Tigray
Afar
Amhara
Benshangul -Gumaz
Dire Dawa
Addis Ababa
Harari People
Gambela Peoples
Oromiya
Southern Nations, Nationalities and Peoples
Somali

1 or 2 surveys
No surveys
All 3 surveys

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Has Equity Improved in Ethiopian Primary Schooling Despite Falling Learning Outcomes?

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Background

RISING ENROLMENT, ESPECIALLY IN DISADVANTAGED AREAS

SYSTEM REFORM – GEQIP COMPREHENSIVE IMPROVEMENT WITH EQUITY FOCUS BUT INPUTS ORIENTED ESPECIALLY TEACHERS

DECLINING LEARNING LEVELS

Research Questions

- What do patterns and trends in learning progress in Grade 4 over time (2012-2021) reveal in terms of equity of outcomes for disadvantaged groups in Ethiopia?

- What does this suggest for the success of GEQIP?

Data

- Young Lives
- Grade 4
- 2012-13
- Regions except Benshangul
- Beginning and end of year pupil maths tests
- Teacher test
- Full teacher and school data

- RISE 1
- Grade 4
- 2018-19
- Regions except Afar
- Beginning and end of year pupil maths tests
- Teacher test
- Full teacher and school data

- RISE 2
- Grade 4
- 2020-21
- Regions except Afar, Tigray
- Beginning and end of year pupil maths tests
- Teacher test

RISE Ethiopia Findings

◦ Tiruneh et al (2021a) analyse 33 common schools (YL and RISE 1) and show decline in outcomes equivalent to one year of schooling

◦ Difficult to say why without data from grades 1-3

◦ However, students in school are more disadvantaged in 2018 than 2012 – Iyer et al (2020) shows many more 'first generation learners' entering the system

◦ Araya et al (2022b) show this finding is robust when using PSM (adjusting for backgrounds)

◦ Araya et al (2022a) show further decline in most regions between 2019 and 2021 in part linked to COVID

◦ No evidence however for declining progress in Grade 4* and this may be the best indicator of school quality

◦ Many school and teacher indicators have improved (implementation of GEQIP)

◦ Some gaps in progress appear to have narrowed e.g. gap on progress by household assets 2012-19

Notions of Equity Improvement

- More or a greater fraction of children have access to education ✔
- More or a greater fraction achieve meaningful standards e.g. reading by age 10 ❓
- Reduction in inequitable gaps i.e. those not based on effort ✔❓
- More access to a quality educational environment ✔ ❓
- Improved focus on disadvantaged children and/or low performers ✔❓

- GEQIP was about many of these things…

Pupils' Learning Outcomes Moving Further Away from Curricular Expectations Presents a Challenge for Teachers*
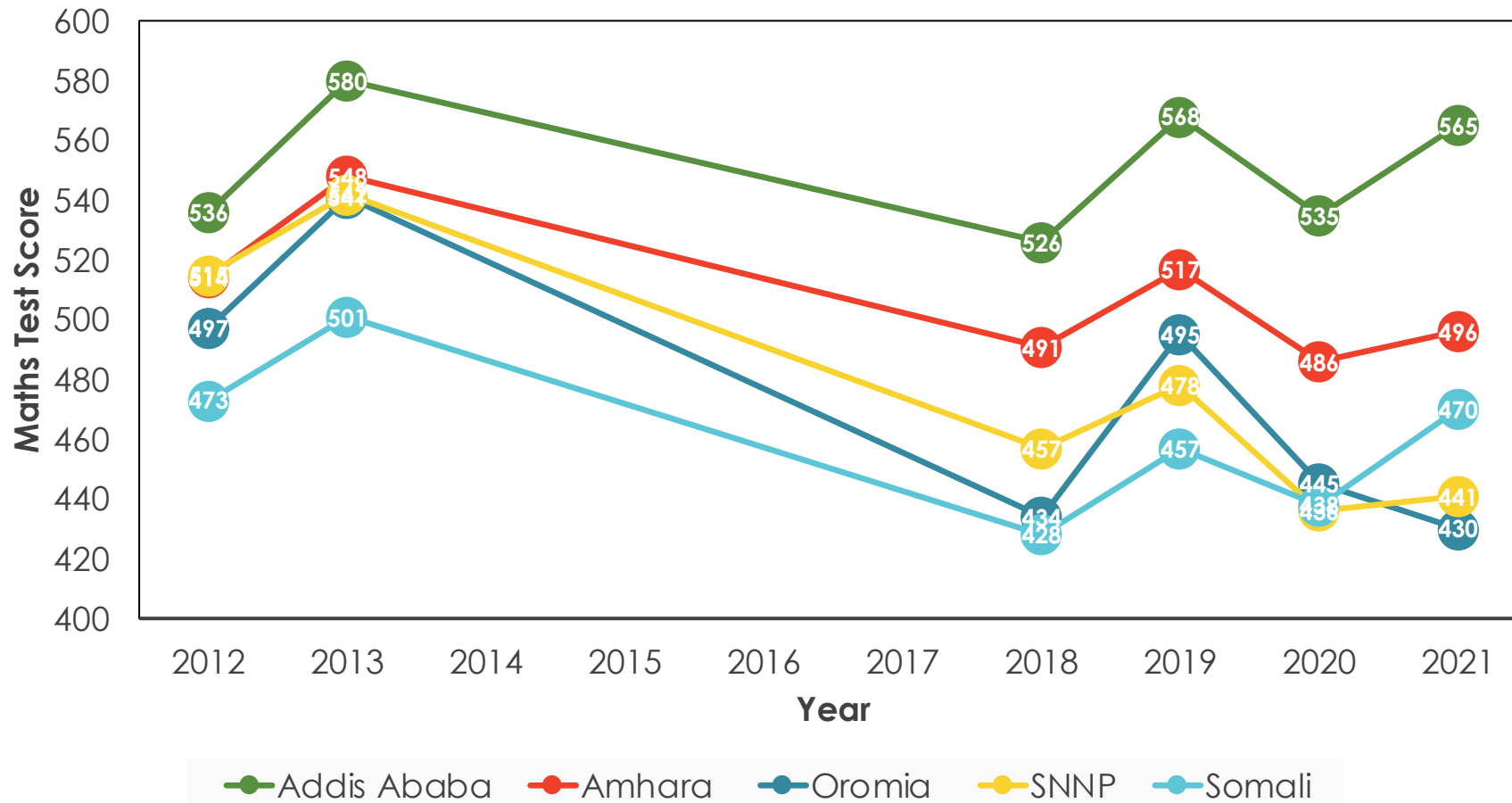
- Measurement in 2021 was right after COVID

- Improvement in outcomes likely to be slow especially where enrolment still growing

* For 33 common schools

Backgrounds of Pupils in school* deteriorated then began to improve
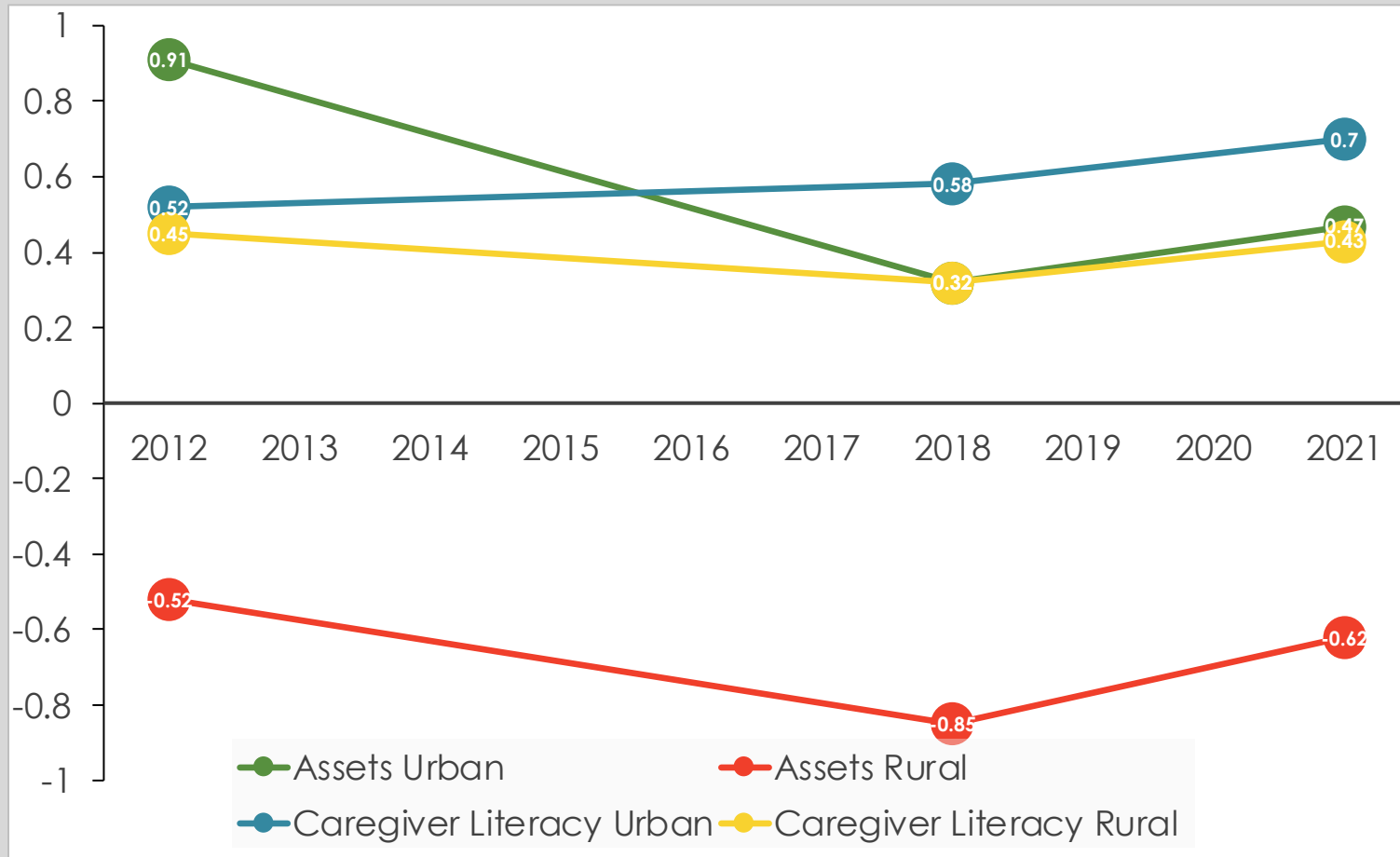
- FGLs may have peaked in 2018 (rural) and earlier than 2012 in urban areas

- Backgrounds(assets) improving from 2018

- Picture varies by region but may indicate bottom of 'u' curve close?

* For 33 common schools

Improvement in many 'teacher quality' indicators

Teacher quality indicator	2012-13	2018-19	Difference
Proportion of teachers with diploma/university degree, %	68.0	88.5	20.5***
Proportion of teachers who completed level 2 CPD training, %	46.5	59.5	13.0
Proportion of teachers who specialised in mathematics, %	19.0	85.0	66.0***
Teacher's mathematics content knowledge, average	479.0	516.0	37.0**
Teachers' age, average	34.69	31.34	-3.35
Teachers' teaching experience, average	13.25	4.82	-8.43***

t-test of the differences is significant at ***$p<0.001$; **$p<0.05$; *$p<0.1$

Teacher Mathematics Knowledge Improved Especially in Rural Areas*
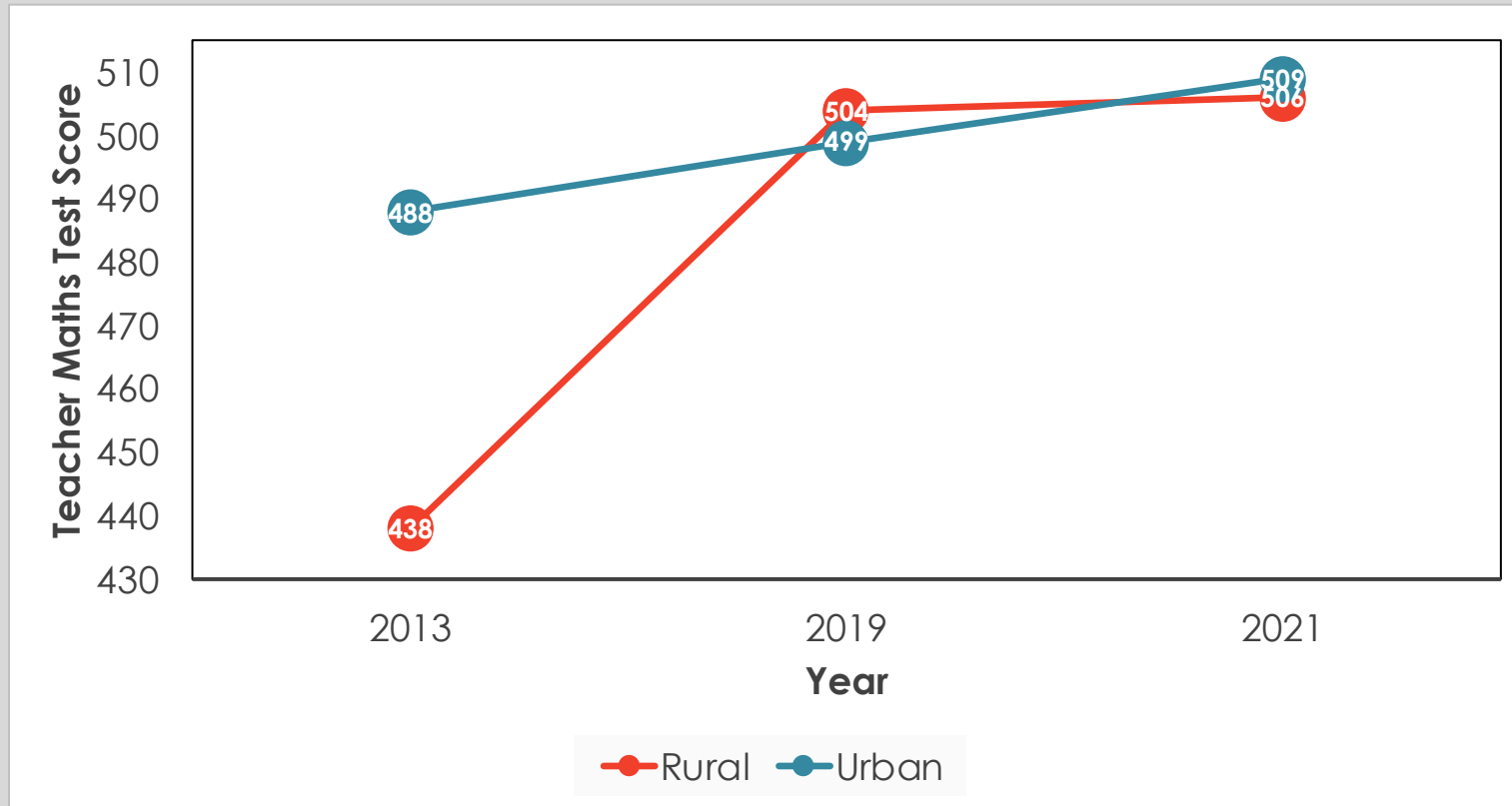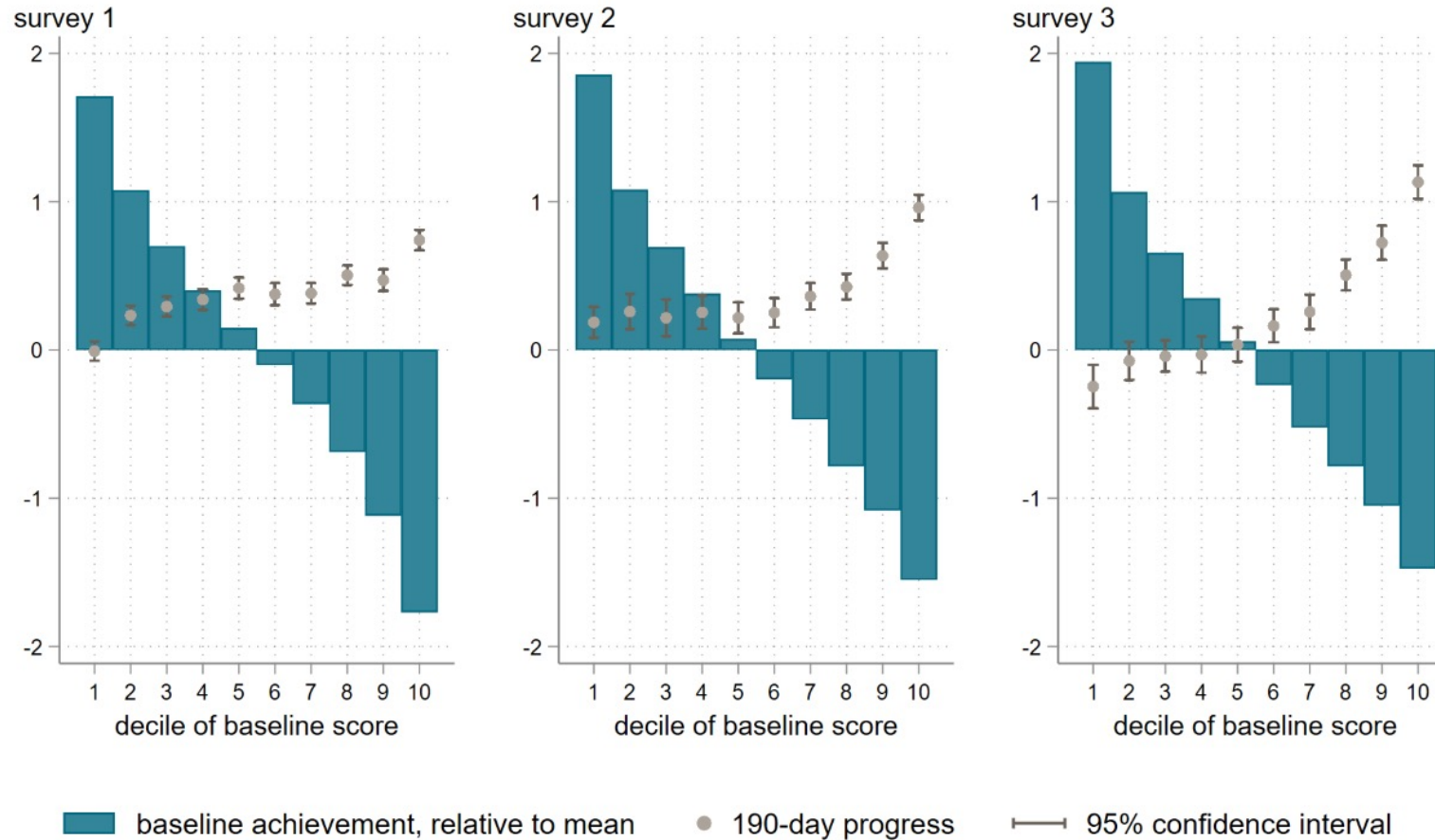

- Observable indicators No new data

* For 33 common schools

Over time lower performers have made relatively more progress

Baseline achievement and progress, by decile of baseline achievement
in standard deviations of learning

survey 1 • survey 2 • survey 3

decile of baseline score

baseline achievement, relative to mean • 190-day progress • 95% confidence interval

Over time, progress in schools attended by lower performers improved

Lower achieving kids are grouped into schools that make more 'progress'
(By survey and quintile of prior test score)
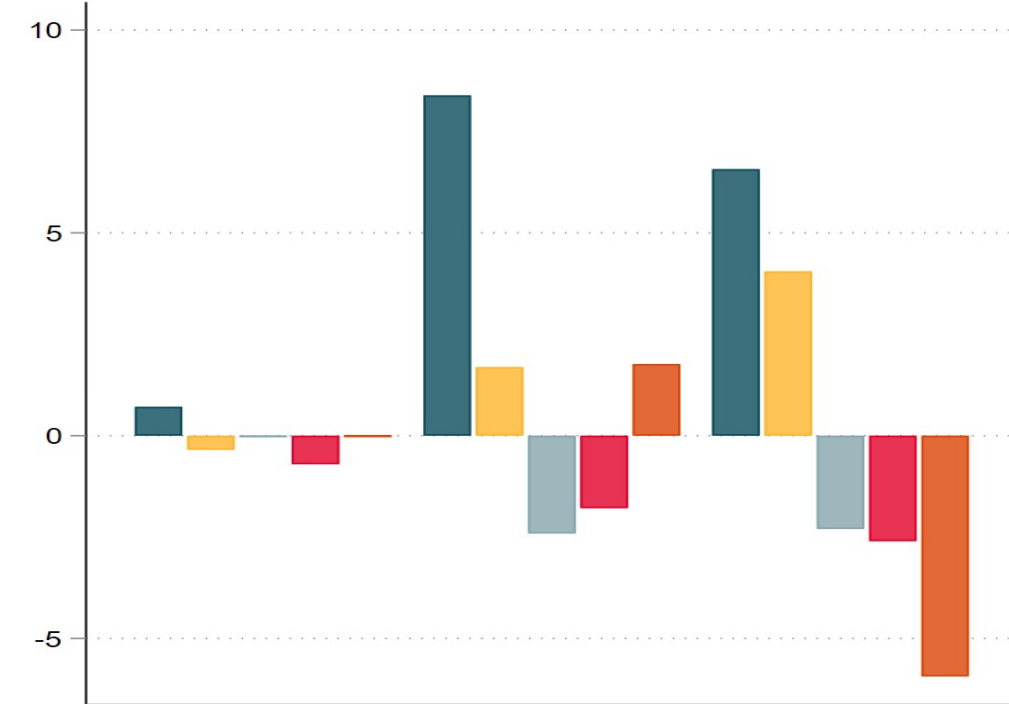
School effects on progress, averaged across groups, conditional on age, sex, caregiver literacy, consumer durables index and location

But a model of school effectiveness shows higher-achieving kids are more likely to be in more effective schools
(By survey and quintile of prior test score)
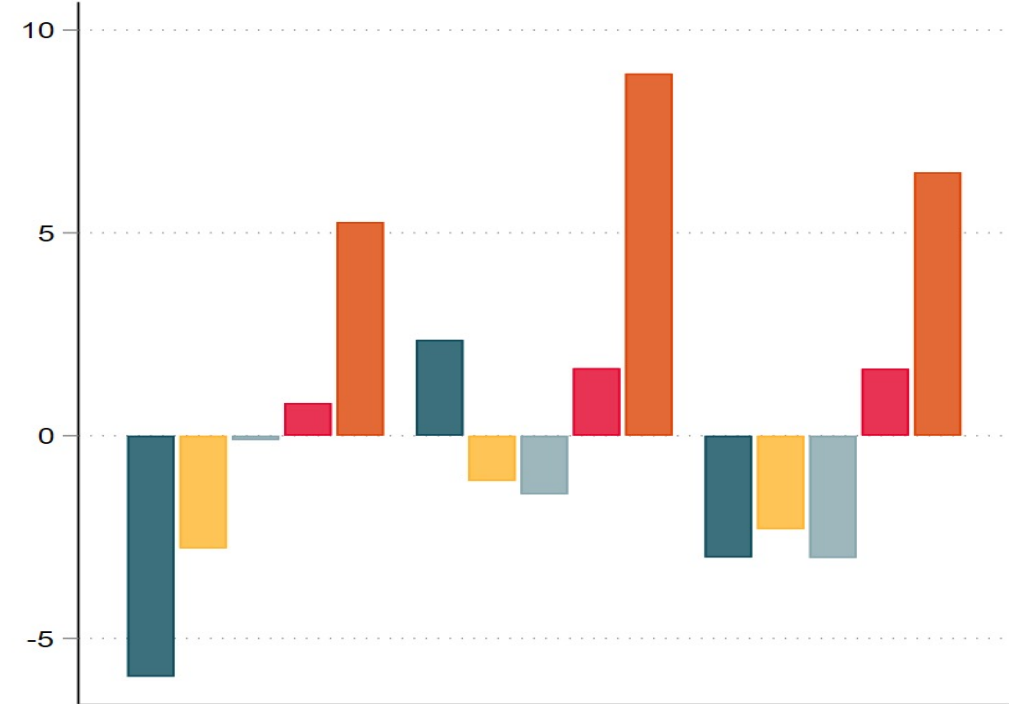
School effects on end of year score, averaged across groups, conditional on start of year score, age, sex, caregiver literacy, consumer durables index and location

Q1   Q2   Q3   Q4   Q5

Are (the same) schools more/less effective for disadvantaged pupils?

Differences in school effectiveness by advantage group, mean incremental effect

◦ Often there is no difference, which is encouraging.

◦ Imagine each school is split in two. One set serves more advantaged, one set less advantaged.

◦ Testing relative progress *within schools*, rather than across full sample of learners.

category	group	Young Lives (2012-13)		RISE 1 (2018-19)		RISE 2 (2021)	
		mean (SE)	# schools	mean (SE)	# schools	mean (SE)	# schools
richer	top 40%	-3.28 (5.13)	54	-9.99* (5.44)	105	6.73 (6.40)	90
more able	top 40%	-2.91 (4.46)	64	15.54** (5.51)	118	8.61 (5.51)	118
gender	male	0.16 (2.79)	67	2.91 (3.05)	125	3.45 (2.95)	124

Note: table shows the mean incremental effect of school on maths test scores of advantaged children compared to disadvantaged, following Glewwe et al. (2017). All models contain controls for age, caregiver literacy, an index of consumer durables and location. ***p<0.01, **p<0.05, *p<0.1

Equity Implications

◦ In one important (absolute) sense equity has worsened in that most in-school groups are 'worse off' in learning outcomes terms even when adjusting for backgrounds

◦ Equity of access has certainly improved

◦ Access to school and teacher 'quality' (on many observable indicators) has improved, improving equity in some sense

◦ Some indication that the relative position of lower performing and more disadvantaged pupils has improved in terms of progress i.e. lower performers capture a larger share of progress (zero sum however)

◦ Suggests something similar to Bau et al's (2021) finding in Pakistan i.e. that being further away from the curriculum isn't necessarily a barrier to progress...

◦ This may depend on how teachers are able to 'adapt' – there is evidence for improvement in teachers especially knowledge and training

◦ Findings consistent with precursors to improved learning outcomes and equity but early days

End

The trend is mixed, but G4 students in 2018-19 were more disadvantaged

Student background indicator	2012-13	2018-19	Difference
Proportion of students attended preschool, %	42.0	50.0	8.0***
Hours spent by a child doing homework/studying, average	1.58	1.80	0.22***
Proportion of students ever dropped out before G4, %	19.0	11.0	-8.0***
Number of days absent in the current school year, aver	1.64	1.46	-0.18
Household durable assets, average	0.12	-0.47	-0.59***
Proportion of female students from the least eco background, %	49.0	52.0	3.0
Primary caregivers' literacy, %	50.0	41.0	-9.0***
Time taken to walk to school (in minutes), average	18.35	21.84	3.49***
Students whose biological mother alive, %	93.0	82.0	11.0***
Students whose biological father alive, %	83.0	78.0	5.0*

t-test of the differences is significant at ***$p<0.001$; **$p<0.05$; *$p<0.1$

There is a general improvement in key school resources over time

Resource indicator	2012-13	2018-19	Difference
School has a functional library, %	70.0	82.0	12.0
School has a functional pedagogical resource centre, %	55.0	85.0	30.0**
Working computers, average	1.09	2.55	1.45
School has working radios, %	67.0	77.0	10.0
Number of classrooms in school, average	14.0	15.0	1.0
Class size, average	56	52	-4.0**
School operates a full-day shift, %	9.0	15.0	6.0
School provides one G4 maths textbook per student, %	72.0	61.0	-11.0
School received "School Grant" last academic year, %	94.0	79.0	-15.0*

t-test of the differences is significant at ***$p<0.001$; **$p<0.05$; *$p<0.1$