# Institutional Ownership, Blockholders, and Attention to the Future*

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**Abstract**

We study how institutional ownership relates to how far ahead managers look, measured from the future dates they mention on earnings calls. Firms whose managers look further ahead invest more, spend more on R&D, and produce more valuable patents in the following year, while managers look less far ahead when financial conditions deteriorate. Our central finding is that managers look further ahead as a firm's total institutional ownership and number of institutional owners rise, but less far ahead as its largest institutional owner's share grows. We explain these opposing patterns by building a model in which informed trading by institutional owners prices long-run value and rewards looking ahead, whereas intervention by a large blockholder can crowd out managerial initiative. Consistent with the model, we find empirically that the negative blockholder association weakens when insiders hold more equity, which gives them a larger share of the value created by intervention.

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# 1 Introduction

Institutional investors hold roughly 80% of U.S. public equity (Backus et al., 2021), placing them at the center of a long-standing debate over corporate short-termism. Their share has risen steadily over the past four decades (Gompers and Metrick, 2001; Backus et al., 2021), and their holdings are often concentrated in a large blockholder (Amel-Zadeh et al., 2022). Whether institutional investors and blockholders worsen or reduce short-termism is debated. On one side, they may press managers for near-term earnings (Bushee, 1998) or deter managerial initiative (Burkart et al., 1997). On the other, they may make the stock price reflect long-run value (Edmans, 2009) and monitor management in ways that insulate managers from short-term earnings pressure (Shleifer and Vishny, 1986; Aghion et al., 2013).

At the heart of this debate is how far ahead managers look, which is difficult to measure. Before a firm can invest or innovate for the long run, its managers must identify, evaluate, and prepare for distant opportunities. Looking further ahead is costly today, while its benefits arrive later and accrue mostly to shareholders, so managers under short-term pressure may focus on the near term instead (Stein, 1989; Graham et al., 2005; Terry, 2023). Without a direct measure, empirical work on institutional ownership has had to rely on downstream outcomes such as investment and innovation (Aghion et al., 2013; Derrien et al., 2013), which do not map one-to-one into how far ahead managers look.[1]

In this paper, we bring new evidence to this debate by measuring how far ahead managers look from the future dates they mention on earnings calls and relating this measure to the ownership structure of their firms. Firms whose managers look further ahead invest more, spend more on R&D, and produce more valuable patents in the following year, while managers look less far ahead when their firms face financial distress. Our central finding is that how far ahead managers look varies with both how much equity institutions hold and how their holdings are distributed: within the same firm, managers look further ahead as total institutional ownership and the number of institutional owners rise, but less far ahead as the largest institutional owner's share grows. We explain these opposing patterns by building a model in which informed trading by institutions rewards looking ahead through the stock price, whereas intervention by a large blockholder can crowd out managerial initiative. Consistent with the model, we find empirically that the negative blockholder association weakens when insiders hold more equity and thus benefit from a larger share of the value created by the blockholder's intervention.

[1] For example, Bebchuk and Stole (1993) show that focusing on the near term can induce either underinvestment or overinvestment in long-run projects, depending on what investors observe.

We begin by constructing a firm-year measure of how far ahead managers look from quarterly earnings-call transcripts. We develop a rule-based algorithm and apply it to what corporate executives say on earnings calls across more than 5,700 U.S. public firms from 2002 to 2020. The algorithm identifies forward-looking statements that contain explicit future dates or durations—such as "in the coming quarter" or "over the next five years"—and expresses each reference in months ahead of the call. We then pool these references within each firm-year and take their median to capture where managers' forward-looking discussion with investors is centered.[2]

We document three facts about the measure. First, it varies substantially across firms and over time: its median is 5.0 months, its interdecile range is 2.6 to 7.5 months, and more than half of its variance is within firms. Second, firms whose managers look one standard deviation (about two months) further ahead invest about 6% more, spend about 9% more on R&D, and file patents that are about 6% more valuable in the following year (Kogan et al., 2017). These relationships remain positive and significant within the same firm over time, and the higher investment is not explained by Tobin's $Q$, firm size, or the firm's cost of capital or perceived discount rate (Gormsen and Huber, 2025). Third, within firms, the measure falls by 4% to 9% of a within-firm standard deviation when financial conditions deteriorate—after earnings misses, operating losses, or stock-price crashes—and rises by 3% to 4% when firms hold more cash or are further from default.

We next examine how a firm's ownership structure relates to how far ahead its managers look, using owner-level holdings from the Ownership Project (Amel-Zadeh et al., 2022) for 2002–2020. To separate how much equity institutions hold from whether those holdings are dispersed across many owners or concentrated in a large blockholder, we measure three dimensions of institutional ownership: the total share of equity held by institutional investors, which averages 84% in our sample; the number of institutional owners; and the share held by the largest institutional owner, which in over 90% of firm-years exceeds the 5% threshold that defines a blockholder under SEC rules. We regress our measure of how far ahead managers look on all three ownership variables jointly, with firm and sector-by-year fixed effects. The estimates therefore use only within-firm changes in each ownership variable, relative to industry peers in the same year, holding the other two fixed.

We find that, within the same firm, a one-standard-deviation increase in total institutional ownership or in the number of institutional owners raises how far ahead managers look by about 5.5% and 11% of its within-firm standard deviation. However, the same

[2]In a companion paper (Olivari and Schwedeler, 2026), we instead use the upper tail of these dated references to measure a firm's planning horizon—how far into the future its explicit plans reach—and show that it shapes the transmission of monetary policy to corporate investment.

increase in the largest institutional owner's stake lowers it by about 3.7%. This negative association holds across alternative measures of blockholding, such as a Herfindahl index of institutional ownership and the presence of a large blockholder. Moreover, when we distinguish blockholders by their SEC filing type, the negative association is significant for active blockholders who file Schedule 13D—disclosing that they may seek to influence control—but not for passive blockholders who file Schedule 13G.

A natural concern with these within-firm estimates is reverse causality: institutional investors may simply select into firms whose managers already look further ahead. To test whether exogenous increases in a major component of institutional ownership—holdings by passive index funds—move how far ahead managers look, we exploit the annual reconstitution of the Russell 1000 and 2000 indexes, where value-weighting gives firms just inside the Russell 2000 a much larger index weight than similarly sized firms just inside the Russell 1000 (Chang et al., 2015; Appel et al., 2016). Within firms near the cutoff, index-induced increases in passive institutional ownership significantly lengthen how far ahead managers look in the year after reconstitution, with no difference beforehand, indicating that passive institutional ownership can move how far ahead managers look rather than only respond to it.

Next, we build a model to explain why how far ahead managers look rises with total institutional ownership and the number of owners, but falls with the largest blockholder's stake. In the model, a manager chooses how far ahead to look when developing plans for the firm. Looking further ahead is privately costly, but expands the scope of the plans she develops and benefits her in two ways: it increases the value of her equity to the extent that the stock price reflects long-run value, and it yields a larger private benefit of control when her own preferred plan is implemented. However, because the manager's private benefits can diverge from shareholder interests—for example, when she favors a pet project or expansion—her preferred plan does not always maximize shareholder value.

The model rationalizes the effects of institutional investors and blockholders through two channels, informed trading and intervention. First, motivated by Edmans (2009); Edmans and Manso (2011), we assume that higher total institutional ownership sharpens investors' signals and a larger number of institutional owners contributes more independent signals; both make the stock price more informative about long-run value and increase the equity-holding manager's reward for looking ahead. Second, a larger stake gives the largest blockholder the incentive to bear the fixed cost of intervening and overruling the manager when her plan does not maximize shareholder value (Shleifer and Vishny, 1986). While being overruled raises the value of the manager's equity, it deprives her of the private benefit of control (Aghion and Tirole, 1997; Burkart et al., 1997). When this loss of

control outweighs the equity gain, anticipated intervention leads the manager to look less far ahead, and the model predicts that this negative effect weakens as the manager holds more equity, provided intervention is not too likely.

Finally, we test this prediction using insider equity holdings from SEC filings (Amel-Zadeh et al., 2022) to measure managerial equity exposure, and find that the negative blockholder association weakens as insiders hold more equity: a one-standard-deviation increase in insider ownership reduces the magnitude of the negative blockholder association by about 30%. We also test whether this positive interaction instead reflects governance through a blockholder's threat of exit (Admati and Pfleiderer, 2009; Bharath et al., 2013). Because exit threats rely on selling shares, an exit channel predicts a stronger interaction in more liquid stocks; instead, the interaction is essentially unchanged when we allow it to vary with stock liquidity and share turnover. Moreover, in our model, a channel operating only through the stock price cannot produce a negative main effect of blockholding alongside a positive interaction with insider equity: if a larger block reduced how far ahead managers look through the price, it would reduce it more, not less, when insiders hold more equity. Together, these findings suggest that the two sides of the debate apply to different margins of ownership: higher institutional ownership, spread across more owners, fits the view that prices reward looking ahead, while a large blockholder fits the view that intervention deters managerial initiative.

**Related literature.** We contribute to two strands of literature. First, we build on work that uses corporate text to measure firm-level risks and attention (Hassan et al., 2019; Sautner et al., 2023; Song and Stern, 2024; Hassan et al., 2025) by constructing a scalable, firm-year measure of how far ahead managers look. Existing studies infer corporate horizons from the relative frequency of short- and long-term dictionary words on conference calls (Brochet et al., 2015), hand-code forward-looking statements in a single industry (DesJardine and Bansal, 2019), average stated project durations from regulatory filings into a time-invariant industry measure (Dessaint et al., 2023), or measure the horizon of explicit CEO promises on earnings calls (Majzoubi et al., 2026). Our measure instead uses all forward-looking statements in which executives mention explicit future dates or durations on earnings calls and takes their firm-year median, capturing in months where managers' overall forward-looking discussion is centered across a broad panel of firms over time.

Second, we contribute to the literature on institutional ownership, blockholders, and corporate short-termism. Prior empirical work relates institutional holdings, investor turnover, and blockholders—including activist Schedule 13D filers—to investment, innovation, and firm performance (Bushee, 1998; Gaspar et al., 2005; Brav et al., 2008; Aghion

et al., 2013; Derrien et al., 2013; Bebchuk et al., 2015; Harford et al., 2018; Guo et al., 2024), links dictionary-based call language to investor turnover (Brochet et al., 2015), and uses Russell index reconstitutions to study passive ownership (Appel et al., 2016; Schmidt and Fahlenbrach, 2017) as well as shifts toward short-term investors that reduce long-term investment (Cremers et al., 2020). Rather than inferring how far ahead managers look from downstream outcomes, we measure it from the future dates managers mention on earnings calls. We show that index-induced passive ownership lengthens how far ahead managers look, and that within the same firm, total institutional ownership and the number of institutional owners are associated with looking further ahead while the largest institutional owner's share—and Schedule 13D holdings in particular—is associated with looking less far ahead. To explain these opposing patterns, we build a model that combines informed trading (Holmström and Tirole, 1993; Edmans, 2009; Edmans and Manso, 2011) with the control–initiative tradeoff (Shleifer and Vishny, 1986; Aghion and Tirole, 1997; Burkart et al., 1997). Unlike models in which trading and intervention work in the same direction (Edmans and Manso, 2011), ours predicts a negative blockholder effect that weakens with insider equity—a sign pattern that separates blockholder intervention from exit and other purely price-based channels (Admati and Pfleiderer, 2009; Bharath et al., 2013; Edmans and Holderness, 2017).[3]

The rest of the paper proceeds as follows. Section 2 constructs our measure and documents its properties. Section 3 presents the within-firm ownership evidence and the Russell reconstitution estimates. Section 4 develops the model, Section 5 tests its prediction for insider ownership and evaluates the exit alternative, and Section 6 concludes.

## 2 Measuring How Far Ahead Managers Look

Studying how institutional ownership shapes how far ahead managers look requires a measure that is cardinal and comparable across firms and over time. This section constructs such a measure—which we refer to in our specifications and tables as the *temporal distance* of managers' forward-looking discussion—and establishes the properties needed for the ownership analysis that follows. We first explain its construction and interpretation, then describe its distribution and within-firm variation, and finally examine how it relates to subsequent investment, R&D, and innovation and to firms' financial condition.

[3]A related literature links executive compensation duration and equity vesting horizons to corporate investment, innovation, and earnings management (Gopalan et al., 2014; Edmans et al., 2017; Flammer and Bansal, 2017; Marinovic and Varas, 2019).

## 2.1 Construction and interpretation

We construct *temporal distance* from quarterly earnings-call transcripts of U.S. public firms provided by NL Analytics. To capture managers' own forward-looking communication rather than analysts' prompts, we restrict the text to statements made by corporate executives across both the management presentation and question-and-answer segments of each call. Using a rule-based algorithm, we identify forward-looking statements and extract explicit future dates and durations across three categories of temporal expressions: (i) calendar-anchored future dates (such as "in Q4 2027" or "by fiscal 2026"), (ii) speech-relative expressions (such as "in the coming quarter" or "over the next 18 months"), and (iii) explicit durations attached to forward-looking plans or commitments (such as "a three-year investment program"). Statements that refer to the future only through undated phrases (such as "in the long term" or "going forward") cannot be assigned a numerical distance and are excluded. Each extracted future reference $k \in \{1, \ldots, n_{i,t}\}$ in firm $i$'s earnings calls during fiscal year $t$ is converted into an implied distance $d_{i,t,k} > 0$, measured in months relative to the date of the call. For the main 2002–2020 sample, we pool all $n_{i,t}$ dated future references in a firm-year and take their median:

$$\text{TemporalDistance}_{i,t} = \text{median}\big( d_{i,t,1}, \ldots, d_{i,t,n_{i,t}} \big), \tag{1}$$

where each dated future reference contributes one value with multiplicity; the median is undefined, and the firm-year excluded, when no statement carries a datable future reference. The measure is denominated in months: a value of five means that the typical dated forward-looking reference points about five months—roughly two quarters—ahead. Taking the median captures how far ahead managers regularly discuss while limiting the influence of isolated distant references. Appendix A documents the merging of the transcript measure with the estimation panel and the construction of the real-activity and financial-condition variables.

The measure belongs to a broader text-as-data literature that recovers firm-level beliefs and risks from earnings calls (Gentzkow et al., 2019; Hassan et al., 2019; Sautner et al., 2023; Barrero, 2022). Its closest antecedents infer corporate horizons from the relative incidence of short- and long-horizon language (Brochet et al., 2015), code the forward horizon of calls in a single-industry sample (DesJardine and Bansal, 2019), or hand-collect the stated duration of investment projects (Dessaint et al., 2023). Our measure differs in yielding a cardinal firm-year quantity at scale: the median number of months ahead referenced in managers' forward-looking statements. Cardinal units matter because they turn the ownership coefficients below into economically interpretable changes in temporal distance.

Because the source is corporate communication, the principal measurement concern is that the statistic captures disclosure volume rather than how far ahead managers look. Forward-looking statements reflect litigation exposure and investor-relations effort (Li, 2010), and institutional ownership can increase both the quantity and precision of voluntary disclosure (Boone and White, 2015). Construction around the median limits this quantity channel. Proportional increases in reference frequencies across horizons, or adding statements at the firm's prevailing median, leave the measure unchanged; adding near-term guidance shortens it. Disclosure volume therefore cannot mechanically increase temporal distance. The evidence below shows that greater temporal distance also precedes, rather than merely accompanies, real forward-looking activity whose returns arrive in the future.

## 2.2 Distribution, within-firm variation, and persistence

| | |
|---|---|
| *Coverage* | |
| Firm-years | 50,375 |
| Distinct firms | 5,705 |
| *Distribution (months)* | |
| Median | 5.0 |
| 10th–90th percentile | 2.6–7.5 |
| Standard deviation | 2.3 |
| *Structure* | |
| Within-firm share of variance | 55% |
| Persistence, AR(1) | 0.44 |

Table 1: Coverage, distribution, and structure of temporal distance.

Table 1 summarizes 50,375 firm-years representing 5,705 firms; Figure 1 plots their distribution. The median firm-year temporal distance is five months, the 10th and 90th percentiles are 2.6 and 7.5 months, and the standard deviation is 2.3 months. The five-month center is natural for a quarterly conversation: the typical dated statement concerns the next quarter or two. The economically useful content lies in the dispersion around that center—whether a given firm-year's temporal distance is three months or eight.

The variation is not simply a permanent firm characteristic. Fifty-five percent of the variance is within firm, leaving substantial movement for the firm fixed-effects designs below to exploit. At the same time, an AR(1) coefficient of 0.44 shows that the measure contains persistent signal rather than only transitory variation. This combination—meaningful persistence and considerable within-firm movement—is consistent with a measure that reflects both durable firm attributes and changes in incentives or circumstances.

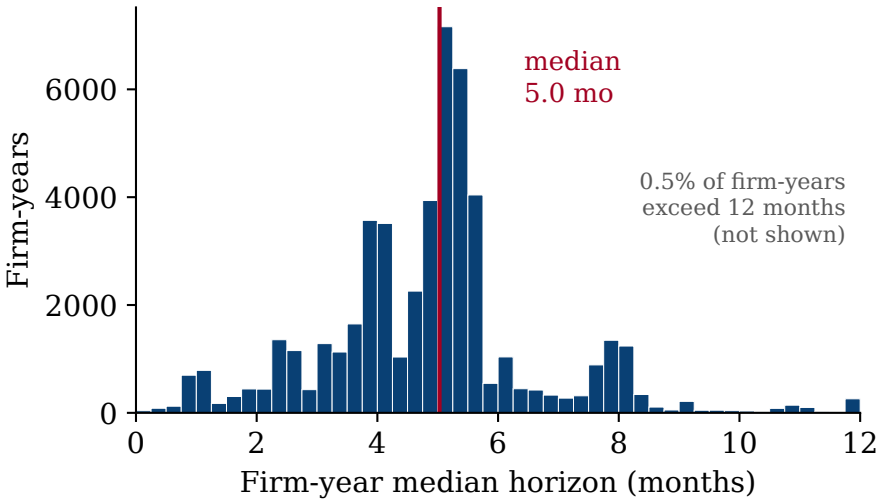



Figure 1: Distribution of firm-year temporal distance (months).

Because the ownership designs of Section 3 identify their effects from precisely this within-firm variation, we standardize the outcome there: rather than reporting coefficients in months, we express temporal distance in units of its within-firm standard deviation (one such standard deviation is about 1.35 months in the ownership sample; see Table 4), and quote the resulting effects in the text as a percentage of a within-firm standard deviation.

## 2.3 Forward-looking activity: Investment, R&D, and innovation

Firms whose managers look further ahead today subsequently undertake more activity whose payoffs require advance preparation (Table 2). We regress five one-year-ahead ($t+1$) outcomes on standardized temporal distance, over fiscal years 2002–2024,[4] absorbing sector×year fixed effects and controlling for firm size (log lagged assets, and additionally Tobin's Q in the investment column); outcomes and the measure are winsorized at the 1st and 99th percentiles and standard errors are clustered by firm. The outcomes trace the progression from expenditure to realized innovation: capital expenditure and R&D from Compustat (each scaled by lagged assets), the growth of firm patent output, and—because looking ahead should raise the quality of what a firm eventually produces, not only the quantity—the market value and citation quality of its subsequent patents, measured with the stock-market-based patent valuations of Kogan et al. (2017).

All five coefficients are positive and statistically significant. A one-standard-deviation longer temporal distance is followed a year later by capital expenditure higher by about

[4]Table 1 and the ownership analysis end in fiscal 2020 to match the ownership data; these regressions need no ownership variables and use the full transcript span.

| Dependent variable | asinh(CAPX / lag assets) | asinh(R&D / lag assets) | IHS patent growth | asinh(KPSS issue value, mean) | KPSS filing high-cite share |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| Temporal distance | 0.256*** | 0.840*** | 0.0071** | 0.0575*** | 0.0040*** |
| | (0.035) | (0.123) | (0.0030) | (0.0117) | (0.0014) |
| Log lag assets control | Yes | Yes | Yes | Yes | Yes |
| Tobin's Q control | Yes | No | No | No | No |
| SIC2 × year fixed effects | Yes | Yes | Yes | Yes | Yes |
| Observations | 44,749 | 27,708 | 26,441 | 16,137 | 44,794 |
| Firms | 5,245 | 3,388 | 4,215 | 2,374 | 5,372 |

*Notes:* Regressions of one-year-ahead ($t$+1) outcomes on standardized temporal distance, with SIC2×year fixed effects. Outcomes and temporal distance are winsorized at the 1st and 99th percentiles inside each estimation sample; all columns control for log lag assets, and the investment column additionally for Tobin's Q. CAPX and R&D coefficients and standard errors are multiplied by 100 (percentage points of the outcome ratio). Standard errors clustered by firm in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 2: Temporal distance predicts real forward-looking activity at $t$+1.

0.25 percentage points of assets and R&D higher by about 0.8 percentage points—roughly 6 and 9 percent of their respective sample means—together with faster patent growth, about 6 percent higher patent value, and higher citation quality. For scale, a one-standard-deviation increase in firm-level political risk—a leading text measure built from the same earnings-call corpus—moves the investment rate by 0.16 percentage points, about 1.4% of its sample mean, in a comparable sector×time specification (Hassan et al., 2019); the temporal-distance gradient, at roughly 6% of mean capital expenditure, is of the same order or larger. Temporal distance thus forecasts real activity that unfolds over the following year, indicating that it captures economically relevant variation in how far ahead managers look.

Two features guard against a mechanical reading. First, the outcomes are dated $t$+1: they describe what a firm does *after* it speaks, not a contemporaneous accounting relationship. Second, the associations survive the more demanding within-firm comparison. Appendix Table 9 re-estimates each column with firm fixed effects added, so that identification comes only from a firm's own variation in temporal distance over time: the capital-expenditure, R&D, and patent-value results remain positive and significant—while patent-count growth and high-citation share attenuate to insignificance—and the investment result holds on top of standard determinants of investment, including Tobin's Q, firm size, and the firm's cost of capital or perceived discount rate (Gormsen and Huber, 2025). Those estimates say something specific: a longer temporal distance within a firm is followed by higher investment one year later. The outcome variables and their sources are described in Appendix A.

## 2.4 Financial distress and state dependence

A useful measure should also move with economic circumstances. Financial pressure raises the value of resolving immediate problems and tightens the resources available for preparing for distant ones; financial slack relaxes that constraint. Table 3 shows that temporal distance behaves this way within firms. Each row is a separate regression of the year-on-year change in a firm's temporal distance on one lagged stressor, with firm and sector×year fixed effects and standard errors clustered by firm, so each estimate describes how a firm's own temporal distance moves when its situation changes relative to its industry peers. Because the dependent variable is itself a year-on-year change, the firm effects absorb firm-specific *trends* in the measure rather than firm levels, so each estimate is the response of the change to a lagged stressor, net of the firm's own trend and of industry-year shocks. The stressors pair accounting and market distress from Compustat and CRSP—an operating loss, high leverage, a low cash ratio, a stock-price crash, and a market-based distance-to-default—with an earnings miss relative to the I/B/E/S analyst consensus and an overall-risk index built from the firm's own earnings-call text following Hassan et al. (2019) and provided by NL Analytics. Because this last index shares its source with temporal distance, we lag it—as we do every stressor—to avoid mechanical overlap with the contemporaneous measure.

| | Dependent variable: Δ temporal distance (months) | |
|---|---|---|
| $\text{Stressor}_{t-1}$ | Estimate (SE) | Obs. |
| Overall risk | $-0.045^{***}$ (0.012) | 41,846 |
| Earnings miss | $-0.053^{**}$ (0.018) | 34,492 |
| Stock-price crash (< −30%) | $-0.116^{***}$ (0.026) | 40,667 |
| Operating loss (EBIT< 0) | $-0.101^{***}$ (0.032) | 41,846 |
| Net leverage | $-0.079^{***}$ (0.017) | 41,651 |
| Cash ratio | $+0.045^{***}$ (0.016) | 35,328 |
| Distance-to-default | $+0.058^{***}$ (0.012) | 34,450 |

*Notes:* Each row is a separate regression of the first difference of firm-year temporal distance (months) on one lagged stressor. Earnings miss, stock-price crash, and operating loss are indicators (per event); the remaining regressors are standardized (per SD). All include firm and sector×year fixed effects; SE (in parentheses) clustered by firm; 2002–2020. $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 3: Within-firm response of temporal distance to prior-year financial stress.

The estimates have a simple summary: *when financial conditions deteriorate, temporal distance contracts*. In the year after a firm faces elevated risk, an earnings miss, a stock-price crash, an operating loss, or high leverage, its temporal distance contracts; after it

accumulates cash or moves away from distress—a higher distance-to-default—temporal distance increases. This uniform pattern documents systematic state dependence with respect to financial distress. The individual effects range from 0.05 to 0.12 months—about 4% to 9% of a within-firm standard deviation for the distress shocks, with a stock-price crash shortening temporal distance by about 0.12 months (9% of a within-firm standard deviation), and increases of 3% to 4% of a within-firm standard deviation for cash holdings and distance to default—and are precisely estimated and uniformly signed. Appendix A gives the construction and source of each variable.

Taken together, the distribution, forward-looking activity, and state-dependence evidence establish that temporal distance captures economically meaningful variation in how far ahead managers look rather than merely the volume of corporate communication.

# 3 Ownership Structure and How Far Ahead Managers Look

Having established that our measure—temporal distance—is persistent and economically meaningful, we now examine how it varies with institutional ownership structure. We first estimate the within-firm relations between temporal distance and three distinct ownership margins: total institutional ownership, the number of institutional owners (breadth), and the largest blockholder's stake. We then exploit the annual reconstitution of the Russell 1000 and 2000 indexes as a source of quasi-random variation in passive institutional ownership and ask whether temporal distance subsequently moves in the same direction.

## 3.1 Data and specification

**Ownership data.** Our measures come from the Ownership Project (Amel-Zadeh et al., 2022), which reconstructs owner-level holdings in U.S. public firms from Forms 13F, Schedules 13D and 13G, and insider Forms 3, 4, and 5. This integrated coverage is the source's key advantage for our analysis: institutional investors, blockholders, and insiders can be measured consistently within the same firm and period. It reports both shares and votes at the owner–firm–quarter level. Its raw file contains roughly 58 million positions from 2000Q4 through 2020Q4. For each firm-quarter, and then averaged over the calendar year, we construct the 13F institutional share, the number of distinct institutional owners (breadth), the largest institutional owner's share (our baseline measure of the leading blockholder's stake), and indicators for blockholder stakes above 5%, 10%, and 20%. We remove positions flagged as outliers, retain records supported by a 13F, 13D, or 13G filing, and consolidate multiple positions filed by the same owner in a firm-quarter. The baseline

institutional-share measure uses 13F positions, while the blockholder and concentration measures draw on the broader 13F, 13D, and 13G universe; because the 10th percentile of the largest institutional owner's share in our sample is 6.7% (median 10.8%; Table 4), the largest institutional owner exceeds the 5% statutory blockholding threshold in over 90% of sample firm-years. Holdings from Forms 3, 4, and 5 provide the broad measure of inside equity alignment used in Section 5. Corporate officers are the managers most directly involved in choosing and communicating firm policy; directors and 10-percent owners broaden the measure to other statutory insiders. Appendix C provides the variable definitions and the broader set of ownership measures used in the robustness analysis.

**Sample.** We merge the firm-year ownership measures with the temporal-distance measure of Section 2 and with firm fundamentals from Compustat. Compustat supplies the size control (lagged book assets), the SIC industry classification used to form the sector×year effects, and the balance-sheet variables—sales, leverage, cash flow, cash holdings, and Tobin's Q—used in the appendix robustness checks. Temporal distance is matched to Compustat by firm identifier (GVKEY), and the ownership data are matched to the panel by firm (PERMCO) and fiscal year. The two identifiers are bridged with the CRSP/Compustat Merged (CCM) link, applied at the fiscal-year period-end date; because ownership is a calendar-year average, it is assigned to the fiscal year it most nearly spans, an approximation for the minority of firms whose fiscal year does not end in December. The estimation sample is the intersection of firms with a transcript-based temporal-distance value, an ownership record, and a non-missing size control: 35,416 firm-years covering 3,593 distinct firms and 1,207 sector-years over fiscal years 2002–2020. Table 4 reports summary statistics for the variables that enter the analysis.

**Specification.** We relate temporal distance to ownership structure through the two-way fixed-effects regression

$$\begin{aligned}\text{TemporalDistance}_{i,t} = \alpha_i + \gamma_{j,t} + \beta_1\, \text{13F-Share}_{i,t} + \beta_2\, \text{Breadth}_{i,t} \\ + \beta_3\, \text{Blockholder}_{i,t} + X'_{i,t-1}\theta + \varepsilon_{i,t},\end{aligned} \tag{2}$$

where $\text{13F-Share}_{i,t}$ is the 13F institutional ownership share, $\text{Breadth}_{i,t}$ is the log number of distinct institutional owners, and $\text{Blockholder}_{i,t}$ is the largest institutional owner's share; $\alpha_i$ is a firm fixed effect, $\gamma_{j,t}$ a sector×year fixed effect, and $X_{i,t-1}$ contains log lagged assets. The ownership regressors are standardized within the estimation sample, and each coefficient is expressed in units of the dependent variable's within-firm standard deviation, where

| | *N* | Mean | SD | Within SD | p10 | Median | p90 |
|---|---|---|---|---|---|---|---|
| *Dependent variable* | | | | | | | |
| Temporal distance (months) | 35,416 | 4.93 | 1.83 | 1.35 | 2.73 | 5.05 | 7.37 |
| *Ownership structure* | | | | | | | |
| 13F institutional ownership share | 35,416 | 0.842 | 0.272 | 0.138 | 0.456 | 0.882 | 1.154 |
| Breadth (no. of institutional owners) | 35,416 | 306.5 | 326.1 | 114.1 | 59 | 202 | 668 |
| Largest institutional-owner share | 35,416 | 0.136 | 0.095 | 0.058 | 0.067 | 0.108 | 0.233 |
| *Control* | | | | | | | |
| Log lagged book assets | 35,416 | 7.11 | 2.06 | 0.52 | 4.56 | 6.98 | 9.85 |

*Notes:* The estimation sample is the intersection of firms with a transcript-based temporal-distance value, an ownership record, and a non-missing size control: 35,416 firm-years, 3,593 firms, and 1,207 sector-years over fiscal years 2002–2020—the sample of the three-fact regression (Table 5). Temporal distance is the firm-year median distance into the future, in months, of managers' dated forward-looking statements. The 13F share is summed reported 13F holdings relative to shares outstanding and is not top-coded; it can exceed one when filing dates and the shares-outstanding denominator do not align. The largest institutional-owner share is also expressed relative to shares outstanding. Breadth is the number of distinct institutional owners and enters the regressions in logs. The Within SD column reports the within-firm standard deviation: the standard deviation of each variable after subtracting its firm-specific mean, the dispersion the firm fixed effects leave available for identification. The ownership regressors are standardized within the sample in the regressions; the statistics reported here are in these natural units. The regression tables that follow report coefficients in units of the dependent variable's within-firm standard deviation; this column gives the conversion, as one within-firm SD of temporal distance is 1.35 months.

Table 4: Summary statistics for the ownership estimation sample.

one within-firm SD of temporal distance is 1.35 months (Table 4). In the text we quote these effects as a percentage of a within-firm standard deviation, so that a table coefficient of, say, 0.07 is a 7% change; each reports the response to a one-standard-deviation change in the corresponding ownership variable. Standard errors are clustered by firm.

**Identifying variation.** Firm effects remove permanent differences in business model, governance, and culture; sector×year effects remove shocks shared by an industry in a given year. The baseline coefficients therefore describe how changes in a firm's ownership structure co-move with changes in its temporal distance, relative to its industry peers. Section 3.3 then complements these estimates with index-induced passive ownership, asking whether an ownership change not selected on the firm's prior language precedes a change in temporal distance. This is a useful division of labor in ownership research, where credible instruments for block ownership are rare and clean designs typically isolate a single ownership margin (Edmans and Holderness, 2017). Clustering by firm allows the errors to be arbitrarily correlated over time within a firm.

## 3.2 Baseline ownership evidence

Table 5 reports the baseline within-firm estimates across the three ownership margins. Column (1) enters institutional ownership alone; columns (2) and (3) add breadth and then the blockholder share, so that the full specification isolates each margin holding the other two fixed.

| | Dependent variable: temporal distance (within SD) | | |
|---|---|---|---|
| | (1) Level | (2) +Breadth | (3) +Block |
| Institutional ownership (13F) | 0.071*** | 0.047*** | 0.055*** |
| | (0.015) | (0.016) | (0.016) |
| Breadth (log # owners) | | 0.145*** | 0.111*** |
| | | (0.036) | (0.038) |
| Blockholder (largest institutional-owner share) | | | −0.037*** |
| | | | (0.012) |
| Firm FE | Yes | Yes | Yes |
| Sector × year FE | Yes | Yes | Yes |
| Observations | 35,416 | 35,416 | 35,416 |
| Firms | 3,593 | 3,593 | 3,593 |
| Within $R^2$ | 0.003 | 0.004 | 0.004 |

*Notes:* Institutional ownership is the 13F share; breadth is the log number of institutional owners; blockholder is the largest institutional owner's share. Firm and sector×year fixed effects; ownership standardized within sample. Coefficients are expressed in within-firm standard deviations ("within SD") of temporal distance per one-SD increase in the regressor (one within-firm SD ≈ 1.35 months; see Table 4); SE clustered by firm. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 5: Ownership structure and temporal distance.

The first fact is that *temporal distance increases with institutional ownership*. A one-standard-deviation increase in the 13F share increases temporal distance by about 7% of a within-firm

standard deviation (roughly a tenth of a month) in column (1). The estimate remains positive and statistically significant when breadth and the blockholder's stake are held fixed, at about 5.5% of a within-firm standard deviation in column (3). This magnitude is of the same order as the response of temporal distance to a one-standard-deviation change in the firm's overall risk, leverage, or distance to default (Table 3). The result complements evidence that investor horizons matter for corporate language and policy (Bushee, 1998; Brochet et al., 2012): here the relation survives within firm, net of permanent firm attributes and sector–year shocks, while holding breadth and the blockholder's stake fixed.

The second fact is that temporal distance increases with ownership breadth. Conditional on the institutional share, a firm held by more distinct institutions has a temporal distance 11–15% of a within-firm standard deviation longer per standard deviation of breadth (columns 2–3), the largest of the three margins. Breadth absorbs part of the institutional-share effect, consistent with the number of informed investors mattering beyond their aggregate stake.

The third fact runs in the opposite direction. A one-standard-deviation increase in the largest institutional owner's share is associated with a contraction of about 3.7% of a within-firm standard deviation in temporal distance (column 3), comparable to the contraction following an earnings miss. This result complements evidence that blockholder identity and activism shape corporate policy and disclosure (Brav et al., 2008; Clifford and Lindsey, 2016; Guo et al., 2024; Ge et al., 2021).

More broadly, prior work distinguishes transient or high-churn institutions from long-horizon owners (Bushee, 2001; Gaspar et al., 2005; Yan and Zhang, 2009) and links patient ownership to investment, innovation, and monitoring (Derrien et al., 2013; Bena et al., 2017; Aghion et al., 2013; Harford et al., 2018). Our three regressors instead distinguish total institutional ownership, the number of institutional owners, and the largest blockholder's stake within the same firm.

The estimates are precise despite a noisy dependent variable. Temporal distance is a firm-year median over a finite set of forward-looking statements. To the extent that the resulting sampling error is mean-independent of ownership, it enters the outcome rather than the regressors: it increases residual variance without attenuating the coefficients and therefore works against statistical precision.

These patterns are robust. Tables 12 and 13 trace the institutional-ownership association across specifications: it holds with and without firm fixed effects, when the wedge between voting and cash-flow rights is added, when current and lagged ownership enter jointly—where the contemporaneous share carries the effect and the lag is flat—and when the size control is replaced by a fuller set of lagged fundamentals (sales, leverage,

cash flow, and cash holdings). Decomposing ownership by filing source locates the positive association in 13F investment-manager ownership, while 13D active-blockholder ownership enters negatively—an early trace of the blockholder fact. Table 14 shows that this negative relationship holds across alternative measures of ownership concentration and blockholding: holding total institutional ownership fixed, temporal distance decreases with the largest institutional owner's share, the gap to the second-largest owner, an owner Herfindahl index, blockholder presence above 20%, the share held by owners above 10% or 20%, and the combined 13D/13G blockholder share—every measure negative and significant at the 1% level.

### 3.3 Russell index assignment and passive institutional ownership

We complement the within-firm estimates with variation induced by the annual reconstitution of the Russell 1000 and Russell 2000 indexes. The design was introduced as an instrument for institutional ownership by Appel et al. (2016) and has been used widely since (Boone and White, 2015; Crane et al., 2016; Schmidt and Fahlenbrach, 2017). Each May, Russell ranks firms by market capitalization and assigns the largest 1000 to the Russell 1000 and the next 2000 to the Russell 2000. Because the indexes are capitalization-weighted, a firm near the cutoff receives a far larger portfolio weight at the *top* of the Russell 2000 than at the *bottom* of the Russell 1000, and index-tracking funds must hold it in proportion to that weight. Firms near the threshold are similar in size but differ sharply in the passive ownership they attract. Conditional on the running variable—market- capitalization rank—and firm size, the assignment therefore generates quasi-random variation in index-fund demand.

We use assignment to the Russell 2000 as an instrument for a firm's passive ownership.[5] Table 6 reports the estimates. The sample covers the post-2007 reconstitutions;[6] we compare firms within ±500 rank positions of the cutoff and include firm and sector×year fixed effects. The first stage is strong: crossing into the Russell 2000 raises passive ownership by about 1.1 percentage points, with a first-stage $F$-statistic of 103, squarely in the range reported by the index-reconstitution literature. The second-stage result is not driven solely by the largest Russell trackers: excluding the iShares Russell funds leaves the

[5]The ownership interpretation assumes that, conditional on the assignment controls, index assignment affects temporal distance through the induced change in passive holdings.

[6]Beginning in 2007, FTSE Russell adopted a *banding* rule to curb index turnover: a firm near the cutoff retains its prior-year index unless its market capitalization moves beyond a band of ±2.5% of the cumulative market capitalization of the Russell 3000E around the Russell 1000/2000 breakpoint. Index membership near the cutoff therefore depends on a firm's prior-year assignment, not only its current rank, and we construct the instrument to reflect these rules (Appel et al., 2019).

second-stage estimate positive and significant ($F = 17$; Appendix Table 15). The second stage estimates the response of temporal distance to that index-induced passive ownership. The timing is consistent with passive ownership affecting temporal distance rather than the reverse. The estimates in the pre-period ($t - 1$) and year of reassignment are statistically indistinguishable from zero; the effect is positive and statistically significant at $t + 1$, when a one-percentage-point increase in passive ownership increases temporal distance by 0.17 months. Because the instrumented regressor is an unstandardized ownership share, this section reports magnitudes in natural units—months of temporal distance per percentage point of passive ownership—rather than the within-firm standard-deviation units of the preceding tables. The null estimate on impact is partly mechanical: the outcome is a fiscal-year median of the firm's calls and reconstitution occurs at the end of June, so roughly half of the year-$t$ calls predate the ownership change—$t$+1 is the first fully exposed year. The $t + 1$ estimate is nearly unchanged when firm-size controls are added and remains positive and significant, though larger, when the window is narrowed to ±250 ranks.

| | First stage | Second stage (2SLS) | | | | |
|---|---|---|---|---|---|---|
| | passive own. (pp) | temporal distance (months) | | | | |
| | | event time | | | robustness $t+1$ | |
| | | $t-1$ *(pre)* | $t$ | $t+1$ | +size | ±250 |
| Russell 2000 assignment | +1.060*** | | | | | |
| | (0.104) | | | | | |
| Passive ownership | | −0.002 | +0.040 | +0.171*** | +0.167*** | +0.265** |
| | | (0.056) | (0.057) | (0.057) | (0.053) | (0.110) |
| First-stage $F$ | 103 | | | | | |
| Observations | 10,090 | 10,069 | 10,564 | 10,090 | 10,040 | 4,793 |

*Notes:* Col. 1 is the first stage (Russell 2000 assignment → S12 passive ownership, pp, $t$+1 cell); cols. 2–6 are 2SLS (months of temporal distance per +1pp). Firm + SIC2×year FE, quad. ln(cap), ±500 ranks, 2007–2020, firm clusters. Robustness adds firm-size controls (+size) or narrows to ±250 ranks. The instrument moves only the index/passive margin, not total institutional ownership. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 6: Russell index-assignment IV: passive ownership and temporal distance.

Thus, when passive institutional ownership rises for reasons external to the firm's prior language, temporal distance increases in the following year, suggesting that increases in passive ownership can move how far ahead managers look rather than only respond to it. The full instrumental-variable and reduced-form specifications appear in Appendix Table 15, together with first-stage diagnostics, alternative windows, and additional fixed-effect structures. Appendix Table 16 adds standard reconstitution diagnostics—running-variable density and the sensitivity of the estimate across windows, fixed effects, and clustering.

# 4 Conceptual Framework and Predictions

Why does temporal distance increase with total institutional ownership and the number of institutional owners, yet decrease with the largest blockholder's stake? This section develops a parsimonious model that accounts for these opposing patterns and derives an additional testable prediction. Two established governance forces shape how far ahead managers look. First, informed trading makes the stock price more revealing, increasing the equity-linked return to actions whose payoffs lie in the future (Edmans and Manso, 2011). Second, intervention by a large shareholder can improve project selection while weakening the manager's incentive to take initiative (Burkart et al., 1997). We bring these forces together to distinguish the three ownership margins documented in Section 3—total institutional ownership and the number of institutional owners (breadth), which govern price informativeness, and the largest blockholder's stake, which governs intervention. Related models study trading and intervention jointly from the blockholder's perspective (Maug, 1998; Kahn and Winton, 1998; Faure-Grimaud and Gromb, 2004). Our purpose is to characterize a managerial choice those models do not study—how far ahead managers look—and to derive a sharp prediction for how insider ownership attenuates the blockholder effect.

## 4.1 Environment

The manager chooses how far ahead to look, $x \geq 0$, when developing plans for the firm. Looking further ahead requires identifying, evaluating, and preparing for more distant opportunities and shifts out the temporal distance of the plans the manager develops and discusses. We normalize the private cost of looking ahead to $x^2/2$; the results require only that this cost be increasing and convex. Empirically, we measure how far ahead managers look using the *temporal distance* constructed in Section 2 (the median distance into the future, in months, of managers' dated forward-looking statements on earnings calls).

A single firm has one unit of equity. The manager owns share $\mu \in (0, 1)$, $I \geq 1$ institutional owners hold stakes $s_1, \ldots, s_I$, and residual noninstitutional investors hold the float $f$. Total institutional ownership is $\beta$, and the blockholder is the largest institution, whose stake is $m$:

$$\beta = \sum_{i=1}^{I} s_i, \qquad m = \max_i s_i, \qquad \mu + \beta + f = 1. \tag{3}$$

The three ownership margins remain distinct. Total institutional ownership $\beta$ and breadth

$I$ govern price informativeness; the blockholder's stake $m$ governs control. We do not impose symmetry across institutional stakes, so $m$ can vary independently of $\beta$ and $I$ within the feasible range $\beta/I \leq m \leq \beta$. This is the theoretical counterpart of entering total institutional ownership, breadth, and the largest institutional owner's share jointly in the empirical analysis.

One unit of a well-directed plan creates value $P > 0$. With probability $\lambda \in (0, 1)$, the manager's plan coincides with the value-maximizing plan. With probability $1 - \lambda$, the manager and shareholders disagree, and value is created only if the manager is overruled. The manager also receives a private benefit $b \geq 0$ per unit of $x$ implemented under her own authority. Here, $b$ is the private value of control and $P$ is the shareholder value of the preferred project.

## 4.2 Price discipline and ownership breadth

Motivated by the trading channel of Edmans and Manso (2011), we summarize the pass-through of fundamental value into the price with a reduced-form informativeness index. Each of the $I$ institutional owners is informed and has an independent signal with precision $q(\beta) > 0$. The restriction $q'(\beta) > 0$ is our extension: it allows a larger stock of institutional capital to support more information acquisition. The signal- aggregation interpretation in Appendix B.1 motivates the following index.

**Lemma 1** (Price informativeness)**.** *Define the fraction of fundamental value impounded in the price as*

$$\Pi(\beta, I) = \frac{Iq(\beta)}{1 + Iq(\beta)} \in (0, 1) \tag{4}$$

*of the value created by the manager's action. Hence $\partial\Pi/\partial\beta > 0$ and $\partial\Pi/\partial I > 0$. When signal precision is fixed at $q \equiv 1$, the expression reduces to $\Pi = I/(I + 1)$ and isolates the breadth channel emphasized by Edmans and Manso (2011).*

The economic role of $\Pi$ is to determine how faithfully value creation is reflected in the price on which the manager's equity wealth depends. Greater institutional ownership raises signal precision by assumption; greater breadth brings more independent information into the price. Both increase the manager's private return to looking further ahead. Because $m$ is the stake of the largest institution, increasing it while holding total institutional ownership and breadth fixed does not raise $\Pi$ in the benchmark: reallocating shares toward an already-informed owner adds no independent signal. Section 5 evaluates the principal alternative in which a block instead disciplines through informed exit.

## 4.3 Control and managerial initiative

When the manager and shareholders disagree, an owner can intervene and impose the value-maximizing plan. Intervention is a public good: all shareholders benefit, but an intervening owner alone bears the fixed organizational cost $K > 0$ of establishing control capacity prior to the action subgame. An owner can remain inactive and earn zero or pay $K$ and subsequently choose an intervention probability $E$ in the action subgame. Conditional on entry and an interior probability, an owner with stake $s$ solves

$$\max_{0<E<1} \; sP(1-\lambda)xE - \frac{E^2}{2} - K. \tag{5}$$

The interior choice is $E = sP(1-\lambda)x$. Because its net value rises with $s$, and because a second intervention is redundant, only the largest owner may find it worthwhile to establish control.

**Proposition 1** (The controlling blockholder)**.** *On the region in which the intervention cap is slack, at most one owner intervenes, and that owner is the largest, $m$. It enters if and only if*

$$mP(1-\lambda)x \geq \sqrt{2K}, \tag{6}$$

*in which case $E = mP(1-\lambda)x$; otherwise $E = 0$.*

The proposition supplies a microfoundation for the largest blockholder's stake as the control margin in the spirit of Shleifer and Vishny (1986). A sufficiently large owner internalizes enough of the gain to bear the fixed cost that smaller owners leave to others. Thus the model distinguishes an active block from a merely noncontrolling institutional owner without assuming that every firm has a controller. The entry comparison is against the zero-payoff outside option. The proof is in Appendix B.2; Appendix B.3 treats the corner at which the probability cap $E \leq 1$ binds.

The manager receives the private benefit of control only when her plan survives, but she receives her equity share of firm value whether the initial plan survives or a better one is imposed. Given $\Pi$ and $E$, she therefore solves

$$\max_{x \geq 0} \; bx[1-(1-\lambda)E] + \mu\Pi Px[\lambda + (1-\lambda)E] - \frac{x^2}{2}. \tag{7}$$

Her first-order condition is

$$x = (\mu\Pi P\lambda + b) + (1-\lambda)(\mu\Pi P - b)E, \qquad \frac{\partial x}{\partial E} = (1-\lambda)(\mu\Pi P - b). \tag{8}$$

Equation (8) isolates the manager's tradeoff. Intervention reduces the private benefit she obtains from retaining control, but raises the value of her equity when it replaces a lower-value plan. It therefore leads the manager to look less far ahead when $\mu\Pi P < b$ and further ahead when $\mu\Pi P > b$. This is the control–initiative trade-off of Burkart et al. (1997), applied here to how far ahead the manager looks. Empirically, insider ownership provides a broad measure of the inside equity alignment represented by $\mu$.

## 4.4 Equilibrium and comparative statics

Ownership is predetermined in the action subgame. Trading first fixes $\Pi(\beta, I)$; the manager then chooses $x$ and an active block chooses $E$, each taking the other's action as given. We focus on an interior, active-block equilibrium.

**Assumption 1** (Interior active-block equilibrium)**.** $\mu > 0$, $\Pi > 0$, the block clears the threshold in (6) strictly, the probability cap is slack in equilibrium ($mP(1-\lambda)x^* < 1$), and $1 - mP(1-\lambda)^2(\mu\Pi P - b) > 0$.

**Proposition 2** (Equilibrium)**.** *Under Assumption 1, the manager's equilibrium choice $x^*$ and the intervention probability $E^*$ are*

$$x^* = \frac{\mu\Pi P\lambda + b}{1 - mP(1-\lambda)^2(\mu\Pi P - b)}, \qquad E^* = mP(1-\lambda)x^*. \tag{9}$$

*When $b = 0$, the equilibrium reduces to $x^*_{\text{price}} = \mu\Pi P\lambda/[1 - mP(1-\lambda)^2\mu\Pi P]$. When $\Pi = 0$ or $\mu = 0$, it reduces to $x^*_{\text{control}} = b/[1 + mP(1-\lambda)^2 b]$.*

The two polar cases isolate the forces at work. In the first, only the manager's equity reward remains, so control and looking ahead are complements. In the second, only the private benefit survives, so control and looking ahead are substitutes. The interior equilibrium combines these two forces. The intervention cap prevents divergence when the equity channel is strong; complete derivations and the corner solution appear in Appendix B.3.

**Proposition 3** (Ownership and how far ahead the manager looks)**.** *In the interior equilibrium of Proposition 2:*

*(i) How far ahead the manager looks increases with total institutional ownership and the number of institutional owners (breadth):*

$$\frac{\partial x^*}{\partial \beta} > 0, \qquad \frac{\partial x^*}{\partial I} > 0.$$

*(ii) The effect of the blockholder's stake is conditionally signed:*

$$\operatorname{sign}\left(\frac{\partial x^*}{\partial m}\right) = \operatorname{sign}(\mu \Pi P - b). \tag{10}$$

*A larger block leads the manager to look less far ahead when private benefits dominate and further ahead when the manager's equity reward dominates.*

*(iii) A higher managerial equity stake raises the sign index $\mu\Pi P - b$, and the cross-partial $\partial^2 x^*/(\partial m\, \partial \mu)$ is strictly positive at the sign-change point $\mu\Pi P = b$ and throughout the private-benefit region $\mu\Pi P < b$ whenever $E^* \leq 1/2$.*

Appendix B.4 proves the proposition. The first result combines Lemma 1 with the manager's price-linked reward: total institutional ownership and breadth both sharpen the price and thereby encourage the manager to look further ahead. The second and third results describe how managerial equity shapes the blockholder effect. In the private-benefit region where a larger block leads the manager to look less far ahead (provided the equilibrium intervention probability does not exceed one-half), as well as around the sign-change threshold $\mu\Pi P = b$, higher managerial equity attenuates the negative effect of the blockholder's stake.

The framework maps directly into four empirical counterparts. The 13F institutional ownership share measures $\beta$, the number of institutional owners measures $I$, the largest institutional owner's share measures $m$, and insider ownership serves as a broad empirical counterpart for the inside equity alignment represented by $\mu$. Price discipline accounts for the positive effects of institutional ownership and breadth documented in Section 3. The intervention mechanism accounts for the negative blockholder effect when private control benefits dominate and predicts a positive blockholder–equity interaction when intervention is moderate. Section 5 tests this interaction prediction. Productive engagement, firm value, and the value-maximizing ownership structure are developed in Appendix B.5; none is needed to derive the predictions for $x^*$. These are predictions for how far ahead managers look, not welfare. A larger block can correct a poorly directed plan even as it deters initiative, so an ownership structure that maximizes how far ahead the manager looks need not maximize firm value.

# 5 Testing the Blockholder–Equity Prediction

Section 3 established that temporal distance increases with total institutional ownership and the number of institutional owners, but decreases with the largest blockholder's

stake. We now test the model's central mechanism prediction (Proposition 3): that higher insider ownership attenuates this negative blockholder effect. We then ask whether a liquidity-based exit mechanism can account for the same pattern.

## 5.1 The blockholder–inside-equity interaction

The empirical counterpart of the model's largest block $m$ is the largest institutional owner's share. We use ownership reported on Forms 3–5 as a broad empirical measure of inside equity alignment. Crucially, these filings cover corporate officers—the managers who choose and communicate firm policy—alongside directors and 10-percent beneficial owners, yielding a consistent firm-level measure of equity held by statutory insiders. This broad measure lets us test the alignment mechanism. The model predicts that this alignment attenuates the initiative cost imposed by intervention, yielding a positive $m \times \mu$ interaction in the conflict region. Table 7 builds up the specification: column (1) includes the raw interaction, and columns (2)–(4) add 13F institutional ownership, breadth, and firm size in turn.

| | Dependent variable: temporal distance (within SD) | | | |
|---|---|---|---|---|
| | (1) Raw | (2) + $\beta$ | (3) + $I$ | (4) +Size |
| Blockholder $m$ | $-0.057^{***}$ | $-0.054^{***}$ | $-0.046^{***}$ | $-0.048^{***}$ |
| | (0.013) | (0.013) | (0.014) | (0.014) |
| Insider ownership $\mu$ | $-0.025$ | $-0.032^{*}$ | $-0.022$ | $-0.023$ |
| | (0.017) | (0.017) | (0.017) | (0.017) |
| $m \times \mu$ | $0.017^{***}$ | $0.015^{**}$ | $0.014^{**}$ | $0.014^{**}$ |
| | (0.006) | (0.006) | (0.006) | (0.006) |
| Institutional ownership $\beta$ | – | Yes | Yes | Yes |
| Breadth $I$ | – | – | Yes | Yes |
| Size (log market cap) | – | – | – | Yes |
| Firm FE | Yes | Yes | Yes | Yes |
| Sector × year FE | Yes | Yes | Yes | Yes |
| Observations | 35,416 | 35,416 | 35,416 | 35,399 |
| Firms | 3,593 | 3,593 | 3,593 | 3,592 |

*Notes:* Build-up of the block–equity interaction. Column (1) is the raw interaction; columns (2)–(4) add 13F institutional ownership $\beta$, breadth $I$ (log number of owners), and firm size (log market cap) one at a time. $m$ largest single institutional owner's share; $\mu$ insider ownership (Forms 3/4/5: officers, directors, 10%+ owners); $m \times \mu$ their interaction (product of standardized components). Firm and sector×year fixed effects and a lagged-book-assets control throughout; ownership standardized within sample. Coefficients are expressed in within-firm standard deviations ("within SD") of temporal distance (one within-firm SD ≈ 1.35 months; see Table 4): main-effect coefficients per one-SD increase in the regressor, interaction coefficients per one-unit increase in the product of standardized components. SE clustered by firm. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 7: The blockholder's stake and insider ownership.

The interaction is positive and significant throughout, and remains stable as the controls enter: $m \times \mu$ moves only from 1.7% to 1.4% of a within-firm standard deviation of temporal distance per unit of the product of standardized $m$ and $\mu$, while the block's average effect remains negative (−4.6% to −5.7% per one-standard-deviation increase in the block). At the fully controlled estimates, a one-standard-deviation increase in the insider-ownership

measure reduces the block's deterrent effect by about 30 percent. A two-standard-deviation increase nearly halves it, from −6.1% to −3.4% of a within-firm standard deviation per standard deviation of the block. Within the main body of the insider-ownership distribution, the blockholder effect attenuates rather than reverses, remaining negative and significant through two standard deviations above the mean (over 95 percent of sample firm-years). The interaction is also robust to absorbing nonlinearities in block size and to residualizing insider ownership with respect to block size (Appendix B.6).

This attenuation matches the model's prediction for how insider equity weakens the blockholder effect. The test uses within-firm changes in equilibrium ownership, and the principal exit-based alternative does not absorb it, as we show next.

## 5.2 A liquidity-based exit alternative

The positive block–equity interaction does not by itself identify control. In exit theories, governance also operates through the manager's price-linked wealth, so a blockholder's threat of informed selling can become more powerful as managerial equity rises. Bharath et al. (2013) find that the relation between blockholdings and firm value responds to exogenous liquidity shocks, especially when managerial wealth is sensitive to the stock price; and Dou et al. (2018) report the corresponding result for earnings management. The same logic could generate the interaction in Table 7 without a control channel.

Exit and control differ in their dependence on market liquidity. Exit requires a credible threat of informed selling and is therefore stronger in liquid stocks (Admati and Pfleiderer, 2009; Edmans, 2009). Indeed, Bharath et al. (2013) identify this channel from the interaction of blockholdings with liquidity and find it concentrated among price-sensitive managers. Direct intervention requires no trade. If exit explains our block–equity coefficient, that coefficient should be absorbed by liquidity interacted with insider ownership, or by liquidity interacted jointly with the block and insider ownership. Under the control interpretation, neither pattern is required.

Table 8 reports the horse race. Column (1) repeats the specification of Table 7 in the subsample with CRSP coverage. The remaining columns add two liquidity measures: $L$, the negative logarithm of the Amihud (2002) illiquidity ratio, and $T$, log share turnover. Columns (2)–(4) interact these measures with insider ownership; columns (5)–(6) add their interactions with the block and with the block–equity term itself.

Three results emerge. First, the exit-threat terms leave the block–equity interaction essentially unchanged. Across the six columns, $m \times \mu$ ranges from 1.2% to 1.7% of a within-firm standard deviation per unit of the product of standardized $m$ and $\mu$, against a

| | Dependent variable: temporal distance (within SD) | | | | | |
|---|---|---|---|---|---|---|
| | (1) Baseline | (2) +Liquidity | (3) +Turnover | (4) Both | (5) Liq. full | (6) Turn. full |
| Blockholder $m$ | $-0.045^{***}$ | $-0.044^{***}$ | $-0.043^{***}$ | $-0.043^{***}$ | $-0.042^{***}$ | $-0.041^{***}$ |
| | (0.014) | (0.014) | (0.014) | (0.014) | (0.016) | (0.015) |
| Insider ownership $\mu$ | $-0.026$ | $-0.029$ | $-0.029^{*}$ | $-0.026$ | $-0.030$ | $-0.033^{*}$ |
| | (0.017) | (0.019) | (0.017) | (0.019) | (0.019) | (0.018) |
| $m \times \mu$ | $0.015^{**}$ | $0.015^{**}$ | $0.012^{*}$ | $0.013^{*}$ | $0.014^{*}$ | $0.017^{**}$ |
| | (0.006) | (0.007) | (0.007) | (0.007) | (0.007) | (0.007) |
| Liquidity $L$ | | 0.010 | | 0.012 | 0.010 | |
| | | (0.037) | | (0.041) | (0.037) | |
| $L \times \mu$ | | $-0.007$ | | 0.007 | $-0.007$ | |
| | | (0.011) | | (0.013) | (0.015) | |
| $L \times m$ | | | | | 0.007 | |
| | | | | | (0.013) | |
| $L \times m \times \mu$ | | | | | $-0.002$ | |
| | | | | | (0.006) | |
| Turnover $T$ | | | 0.003 | 0.001 | | 0.001 |
| | | | (0.014) | (0.015) | | (0.014) |
| $T \times \mu$ | | | $-0.017^{**}$ | $-0.020^{**}$ | | $-0.028^{***}$ |
| | | | (0.008) | (0.009) | | (0.010) |
| $T \times m$ | | | | | | 0.003 |
| | | | | | | (0.009) |
| $T \times m \times \mu$ | | | | | | 0.007 |
| | | | | | | (0.004) |
| $\beta$, breadth $I$, size, lagged assets | Yes | Yes | Yes | Yes | Yes | Yes |
| Firm FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Sector × year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 35,030 | 35,030 | 35,030 | 35,030 | 35,030 | 35,030 |
| Firms | 3,555 | 3,555 | 3,555 | 3,555 | 3,555 | 3,555 |

*Notes:* Estimates of the block–equity interaction alongside the exit-threat channel of Bharath, Jayaraman, and Nagar (2013), which operates through stock liquidity interacted with the manager's price-linked wealth. $L$ is liquidity, the negative log of the Amihud (2002) illiquidity ratio (monthly |return| per dollar volume from CRSP, averaged over the year); $T$ is log share turnover (monthly volume over shares outstanding, averaged over the year). Column (1) repeats the baseline interaction specification on the CRSP-merged sample; (2)–(4) add each liquidity measure and its interaction with insider ownership $\mu$; (5)–(6) add the interactions with the block $m$ and with $m \times \mu$. All columns include 13F institutional ownership $\beta$, breadth $I$, size (log market cap), a lagged-book-assets control, and firm and sector×year fixed effects; ownership and liquidity standardized within sample. Coefficients are expressed in within-firm standard deviations ("within SD") of temporal distance (one within-firm SD $\approx$ 1.35 months; see Table 4): main-effect coefficients per one-SD increase in the regressor, interaction coefficients per one-unit increase in the relevant product of standardized components. SE clustered by firm. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 8: The block–equity interaction and the liquidity-based exit threat.

baseline of 1.5%, and remains statistically significant throughout. Second, the exit terms themselves are either indistinguishable from zero or have the opposite sign. Liquidity interacted with insider ownership is −0.7% (s.e. 1.1%), while turnover interacted with insider ownership ranges from −1.7% to −2.8% and is statistically significant. Temporal distance is therefore shorter, not longer, where insiders have greater equity exposure and the stock is heavily traded. This pattern is inconsistent with simple exit-based discipline and accords with evidence that high-turnover ownership accompanies short-horizon corporate language (Brochet et al., 2012). Third, the triple interactions $L \times m \times \mu$ and $T \times m \times \mu$ are small and insignificant. The attenuating role of insider ownership is no stronger in liquid than in illiquid stocks, although an exit account predicts precisely such a gradient.

A complementary restriction follows directly from the price channel. Any block effect that reaches the manager only through the price enters her marginal return through $\mu\Pi$. Its main effect and its interaction with inside equity must therefore share the sign of $\partial\Pi/\partial m$. A block that improves price discovery encourages the manager to look further ahead, especially when she holds more equity; a block that crowds out trading competition reduces both. The estimates instead combine a negative main effect with a positive equity interaction. A mechanism operating only through the price does not naturally deliver that pairing. It is consistent with a control cost outside the price—the deterrence of initiative—that greater equity exposure partially offsets. These tests sharpen the control interpretation of the block–insider-equity interaction.

# 6 Conclusion

This paper measures how far ahead managers look—the *temporal distance* of their forward-looking discussion—from the median number of months ahead referenced in their forward-looking statements on earnings calls. The measure captures a margin that investment, R&D, and patent outcomes cannot isolate on their own: how far ahead managers look before those actions are chosen. Across and within U.S. public firms, managers who look further ahead subsequently invest and innovate more, whereas our measure contracts when firms encounter financial distress.

We use this measure to study how institutional ownership structure relates to how far ahead managers look. Within the same firm, managers look further ahead as total institutional ownership and the number of institutional owners rise, and less far ahead as the largest institutional owner's share grows. Around Russell index reconstitutions, quasi-random increases in passive institutional ownership for reasons external to the firm's prior language are followed by managers looking further ahead. The negative blockholder

association, in turn, is consistent with our model's intervention mechanism: it weakens as insider ownership rises. Liquidity and turnover interactions do not absorb that pattern, making a simple exit-based explanation difficult to reconcile with the evidence.

The Ownership Project's integrated coverage of institutions, blockholders, and insiders is central to this evidence: it lets us study institutional ownership structure and inside equity alignment jointly. Taken together, the results show that ownership is related not only to which projects a firm ultimately undertakes, but also to how far ahead management identifies, evaluates, and prepares for future opportunities. Corporate governance therefore shapes an input into long-run action that precedes the actions conventionally observed.

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# A Data and Measure Construction

This appendix documents the estimation panel behind Section 2: how the temporal-distance measure is merged to firm fundamentals, how the forward-looking activity outcomes (Table 2) and financial-stress variables (Table 3) are constructed, and where each comes from. The measure itself—the transcript corpus and the rule-based extraction algorithm—is described in Section 2.1; the ownership data are described in Section 3.1 and Appendix C.

**Sample construction and merge.** We take Compustat annual as the master panel and merge the firm-year temporal-distance measure to it on GVKEY, matching a firm's calendar-year calls to the fiscal year of the same label; the merge is one-to-one and preserves the Compustat row count, and a firm-year enters the estimation samples only when it has a non-missing temporal-distance value and the size control. Over 2002–2020 the measure is available for roughly 50,000 firm-years and 5,700 firms. Firm identifiers are linked across sources with the CRSP/Compustat Merged (CCM) fiscal-year bridge, which attaches a PERMCO to each GVKEY–fiscal-year; this link is what allows the PERMCO-keyed patent-value and ownership files to be joined to the Compustat master. Because same-year Compustat items are not predetermined with respect to same-year temporal distance, the forward-looking activity and ownership specifications lag the controls and date outcomes at $t+1$.

**Forward-looking activity outcomes.** The outcomes in Table 2 come from two kinds of source. Capital expenditure and R&D are from Compustat, each scaled by lagged book assets, as are the size control (log lagged assets) and Tobin's Q. The innovation outcomes combine two patent datasets: patent counts, and their growth, are drawn from a firm-year patent panel keyed by GVKEY, while the value and citation quality of patents are taken from the stock-market-based patent valuations of Kogan et al. (2017), linked to firms by PERMCO. From the latter we use the mean real value of the patents a firm is issued in a year and the share of its filings that are highly cited. All outcomes and the measure are winsorized at the 1st and 99th percentiles within each estimation sample; the capital-expenditure and R&D coefficients are reported in percentage points of the outcome ratio.

Table 9: Temporal distance and subsequent forward-looking activity with firm fixed effects.

| Dependent variable | asinh(CAPX / lag assets) | asinh(R&D / lag assets) | IHS patent growth | asinh(KPSS issue value, mean) | KPSS filing high-cite share |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| Temporal distance | 0.137*** | 0.166** | 0.0069 | 0.0170** | 0.0010 |
| | (0.024) | (0.066) | (0.0047) | (0.0085) | (0.0009) |
| Log lag assets control | Yes | Yes | Yes | Yes | Yes |
| Tobin's Q control | Yes | No | No | No | No |
| Firm fixed effects | Yes | Yes | Yes | Yes | Yes |
| SIC2 × year fixed effects | Yes | Yes | Yes | Yes | Yes |
| Observations | 44,197 | 27,332 | 25,915 | 15,663 | 44,210 |
| Firms | 4,694 | 3,016 | 3,689 | 1,926 | 4,788 |
| Within $R^2$ | 0.0522 | 0.0525 | 0.0004 | 0.0324 | 0.0004 |
| Mean dependent variable | 0.0420 | 0.0929 | -0.0078 | 14.62 | 0.0573 |

*Notes:* One-year-ahead ($t$+1) outcomes on standardized temporal distance. All columns include firm and SIC2×year fixed effects. Outcomes and temporal distance are winsorized at the 1st and 99th percentiles; all columns control for log lag assets, and the investment column additionally for Tobin's Q. CAPX and R&D coefficients and standard errors are multiplied by 100 (percentage points of the outcome ratio). Standard errors clustered by firm in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 10: Investment robustness to cost-of-capital and discount-rate controls.

| Specification | Baseline full | Baseline CoC/DR sample | + CoC | + DR | Obs. full | Obs. matched |
|---|---|---|---|---|---|---|
| **Panel A. Temporal-distance coefficient** | | | | | | |
| Yearly | | | | | | |
| SIC2-year FE | 0.294*** | 0.279*** | 0.278*** | 0.284*** | 61,457 | 29,966 |
| | (0.035) | (0.040) | (0.040) | (0.040) | | |
| Yearly | | | | | | |
| Firm + SIC2-year FE | 0.221*** | 0.199*** | 0.198*** | 0.194*** | 60,852 | 29,572 |
| | (0.024) | (0.030) | (0.030) | (0.030) | | |
| Quarterly | | | | | | |
| SIC2-quarter FE | 0.040*** | 0.036*** | 0.037*** | 0.037*** | 229,066 | 113,164 |
| | (0.005) | (0.006) | (0.006) | (0.006) | | |
| Quarterly | | | | | | |
| Firm + SIC2-quarter FE | 0.022*** | 0.023*** | 0.023*** | 0.022*** | 228,810 | 113,033 |
| | (0.003) | (0.004) | (0.004) | (0.004) | | |
| **Panel B. Added control coefficients** | | | | | | |
| Yearly | | | | | | |
| SIC2-year FE | | | -0.494*** | -0.257*** | | |
| | | | (0.066) | (0.043) | | |
| Yearly | | | | | | |
| Firm + SIC2-year FE | | | -0.140** | -0.343*** | | |
| | | | (0.062) | (0.033) | | |
| Quarterly | | | | | | |
| SIC2-quarter FE | | | -0.099*** | -0.046*** | | |
| | | | (0.016) | (0.010) | | |
| Quarterly | | | | | | |
| Firm + SIC2-quarter FE | | | 0.014 | -0.038*** | | |
| | | | (0.014) | (0.007) | | |
| Firm fixed effects | No for SIC2-time rows; yes for Firm + SIC2-time rows | | | | | |
| SIC2 × time fixed effects | Yes in all rows | | | | | |
| Log lag assets and Tobin's Q controls | Yes in all columns | | | | | |

*Notes:* The table reports investment regressions corresponding to the selected size-only yearly and quarterly tables. The dependent variable is asinh(CAPX/lag assets). Temporal distance is standardized within each estimation sample and both investment and temporal distance are winsorized at the 1st and 99th percentiles. All columns control for log lag assets and Tobin's Q and cluster standard errors by firm. The yearly CoC/DR sample matches Gormsen-Huber data to the fiscal-year-end quarter; the quarterly sample matches exact quarters. Duplicate GVKEY-quarter CoC rows from multiple exchanges are averaged. Panel A coefficients and standard errors are multiplied by 100 and reported in percentage points of the investment ratio. Panel B reports the added control coefficient in percentage points of the investment ratio per 1 percentage point of the rate. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

**Financial-stress and uncertainty variables.** The stress regressions in Table 3 use transparent indicators of distress and slack built from Compustat and market data—an operating loss (EBIT $< 0$), net leverage, the cash ratio, and a market-based distance-to-default—together with an earnings-miss indicator (reported earnings below the I/B/E/S analyst consensus), a stock-price-crash indicator (an annual return below $-30\%$), and an overall-risk measure. The risk measure is a firm-level uncertainty index constructed from the same earnings-call transcripts following the text-based approach of Hassan et al. (2019) and provided by NL Analytics; because it shares its source with temporal distance, we enter it lagged one year to avoid mechanical overlap with the contemporaneous measure. Continuous stressors are standardized within the estimation sample (indicators enter per event), and the dependent variable is the year-on-year change in firm-year temporal distance.

# B The Model: Derivations and Extensions

This appendix collects the derivations behind Section 4: the trading stage that underlies Lemma 1 (Appendix B.1), and the proofs of Propositions 1–3 (Appendices B.2–B.4). It then develops the ancillary engagement channel and the value-maximizing ownership structure that the main text states but does not derive (Appendix B.5). Notation is as in Section 4.

## B.1 The trading stage and price informativeness

We use a signal-aggregation representation motivated by Edmans and Manso (2011), enriched so that total institutional ownership, and not only the number of owners, moves informativeness. Let $v$ denote the innovation to the value the manager's action will create, Gaussian with prior precision normalized to one. Each institutional owner $i = 1, \ldots, I$ is informed and observes a private signal

$$\sigma_i = v + \varepsilon_i, \qquad \varepsilon_i \sim \mathcal{N}\big(0,\, 1/q(\beta)\big), \quad q'(\beta) > 0, \tag{11}$$

with $\varepsilon_i$ independent across owners and of $v$. Signal precision $q(\beta) > 0$ is the intensive margin: we assume that a larger stock of institutional capital supports more information production, so each owner's signal is sharper. We use the share of posterior precision supplied by these signals as a reduced- form index of fundamental information passed into the price; we do not derive a noisy-order-flow trading equilibrium.

*Proof of Lemma 1.* The $I$ conditionally independent signals carry total precision $I\, q(\beta)$ about $v$, which has prior precision one, so the posterior precision of $v$ given the aggregate

informed signal is $1 + I\,q(\beta)$. We summarize price informativeness by the share of that posterior precision contributed by informed trading,

$$\Pi(\beta, I) = \frac{I\,q(\beta)}{1 + I\,q(\beta)} \in (0, 1). \tag{12}$$

We take $\Pi$ to be the fidelity with which fundamentals pass into the price. A well-directed unit of $x$ shifts fundamental value by $P$, so the price moves by $\Pi P$ per unit and a manager holding $\mu$ of the equity captures $\mu\Pi P$ of the value her action creates. Differentiating,

$$\frac{\partial \Pi}{\partial \beta} = \frac{I\,q'(\beta)}{[1 + I\,q(\beta)]^2} > 0, \qquad \frac{\partial \Pi}{\partial I} = \frac{q(\beta)}{[1 + I\,q(\beta)]^2} > 0, \tag{13}$$

so the index rises with both the level and the breadth of institutional ownership. Setting $q \equiv 1$ collapses (12) to $\Pi = I/(I+1)$, the Edmans and Manso (2011) benchmark in which only the number of owners moves informativeness. The microfoundation differs from theirs: in Edmans and Manso a single blockholder is already perfectly informed and the number of owners matters through competition in trading rather than through the arrival of additional signals. We adopt their reduced form for $\Pi$ and obtain it by aggregation, which is what allows the level of institutional ownership to enter alongside the number of owners. □

## B.2 Control and the endogenous blockholder

*Proof of Proposition 1.* Conditional on paying $K$ and with the cap slack, the block's problem (5) is strictly concave in $E$, with interior solution $E(s) = s\,P(1-\lambda)\,x$. Substituting back, the net value of controlling is

$$\Psi(s) = \tfrac{1}{2}\,s^2 P^2 (1-\lambda)^2 x^2 - K, \tag{14}$$

strictly increasing in $s$ for $x > 0$. Because overruling the manager once implements the value-maximizing action, a second intervening owner would duplicate the fixed cost $K$ without creating additional value; control is therefore a single-owner activity, and the owner who undertakes it is the one with the highest net value $\Psi$. By monotonicity that is the largest block, $m$, and every smaller owner free-rides—the Shleifer and Vishny (1986) logic. Comparing entry with the zero-payoff outside option, the block participates iff $\Psi(m) \geq 0$, i.e. $\frac{1}{2}m^2P^2(1-\lambda)^2x^2 \geq K$, which rearranges to the threshold $m\,P(1-\lambda)\,x \geq \sqrt{2K}$. When it holds the equilibrium threat is $E = m\,P(1-\lambda)\,x$; when it fails no owner controls

and $E = 0$. □

## B.3 The manager's problem and equilibrium

*Proof of Proposition 2.* The manager's objective (7) is strictly concave in $x$, with first-order condition

$$x = \mu\Pi P\,[\lambda + (1-\lambda)E] + b\,[1 - (1-\lambda)E] = (\mu\Pi P\lambda + b) + (1-\lambda)(\mu\Pi P - b)\,E.$$

Substituting the block's interior rule $E = mP(1-\lambda)x$ from Proposition 1 gives

$$x = (\mu\Pi P\lambda + b) + mP(1-\lambda)^2(\mu\Pi P - b)\,x,$$

and solving for $x$, with the denominator positive by Assumption 1,

$$x^* = \frac{\mu\Pi P\lambda + b}{1 - mP(1-\lambda)^2(\mu\Pi P - b)}, \qquad E^* = mP(1-\lambda)\,x^*. \tag{15}$$

Setting $b = 0$ and, separately, $\Pi = 0$ (or $\mu = 0$) yields the two special cases in the statement. Finally, intervention is a probability, so $E \le 1$. The unconstrained threat reaches the cap when $E^* = mP(1-\lambda)x^* \ge 1$, i.e. when $mP(1-\lambda)(\mu\Pi P + \lambda b) \ge 1$; control then saturates at $E^* = 1$, and evaluating the manager's first-order condition at $E = 1$ gives the finite corner action

$$x^* = \mu\Pi P + b\lambda \qquad \text{(corner, } E^* = 1\text{)}. \tag{16}$$

This condition can hold in either regime; its role differs across them. In the equity-dominant region $\mu\Pi P > b$, where the denominator of (15) could otherwise fall to zero, the cap is reached strictly before it does so—$E^* = 1$ at $m = [P(1-\lambda)(\mu\Pi P + \lambda b)]^{-1}$, whereas $D = 0$ only at the larger $m = [P(1-\lambda)^2(\mu\Pi P - b)]^{-1}$, since $\mu\Pi P + \lambda b > (1-\lambda)(\mu\Pi P - b)$—so $x^*$ never diverges. In the private-benefit region $b > \mu\Pi P$ the denominator already exceeds one and $x^*$ is finite regardless; the cap, if it binds, merely truncates a large intervention threat. □

## B.4 Comparative statics

*Proof of Proposition 3.* Write $A = \mu\Pi P\lambda + b > 0$ and $D = 1 - mP(1-\lambda)^2(\mu\Pi P - b) > 0$, so $x^* = A/D$.

*(i) Level and breadth.* Both $A$ and $D$ depend on $\Pi$, with $\partial A/\partial\Pi = \mu P\lambda$ and $\partial D/\partial\Pi =$

$-\mu m P^2(1-\lambda)^2$. Hence

$$\frac{\partial x^*}{\partial \Pi} = \frac{\mu P\left[\lambda D + A\, mP(1-\lambda)^2\right]}{D^2} > 0, \tag{17}$$

every term being positive under $D > 0$. By the chain rule and Lemma 1, $\partial x^*/\partial \beta = (\partial x^*/\partial \Pi)(\partial \Pi/\partial \beta) > 0$ and $\partial x^*/\partial I = (\partial x^*/\partial \Pi)(\partial \Pi/\partial I) > 0$.

*(ii) The block.* $A$ is independent of $m$, and $\partial D/\partial m = -P(1-\lambda)^2(\mu \Pi P - b)$, so

$$\frac{\partial x^*}{\partial m} = -\frac{A}{D^2}\frac{\partial D}{\partial m} = \frac{A\, P(1-\lambda)^2(\mu \Pi P - b)}{D^2}. \tag{18}$$

Since $A > 0$, $D^2 > 0$, and $P(1-\lambda)^2 > 0$, the sign is that of $\mu \Pi P - b$: the block deters the action when $b > \mu \Pi P$ and encourages it when $\mu \Pi P > b$.

*(iii) The interaction.* The factor $\mu \Pi P - b$ in (18) is strictly increasing in $\mu$ (at rate $\Pi P$), so raising $\mu$ moves $\partial x^*/\partial m$ from the deterrence region toward the encouragement region, crossing zero at $\mu \Pi P = b$. Differentiating (18) with respect to $\mu$ yields

$$\frac{\partial^2 x^*}{\partial m\, \partial \mu} = \frac{\Pi P^2(1-\lambda)^2}{D^3}\Big[A\big(1 + mP(1-\lambda)^2(\mu \Pi P - b)\big) + \lambda(\mu \Pi P - b)D\Big]. \tag{19}$$

Evaluating (19) at the sign-change boundary $\mu \Pi P = b$, where $D = 1$ and $A = (1+\lambda)b$, gives

$$\left.\frac{\partial^2 x^*}{\partial m\, \partial \mu}\right|_{\mu \Pi P = b} = (1+\lambda)(1-\lambda)^2\, b\, \Pi P^2 > 0. \tag{20}$$

Now consider the private-benefit region $\mu \Pi P < b$, and let $\Delta \equiv b - \mu \Pi P > 0$. Because $\mu \Pi P \geq 0$, we have $\Delta \leq b \leq A$ (with $\Delta < A$ whenever $\mu > 0$), and hence $D - 1 = mP(1-\lambda)^2\Delta \leq mP(1-\lambda)^2 A = (1-\lambda)DE^*$. Whenever $E^* \leq 1/2$, this implies $D - 1 \leq \frac{1}{2}(1-\lambda)D$, which rearranges to $D - 1 \leq (1-\lambda)/(1+\lambda)$. Rewriting the bracketed term in (19) as $(A - \lambda\Delta) - (D-1)(A + \lambda\Delta)$ and using $\Delta \leq A$ together with $D - 1 \leq (1-\lambda)/(1+\lambda)$ yields

$$(A - \lambda\Delta) - (D-1)(A + \lambda\Delta) \geq A\left[(1-\lambda) - \frac{1-\lambda}{1+\lambda}(1+\lambda)\right] = 0,$$

with strict inequality whenever $\mu > 0$ or $E^* < 1/2$. Thus $\partial^2 x^*/(\partial m\, \partial \mu) > 0$ throughout the private-benefit region whenever $E^* \leq 1/2$. □

## B.5 Engagement, firm value, and the optimal ownership structure

**Engagement.** Informed owners possess a second governance lever, the productive engagement (voice) of Edmans and Manso (2011). Owner $i$ chooses engagement effort $z_i \geq 0$ to maximize $s_i\,\phi\,\log(1+Z) - z_i^2/(2s_i)$, where $Z = \sum_j z_j$ is aggregate engagement and $\phi > 0$ scales its productivity: the benefit is the owner's pro rata share of a concave firm-value gain, and the cost is convex and stake-scaled, so a larger owner both values engagement more and spreads its cost over a larger governance apparatus. The first-order condition is $z_i = s_i^2\phi/(1+Z)$; summing over owners and using $\Omega = \sum_i s_i^2$ gives $Z(1+Z) = \phi\,\Omega$, hence

$$Z^*(\Omega) = \frac{-1 + \sqrt{1 + 4\phi\,\Omega}}{2}, \tag{21}$$

which is strictly increasing in the voice-concentration index $\Omega$. Unlike control, engagement is interior for any $\Omega > 0$: it carries no fixed cost and is not monopolized. Holding total institutional ownership $\beta$ fixed, dispersing ownership lowers $\Omega$ and hence $Z^*$; in the symmetric benchmark $s_i = \beta/I$ we have $\Omega = \beta^2/I$, so more owners weaken engagement even as they sharpen the price.

**Firm value.** Expected firm value sums the value created by the managerial action, net of whether the manager's project is implemented or overruled, and the value created by engagement:

$$V = P\,x\,[\lambda + (1-\lambda)E] + \phi\,\log(1+Z). \tag{22}$$

Engagement enters $V$ additively and does not appear in the manager's problem (7); this is why it moves firm value but yields no prediction for how far ahead the manager looks, and why the main text can characterize $x^*$ without it.

**The optimal ownership structure.** The value-maximizing structure trades off three levers. Dispersing the informed fringe raises $\Pi$ (improving price discipline and $x^*$) but lowers $\Omega$ (worsening engagement), the Edmans and Manso (2011) trading-versus-voice tension. Under parameters for which the two marginal effects cross, the optimal number of institutional owners is interior; otherwise the optimum is a boundary. The block size carries the intervention tension. Holding $\Pi$ and $\Omega$ fixed and working in the empirically relevant private-benefit region $b > \mu\Pi P$, write $A = \mu\Pi P\lambda + b$ and $D = 1 + mP(1-\lambda)^2(b - \mu\Pi P) > 1$, so $x^* = A/D$ and $E^* = mP(1-\lambda)x^*$. The managerial-action component of firm value is

$$V_x \equiv P\,x^*[\lambda + (1-\lambda)E^*] = \frac{P\lambda A}{D} + \frac{mP^2(1-\lambda)^2A^2}{D^2}. \tag{23}$$

The first term is the value of the manager's own initiative, which the block deters ($x^* = A/D$ falls in $m$); the second is the value the block creates by overriding low-value projects, which the block raises. Differentiating, $\partial V_x/\partial m > 0$ at $m = 0$ (the override gain, $\propto P^2(1-\lambda)^2A^2$, dominates the deterrence loss, $\propto P\lambda A \cdot P(1-\lambda)^2(b - \mu\Pi P)$, because $A > \lambda(b - \mu\Pi P)$) while $\partial V_x/\partial m < 0$ for $m$ large; the numerator of $\partial V_x/\partial m$ is linear in $m$ with a unique root, so $V_x$ is single-peaked. The value-maximizing block is interior, $m^* > 0$, when that root falls within the feasible range of block sizes (recall $m \leq \beta$), and a corner otherwise. Combined with the control threshold of Proposition 1, an interior peak yields an extensive margin: a blockholder is active only where the value-maximizing block clears the fixed cost of control, $m^*P(1-\lambda)x^* \geq \sqrt{2K}$; otherwise the firm is dispersed and blockholder-free.

Two implications follow. First, the block is distinct from total institutional ownership $\beta$ and from the voice-concentration index $\Omega$: $\beta$ (with $I$) sets price precision, $\Omega$ sets the free-rider strength of engagement, and $m$ sets control—a separation the symmetric benchmark $m = \beta/I$ cannot deliver. Second, the $x^*$-maximizing and value-maximizing structures differ: how far ahead the manager looks falls monotonically with the block throughout the private-benefit region, whereas firm value is single-peaked in it, so the ownership structure that maximizes value need not be the one that maximizes how far ahead the manager looks.

### B.6 Robustness of the block–equity interaction

The $m \times \mu$ interaction of Table 7 is robust to absorbing nonlinearity in the block and to residualizing insider ownership with respect to block size. Table 11 adds the squared block $m^2$ (column 2), adds $m^2$ and $\mu^2$ (column 3), and replaces $\mu$ with its component orthogonal to $m$ (column 4). The interaction is stable throughout, ranging from 1.1% to 1.6% of a within-firm standard deviation per unit of the product of standardized components and remaining significant.

## C Ownership Structure: Variable Definitions and Robustness

The robustness tables—Tables 12 and 13 (institutional ownership) and Table 14 (ownership concentration and blockholders)—examine a broader set of ownership-structure measures than the three used in the main text. All are constructed from the owner–firm–quarter positions in the Ownership Project data and averaged over the calendar year, and all holdings are expressed as a fraction of shares outstanding. The baseline 13F share is not

| | Dependent variable: temporal distance (within SD) | | | |
|---|---|---|---|---|
| | (1) Baseline | (2) + $m^2$ | (3) + $m^2$, $\mu^2$ | (4) $\mu \perp m$ |
| Blockholder $m$ | −0.046*** | −0.035* | −0.035* | −0.036*** |
| | (0.014) | (0.019) | (0.019) | (0.012) |
| Insider ownership $\mu$ | −0.022 | −0.025 | −0.029 | −0.020 |
| | (0.017) | (0.018) | (0.023) | (0.015) |
| $m \times \mu$ | 0.014** | 0.016** | 0.015** | 0.011** |
| | (0.006) | (0.007) | (0.008) | (0.006) |
| $m^2$ | | −0.004 | −0.004 | |
| | | (0.005) | (0.005) | |
| $\mu^2$ | | | 0.002 | |
| | | | (0.008) | |
| $\beta$, breadth $I$, lagged assets | Yes | Yes | Yes | Yes |
| Firm FE | Yes | Yes | Yes | Yes |
| Sector × year FE | Yes | Yes | Yes | Yes |
| Observations | 35,416 | 35,416 | 35,416 | 35,416 |
| Firms | 3,593 | 3,593 | 3,593 | 3,593 |

*Notes:* Robustness of the block–equity interaction of Table 7. Column (1) repeats the interaction specification; (2) adds the squared block $m^2$; (3) adds $m^2$ and $\mu^2$; (4) replaces $\mu$ with its component orthogonal to $m$ ($\mu \perp m$). All columns include $\beta$, breadth $I$, a lagged-book-assets control, and firm and sector×year fixed effects; ownership standardized within sample. Coefficients are expressed in within-firm standard deviations ("within SD") of temporal distance (one within-firm SD ≈ 1.35 months; see Table 4): main-effect coefficients per one-SD increase in the regressor, interaction coefficients per one-unit increase in the product of standardized components. SE clustered by firm. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 11: Robustness of the conditional blockholder effect ($m \times \mu$).

top-coded and can exceed one when filing dates and the shares-outstanding denominator do not align. The broader total institutional ownership measure used in the robustness tables is top-coded at one. That cap creates a mass point: the broader measure has a 90th percentile of 1.000 (mean 0.85, median 0.93), so the most heavily held firm-years are collapsed onto a single value—if anything attenuating its coefficient toward zero. The names below match the row and column labels in the tables. The baseline institutional-share measure in Table 5 is *13F institutional ownership*, the summed reported holdings of 13F investment managers relative to shares outstanding. The broader robustness measure, *total institutional share ownership*, is the summed share of all 13F, 13D, and 13G filers, and *lagged total institutional share ownership* is its one-year lag. The filing-source rows split holdings into mutually exclusive components: *13F institutional ownership* (institutional investment managers), *13D active blockholder ownership* (control-intent 5% holders), *13G passive/exempt blockholder ownership* (passive or exempt 5% holders), and *F345 insider ownership* (officers, directors, and 10% owners filing Forms 3/4/5); positions are assigned first to 13D, then 13G, then 13F. *Vote ownership minus share ownership* is total votes controlled minus total shares held, capturing divergence between voting and cash-flow rights. *Largest institutional-owner share* is the holding of the single largest institutional owner in the 13F/13D/13G universe; *top owner minus second owner* is the gap between the largest and second-largest owners; and *owner HHI* is the Herfindahl index of ownership shares (the sum of squared owner shares). *Any owner above 20 percent* is the fraction of the year's quarters in which at least one owner holds more than 20% of shares outstanding (defined analogously at the 5% and

10% thresholds), and *ownership held by owners above 10 (20) percent* is the summed share of owners above that threshold. The *13D-or-13G blockholder share of institutional ownership* is the fraction of total institutional ownership reported through a 13D or 13G (>5%) blockholder disclosure. Full construction details, including the exact normalization, are given in the notes to Tables 12–14.

## C.1 Robustness tables

Table 12: Alternative measures and dynamics of institutional ownership.

| | Dependent variable: temporal distance (within SD) | | | | | |
|---|---|---|---|---|---|---|
| **Panel A. Alternative ownership measures and dynamics** | Total | | Voting | | Current + lagged | |
| | (1) SIC2-year FE | (2) Firm + SIC2-year FE | (3) SIC2-year FE | (4) Firm + SIC2-year FE | (5) SIC2-year FE | (6) Firm + SIC2-year FE |
| Total institutional share ownership | 0.090*** | 0.039*** | 0.089*** | 0.039*** | 0.098*** | 0.030* |
| | (0.018) | (0.015) | (0.018) | (0.015) | (0.019) | (0.018) |
| Vote ownership minus share ownership | | | 0.028* | -0.009 | | |
| | | | (0.017) | (0.021) | | |
| Lagged total institutional share ownership | | | | | -0.005 | 0.001 |
| | | | | | (0.020) | (0.017) |
| Log lag assets control | Yes | Yes | Yes | Yes | Yes | Yes |
| Controls excluding Tobin's Q | No | No | No | No | No | No |
| Firm fixed effects | No | Yes | No | Yes | No | Yes |
| SIC2 × year fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 35,739 | 35,416 | 35,739 | 35,416 | 34,209 | 33,862 |
| Firms | 3,916 | 3,593 | 3,916 | 3,593 | 3,800 | 3,453 |
| Within $R^2$ | 0.0219 | 0.0021 | 0.0222 | 0.0021 | 0.0237 | 0.0023 |
| Mean dependent variable (months) | 4.93 | 4.93 | 4.93 | 4.93 | 4.95 | 4.94 |

*Notes:* The table reports OLS regressions of temporal distance on institutional ownership. Coefficients and standard errors are expressed in within-firm standard deviations ("within SD") of the dependent variable (one within-firm SD ≈ 1.35 months; see Table 4). Listed ownership variables are standardized within the estimation sample, so coefficients correspond to a one-standard-deviation increase. Standard errors are clustered by firm and reported in parentheses. The Total columns include total institutional share ownership. The Voting columns add the total vote-share ownership wedge. The Current + lagged columns include current and lagged total institutional share ownership jointly. Total institutional ownership is computed from 13F, 13D, and 13G rows; F345-only rows are excluded. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 13: Institutional-ownership controls and filing-source decomposition.

| | Dependent variable: temporal distance (within SD) | | | |
|---|---|---|---|---|
| **Panel B. Controls and filing-source decomposition** | | | | |
| | Controls | | Filing source | |
| | (7) SIC2-year FE | (8) Firm + SIC2-year FE | (9) SIC2-year FE | (10) Firm + SIC2-year FE |
| Total institutional share ownership | 0.074*** | 0.036** | | |
| | (0.020) | (0.016) | | |
| 13F institutional ownership | | | 0.117*** | 0.085*** |
| | | | (0.015) | (0.015) |
| 13D active blockholder ownership | | | -0.027* | -0.030** |
| | | | (0.014) | (0.014) |
| 13G passive/exempt blockholder ownership | | | -0.007 | -0.021 |
| | | | (0.015) | (0.013) |
| F345 insider ownership | | | -0.003 | -0.003 |
| | | | (0.017) | (0.017) |
| Log lag assets control | Yes | Yes | Yes | Yes |
| Controls excluding Tobin's Q | Yes | Yes | No | No |
| Firm fixed effects | No | Yes | No | Yes |
| SIC2 × year fixed effects | Yes | Yes | Yes | Yes |
| Observations | 30,994 | 30,700 | 35,739 | 35,416 |
| Firms | 3,425 | 3,133 | 3,916 | 3,593 |
| Within $R^2$ | 0.0328 | 0.0041 | 0.0243 | 0.0036 |
| Mean dependent variable (months) | 5.01 | 5.01 | 4.93 | 4.93 |

*Notes:* The table reports OLS regressions of temporal distance on institutional ownership. Coefficients and standard errors are expressed in within-firm standard deviations ("within SD") of the dependent variable (one within-firm SD ≈ 1.35 months; see Table 4). Listed ownership variables are standardized within the estimation sample, so coefficients correspond to a one-standard-deviation increase. Standard errors are clustered by firm and reported in parentheses. The Controls columns add lagged log sales, book leverage, operating cash flow/assets, and the cash ratio to the log lag assets control, excluding Tobin's Q. The Filing source columns enter 13F, F345, 13D, and 13G ownership shares jointly. 13D identifies active/control-intent blockholders, 13G identifies passive or exempt blockholder reporting, and F345 identifies insider Forms 3/4/5. Total institutional ownership is computed from 13F, 13D, and 13G rows; F345-only rows are excluded from that measure. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 14: Ownership concentration and blockholders.

| | Dependent variable: temporal distance (within SD) | | | | | | |
|---|---|---|---|---|---|---|---|
| **Panel B. Ownership concentration and blockholders** | | | | | | | |
| | Concentration | | | Blockholders | | | |
| | (1) Largest owner | (2) Top-owner gap | (3) Owner HHI | (4) Any owner >20% | (5) Ownership by >10% owners | (6) Ownership by >20% owners | (7) By filing status |
| Total institutional ownership | 0.067*** (0.016) | 0.050*** (0.015) | 0.071*** (0.016) | 0.052*** (0.015) | 0.063*** (0.016) | 0.059*** (0.016) | 0.058*** (0.015) |
| Largest-owner share | -0.066*** (0.012) | | | | | | |
| Top owner minus second owner | | -0.048*** (0.011) | | | | | |
| Owner HHI | | | -0.067*** (0.012) | | | | |
| Any owner above 20 percent | | | | -0.038*** (0.011) | | | |
| Ownership held by owners above 10 percent | | | | | -0.047*** (0.012) | | |
| Ownership held by owners above 20 percent | | | | | | -0.054*** (0.012) | |
| 13D-or-13G blockholder share of institutional ownership | | | | | | | -0.074*** (0.014) |
| Log lag assets control | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Controls excluding Tobin's Q | No | No | No | No | No | No | No |
| Firm fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| SIC2 × year fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 35,416 | 35,416 | 35,416 | 35,416 | 35,416 | 35,416 | 35,416 |
| Firms | 3,593 | 3,593 | 3,593 | 3,593 | 3,593 | 3,593 | 3,593 |
| Within $R^2$ | 0.0035 | 0.0029 | 0.0035 | 0.0027 | 0.0028 | 0.0030 | 0.0035 |
| Mean dependent variable (months) | 4.93 | 4.93 | 4.93 | 4.93 | 4.93 | 4.93 | 4.93 |

*Notes:* The table reports OLS regressions of temporal distance on institutional ownership structure. Coefficients and standard errors are expressed in within-firm standard deviations ("within SD") of the dependent variable (one within-firm SD ≈ 1.35 months; see Table 4). Listed ownership variables are standardized within the estimation sample, so coefficients correspond to a one-standard-deviation increase. Columns (1)–(6) include total institutional share ownership and one concentration or blockholder measure; these coefficients therefore compare firms with similar total institutional ownership but different ownership concentration. All columns include log lag assets, firm fixed effects, and SIC2 × year fixed effects. Blockholder indicators are annual shares of quarters in which at least one institutional owner holds more than the listed share of shares outstanding. Ownership by blockholders is the annual mean normalized share held by institutional owners above the listed threshold. Column (7) splits blockholders by filing status: it includes total institutional share ownership and a single combined 13D-or-13G blockholder share of total institutional ownership. Ownership is assigned first to 13D, then to 13G, then to 13F, so 13F is the omitted filing-source category. Total institutional ownership is computed from 13F, 13D, and 13G rows; F345-only rows are excluded. Standard errors are clustered by firm and reported in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

# D Russell IV: Full Specification

Table 15: Russell index-assignment IV: Passive ownership and temporal distance.

| *Panel A: event-time profile (instrument dated $t$; months per +1pp of passive ownership)* | $t-1$ *(pre)* | $t$ | $t+1$ | $t+2$ | |
|---|---|---|---|---|---|
| Passive ownership (2SLS) | -0.002 | +0.040 | +0.171*** | +0.080 | |
| | (0.056) | (0.057) | (0.057) | (0.053) | |
| AR 95% set | [-0.111, +0.109] | [-0.071, +0.155] | [+0.065, +0.292] | [-0.022, +0.189] | |
| Reduced form | -0.002 | +0.042 | +0.181*** | +0.090 | |
| First-stage $F$ | 99 | 100 | 103 | 115 | |
| Observations | 10,069 | 10,564 | 10,090 | 9,602 | |
| *Panel B: the $t+1$ estimate across specifications (2SLS $b$, $p$ house/reghdfe, AR, $F$, $N$)* | | | | | |
| Baseline: broad passive, ±500, firm+SIC2×yr | +0.171*** (0.057) | 0.003 / 0.004 | [+0.065, +0.292] | 103 | 10,090 |
| FE: firm + year | +0.179*** (0.064) | 0.005 / 0.005 | [+0.062, +0.317] | 86 | 10,195 |
| Window ±250 | +0.265** (0.110) | 0.016 / 0.025 | [+0.070, +0.529] | 35 | 4,793 |
| Margin: Russell-benchmarked passive | +0.238*** (0.076) | 0.002 / 0.003 | [+0.092, +0.389] | 545 | 10,090 |
| Margin: ex-iShares passive (no same-source) | +0.454** (0.183) | 0.013 / 0.017 | [+0.164, +1.013] | 17 | 10,090 |
| + size controls (assets, sales) | +0.167*** (0.053) | 0.002 / 0.003 | [+0.068, +0.278] | 116 | 10,040 |
| Cluster by gvkey | +0.171*** (0.057) | 0.003 / 0.009 | [+0.065, +0.292] | 103 | 10,090 |
| Years 2002–2020 (full FL sample) | +0.129** (0.054) | 0.018 / 0.023 | [+0.026, +0.241] | 114 | 13,010 |

*Notes:* 2SLS of temporal distance (months, winsorized 1/99) on the broad S12 index/passive ownership share (percentage points, winsorized 1/99), instrumented by banding-aware predicted Russell 2000 assignment. Baseline: firm and SIC2×year fixed effects, quadratic ln(company cap), ±500-rank window around the Russell 1000/2000 cutoff, banding era 2007–2020, standard errors clustered by firm (permco). $p$ is reported under the house dof convention and (rg) the reghdfe convention; AR is the weak-instrument-robust Anderson–Rubin 95% set. The estimand is the index/passive-ownership margin: the instrument does not move total institutional ownership ($F \approx 3$–5) and reduces the number of institutional owners, so the table is not evidence about total institutional ownership. The sample ends in fiscal 2020 to match the corporate-ownership data coverage used throughout the ownership tables. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 16 collects two reconstitution diagnostics. *Panel A* reports density diagnostics. The mechanical instrument panel is symmetric; in the headline estimation sample, pooled counts differ modestly across sides, but the estimated discontinuity at the cutoff is statistically insignificant. *Panel B* shows that the $t+1$ estimate remains positive across windows, time fixed-effect specifications, size controls, and cluster levels. Together with the statistically null pre-period estimate reported in Section 3.3, these results reinforce the timing of the post-reconstitution response.

Table 16: Russell index-assignment IV: Reconstitution diagnostics.

*Panel A: density of the running variable (counts per 50-rank bin, pooled 2007–2020)*

| Sample | $N$ | Below/above | Symmetry $z$ ($p$) | McCrary jump (SE) | $t$ ($p$) |
|---|---|---|---|---|---|
| Instrument panel (mechanical) | 14,014 | 0.500/0.500 | +0.12 (0.906) | -2.4 (2.5) | -0.95 (0.356) |
| Headline estimation sample | 10,090 | 0.518/0.482 | +3.70 (0.000) | -11.1 (12.8) | -0.87 (0.399) |

*Panel B: sensitivity of the headline $t+1$ 2SLS estimate (months per +1pp of passive ownership)*

| Specification | 2SLS $b$ | (SE) | AR 95% | $F$ | $N$ |
|---|---|---|---|---|---|
| Baseline: ±500, firm+SIC2×yr, permco cluster | +0.171*** | (0.057) | [+0.065, +0.292] | 103 | 10,090 |
| Window ±250 | +0.265** | (0.110) | [+0.070, +0.529] | 35 | 4,793 |
| FE: firm + year | +0.179*** | (0.064) | [+0.062, +0.317] | 86 | 10,195 |
| + size controls (assets, sales) | +0.167*** | (0.053) | [+0.068, +0.278] | 116 | 10,040 |
| Cluster by gvkey | +0.171*** | (0.057) | [+0.065, +0.292] | 103 | 10,090 |

*Notes:* Diagnostics for the banding-era Russell 1000/2000 IV (broad S12 passive share instrumented by banding-aware predicted R2000 assignment), ±500 cap-rank window, 2007–2020, temporal-distance sample, SEs clustered by firm (permco). Panel A: the running variable is the reconstructed end-of-May cap rank, assigned mechanically by Russell (one firm per rank per year), so the density check is pro forma and diagnoses sample coverage; the McCrary-style statistic is the jump in binned counts at the cutoff allowing separate linear trends on each side. Panel B re-estimates the headline $t+1$ 2SLS across windows, fixed-effect menus, size controls, and cluster levels; AR is the weak-instrument-robust Anderson–Rubin 95% set. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.