Index Fund Inertia and the Market for Corporate Control

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August 25, 2026

Abstract

In corporate change-of-control bids, index funds are unlikely to tender their shares or resist (sue, vote no, or pressure the committee). We find this inertia cuts both ways: a one-standard-deviation increase in target passive ownership raises the completion of friendly tender offers, but lowers the completion of hostile ones. The effect concentrates where shareholder behavior matters most: in conflicted friendly deals. Acquirers respond ex ante: firms with high passive ownership receive more friendly offers, and those deals complete faster at slightly lower premiums. The rise of passive investing can explain a large fraction of the rise of friendly acquisitions.

Keywords: passive investing, index funds, tender offers, mergers and acquisitions, corporate governance.
JEL Classification: G23, G34.

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I Introduction

Index funds hold roughly one fifth of U.S. public equity, and the question of how they govern the firms they own has produced a large literature and little agreement (Schmidt and Fahlenbrach, 2017; Lund, 2017; Heath et al., 2022). Nearly all of this evidence comes from routine internal governance decisions: director elections, say-on-pay and board structure. By contrast, much less is known about how passive ownership affects high-stakes, external governance. We address this gap by studying the setting in which the stakes are highest, namely, the market for corporate control.

When a bidder offers to buy the firm, each shareholder must choose to tender or hold, vote yes or no, and to acquiesce or fight. Relative to active institutions, index funds have both weaker incentives and less resources to monitor their portfolio firms (Bebchuk and Hirst, 2019). We find that the resulting inertia in index fund behavior pushes on deal outcomes from two directions at once. First, index funds are less prone to tender their shares, because tendering before the deal is complete creates tracking error against the benchmark. As a result, a larger passive block starves any bid that needs shares affirmatively delivered (Grossman and Hart, 1980). Second, index funds do not resist change-of-control offers: they do not sue, demand appraisal, initiate proxy fights, or vote against management. As a result, a larger passive block weakens the shareholder dissent channel that kills deals in settings where shareholders have strong legal rights to protest: in particular, conflicted deals subject to an entire-fairness requirement. Which force dominates depends on the deal's characteristics.

In a sample of all 1,042 U.S. tender offers for CRSP-listed targets from 2004–2024, we find that passive ownership raises the probability that a friendly tender offer succeeds: by about 1 percentage point per standard deviation in ordinary least squares (OLS), and by 4 to 5 points when we instrument passive ownership, against a 96% base rate. The same increase lowers the probability that a hostile tender offer succeeds by about 17 points, against a 32% base rate. One-step mergers show no completion effect on either side: friendly merg-

ers pass on shareholder votes that clear comfortably, and hostile one-step proposals almost never complete regardless of ownership. The pattern is exactly what the index-fund inertia mechanism predicts: passive ownership helps deals that need shareholder *inaction* and hurts deals that need shareholder *action*. The hostile estimates are imprecise because of their small numbers, so we flag them as merely suggestive. Hostile tender offers are one mechanism for disciplining underperforming firms, and a growing passive footprint may weaken that channel. Friendly board-supported takeovers, by contrast, can reflect value-creating synergies or anticompetitive motives.

Within friendly offers, the effect concentrates precisely where shareholder resistance matters. We capture this by hand-collecting the legal structure of every friendly offer from SEC filings and introducing a classification of tender offers that captures minority shareholders' legal leverage. *Conflicted* deals are change-of-control bids by large toeholded shareholders or by management. In these deals, minority shareholders benefit from strengthened legal protections, such as enhanced judicial scrutiny, procedural safeguards, or appraisal rights, which can give them the ability to block or delay the transaction without tendering their shares.[1] As a result, one in eleven of these deals fails. At the other end of the spectrum, in arm's-length deals, a simple majority of tendered shares suffices, the back-end merger sweeps up everyone else at the same price, and 98% complete. Tender offers from insiders, such as rollovers or toeholds, lie between these two cases. This classification identifies where minority resistance can block deals. Consistent with index-fund inertia, passive ownership raises completion in conflicted deals, on the order of 11 percentage points per standard deviation of passive ownership in the instrumental-variable estimates, and does nothing in arm's-length deals, while insider deals lie in between. We read the arm's-length zero effect as less informative: arm's-length deals fail so rarely that there is almost no completion margin. The classification is therefore not a limitation of scope but the identification itself: the effect

[1]For example, under Delaware law, conflicted transactions are often subject to "entire fairness" review and may involve procedural safeguards such as independent committees and majority-of-the-minority approval (Subramanian, 2005; Restrepo and Subramanian, 2015). Other states provide related protections, though their strength and implementation vary.

appears exactly where minority resistance is the binding constraint, scales with how much leverage the law gives the minority, and vanishes where that leverage vanishes.

This sign-flip is the heart of the design, and the reason the market for corporate control is the ideal place to study passive governance. Studies of internal governance (director elections, say-on-pay, board structure) (Boone and White, 2015; Schmidt and Fahlenbrach, 2017; Heath et al., 2022) observe worse governance where index funds hold more, but struggle to rule out confounds such as added investor attention due to index inclusion. Here the same variable flips sign within a single mechanism: index-fund non-response raises completion when a deal needs shareholders to stay put and lowers it when a deal needs shareholders to act. No single-signed measure of engagement or governance outcome can generate opposite-signed effects from the same variable. By contrast, change-of-control offers where inaction is sometimes positive and sometimes negative, verify that it is index-fund inertia and not other variables causing the patterns we document.

We find that the market accurately assesses the effects of passive ownership on deal completion. We find that the market's implied completion probability rises with passive ownership in friendly tenders. Arbitrage spreads tell the same story.

Who pays for the higher completion? A one-standard-deviation increase in passive ownership is associated with a deal premium lower by about 4 log points in OLS and about 10 log points when instrumented, on a 37-log-point mean, though neither estimate is precise. Once we control for the target's prior-year market-adjusted return, the premium effect shrinks to 1 to 3 log points per standard deviation and is statistically indistinguishable from zero. The acquirer's adjusted announcement return in conflicted deals averages roughly -5% and is flat with the level of target passive ownership, so the acquirers we observe capture no windfall. What does move are the terms that reflect transaction friction: high-passive targets are more likely to complete, are more often paid in cash, and close about two weeks faster. We conclude that passive ownership mainly changes whether and how smoothly control transfers, and shaves the price modestly, if at all, along the way.

Index fund inertia is clearly visible in the funds' behavior. We track fund-level holdings around each tender offer and compare index and active funds within the same deal in a Difference-in-Differences design over event time. Active funds progressively tender their shares during the offer window, whereas index funds largely retain their pre-offer positions. In completed friendly tenders, active-fund retention of the pre-offer position falls to 0.60 during the offer while passive-fund retention stays at 0.94. After the offer closes, the back-end merger then sweeps the non-tendered passive block at the offer price. The deal succeeds even though passive shareholders do nothing. On the resistance margin, index funds vote for merger proposals 0.9 percentage points more often than active funds at the same meeting, and 2.4 points more in conflicted deals. And in our reading of failed conflicted tenders, the deal-killing actions were special committees emboldened by minority opposition, failed majority-of-the-minority or minimum-tender conditions, separate-class vetoes, and fiduciary suits seeking injunctions. The parties behind them were activist funds, families, pensions, and individuals. Not once was an index fund the dissenting party.

Acquirers take index-fund inertia into consideration. In the cross section of all U.S. listed firms, a one-standard-deviation increase in passive ownership raises the probability of receiving a friendly tender offer next year by 0.33 percentage points in the instrumented estimate, a 45% increase over the base rate. Hostile-bid arrival shows no comparable shift. Bidders go where the path is clear. Taking the estimated effects of passive ownership on both deal completion and the probability of receiving a bid, and aggregating them across the sample, implies that passive ownership accounts for somewhere between one-seventh and one-half of the rising friendly-tender volume over 2004–2024, depending on whether we use the ordinary-least-squares or the instrumental-variable slopes. We present this only as a suggestive range: the majority of it runs through our least cleanly estimated channel, acquirers directing bids toward high-passive targets, and it rests on linearity and extrapolation assumptions detailed in the Internet Appendix.

Passive ownership is not randomly assigned, so throughout, we instrument it with the

lagged benchmark-inclusion (BMI) measure of Pavlova and Sikorskaya (2023): the share of the stock that index funds hold mechanically because of index membership and weights. Because index funds have little or no discretion over their holdings conditional on BMI, this approach removes reverse causality between fund holdings and deal outcomes. The remaining threat to identification is omitted variables, as index weight and membership correlate with size and liquidity. We deal with this concern two ways. First, we show that controlling for size and for liquidity (the target's pre-announcement share turnover in the baseline estimates, and Amihud in robustness) does not eliminate or attenuate the patterns we document. Second, we emphasize that our key finding on deal completion flips sign across deal attitude and rises monotonically with the minority's legal leverage within friendly deals. That is, a confound such as size or liquidity (or other firm characteristic) would have to raise completion in conflicted friendly tenders, lower it in hostile tenders, and skip arm's-length tenders in between. The hostile-tender subsample is small (79 deals), so its instrumental variable (IV) estimate is imprecise, and we treat the hostile result as a robust point estimate with a magnitude consistent with our mechanism, not as a precisely estimated effect. The within-subsample market-pricing estimates carry the same caveat.

Our findings add a new perspective to the stewardship debate around the rise of passive investing. Whether index funds monitor too little is usually asked as a positive question about *voice* (Bebchuk and Hirst, 2019; Lund, 2017; Heath et al., 2022). By contrast, we show that index funds' *inertia* is not neutral. In the highest-stakes arena of corporate governance where the law empowers minority shareholders, conflicted transactions under entire fairness, passive ownership removes the constituency the doctrine assumes. The legal framework governing conflicted transactions, as in Delaware's special-committee and majority-of-the-minority machinery, presumes a minority that bargains, sues, and votes no. Index funds do none of these. As indexing grows, that machinery binds less, hostile discipline weakens further, and friendly control transactions, including conflicted ones, clear more easily.

Our paper makes three contributions. First, to the literature on passive ownership and

governance (Appel et al., 2016; Schmidt and Fahlenbrach, 2017; Heath et al., 2022; Bebchuk and Hirst, 2019; Lund, 2017): We move from internal to external governance by studying control transactions, and show that passive ownership reshapes the market for corporate control. In particular, passive funds matter there through abstention, not voice: they facilitate board-supported transactions while impeding hostile bids, thereby affecting which firms get acquired and how. The only other direct evidence on index funds in tender offers comes from German offers, where passive ETF ownership lowers the fraction of shares a bidder obtains (Dobmeier et al., 2019; Osei and Schwetzler, 2026). German law has no provision that converts non-tendered shares at the offer price, so every German offer works like our hostile case, and the negative German effect is what the completion-technology mechanism predicts. Second, to takeover theory: Grossman and Hart (1980) predicted dispersed shareholders free-ride, Bagnoli and Lipman (1988) and Holmström and Nalebuff (1992) showed that blocks and divisible stakes soften the free-rider problem, and Shleifer and Vishny (1986) that blockholders grease control transfers; a parallel literature models blockholder influence through exit and voice (Edmans, 2009; Admati and Pfleiderer, 2009; Levit, 2019) and through the composition of the shareholder base itself (Levit et al., 2024). The passive fund is a new species, a blockholder with neither exit nor voice, and our sign-flip evidence shows both classic forces operating in the same data, each where the deal technology makes it pivotal. Third, to the literature on freeze-outs and institutional ownership in M&A: We introduce a new classification of tender offers based on minority shareholders' legal leverage, distinguishing conflicted, insider, and arm's-length deals, constructed from hand-collected SEC filings. This classification isolates the variation in resistance rights that identifies where passive ownership should affect completion. Using it, we also confirm the Bates et al. (2006) no-expropriation result on a modern sample and locate passive ownership's effect on completion rather than price. The price evidence descends from Stulz et al. (1990), who found target gains fall with institutional ownership, and Gaspar et al. (2005), who found that short-horizon shareholders sell cheap; index funds sit at the opposite, infinite-horizon end of that spectrum yet show

the same bargaining weakness, so responsiveness, not horizon, is the operative trait. We complement the value-creation evidence of Bhagat et al. (2005) and distinguish our governance channel from the common-ownership channel (Matvos and Ostrovsky, 2008; Azar et al., 2018; Brooks et al., 2018; Antón et al., 2022). Passive co-ownership of the two merging firms drives none of our results (Internet Appendix Section IA.5).

II Data and Sample

We combine SDC Platinum deal records, CRSP prices and returns, CRSP MFDB and Thomson S12 mutual-fund holdings, the Pavlova and Sikorskaya (2023) benchmark-inclusion measure, and machine-read SEC EDGAR filings. The sample period is 2004–2024. This section describes the deal sample, the ownership measures, and the market-implied completion probability. Summary statistics follow.

A Deal universe

We start from all SDC change-of-control transactions with U.S. public targets. We classify each deal's structure (tender offer, one-step merger, exchange offer, remaining-interest acquisition) using SDC tags, with EDGAR filings as the override.[2] We keep deals that are either completed or withdrawn. We obtain deal outcomes from SDC effective and withdrawal dates, and classify deals as friendly versus hostile or unsolicited based on SDC deal attitude (Schwert, 2000). Exchange offers, in which the bidder offers securities rather than cash through the same SC TO-T machinery, sit in the tender-offer branch of the sample. We retain 150 of them, almost all distressed debt-for-equity restructurings rather than control contests, and they complete essentially always. Fifty-one fall in the conflicted cell defined below, so the headline conflicted estimates carry them, which pushes those estimates toward zero; Section X shows the results strengthen when they are excluded. After merging to CRSP

[2] An SC TO-T filing marks a tender offer, an isolated DEFM14A a one-step merger. The two sources agree on 91% of deals.

and the lagged ownership files, the analysis sample contains 5,734 deals, of which 18% are tender offers.

The deal universe branches three times, and every test in the paper lives on one branch. The first split is deal structure: tender offer versus one-step merger. The second is attitude: friendly versus hostile. The third, within friendly tender offers only, is the minority's legal leverage: conflicted, insider, or arm's-length (Section B). Figure 1 draws the tree with the count at each node; each table names its branch.

B Hand-collected tender-offer data

SDC's attitude and outcome fields are noisy exactly where our tests live, so we manually collect additional data where SDC's coverage is poor: we verified all 1,042 tender offers in the sample against EDGAR filings.[3] This review reclassifies attitudes (including seven nominally "friendly" offers that were in fact unsolicited interloper bids, all withdrawn) and verifies every coded outcome against tender-settlement and back-end-merger records. The corrections are folded into the working data throughout. The verified sample contains 963 friendly and 79 hostile or unsolicited tender offers.

Within friendly tenders, we classify each deal's legal leverage from the filings into three subsamples. A deal is *conflicted* when it is the kind of transaction that triggers entire-fairness review: the acquirer is a controlling shareholder, affiliate, or management/founder group, identified by an SC 13E-3 filing, a controller on both sides, or a majority-of-the-minority condition (207 deals). These filing-based markers are an empirical proxy for the minority's legal leverage, not an adjudicated legal status.[4] A deal is an *insider* deal when insiders participate (rollovers, toeholds, board seats) but the deal does not trigger entire-fairness review (134 deals). The remaining 622 deals are *arm's-length*: a third-party acquirer,

[3] In particular, we review firms' SC TO-T, SC 14D9, SC 13E-3, DEFM14A, and their associated background sections.

[4] Under *Kahn v. M&F Worldwide* (Del. 2014), a controller can earn business-judgment rather than entire-fairness review precisely by committing up front to an independent special committee and a non-waivable majority-of-the-minority condition. The devices that relax the standard of review are the same devices that give the minority its leverage, so the classification captures leverage under either doctrinal outcome.

no insider participation, board-recommended. The conflicted and insider labels describe different things, a legal standard and a factual one, and neither implies the other. Of the 207 conflicted deals, 187 also involve insiders, while 20 owe entire fairness with no insider participation, typically a controlling corporate parent squeezing out the minority. The insider deals have involvement that falls short of the legal standard, such as a founder rolling a minority stake into a third-party buyout. The three subsamples therefore form a partition ordered by the minority's legal leverage: entire fairness, insider involvement without it, and neither. Completion rates fall monotonically with legal leverage: 98% in arm's-length deals, 96% in insider deals, 91% in conflicted deals (Table 1, Panel B). Premiums fall with legal leverage as well, from 40 log points in arm's-length deals to 26 in conflicted deals, the freeze-out discount of Bates et al. (2006).

C Passive ownership and the instrument

Target passive ownership is the fraction of shares outstanding held by index mutual funds and ETFs at the end of December before announcement, built from CRSP MFDB holdings under the standard index-fund classification.[5] Negative reported values, a reporting artifact, are set to zero. For instrumental-variable estimates, we use the Pavlova and Sikorskaya (2023) benchmark-inclusion measure (BMI), lagged to the prior June: the share of the stock held by passive funds that is mechanically determined by index-membership rules rather than fund discretion. Index funds enter and exit a stock by rule, not by view. The threat to exclusion is that index weight tracks size and liquidity, which we address with size and liquidity controls, industry and year fixed effects, and, more powerfully, the within-friendly-tender classification design of Section V(C), which any level confound would have to reproduce subsample by subsample. The published BMI series ends in 2018, so every instrumental-

[5]The measure counts index mutual funds and ETFs that report to CRSP MFDB. It excludes index-tracking collective investment trusts and separately managed accounts, which is one reason it averages 5.9% in our deal sample while aggregate index-tracking ownership approaches one fifth of the market; our targets are also smaller than the average listed firm. Classical measurement error of this kind attenuates the OLS estimates and leaves the instrumented estimates consistent, so the per-standard-deviation magnitudes we report are, if anything, conservative.

variable specification is estimated on the 2004–2018 window, while the ordinary-least-squares estimates use the full 2004–2024 sample.

D Market-implied completion probability

We measure the market's assessment of completion at announcement from price levels, following Samuelson and Rosenthal (1986). For deal i with offer price B_i, let $P_{i,t+5}$ be the target's closing price five trading days after announcement. This timing is late enough for prices to settle and remains well within the 20-business-day minimum tender window. Let F_i be the fallback price if the deal fails, proxied by the target's price four weeks before announcement (Officer, 2003), carried forward at the CRSP value-weighted market return. The implied probability is

$$\pi_i \;=\; \frac{P_{i,t+5} - F_i}{B_i - F_i}, \tag{1}$$

truncated to $[0, 1]$. We require the offer to exceed the fallback by at least 5%, since the denominator is noisy below that threshold, and drop deals resolved before day t+5. Of the raw values, 3.8% fall below zero, reflecting stale fallbacks, and 14.7% exceed one, reflecting the market pricing a bump or competing bid. We also report the untruncated arbitrage spread $(B_i - P_{i,t+5})/P_{i,t+5}$ of Mitchell and Pulvino (2001), which needs no truncation. The measure behaves as expected: π averages 0.82 in deals that later complete and 0.63 in deals that later fail (Internet Appendix Figure IA.1). An earlier literature (Bhagwat et al., 2016) computes an implied probability as the ratio of the target's announcement CAR to the offer premium. That ratio explodes as the premium approaches zero (in our sample it has a standard deviation of 5 and 38% of observations outside $[0, 1]$), so we use the price-level construction throughout.

E Summary statistics

Table 1, Panel A reports summary statistics for the analysis sample. Of the 5,734 deals, 81% complete, 92% are friendly, and 18% are structured as tender offers. Passive ownership averages 5.9% of shares, with a 7.4% standard deviation, over a period in which indexing rises secularly. The spliced initiation-based log premium (Eaton et al., 2021) averages 29 log points, and the median deal is all-cash. The market-implied completion probability averages 0.79, consistent with high ex ante success rates in these transactions.

Panel B describes the architecture of the tender sample. Completion falls with the minority's legal leverage, from 98% in arm's-length deals to 91% in conflicted deals, and premiums fall with it, from 40 to 26 log points. That is, arm's-length deals almost always close, while conflicted and especially hostile bids generate most of the variation. The failure counts are 38 friendly failures, including 19 conflicted ones, and 54 among just 79 hostile bids, reflecting the much higher failure rate of hostile offers.

III Hypothesis Generation

Index funds' business is replicating a benchmark at minimum cost, and managers are evaluated on tracking error rather than alpha. When a control contest arrives, a shareholder has two costly actions available, and both are unattractive to an index fund. Tendering is costly because it converts an index position into cash or a claim that deviates from the benchmark: tender too early and the fund incurs tracking error for the life of the offer. Resisting is costly because litigation, appraisal campaigns, pressure on special committees, and proxy opposition demand exactly the deal-specific attention index funds tend not to supply (Bebchuk and Hirst, 2019; Heath et al., 2022). The cheapest response on both margins is inertia, and it follows from the business model rather than from information about any particular deal:

H1: *Index funds are more prone to retain their positions through the tender window.*

H2: *Index funds support management's merger proposals at higher rates than active investors*

and do not initiate resistance: they do not sue, seek appraisal, or organize opposition.

Whether inertia helps or hurts a bid depends on what the deal's completion technology asks of shareholders. A *friendly two-step tender offer* asks the least. The board has signed a merger agreement; the bidder needs tendered shares to cross a threshold, after which a back-end merger converts every non-tendered share at the same price. Since 2013, Delaware's §251(h) allows that back-end merger at a bare majority; before 2013, top-up options served the same purpose and appear in 47% of the pre-2013 friendly tenders in our sample. A shareholder who does nothing is swept along. The passive block is not free even here: the minimum tender condition sits at 50% of outstanding shares in the median offer, so with a passive fraction p that never tenders, the bidder needs $0.5/(1-p)$ of the remaining shares. In a board-supported deal that hurdle is manageable, because active holders tender or sell to arbitrageurs who tender, and the board can extend the offer. What a friendly two-step deal cannot absorb is active resistance, which we turn to below. A *hostile tender offer* asks the most. The board resists, so there is no merger agreement and no back-end mechanism to sweep in non-tendered shares; the bidder must obtain control from shares that are actively tendered. Tendering is exactly the action H1 says index funds withhold, so a larger passive block shrinks the pool of deliverable shares one for one. Takeover offers in Germany illustrate the distinction: German law has no back-end conversion of non-tendered shares, and there passive ETF ownership lowers the fraction of shares a bidder obtains (Dobmeier et al., 2019; Osei and Schwetzler, 2026). Without a cooperative back end, every offer works like our hostile case. A *one-step merger* asks for a vote, which is costless, legally compelled for many funds, and by H2 reliably cast with management; the technology requires action, but action index funds supply mechanically. The same inertia therefore pushes deal outcomes in opposite directions across technologies:

H3: *Passive ownership raises the completion of friendly tender offers, reduces the success of hostile tender offers, and has little or no effect on one-step mergers.*

Within friendly tender offers, the friendly half of H3 has a sharper implication. With

the back-end merger built into the transaction, a friendly two-step deal fails only if someone takes costly action against it: a fiduciary suit, an appraisal campaign, organized pressure on the special committee, or a no vote under a majority-of-the-minority condition. How much such resistance can accomplish is set by the legal environment. In a *conflicted* deal, where a controller or management buys out the minority and owes it heightened protection, the dissenting minority can credibly block or reprice the deal, through non-waivable majority-of-the-minority and minimum-tender conditions, separate class votes, appraisal and fiduciary litigation, and pressure on the special committee, so replacing potential dissenters with index funds moves the completion margin. In an *arm's-length* deal, the minority's only lever is not tendering, but once the deal succeeds the back-end sweeps in non-tendered shares, so there is essentially no completion margin to move. *Insider* deals sit between. The completion effect should therefore not be uniform across friendly deals. It should track the minority's legal leverage:

H4: *Among friendly tender offers, the effect of passive ownership on completion increases with the minority's legal leverage: largest in conflicted deals, intermediate in insider deals, and absent in arm's-length deals.*

Two further implications discipline the empirics. First, completion risk is priced. If passive ownership truly raises the probability that a friendly offer closes, arbitrageurs should impound that information as soon as the offer is public:

H5: *The market-implied completion probability at announcement rises with target passive ownership in friendly tender offers and falls in hostile ones, mirroring realized completion.*

Second, bidders solve this calculus before we observe any deal. An acquirer choosing a target and a deal structure internalizes that a high-passive register makes a board-recommended two-step offer cheap to execute and a contested offer hard to supply with shares; acquirers already design deals around their shareholder base on the voting margin (Li et al., 2018). The anticipated friction shapes which firms receive a bid and on what terms, not only in

completion:

H6: *Firms with higher passive ownership are more likely to receive friendly tender offers and no more likely to receive hostile ones; deals at high-passive targets close faster and in cash, at a somewhat lower premium.*

The hypotheses also say what we should *not* find, which is where the identification lives. If passive ownership merely proxied for size, liquidity, or index membership, its effect would not flip sign with deal attitude (H3), would not vanish exactly where the minority has no legal leverage (H4), and would not skip one-step mergers. A level confound would have to reproduce the whole pattern, subsample by subsample.

IV Index Funds Do Not Tender or Resist

We start by examining fund behavior. When a bid arrives, a fund can deliver its shares, hold them, or fight. We observe all three margins directly: fund-level holdings through the offer window, fund votes on merger proposals, and the identity of every party that moved against a failed conflicted deal. Two facts emerge, confirming H1 and H2: index funds do not tender, and index funds do not resist.

A Passive funds do not tender

A friendly deal can be supplied with shares (funds tender) or with silence (funds hold, and the back-end merger sweeps them in); the two leave opposite holdings trajectories. Because fund holdings are observed only at filing dates, we track fund-level positions around each tender offer using filings before announcement, filings that fall within the offer window, and filings after resolution. We normalize holdings to the fund's last pre-announcement filing, and compare behavior before, during, and after the offer window, estimating within-deal difference-in-differences specifications that contrast index and active funds over these event times. Figure 2 plots the mean retention trajectory across these event times, separately by

deal attitude and outcome. Shaded areas show 5% confidence intervals around the plotted means.

Panel (a) shows hostile offers that are not completed. Passive funds largely maintain their pre-offer positions throughout the offer window and after withdrawal, while active funds gradually reduce their holdings, consistent with selective tendering. Panel (b) shows friendly offers that are not completed. Passive funds again exhibit substantial inertia, though post-resolution retention declines somewhat more than in hostile deals. Active funds tender more aggressively throughout. This pattern underscores that most passive funds do not tender. The limited tendering that occurs is concentrated in board-supported deals: when passive funds supply shares at all, they do so only where the board backs the offer.

Panels (c) and (d) show completed deals. In hostile offers that complete (Panel (c)), passive funds do not tender during the offer window, while active funds reduce their holdings substantially, tendering roughly a quarter of their positions. Hostile offers that complete typically end in negotiation, with the target board eventually signing, consistent with the strategic reading of hostility in Schwert (2000). After completion, remaining shares are eliminated as the bid succeeds, and all non-tendered shares are ultimately squeezed out. In friendly completed deals (Panel (d)), the contrast is sharp: active-fund retention falls to 0.60 during the offer, while passive-fund retention remains high at 0.94. After completion, the back-end merger converts the remaining non-tendered shares, and both series decline sharply.[6]

Across the panels, index funds systematically sit out the tender window: they neither tender shares to friendly bidders early nor to hostile bidders at all. The friendly deal nonetheless closes, because the back-end merger converts the passive block at the offer price. The bidder's hurdle falls entirely on the *non-passive* float, the $0.5/(1-p)$ arithmetic of Section III, and the active shareholders' tendering clears it. By contrast, the hostile bidder must rely on

[6]Retention does not fall to exactly zero because fund positions are observed only at periodic filing dates (Form 13F/N-PORT quarter-ends): a fund's first post-resolution filing can still report a not-yet-removed target position when that quarter-end falls shortly after the effective date, before the squeeze-out clears the fund's books.

shares that are actively tendered into the offer; passive ownership thus shrinks the pool of deliverable shares and directly impedes completion.

Table 2 reports the regression analogue of Figure 2. The dependent variable equals one if a fund has exited its pre-offer position by the indicated event time.[7] The specification includes deal fixed effects, so identification comes from comparing index and active funds within the same deal across event times. The coefficients therefore capture difference-in-differences estimates of the propensity of index funds to exit relative to active funds.

During the offer window, index funds are significantly less likely to exit their positions: the estimated difference is -0.24 in the full sample, and somewhat smaller in the deals that do not complete (-0.17). After resolution, the patterns diverge by outcome. In completed deals, the difference between index and active funds largely disappears, as both groups exit at completion, through tendering or the squeeze-out of remaining shares. In non-completed deals the gap persists: index funds keep holding when no transaction forces an exit. The regressions thus isolate the same inertia the figure shows. Two measurement notes: the figure's retention ratio captures partial tendering, while the table's exit indicator is the conservative discretization; and deal-level counts of shares tendered are not systematically available from the filings, so the fund panel is our sharpest view of the tendering margin.

B Passive funds do not resist

Holding and delaying or refusing to tender shares is one form of inertia; failing to take action to resist the deal is the other. We observe resistance directly in two places. The first is voting: using fund voting records on M&A proposals, Table 3 reports linear probability models in which the dependent variable equals one if a fund votes in favor of management's proposal, scaled so that coefficients read in percentage points. These meetings are one-step mergers, since tender offers carry no shareholder vote; here a *conflicted* deal is a merger with

[7] Exit conflates tendering with selling in the market. The distinction is immaterial for share supply: shares sold in the market go largely to arbitrageurs who tender, so either route delivers shares to the bidder, and index funds take neither.

an SC 13E-3 filing, the merger analogue of the tender-offer definition in Section B. Column (1) includes year fixed effects, while columns (2) and (3) compare funds voting on the same proposal through meeting fixed effects; column (3) restricts the sample to conflicted deals. Overall, index funds support management 0.91 percentage points more than active funds. The gap nearly triples to 2.4 percentage points in conflicted deals. These differences are large relative to the margin that matters: the vote-yes share averages 98.0% across all funds and deals and 95.1% in conflicted deals, so the conflicted-deal tilt removes roughly half of the dissent an average active fund supplies. The same pattern appears in proxy contests, where passive funds are about 10 percentage points less likely than active funds to side with dissidents (Brav et al., 2024). As a result, higher passive ownership mechanically lowers the dissenting-vote share in M&A proposals.

Second, we read the filings and news coverage of every failed conflicted tender (19 deals). In 15 of 19, a minority-protection margin killed the deal. In eight, shareholders acted directly: majority-of-the-minority or minimum-tender conditions fell short, a buyout vote failed, a separate voting class withheld consent, or holders sued for appraisal or breach of fiduciary duty (Jiang et al., 2016; Boone et al., 2019). In the other seven, the independent special committee, the organ that exercises the minority's rights, refused or withdrew its recommendation under that leverage. The remaining four deals died of financing, valuation or liability issues. The cited plaintiffs, holdouts, and withholders consisted of activist funds, founding families, pensions, and individual shareholders. In none of these deals (0 of 19) was an index fund the dissenting party. As a result, higher passive ownership reduces both the number and the stakes of minority shareholders who oppose conflicted offers.

V Passive Ownership and Deal Completion

If index-fund inertia means index funds are less likely to tender or resist, completion should rise with passive ownership where a deal needs shareholder inaction, and fall where it needs

positive shareholder action such as shares affirmatively tendered. This section tests H3, then sharpens the test based on the shareholder-leverage classification (H4).

A Baseline

Table 4 estimates the relation between deal completion and target passive ownership among tender offers, the outcome first modeled by Walkling (1985). The dependent variable is an indicator for deal completion, and all specifications include year fixed effects. The friendly columns additionally include industry (SIC2) fixed effects, while the hostile sample is too small to support them. Standard errors are clustered by target firm. Columns (1) and (2) report specifications without controls, while columns (3) and (4) add target size (log market capitalization) and target liquidity (pre-announcement share turnover). Columns (5)–(8) repeat the exercise for one-step mergers, again without controls (columns 5 and 6) and with them (columns 7 and 8). Adding deal-terms controls (log premium and cash share) leaves the estimates unchanged in both the OLS (Internet Appendix Table IA.4) and instrumental-variable specifications (Table IA.2), as do an alternative liquidity proxy and flexible polynomials.

The coefficient on passive ownership flips sign with deal attitude: 0.14 among friendly tender offers and -2.40 among hostile ones, both statistically significant at the 5% level. The flip itself passes a formal test: pooling the tender sample and interacting passive ownership with a hostile indicator, with each branch keeping its own fixed effects, the slope difference is -2.55 (s.e. 0.95, $p = 0.007$) in OLS and -2.79 (s.e. 1.65, $p = 0.09$) when both terms are instrumented. A one-standard-deviation increase in passive ownership (7 percentage points) raises friendly-tender completion by 1 percentage point against a 4-point failure margin and lowers hostile-tender completion by 17 points against a 32% base. Adding size and liquidity controls leaves the friendly estimate unchanged at 0.16 and the hostile estimate large and negative at -1.54. The modest widening of the standard errors reflects the collinearity of passive ownership with size within a year, not movement in the coefficient. If size or

liquidity drove the slopes, the controls would materially shift the coefficients; they do not. The modest magnitude on the friendly side reflects composition, as Section C makes precise: most friendly tenders are arm's-length deals that complete at 98% regardless of who owns the target, so the identifying variation lives in the conflicted subsample. Year fixed effects also absorb the end of the sample, where there is nothing left to identify: by 2020–2024, passive ownership is high for every target and 222 of 223 friendly tenders completed.

One-step mergers, which passive funds largely support through voting (Table 3), show no effect on either side: the coefficients are 0.01 for friendly mergers and −0.02 for hostile ones, both statistically indistinguishable from zero. This null is consistent with the voting channel, not in tension with it. A board-recommended one-step merger passes on a shareholder vote that clears with a comfortable margin, so the index funds' management-aligned tilt is almost never pivotal: the 12% of friendly one-step deals that fail typically die from financing, regulatory, or competing-bid shocks rather than from withheld votes, and hostile one-step mergers complete only 3% of the time regardless of ownership, leaving no margin for passive ownership to move. Figure 3 shows the raw data: completion rises steadily in passive ownership across bins of friendly tenders and falls steeply across bins of hostile ones.

B Instrumental-variable estimates

Table 5 reports two-stage least-squares estimates instrumenting passive ownership with the prior-June BMI, absorbing industry (SIC2) and year fixed effects in the friendly columns and year effects in the small hostile sample. Table IA.1 in the Internet Appendix reports the first-stage estimates across all specifications. The first stage is strong: the instrument is highly relevant, with F-statistics above 300 in the friendly sample. The IV estimates for friendly tender offers are positive and statistically significant at conventional levels: 0.56 without controls and 0.69 with size and liquidity controls. In terms of magnitude, a one-standard-deviation increase in passive ownership raises completion by 4 to 5 percentage points, most of the available failure margin. The hostile IV coefficients, −2.23 without controls and

−0.75 with them, share the sign of OLS but are imprecise. Because each specification is just-identified, we can also report weak-instrument-robust inference: Anderson–Rubin confidence sets for every instrumental-variable estimate in the paper leave all of these conclusions unchanged (Internet Appendix Table IA.3).

C The shareholder-leverage classification

Table 6 presents the paper's strongest identification. We re-estimate the completion regression within each shareholder-leverage subsample of friendly tender offers, controlling for target size and liquidity, with year fixed effects throughout. The point estimates rise monotonically with the minority's legal leverage in both panels: the OLS coefficient on passive ownership (Panel A) is 0.00 in arm's-length deals, 0.25 in insider deals, and 0.27 in conflicted deals, and the IV coefficient (Panel B) rises from 0.19 to 1.34 to 1.62 across the same ordering. The individual OLS slopes are imprecise once target size and liquidity are absorbed within cells. A formal test of the conflicted-minus-arm's-length slope difference bears this out: the difference is 0.27 (s.e. 0.27) in OLS and 1.43 (s.e. 0.79) in IV, the latter significant at the 10% level. The conflicted-deal IV estimate is itself significant, 1.62 with an Anderson–Rubin 95% confidence set of $[0.51, 3.17]$ that excludes zero. We therefore read the gradient as directionally clear and concentrated in conflicted deals, while noting that the cross-cell difference is estimated imprecisely.

The near-zero estimate in arm's-length deals admits two interpretations. The first is that passive ownership simply does not affect completion for arm's-length deals. The second is mechanical: arm's-length deals complete at a 98% rate, so even a coefficient at the top of the confidence interval could move completion by at most the 2-point margin that exists. Both interpretations point to the same conclusion for our purposes: completion is not the margin on which passive ownership operates in arm's-length deals, because nothing blocks those deals to begin with.

In conflicted deals, by contrast, the failure margin is substantial: 9 points in the full cen-

sus, 14 in the 2004–2018 instrument window. The IV estimate implies that a one-standard-deviation increase in passive ownership raises conflicted-deal completion by roughly 11 points, moving much of that margin. We read this as a per-standard-deviation, ceiling-bounded local effect, not a structural magnitude; a one-standard-deviation move is also large relative to the conflicted cell itself, where passive ownership averages only 4.5%. Even the unscaled OLS slope closes 2 points of the conflicted-versus-arm's-length completion gap for an interquartile move in passive ownership. This is the no-resistance channel at work: the filings of the failed conflicted deals, discussed in Section IV, identify the sources of resistance that passive ownership displaces.

If anything, the share-supply channel of Section III works *against* completion in exactly these deals. A majority-of-the-minority tender condition counts non-tendered passive shares in its denominator, so index funds that sit out make the condition harder to satisfy; five of the 19 failed conflicted deals died on majority-of-the-minority or minimum-tender shortfalls (Internet Appendix Section IA.10). The conflicted completion effect is large and positive despite this mechanical headwind, so the resistance channel more than offsets the supply channel where the two collide.

A final concern is selection into the sample. Completion is estimated conditional on an announced bid, and Section IX shows bids are not directed at random: acquirers favor high-passive targets. Three features of the data say selection does not manufacture the completion results. First, the hostile side has no selection margin, hostile-bid arrival does not rise with passive ownership, yet hostile completion falls sharply; cherry-picking easy targets cannot produce a sign flip. Second, selection on unobserved deal quality would have to reproduce the leverage gradient cell by cell, raising completion only in the conflicted corner where resistance is strongest. Third, the fund-level evidence of Section IV is estimated within deals and is immune to deal-level selection. If acquirers do pick targets whose registers make completion easy, that is the mechanism operating ex ante, not a confound of it. The same logic covers shareholder-base composition: conditional on size, liquidity, and industry-year,

a higher passive share means the remaining float holds fewer of the active institutions and individuals from whom resistance comes. That composition is not a confound of inertia; it is how inertia operates. Passive shares stand where resisters would otherwise stand.

VI The Market Prices the Effect

If passive ownership truly raises completion, the market should reflect that information at announcement (H5). Table 7 regresses the market-implied completion probability π of equation (1) on passive ownership in friendly tender offers, controlling for target size and liquidity, and including industry (SIC2) and year fixed effects.

The estimated relation is strong and statistically significant. The coefficient is 0.76 in the OLS specification and 0.86 in the IV specification. In terms of magnitude, a one-standard-deviation increase in passive ownership raises the market-implied completion probability by about 5 to 6 percentage points relative to a mean of 0.89 in this estimation sample (0.79 across all deals). The market therefore prices, within five trading days of announcement, nearly the same effect we estimate from realized outcomes over the subsequent months. The arbitrage spread shows the mirror image: it declines with passive ownership, with a coefficient of -0.19, relative to a 3% mean. The symmetric prediction for hostile tenders, that passive ownership should lower the implied probability, has the right sign but cannot be estimated with any precision: only 53 of the 79 hostile tenders carry a usable implied probability, so we do not report it.

The market also knows where the completion risk lives. Adding the shareholder-leverage subsamples (column 2), conflicted deals carry implied completion probabilities 20 percentage points lower than arm's-length deals, and insider deals 7 points lower, matching the ordering in realized failures. The within-subsample passive slope, 0.43 (s.e. 0.20) in OLS and 0.36 (s.e. 0.42) when instrumented, remains positive though smaller, and the instrumented version is imprecise. This attenuation reflects composition because controllers mechanically cap

the float available to index funds. Conflicted deals have both low passive ownership and high failure risk, so part of the pooled slope reflects differences across deal types rather than variation within them. For this reason, the main test is most cleanly identified in realized completion (Table 6). The market evidence corroborates the mechanism: completion probabilities incorporate passive ownership at announcement, are higher where the data predict, and align with the ex post outcomes. Internet Appendix Figure IA.1 shows that implied probabilities closely track realized completion rates.

VII Deal Terms: Premium, Consideration, Speed

Higher completion could come out of someone's pocket. Table 8 asks whose; H6 predicts the adjustment shows up in execution terms more than in the price. Columns 1 and 4 report the effect of passive ownership on the offer premium, in OLS and when we instrument passive ownership. A one-standard-deviation increase is associated with a premium lower by about 4.5 log points (s.e. 2.8) in OLS and about 9.9 log points (s.e. 5.5) when instrumented, on a 37-log-point mean. The estimate is negative in every specification, though imprecise. Much of even this modest discount travels with the target's price path rather than with the bargain. Benchmarked ownership is capitalized into prices, and high-BMI stocks earn low returns (Kashyap et al., 2021; Pavlova and Sikorskaya, 2023), while the premium is measured against the pre-bid price. Controlling for the target's prior-year market-adjusted return, the passive coefficient falls to -0.20 (s.e. 0.38) in OLS and -0.39 (s.e. 0.74) when instrumented: 1 to 3 log points per standard deviation, indistinguishable from zero. We conclude that the premium concession is modest at most. The instrumented intervals remain wide, so we read the evidence as most consistent with a small discount, not as a precise estimate; the discount that is there rides on the pre-bid price path, not on measurably weaker bargaining. We do not condition on the cash share, which is itself an outcome of passive ownership (columns 2 and 5) rather than a pre-set control.

What adjusts instead are execution frictions. The cash share of consideration rises about 3.8 percentage points per standard deviation of passive ownership (s.e. 1.5; IV 8.3, s.e. 3.2), though the mean is already 0.91, so the movement comes from the minority of mixed-consideration deals. Deals close faster: about 13 fewer days per standard deviation of passive ownership (s.e. 5.5) on a mean of 84 days, roughly two weeks. The IV estimate is similar in magnitude (17 days) but imprecise. These patterns are consistent with bidders adjusting execution, cash and speed, more than price. Cash-for-speed is exactly the bundle a bidder assembles when execution risk, not price, is the binding margin.

VIII A Modest Price Concession

If removing resistance let controllers underpay, the cost would show up as lower premiums to target shareholders, higher returns to the controlling acquirer, or both. We find at most a modest premium concession, and no acquirer windfall. Premiums are somewhat lower with passive ownership (Table 8), on the order of 4 to 10 log points per standard deviation, and the discount shrinks toward zero once the target's pre-bid price path is held fixed (Section VII), a pattern more consistent with less minority resistance and smaller deal surplus than with large-scale expropriation. Following Bates et al. (2006), we also compute the controlling acquirer's announcement return adjusted for its toehold α, the return to buying the remaining $1-\alpha$ at the offer, using toeholds hand-verified against SC 13E-3 and 13D/G filings (Internet Appendix Table IA.11).[8] For the 34 conflicted deals with listed strategic or parent acquirers, the adjusted return averages roughly -5% (median -3%; -3.5% among the 27 deals with a controlling stake of at least one-half), no higher than in arm's-length deals and flat across terciles of target passive ownership. These are small subsamples, which we report as magnitudes, not powered tests. The picture is consistent: passive ownership eases completion and shaves the premium modestly, if at all, while the controlling acquirer captures no windfall, echoing the smaller-surplus reading of Bates et al. (2006) rather than

[8] SDC's toehold field matches the filings within a percentage point in every case we checked.

large-scale expropriation.

IX Selection and Aggregate Reallocation

All our results so far are estimated within the tender-offer deal sample, that is, conditional on an announced deal. Bidders move first, and observe the ownership of potential targets (H6). Table 9 therefore estimates, in the unconditional firm-year panel, the effect of passive ownership on the probability of receiving a tender offer the following year, measured in percentage points. The panel spans 2001–2018, the coverage window of the published Pavlova–Sikorskaya benchmark-inclusion instrument.

Passive ownership positively predicts the arrival of friendly tender offers. The OLS estimate is 1.43 and the IV estimate is 5.34, both statistically significant at the 1% level. In terms of magnitude, a one-standard-deviation increase in passive ownership raises the probability of receiving a friendly tender offer by 0.33 points in the instrumented estimate, a 45% increase relative to the 0.73% baseline rate. Both the OLS and IV estimates control for target size and liquidity, and use industry by year fixed effects, i.e. these results are within each industry-by-year set of firms and cannot be explained by overall time trends or industry-level booms and busts.

By contrast, hostile offers show no comparable shift. The point estimates are small in absolute terms (0.11 in OLS; 0.40, s.e. 0.26, instrumented), and even the top of the instrumented confidence interval is about one-sixth of the friendly-tender slope, on a base rate roughly one-tenth as large. These patterns indicate that acquirers direct friendly tenders toward the targets whose ownership makes completion mechanical, and do not bother launching hostile bids that passive blocks would starve. The selection evidence carries the usual caveat that targeting models are potentially sensitive to level confounds. The identifying content here lies in the contrast within the same panel: passive ownership predicts friendly but not hostile bids, a pattern that is difficult to reconcile with explanations based

solely on firm size, liquidity, or index inclusion.

Scaled to the economy, the effects are potentially large but imprecise. Multiplying the completion and selection slopes through announced friendly tenders and the firm-year panel attributes between roughly one-seventh (using the ordinary-least-squares slopes) and one-half (using the instrumental-variable slopes) of completed friendly-tender volume between 2004 and 2024 to passive ownership. The great majority of that share, about 85% under either estimator, runs through the selection channel, acquirers directing bids toward high-passive targets, rather than through the completion channel; the selection channel is also our least cleanly identified result. The calculation is deliberately crude: it assumes local linearity, treats the two slopes as independent, applies the selection slope (estimated through 2018) across the whole window, and assigns marginal deals the average deal size. We offer it not as a parameter but as a suggestive sense of scale, with the range and the calculation detailed in the Internet Appendix. By the end of the sample, when passive ownership of the average target reaches 11%, most of the friendly-tender flow runs through ownership structures that did not exist in 2004.

X Robustness

Coding. The results are not driven by our manual coding of deal attitude and outcomes. Re-estimating the baseline regressions using only SDC's original deal attitude and outcome classifications, not supplemented with our manual hand-collected checks, yields similar or larger effects: the friendly-tender OLS coefficient is 0.19 compared to 0.14 with the corrected data, and the hostile coefficient is -2.99, compared to -2.40. If anything, the corrections shrink the estimates rather than create them. They matter most for correctly assigning the shareholder-leverage classification. Nor does the classification work through soft judgment calls: restricting the conflicted cell to deals with an EDGAR-verified SC 13E-3 filing, the marker least dependent on our reading, gives estimates of the same sign and, if anything,

larger magnitude (OLS 2.04, s.e. 1.25; IV 5.67, s.e. 2.75). The strict cell holds only six failures, so we read it as confirming the sign, not the magnitude.

Debt-restructuring exchanges. Excluding the 51 conflicted-cell exchange offers that are distressed liability management rather than control contests strengthens the conflicted completion effect on the exact gradient specification: the OLS coefficient rises from 0.27 to 1.09 (s.e. 0.71) and the IV coefficient from 1.62 to 5.85 (s.e. 1.99, first-stage F 26.1). The restructurings complete essentially always and load on large, high-passive issuers, so keeping them pushes the headline estimates toward zero. The excluded-sample magnitudes sit near a probability ceiling, and we read them as confirming where the effect concentrates, not as structural.

Premium construction. The premium result, a modest discount at most, is robust to alternative measures, including the pure SDC four-week premium, the Eaton et al. (2021) initiation-based measure, and alternative winsorization schemes at the 1/99 and 5/95 levels. Controlling for the target's prior-year market-adjusted return, which absorbs the benchmarking return effect of Pavlova and Sikorskaya (2023), shrinks the per-unit OLS coefficient from -0.63 to -0.20 (s.e. 0.38) and the IV coefficient from -1.41 to -0.39 (s.e. 0.74) on the same sample.

Functional form. Allowing for nonlinearity by including a quadratic in passive ownership yields no evidence of reversal within the support of the data. The linear slope is not an artifact of a few high-passive deals.

Implied probability. The pricing results are robust to alternative constructions of the implied probability π. Measuring π at $t{+}1$ or $t{+}10$, or replacing π with the untruncated arbitrage spread, yields similar conclusions (Table 7); the all-cash subsample, where the offer price is measured without exchange-ratio error, gives the same picture.

Common ownership. Passive support for completion could reflect common ownership rather than inertia: the same index funds often hold both merging firms, so they might favor a deal because they internalize the acquirer's gain (Matvos and Ostrovsky, 2008; Brooks

et al., 2018). They do not. We measure a deal's passive co-ownership as the fraction of the target held by index funds that also hold the acquirer, defined for the 2,687 deals with a public acquirer, and test the channel three ways; the public-acquirer restriction removes most conflicted going-privates, so the two within-fund designs carry the weight. Across deal outcomes the coefficient on co-ownership is at most 0.02 in magnitude and statistically indistinguishable from zero in five of six outcomes; the one exception, a marginally lower target announcement return, is isolated. Within a deal, funds that co-own the acquirer tender 0.07 (s.e. 0.01) less, but the tilt is fund selection: it falls to 0.00 (s.e. 0.01) once fund fixed effects hold the fund constant. And the extra index-fund support for management is no larger where funds co-own the acquirer, and is if anything smaller where the acquirer is public, the opposite of internalization. The completion result is inertia, not common ownership (Internet Appendix Section IA.5).

Two caveats. The aggregate share attributed to passive ownership is an extrapolation, not a measured flow. And our sample is restricted to CRSP-listed targets, so small controlled-subsidiary squeeze-outs outside CRSP are beyond our measured scope.

XI Conclusion

A shareholder who does nothing is not neutral. In the market for corporate control, index funds' inertia strengthens the bids that need acquiescence and weakens the bids that need shares. The funds' direct behavior demonstrates inertia: through the tender window they hold while active funds tender, they vote yes while others vote no, and in the filings of every failed conflicted tender offer, the legal or rhetorical resistance never comes from an index fund.

We document the consequences on the market for corporate control among U.S. public firms. Friendly tender completion rises with passive ownership, concentrated in the conflicted and insider deals where minority shareholders have leverage, while hostile tender comple-

tion falls. Market-implied completion probabilities anticipate these effects. Deal premiums are, if anything, somewhat lower, while consideration turns toward cash and deal closings accelerate. Acquirers respond by directing friendly tenders toward high-passive targets, a reallocation whose scale, though imprecisely estimated, plausibly runs to a large share of friendly-tender volume over two decades.

The normative reading is two-sided. On one hand, the costs to target shareholders are modest at most: premiums are, if anything, somewhat lower, the listed controlling acquirers we observe earn nothing extra, and more deals complete overall. On the other hand, the shift is not symmetric across deal types. Inertia eases completion exactly where minorities hold the most leverage, the conflicted deals that entire-fairness exists to police, and it blocks the hostile bids that discipline entrenched managers; the constituency that exercises minority rights is shrinking as passive investing grows. Whether the deals that do complete are deals that should complete, and vice versa, is a question our analysis cannot settle. Failed tenders could have weaker value propositions (Savor and Lu, 2009) and leave no ex post terms to observe. We do not sign the net welfare effect, but the direction of the shift, toward incumbent-favored outcomes and away from contested ones, is clear: passive ownership has real effects on the allocation of corporate control, operating not through voice or exit, but through the predictable, priced, and increasingly load-bearing fact of doing nothing.

References

Admati, A. R. and Pfleiderer, P. (2009). The "wall street walk" and shareholder activism: Exit as a form of voice. *Review of Financial Studies*, 22(7):2645–2685.

Antón, M., Azar, J., Giné, M., and Lin, L. X. (2022). Beyond the target: M&A decisions and rival ownership. *Journal of Financial Economics*, 144(1):44–66.

Appel, I., Gormley, T. A., and Keim, D. B. (2016). Passive investors, not passive owners. *Journal of Financial Economics*, 121:111–141.

Azar, J., Tecu, I., and Schmalz, M. C. (2018). Anti-competitive effects of common ownership. *Journal of Finance*, 73(4):1513–1565.

Bagnoli, M. and Lipman, B. L. (1988). Successful takeovers without exclusion. *Review of Financial Studies*, 1(1):89–110.

Bates, T. W., Lemmon, M. L., and Linck, J. S. (2006). Shareholder welfare and bid negotiation in freeze-out deals: Are minority shareholders left out in the cold? *Journal of Financial Economics*, 81(3):681–708.

Bebchuk, L. and Hirst, S. (2019). Index funds and the future of corporate governance: Theory, evidence, and policy. *Columbia Law Review*, 119(8):2029.

Bhagat, S., Dong, M., Hirshleifer, D., and Noah, R. (2005). Do tender offers create value? New methods and evidence. *Journal of Financial Economics*, 76(1):3–60.

Bhagwat, V., Dam, R., and Harford, J. (2016). The real effects of uncertainty on merger activity. *Review of Financial Studies*, 29(11):3000–3034.

Boone, A. L., Broughman, B., and Macias, A. J. (2019). Merger negotiations in the shadow of judicial appraisal. *Journal of Law and Economics*, 62(2):281–319.

Boone, A. L. and White, J. T. (2015). The effect of institutional owners on firm transparency and information production. *Journal of Financial Economics*, 117:508–533.

Brav, A., Jiang, W., Li, T., and Pinnington, J. (2024). Shareholder monitoring through voting: New evidence from proxy contests. *Review of Financial Studies*, 37(2):591–638.

Brooks, C., Chen, Z., and Zeng, Y. (2018). Institutional cross-ownership and corporate strategy: The case of mergers and acquisitions. *Journal of Corporate Finance*, 48:187–216.

Dobmeier, N., Lavrova, P., and Schwetzler, B. (2019). Index fund and ETF ownership and the German market for corporate control. Working paper, HHL Leipzig Graduate School of Management, SSRN 3443622.

Eaton, G. W., Liu, T., and Officer, M. S. (2021). Rethinking measures of mergers and acquisitions deal premiums. *Journal of Financial and Quantitative Analysis*, 56(4):1097–1130.

Edmans, A. (2009). Blockholder trading, market efficiency, and managerial myopia. *The Journal of Finance*, 64(6):2481–2513.

Gaspar, J.-M., Massa, M., and Matos, P. (2005). Shareholder investment horizons and the market for corporate control. *Journal of Financial Economics*, 76(1):135–165.

Grossman, S. J. and Hart, O. D. (1980). Takeover bids, the free-rider problem, and the theory of the corporation. *Bell Journal of Economics*, 11:42–64.

Heath, D., Macciocchi, D., Michaely, R., and Ringgenberg, M. C. (2022). Do index funds monitor? *Review of Financial Studies*, 35(1):91–131.

Holmström, B. and Nalebuff, B. (1992). To the raider goes the surplus? A reexamination of the free-rider problem. *Journal of Economics & Management Strategy*, 1(1):37–62.

Jiang, W., Li, T., Mei, D., and Thomas, R. (2016). Appraisal: Shareholder remedy or litigation arbitrage? *Journal of Law and Economics*, 59(3).

Kashyap, A. K., Kovrijnykh, N., Li, J., and Pavlova, A. (2021). The benchmark inclusion subsidy. *Journal of Financial Economics*, 142(2):756–774.

Levit, D. (2019). Soft shareholder activism. *Review of Financial Studies*, 32(7):2775–2808.

Levit, D., Malenko, N., and Maug, E. (2024). Trading and shareholder democracy. *Journal of Finance*, 79(1):257–304.

Li, K., Liu, T., and Wu, J. (2018). Vote avoidance and shareholder voting in mergers and acquisitions. *Review of Financial Studies*, 31(8):3176–3211.

Lund, D. S. (2017). The case against passive shareholder voting. *J. Corp. L.*, 43:493.

Matvos, G. and Ostrovsky, M. (2008). Cross-ownership, returns, and voting in mergers. *Journal of Financial Economics*, 89(3):391–403.

Mitchell, M. and Pulvino, T. (2001). Characteristics of risk and return in risk arbitrage. *Journal of Finance*, 56(6):2135–2175.

Officer, M. S. (2003). Termination fees in mergers and acquisitions. *Journal of Financial Economics*, 69(3):431–467.

Osei, K. B. and Schwetzler, B. (2026). Do ETFs undermine takeover success? Evidence from German takeover offer outcomes. *Schmalenbach Journal of Business Research*, 78(3).

Pavlova, A. and Sikorskaya, T. (2023). Benchmarking intensity. *Review of Financial Studies*, 36(3):859–903.

Restrepo, F. and Subramanian, G. (2015). The effect of Delaware doctrine on freezeout structure and outcomes: Evidence on the unified approach. *Harvard Business Law Review*, 5.

Samuelson, W. and Rosenthal, L. (1986). Price movements as indicators of tender offer success. *Journal of Finance*, 41(2):481–499.

Savor, P. G. and Lu, Q. (2009). Do stock mergers create value for acquirers? *Journal of Finance*, 64(3):1061–1097.

Schmidt, C. and Fahlenbrach, R. (2017). Do exogenous changes in passive institutional ownership affect corporate governance and firm value? *Journal of Financial Economics*, 124:285–306.

Schwert, G. W. (2000). Hostility in takeovers: In the eyes of the beholder? *Journal of Finance*, 55(6):2599–2640.

Shleifer, A. and Vishny, R. W. (1986). Large shareholders and corporate control. *Journal of Political Economy*, 94:461–488.

Stulz, R. M., Walkling, R. A., and Song, M. H. (1990). The distribution of target ownership and the division of gains in successful takeovers. *Journal of Finance*, 45(3):817–833.

Subramanian, G. (2005). Fixing freezeouts. *Yale Law Journal*, 115(1):2–70.

Walkling, R. A. (1985). Predicting tender offer success: A logistic analysis. *Journal of Financial and Quantitative Analysis*, 20(4):461–478.

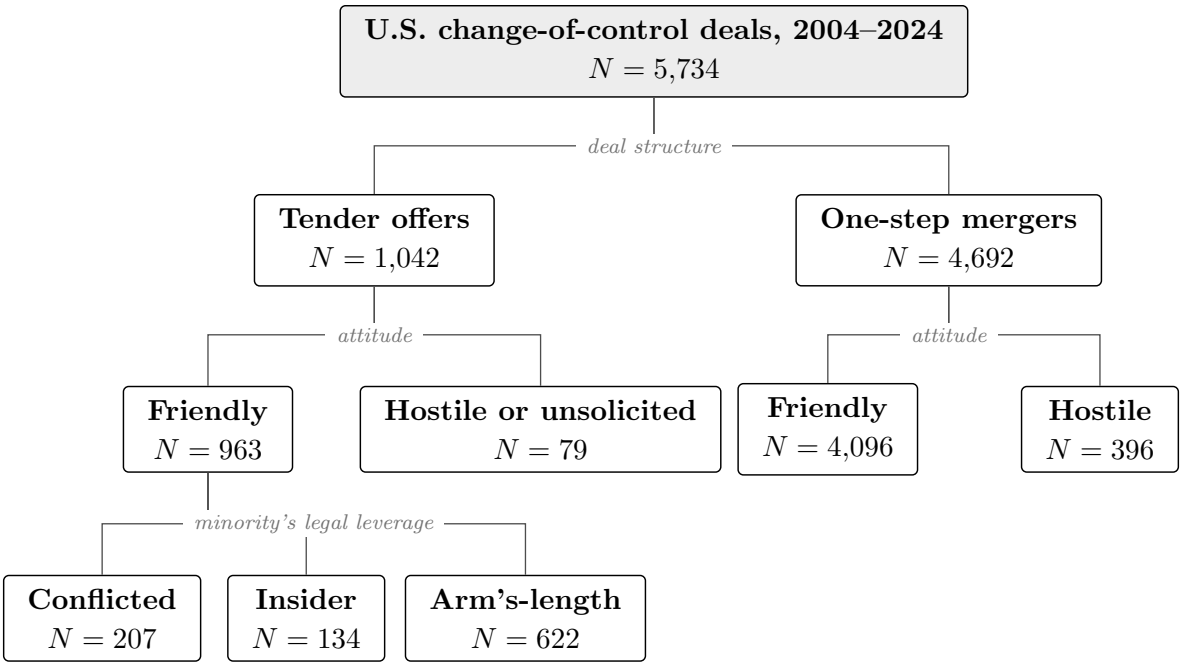


Figure 1. The Deal Universe

All 5,734 SDC change-of-control deals for CRSP-listed U.S. targets, 2004–2024, and the three splits that organize every test in the paper: deal structure, attitude, and, within friendly tender offers, the minority's legal leverage (Section B). Counts partition each parent node, except that attitude is unclassified for 200 one-step mergers, which enter no attitude-split test. The tender-offer branch includes the 150 exchange offers described in Section A.

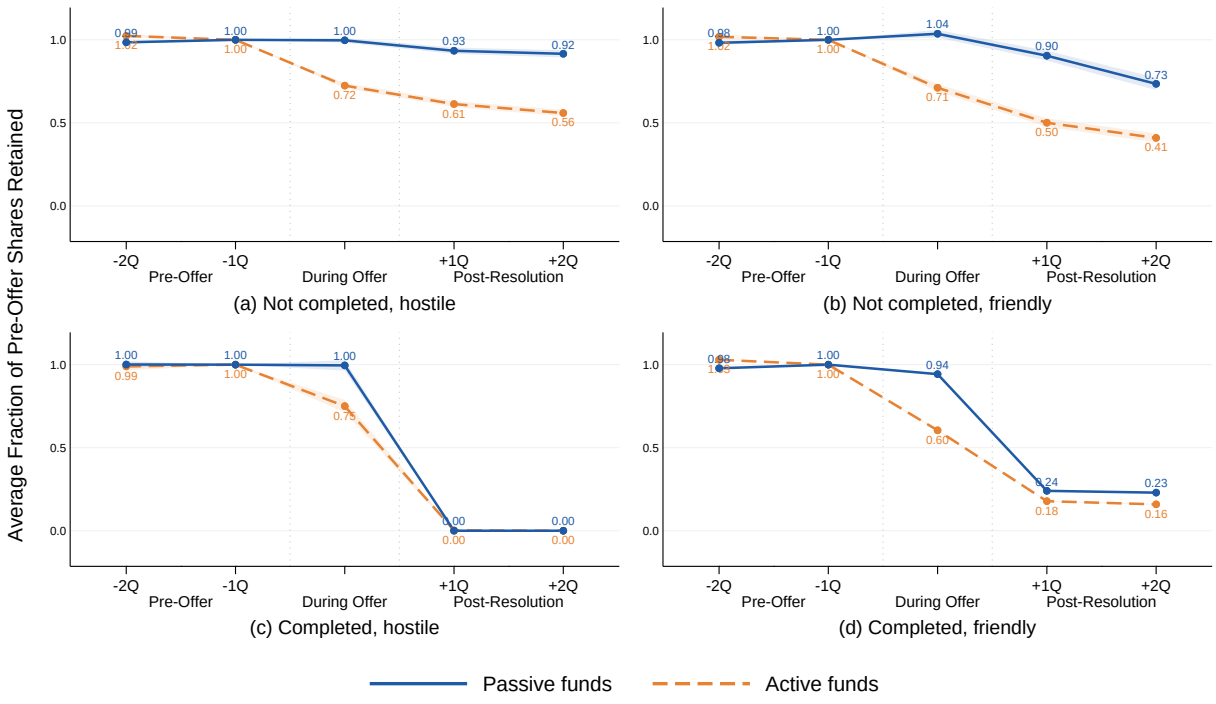


Figure 2. Fund Retention Around Tender Offers

Mean fund-level retention of the pre-offer position (holdings divided by the fund's last filing before announcement) at five event times: second and first quarters before announcement, the last filing within the offer window, and the first and second quarters after resolution. Panels split the sample by deal attitude and outcome: Panel (a) hostile non-completed offers, Panel (b) friendly non-completed offers, Panel (c) hostile completed offers, and Panel (d) friendly completed offers. Passive funds are shown by the solid blue line and active funds by the dashed orange line. A fund that files in a window but no longer reports the target is coded as holding zero; funds that file nothing in a window are excluded from that window's mean.

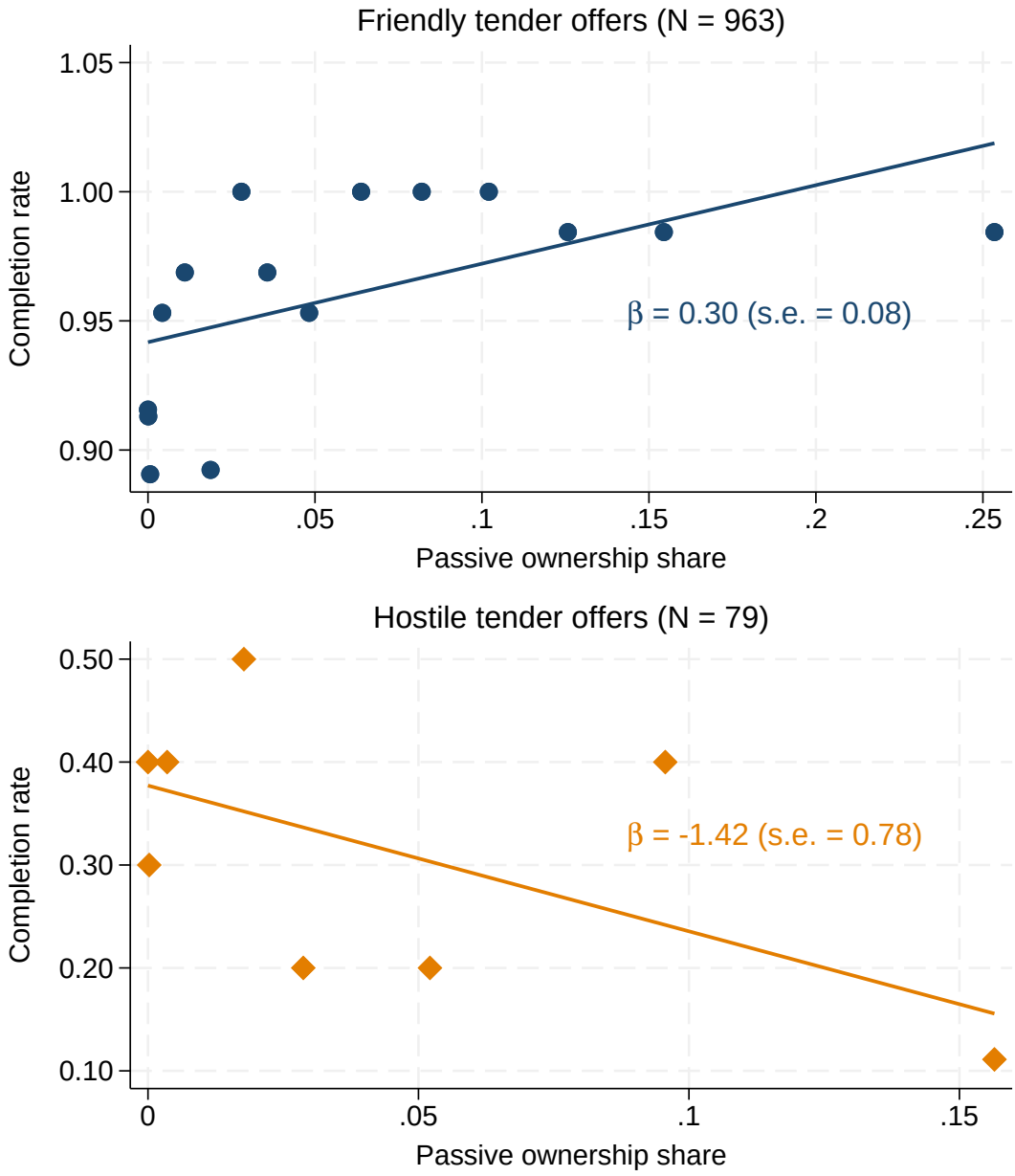


Figure 3. Completion and Passive Ownership in Tender Offers

Each panel bins tender offers by target passive ownership (the December before announcement) and plots the within-bin completion rate. The line and the printed slope are the OLS fit on the underlying deal-level data, with standard errors clustered by target firm. Attitude and outcome codes follow Section B. The top panel shows the 963 friendly tender offers (15 bins). The bottom panel the 79 hostile and unsolicited offers (8 bins). Sample period 2004–2024.

Table 1
Summary Statistics

Panel A reports distributions across the 5,734-deal analysis sample (2004–2024). Passive ownership is the fraction of target shares outstanding in the December before announcement. BMI is the benchmark-inclusion instrument (Pavlova and Sikorskaya, 2023); the log premium is the spliced initiation-based measure (Eaton et al., 2021). Target size and acquirer size are the natural log of pre-announcement market capitalization, whose dollar levels (in $B) are reported alongside. Panel B reports the 1,042 tender offers: deal counts, completion rates and failure counts, and subsample means of passive ownership and the log premium, by shareholder-leverage subsample (Section B).

Panel A: Analysis sample

	N	Mean	SD	P25	Median	P75
Completed	5,734	0.811	0.392	1.000	1.000	1.000
Friendly	5,529	0.916	0.277	1.000	1.000	1.000
Tender offer	5,734	0.182	0.386	0.000	0.000	0.000
Passive ownership	5,734	0.059	0.074	0.001	0.027	0.096
BMI (instrument)	4,624	0.112	0.109	0.000	0.114	0.217
log premium	4,587	0.287	0.333	0.140	0.264	0.418
Cash share	5,096	0.673	0.428	0.168	1.000	1.000
Target market cap ($B)	5,365	2.461	9.305	0.093	0.387	1.682
Target Size	5,365	5.973	2.012	4.532	5.959	7.428
Acquirer market cap ($B)	2,630	25.887	89.372	0.832	3.207	16.592
Acquirer Size	2,630	8.155	2.170	6.724	8.073	9.717
Target CAR $[-3, +3]$	5,365	0.232	0.422	0.057	0.175	0.329
Acquirer CAR $[-3, +3]$	2,630	-0.009	0.130	-0.047	-0.008	0.025
Implied completion prob. π (t+5)	3,754	0.791	0.264	0.701	0.905	0.978

Panel B: The tender-offer sample

	N	Completed	Failures	Mean passive	Mean premium
Conflicted	207	0.91	19	0.045	0.26
Insider	134	0.96	6	0.090	0.30
Arm's-length	622	0.98	13	0.061	0.40
All friendly tenders	963	0.96	38	0.062	0.37
Hostile and unsolicited	79	0.32	54	0.043	0.27

Table 2
Index Funds Do Not Tender: Difference-in-Differences Estimates

Fund–deal panel around tender offers. The dependent variable equals one if the fund has tendered or disposed of its entire position by the indicated event time (during the offer window; after resolution). All specifications include deal fixed effects. The estimates compare index and active funds within the same deal across event times, yielding a difference-in-differences measure of relative exit behavior. Standard errors clustered by deal in parentheses. The sample is fund–deal pairs with a positive pre-offer position.

	Relative to pre-offer: During tender window			Relative to pre-offer: After resolution		
	All	Not completed	Completed	All	Not completed	Completed
Index fund	-0.24***	-0.17***	-0.24***	-0.04***	-0.26***	-0.03***
	(0.01)	(0.02)	(0.01)	(0.00)	(0.02)	(0.00)
Deal FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	94,622	10,124	84,498	121,196	9,507	111,689
R^2	0.286	0.133	0.297	0.776	0.334	0.824

Table 3
Index Funds Do Not Vote No on M&A Deals

Linear probability models of a fund's vote in favor of an M&A-related management proposal, from N-PX filings, comparing index funds to active funds; the vote indicator is scaled so that coefficients read in percentage points. The sample is one observation per fund per merger-approval shareholder meeting for targets in our deal universe; tender offers carry no separate shareholder vote and are excluded, so every meeting in this subsample is a board-recommended one-step merger. Column (1) includes year fixed effects, while columns (2)–(3) include meeting fixed effects and thus compare funds voting on the same proposal. Column (3) restricts to conflicted deals, defined for these one-step mergers as deals with an SC 13E-3 filing (an affiliate going-private), the merger analogue of the tender-offer definition in Section B. Standard errors clustered by meeting in parentheses.

	(1)	(2)	(3)
Index fund	0.91***	0.91***	2.44**
	(0.16)	(0.10)	(1.08)
Sample	All	All	Conflicted
Meeting FE	No	Yes	Yes
Year FE	Yes	No	No
Observations	239,798	239,791	8,392

Table 4
Passive Ownership and Deal Completion

OLS regressions of an indicator for change-of-control deal completion on target passive ownership. Columns (1)–(4) consider tender offers and columns (5)–(8) one-step mergers. Within each, the first pair of columns omits controls and the second pair adds target size (log pre-announcement market capitalization) and target liquidity (pre-announcement share turnover). All specifications include year fixed effects; industry (SIC2) fixed effects are included in the friendly columns but not in the hostile columns. Passive ownership enters as a 0–1 fraction (standard deviation 0.07), so per-unit coefficients scale to roughly one-fourteenth of their size for a one-standard-deviation move. Standard errors clustered by target firm in parentheses.

	Tender offers				One-step mergers			
	(1) Friendly	(2) Hostile	(3) Friendly	(4) Hostile	(5) Friendly	(6) Hostile	(7) Friendly	(8) Hostile
Passive ownership	0.14**	-2.40**	0.16	-1.54	0.02	-0.06	0.01	-0.02
	(0.07)	(1.03)	(0.10)	(1.21)	(0.08)	(0.06)	(0.09)	(0.08)
Target Size			0.00	0.01			0.01*	-0.00
			(0.00)	(0.03)			(0.00)	(0.00)
Target Liquidity			0.28	-9.84			-0.70	-0.40
			(0.44)	(7.73)			(0.60)	(0.62)
SIC2 FE	Yes	No	Yes	No	Yes	No	Yes	No
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mean completion	0.96	0.32	0.96	0.31	0.88	0.03	0.88	0.03
Observations	950	76	916	74	4,067	396	3,779	384
R^2	0.109	0.285	0.110	0.307	0.035	0.069	0.040	0.071

Table 5
Deal Completion: Instrumental-Variable Estimates

Two-stage least-squares estimates on the completion rate of tender offers, instrumenting target passive ownership with the prior-June benchmark-inclusion measure (Pavlova and Sikorskaya, 2023). Columns (3)–(4) add target size (log market capitalization) and target liquidity (pre-announcement share turnover). All specifications include year fixed effects; industry (SIC2) fixed effects are included in the friendly columns but not in the hostile columns. Standard errors clustered by target firm in parentheses.

	Friendly	Hostile	Friendly	Hostile
$\widehat{\text{Passive ownership}}$	0.56**	-2.23	0.69**	-0.75
	(0.22)	(1.75)	(0.31)	(2.58)
Target Size			-0.01	-0.01
			(0.01)	(0.04)
Target Liquidity			0.80	-8.39
			(0.80)	(10.24)
SIC2 FE	Yes	No	Yes	No
Year FE	Yes	Yes	Yes	Yes
Mean completion	0.95	0.32	0.95	0.32
KP first-stage F	588.9	40.3	374.5	22.4
Observations	727	65	700	63

Table 6
Shareholder Leverage Categories in Friendly Tender Offers

Completion regressions within each shareholder-leverage subsample of the friendly tender offers: conflicted (entire-fairness) deals, insider deals, and arm's-length deals. Panel A reports OLS estimates and Panel B reports instrumental-variable estimates using the prior-June benchmark-inclusion measure. All specifications control for target size (log market capitalization) and target liquidity (share turnover), and include year fixed effects. Passive ownership enters as a 0–1 fraction (standard deviation 0.07), so per-unit coefficients scale to roughly one-fourteenth of their size for a one-standard-deviation move. Standard errors are clustered by target firm and reported in parentheses.

Panel A: OLS

	Conflicted	Insider	Arm's-length
Passive ownership	0.27	0.25	0.00
	(0.23)	(0.20)	(0.15)
Target Size	0.01	0.01	-0.00
	(0.01)	(0.01)	(0.01)
Target Liquidity	0.23	1.61	0.38
	(0.96)	(1.44)	(0.64)
Year FE	Yes	Yes	Yes
Mean completion	0.91	0.95	0.98
Observations	197	120	607

Panel B: IV (BMI instrument)

	Conflicted	Insider	Arm's-length
$\widehat{\text{Passive ownership}}$	1.62**	1.34	0.19
	(0.67)	(0.94)	(0.44)
Target Size	0.02	0.01	-0.00
	(0.02)	(0.03)	(0.01)
Target Liquidity	-1.56	1.45	1.25**
	(3.72)	(3.46)	(0.55)
Year FE	Yes	Yes	Yes
Mean completion	0.86	0.90	0.98
KP first-stage F	66.6	42.3	228.1
Observations	132	62	515

Table 7
The Market-Implied Completion Probability

Regressions of the market-implied completion probability π and the arbitrage spread on target passive ownership in friendly tender offers. The probability π is truncated to $[0, 1]$ by construction (equation (1)) and enters unwinsorized; the arbitrage spread (Mitchell and Pulvino, 2001) is winsorized at 1/99. Columns 2 and 5 add indicators for the conflicted and insider subsamples. All specifications control for target size (log market capitalization) and target liquidity (pre-announcement share turnover), and include industry (SIC2) and year fixed effects. Passive ownership enters as a 0–1 fraction (standard deviation 0.07), so per-unit coefficients scale to roughly one-fourteenth of their size for a one-standard-deviation move. Standard errors clustered by target firm in parentheses.

	OLS			IV (BMI instrument)		
	π	π	Spread	π	π	Spread
Passive ownership	0.76***	0.43**	-0.19**	0.86**	0.36	-0.22
	(0.20)	(0.20)	(0.09)	(0.39)	(0.42)	(0.23)
Conflicted		-0.20***			-0.19***	
		(0.03)			(0.04)	
Insider		-0.07*			-0.09*	
		(0.04)			(0.05)	
Target Size	-0.00	0.00	-0.00	-0.01	0.00	-0.00
	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)	(0.00)
Target Liquidity	-0.51	-1.57	0.84	0.35	-0.56	0.29
	(1.31)	(1.27)	(0.84)	(1.41)	(1.35)	(0.95)
SIC2 FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Mean dep. var.	0.89	0.89	0.03	0.90	0.90	0.03
KP first-stage F				262.1	246.5	262.1
Observations	669	669	669	571	571	571

Table 8
Deal Terms: Premium, Consideration, Speed

Regressions of deal terms on target passive ownership in friendly tender offers. The dependent variable is the spliced log offer premium (columns 1 and 4), the cash share of the consideration (columns 2 and 5), and days from announcement to resolution (columns 3 and 6). Columns 1–3 are OLS; columns 4–6 instrument passive ownership with the prior-June benchmark-inclusion measure. All specifications control only for the ex-ante primitives, target size (log market capitalization) and target liquidity (share turnover); the premium and the cash share are themselves equilibrium outcomes of the deal, so we do not condition on them. The sample is the friendly tenders with all three terms observed, so the columns compare the same deals. All specifications include industry (SIC2) and year fixed effects. Passive ownership enters as a 0–1 fraction (standard deviation 0.07), so the reported per-unit coefficients scale to roughly one-fourteenth of their size for a one-standard-deviation move. Standard errors clustered by target firm in parentheses.

	OLS			IV (BMI instrument)		
	log prem.	Cash share	Duration	log prem.	Cash share	Duration
Passive ownership	-0.64	0.54**	-180.07**	-1.41*	1.19**	-248.97
	(0.40)	(0.22)	(79.31)	(0.78)	(0.46)	(177.33)
Target Size	0.03**	-0.01**	6.06**	0.03**	-0.03***	5.57
	(0.01)	(0.01)	(2.72)	(0.01)	(0.01)	(3.86)
Target Liquidity	3.25	0.85	-203.90	3.49	1.55	-312.66
	(2.52)	(1.15)	(474.44)	(2.97)	(1.26)	(534.31)
SIC2 FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Mean dep. var.	0.37	0.91	83.58	0.37	0.91	83.66
KP first-stage F				324.5	324.5	324.5
Observations	764	764	764	653	653	653

Table 9
Passive Ownership and Becoming a Tender-Offer Target

Firm-year panel of the probability, in percentage points, of receiving a tender offer in the following calendar year, by attitude. IV columns instrument passive ownership with the prior-June benchmark-inclusion measure. All specifications control for target size (log market capitalization) and target liquidity (annual share turnover) and include industry-by-year fixed effects. Standard errors clustered by firm in parentheses.

	OLS			IV (BMI instrument)		
	Any	Friendly	Hostile	Any	Friendly	Hostile
Passive ownership	1.50***	1.43***	0.11	5.57***	5.34***	0.40
	(0.56)	(0.54)	(0.12)	(1.13)	(1.10)	(0.26)
Target Size	-0.09***	-0.09***	-0.00	-0.13***	-0.13***	-0.00
	(0.01)	(0.01)	(0.00)	(0.02)	(0.02)	(0.00)
Target Liquidity	-0.16*	-0.13	-0.02	-0.19**	-0.17*	-0.02
	(0.09)	(0.09)	(0.03)	(0.09)	(0.09)	(0.03)
Industry × Year FE	Yes	Yes	Yes	Yes	Yes	Yes
KP first-stage F				6768.5	6768.5	6768.5
Observations	91,361	91,361	91,361	91,361	91,361	91,361