



# Understanding the improved performance of disadvantage pupils in London

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# Motivation



- Role of educational inequality central to discussions of social mobility
- Wide range of empirical studies concerning association between origin, education, and destination
  - Breen and Goldthorpe 2001; Breen and Jonsson 2007; Blanden et. al. 2007; Duncan and Murnane 2011; Goldthorpe 2013
- UK ranks middle to bottom of international comparisons of educational inequality
  - UK is 14<sup>th</sup> out of 24 countries in terms of university access by parental education
  - UK is 22<sup>nd</sup> out of 24 countries in terms of PIACC test scores by parental education (Jerrim and Macmillan 2015)

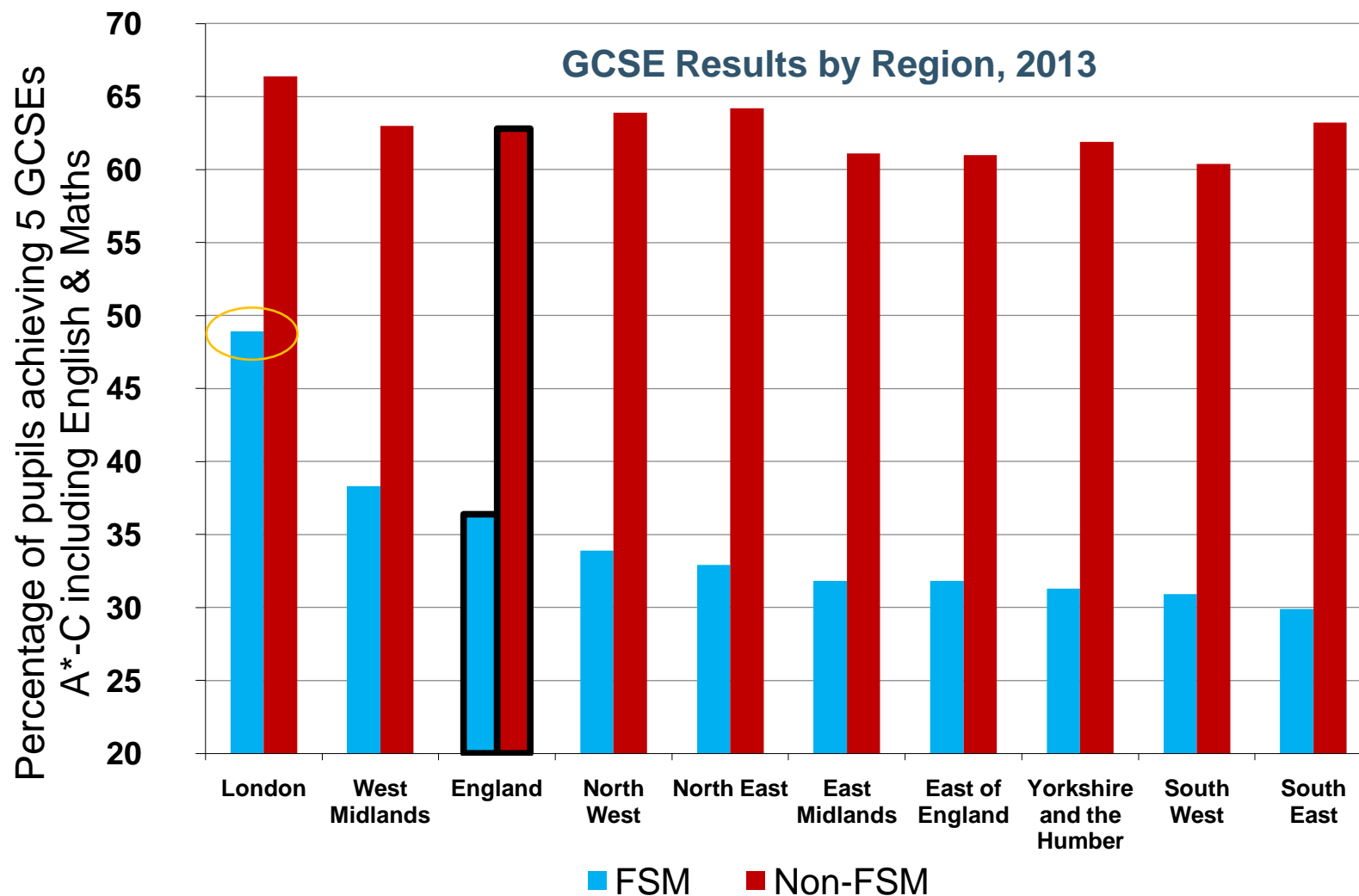
# Motivation



- Existing research shows that gaps are not easy to close
  - educational inequalities emerge early in life and persist through to later ages
- Goodman et al 2011; Todd and Wolpin, 2007; Waldfogel and Washbrook, 2011
- Here we consider a specific example where performance of pupils has improved dramatically in recent years.
- In particular we focus on the rapid progress made by disadvantaged children in London over time; a trend that has not been matched in the rest of England.

Disadvantage gaps exist across all regions, but are much narrower in London

Due to disadvantaged pupils performing better in London than any other region



Source: Department for Education, GCSE and their equivalents, 2013

# Motivation



- Existing explanations for London's performance generally fall into two camps:
  1. a number of policy reports emphasise the role of recent changes in schools policy, initiatives and leadership in generating the gains, particularly the London Challenge which began in the mid-2000s. (CfBT, 2014; Wyness, 2011; Hutchings et al, 2012)
  2. Burgess (2014) emphasises the role of the characteristics of London's children, in particular their ethnic make-up.

# Motivation



- In this paper we add more of the missing pieces to the puzzle of the success in London:
- We focus on the *changes* in the performance of *disadvantaged* pupils in London over time, relative to the rest of England.
  1. we document the dramatic increase in the performance of disadvantaged pupils in London compared to elsewhere.
  2. quantify the extent to which pupil and school characteristics can explain the improved performance of disadvantaged pupils in London over time.
  3. explore the role of schools and parents using the Millennium Cohort Study (MCS) which shows the trajectory of the London advantage among a year-group of deprived children who started school in 2005

# Structure



- Context
- Data description
- Empirical decomposition
- Results
- Conclusions

# Context – London is different

## Both in terms of people....



	Inner London			Outer London			Rest of England		
	2001	2011	Δ	2001	2011	Δ	2001	2011	Δ
<b>Demographics</b>									
White British	19.0	12.8	-6.2	41.9	29.2	-12.7	77.5	75.7	-1.8
Highly educated	40.4	46.8	6.4	25.8	33.1	7.2	17.3	24.7	7.4
High Professional occupations	15.3	16.6	1.3	10.9	11.5	0.6	7.5	9.0	1.5
<b>Incomes and Costs</b>									
Average equivalised income (AHC)	553	581	5%	553	581	5%	454	503	11%
Amongst non-working households	210	227	8%	210	227	8%	215	236	10%



# Context – London is different Both in terms of people....



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<b>Demographics</b>									
White British	19.0	12.8	-6.2	41.9	29.2	-12.7	77.5	75.7	-1.8
Highly educated	40.4	46.8	6.4	25.8	33.1	7.2	17.3	24.7	7.4
High Professional occupations	15.3	16.6	1.3	10.9	11.5	0.6	7.5	9.0	1.5
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# Context – London is different ...and schools



## Policy action:

- London Challenge (Secondary, 2003, Primary, 2008)
- Excellence in Cities (Secondary , 1999, Primary, 2000)
- School governance (academies) (Secondary, early 2000s)
- Teach First (Secondary, 2002, Primary, 2011)
- National Strategies (Primary trial, 1998)

## School environment:

- School funding
- Teacher tenure
- Teacher pay
- Choice and competition

# Context – London is different ...and schools



## Policy action:

- London Challenge (Secondary, 2003, Primary, 2008)
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## School environment:

- School funding – stable over time (Greaves et al., 2014)
- Teacher tenure – stable over time (Greaves et al., 2014)
- Teacher pay – no effect on attainment (Greaves and Sibieta, 2014)
- Choice and competition – weak effects (Gibbons et al, 2008)

# Data description



	YCS	NPD	MCS
GCSEs	1985-2003	2002-2013	n/a
KS2	n/a	1997-2013	2012
Total N	≈12,000	≈550,000	≈18,000
Disadvantage	Workless hhd	FSM	Receipt of means-tested benefits
Prop disadv.	10-15%	≈15%	≈18%
Controls available		Gender, SEN, IDACI, Ethnicity, EAL, School Size, School Type, School Composition, KS2 scores	Gender, Local Deprivation, Ethnicity, EAL, School Type, Parents Ed. + Occ., Immigrant status of parents, Parenting Activities (Home-Learning Environment, Time spent reading, maths, visits to library)

# Empirical strategy



$$Y_{i,s,t} = f(X_{i,t}^F, X_{i,t}^P, X_{i,t}^S, Y_{i,t-1}, \varepsilon_i)$$

Education production function approach (Todd and Wolpin, 2003) assumes achievement of pupil (i) at school (s) at time (t) is a function of:

- Family background and parental investments up to time t ( $X^F, X^P$ )
- School characteristics and investments up to time t ( $X^S$ )
- Prior achievement ( $Y_{t-1}$ )
- Pupil abilities ( $\varepsilon$ )

Differences in these factors can then be used to understand source of attainment gaps

# Decomposition



1. Start with estimating raw London effect across time and different measures of school attainment

$$Y_{i,t} = \alpha_t^{raw} \cdot London_{it} + \epsilon_{it}$$

2. How much of the increased performance of disadvantaged pupils in London can be explained by differences in pupil characteristics, school characteristics and prior attainment?

$$Y_{i,t} = \alpha_t^{full} \cdot London_{it} + X_{it}^F \beta_t^F + X_{it}^P \beta_t^P + X_{it}^S \beta_t^S + Y_{it-1} \beta_{t-1} + \epsilon_{i,t}$$

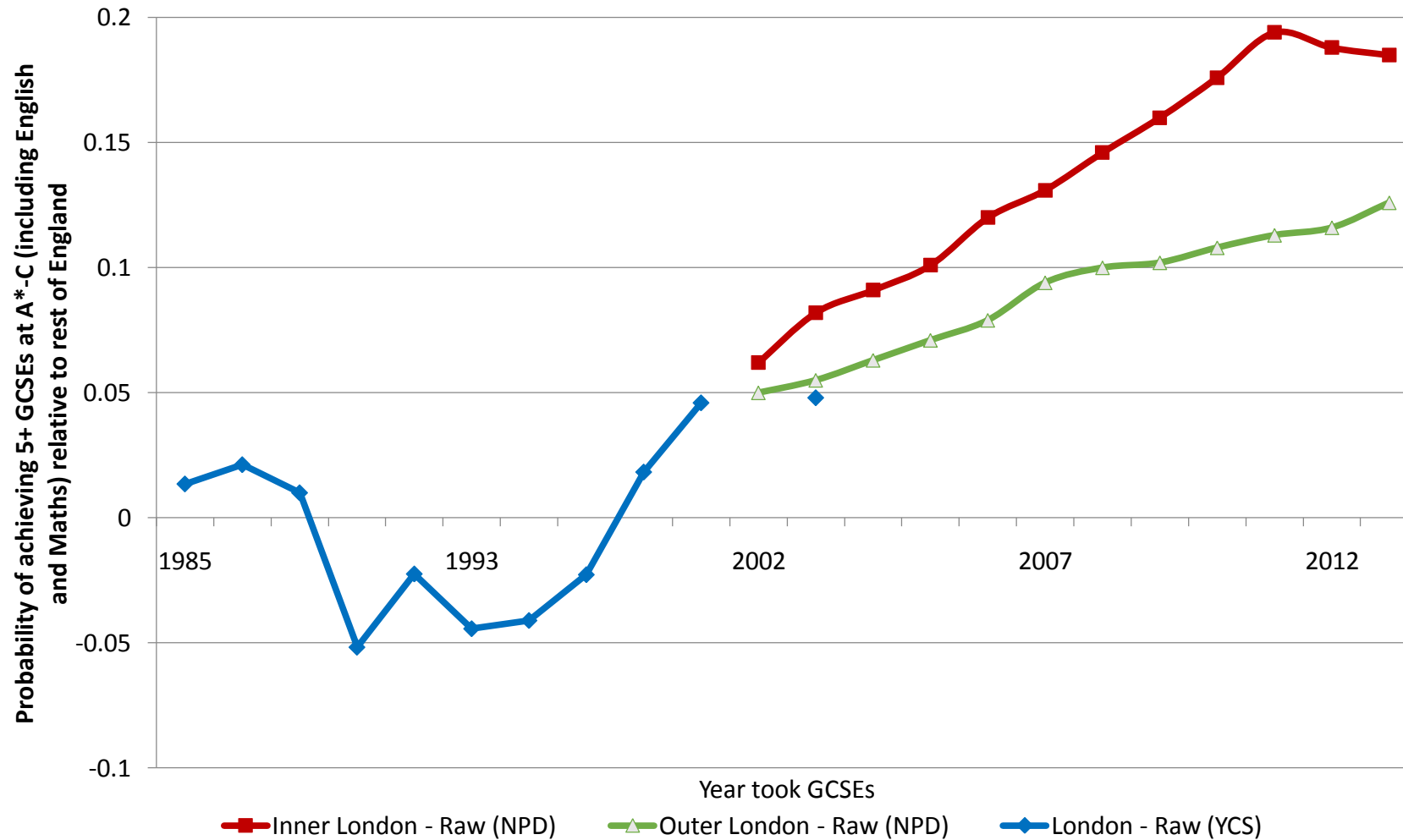
- Following Gelbach (2014), contribution of  $X_k$  to London effect can be written as:

$$\alpha_t^{raw} - \alpha_t^{full} = \sum_{k=X^F, X^P, X^S, Y^{t-1}} \tau_t^k \beta_t^k$$

- Intuitive as role of  $X_k$  is mean difference in  $X_k$  in London compared to elsewhere ( $\tau_t^k$ ) multiplied by  $\beta_t^k$  in full specification
- **Importantly, not sensitive to ordering issues.**

# Results:

Performance of disadvantaged pupils in London at age 16 has improved substantially since mid-1990s



# Results: Improvements seen across a range of measures of performance at age 16



Raw difference in the performance of disadvantaged pupils in inner and outer London vs the rest of England, various measures and selected years

	5+ A*-C with E+M		5+ A*-C with E+M (excluding equivalents)		8+ Bs with E+M (excluding equivalents)		Capped Points Score (Std)	
	Inner	Outer	Inner	Outer	Outer	Outer	Inner	Outer
2002	0.062*** [0.009]	0.051*** [0.009]	0.063*** [0.009]	0.054*** [0.008]	0.024*** [0.003]	0.022*** [0.003]	0.307*** [0.033]	0.229*** [0.029]
2005	0.101*** [0.010]	0.071*** [0.008]	0.100*** [0.010]	0.072*** [0.008]	0.035*** [0.005]	0.026*** [0.003]	0.432*** [0.033]	0.282*** [0.028]
2009	0.160*** [0.010]	0.102*** [0.009]	0.155*** [0.009]	0.111*** [0.009]	0.048*** [0.004]	0.036*** [0.004]	0.422*** [0.032]	0.300*** [0.026]
2013	0.185*** [0.012]	0.126*** [0.009]	0.206*** [0.010]	0.151*** [0.009]	0.073*** [0.005]	0.061*** [0.004]	0.342*** [0.036]	0.246*** [0.029]

Notes: Differences relate to higher performance of pupils eligible for FSM in inner and outer London compared with the rest of England. GCSE capped points score is expressed in standardised terms (i.e. mean = 0, SD = 1).

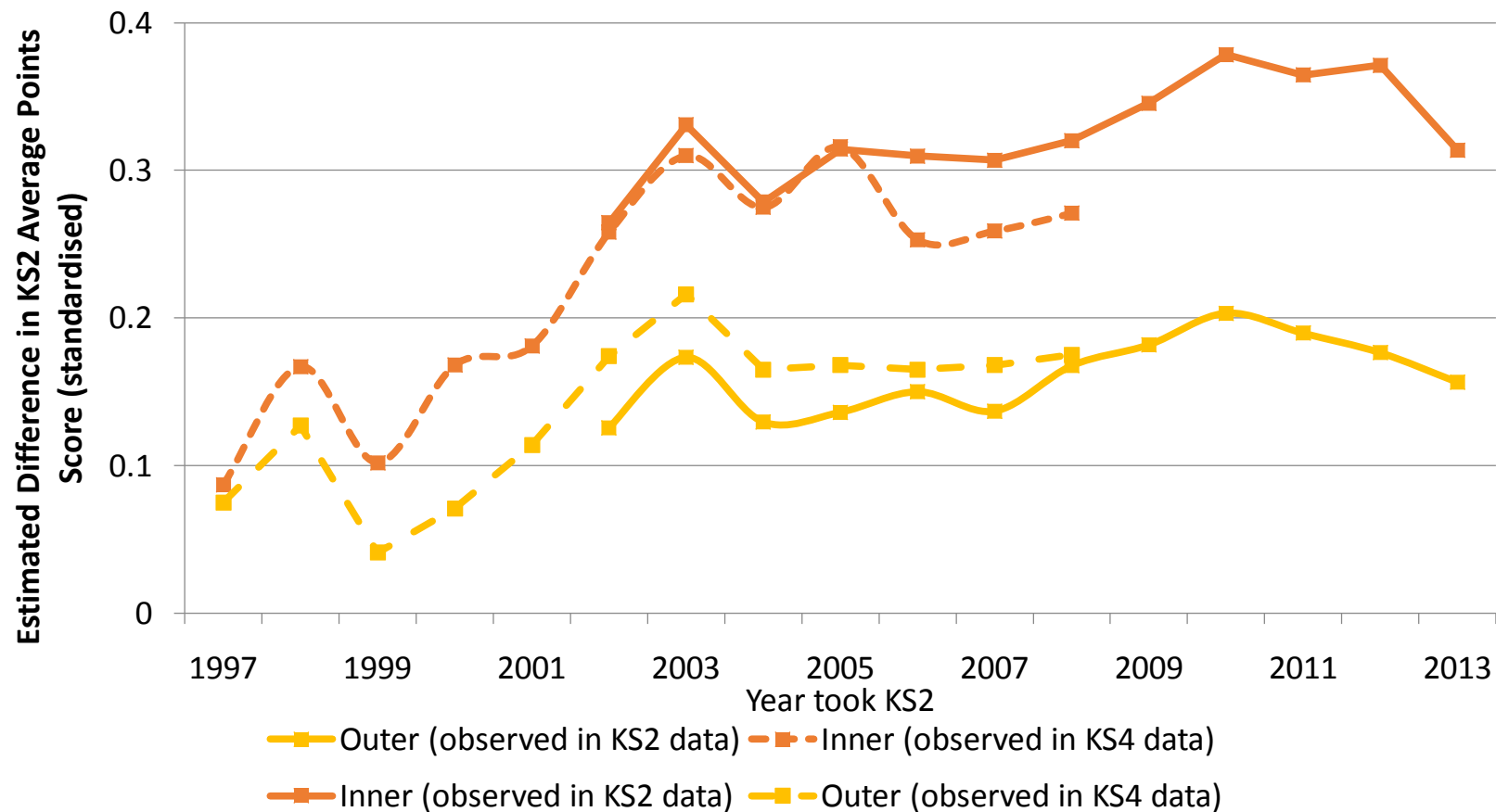


# Results:

## Large improvements in primary school results from late 1990s onwards



Key Stage 2 English attainment gaps London vs. rest of England for those on FSM

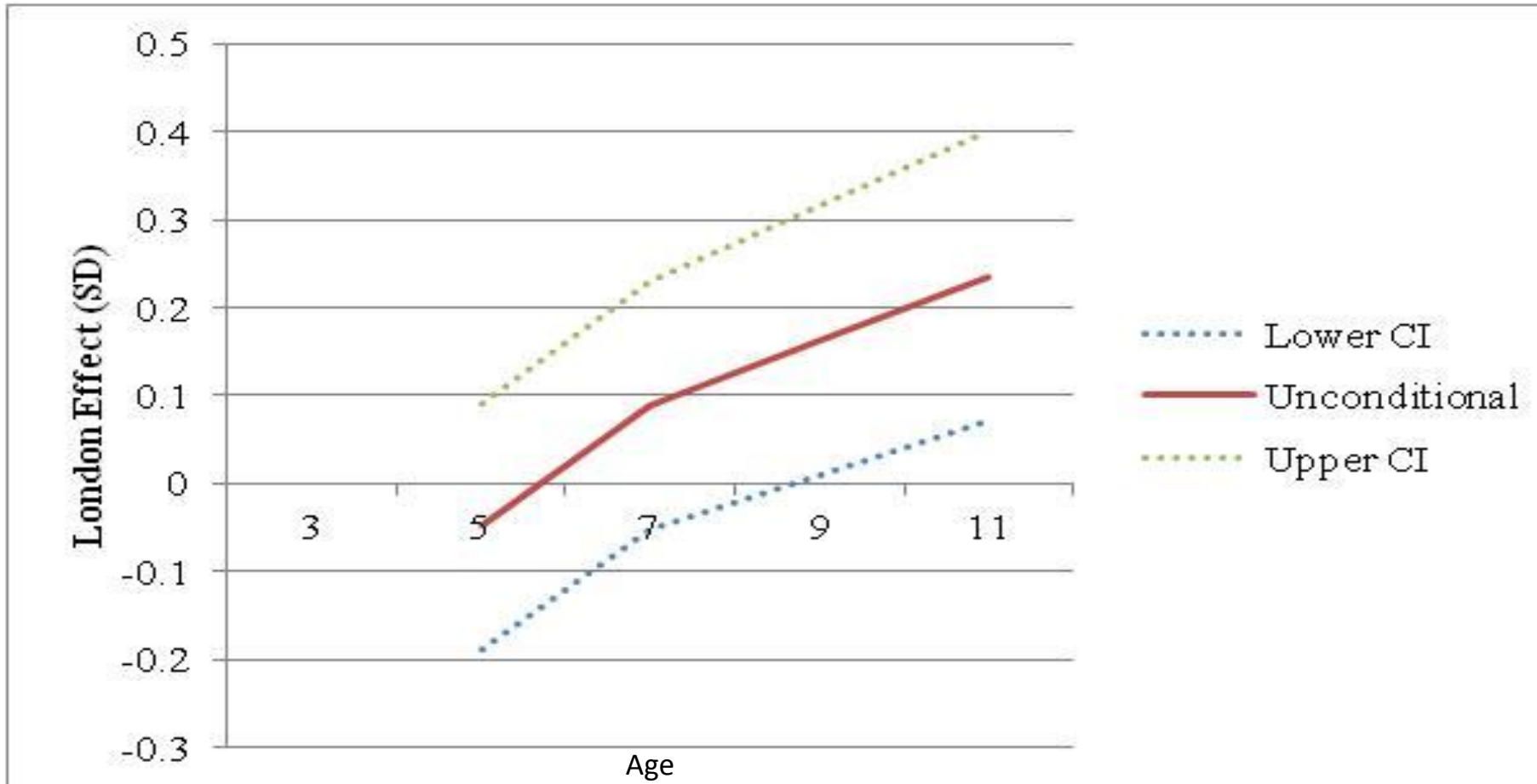


# Results:

## Very little difference in the performance of disadvantaged pupils on entry to primary



FSP, KS1 and KS2 English attainment gaps London vs. rest of England for those on means-tested benefits for a cohort born in 2000 (MCS)

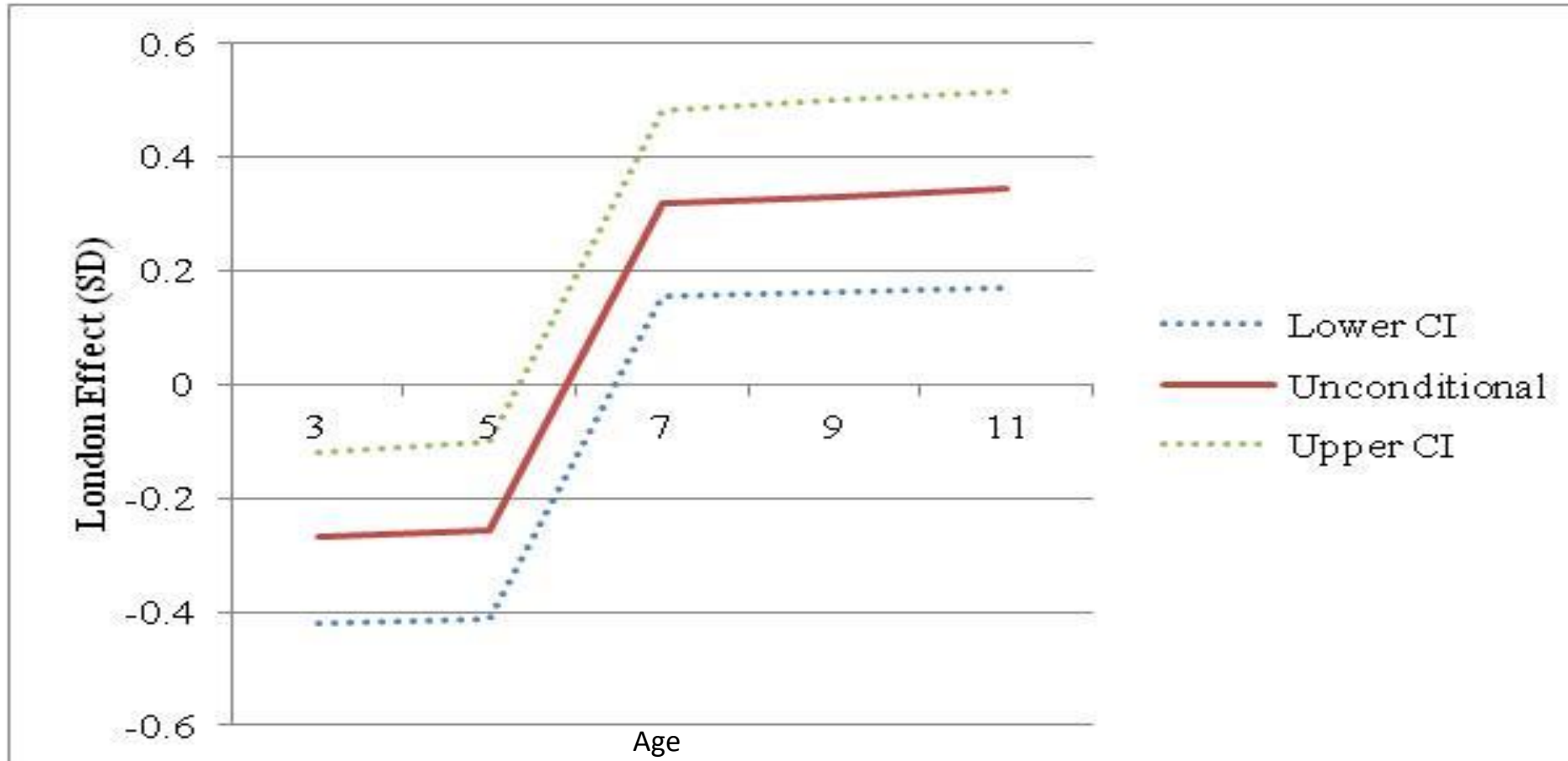


# Results:

## Very little difference in the performance of disadvantaged pupils before primary



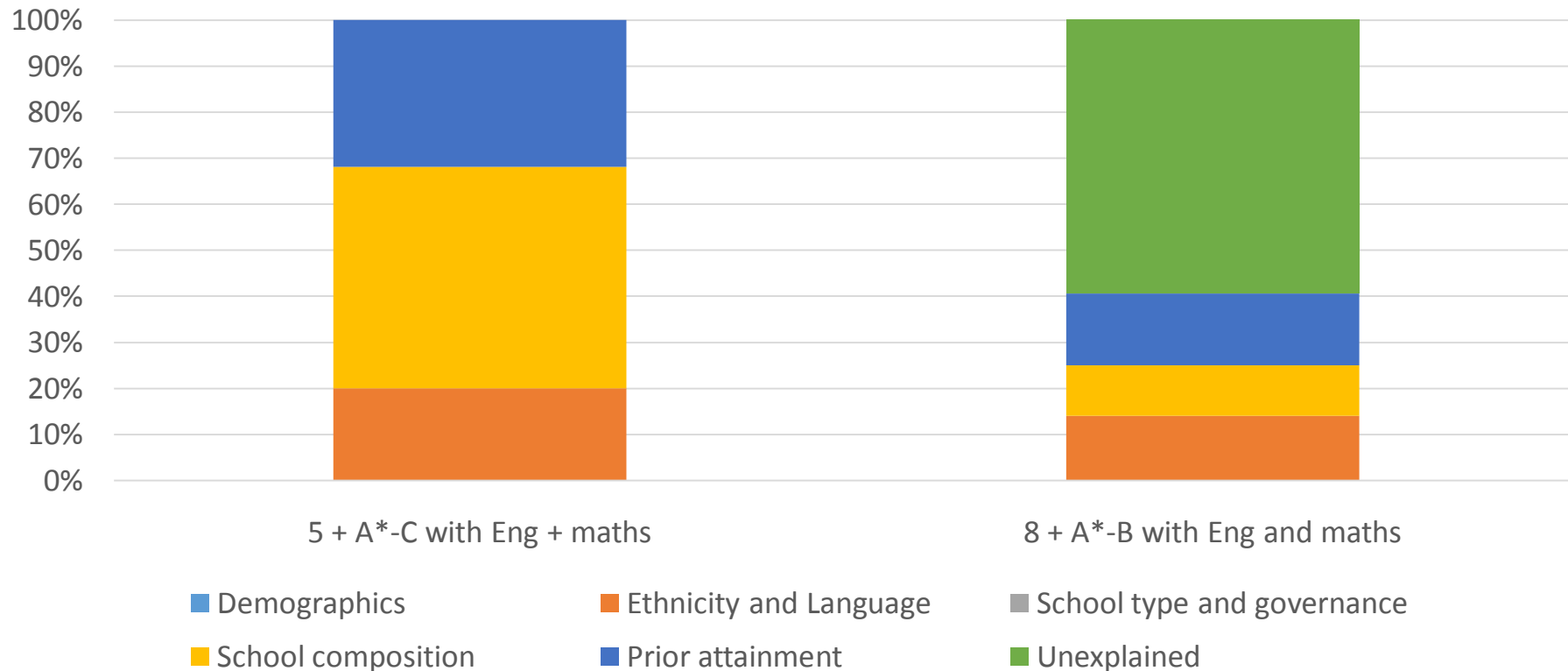
MCS vocab / reading test score gaps London vs. rest of England for those on means-tested benefits for a cohort born in 2000 (MCS)



# Results: Decomposing the Inner London effect at KS4



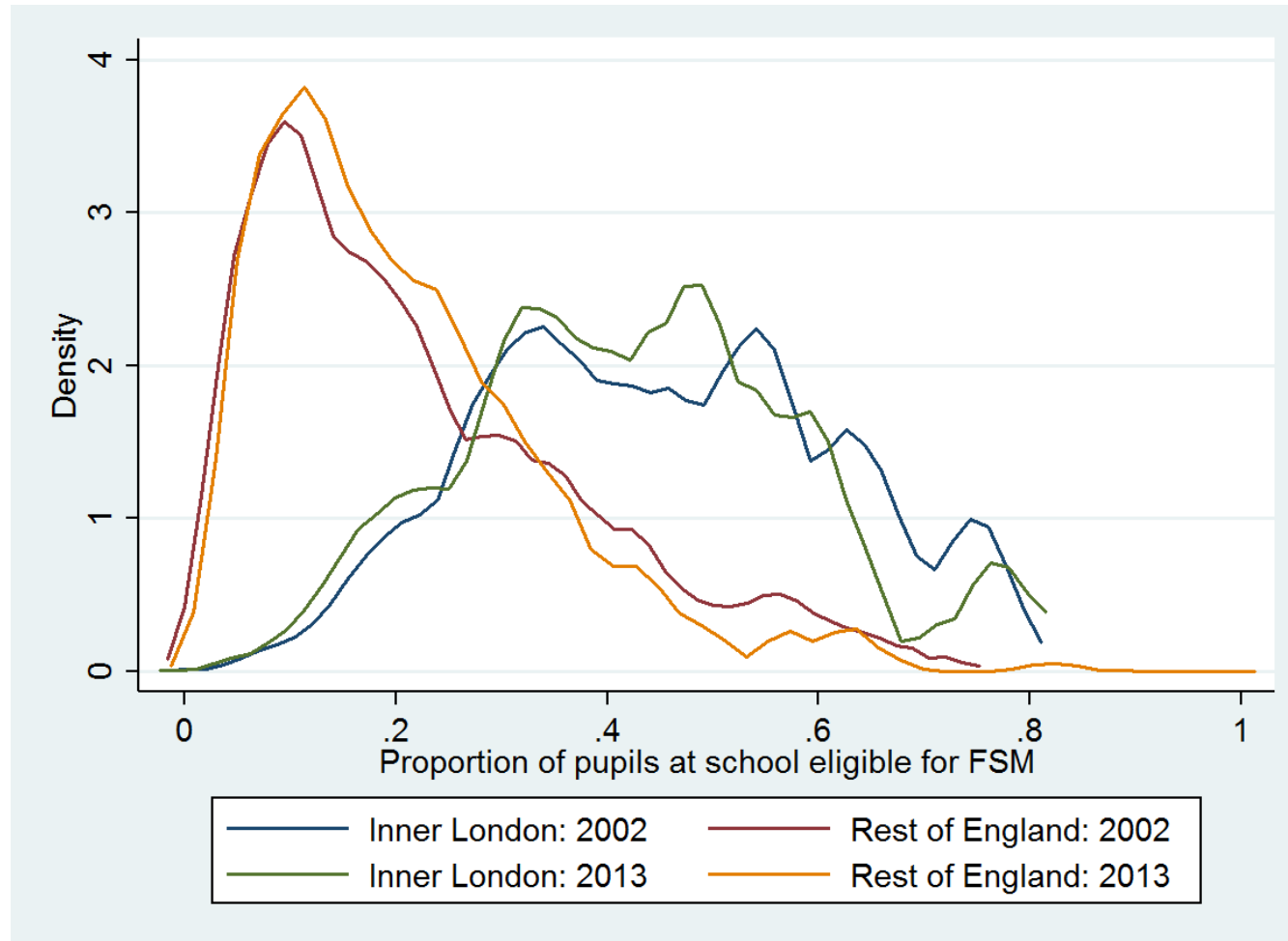
	5+ A*-C with Eng + Math (%)			8+ A*-B with Eng +Math (%)		
	2002	2013	Change	2002	2013	Change
Inner London Advantage	0.065	0.191	<b>0.125</b>	0.029	0.092	<b>0.063</b>
	(0.010)	(0.012)		(0.004)	(0.008)	



# Looking deeper into school composition effects



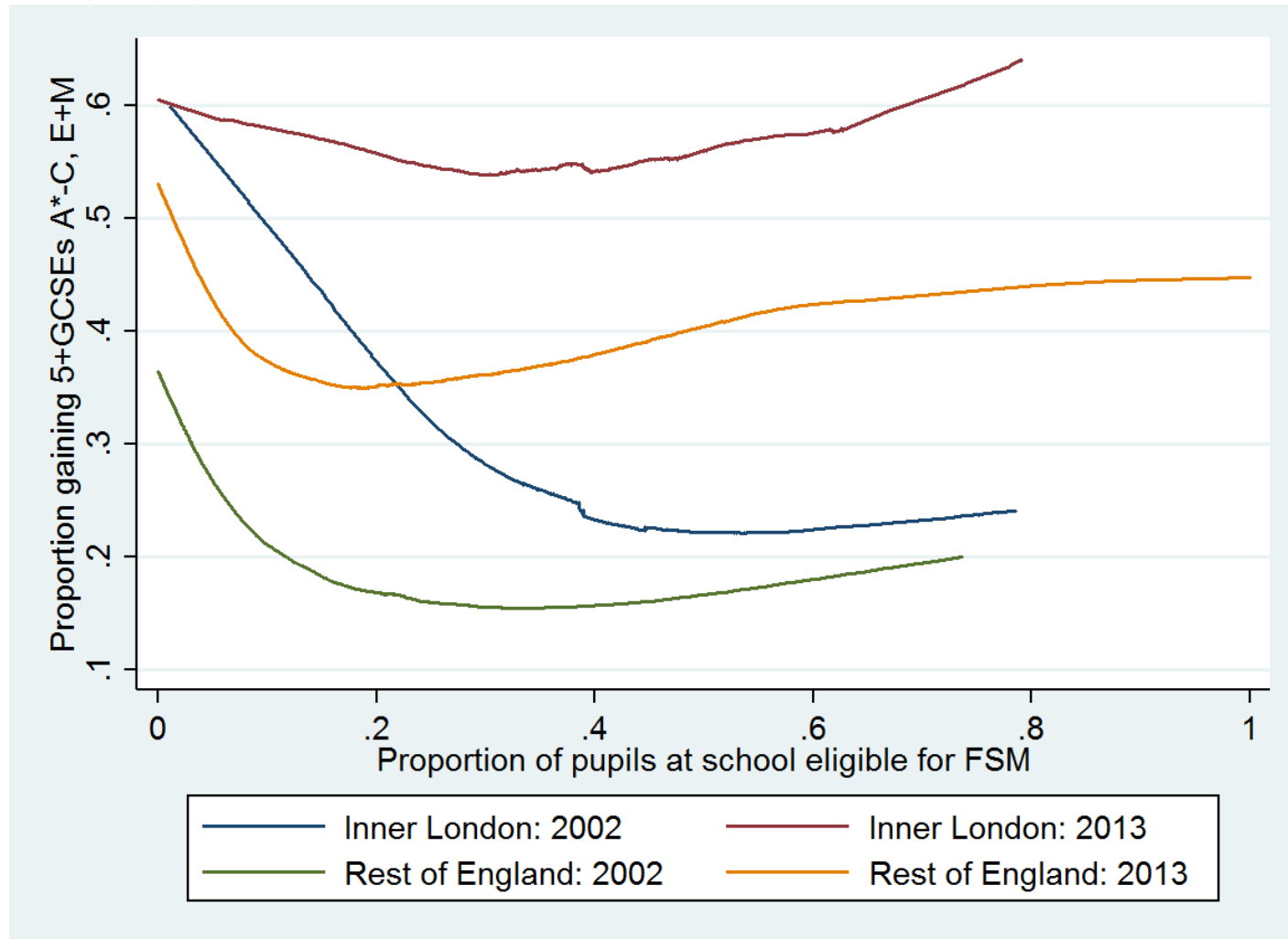
Unlikely to reflect changes in school composition over time



# Looking deeper into school composition effects



Reduced effect of having more deprived peers in inner London



Results:

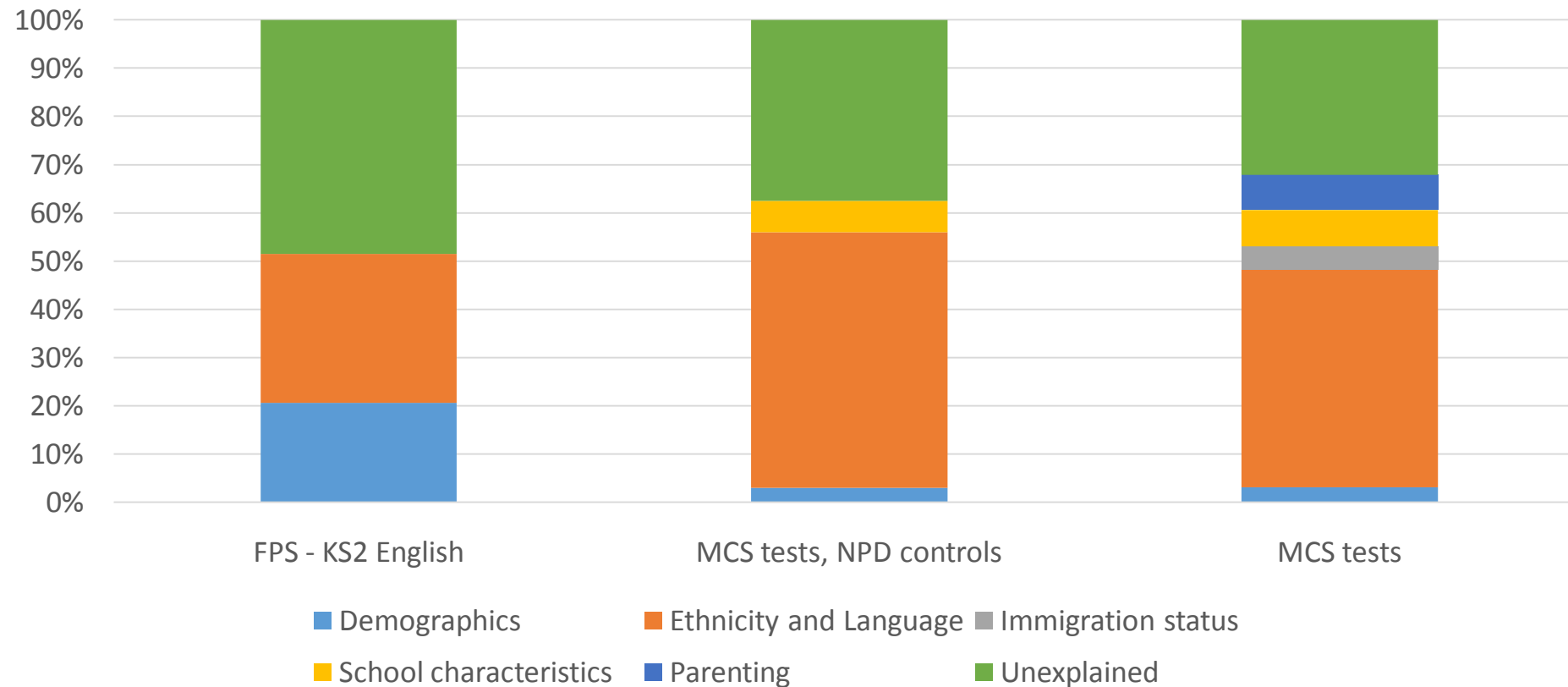
## Decomposing the Inner London effect at KS4



- Ethnicity and language plays an important role at points in time but is not a major driver of the *change* in performance over time at KS4
- School composition has become increasingly important over the last decade – while levels of FSM pupils in schools remain stable, the penalty for being in a high-concentration FSM school has declined significantly
- Prior attainment is also an important factor – performance in primary schools has improved dramatically

# Results: Decomposing the London effect in the MCS

	FPS – KS2 English tests			MCS tests		
	FPS	KS2	Change	Age 5 Vocabulary	Age 11 Verbal reasoning	Change Age 5 to 11
London Advantage	-0.048 (0.071)	0.232 (0.084)	<b>0.280</b>	-0.258 (0.079)	0.343 (0.088)	<b>0.601</b>





# Results:

## Decomposing London effect in the MCS



- Ethnicity and language plays an important role at given age, particularly the poorer performance at FSP, but only accounts for around 30% of the *change* in performance as individuals get older
- Ethnicity appears more important in MCS verbal tests performance when just use NPD controls
- When condition on other measures can see some is immigration status but also parenting behaviours have a *negative impact* for London kids – disadvantaged Londoners do better at school despite poorer investments at home

# Summary and implications



- Dramatic improvement in performance of deprived pupils in London over time since mid-1990s
- Even stronger effects when excluding equivalent qualifications
- Improvements began well before many recent policy initiatives associated with London's success and is seen across primary and secondary schools
- Increasing London effect as children progress through primary school

# Summary and implications



## Driving Factors:

1. Differences in **family background** (particularly ethnicity and language) explain a substantial element of higher level of performance, but only some of the growth.
  2. But do differences in ethnicity reflect other differences, like aspirations or other social/cultural capital (Burgess, 2014)
  3. Improvements in GCSE performance over time largely reflect improvements in **prior attainment** and **declining effect of having deprived peers**
- **Key role played by improving school quality, particularly in primary schools, from late 1990s onwards**

# Further research



- What happened in London schools in late 1990s/early 2000s?
  - Standards agenda and OFSTED inspections from mid 1990s
  - School performance more transparent
  - Literacy and numeracy hours in primaries but national roll out followed
  - London schools face greater competition than anywhere else in country
- Will the London schools effect translate into increased HE participation and improved labour market performance
  - Already seeing strong improvements in A-Level performance



## **Understanding the improved performance of disadvantaged pupils in London**

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