RISE PROGRAMME IN INDONESIA

Making public schools less selective: implications for equity and learning in Indonesia

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Starting point

- How to allocate scarce resources, promote equity in a dynamic system?
- What are the impacts of a policy that expands access to selective schools on students across the learning distribution?

Public junior secondary schools in Indonesia are oversubscribed and selective

Public schools

- Capacity for 50-60% of students in large districts
- Usually politically impossible to expand capacity
- Admissions based on 6th grade leaving exam (UASDA)
- Higher quality, eg value-added in Yogyakarta was ~0.3 SD higher in math, 0.4 SD higher in Indonesian

Private schools

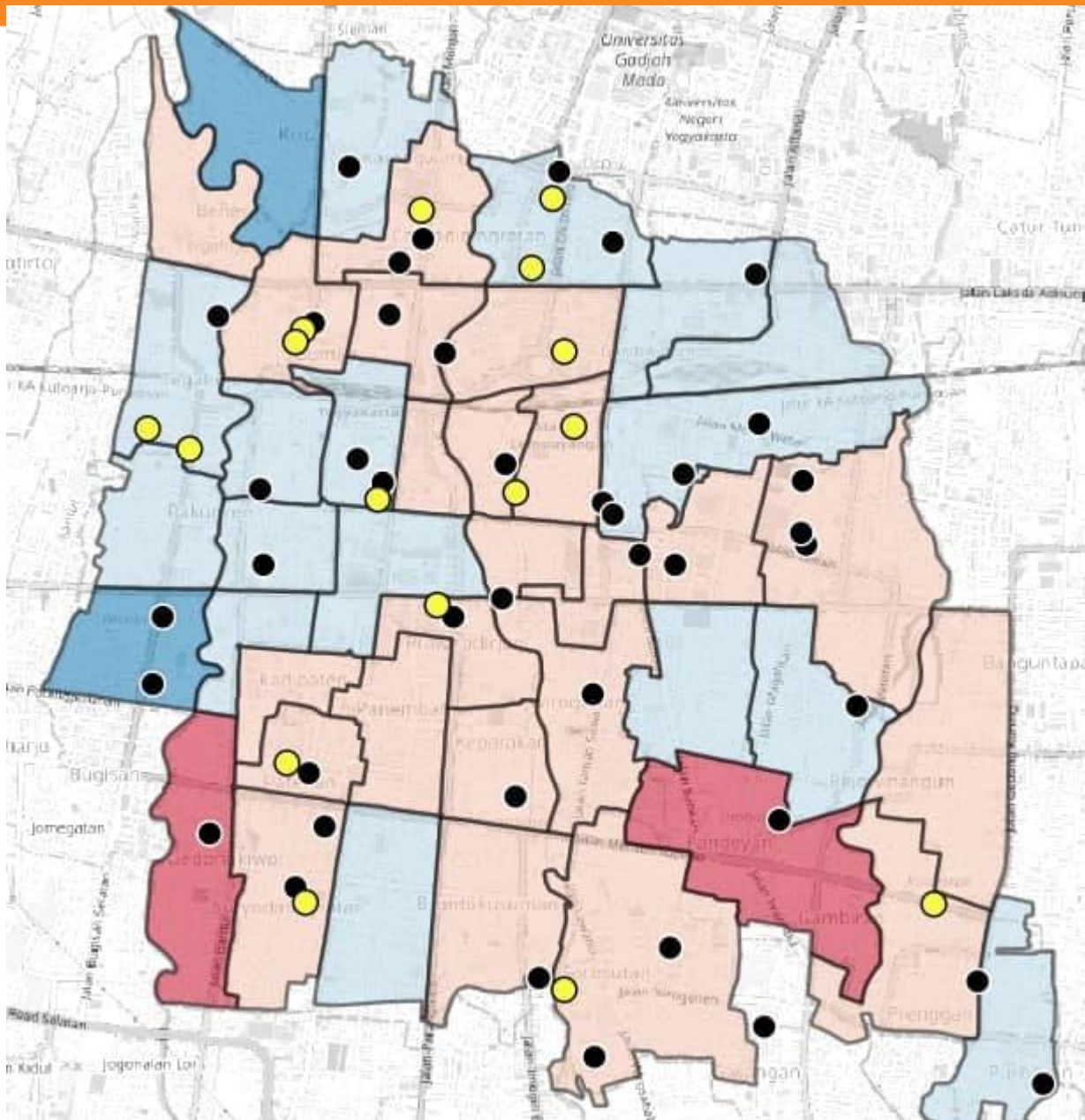
- Less preferred
- Not free but subsidized (through vouchers) for qualifying students

Yogyakarta has 16 public and 41 private schools

Public schools
Private schools

% of students with below median math UASDA

0-25%
26-50%
51-75%
76-100%

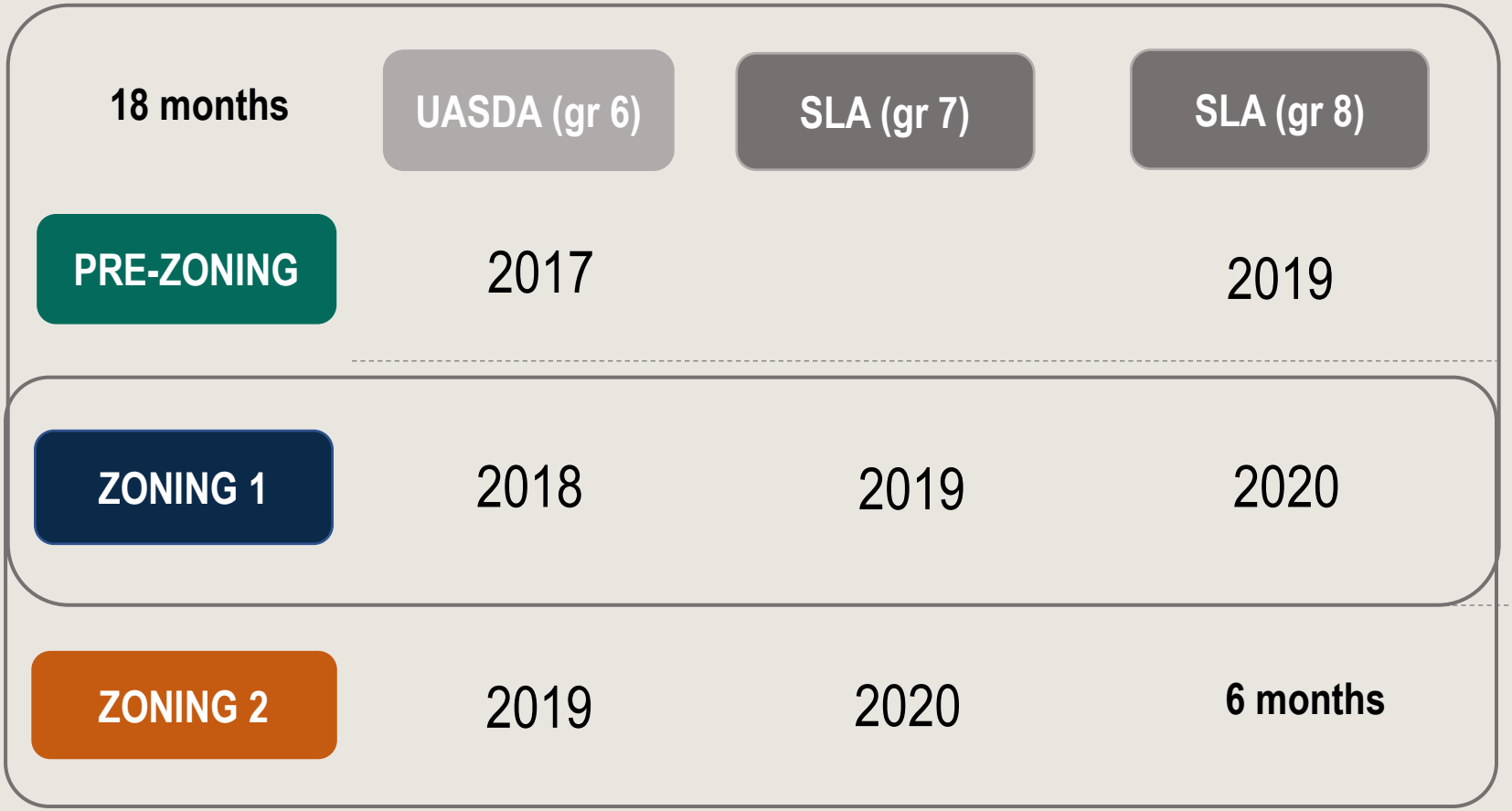


High performing: 13 of Yogyakarta public junior high schools were in the top 100-scoring schools on the gr9 leaving exam in Indonesia in 2019

With the goal of expanding access, Yogyakarta changed its admissions policy for junior secondary schools

Share of seats allocated based on:	PRE-ZONING	ZONING 1	ZONING 2
UASDA score (Yogyakarta residents)	55	15	40
UASDA score (non-Yogyakarta residents)	20	5	5
Poverty status (UASDA rank)	25	0	10
Proximity to school (Yogyakarta residents)	0	75	30
"Special talents" (UASDA rank)	0	0	10
Relocation (UASDA rank)	0	5	5
		May 2018	**May 2019**

We use testing data for 3 cohorts of students



We tested students in

- all 16 public schools
- 30 (out of 41) private schools (89% of all students)

Administrative and survey data

- Residence locations for ~2/3 of the sample
- Student, teacher, and principal questionnaires

We estimate the effect for all students and by UASDA quintile

Percent of students in public school by quintile	PRE-ZONING	ZONING 1	DIFFERENCE
Quintile 5 (highest)	91	81	-10
Quintile 4	86	73	-13
Quintile 3	73	69	-4
Quintile 2	49	66	+17
Quintile 1 (lowest)	17	65	**+48**

	Public			Private		
	PZ	Z1	Diff	PZ	Z1	Diff
Standardized UASDA	0.49	0.09	-0.40***	-0.73	-0.19	0.54***

We predict SLA scores under constant SVA

We estimate model for student *i* in the pre-zoning cohort

$$Y_i^2 = \alpha_1 Y_i^1 + \alpha_2 X_i + \gamma_s + \varepsilon_i$$

Y^2 is the grade 8 or grade 7 math or Indonesian SLA score

Y^1 is the standardized UASDA score in the relevant subject

X is a vector of control variables for gender, an asset index, an indicator for whether the mother completed tertiary education and neighborhood

γ_s are school indicators that capture the average school value-added in the baseline cohort

Simulate grade 9 SLA scores for the zoning cohort, taking a draw from pre-zoning error distribution

We produce simulated and actual impact estimates

$$Y_i^2 = \beta_0 + \beta_1 Z_i + \beta_2 Y_i^1 + \beta_3 X_i + \varepsilon_i$$

Y_i^2 **is actual grade 8 test score or predicted score**

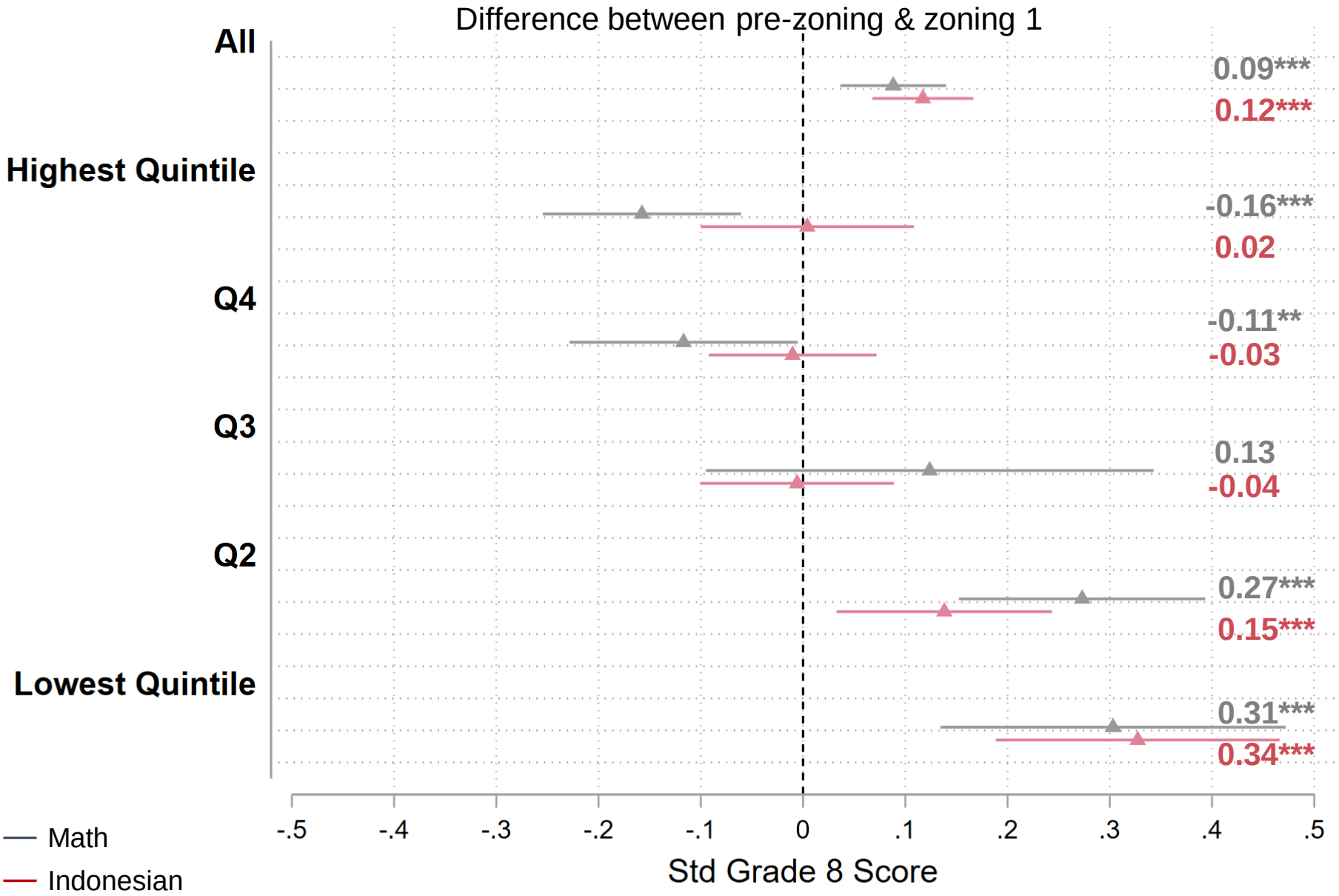
Z is a dummy variable indicating the first zoning cohort

β_1 is the difference in learning levels between two cohorts for students in the same neighborhood and baseline score

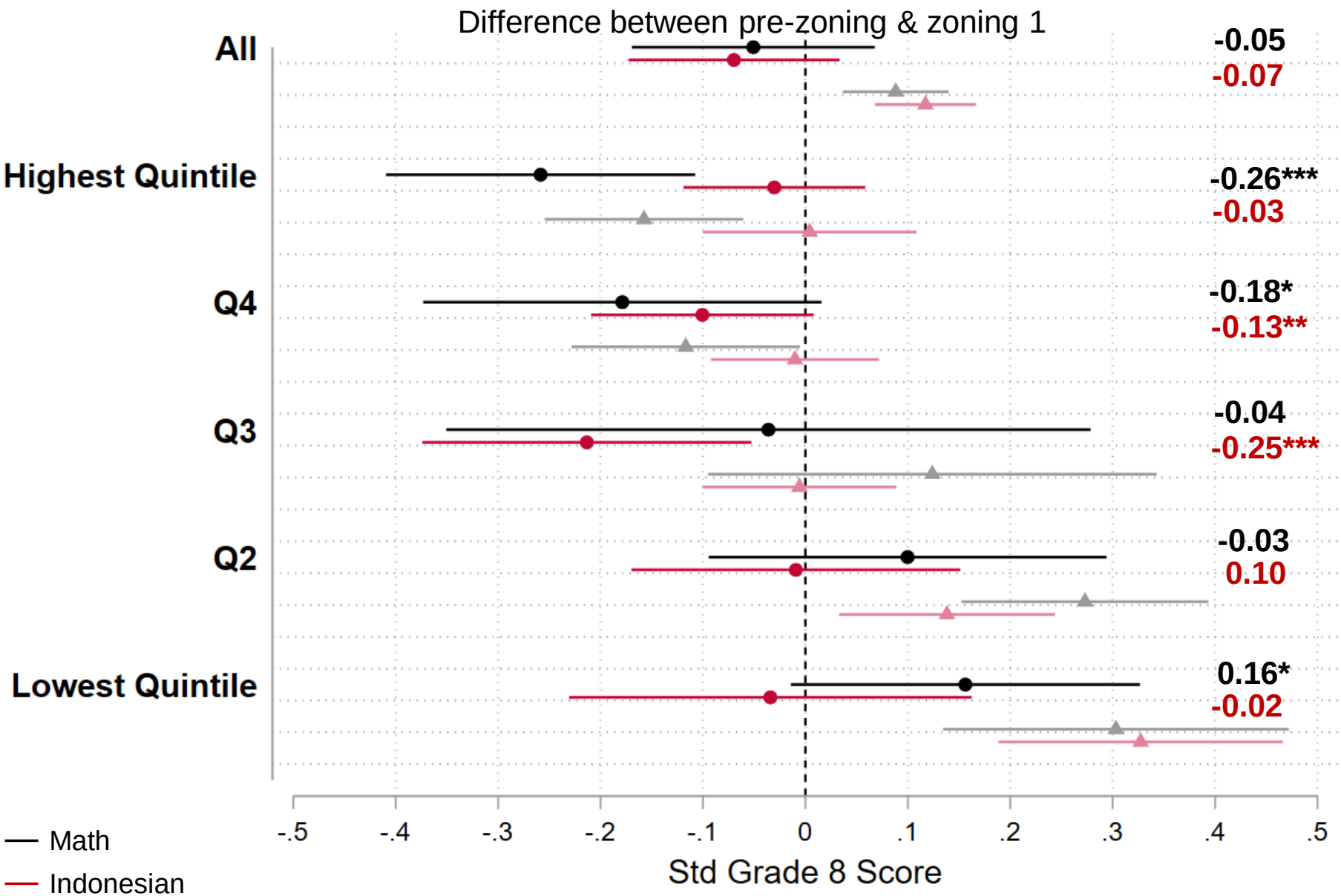
We compare the predicted and actual impact

- Benchmark estimates for β_1
- What happens when lowest quintile students move into public schools with much higher pre-zoning SVA? How do these schools respond?

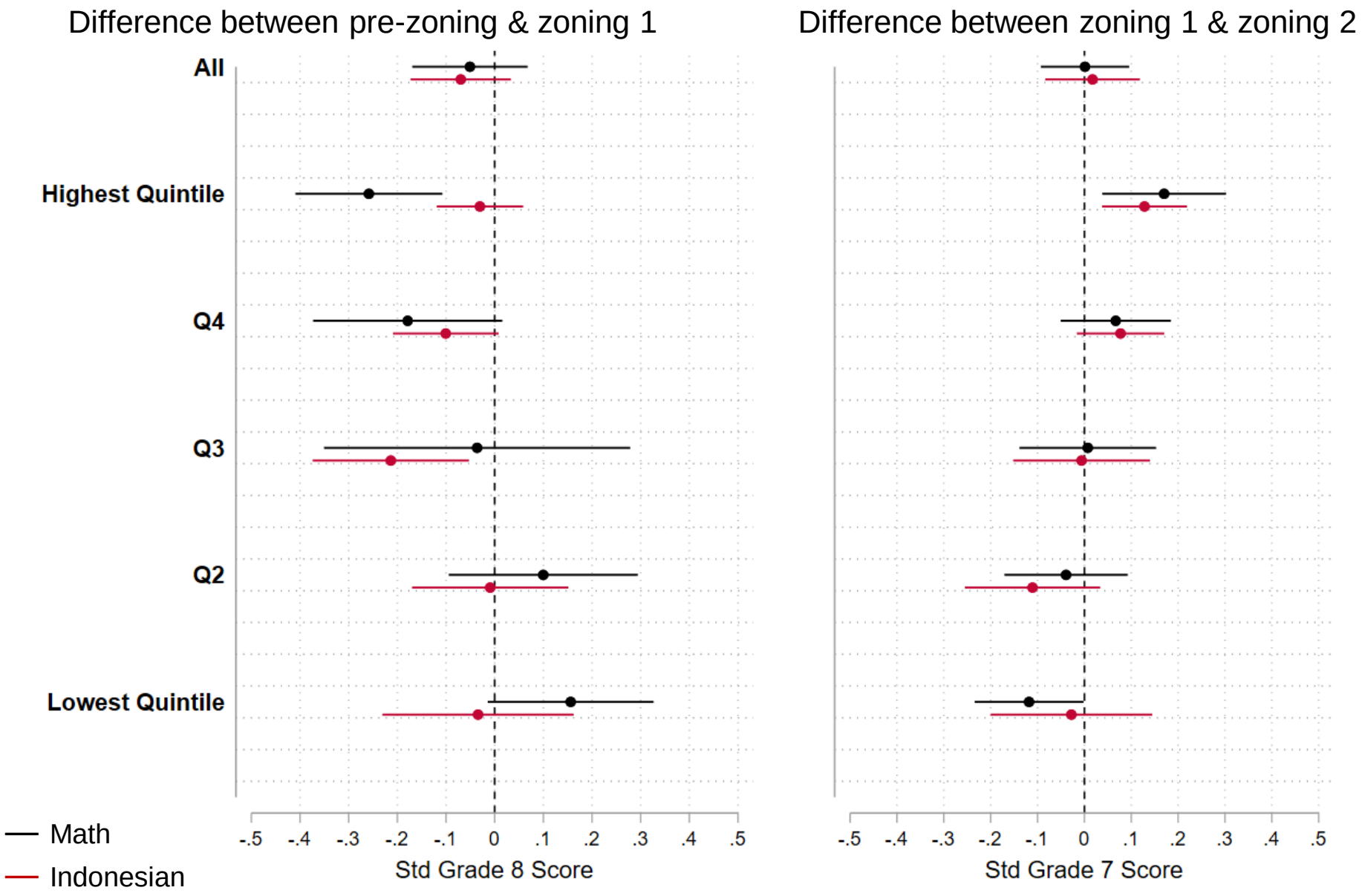
Under constant school value-added, we would expect larger positive changes in lower quintiles (1st policy change)



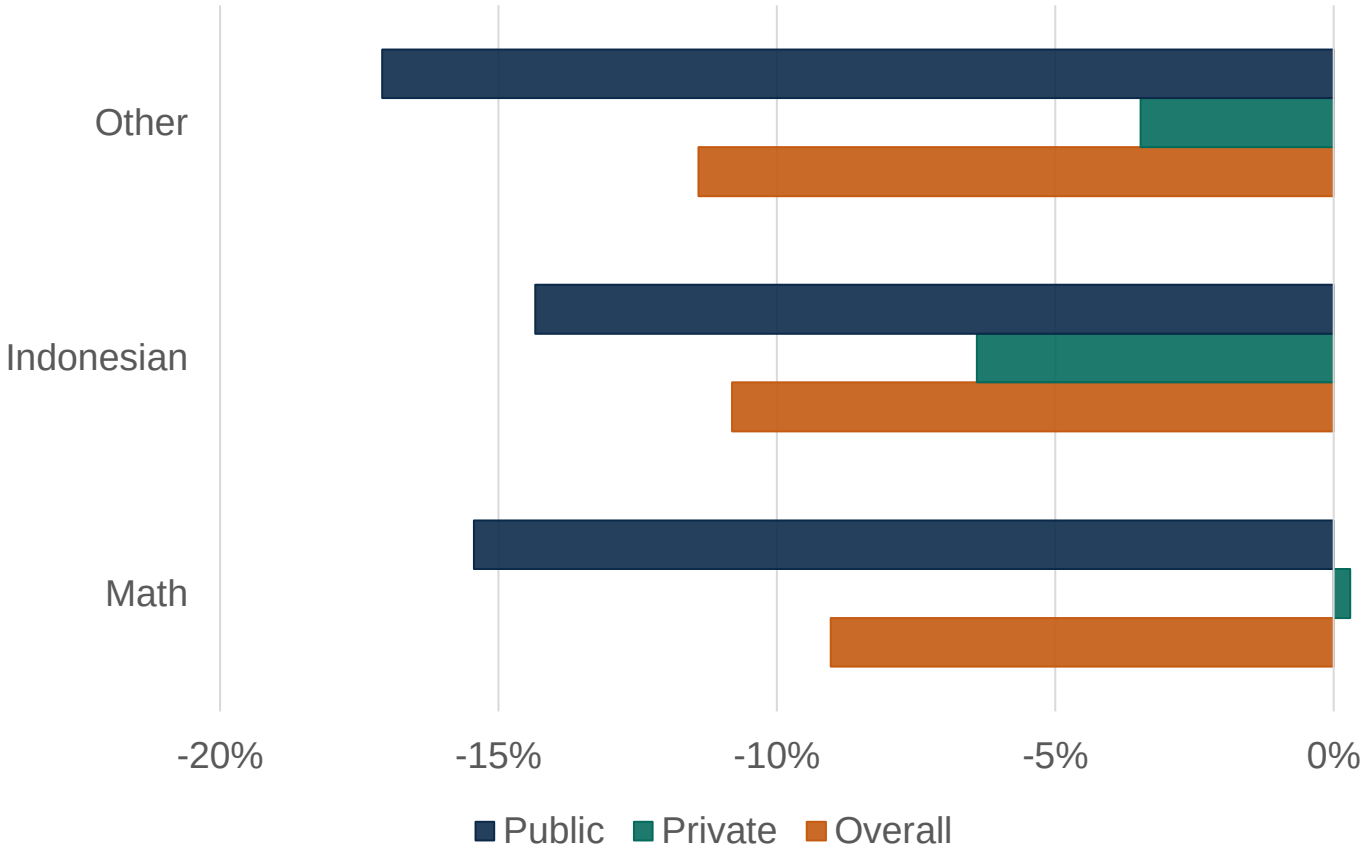
Overall results are worse than predicted. Slight, non-significant decline overall but larger changes by quintiles



Slight bounce back effect (more similar to pre-zoning) after the second policy



Why don’t we see more positive results? Decline in student-reported tutoring?



	Public			Private		
	PZ	Z1	Diff	PZ	Z1	Diff
Tutoring outside teaching hrs (%)	70	35	-35***	63	49	-14
Tutoring in minutes per week	99	48	-51**	65	44	-21

Did this policy improve equity? Implications for considering large policy changes in a dynamic system

- Grade 8 SLA difference between Q1 and Q5 1.9 SD → 1.5 SD. Mostly at the expense of Q5.
- Limited effect Q1 students for whom access 17% → 65%. Compared to alternative private, learning only goes up a bit for Q1.
- College-going aspirations ↓ 5pp overall from base ~80% (↓ 8pp Q1)
- Effects are short-term (18 months of schooling)
- When implementing a policy that redistributes students, not safe to assume schools will maintain learning levels with new student composition

Thank You

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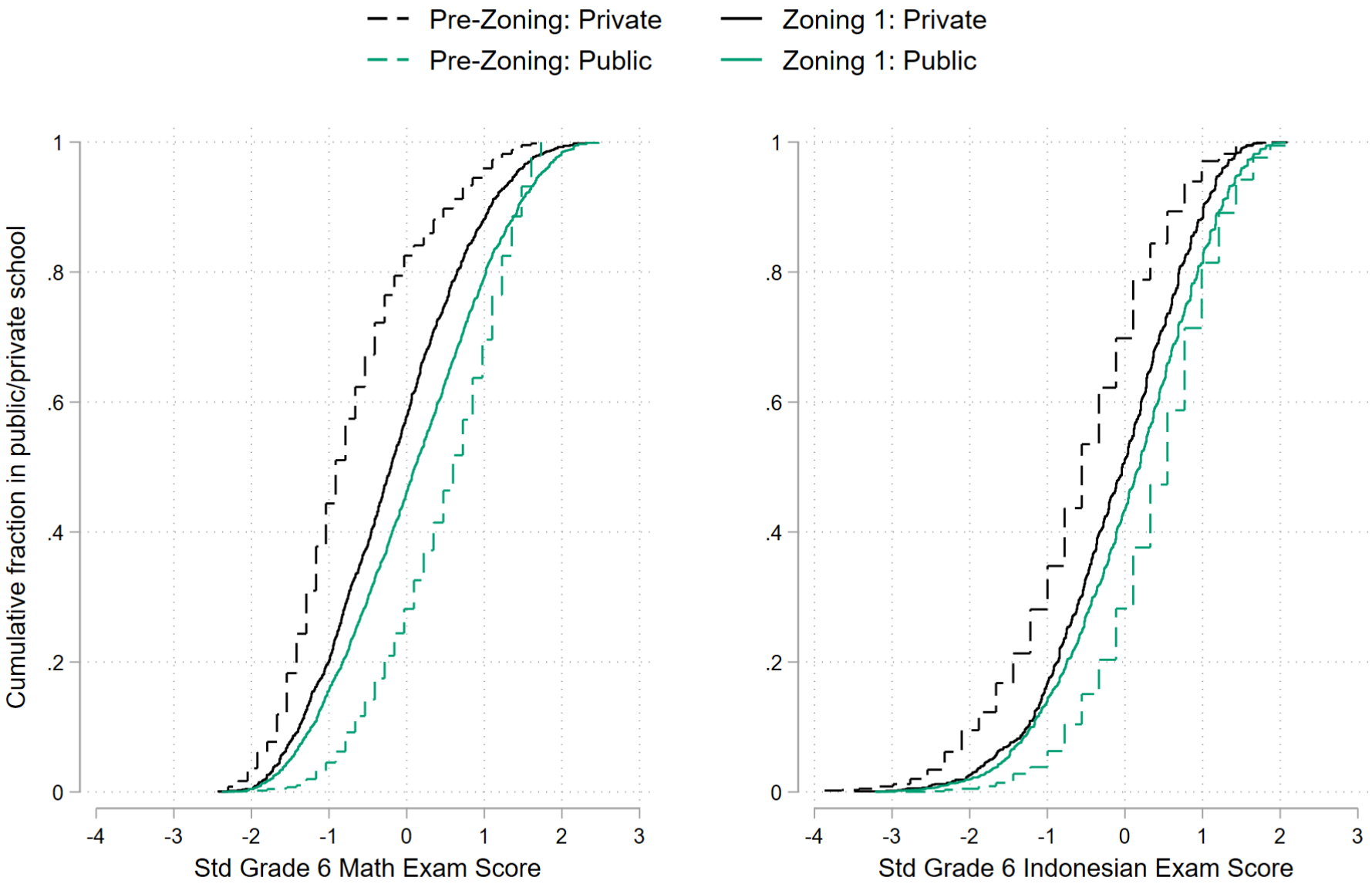
Backups

Another way of showing the change in student composition



Difference in enrolment from 1st zoning to 2nd zoning policy

Percent of students in public school by quintile	ZONING 1	ZONING 2	DIFFERENCE
Quintile 1 (lowest)	65	37	-28
Quintile 2	66	58	-8
Quintile 3	69	68	-1
Quintile 4	73	83	+10
Quintile 5 (highest)	81	85	+4

We estimate the effect for all students and by UASDA quintile

UASDA math quintiles	Percentage in Public School		
	Pre-Zoning	Zoning 1	Zoning 2
Total	**61.7**	**70.5**	**65.8**
Lowest Quintile	17.4	64.5	37.2
Q2	48.7	65.7	58.2
Q3	73.4	68.6	67.6
Q4	85.9	73.1	82.8
Highest Quintile	91.1	80.8	85.1

Student characteristics pre-zoning and zoning

	Public			Private		
	Pre-zoning	Zoning 1	Difference	Pre-zoning	Zoning 1	Difference
Standardized grade 6 exam score - math	0.49	0.09	-0.40***	-0.73	-0.19	0.54***
Standardized grade 6 exam score - Indonesian	0.40	0.06	-0.34***	-0.58	-0.13	0.45***
Male	0.45	0.49	0.04*	0.55	0.51	-0.04**
Student asset index	-0.04	-0.12	-0.08	0.04	0.24	0.20***
Mother completed tertiary education	0.46	0.43	-0.03	0.49	0.60	0.11***
Travel time to school (minutes)	17.55	13.76	-3.79***	19.08	16.14	-2.94***
Moved in grade 6	0.12	0.11	-0.01	0.15	0.11	-0.04**

We find that cohorts are balanced on key characteristics (after some minor weighting corrections)

Student characteristics by cohort and subject (weighted)

	(1)	(2)	(3)	(4)	(5)
	Pre-zoning	Zoning 1	Zoning 2	Diff c1-c2	Diff c2-c3
Number of observations	3903	3967	4130		
Mathematics Standardized UASDA Score	0.02 (1.01)	0.01 (0.99)	-0.03 (0.98)	-0.01 (0.11)	-0.03 (0.08)
Indonesian Standardized UASDA Score	0.02 (1.00)	0.01 (0.95)	-0.01 (0.98)	-0.02 (0.08)	-0.01 (0.06)
Standardized Student Asset Index	-0.01 (1.03)	-0.01 (0.99)	-0.02 (0.99)	-0.01 (0.05)	-0.00 (0.04)
Male	0.49 (0.50)	0.49 (0.50)	0.50 (0.50)	0.00 (0.01)	0.01 (0.01)
Mother completed Tertiary Education	0.45 (0.50)	0.48 (0.50)	0.46 (0.50)	0.02 (0.02)	-0.01 (0.02)

Table includes students with non-missing UASDA and SLA score. Standard deviations are in parentheses. Gender, mother's education, and household assets were reported by the students tested. Mother's education is missing for about 25 percent of the sample. We test the difference in means with a t-test. * *p < .10,* ** *p < .05,* *** *p < .01*

After the first zoning policy, more lower-scoring, poorer students in public schools, but limited change in travel time to school

	(1)	(2)	(3)	(4)	(5)	(6)
		Public			**Private**	
	Pre-zoning	1st Zoning	2nd Zoning	Pre-zoning	1st Zoning	2nd Zoning
Standardized grade 6 exam score - math	0.49***	0.09	0.23*	-0.74***	-0.19	-0.53***
	(0.80)	(1.00)	(0.94)	(0.93)	(0.93)	(0.85)
Standardized grade 6 exam score - Indonesian	0.40***	0.06	0.26***	-0.58***	-0.13	-0.52***
	(0.79)	(0.95)	(0.83)	(0.99)	(0.93)	(1.04)
Student asset index	-0.04	-0.12	-0.06**	0.04***	0.24	0.07*
	(1.01)	(0.96)	(0.96)	(1.06)	(1.00)	(1.04)
Mother completed tertiary education	0.44	0.43	0.45	0.47***	0.60	0.51***
	(0.50)	(0.50)	(0.50)	(0.50)	(0.49)	(0.50)
Travel time to school (minutes)	17.53***	13.76	14.33	19.07***	16.14	17.38*
	(11.31)	(10.37)	(10.77)	(15.90)	(11.07)	(15.08)
Moved in grade 6	0.12	0.11	0.08***	0.14**	0.11	0.10
	(0.32)	(0.31)	(0.28)	(0.35)	(0.32)	(0.30)

Summary table of mean and s.d. with significance for t-test result compared to 1st Zoning.

* $p < .10$, ** $p < .05$, *** $p < .01$

Comparing the predicted (assuming constant v.a.) and the actual changes.