

Should the Government modify
Progress 8 to account for school
intake differences in pupil
background?

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Outline

- **Progress 8** is the Government's current measure of school performance and is used to **hold schools accountable**
- Progress 8 is argued to be a fair measure of school performance as it adjusts for **pupils' starting attainments**
- Progress 8, however, ignores school intake differences in all other pupil characteristics such as **socioeconomic status and ethnicity**, but these also predict later pupil attainment
- In this talk, we present **arguments for and against** modifying Progress 8 to more fully account for pupil background and we explore the **impact of such a change on schools**

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2. Attainment 8 and Progress 8
3. Some pupil groups do better on Progress 8 than others
4. The arguments in favour of adjusting for pupil background
5. The arguments against adjusting for pupil background
6. Does adjusting make any difference in practice?
7. Conclusion

Introduction and context

PART 1

Progress 8 and accountability

- **Direct school accountability** via Ofsted
 - Progress 8 informs the timing of inspections and many would argue strongly influences Ofsted ratings
 - Poor Progress 8 and Ofsted ratings lead to pressures to change: convert to academy, join MAT, change head, etc.
- **Indirect school accountability** via public league tables
 - Public pressure from local media and parents to improve if results are poor
 - Parents choosing schools may decide to apply elsewhere

All schools and colleges in Bristol

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- Primary performance**
(144 schools)
- Secondary performance**
(51 schools)
- 16 to 18 performance**
(41 schools/colleges)
- Ofsted ratings**
- Absence and pupil population**
- Workforce and finance**

Overall performance at end of key stage 4 in 2017 - all pupils ?

School name	Type of school	Number of pupils at end of key stage 4	Progress 8 score & description	Attainment 8 score	Grade 5 or above in English & maths GCSEs	Achieving EBacc at grade 5/C or above	Entering EBacc	Staying in education or entering employment (2015 leavers)
	Academy	139	Above average 0.39	54.3	68%	47%	87%	98% (105 of 107 pupils)
Add to comparison list								
	Academy	145	Above average 0.3	43	38%	12%	33%	93% (90 of 97 pupils)



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NEWS

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By [Michael Yong](#) Education And News Reporter
18:52, 25 JAN 2018 | UPDATED 19:43, 25 JAN 2018

Thousands of parents are finding out how their schools did in the latest GCSE exams.

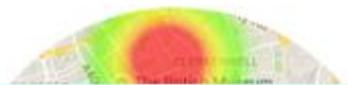
Last year saw tougher papers for English and Maths as the Government tries to push standards higher.

This is only the second year that the Department for Education is using the Progress 8 measure, which aims to give a more comprehensive look at how successfully a school educates its pupils, rather than just attainment.

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Attainment 8 and Progress 8

PART 2

Attainment 8

- Attainment 8 aims to measure the **average academic attainment** of pupils at the end of secondary schooling
- Each pupil's Attainment 8 score is a total across 8 largely 'academic' GCSEs; English and maths are double counted
- Attainment 8 is useful for describing school inequalities and readiness of pupils for next phase of education
- Attainment 8 is less useful for school accountability as it says more about school intake differences in KS2 scores than differences in school effectiveness

Progress 8

- Progress 8 aims to measure the **average academic progress** pupils make during secondary schooling
- Each pupil's Progress 8 score is the difference between their Attainment 8 score and the average Attainment 8 score among pupils nationally with the same KS2 score
- Progress 8 is therefore argued to be a fairer and more meaningful measure of school effectiveness as it adjusts Attainment 8 for school intake differences in KS2 scores
- Crucially, for the first time, the Government places more importance on progress than attainment in its measures

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Primary performance (144 schools) Secondary performance (51 schools) 16 to 18 performance (41 schools/colleges) Ofsted ratings Absence and pupil population Workforce and finance

Attainment 8

Overall performance at end of key stage 4 for all pupils

School name	Type of school	Number of pupils at end of key stage 4	Progress 8 score & description	Attainment 8 score	Grade 5 or above in English & maths GCSEs	Achieving EBacc at grade 5/C or above	Entering EBacc	Staying in education or entering employment (2015 leavers)
[Redacted]	Academy	139	Above average 0.39	54.3	68%	47%	87%	98% (105 of 107 pupils)
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Add to comparison list

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Overall performance at end of key stage 4 in 2017 - all pupils ?

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[Redacted]	Academy	139	Above average 0.39	54.3				
[Redacted]	Academy	145	Above average 0.3	43				(90 or 97 pupils)

The average pupil in this school scores 5.43 grades per GCSE subject

Equivalent to eight GCSE grade B's

Add to comparison list

All schools and colleges in Bristol

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Progress 8

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[Redacted]	Academy	139	Above average 0.39					
[Redacted]	Academy	145	Above average 0.3					

The average pupil in this school scores 0.39 grades higher per GCSE subject than pupils nationally with the same KS2 score

All schools and colleges in Bristol

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Extra information available here



Progress 8 score for [REDACTED]

This school's
Progress 8
score is

0.39

Confidence
interval
0.19 to 0.6

Well below average

About **12%** of
schools in England

Below average

About **18%** of
schools in England

Average

About **40%** of
schools in England

Well above average

About **12%** of
schools in England

**Above
average**

About **18%** of
schools in England

This score is considered **above average** because it is higher than 0 but lower than 0.5, and its lower confidence interval is higher than 0.

The local authority (Bristol) average score for state-funded schools is -0.22

The average score for all state-funded schools in England is -0.03

► [What are confidence intervals](#)

Progress 8 score for [Redacted School Name]

The school has a high Progress 8 score: it is performing somewhere between the 70th and 88th percentile nationally

This school's Progress 8 score is

0.39

Confidence interval
0.19 to 0.6

Well below average

About **12%** of schools in England

Below average

About **18%** of schools in England

Average

About **40%** of schools in England

Above average

About **18%** of schools in England

Well above average

About **12%** of schools in England

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[▶ What are confidence intervals](#)

Progress 8 score for [Redacted]

This school's Progress 8 score is

0.39

Confidence interval **0.19 to 0.6**

Well below average

About **12%** of schools in England

Below average

About **18%** of schools in England

Average

About **40%** of schools in England

Above average

About **18%** of schools in England

Well above average

About **12%** of schools in England

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The local authority (Bristol) average score for state-funded schools is -0.22

The average score for all state-funded schools in England is -0.03

[What are confidence intervals](#)

The average pupil in Bristol scores 0.22 grades lower per GCSE subject than expected given their KS2 scores

Progress 8 score for [REDACTED]

This school's
Progress 8
score is

-0.52

Confidence
interval
-0.74 to -0.31

**Well
below
average**

Below average

About **18%** of
schools in England

Average

About **40%** of
schools in England

Above average

About **18%** of
schools in England

Well above average

About **12%** of
schools in England

About **12%** of
schools in England

This score is considered **well below average** because it is lower than -0.5 and its upper confidence interval is lower than 0.

The local authority (Bristol) average score for state-funded schools is -0.22

The average score for all state-funded schools in England is -0.03

► [What are confidence intervals](#)

Progress 8 score for [Redacted]

This school's Progress 8 score is

-0.52

Confidence interval
-0.74 to -0.31

In contrast, this school has a low Progress 8 score: it is performing in the bottom 12% of schools nationally

- Below average
- Average
- Above average
- Well above average

Well below average

About **18%** of schools in England

About **40%** of schools in England

About **18%** of schools in England

About **12%** of schools in England

About **12%** of schools in England

This score is considered **well below average** because it is lower than -0.5 and its upper confidence interval is lower than 0.

The local authority (Bristol) average score for state-funded schools is -0.22

The average score for all state-funded schools in England is -0.03

[▶ What are confidence intervals](#)

Progress 8 score for [redacted]

This school's Progress 8 score is

-0.52

Confidence interval
-0.74 to -0.31

Well below average

Below average

About **18%** of schools in England

Average

About **40%** of schools in England

Above average

About **18%** of schools in England

Well above average

About **12%** of schools in England

About **12%** of schools in England

This score is considered **well below average** because it is less than 0.

The local authority (Bristol) average score for state-funded schools is

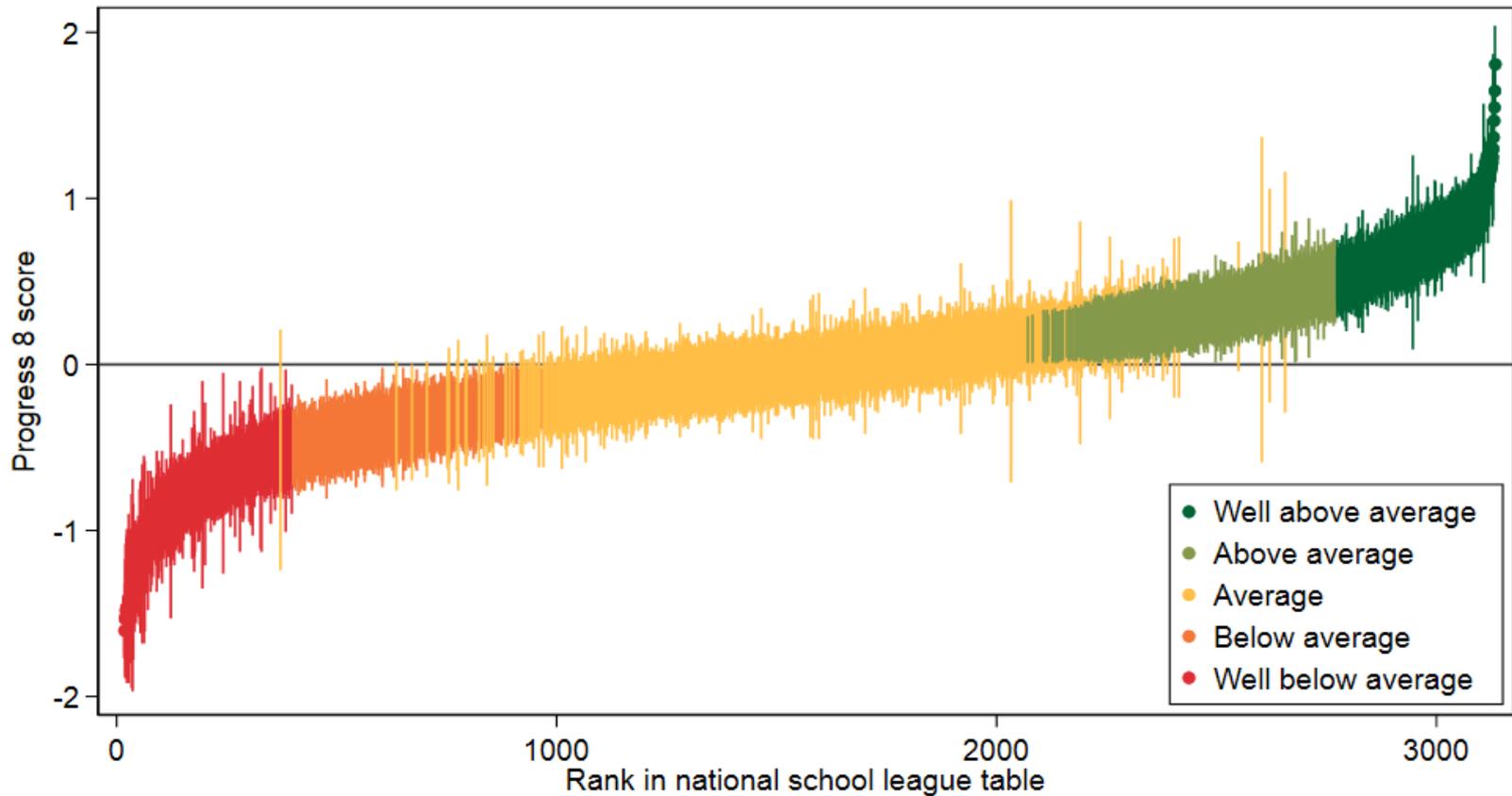
The average score for all state-funded schools in England is

All 'well below average' schools are performing below the Government's Progress 8 'floor standard' and are therefore judged 'underperforming'

[▶ What are confidence intervals](#)

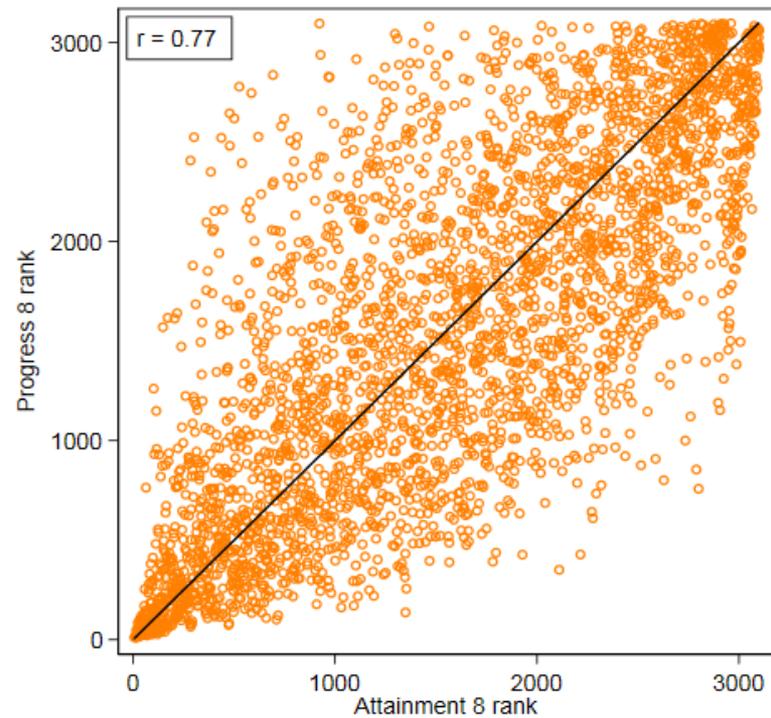
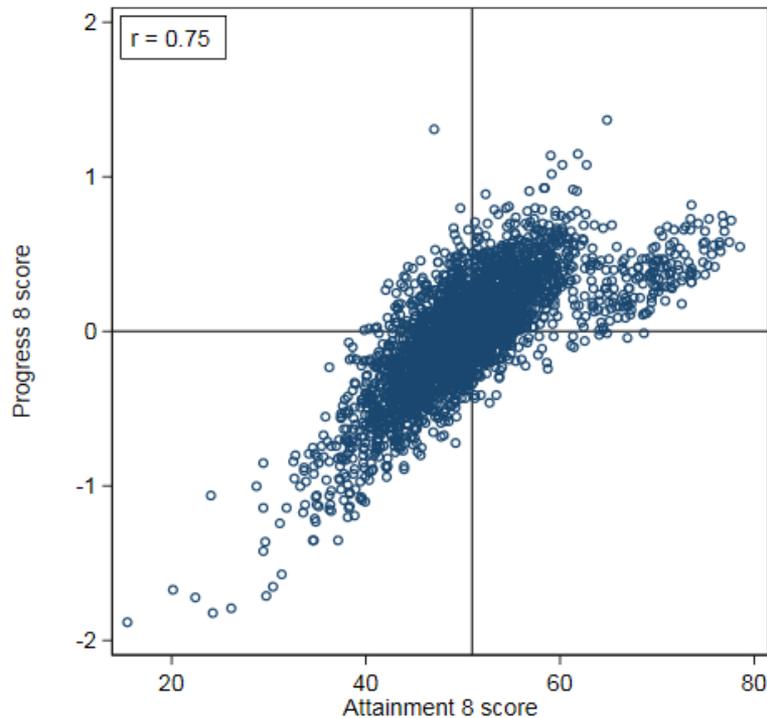
Progress 8

95% confidence intervals



- The average progress observed in the middle 39% of schools cannot be statistically distinguished from overall national average

Progress 8 vs. Attainment 8 Scores and national ranks



- Schools with higher Attainment 8 scores tend to show higher Progress 8, but this relationship is by no means guaranteed

Nationally, some pupil groups do better on Progress 8 than others

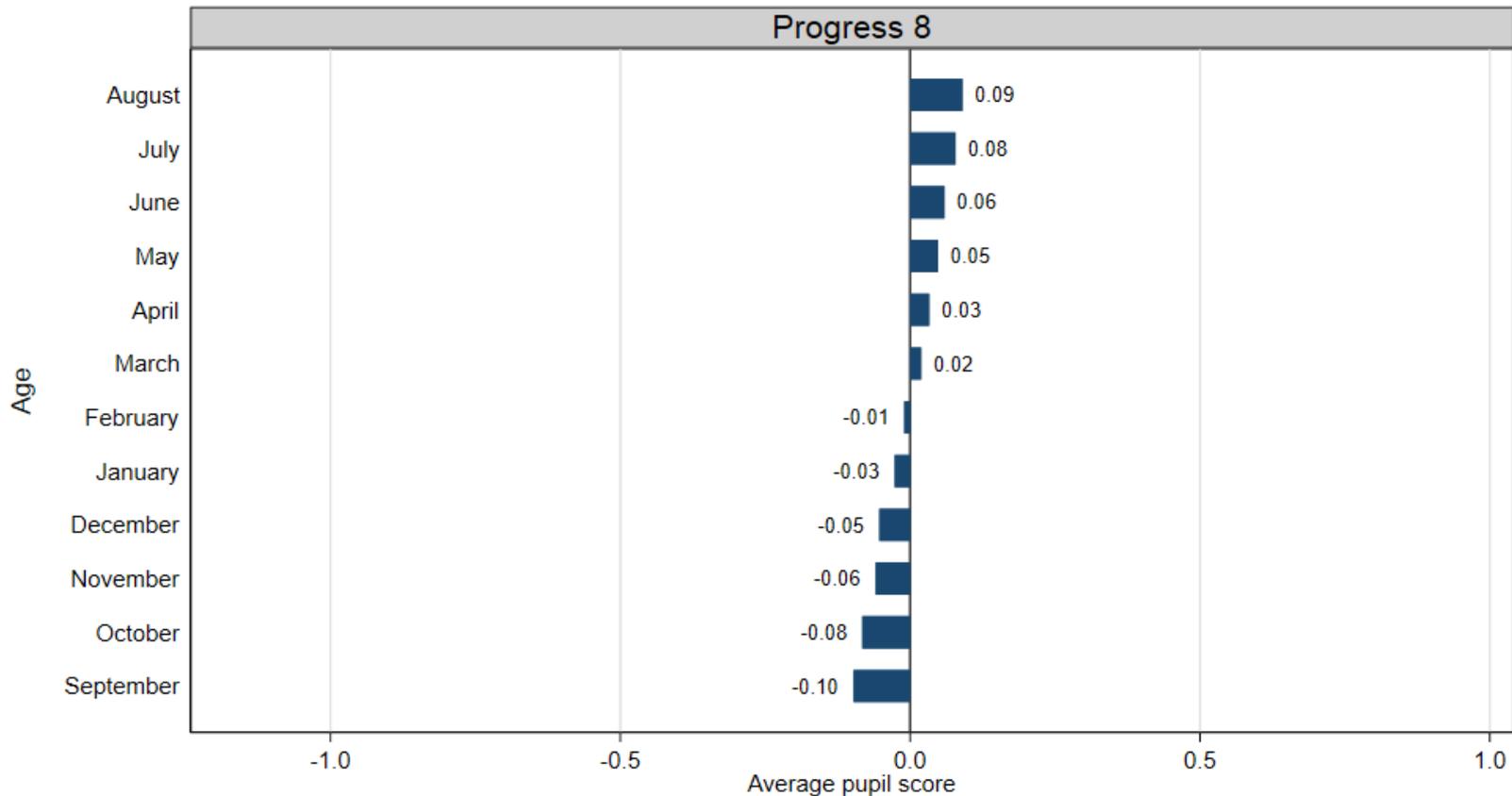
PART 3

Nationally, some pupil groups do better on Progress 8 than others

- Progress 8 adjusts for school intake differences in pupils' KS2 scores but does not adjust for school intake differences in other pupil characteristics (e.g., FSM, ethnicity,...)
- While KS2 score is the most important predictor of Attainment 8, other pupil characteristics still play an important role
- It follows that schools with more 'educationally advantaged' intakes with respect to these characteristics will in general show higher average pupil progress and therefore higher Progress 8 scores than schools with less educationally advantaged intakes

Progress 8

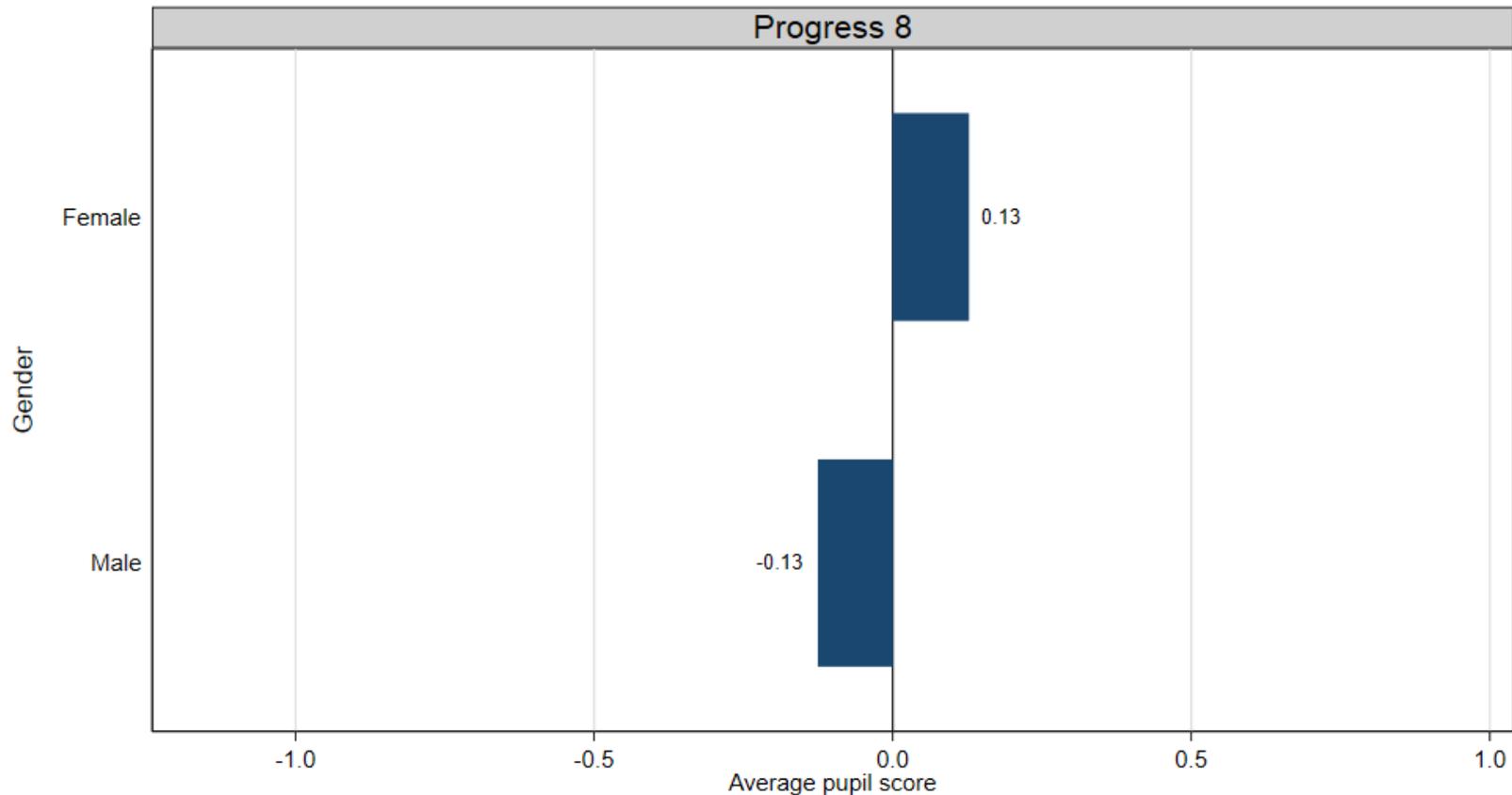
Average score by age



- Young in year pupils make the most progress. Importance of month of birth reduces during secondary schooling.

Progress 8

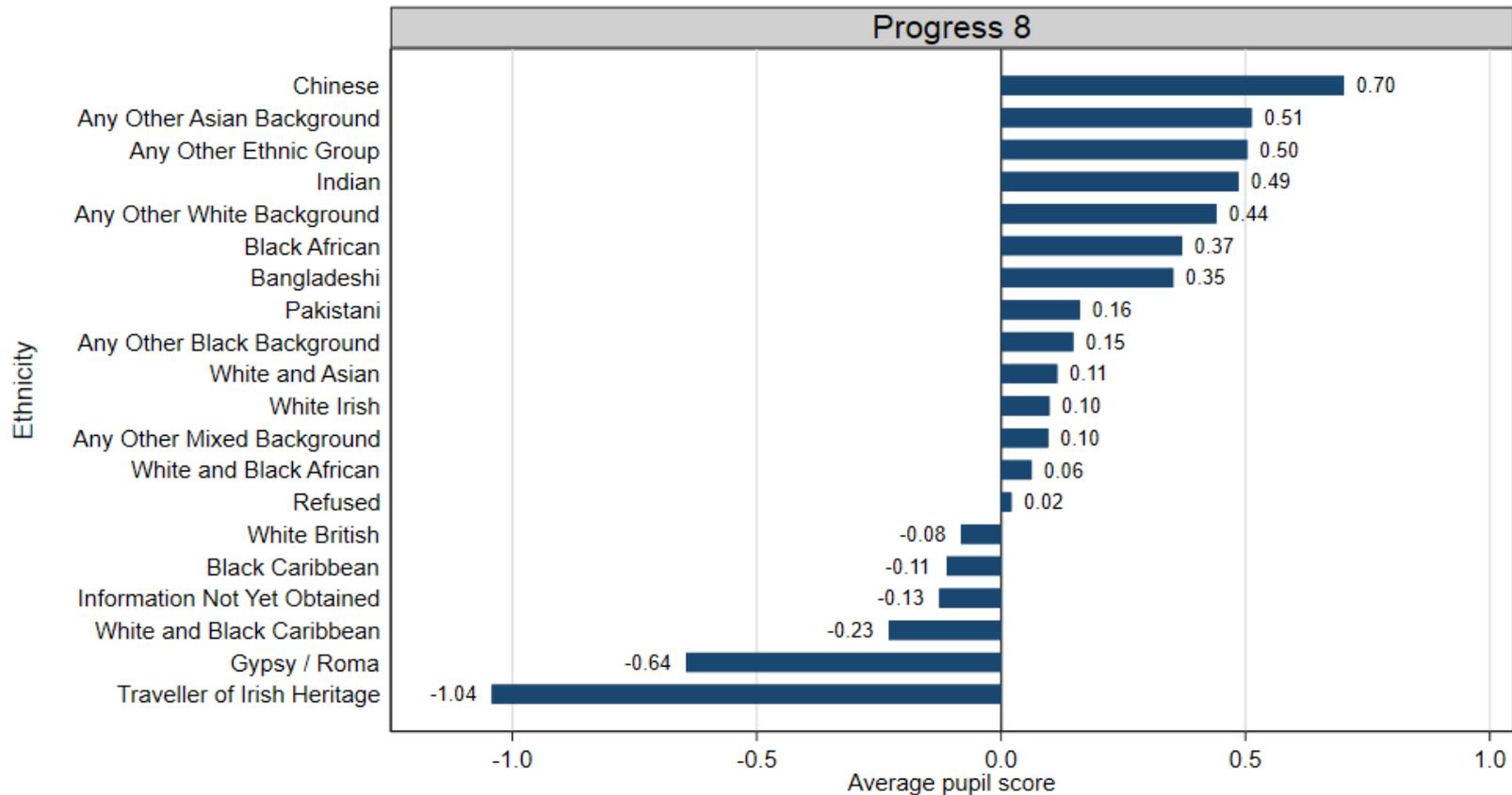
Average score by gender



- Girls score 0.13 grades higher per GCSE subject than expected. Boys 0.13 grades lower. Gender gap widens with age

Progress 8

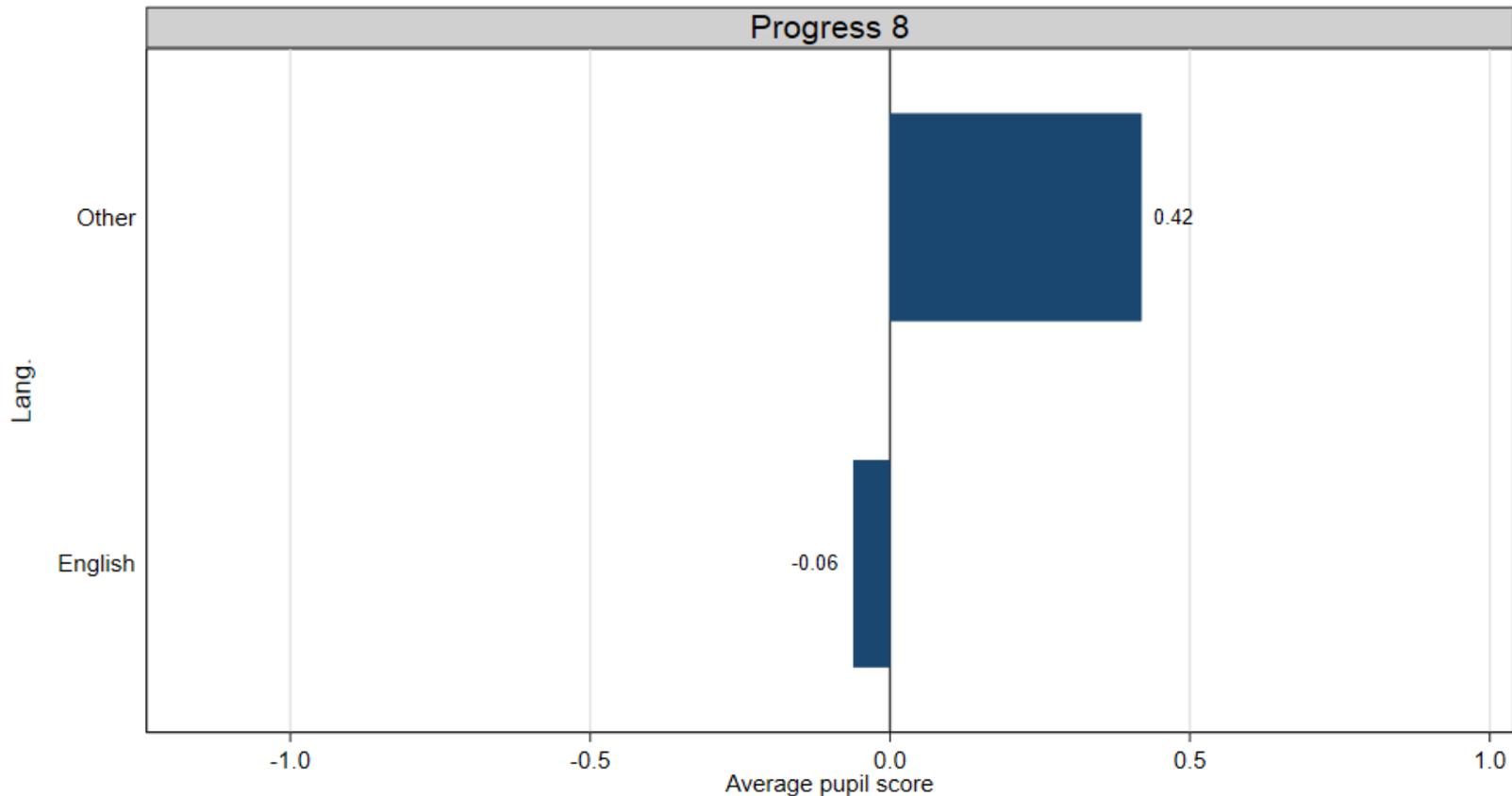
Average score by ethnicity



- Chinese pupils score 0.70 grades higher per subject than expected. White British 0.08 grades lower than expected.

Progress 8

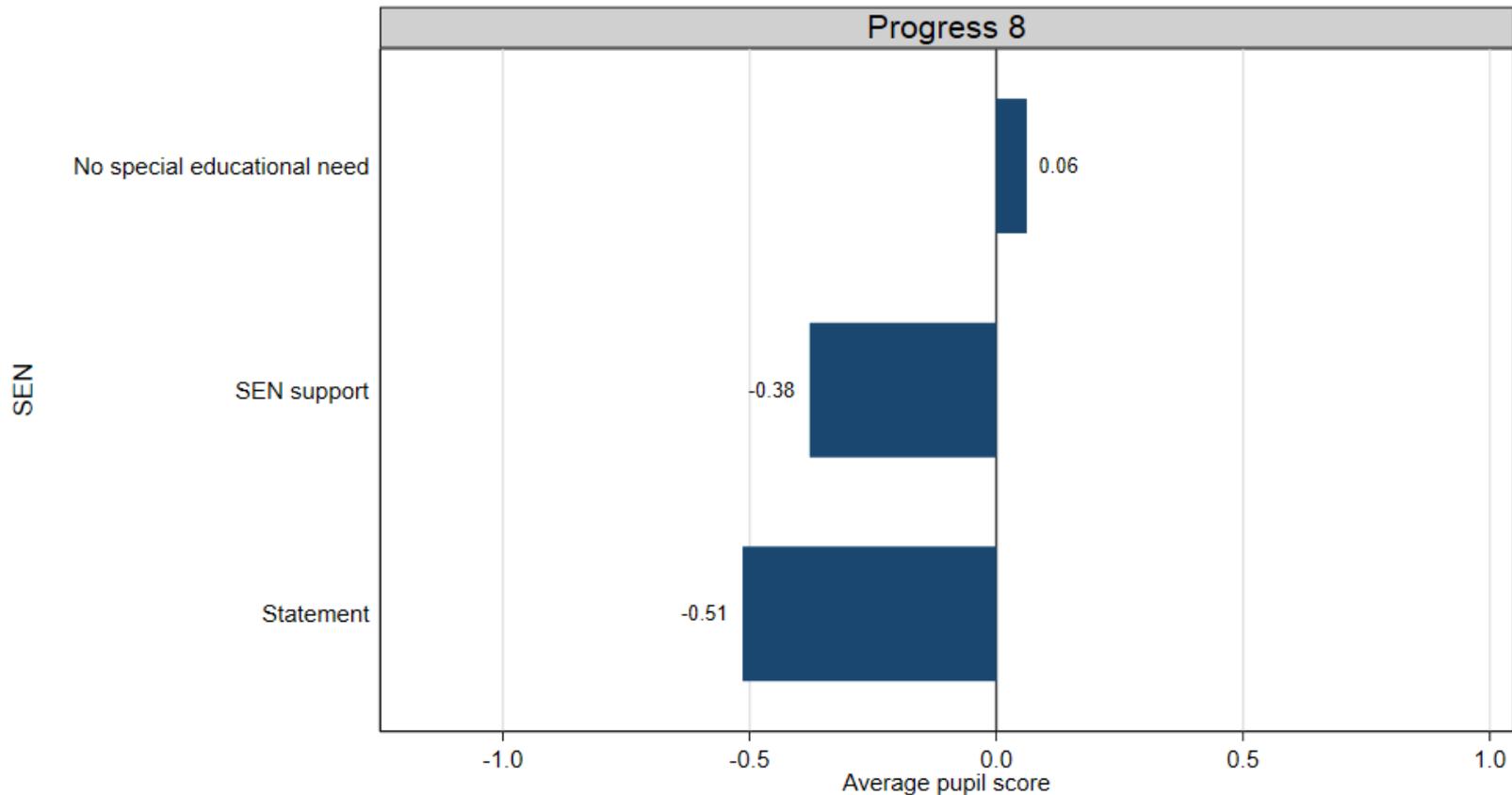
Average score by language



- English as an additional language pupils make more progress: they catch up and overtake their English speaking peers

Progress 8

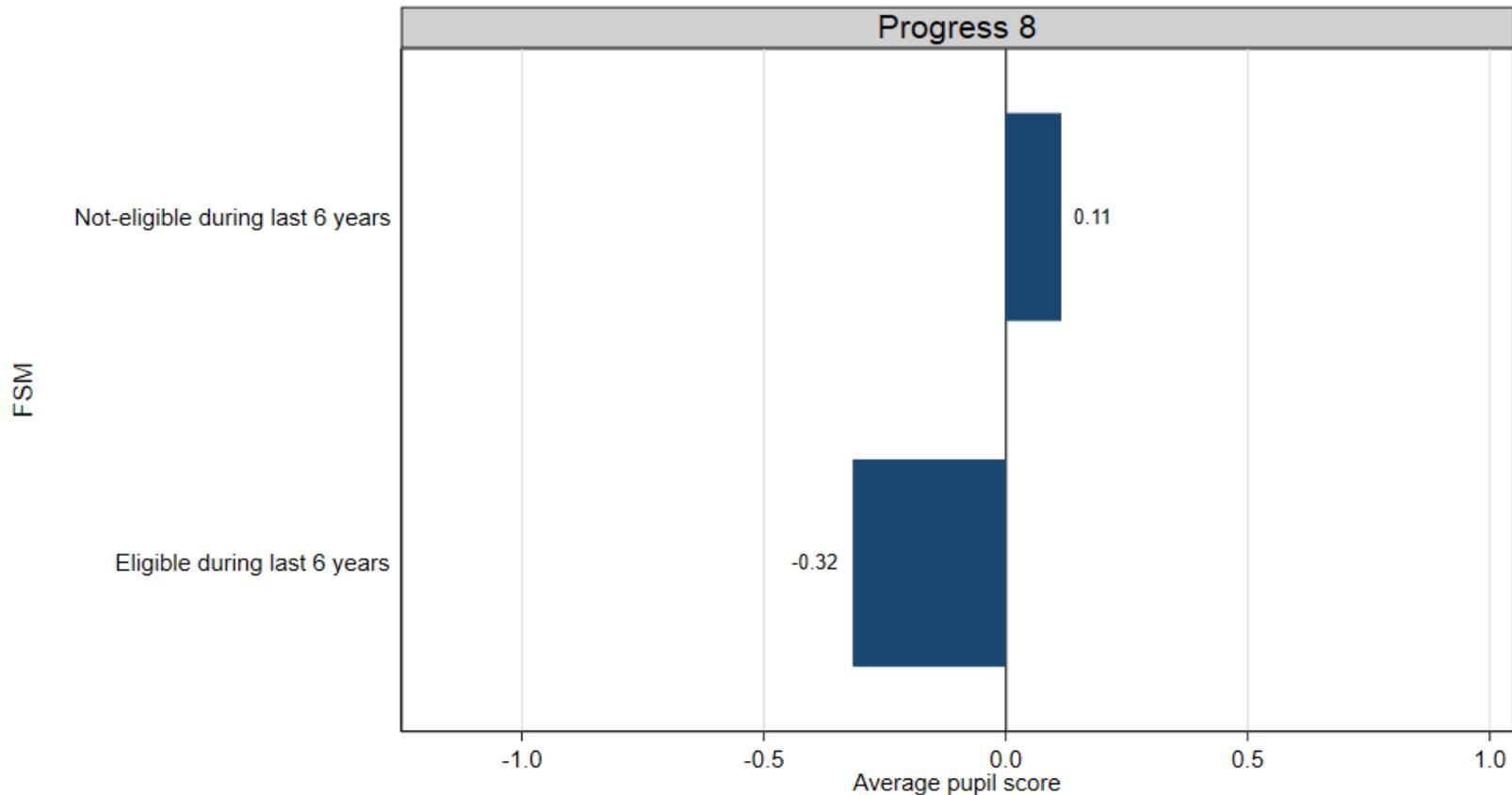
Average score by SEN



- SEN pupils make much less progress. They start behind and the attainment gap widens over secondary schooling.

Progress 8

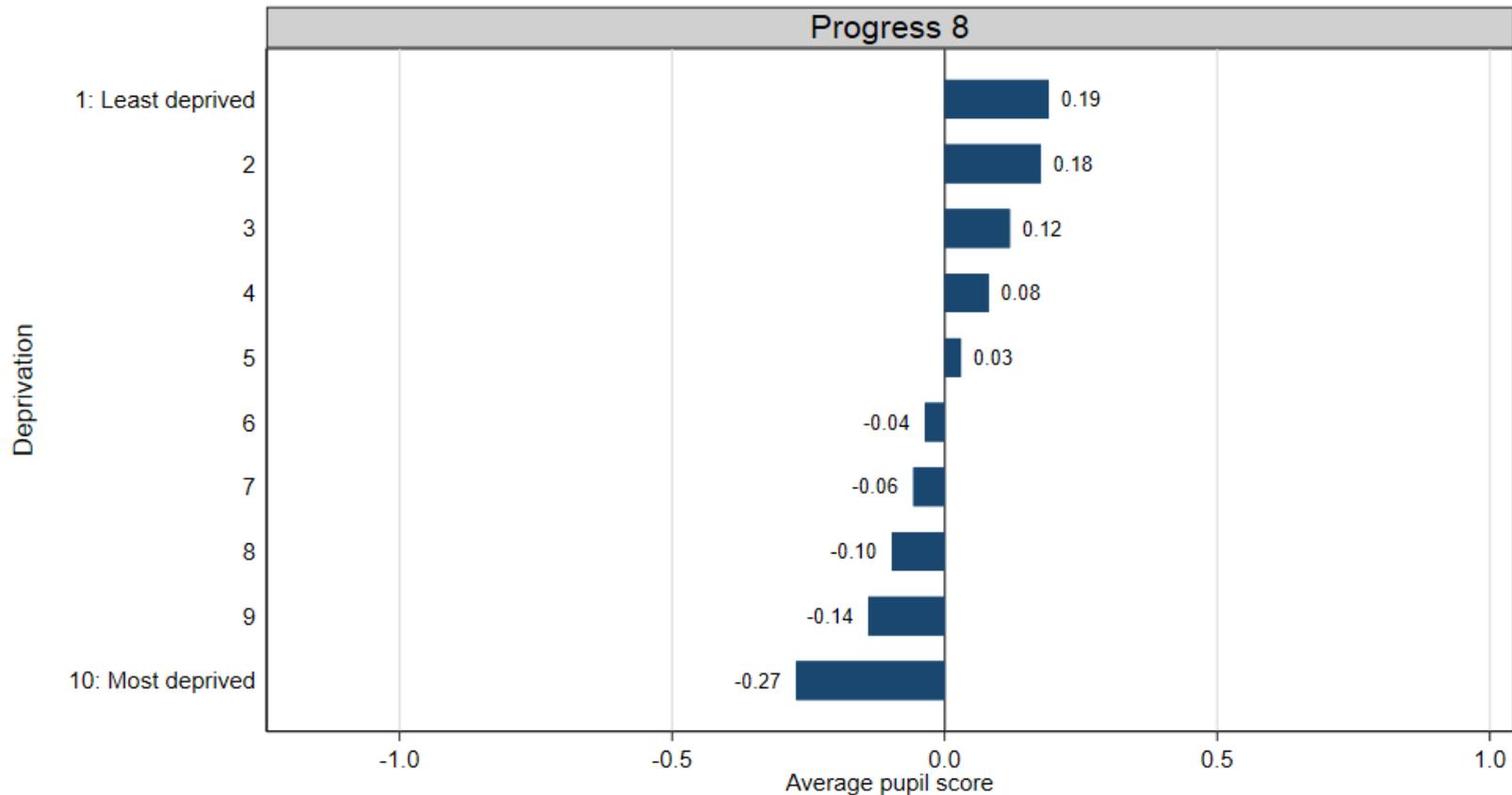
Average score by FSM



- FSM pupils make 0.43 grades less progress per subject than their more affluent peers. The rich-poor gap widens with age.

Progress 8

Average score by deprivation



- There are large differences in average pupil progress by decile of neighbourhood deprivation. These widen with age.

The arguments in favour of
adjusting for pupil background

PART 4

Arguments in favour of adjusting

- Proponents of adjusting argue that failing to adjust is **fundamentally unfair** as it punishes some schools simply for teaching educationally disadvantaged intakes and rewards other schools merely for teaching advantaged intakes
- The true effectiveness of many schools in disadvantaged areas will likely go undetected as will the lack of effectiveness of many schools in advantaged areas
- Progress 8 **punishes and rewards the wrong schools** and holds up the wrong schools as examples of success that other schools should learn from

Arguments in favour of adjusting (cont'd)

- Punishing schools for teaching disadvantaged pupil groups is likely to **incentivise schools** to avoid admitting particular pupil groups (e.g., SEN pupils) at intake...
- ...and where these pupil groups are admitted, to find ways to **exclude them** from the GCSE examinations and therefore the Progress 8 calculations (i.e., off-rolling)
- Demanding disadvantaged pupils to make the same progress as their more advantage peers sets **unrealistic targets** and this may demotivate many disadvantaged pupils and their schools, making them feel as if they have failed and may **dissuade good teachers** from working in challenging schools

The arguments against adjusting for pupil background

PART 5

Arguments against adjusting

- The Government and other opponents of adjusting argue that adjusting amounts to accepting that poor pupils *will* perform worse than rich pupils
- In contrast, society should expect poor pupils with the same KS2 scores as rich pupils to continue to continue to perform as well at GCSE, not accept that they fall behind
- Adjusting for socioeconomic status is therefore argued to entrench low aspirations for poor pupils
- The low performances of schools with many poor pupils are being incorrectly excused; they are being let off the hook

Arguments against adjusting (cont'd)

- However, if one accepts the argument that adjusting for pupil background entrenches low aspirations for particular pupil groups, one must also accept that adjusting for prior attainment entrenches low aspirations for other pupil groups
- However, adjusting for socioeconomic status does not a priori declare pupils from disadvantaged backgrounds will do worse than those from more advantage backgrounds, rather it reacts to any national difference in progress which arise
- There appears to be a confounding of the notion of 'statistical adjustment' for what we observe in the data with 'societal aspirations' for more equal educational outcomes

Target setting may well entrench low aspirations

- One practice that clearly entrenches low aspirations for particular pupil groups is the widespread practice of target setting in schools
- Pupils are set target Attainment 8 scores and GCSE grades as a function of their KS2 score and background characteristics
- Here, the empirical relationships between attainment and pupil background characteristics in previous school cohorts is used to predict the future performance of current pupils and so past inequities are passed onto future generations
- A criticism of high-stages accountability, not the measures



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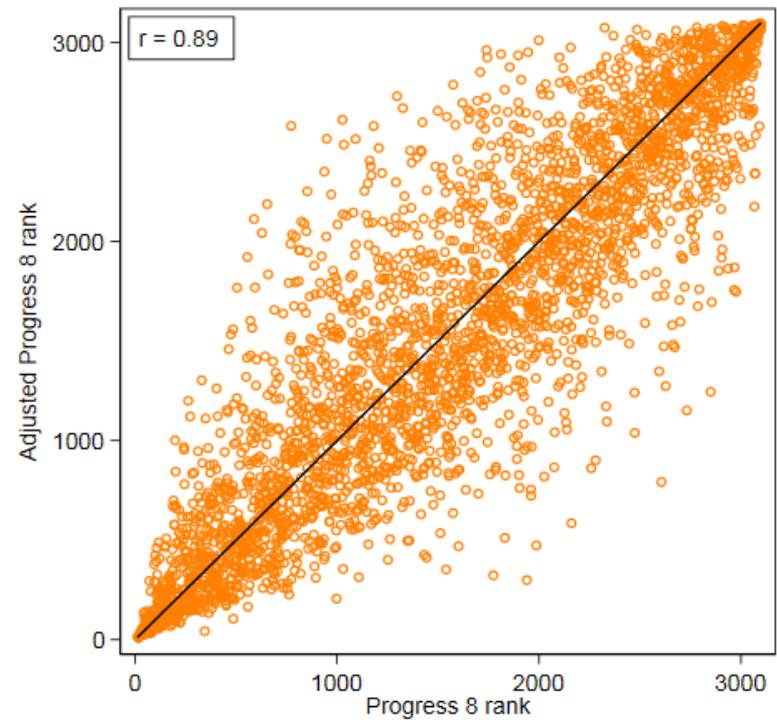
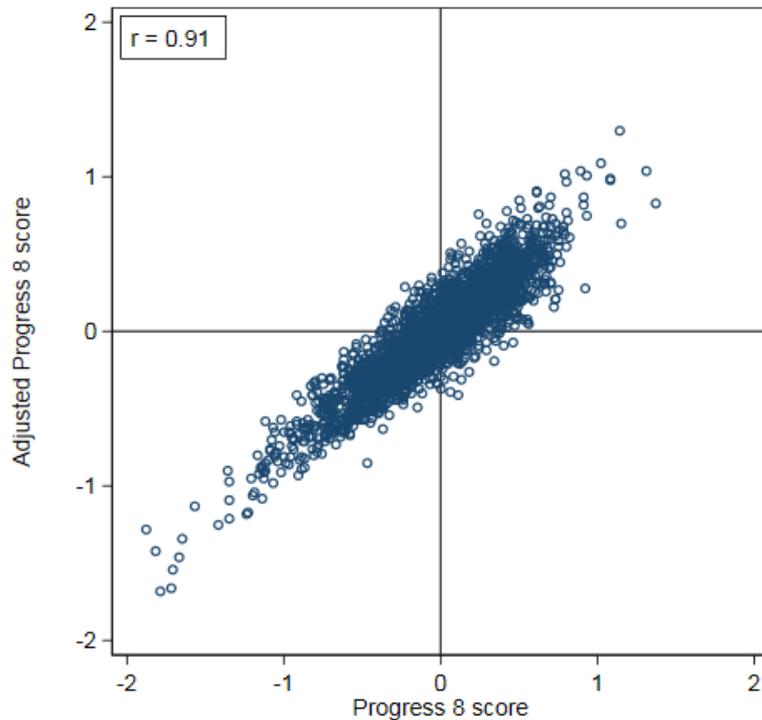
Does adjusting for pupil background make any difference in practice?

PART 6

Adjusted Progress 8

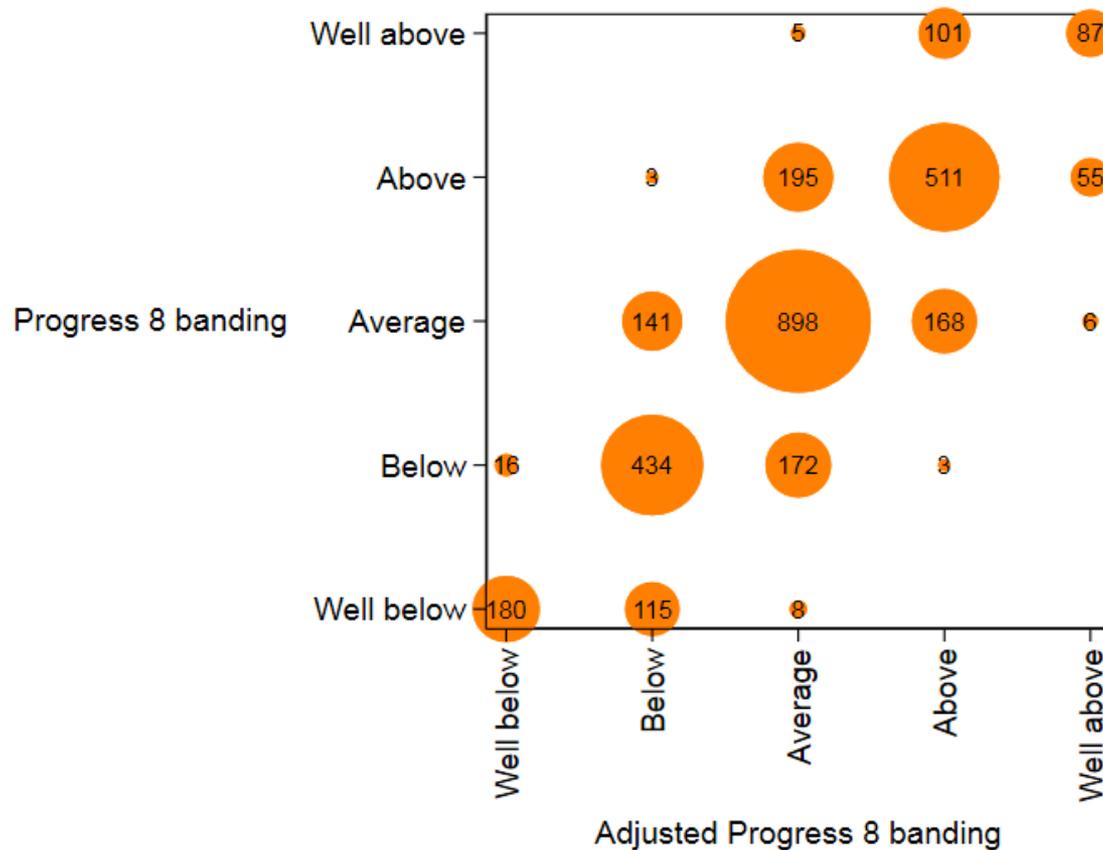
- Recall that Progress 8 compares each pupil's Attainment 8 score to the average score among pupils nationally with the same KS2 score
- We now modify the Government's approach to instead compare each pupil's Attainment 8 score to the average score among pupils nationally with not only the same KS2 score, but who are also of the same **age, gender, ethnicity, language, SEN status, FSM status, and residential deprivation**
 - Linear regressions fitted to the NPD data for 2016 cohort
- We refer to this modified measure as '**Adjusted Progress 8**'

Progress 8 vs. Adjusted Progress 8 Scores and national ranks



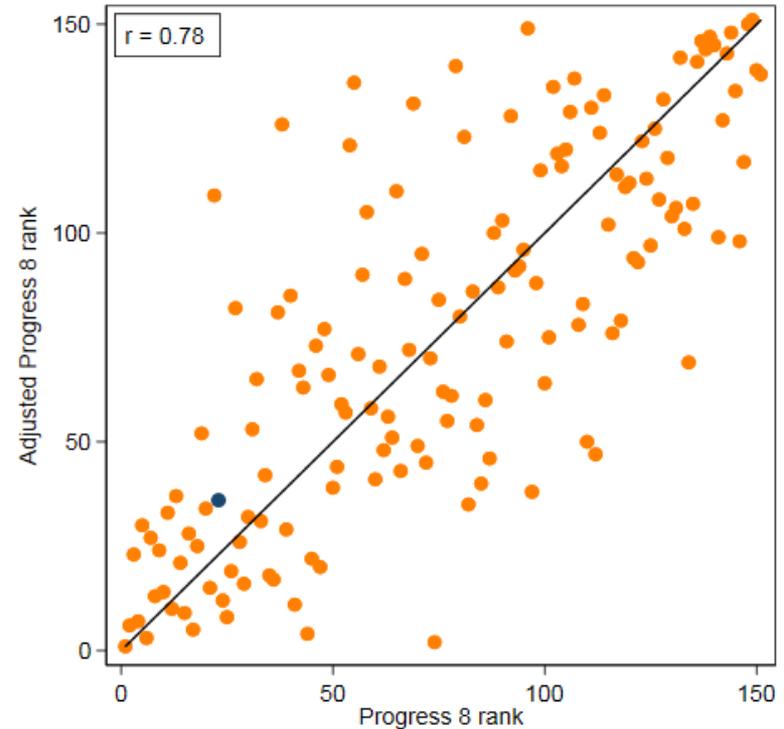
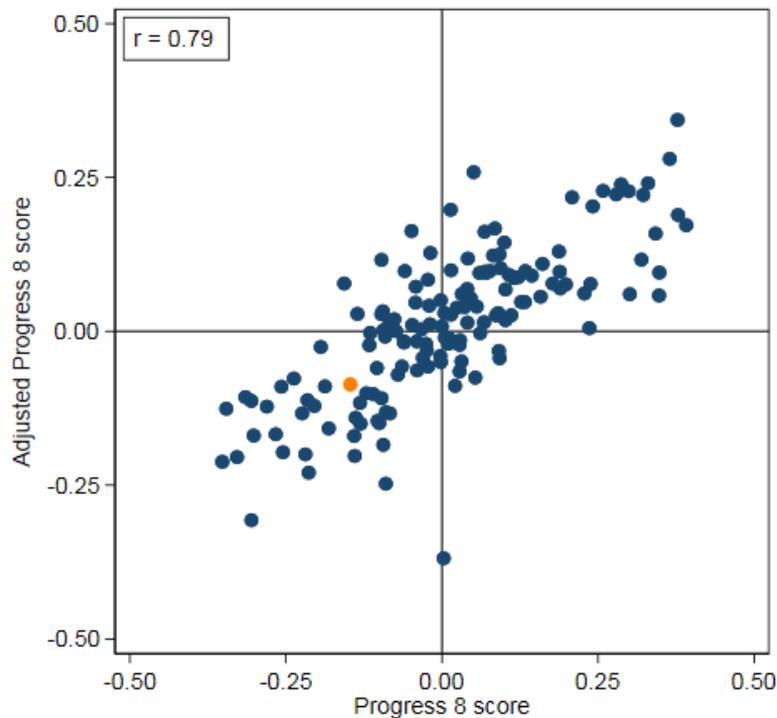
- Fairly high agreement, but over 1/5 of schools would see their national league table rank change by over 500 places

Progress 8 vs. Adjusted Progress 8 Bandings



- Over 40% of schools judged 'underperforming' by Progress 8 are no longer underperforming under Adjusted Progress 8.

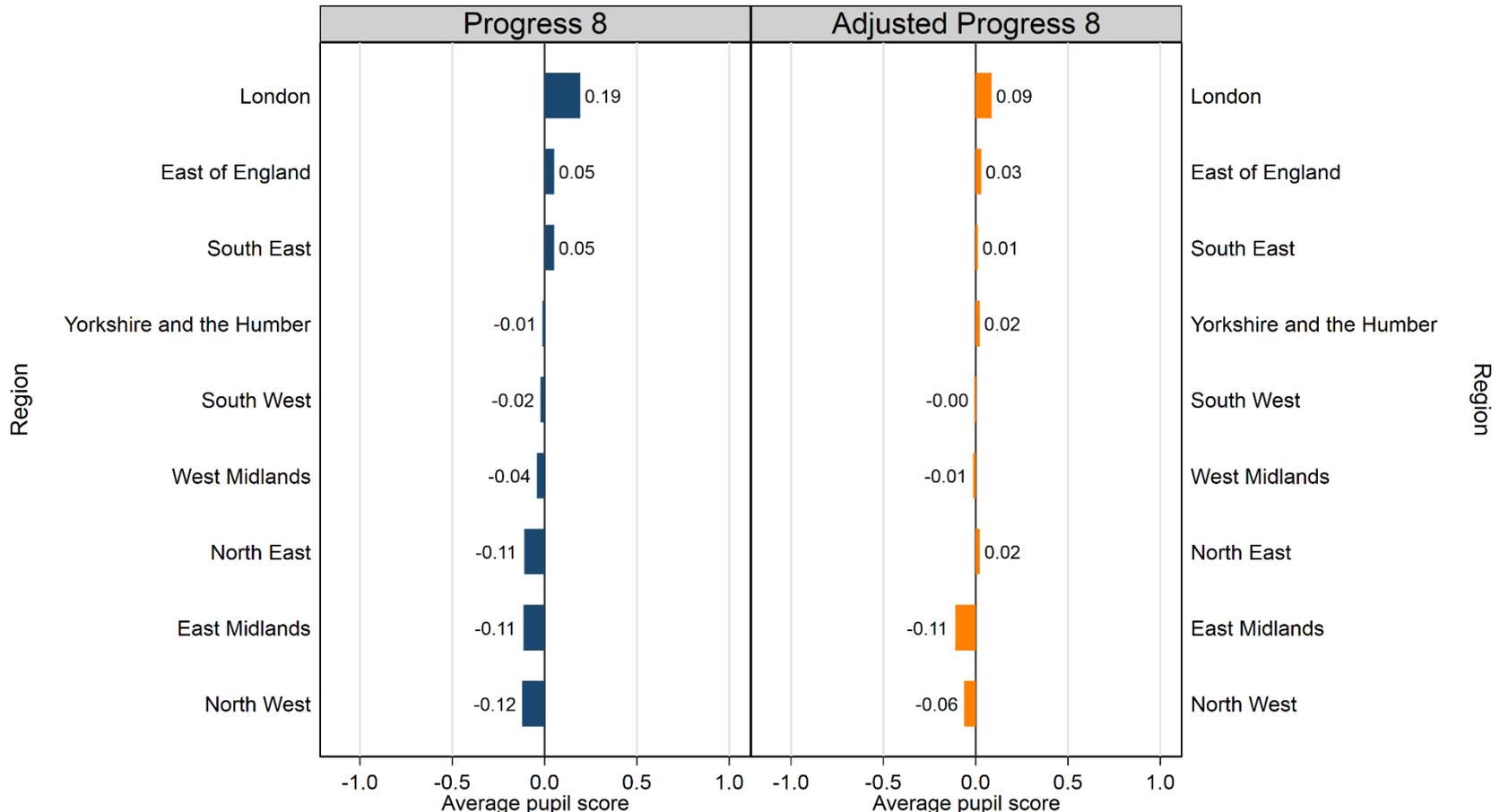
Progress 8 vs. Adjusted Progress 8 Scores and national ranks for LAs



- Bristol improves as pupils are poorer (33% FSM vs. 26%) and live in more deprived neighbourhoods than pupils nationally

Progress 8 vs. Adjusted Progress 8

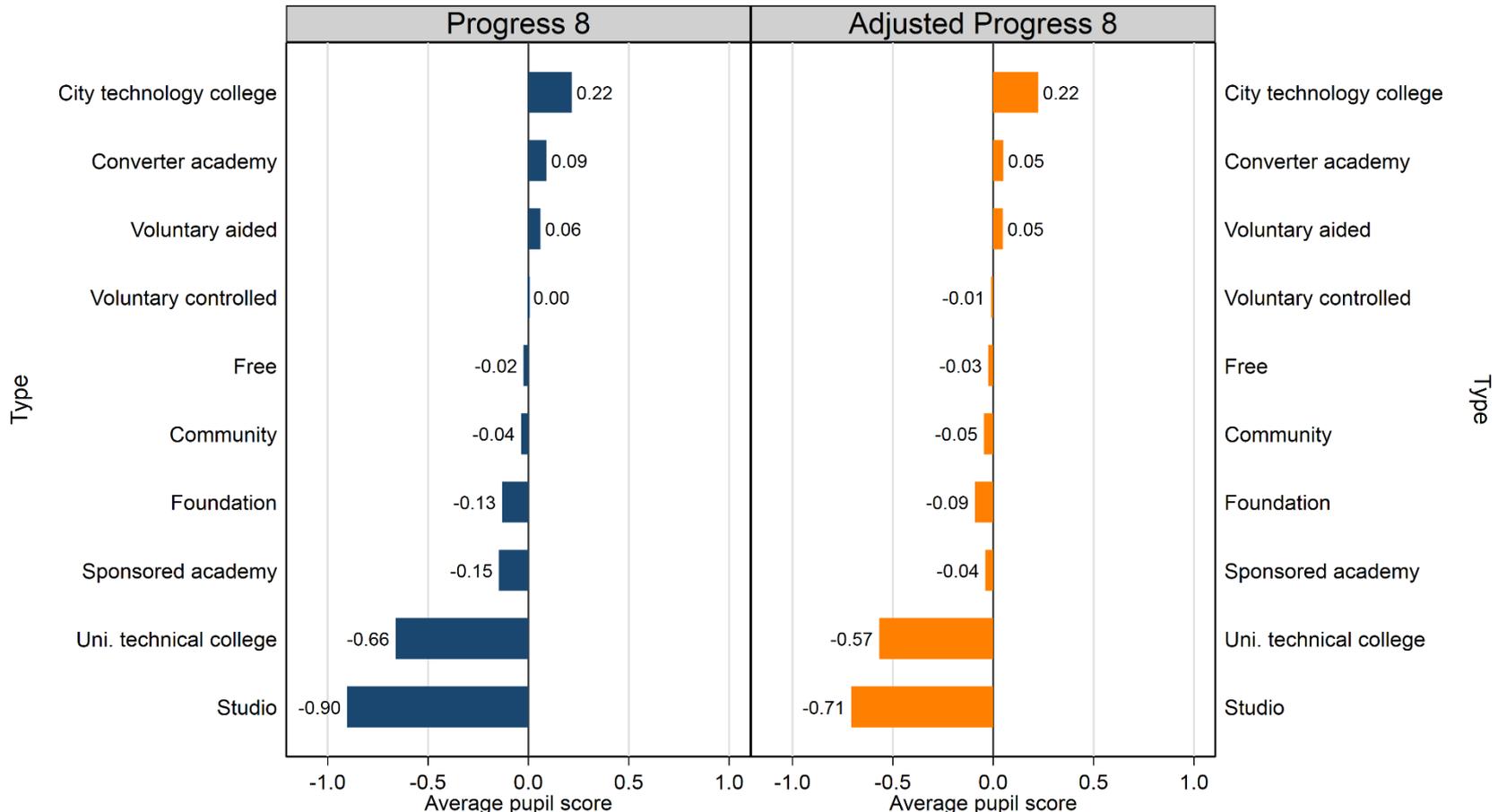
Average score by school region



- London worsens (ethnicity; 38% language vs. 13%); North East improves (ethnicity; 31% FSM); East Midlands no change

Progress 8 vs. Adjusted Progress 8

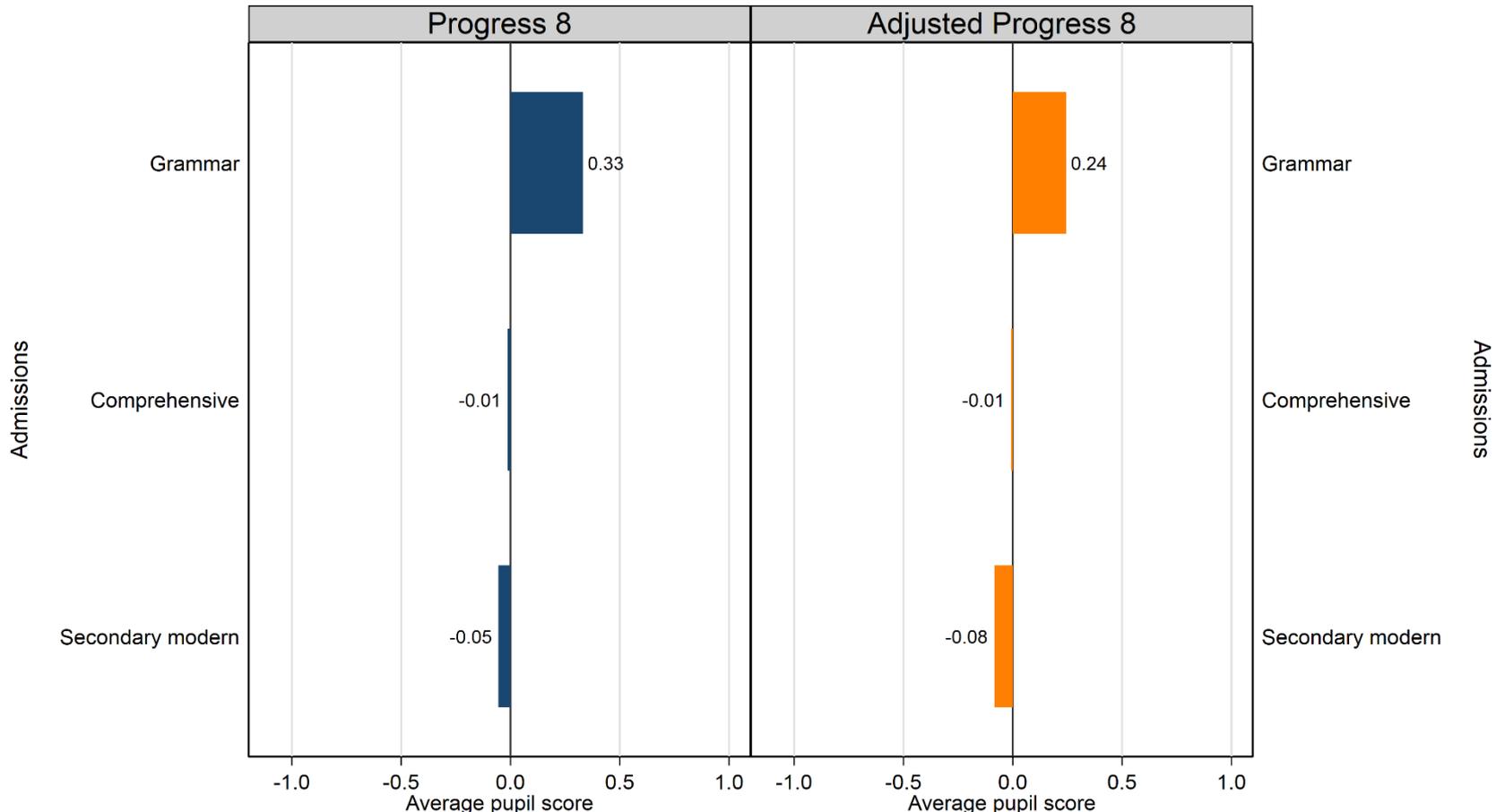
Average score by school type



- Converters worsen (20% FSM); spon. improve (40% FSM); Studio improve (33% SEN vs. 13%), UTCs improve (76% boys)

Progress 8 vs. Adjusted Progress 8

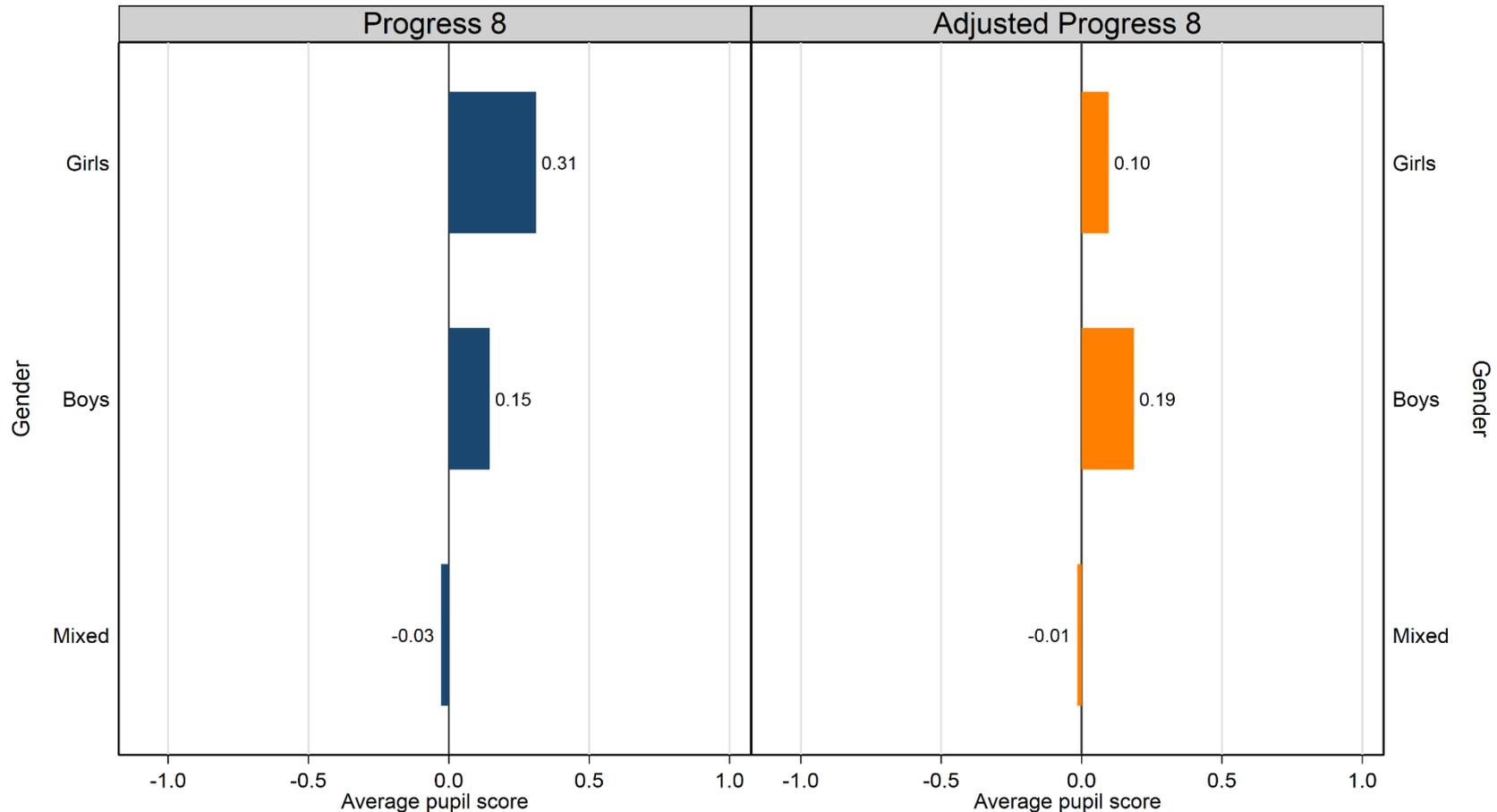
Average score by school admissions



- Grammar schools worsen (7% FSM; 6% SEN); but so do secondary moderns (24% FSM)!

Progress 8 vs. Adjusted Progress 8

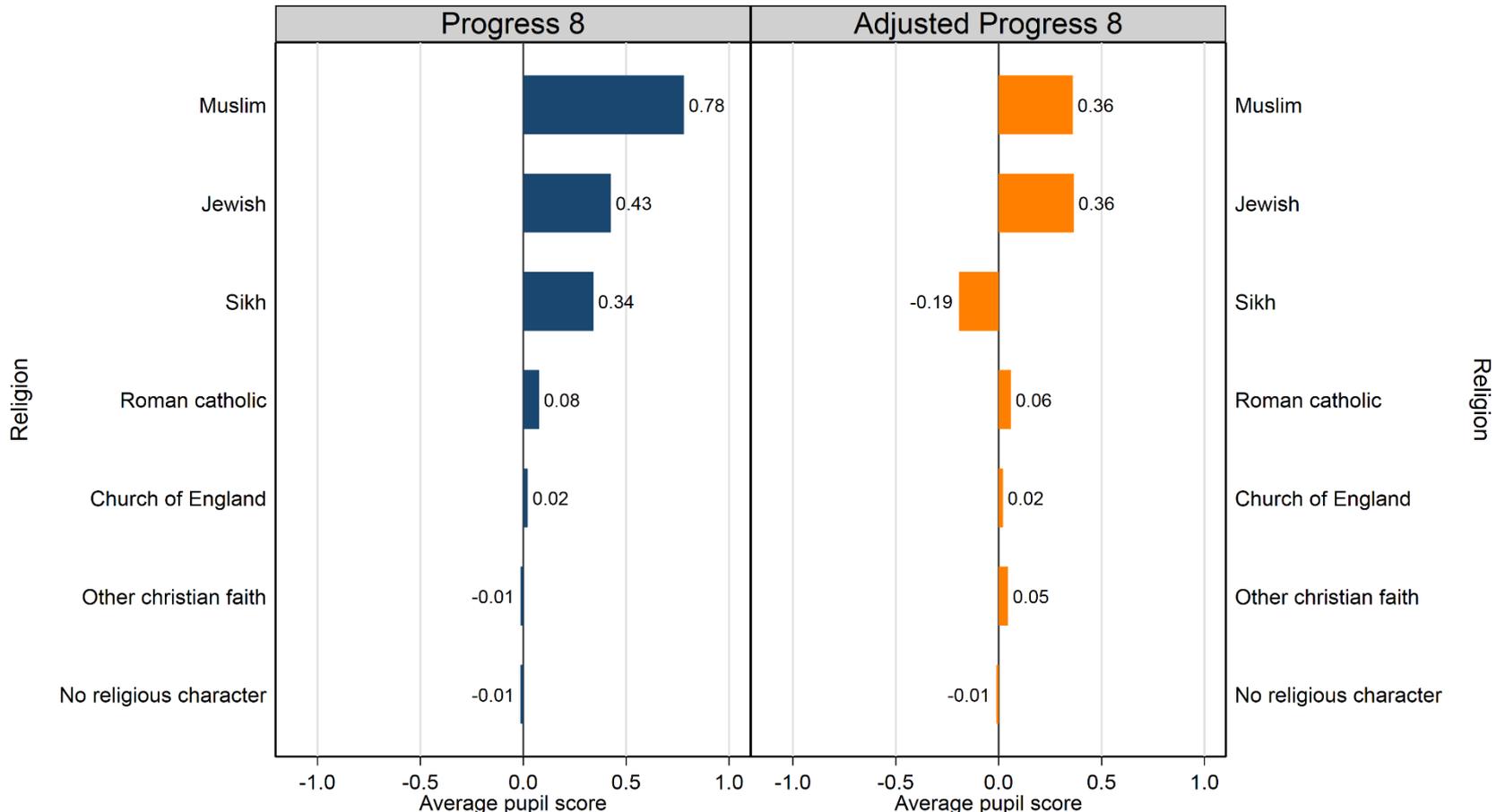
Average score by school gender



- All-girls worsen (100% girls!); all-boys improve (100% boys!); all-boys schools now appear to be the more effective

Progress 8 vs. Adjusted Progress 8

Average score by school religion



- Muslim worsen (50% Indian, 37% Pakistani); Sikh worsen (86% Indian); Jewish worsen (11% FSM; 65% white British)

Conclusion

PART 7

Conclusion

- Should the Government modify Progress 8 to account for school intake differences in pupil background?
 - Different pupil groups make different average progress
 - Different schools serve different pupil groups
- There are theoretical arguments for and against modifying Progress 8 to adjust for pupil background
- This is not just an academic debate, we have shown that adjusting makes a real difference to interpretations and conclusions as to how schools in England are performing

Conclusion (cont'd)

- Under Progress 8, the higher the proportion of disadvantaged pupils in a school, the more it will be punished for the national underperformance of these pupils
- It would seem that Progress 8 view schools rather than Government or society as primarily responsible for the national underperformance of these pupils
- In contrast, a measure such as Adjusted Progress 8 can be argued to view Government and society rather than schools as primarily responsible for these national differences

Conclusion (cont'd)

- However, there is no need to choose, especially as most would argue that schools, society, and Government bear shared responsibility for the national differences that we see between different pupil groups
- The Government would do better to publish and explain Progress 8 and an adjusted Progress 8 measure side-by-side to present a more informative picture of school performance
- However, there are many further methodological issues with all attempts to measure school value-added not to mention more general concerns with high-stakes testing which limit our enthusiasm for value-added based school accountability

End of talk – Thank you

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bristol.ac.uk/cmm/team/leckie.html

Conclusion (cont'd)

- Tests fail to measure many important aspects of teaching
- Lead to narrowing of the curriculum and teaching to the test
- Induce excessive pupil and teacher stress
- Create a culture of fear
- Tend to drive teachers out of the profession
- Lead to various gaming behaviours
- Published scores presented with insufficient guidance, caveats, or quantification of statistical uncertainty
- Perhaps, most worryingly, there is still very little research demonstrating the actual improvement to pupil learning that school accountability via pupil test scores and school value-added measures are meant to bring about