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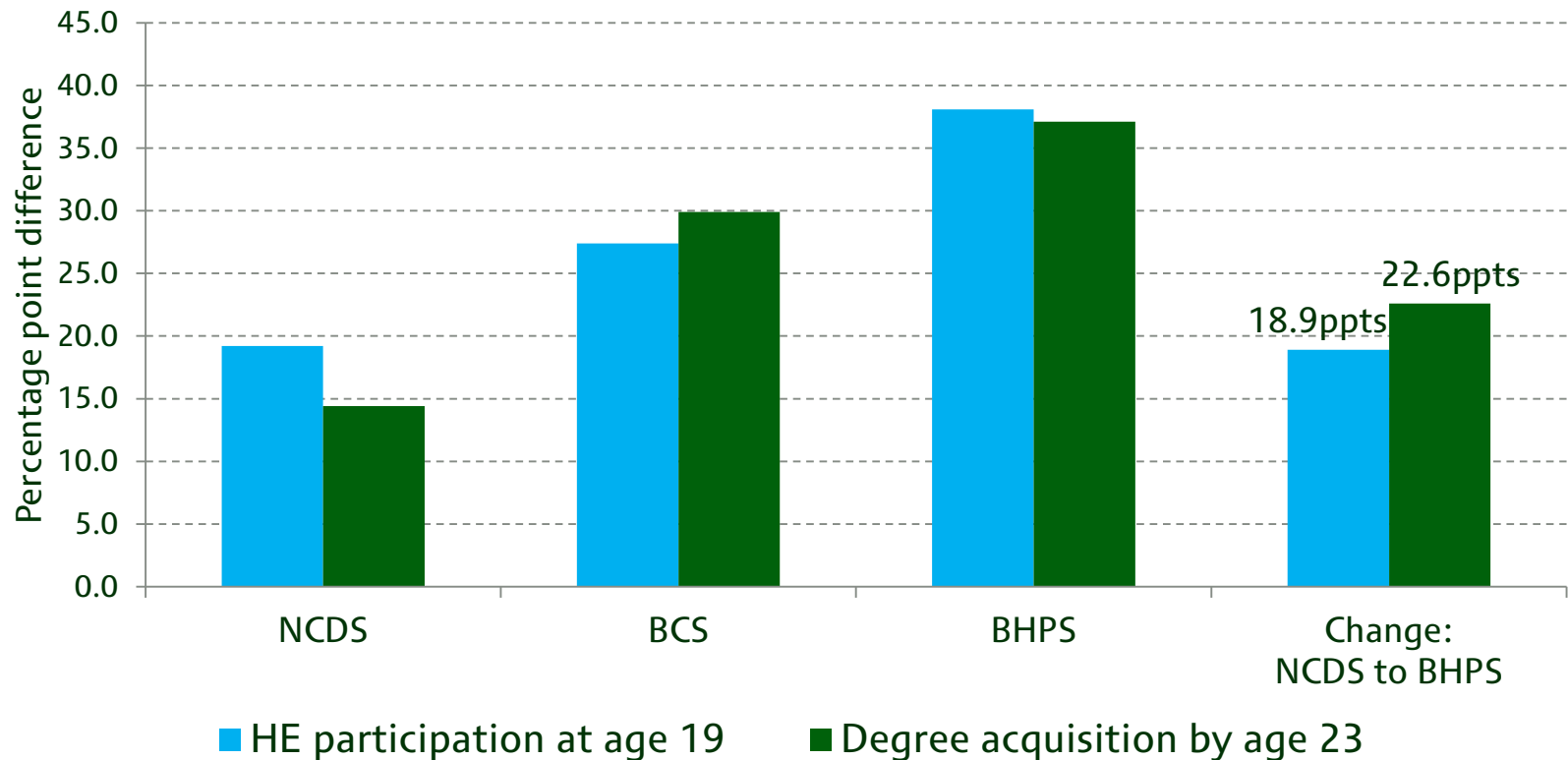
## Socio-economic differences in higher education participation and outcomes

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# Motivation: rising socio-economic inequalities in HE participation and degree acquisition over time

**Difference in HE participation/degree acquisition rates between those in the top and bottom income quintile groups**



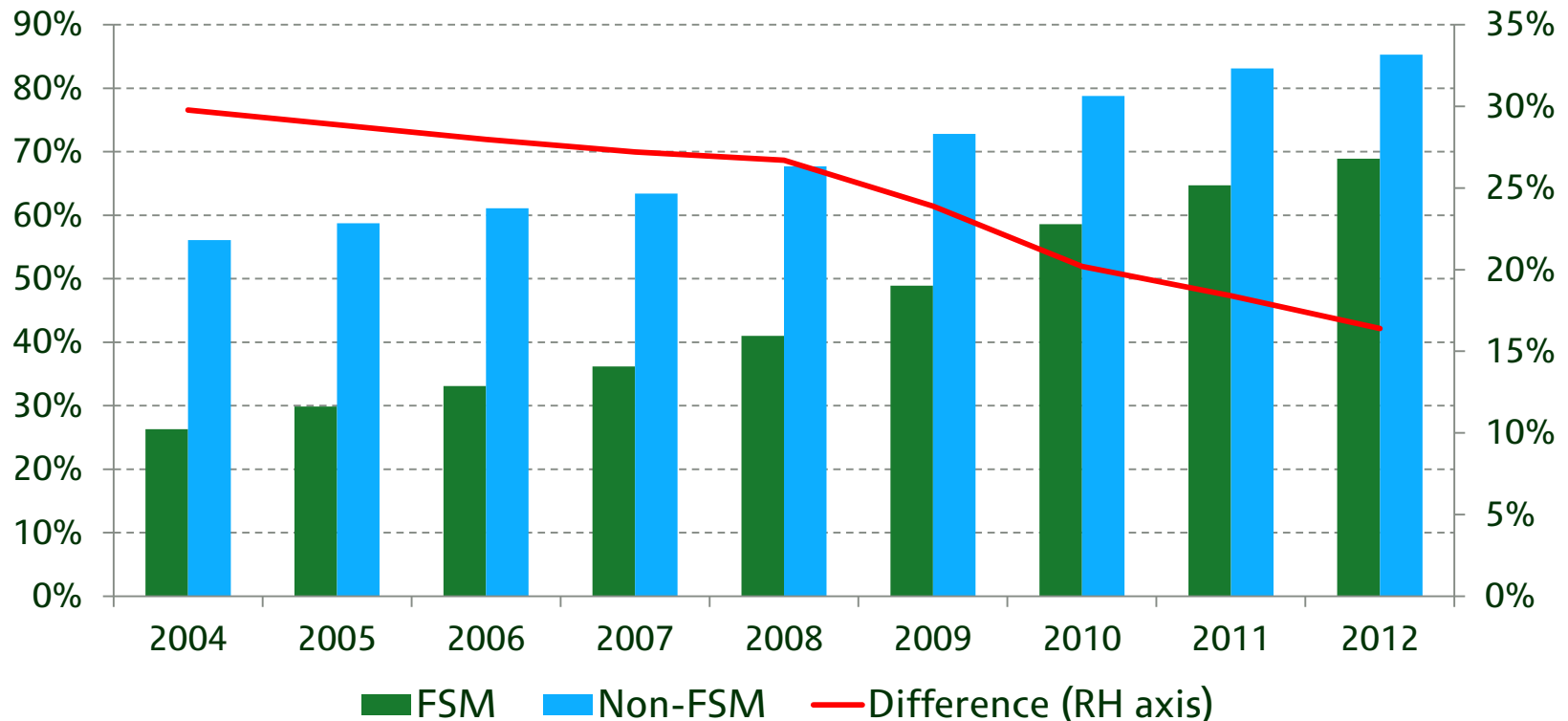
Source: Blanden & Machin (2004), Educational inequality and the expansion of UK higher education, Scottish Journal of Political Economy, Special Issue on the Economics of Education, Vol. 51, pp. 230-249.

# Motivation: what has happened since then?

- Participation in higher education has risen dramatically
- Fees and student support arrangements have changed significantly
- SES differences in some measures of attainment have been falling

# SES gap in terms of % getting 5 A\*-C grades in GCSEs and equivalents has fallen substantially

## % pupils getting 5 A\*-C grades in GCSEs and equivalents



2010-2012 figures based on SFR 04/2013: GCSE and Equivalent Attainment by Pupil Characteristics in England.  
2006-2009 figures based on SFR 37/2010: GCSE and Equivalent Attainment by Pupil Characteristics in England.  
2004-2005 figures based on authors' calculations using Key Stage 4 and PLASC data.

# Motivation: what does this mean for SES gaps in HE participation and outcomes?

- Changes to student finance:
  - Concerns that prospect of high fees/debt levels would create a barrier to participation/retention for poorer students and hence **increase** SES gaps
- Prior attainment:
  - Given key role in driving HE participation, poorer students “catching up” with their better off peers may **decrease** SES gaps
- Mass HE participation:
  - Potential “selection effects”: lower ability students may be less likely to complete their degree and less likely to graduate with a 1<sup>st</sup> or a 2:1
    - Effect on SES gaps **ambiguous** (depends where new participants are drawn from)
- Empirical question . . .

# Plan for today

- Document socio-economic gaps in HE participation, drop-out, degree completion and degree class
- Explore the extent to which these gaps can be explained by differences in other characteristics, especially prior attainment
- Compare these results to differences by school characteristics (including differences in labour market outcomes)
- What policy implications can be drawn from our results?

# Data

- Analysis of participation, drop-out, degree completion and degree class uses linked NPD-ILR-HESA data
  - Allows us to follow the population of pupils attending schools in England from age 11 through to potential degree completion
- Analysis of labour market outcomes uses DLHE data
  - Survey of those leaving university in 2007, 6 months and 3.5 years later
- 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 five equally sized 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 five equally sized groups on the basis of this measure

# HE participation

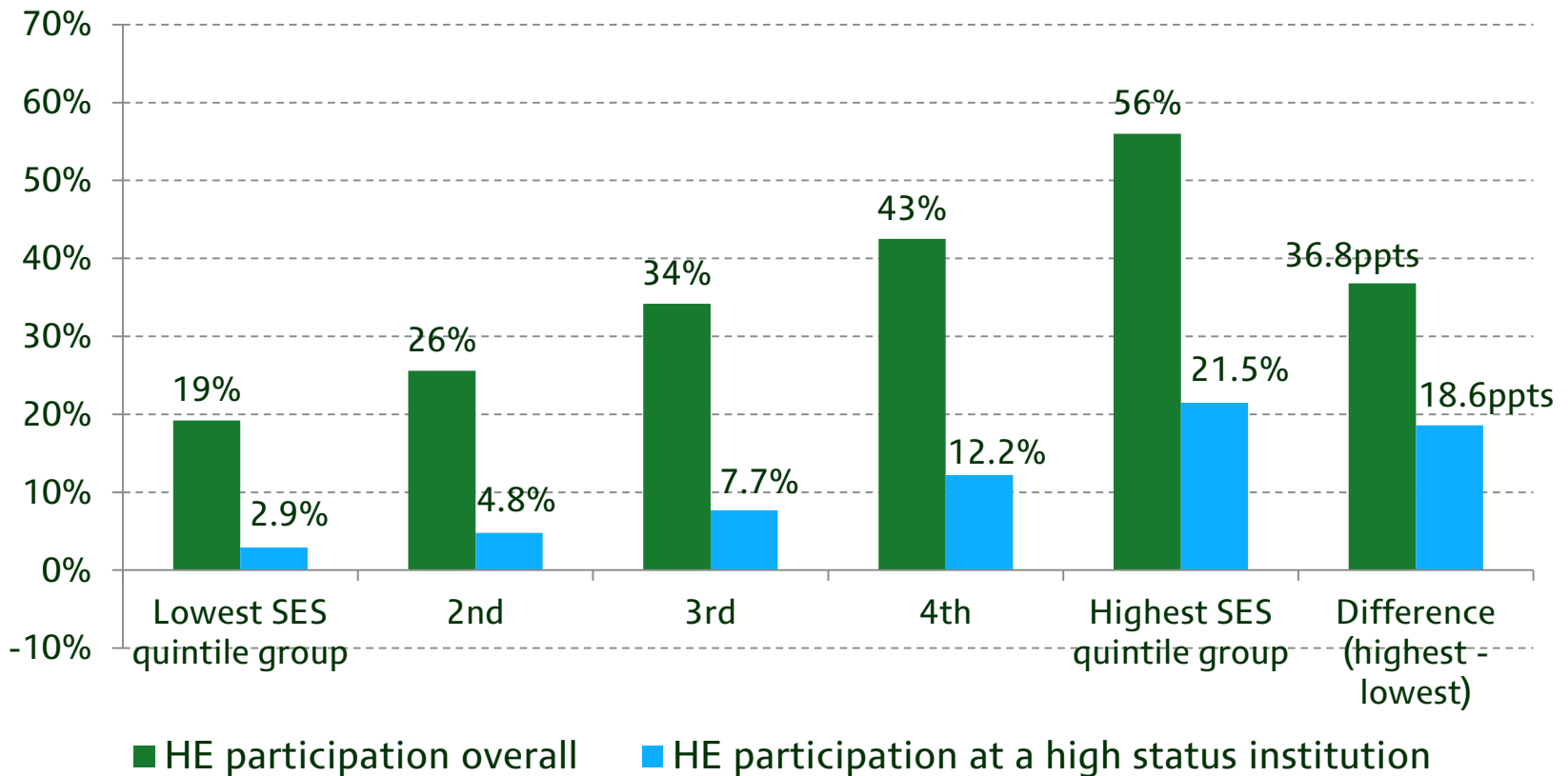


# Outcomes: HE participation

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

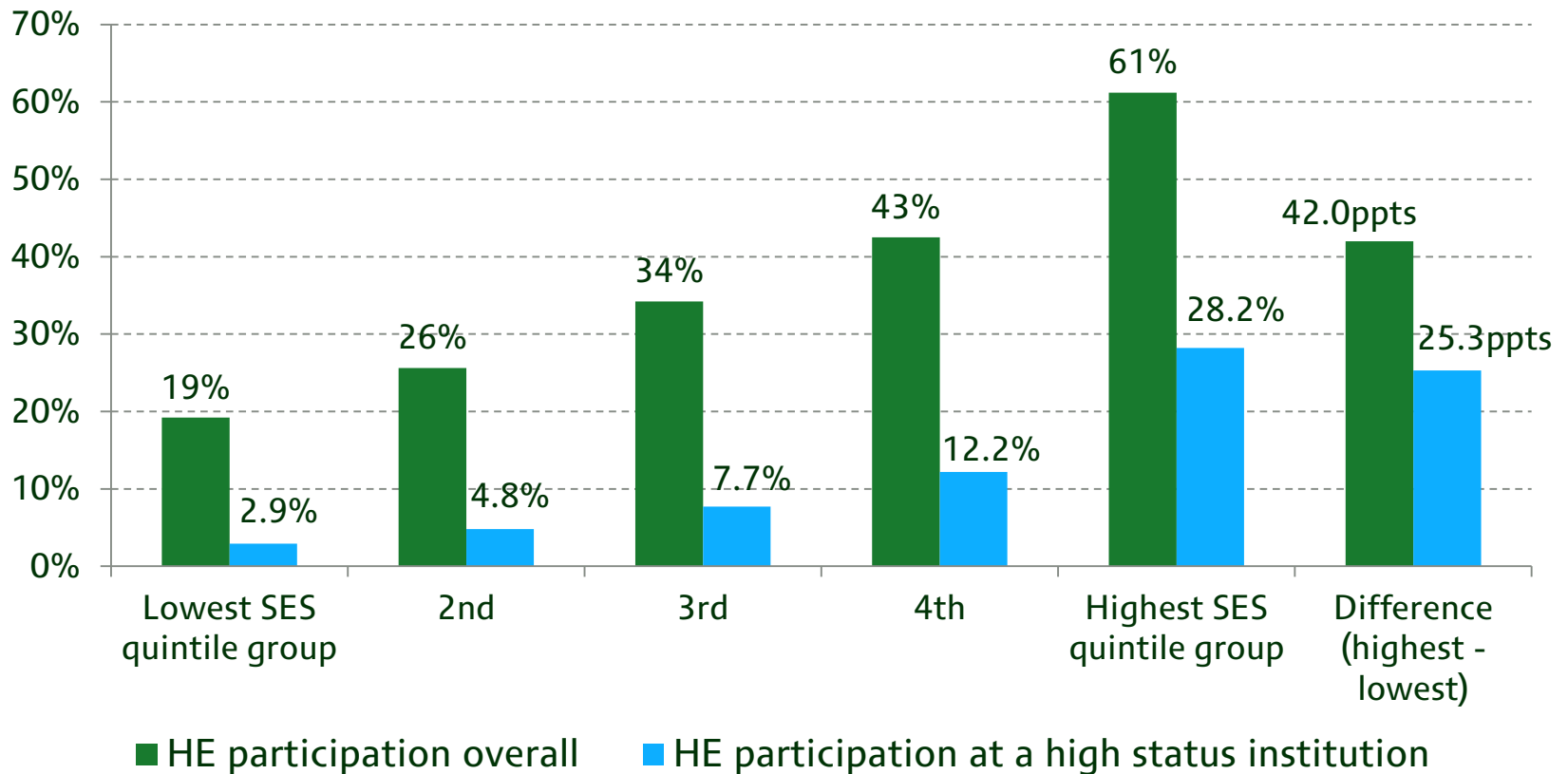
**% pupils going to university at age 18/19: highest SES quintile group including state school pupils only**



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)

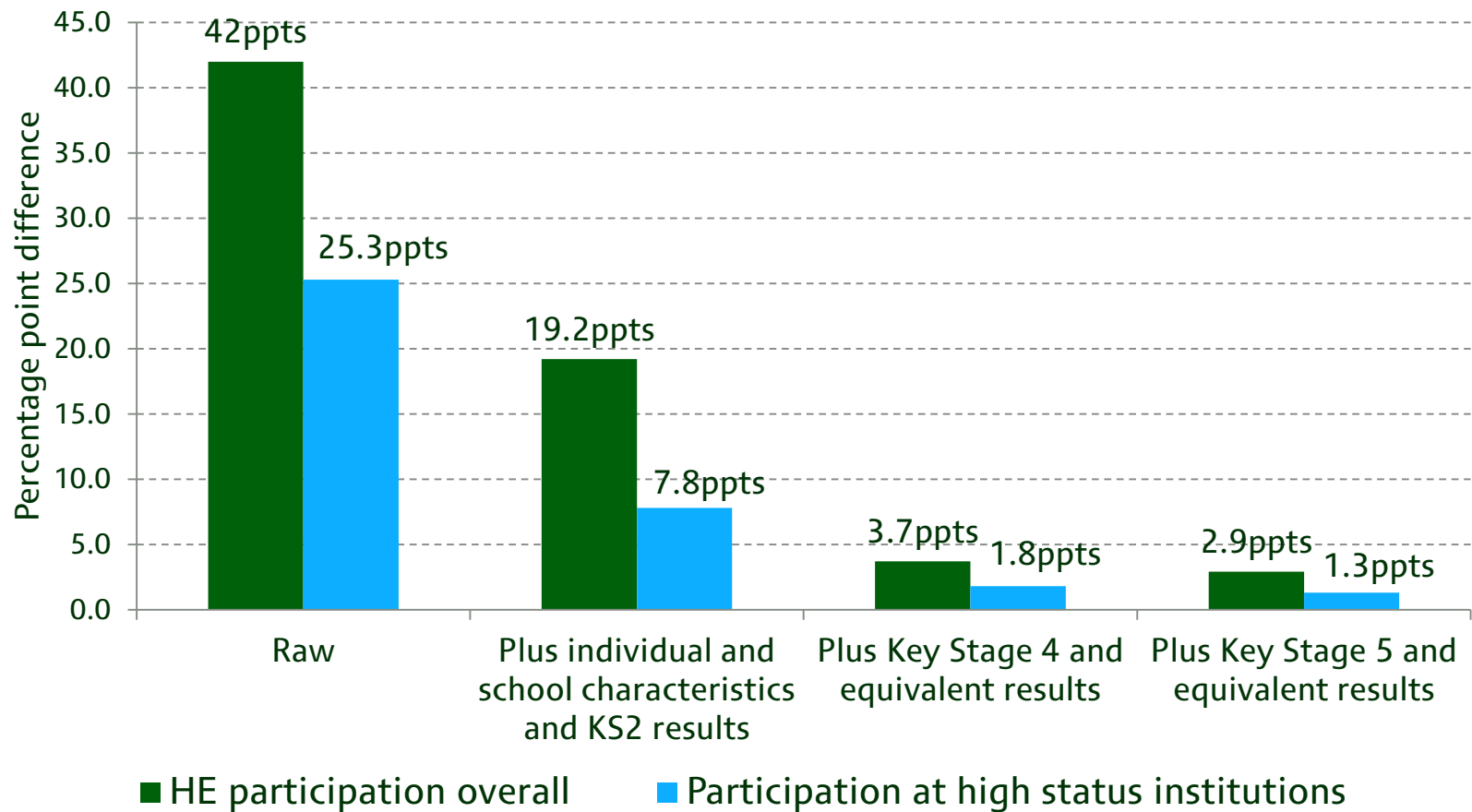
# HE participation overall and at high status institutions for all pupils first eligible to go in 2010-11, by SES

**% 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)

# Summary

- Large differences in HE participation overall and at high status institutions on the basis of socio-economic status
- But these gaps can largely be explained by differences in prior attainment between pupils from different backgrounds
  - Especially participation at high status institutions
- Particularly emphasise the substantial explanatory power of KS4
  - Addition of Key Stage 5 controls adds little to this picture
- 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

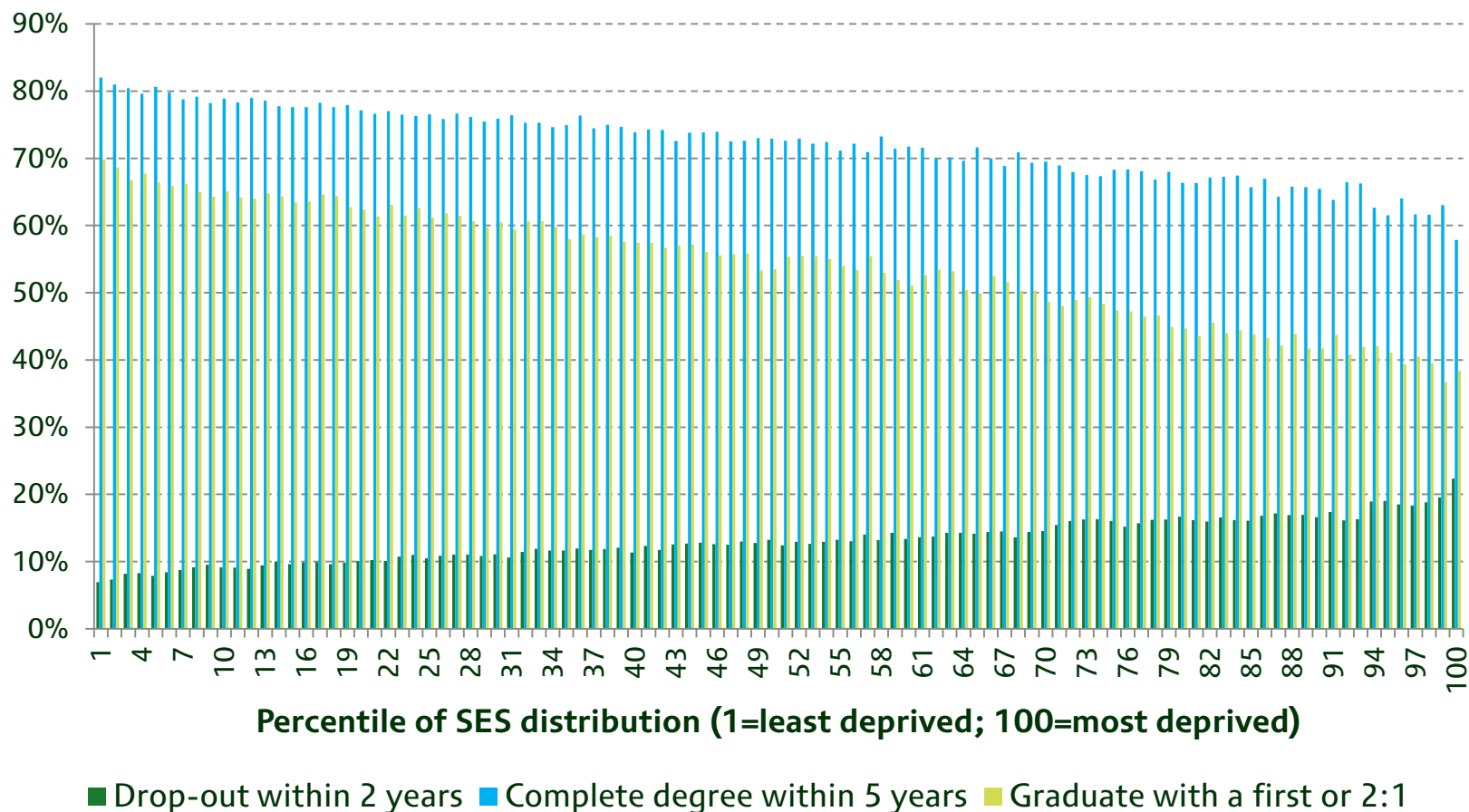
- Drop-out in first or second year:
  - Defined only for those who went to university at age 18 or 19
  - Focus on those who leave the sector completely; anyone who transfers to another university is included in the zeroes
- Need to be able to observe three years of data to define measure
  - Means focus 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 1<sup>st</sup> 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 1<sup>st</sup> or a 2:1 on our definition

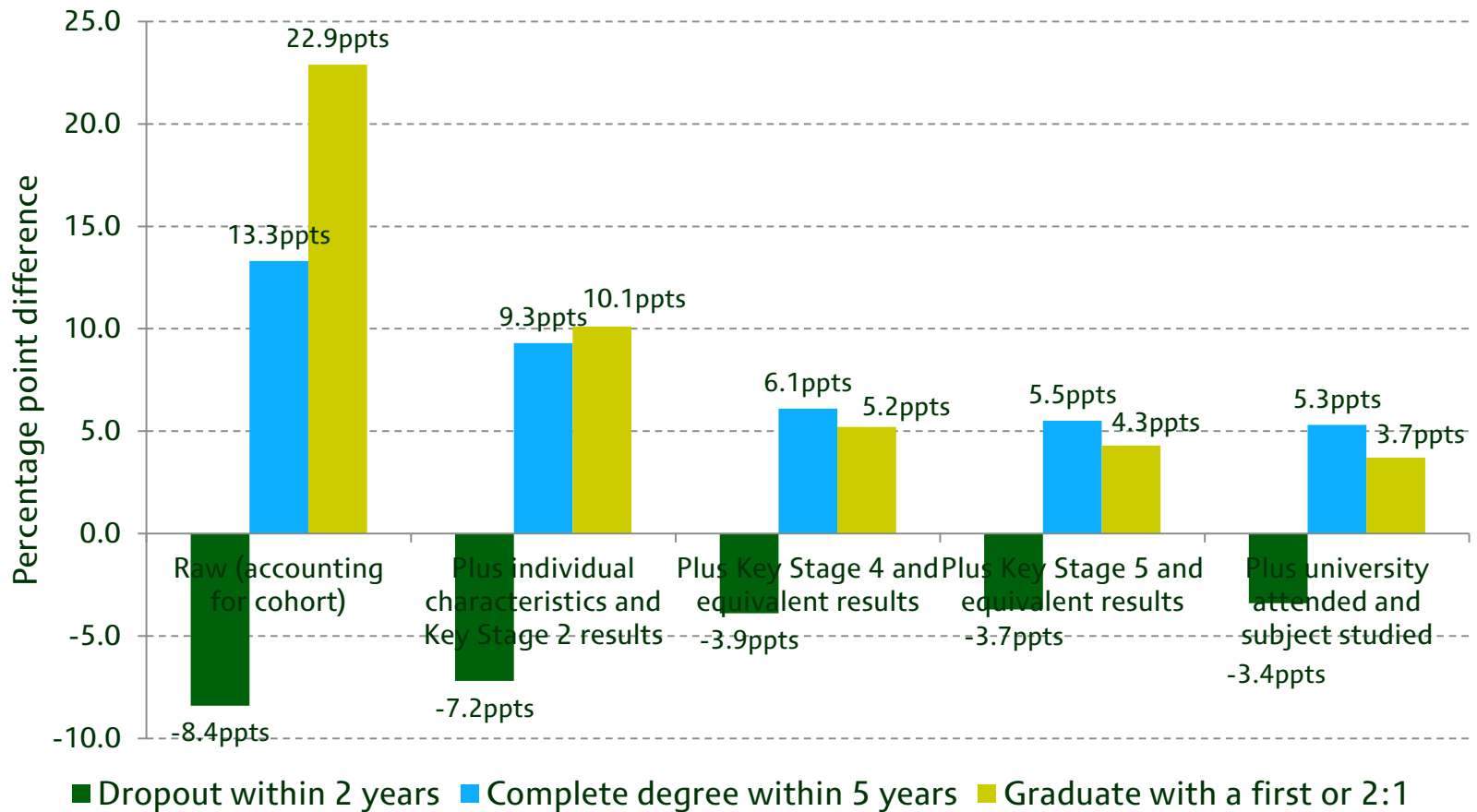


# % of HE participants who drop-out, complete their degree and graduate with a first or 2:1, by percentile of socio-economic background



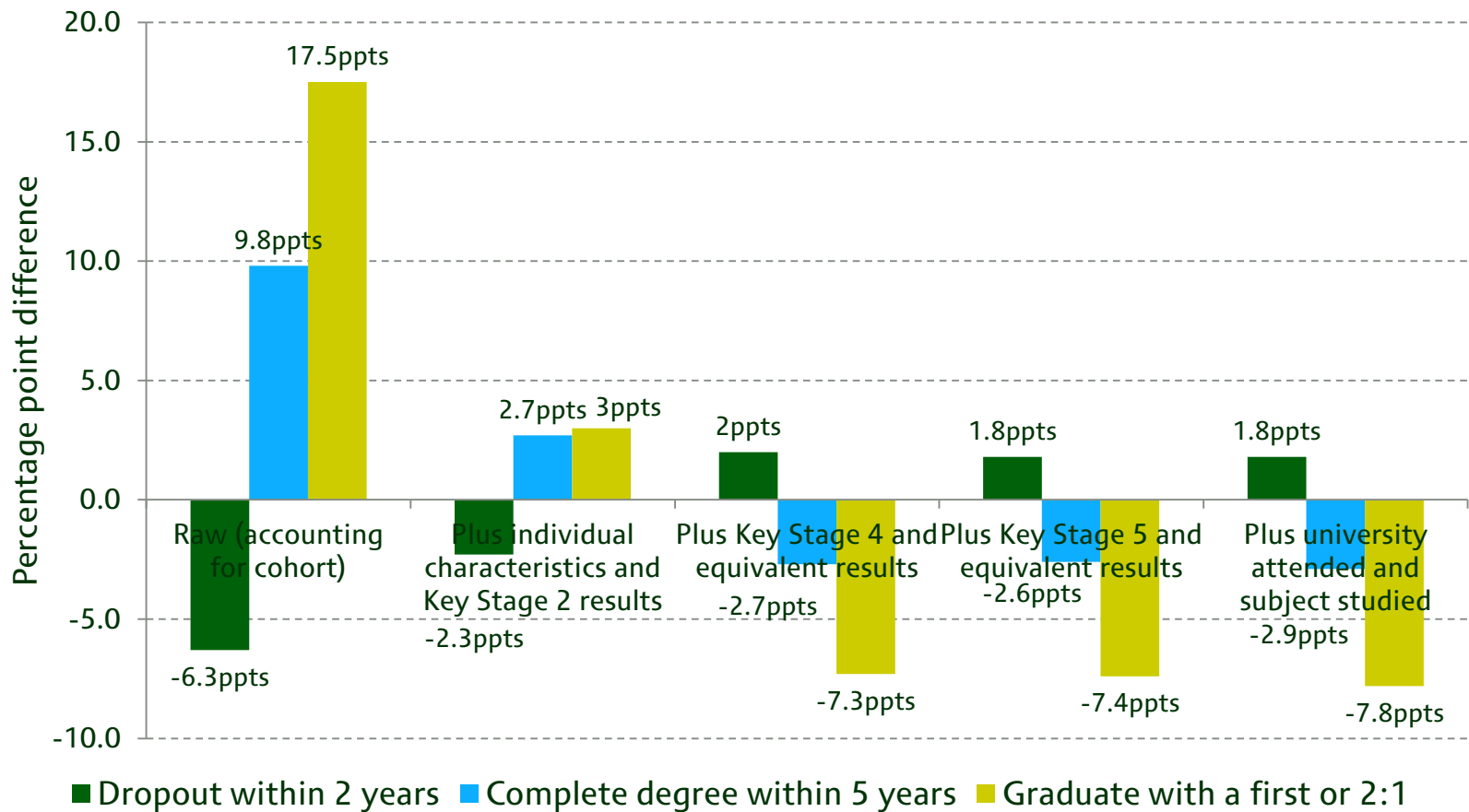
Source: authors' calculations based on linked NPD-HESA data for the cohorts first eligible to start university between 2004-05 and 2008-09 for drop-out, and between 2004-05 and 2006-07 for degree completion and degree class

# What explains differences in university outcomes between pupils from high and low SES backgrounds?



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

# How does this compare to the differences between pupils from the 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)
- Controlling for attainment on entry to university substantially reduces SES differences; comparing students on the same courses makes little difference over and above accounting for attainment
  - Students from high SES backgrounds still, on average, less likely to drop out, more likely to complete degree and less likely to get first or 2:1 than students from low SES backgrounds
- Different picture when comparing outcomes by school performance
  - Students from high-performing schools are, on average, *more* likely to drop out, *less* likely to complete degree and *less* likely to get first or 2:1 once we account for differences in attainment prior to university entry

# Policy implications?

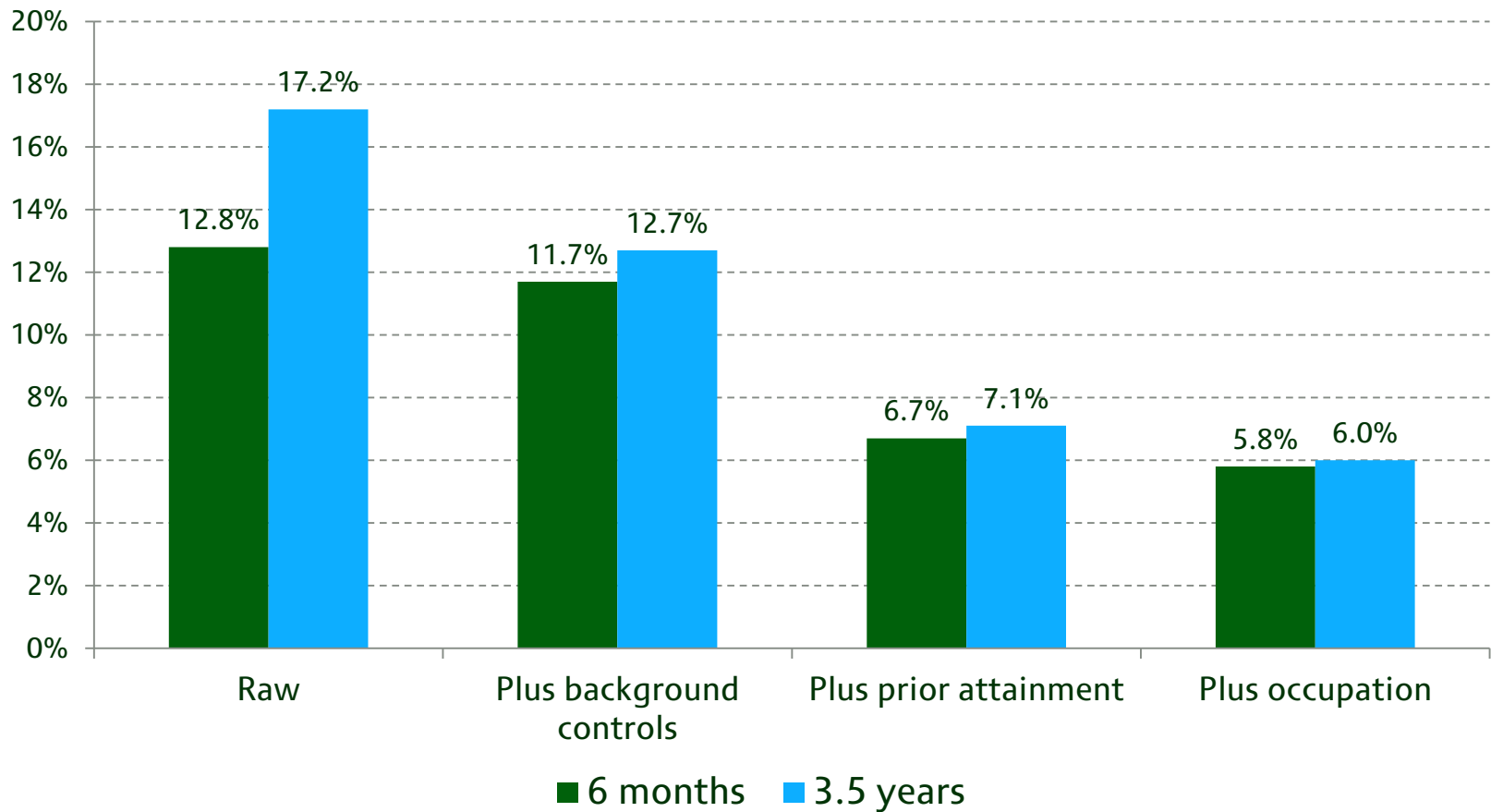
- Attainment during secondary school still a key driver of progression and performance at university, so SES gaps in these outcomes may fall if attainment rises earlier in the school system
- Differences by school characteristics suggest that pupils from low performing schools with the same attainment as those from high performing schools have, on average, higher “potential”
  - Universities may wish to account for this in making entry offers
  - If they do, they are likely to get it right **on average**
- Same is not true for individual/neighbourhood measures of SES
  - Does not mean that no students from lower SES backgrounds will go on to outperform students from higher SES backgrounds at university
  - But it is not true **on average**: makes it more challenging for universities to identify low SES students with high potential to do well

# Early labour market outcomes

# Is HE a route to social mobility?

- Returns to education in the UK largely accrue to qualifications
  - Also vary by institution, subject and degree class
- But those from low SES backgrounds are less likely to attend a high status institution, less likely to complete their degree and less likely to get a first or 2:1, even conditional on prior attainment
- Do such differences persist into the labour market too?
- Look at earnings differences 6 months and 3.5 years after graduation for those who attended private vs. state schools

# Differences in earnings between graduates who previously attended private vs. state schools



Source: authors' calculations based on Destination of Leavers from Higher Education data for UK-domiciled students who studied full-time for a first degree and graduated in 2006-07.



# Summary

- Private school students earn more than state school students, even when we compare those who went to the same universities, studied the same subjects and went into the same occupations
- Why?
  - Better social networks?
  - Better non-cognitive skills?
  - Or are we still not measuring ability well enough?
    - Can check this now that NPD-HESA and DLHE have been linked
- But as things stand, those from lower socio-economic backgrounds and state schools do not appear to benefit to the same extent from higher education: challenge for social mobility?

# 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. (2014a), *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. (2014b), *Socio-economic differences in university outcomes in the UK: drop-out, degree completion and degree class*, IFS Working Paper No. 14/31.
- Crawford, C. and A. Vignoles (2014), *Heterogeneity in graduate earnings by socio-economic background*, IFS Working Paper No. 14/30.
- 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>).