
HE participation and outcomes: differences by SES and secondary school characteristics

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Motivation

- Education a key driver of social mobility, yet large socio-economic gaps remain in HE participation and degree outcomes
- Much work to “widen” participation focuses on those sitting A-levels; but previous work suggests earlier attainment is important
- Key questions of interest:
 - When is the most productive period to intervene to improve HE participation amongst those from disadvantaged backgrounds?
 - What role can and do schools play in shaping HE participation decisions and subsequent performance? Can think of two routes:
 - Indirect: via attainment
 - Direct: e.g. via careers advice, application assistance, non-cognitive skills, etc

Plan for today

- Document differences in HE participation and outcomes on the basis of socio-economic status and secondary school performance
- Explore the extent to which these differences can be explained by:
 - Selection into schools (background characteristics and KS2 results)
 - Differential performance at Key Stage 4
 - Differential performance at Key Stage 5
 - For degree outcomes: university attended and subject studied

Data

- Linked NPD-ILR-HESA data
- National Pupil Database (NPD)
 - Census of pupils taking GCSEs in England: 2001-02 to 2007-08 here
 - Key Stage test results at ages 11, 16 and 18 for those who sat them
 - Key Stage 4 school identifiers for all pupils
 - Plus limited background characteristics for state school pupils
 - e.g. gender, ethnicity, FSM eligibility, local area characteristics based on home postcode
- NISVQ and ILR data
 - Census of those taking qualifications in FE colleges; but only limited info
- Higher Education Statistics Agency (HESA) data
 - Census of students attending UK universities: 2004-05 to 2011-12 here
 - Includes information on institution attended, qualification and subject studied, and qualification outcomes, e.g. completion and degree class

Data

→ Linked NPD-ILR-HESA data enables us to:

- Follow the population of secondary school pupils in England from age 11 through to potential HE participation at age 18 or 19
- Follow the population of UK university participants who went to school in England from HE entry to degree completion

→ Compared to HESA data alone it gives us:

- Richer information about earlier measures of attainment, enabling us to investigate the “critical periods” for potential intervention
- e.g. at Key Stage 4:
 - Grades in English and Maths
 - No. of GCSEs in EBacc and other subjects at particular grades
 - Summary measures of overall performance (including equivalents)

Key covariates of interest

- Socio-economic status
 - Combine FSM eligibility at age 16 with measures of local area deprivation based on pupils' home postcode at age 16
 - Split state school population into quintile groups based on this index
 - Add private school students to top quintile group
- School performance:
 - % of pupils in school achieving at least 5 A*-C grades at GCSE
 - Pupils split into quintile groups on the basis of this measure
 - Accompanying report also considers school type, school value-added, whether school has a sixth form and % of pupils eligible for FSM

HE participation

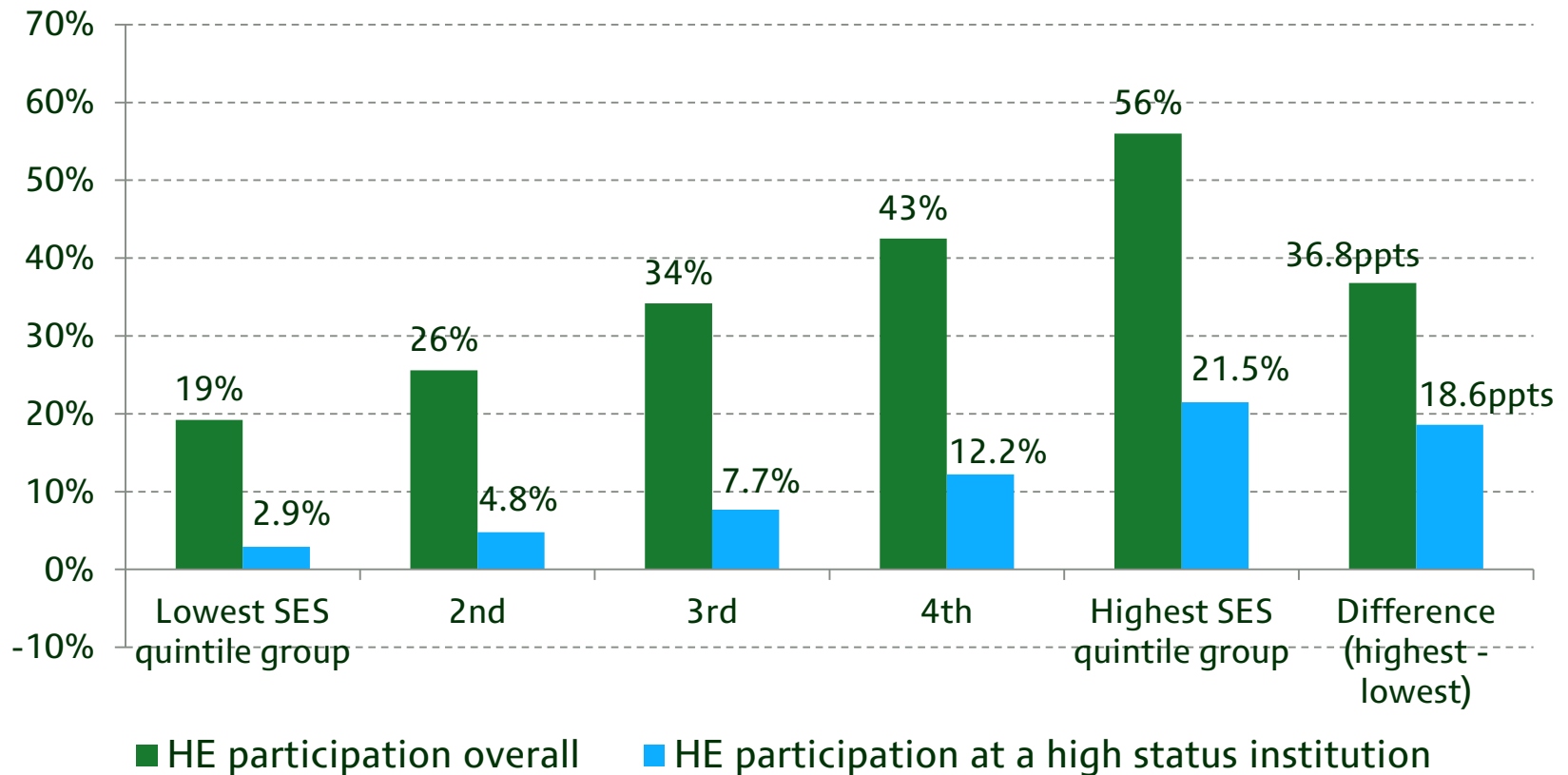
Outcomes: HE participation

- Participation at any UK university for the first time at age 18 or 19
- Participation at a “high status” institution, where high status is:
 - Russell Group institutions (20 in total pre-2012)
 - Plus any UK university with a 2001 average RAE score higher than the lowest amongst the Russell Group (an extra 21 institutions)
- Focus on cohorts first eligible to participate 2004-05 to 2010-11
 - 34.7% participated for the first time at age 18 or 19
 - 12.0% attended a high status institution (34.7% of participants)

HE participation: differences by socio-economic status

HE participation overall and at high status institutions for state school pupils first eligible to go in 2010-11, by SES

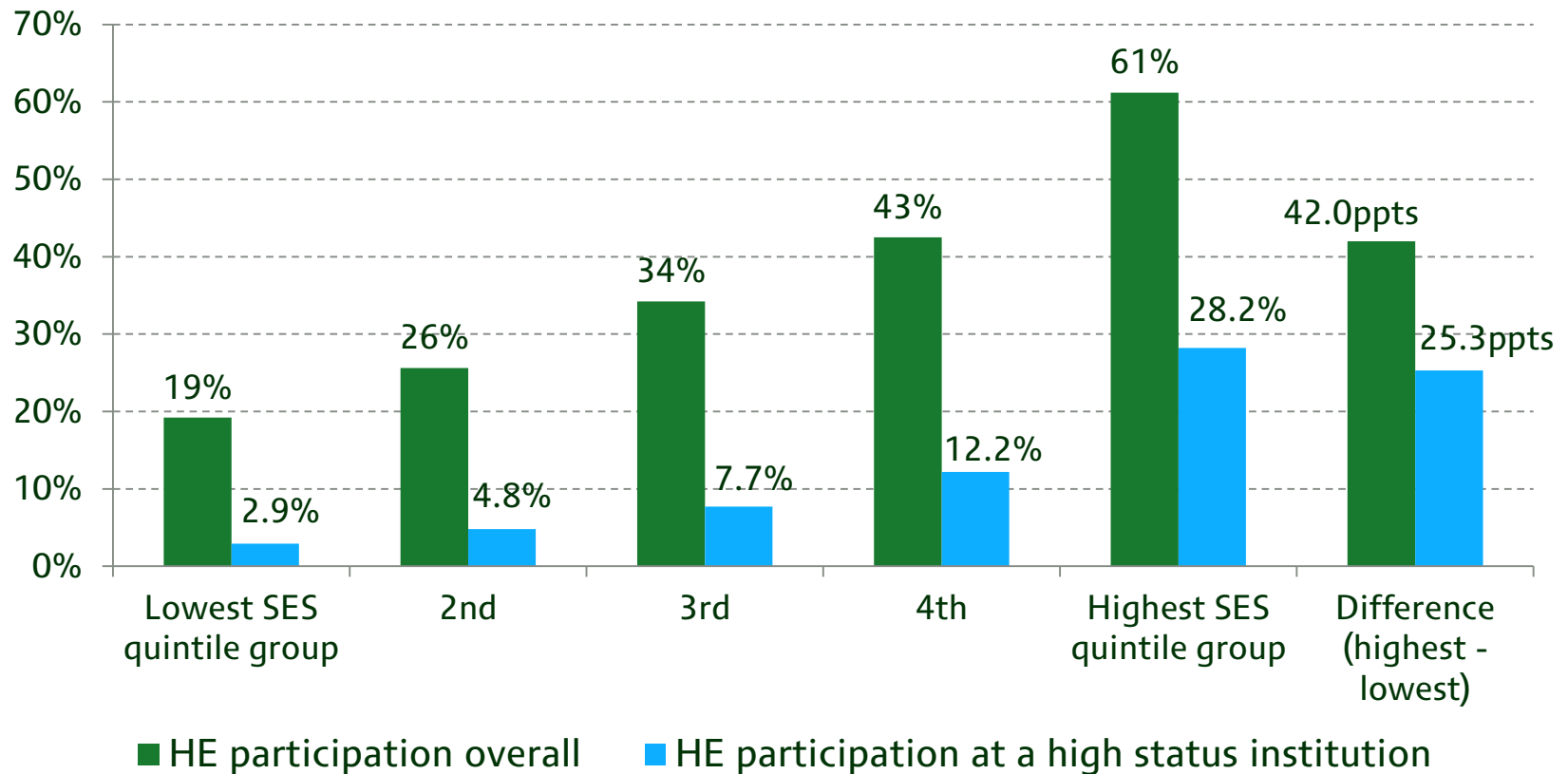
% pupils going to university at age 18/19: highest SES quintile group including state school pupils only



Source: authors' calculations based on linked schools and universities administrative data for the cohort first eligible to start university in 2010-11 (who sat their GCSEs in 2007-08)

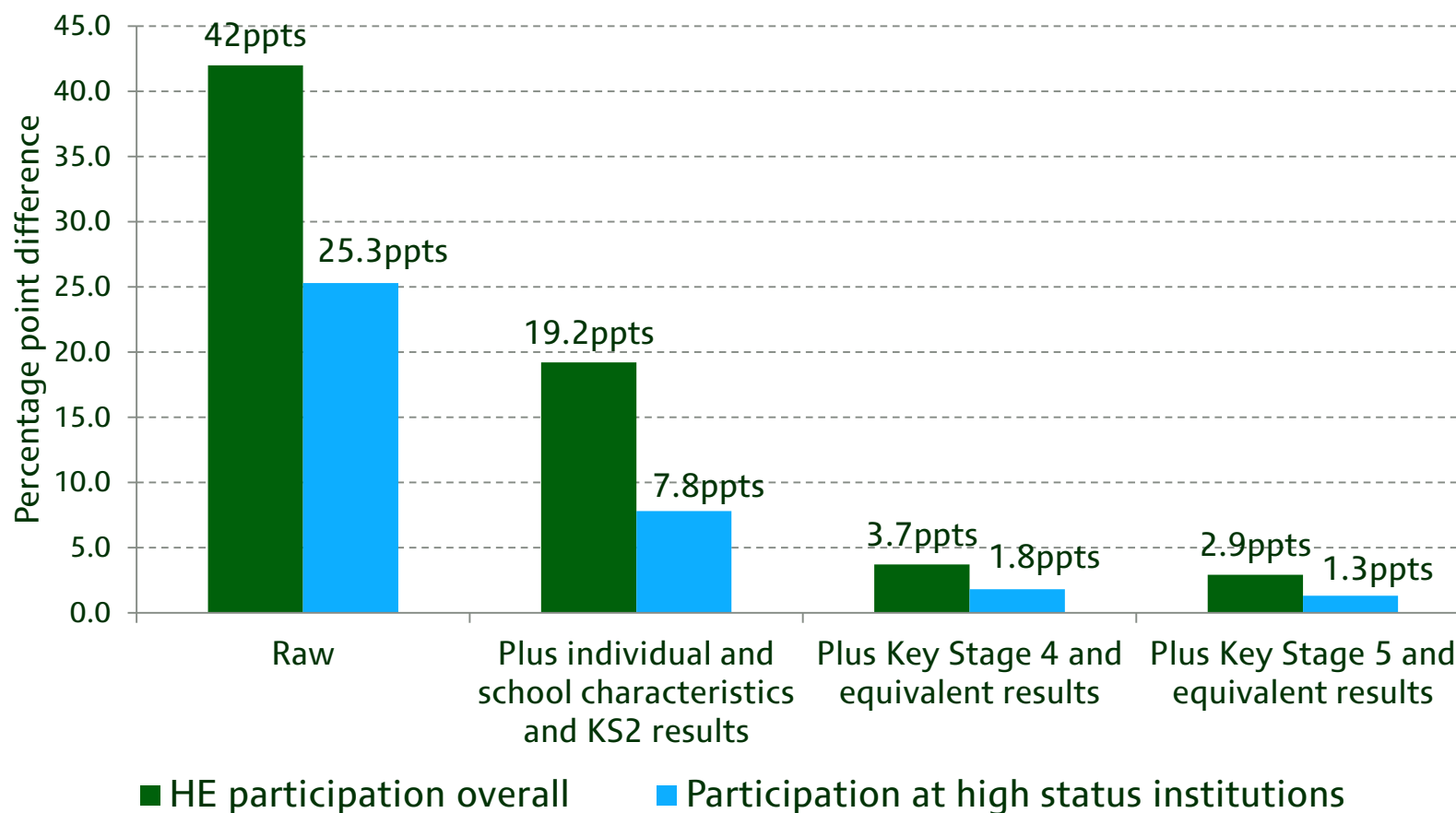
HE participation overall and at high status institutions for all pupils first eligible to go in 2010-11, by SES

% pupils going to university at age 18/19: highest SES quintile group including state and private school pupils



Source: authors' calculations based on linked schools and universities administrative data for the cohort first eligible to start university in 2010-11 (who sat their GCSEs in 2007-08)

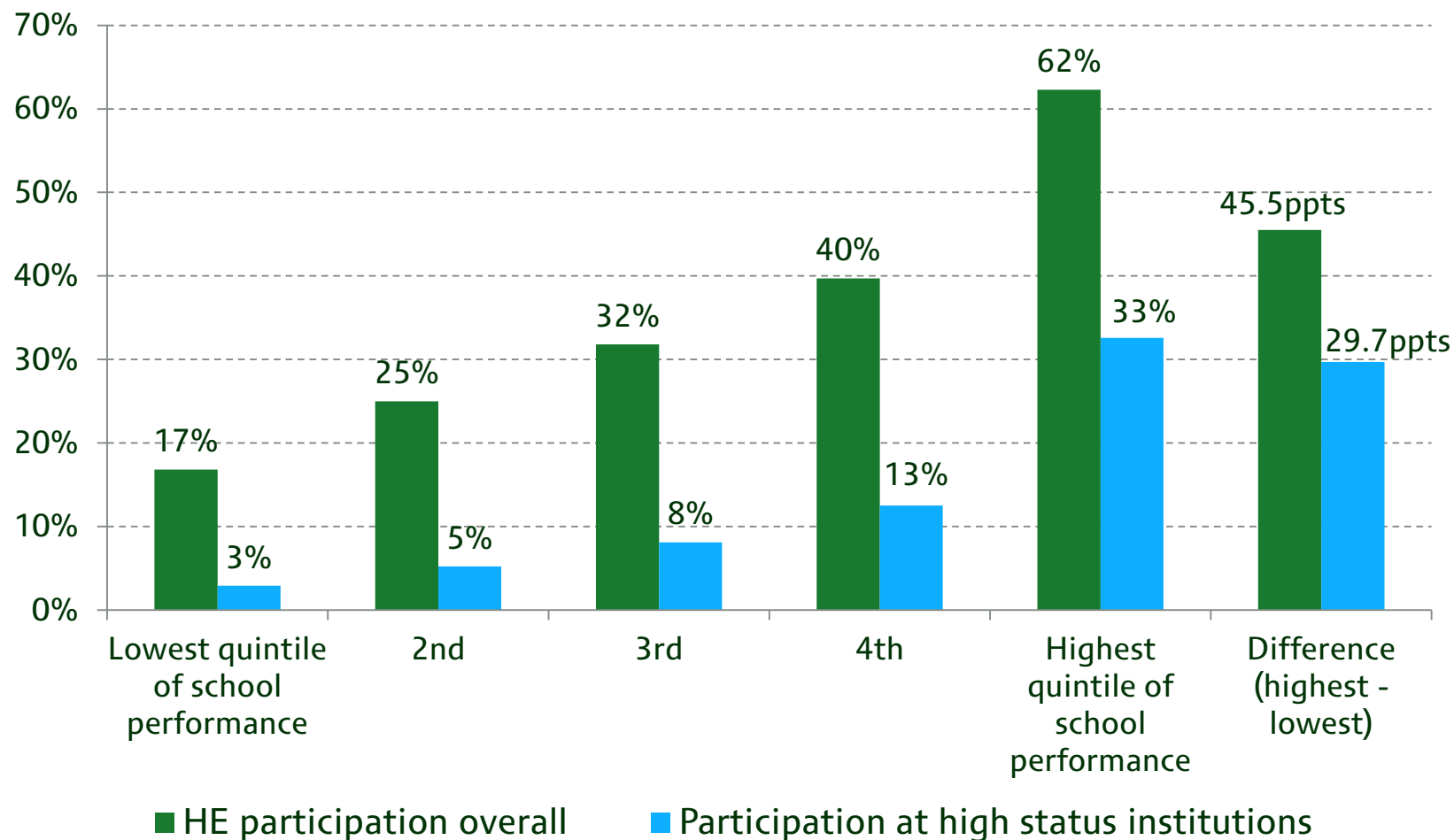
What explains differences in HE participation between pupils from most and least deprived backgrounds?



Source: authors' calculations based on linked schools and universities administrative data for the cohort first eligible to start university in 2010-11 (who sat their GCSEs in 2007-08)

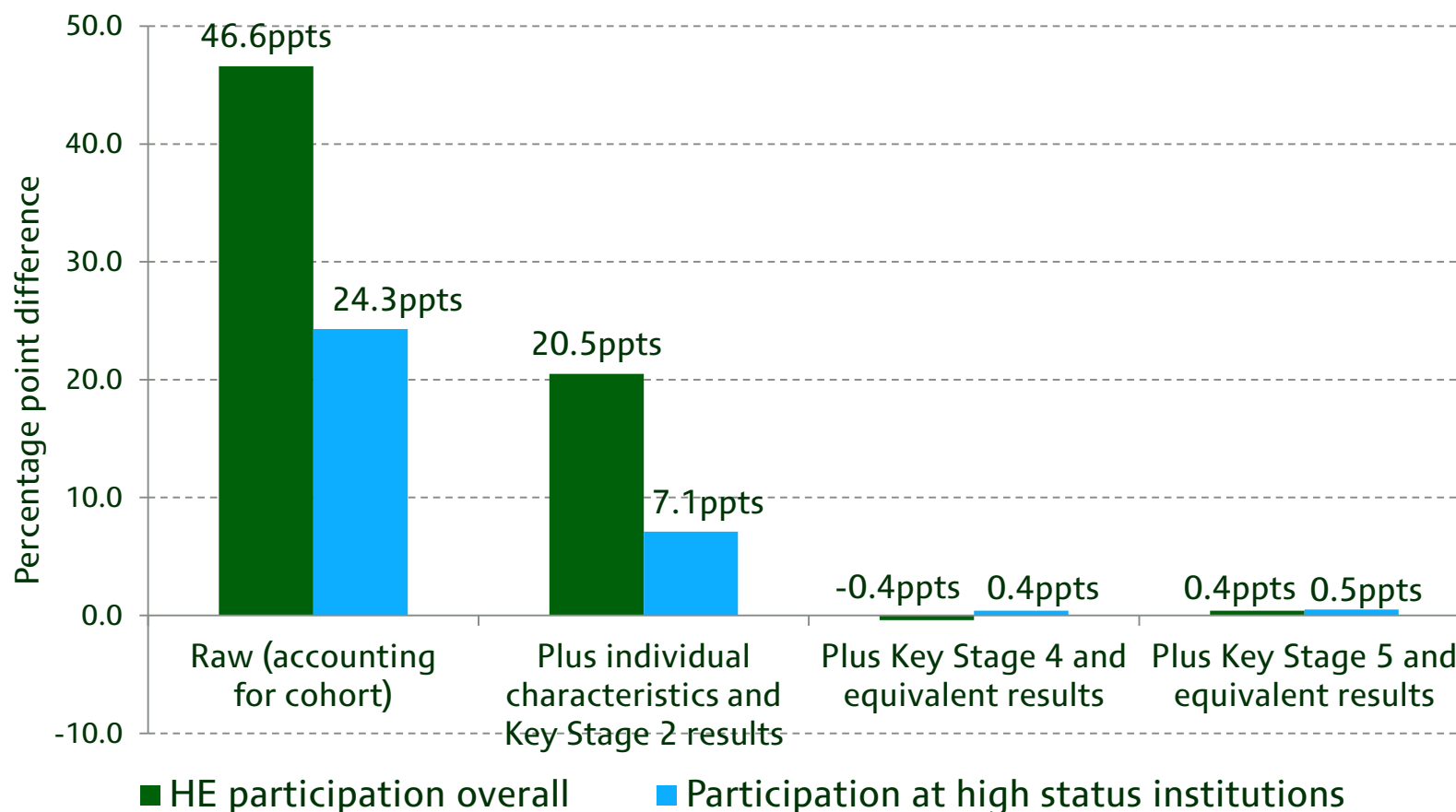
HE participation: differences by school performance

HE participation at age 18/19, by school performance



Source: authors' calculations based on linked schools and universities administrative data for the cohorts first eligible to start university between 2004-05 and 2010-11 (who sat their GCSEs between 2001-02 and 2007-08 respectively)

What explains differences in HE participation between pupils attending highest and lowest performing schools?



Source: authors' calculations based on linked schools and universities administrative data for the cohorts first eligible to start university between 2004-05 and 2010-11 (who sat their GCSEs between 2001-02 and 2007-08 respectively)

Summary

- Large differences in HE participation overall and at high status institutions on the basis of SES and school performance
 - Interestingly slightly larger by school performance
- But these gaps can largely be explained by differences in prior attainment between pupils from different backgrounds and schools
 - Especially participation at high status institutions
- Particularly emphasise the substantial explanatory power of KS4
 - Gaps by SES much reduced and by school performance virtually eliminated
 - Addition of Key Stage 5 controls adds little to this picture
- Suggests that, to the extent that schools affect their pupils' chances of going to university, it comes mainly via increasing KS4 attainment
- Further suggests that secondary school is a potentially vital period for interventions to “widen” participation in HE

Drop-out, degree completion and degree class

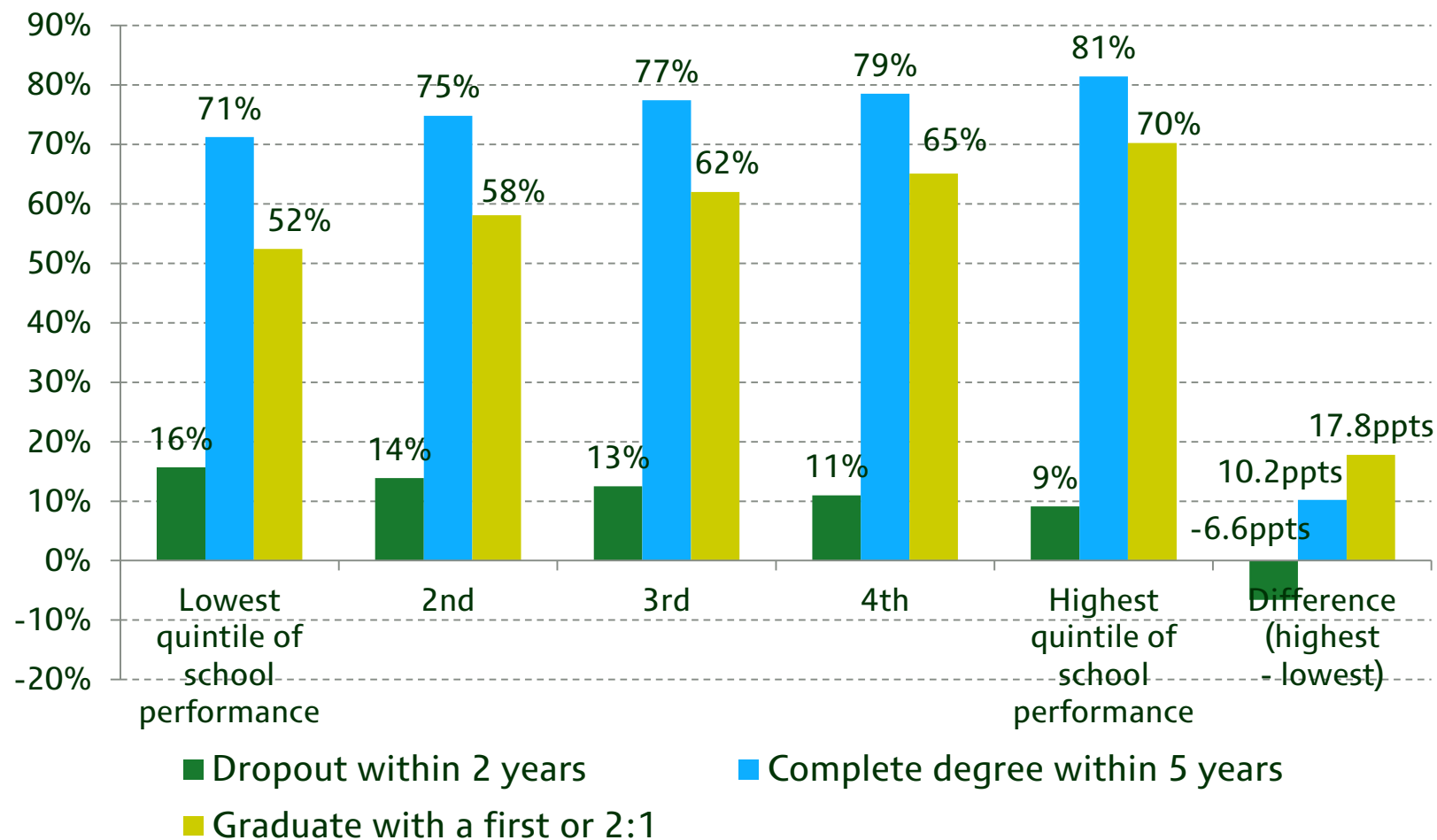
Outcomes: drop-out

- Drop-out in first or second year:
 - Defined only for those who went to university at age 18 or 19
 - Focus on those who leave the sector completely; anyone who transfers to another university is included in the zeroes
- Need to be able to observe three years of data to define measure
 - Means focus on those first eligible to go 2004-05 to 2008-09
- 11.5% drop-out on our measure
- Slightly lower (9.7%) if we focus on full-time first degree entrants

Outcomes: degree completion and degree class

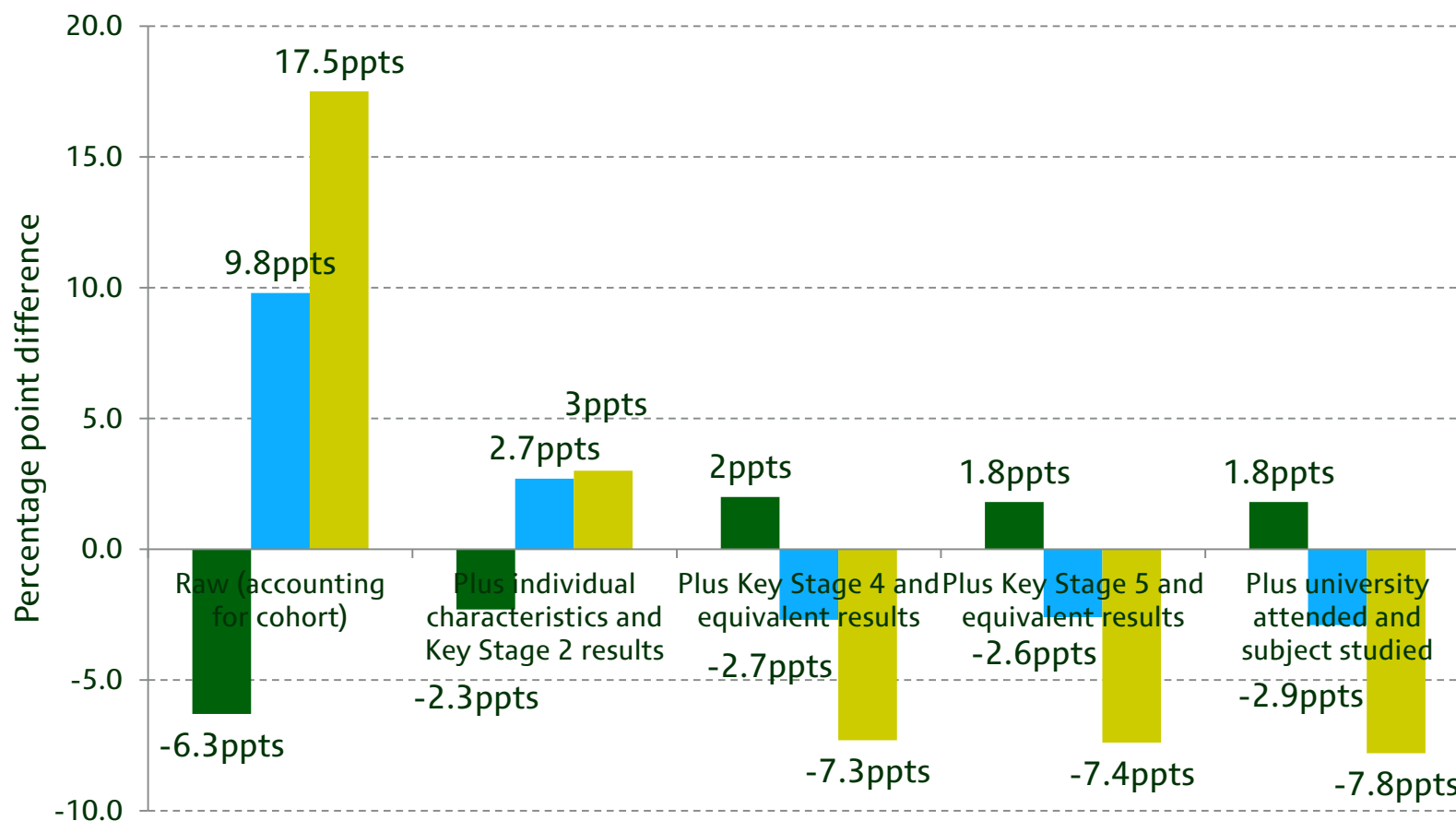
- For both outcomes, focus on those completing within 5 years
 - Means need to be able to observe 5 years of data to define measure
 - Hence focus on those first eligible to go in 2004-05 to 2006-07
- Degree completion:
 - Defined for those who went to university at age 18 or 19 to study full-time for a first degree in a non-medical subject
 - 78.2% complete their degree within 5 years on our definition
- Graduate with a 1st or a 2:1:
 - Sample as above but additionally restricted to those who complete their degree within 5 years
 - 64.6% of degree completers graduate with a 1st or a 2:1 on our definition

HE outcomes, by quintile of school performance



Source: authors' calculations based on linked NPD-HESA data for the cohorts first eligible to start university between 2004-05 and 2008-09 for drop-out, and between 2004-05 and 2006-07 for degree completion and degree class

What explains differences in HE participation between pupils attending highest and lowest performing schools?



Source: authors' calculations based on linked NPD-HESA data for the cohorts first eligible to start university between 2004-05 and 2008-09 for drop-out, and between 2004-05 and 2006-07 for degree completion and degree class

Summary

- Differences in HE outcomes smaller, on average, than participation, and in expected direction (but amongst selected sample)
- Relationships reverse once we account for attainment at KS4
 - Pupils from high-performing schools *more* likely to drop out, *less* likely to complete degree and *less* likely to get first or 2:1 than pupils with similar characteristics and attainment from low-performing schools
- Cannot be certain what drives it, but suggests that pupils from low performing schools with the same attainment as those from high performing schools have, on average, higher “potential”
 - May be something universities want to account for in making entry offers
 - There is some evidence consistent with differential offers by SES
 - Those from the most deprived backgrounds who make it to high status institutions have lower attainment, on average, than those from less deprived backgrounds

Relevant published work

- Chowdry, H., C. Crawford, L. Dearden, A. Goodman and A. Vignoles (2013), Widening participation in higher education: analysis using linked administrative data, *Journal of the Royal Statistical Society: Series A*, Vol. 176, pp. 431-457.
- Crawford, C. (2012), *Socio-economic gaps in HE participation: how have they changed over time?*, IFS Briefing Note BN133.
- Crawford, C. (2014), *The link between secondary school characteristics and HE participation and outcomes*, CAYT Research Report (<https://www.gov.uk/government/publications/secondary-school-characteristics-and-university-participation>).
- Crawford, C., L. Macmillan and A. Vignoles (2014), *Progress made by high-attaining children from disadvantaged backgrounds*, CAYT Research Report (<https://www.gov.uk/government/publications/high-attaining-children-from-disadvantaged-backgrounds>).