects. CARs, continuous controls, the U-index, and EPS Pressure Score are winsorized at the 1st and 99th percentiles; forecast treatment varies as indicated. Parentheses contain firm-clustered t-statistics in Panel A and standard errors in Panels B–E. *, **, and *** denote significance at 10%, 5%, and 1%.

Panel B . Fixed Effects and Sample Robustness				
	Firm FE	No Same-Day	No ± 1 Day	Nonoverlap 180
Expected Execution	0.922*** (0.099)	1.029*** (0.083)	1.030*** (0.083)	0.958*** (0.074)
Controls	Yes	Yes	Yes	Yes
Firm FE	Yes	No	No	No
Industry FE	No	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
SE Clustered by Firm	Yes	Yes	Yes	Yes
R-squared	0.274	0.078	0.079	0.049
N	8,286	5,835	5,726	7,816

Panel C. Leakage and Earnings Information					
Dependent Variable	Expected Execution and Pre-Announcement Returns			Recent Earnings Forecasts	
	Pre-CAR [−10, −1]	CAR[0, +1]	CAR[0, +1]	Pre-CAR [−10, −1]	CAR[0, +1]
Specification	Baseline	+ Pre-CAR	Earnings Screen	Forecast Timing	Forecast Timing
Expected Execution	-0.888*** (0.129)	0.953*** (0.071)	1.037*** (0.097)		0.964*** (0.071)
Pre-CAR [−10, −1]		-0.031*** (0.008)			
Earnings Forecast in Prior 10 Trading Days				-0.878** (0.364)	0.674*** (0.188)
Exclude Prior Earnings Information	No	No	Yes	No	No
Controls	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
SE Clustered by Firm	Yes	Yes	Yes	Yes	Yes
R-squared	0.032	0.047	0.083	0.029	0.046
N	9,351	9,351	4,719	10,175	9,351

Panel D . Undervaluation and EPS Incentives			
Prior Specification	Expected Execution	Historical Prior	Price-State-Adjusted Prior
Execution Prior	0.947*** (0.071)	0.222*** (0.064)	0.790*** (0.067)
CEO EPS-Linked Incentive	−0.641** (0.292)	−0.972*** (0.376)	−0.708** (0.293)
U-Index	0.203*** (0.066)	0.318*** (0.078)	0.321*** (0.065)
EPS Pressure Score	0.006 (0.058)	0.001 (0.068)	0.012 (0.059)
Controls	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
SE Clustered by Firm	Yes	Yes	Yes
R-squared	0.045	0.028	0.037
N	9,347	6,413	9,347

Panel E . Extreme Values, Shifted Timing, and Distant Placebos					
Test	Dependent Variable	Prior Measure	Estimate	R-squared	N
Baseline	CAR[0, +1]	Expected Execution	0.980*** (0.072)	0.044	9,351
Winsorized Tail	CAR[0, +1]	Winsorized Expected Execution	1.171*** (0.082)	0.044	9,351
Capped Tail	CAR[0, +1]	Capped Expected Execution	1.163*** (0.081)	0.044	9,351
Annual Rank	CAR[0, +1]	Expected Execution Rank	2.321*** (0.167)	0.039	9,351
Shifted Window	CAR[+1, +2]	Price-State-Adjusted Prior	0.175*** (0.060)	0.019	9,351
Distant Placebo	CAR[−60, −41]	Winsorized Expected Execution	0.154 (0.152)	0.105	9,351
Distant Placebo	CAR[−60, −41]	Historical Prior	0.017 (0.144)	0.114	6,414

D.5 Forecast Measurement and Recovery Definitions

Table D.8 compares the forecast and history on 6,108 common observations. Expected Execution retains a coefficient of 0.986 with a standard error of 0.099 when both measures enter. The joint specification distinguishes the current execution forecast from the firm’s historical record.

Table D.10 reports annual performance for Disclosure-Aligned Expected Execution. The forecast mean tracks the level of realized log execution, while the annual Spearman correlation evaluates ordering. Table D.11 shows that realized 90-day intensity increases from the lowest to the highest forecast quintile.

Table D.9 distinguishes two economically different measures. The remaining fraction is the exact complement of bounded recovery and has the opposite slope under the same sample and specification. Incomplete Recovery is binary; it describes whether any preceding loss remains, not the fraction remaining.

The coefficient of 0.106 for bounded recovery corresponds to a 10.600-percentage-point larger recovered fraction per unit of Winsorized Expected Execution. The coefficient of -0.106 for the remaining fraction expresses the same relation through its exact complement. The binary incomplete-recovery coefficient of -0.057 asks a different question and corresponds to a 5.700-percentage-point lower probability that a loss remains. Fractional recovery measures how far the price moves back; the binary measure records whether it reaches the earlier benchmark. Separating these margins avoids treating two algebraically equivalent dependent variables as independent evidence.

Table D.8: Expected Execution and Historical Reputation in a Common Sample

	Forecast	History	Joint
Expected Execution	1.016*** (0.097)		0.986*** (0.099)
Historical Reputation		0.236*** (0.065)	0.097 (0.062)
N	6,108	6,108	6,108

This table compares Expected Execution and Historical Execution Reputation separately and jointly on the same sample. The dependent variable is the Fama–French five-factor (FF5)-adjusted cumulative abnormal return (CAR) over days $[0, +1]$, in %. All columns require both measures. Controls include log market value, book-to-market, return on assets, leverage, cash holdings, Tobin’s Q, state ownership, pre-announcement momentum, and pre-announcement volatility. All models absorb industry and announcement-year fixed effects. CAR and continuous controls use 1st- and 99th-percentile winsorization. Firm-clustered standard errors appear in parentheses. *, **, and *** denote significance at 10%, 5%, and 1%.

Table D.9: Recovery Ratios and Incomplete Recovery

	Bounded Recovery	Remaining Fraction	Incomplete Recovery
Winsorized Expected Execution	0.106*** (0.008)	−0.106*** (0.008)	−0.057*** (0.008)
N	5,034	5,034	5,034
R-squared	0.149	0.149	0.156

This table uses events with a Fama–French five-factor (FF5)-adjusted pre-announcement cumulative abnormal return (CAR) loss of at least 1%. Bounded Recovery clips announcement CAR divided by the absolute loss to $[0, 1]$. Remaining Fraction is one minus Bounded Recovery. Incomplete Recovery is an indicator that announcement CAR is smaller than the loss. Controls include loss-decile indicators, log market value, book-to-market, return on assets, leverage, cash, Tobin’s Q, state ownership, momentum, and volatility. All regressions absorb industry and year fixed effects and cluster by firm. CAR, continuous controls, and the forecast use 1st- and 99th-percentile winsorization. Standard errors appear in parentheses. *, **, and *** denote significance at 10%, 5%, and 1%.

Table D.10: Annual Performance of Disclosure-Aligned Expected Execution

Year	Train N	Test N	Actual	Forecast	Spearman
2020	453	169	0.706	0.688	0.092
2021	607	318	0.669	0.604	0.301
2022	909	429	0.546	0.579	0.343
2023	1,302	524	0.494	0.571	0.338
2024	1,578	1,203	0.656	0.574	0.516
2025	2,899	389	0.476	0.555	0.444

This table reports the expanding out-of-sample forecast of log 90-day execution intensity. A training label enters only after its measurement window closes and the corresponding implementation information becomes public. Accounting predictors enter after their publication dates. Train N and Test N are the training and prediction-year sample sizes. Actual and Forecast are annual means in log-intensity units. Spearman is the annual rank correlation between realized and predicted execution.

Table D.11: Execution Intensity across Forecast Quintiles

Quintile	N	Forecast	Realized Execution
Q1	608	-1.950	0.312
Q2	606	-0.719	0.510
Q3	604	-0.055	0.604
Q4	606	0.454	0.717
Q5	608	1.273	0.824

This table sorts Disclosure-Aligned Expected Execution into annual quintiles. Q1 contains the lowest forecasts and Q5 the highest. Forecast is the mean standardized score; Realized Execution is mean log 90-day execution intensity. The sample contains exchange-based plans with an out-of-sample forecast and a realized execution label.

D.6 Execution Disclosure and Subsequent Information

I identify the first quantitative implementation announcement whose cumulative coverage reaches the end of trading day 30. The program identifier and security code agree across records, and the coverage period ends no later than the publication date. Let T_i^h be the endpoint of the h -trading-day purchase window and d_i^h the publication date of the implementation record that covers that endpoint. A training label becomes available on

$$a_i^h = \max\{T_i^h, d_i^h\}, \quad h \in \{30, 90\}. \quad (\text{D.1})$$

The underlying 90-day intensity is cumulative purchase amount over days $[0, 90]$ divided by announcement-date market value. I express this ratio in %, $q_i^{90} = 100 \text{ Ex}90_i^{\text{Raw}}$, and define the forecasting label as $e_i^{90} = \ln(1 + q_i^{90})$. Thus, the logarithm applies to one plus execution intensity measured in %, rather than to the decimal ratio. For prediction year y , the disclosure-aligned training set contains labels with $a_i^{90} < \text{January } 1_y$. Positive intensity comes from verified exchange-based purchase records, confirmed nonexecution enters as zero, and unresolved records remain missing. Annual accounting predictors use the latest report published before the authorization; market variables precede the authorization, and current plan terms enter when the plan becomes public.

The 30-day execution innovation uses the same availability rule:

$$u_i^{30} = e_i^{30} - \widehat{\mathbb{E}}[e_i^{30} | \mathcal{I}_i^A]. \quad (\text{D.2})$$

The earnings clock begins after d_i^{30} . Panel B of Table 4 in the article reports the sequence. Disclosure-Aligned Expected Execution predicts realized 90-day intensity with a coefficient of 0.158 and announcement CAR with a coefficient of 0.557. When Disclosure-Aligned Expected Execution and Historical Execution Reputation enter together, their coefficients are 0.721 and 0.188. The 30-day execution innovation predicts mean post-disclosure SUE with a coefficient of 0.094 after the matching 30-day forecast enters the regression.

E Post-Announcement Return Sorts

Table E.1 reports post-announcement returns from annual event-time sorts on Expected Execution. The positive high-minus-low spread complements the monthly cross-sectional evidence and links stronger announcement-date execution forecasts to later returns. Annual breakpoints describe relative positions across announcement events. China’s short-selling constraints separate this return spread from direct long–short implementation (Chang et al. 2014).

The high-score group earns 4.538% over the later window, compared with 0.223% for the low-score group. The reported high-minus-low spread is 4.315%. Returns in the middle groups are lower, so the sort does not imply a uniform increase at every successive score rank. Its contribution is to show the separation between the highest and lowest announcement-date forecasts over the later horizon.

These are event-time, factor-adjusted returns rather than the wealth path of a calendar-time trading strategy. Annual ranks use the distribution of announcements in that year, and the displayed spread excludes transaction costs, financing charges, and short-sale implementation costs. The table describes subsequent return differences across forecast groups. The monthly regressions address a related but distinct comparison by relating eligible execution signals to returns across stocks in the same calendar month.

Table E.1: Post-Announcement Returns in Execution-Score-Sorted Portfolios

Portfolio	FF5-Adjusted Return [31, 180] (%)
Q1 (Low Score)	0.223 [0.290]
Q2	-3.690*** [-4.652]
Q3	-4.846*** [-5.892]
Q4	1.328 [1.611]
Q5 (High Score)	4.538*** [5.717]
Q5 – Q1	4.315*** [3.887]

This table reports Fama–French five-factor (FF5)-adjusted returns over trading days [31, 180] for portfolios sorted by Expected Execution. Within each announcement year, observations are assigned to five near-equal groups; tied values are ordered by within-year rank. Q1 is Low Score and Q5 is High Score. High – Low is Q5 minus Q1. Returns are in % and are winsorized at the 1st and 99th percentiles. The portfolio design uses within-announcement-year sorting without regression controls or fixed effects. Firm-clustered t-statistics appear in brackets. *, **, and *** denote significance at 10%, 5%, and 1%.

F Matched Non-Repurchase Benchmark

This appendix reports matching balance and alternative matching estimates for the non-repurchase benchmark. The main one-to-one design matches with replacement within announcement year and industry. It imposes a 1% caliper on the market-adjusted CAR over days $[-20, -1]$ and a 0.300 caliper on log market value, then minimizes distance in book-to-market, momentum, and volatility. The matched stock receives the repurchase firm’s announcement date as its pseudo-event date. Firms with a repurchase lifecycle disclosure within 45 calendar days on either side of that date do not enter the control pool. The control pool also excludes firms with an active repurchase plan on the pseudo-event date.

Panel [A](#) of Table [F.1](#) reports close balance in the main sample. The largest absolute standardized mean difference is 0.047 for momentum, and the market-adjusted pre-event CAR difference is 0.004 standard deviations. The FF5-adjusted pre-event CAR differs by 0.019 standard deviations. Panel [B](#) widens the pre-event CAR caliper to 2% and matches three controls to each treated event. The announcement-window difference remains 0.863%. The raw Recovery Fraction also remains positive in both the one-to-one and one-to-three designs. The bounded and raw measures, together with both matching ratios, yield the same conclusion.

Table F.1: Balance and Alternative Matching Estimates

Panel A . Matching Balance: One-to-One Design			
Variable	Mean (Repurchase)	Mean (Control)	SMD (R – C)
Market-Adjusted Pre-Event CAR	-8.636	-8.609	-0.004
FF5-Adjusted Pre-Event CAR	-4.846	-4.984	0.019
Size	22.786	22.782	0.004
Book-to-Market	0.601	0.594	0.029
Momentum	2.709	4.663	-0.047
Volatility	0.027	0.027	-0.042
Panel B . Alternative Matching Estimates			
Design and Measure	Difference (R – C)	t-Statistic	N
One-to-One: Raw Recovery Fraction	0.248***	3.820	6,686
One-to-Three: CAR[0, +1]	0.863***	9.920	9,880
One-to-Three: CAR[+2, +20]	-0.441**	-2.160	9,880
One-to-Three: CAR[–20, +20]	0.393	1.640	9,880
One-to-Three: Raw Recovery Fraction	0.279***	4.160	9,880
One-to-Three: Bounded Recovery Fraction	0.088***	11.000	9,880

Panel **A** reports unwinsorized means and standardized mean differences (SMDs) for the one-to-one matched sample. Matching uses market-adjusted Pre-Event CAR, while the additional FF5-Adjusted Pre-Event CAR row reports unwinsorized balance under the return model used for the dependent variables. The corresponding CAR means in Table 2 of the article apply 1st-and-99th-percentile winsorization. Size is log market value; Momentum is a percentage return; Volatility is a daily return standard deviation. Panel **B** reports paired estimates for the raw Recovery Fraction in the one-to-one design and all return measures in the one-to-three design. The one-to-three estimates use inverse matching weights. Continuous return measures are winsorized at the 1st and 99th percentiles. Every regression absorbs matching-pair fixed effects and clusters standard errors by both the repurchasing firm and the matched stock. CAR denotes Fama–French five-factor (FF5)-adjusted cumulative abnormal return. The t-statistic column uses the corresponding two-way-clustered standard errors. *, **, and *** denote significance at 10%, 5%, and 1%.

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