Demography is Destiny?

University Finances and the Enrollment Cliff

Cornaggia, Cornaggia, Iliev, and Li

Discussion

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Federal Reserve Bank of Chicago Conference on Municipal Bond Markets, 2026

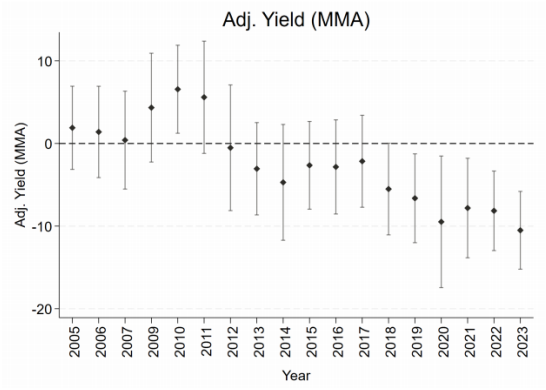
The Paper in One Slide

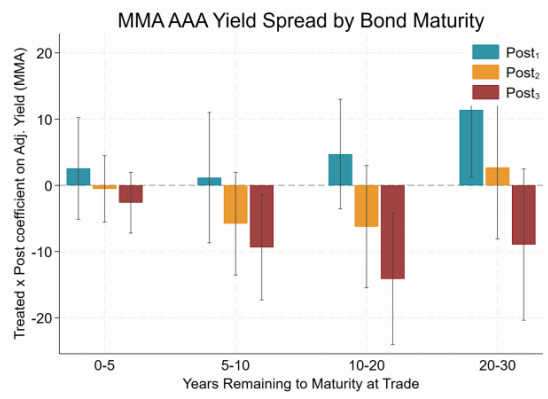
- **Setting:** U.S. births fell ∼13% after 2007 ⇒ the college-age pool shrinks starting ∼2025 (the "enrollment cliff")
- **Questions:** Do forward-looking muni markets price this foreseeable shock in advance? Do exposed universities adapt in the interim? Does the market reward it?
- **Treatment:** local birth ratio, 2011–13 over 2005–07 births, county plus first- and second-order neighbors; below-median = treated
- **Design:** difference-in-differences event study, 2005–2024, university and year fixed effects; three post-2008 windows (Post1, Post2, Post3)

What They Find

- **Yields:** MMA spread $+4.5$bp in Post1 (n.s.), -9.8bp** in Post3
- **Enrollment:** -450 students on average, emerging $\sim$2012, concentrated in undergraduates
- **Finances:** revenue and expenses both fall $\sim$3.3–3.4% of assets — operating surplus roughly preserved
- **Endowments:** modest growth advantage, concentrated among Rust Belt institutions
- **Mergers:** continuous exposure predicts consolidation, strongest for public four-year institutions

Story in Two Figures





Four Comments

1. A Stronger Maturity Test
2. Forced Adaptation
3. School Districts
4. Local Students

Comment 1a — The Market Prices a Shock 15+ Years Out

- In 2009–2011, bonds maturing **before** 2025 show no treatment differential
- Bonds maturing **2025 or later** widen significantly — exactly the bonds still outstanding when the cliff arrives
- Local-government bonds in the *same counties* show no analogous maturity gradient

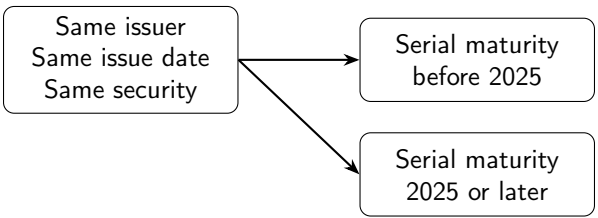
	Matures < 2025	Matures ≥ 2025
University bonds (Post1)	$+1.4$ (n.s.)	$+12.2^{***}$
Local-govt bonds (Post1)	—	-3.7 to -9.1 (n.s.)

University×year FE for university bonds; entity FE for local-government bonds. Basis points.

This is a really nice result.

Comment 1b — An Even Stronger Test

- University debt often comes in **serial maturities** from a single bond issue
- Compare maturities on opposite sides of 2025, *within the same issue*



Hold everything except maturity fixed.

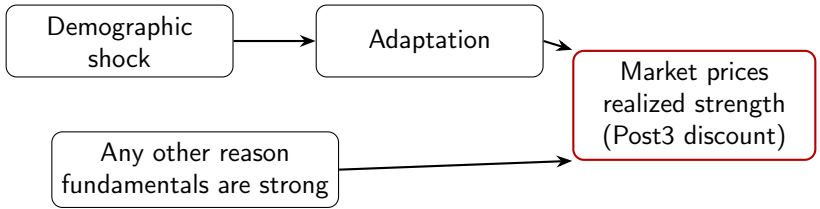
Comment 1c — Changing Composition?

- Issuers actively reshape their **own** maturity profile: refunding into shorter debt, defeasance from reserves, and (after 2017) the loss of tax-exempt *advance* refunding under the TCJA
- If treated universities shortened their debt profile more, the Post3 "long" bucket is a **selected, shrinking** pool, not a stable comparison group
- Robustness: Restrict the maturity test to bonds issued before 2008 — a fixed, predetermined set of bonds that can't have been reshaped by post-shock refinancing.

Would rule out that results are driven by *changing bond composition*

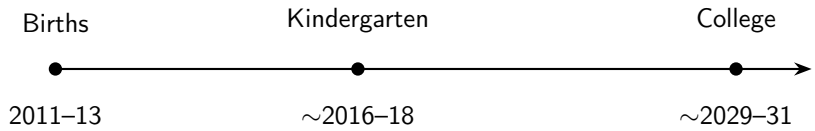
Comment 2 — Market Rewards Forced Adaptation

- Table OA.19's adaptation measures are genuinely **predetermined** relative to Post3 — every one is built through 2019, before the 2020–24 outcome window begins:
  - expenses, revenue, government funding: *2012–19 vs. 2005–07*
  - endowment growth: *2009–19* enrollment: *2017–19 vs. 2005–07*
- Result: predetermined enrollment and endowment growth predict a larger Post3 discount; the expense cut does not



This analysis belongs in the main paper.

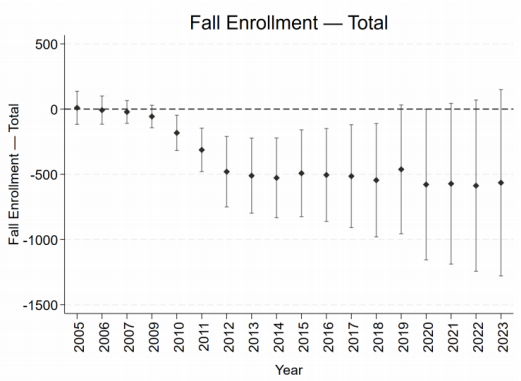
Comment 3a — Same Cohort, Earlier Arrival

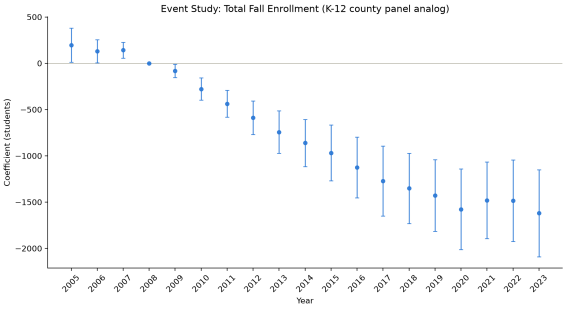


- The paper already includes school-district bonds — as part of the local-government *control* group
- But a school district's fundamentals are tied to the **same** birth cohorts, just ∼13 years earlier

The same child who affects university enrollment at 18 affects a school district at age five.

Comment 3b — Enrollment Shocks





Enrollment shock hits schools early.

Comment 3c — Slight Complication

- Most K–12 GO bonds are paid from a **dedicated, voter-approved debt-service property tax levy**, not from per-pupil state aid
- Property tax revenue tracks *assessed value*, not headcount: a district can lose students without losing its tax base
- State per-pupil aid mostly funds **operations**, not debt service, in most states

The enrollment channel runs through the operating budget and credit perception — not mechanically through the bond's own revenue stream, the way university tuition does.

MOODY'S
RATINGS

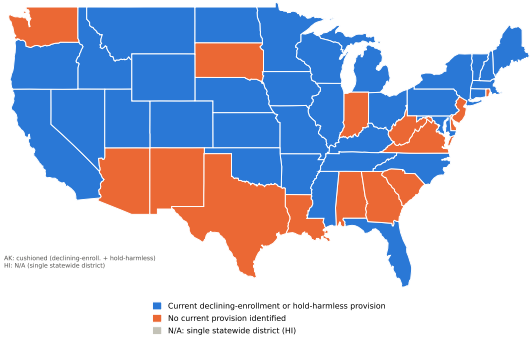
Rating Action: Moody's Ratings downgrades Ann Arbor Public Schools, MI's to A2 from A1, outlook stable

20 Aug 2026

RATINGS RATIONALE

The A2 issuer rating balances the district's notable economic and reputational strengths against its very narrow reserve ratios. The district benefits from a very strong local economy and is home to the University of Michigan. Despite a large student population, the resident income ratio is robust at 113% and full value per capita is over $187,000. The district enjoys strong community support, as demonstrated by voter approval for a countywide enhancement millage, a renewed sinking fund millage for maintenance and a billion-dollar bond authorization for capital projects. Still, enrollment fell over the last three years and will likely continue to decline.

Comment 3e — How Exposed Is the State Aid Formula?



Declining-enrollment or hold-harmless provisions in state K–12 funding formulas. Source: Shuls and Lueken (2023), *How States Protect Funding for K-12 Public Schools*, EdChoice/Hanover Research.

34 states currently cushion state aid against enrollment decline; 15 fund on current-year counts

Comment 3f — Similar Story in School Districts?

- For universities: split bonds at 2025 (college entry)
- For school districts: split bonds at ∼2016–18 (kindergarten entry) instead
- **Suggestion:** interact exposure with whether the state cushions enrollment declines (Comment 3e) — the operating-budget channel should bite hardest where it isn't

$$\text{AffectedGradeShare}_{d,t} = \frac{\#\text{ grades occupied by post-2007 cohorts}}{13} \times \text{Uncushioned}_s$$

This cliff can be *observed*, not just anticipated.

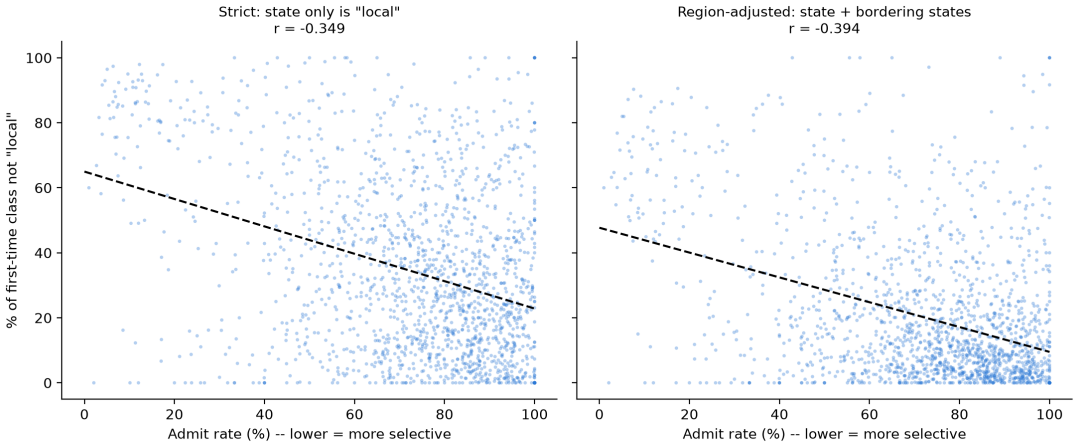
Comment 4a — Local Students

Both the binary treatment and a state-level in/out-of-state split treat every university in a county identically — but universities differ enormously in *where their students actually come from*.

University	% not "local"	
	Strict (state)	+ neighbor states
Saint Anselm College (NH)	80.5%	14.5%
North Dakota State	65.0%	6.2%
Dartmouth	97.4%	87.2%
Tulane	90.8%	83.3%

- Counting bordering states as "local" shifts the average school by 14 points.
- International students (2.9% of first-time enrollees nationally — 40%+ at schools like RISD) are excluded from *every* version of this measure.

Comment 4b — Out of State vs Selectivity?



Out-of-state exposure is correlated with selectivity, but not perfectly.

Comment 4c — Suggestion: A Shift-Share Exposure Measure

- Replace the binary local birth ratio with a weighted exposure measure, using each university's **pre-period** state-of-residence shares (already in IPEDS EF, Residence and Migration component):

$$\text{Exposure}_{it} = \sum_{s} \text{Share}_{i,s,\text{pre}} \times \text{BirthDecline}_{s,t-18}$$

- Continuous, not a cutoff — a national-draw school and a regional commuter school get different exposure *by construction*, not by which side of a median split they land on
- Creates within-university variation over time, so university×state-year effects become available
- Add international share $\text{Intl}_{i,\text{pre}}$ as a covariate. It should scale exposure down further.

Bottom Line

My Take

Important topic. Nice, consistent results. I buy the story. I think it can be made even stronger.

Four asks

1. Push the maturity design further: serial maturities within the same bond issue
2. Emphasize the adaptation $\rightarrow$ repricing link
3. Add school districts as a second, earlier-arriving treatment setting, not just a placebo
4. Replace the binary local birth ratio with a shift-share exposure measure built from each university's actual entering-class geography