Stock Exchanges as Governance Institutions

Evidence from the Tokyo Stock Exchange

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Roadmap

One question: can an exchange shape firms by *moral suasion* rather than enforcement?

Motivation & Setting

An exchange is also a governance institution

Liquidity infrastructure

A trading venue for price discovery that lowers the cost of capital.

Heavily studied.

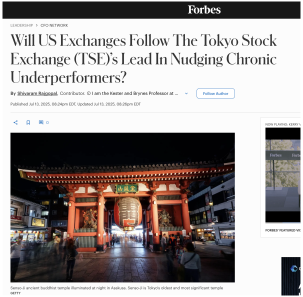
Governance institution

Listing rules, disclosure requirements, monitoring that shape firm conduct.

Underappreciated.

We study a rare case where a major exchange *actively* intervened in firm governance.

A bit about the making of the paper

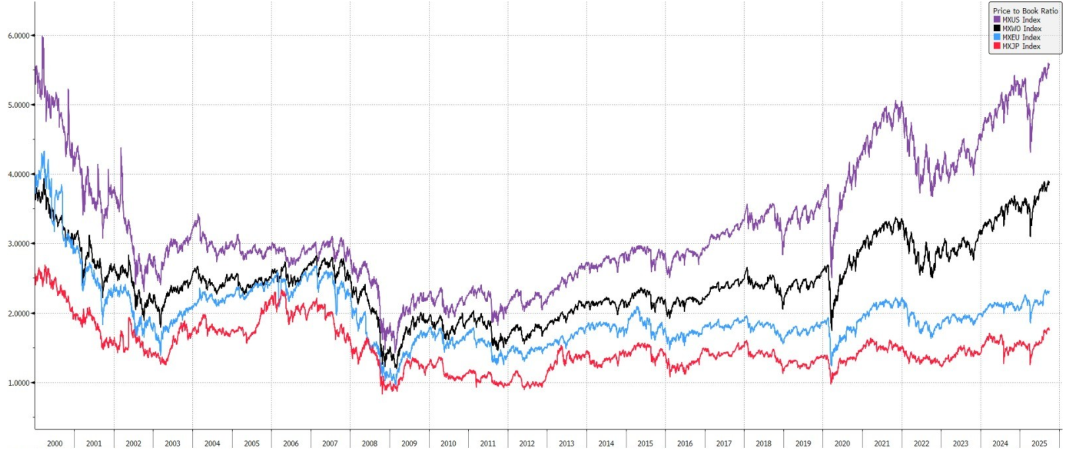


Rajgopal, *Forbes*, Jul 13, 2025: an "*out-of-the-box idea*"; asks if US exchanges should follow.

Lewis & Keohane, *FT*, Nov 5, 2023: "*unprecedented*" influence; Yamaji "the biggest activist in Tokyo."

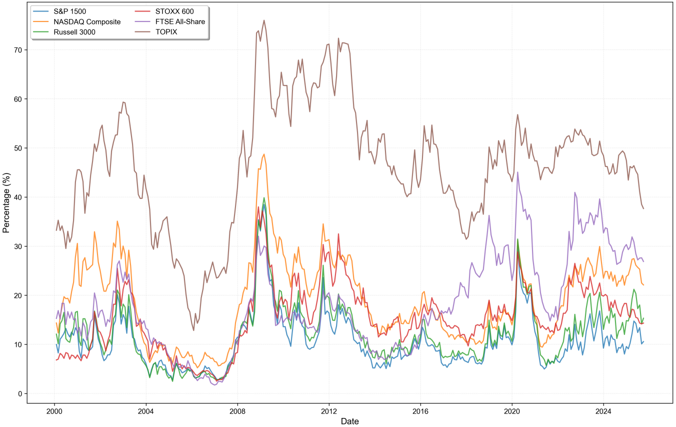
- An **unprecedented**, "out-of-the-box" intervention by a major exchange — worth a causal study.
- We first framed it as **"stock-exchange activism,"** then **set that framing aside**, letting the empirics lead. ▸ the framing we set aside

Japan: a global outlier in chronic undervaluation



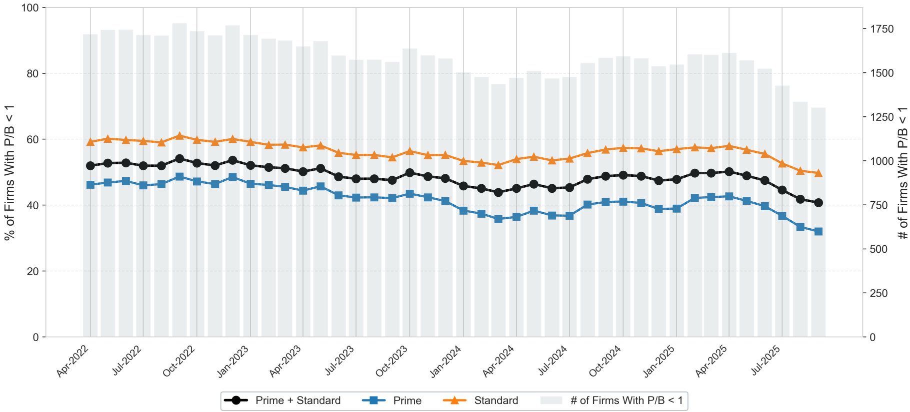
Average P/B ratios across major economies, 2000–2025 (Bloomberg). U.S. >5, Japan <2.

Trading below book is widespread — worst in Japan



Share of index constituents with P/B < 1. TOPIX often $>$50%; S&P 1500 $\sim$10%; other DM $\sim$20–30%.

Roughly half of TSE firms persistently trade below book



Number (bars) and share (lines) of TSE firms with P/B $<$ 1, 2022–2025. Prime, Standard, all.

The Intervention

The CCSP request caps a decade of escalating reform

Norm-setting

Stewardship Code (2014); Corporate Governance Code (2015) — comply-or-explain.

Index reforms

JPX–Nikkei 400 (2014); TOPIX reform (2022); JPX Prime 150 (2023) — reward ROE.

Segment reform

2022: Prime / Standard / Growth; stricter free-float, governance, English disclosure.

A gradual shift from voluntary compliance → direct, exchange-led intervention (CCSP, 2023).

March 2023: the TSE *asked* firms to act on low valuations

"Action to Implement Management that is Conscious of Cost of Capital and Stock Price"

1. analyze current situation $\rightarrow$ **2.** plan & disclose $\rightarrow$ **3.** implement & update annually

A clean laboratory

A **soft, non-binding** request, **initiated by the exchange**, addressed to all Prime & Standard firms, with emphasis on those below book — a salient P/B $= 1$ threshold.

“Soft” — but the TSE framed it as a *strong request*

TSE letter to CEOs (signed by the TSE CEO)

“While they are not imposed as obligations under the regulations, we request that listed companies actively implement them in light of investor expectations.”

Council of Experts follow-up material (Jan 2023)

*“For companies whose P/B ratio has continuously fallen below one, disclosure is **strongly requested**.”*

▸ framing evidence

Not regulatorily binding, yet a de facto soft obligation — a quasi-regulatory role.

The market read it as a P/B $= 1$ rule

Nihon Keizai Shimbun, front lead, March 31, 2023

*"The Tokyo Stock Exchange is calling on listed companies whose price-to-book ratio has fallen below one — **about 1,800 firms** — to present concrete measures to raise it."*

- TSE never set P/B $= 1$ as a formal criterion — but media, analysts (Nomura), and even the JPX CEO's clarifications treated it as *the* line.
- That salience makes P/B $= 1$ a natural running variable for RD.

media evidence

Three research questions

1. **Disclosure** — how do firms adjust to a non-binding request that singles out low-P/B firms?
2. **Valuation** — credible commitment that raises value, or a backfiring signal?
3. **Real effects** — profitability and capital allocation (ROE, cash, dividends, buybacks)?

Can an exchange shape corporate behavior through *moral suasion* rather than enforcement?

Preview: works on average — backfires at the margin

DiD — average effect (ATT)

+ Short-run rise in P/B, P/S; higher ROE, dividends, buybacks; lower cash.
+ Stronger & persistent for high-valuation & Prime firms.

RD — local effect at P/B $= 1$ (LATE)

− Targeted firms (just below) disclosed *less*.
− Marginal disclosers (just above) re-priced *down*; concentrated in Standard.

Soft governance can work on average, yet depress valuations for firms induced to comply.

Contribution

Contribution to three literatures

- **Disclosure without enforcement.** Prior work stresses public/private enforcement (Daske et al. 2008; Christensen et al. 2013). We show a well-framed *soft* request can move valuations — with highly heterogeneous effects.
- **Exchanges as governance institutions.** Literature emphasizes *investors* and *regulators*; evidence on exchanges themselves is scarce (Bonetti 2023; Bourveau et al. 2025).
- **Japan's capital-market reforms.** Beyond market reactions (Morikawa 2024; Okada; D'Acunto 2025), we give *causal* evidence on fundamentals and financial policy.

Data

Sample: 2,957 TSE firms, Dec 2023 – Sep 2025

Sources

- **NEEDS FinancialQUEST** (Nikkei): multiples & fundamentals, near-universal.
- **TSE disclosure list**: who disclosed, monthly — only from **Dec 2023**.

Construction

- Drop financials/utilities, negative book equity, recent IPOs; 24 "switchers."
- **1,467 Prime** + **1,490 Standard**.
- ∼63k firm-months; ∼22k firm-quarters.

Disclosure list starts Dec 2023 — this defines the 22-month window.

Summary statistics

	Mean	SD	P10	Median	P90	N
P/B	1.591	1.590	0.482	1.060	3.260	63,424
P/S	1.084	1.329	0.208	0.662	2.280	63,424
P/E	22.665	40.979	7.220	14.539	37.547	57,346
Dividend yield	2.436	1.416	0.456	2.436	4.271	63,424
Spread	0.007	0.007	0.002	0.005	0.014	63,424
Return	0.009	0.080	-0.075	0.003	0.099	63,424
ROE	7.409	11.154	-1.540	7.460	18.640	22,517
Cash holding (% assets)	22.563	15.362	6.393	18.850	44.721	22,517
Dividend payout (%)	40.629	40.834	7.000	32.100	72.140	22,517
Share repurchase	34.300	234.598	-3.276	0.000	21.519	22,517

Monthly panel, Dec 2023–Sep 2025. Winsorized at 1/99%. Full table in the paper.

Empirical Strategy

Two strategies: the average effect and the local effect

1. Difference-in-Differences

Staggered timing of *when* firms comply; event study on fundamentals & policy.

Estimand: ATT — average over disclosers.

2. Regression Discontinuity

Fuzzy RD at the salient $P/B = 1$ cutoff (running variable: P/B, March 2023).

Estimand: LATE — marginal compliers.

DiD gives the average story; RD gives a sharp local story at the policy margin.

DiD: staggered event study, modern estimators

$$y_{i,t} = \sum_{k \in W} \beta_k \, D_{i,t-k} + \alpha_i + \tau_t + X'_{i,t}\gamma + \varepsilon_{i,t}, \qquad W = \{-6, \ldots, 10\}$$

- $D_{i,t}$: firm i discloses in month t; α_i firm FE, τ_t time FE, $X_{i,t}$ controls.
- Identification: **parallel trends**, supported by flat pre-trends.
- TWFE-OLS biased under heterogeneous, staggered timing $\Rightarrow$ modern estimators.
- **Baseline:** de Chaisemartin–D'Haultfœuille, *not-yet-treated* controls.
  Robustness: Sun–Abraham; Callaway–Sant'Anna; Borusyak et al.; never-treated.

Fuzzy RD at the salient P/B $= 1$ cutoff

First stage — effect of being an emphasized target on disclosure (by year-month):

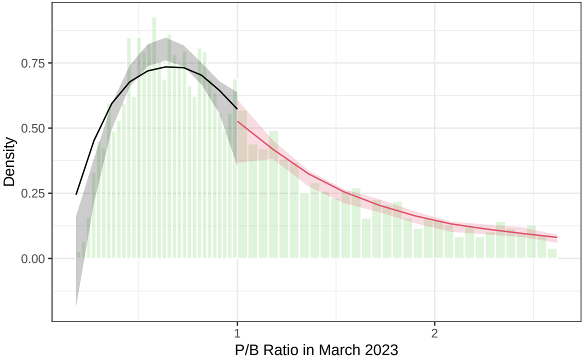
$$D_{i,t} = \beta_0 + \gamma\, \mathbb{1}\{\mathrm{PBR}_{i,2023/03} \geq 1\} + f_L(\cdot) + f_R(\cdot) \times \mathbb{1}\{\mathrm{PBR} \geq 1\} + \varepsilon_{i,t}$$

Second stage — fuzzy effect of disclosure on outcomes (2SLS, pooled):

$$Y_{i,t} = \alpha + \rho\, \widehat{D}_{i,t} + g_L(\cdot) + g_R(\cdot) \times \mathbb{1}\{\mathrm{PBR} \geq 1\} + \delta_t + \eta_{i,t}$$

Local-linear, MSE-optimal bandwidths; bias-corrected robust inference (Calonico, Cattaneo & Titiunik 2014).
Standard errors clustered by firm; pooled across months for power.

No manipulation at the cutoff (density)



Local-polynomial density of P/B (March 2023) around $c = 1$. Curves overlap smoothly — no jump.

No manipulation at the cutoff (tests)

	Left of c	Right of c
Effective obs.	1,228	599
Bandwidth (h)	0.543	0.553
Robust t-statistic	0.085	
p-value	0.933	

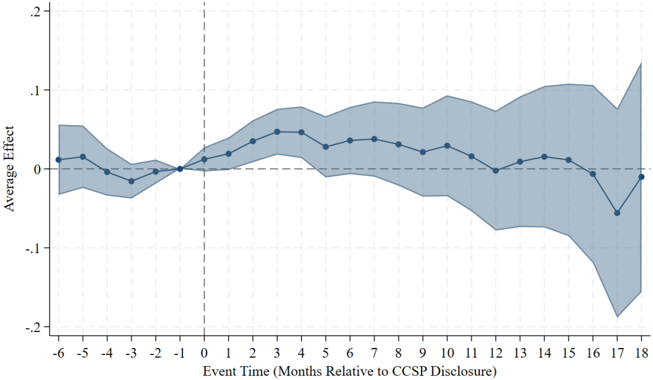
Density discontinuity test at $c = 1$ (Cattaneo, Jansson & Ma 2020). Binomial exact tests agree (appendix).

binomial tests

Robust $T \approx 0$, $p \approx 0.93$: no evidence of sorting — the running variable is clean.

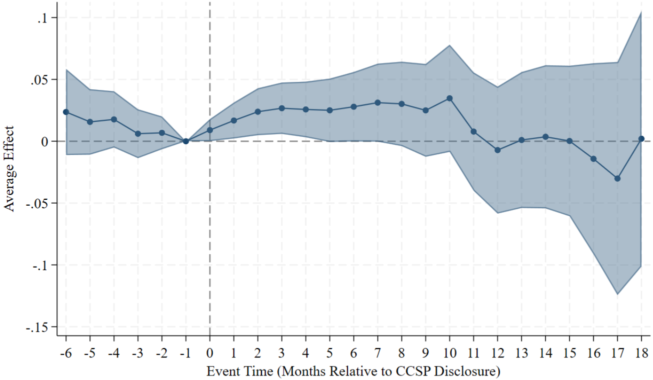
Results I — Difference-in-Differences

Disclosure raises P/B — modestly and briefly



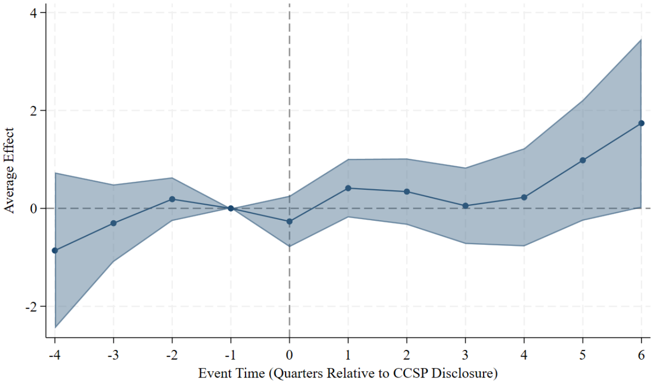
Event study of P/B, dC–DH estimator. Flat pre-trends; ∼+0.05 over ∼4 months, then fades.

P/S mirrors P/B: a parallel short-run bump



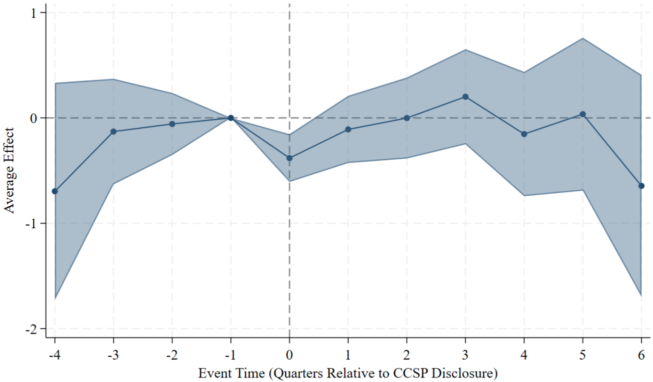
Event study of P/S, dC–DH estimator. ∼+0.03 in the first four months, then fades.

ROE improves — but only with a long lag



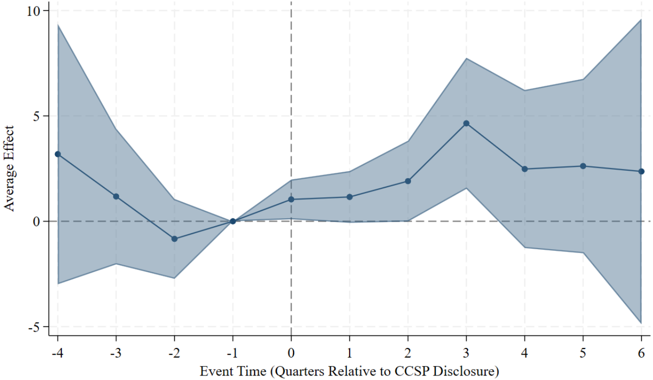
Event study of ROE (quarterly). Flat early, then ∼+2 pp at ∼6 quarters (marginally significant).

Cash holdings fall — capital is reallocated



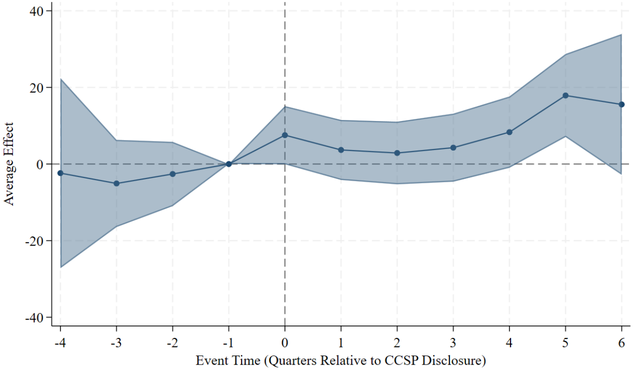
Event study of cash/assets (quarterly). Gradual decline $\sim -5\%$ of assets by Q4–Q5.

Dividends rise steadily after disclosure



Event study of dividend payout ratio (quarterly). ∼+5 pp by month 9.

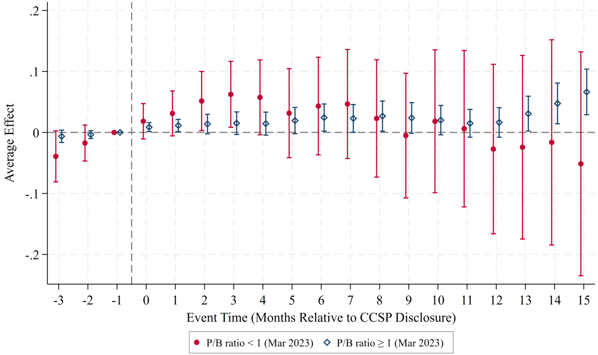
Buybacks are the largest response



Share repurchases (treasury-stock growth, quarterly). ∼+20% by Q5 — large & significant.

Real, shareholder-friendly reallocation — and robust to firm-fundamental controls.

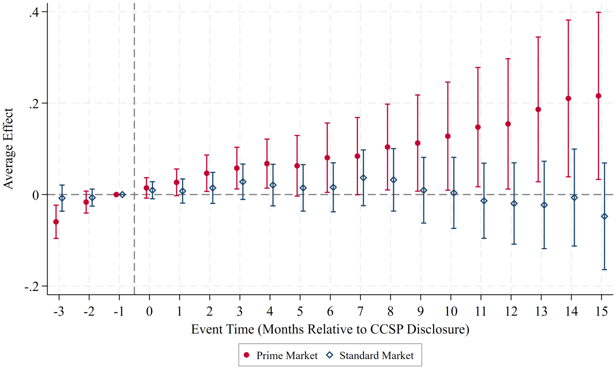
The effect concentrates in *high-valuation* firms



P/B response by valuation: P/B <1 (red) vs. ≥ 1 (blue) in March 2023.

The request worked best where firms were *already* viewed favorably.

. . . and in *Prime*-market firms



P/B response by segment: Prime (red) vs. Standard (blue). Standard is small, noisy, short-lived.

DiD summary

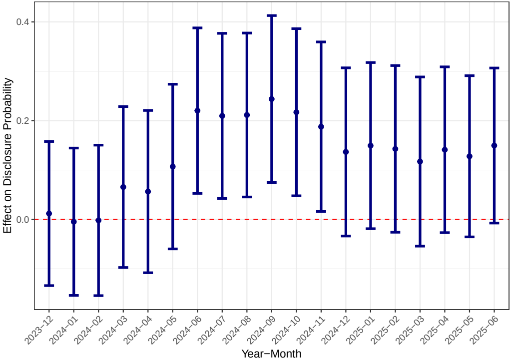
- On average, disclosure $\Rightarrow$ higher P/B & P/S (short-run), ROE (lagged), dividends, buybacks; lower cash.
- Robust to firm-fundamental controls, alternative estimators, and alternative trends.
- Effects **concentrated** in high-valuation and Prime firms — *not* where reform was most needed.

DiD robustness

A soft request *can* move average behavior — but unevenly.

Results II — Regression Discontinuity

The targeting backfired: *targeted* firms disclosed *less*



RD effect of crossing P/B $= 1$ on disclosure, by month. Firms *above* disclosed up to $+25$pp *more*.

▸ RD plots by month

Stigma, disclosure costs, and strategic risk made *targeted* firms slower to comply.

Marginal disclosers were re-priced *down*

	P/B	P/S	P/E	Yield	Spread	Volume/sh	Return
Disclosure	-0.811^{***}	-0.333	-38.81	5.875^{***}	-0.017^{***}	-0.033	-0.027^{**}
	(0.181)	(0.264)	(24.99)	(1.718)	(0.003)	(0.051)	(0.012)
First stage	0.109^{***}	0.110^{***}	0.093^{***}	0.109^{***}	0.109^{***}	0.117^{***}	0.168^{***}

Pooled fuzzy RD, full sample. Bias-corrected SEs clustered by firm. $^{*}p<.10$, $^{**}p<.05$, $^{***}p<.01$.

▸ fuzzy RD plots

P/B falls 0.81, yield rises, spreads narrow, returns decline.

Mechanism: information revelation

What disclosure did

Made fundamentals & constraints **transparent** to investors near the margin.

What markets did

Revised growth/profitability beliefs **down**; priced compliance costs; *but* traded more efficiently (tighter spreads).

Lower valuations *with* better liquidity — transparency, not a liquidity story alone.

The markdown is a Standard-market story

	P/B	P/S	P/E	Yield	Spread	Return
Prime	0.069	-1.588^{***}	-1.18	2.278^{***}	-0.009^{***}	-0.009^{***}
Standard	-2.292^{***}	0.517	-155.9^{**}	4.031^{***}	-0.032^{***}	-0.019^{***}

Pooled fuzzy RD by market segment. Bias-corrected SEs clustered by firm.

Prime: mostly liquidity. Standard: sharp P/B and P/E declines where scrutiny is weaker.

Interpretation & Conclusion

No contradiction: ATT $(+)$ vs. LATE $(-)$

DiD $=$ ATT > 0

$$\mathrm{E}\big[Y(1) - Y(0) \mid D = 1\big]$$

Averages over *all* disclosers — many high-quality *voluntary* signalers.

RD $=$ LATE < 0

$$\mathrm{E}\big[Y(1) - Y(0) \mid \text{compliers, PBR} \simeq 1\big]$$

Local to *marginal, induced* compliers — more opportunistic.

The *margin* of compliance — not the sign of the policy — drives the difference.

Promise and limits of soft, exchange-led governance

- **Promise:** without enforcement, a well-framed request raised average valuations, ROE, dividends, and buybacks, and improved liquidity/transparency.
- **Limit:** it worked *least* among low-P/B / Standard firms — exactly the intended targets — and re-priced marginal compliers *down*.
- **Why:** strategic firm responses can *dilute the targeting* a soft initiative aims for.

Conclusion

Bottom line

Exchanges can act as governance institutions through **moral suasion and visibility** — but moral suasion has its limits precisely among the firms most in need of reform.

- A soft, non-binding request *worked on average* — without formal enforcement.
- Deeply heterogeneous: strongest for high-valuation / Prime; targeted firms disclosed less; marginal disclosers re-priced down.

Soft exchange-led governance: effective on average, unpredictable at the margin.

Limitations & future research

- **Horizon.** Only 1–2 years post-request — do effects persist, reverse, or intensify?
- **Disclosure quality.** Distinguish *substantive* action plans from *symbolic* compliance.
- **Longer-run outcomes.** Governance practices, disclosure quality, cost of capital.
- **External validity.** Comparative evidence from other exchange-led initiatives.

Exchanges can govern through moral suasion and visibility — but its limits bind precisely among the firms most in need of reform.

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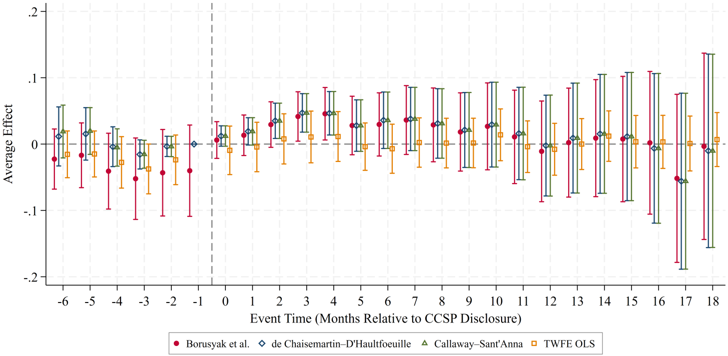
Appendix

Robustness · RD detail · Sources

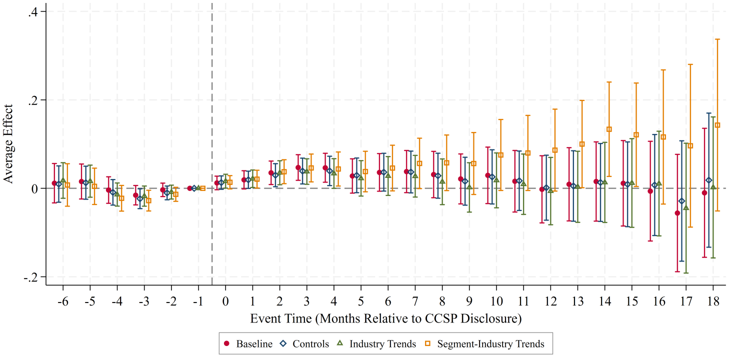
Appendix A — DiD robust across four estimators



P/B event study: Borusyak et al., dC–DH, Callaway–Sant'Anna, and TWFE-OLS.

back to DiD

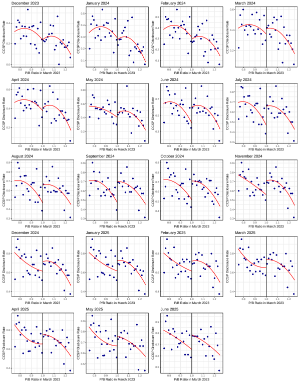
Appendix A — DiD robust to controls & trends



P/B event study: baseline vs. firm controls, industry trends, and segment×industry trends.

back to DiD

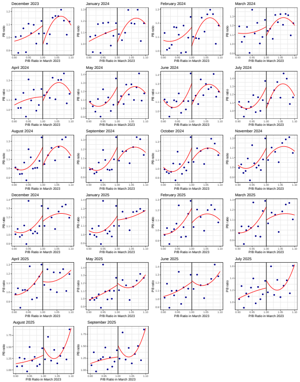
Appendix B — first-stage RD plots by month



Binned disclosure vs. P/B (March 2023); local-quadratic fits each side of $c = 1$. Bandwidth $[0.75, 1.25]$.

◂ back to RD

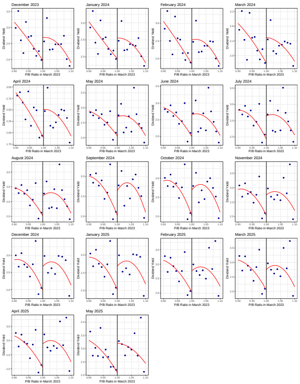
Appendix B — fuzzy RD plots: P/B by month



Binned P/B vs. running variable; local-quadratic fits each side of $c = 1$. Bandwidth $[0.90, 1.10]$.

back to RD table

Appendix B — fuzzy RD plots: dividend yield by month



Binned dividend yield vs. running variable; local-quadratic fits each side of $c = 1$. Bandwidth $[0.90, 1.10]$.

◂ back to RD table

Appendix — binomial manipulation tests

Window / 2	$< c$	$\geq c$	p-value
0.02	45	37	0.440
0.04	75	72	0.869
0.06	111	100	0.491
0.08	145	130	0.399
0.10	176	150	0.166

Exact binomial tests of equal mass around $c = 1$ (Calonico–Cattaneo–Titiunik; Cattaneo et al.). No window rejects.

back to tests

Appendix C — the "strong request" framing

- TSE CEO letter: not an obligation, *yet* "we request that listed companies actively implement."
- Follow-up material: for chronically sub-1 P/B firms, "disclosure is **strongly requested**."
- The request text never states compliance is optional or penalty-free.

◂ back

Non-binding in form, quasi-regulatory in framing — a de facto soft obligation.

Appendix D — how the market understood it

JPX Group CEO Yamaji, interview (Sep 2023)

"Meeting a PBR of 1 is not the dividing line between pass and fail... it is not sufficient to say that simply reaching a PBR of 1.0 is enough."

- Nikkei headlines (Mar 31 / Apr 1, 2023) framed it as targeting the "1,800 firms" below book.
- Analysts (Nomura) described it the same way; general-interest papers barely covered it.

◂ back

The CEO's clarification itself reveals that participants read P/B $= 1$ as the line.

Appendix — the framing we set aside: “stock-exchange activism”

Dimension	Shareholder activism	Stock-exchange activism
Strategy	Voting, proxy contests, engagement via ownership rights	Non-binding but salient tools: disclosure requests, comply-or-explain, naming & shaming
Incentive	Raise firm value $\Rightarrow$ own stake	Raise the market's credibility & attractiveness
Scope	Firm-specific, concentrated stakes	Systemic — whole categories (e.g. all firms below book)

A hybrid mechanism — the authority of regulation with the soft influence of activism. Foregrounded early, then set aside in favor of the empirics.

◂ back