



Social Mobility &
Child Poverty
Commission

Lessons from London schools for attainment gaps and social mobility

Research report

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Contents

Table of figures and tables	4
Executive summary	6
Findings	6
Policy implications	6
Introduction	9
1. When did London's secondary schools begin to improve?	11
2. Accounting for the improvements at GCSE	15
How do pupils in London differ from those in the rest of England?	15
Can changes in pupil characteristics explain improvements in GCSE outcomes?	18
Can improvements in GCSE outcomes be explained by prior attainment at primary school?	20
3. Improvements in primary schools	24
4. Sustained improvements in post-16 outcomes	26
5. Why have we seen an improvement in London?	29
Pupil intake	29
Resources	30
Teachers	30
School governance	31
School competition	32
Specific policy initiatives	32
6. Conclusions and implications for the future	35
References	37

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Institute for Fiscal Studies

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Social Mobility and Child Poverty Commission (SMCP)

The Social Mobility and Child Poverty Commission is an advisory non-departmental public body (NDPB) of the Department for Education, the Department for Work & Pensions and the Cabinet Office.

The Commission was established with a remit to:

- publish an annual report setting out progress made in improving social mobility and reducing child poverty in Great Britain;
- provide published advice to ministers at their request on social mobility and child poverty; and
- act as an advocate for social mobility beyond government by challenging employers, the professions and universities amongst others to play their part in improving life chances.

This research was commissioned to understand the roots of London schools' success over the last decade in improving the results of pupils from disadvantaged backgrounds. Ensuring higher attainment for those from disadvantaged backgrounds is a crucial step towards improving social mobility.

Table of figures and tables

Figure 1 Percentage of pupils achieving five or more GCSEs at A*–C including English and maths (or equivalent), by region, 2013	9
Figure 2 Percentage achieving five or more GCSEs at A*–C including English and maths (or equivalent), by region, 2002–12	11
Figure 3 Percentage of pupils eligible for FSM who achieve five or more GCSEs at A*–C including English and maths (or equivalent), by region, 2002–12	13
Figure 4 Percentage of pupils eligible for FSM who achieve eight or more GCSEs at A*–B including English and maths (or equivalent), by region, 2002–12	13
Figure 5 Change in proportion of pupils eligible for FSM achieving five or more GCSEs at A*–C including English and maths (or equivalent), across local authorities, 2002–12	14
Figure 6 Average pupil characteristics for London, Birmingham, Manchester and the rest of England: pupils in Year 11 in 2002 and 2012	15
Figure 7 Average Census characteristics for London, Birmingham, Manchester and the rest of England, 2001 and 2011	17
Figure 8 Estimated effect of being in London or other large cities on proportion of pupils eligible for FSM achieving five or more GCSEs at A*–C including English and maths (or equivalent), 2002–12, with and without controls (relative to rest of England)	19
Figure 9 Estimated effect of being in London or other large cities on proportion of pupils eligible for FSM achieving five or more GCSEs at A*–C including English and maths (or equivalent), 2002–12, with controls and prior attainment (relative to rest of England)	20
Figure 10 Estimated effect of being in London or other large cities on different GCSE outcomes for pupils eligible for FSM, with different sets of controls, 2012 (relative to rest of England)	21
(a) Five or more GCSEs or their equivalent at A*–C (including English and maths)	21
(b) Eight or more GCSEs or their equivalent at A*–B (including English and maths)	21
(c) Average standardised capped points score at GCSE (including equivalents)	21
Figure 11(a) Estimated effect of being in London or other large cities on average standardised KS2 maths fine points score amongst pupils eligible for FSM, by year in which pupils took or will take GCSEs, 2002–18, with controls (relative to rest of England)	24
Figure 11(b) Estimated effect of being in London or other large cities on average standardised KS2 English fine points score amongst pupils eligible for FSM, by year in which pupils took or will take GCSEs, 2002–18, with controls (relative to rest of England)	24
Figure 12 Estimated effect of being in London or other large cities on participation at KS5 for pupils eligible for FSM, 2002–10, with and without controls (relative to rest of England)	26

Figure 13 Estimated effect of being in London or other large cities on participation at KS5 for pupils eligible for FSM, 2002–10, with controls and prior attainment (relative to rest of England) 27

Table 1 National Literacy Programme (NLP) and 'matched' local education authorities (LEAs) for NLP cities (close geographically and with a similar level of educational achievement in 1996) 34

Executive summary

Findings

- Disadvantaged pupils¹ perform better in Inner London than in other regions and have pulled even further ahead over the past decade, something that has often been referred to as the 'London effect'. This is not unique to London, however: there have also been smaller improvements in other large cities across England, such as Birmingham and Manchester.
- What explains these changes? The mix of pupils in Inner London and other large cities is very different from the mix in the rest of England, with higher levels of deprivation and a greater number of pupils from ethnic minority backgrounds. Some of the higher level and improvement in results over time for disadvantaged pupils in London and other big cities can be explained by these differences. However, demographics alone do not explain all of the 'London effect'. For example, disadvantaged pupils in inner London are 21 percentage points more likely to achieve 5 or more GCSEs at A*-C (including English and Maths) compared with elsewhere in the country, which falls to 17 percentage points after controlling for pupil demographics.
- We show that the higher level of achievement at Key Stage 4 (at the end of secondary school) and the improvement in results for disadvantaged pupils in London and other big cities can be mostly explained by differences in prior attainment at Key Stage 2 (at the end of primary school). The gap between inner London and the rest of England in terms of disadvantaged pupils achieving 5 or more GCSEs at A*-C falls by 11 percentage points (to 6 percentage points) after controlling for prior attainment. Furthermore, an even larger amount of the gap in results across higher GCSE outcomes (such as those achieving 8 or more A*-B) can be explained by prior attainment.
- After controlling for prior attainment, the gap between inner London FSM results and those in the rest of England is a lot smaller and is quite static over time across a range of GCSE outcomes. The same is true of Manchester and Birmingham. This suggests that the big improvement over the last decade in FSM results in London and other big cities is unlikely to have been driven by secondary schools, as was previously thought. Instead, the roots are likely to lie in primary schools.
- Disadvantaged pupils in London, Manchester and Birmingham all perform significantly better at Key Stage 2 in both English and maths than in other areas of England, with the highest level of performance for pupils in Inner London.
- There was a substantial improvement in Key Stage 2 English scores for disadvantaged pupils in London between 1999 and 2003, which is a key reason why Key Stage 4 results in London subsequently improved between 2004 and 2008. Key Stage 2 Maths results have remained consistently higher for London compared with the rest of the country over time. Higher maths results can thus explain some of why pupils in London do better, on average, but not why results have improved so much over time.

¹ Throughout, when we use the term 'disadvantaged' pupils, we are referring to those pupils who are eligible for free school meals (FSM).

- The 'London effect' is sustained into post-16 outcomes: disadvantaged pupils in London are more likely to continue into Key Stage 5 after accounting for differences in pupil and school characteristics, and even after accounting for their higher performance at Key Stage 4.
- In Manchester and Birmingham, by contrast, better Key Stage 4 results than for disadvantaged pupils elsewhere in England are not sustained into Key Stage 5 participation. This contrast could reflect the fact that disadvantaged pupils in London perform better according to measures of high GCSE attainment than those in Manchester and Birmingham.
- What caused the improvement in Key Stage 2 test scores that led to the 'London effect' at Key Stage 4 is not clear. However, the explanation will be related to changes in London's primary schools in the late 1990s and early 2000s. This means that programmes and initiatives such as the London Challenge, the Academies Programme, Teach First or differences in resources are unlikely to be the major explanation (as these changes either happened too late, were focused on secondary schools or were longstanding, and therefore are unlikely to account for the rapid improvements we see).
- We note that the improvement in Key Stage 2 English scores at age 11 occurred almost exactly at the same time as the National Literacy and Numeracy Strategies were rolled out, and London local authorities made up many of the pilot areas for these programmes. More research is needed to understand whether these programmes were an important source of London's improvement and, if so, why this was not repeated across the country when the programmes were rolled out nationally.

Policy implications

There are three key lessons for policymakers in seeking to narrow the achievement gaps between more and less disadvantaged pupils across the rest of England:

- First, the power of early achievement in primary schools is evident, particularly in terms of English scores: one of the major reasons why disadvantaged pupils in London and other big cities perform better at Key Stage 4 is that they had higher levels of achievement at Key Stage 2. This is consistent with a case for early intervention. Equally, however, we should not completely discount the role of secondary schools in sustaining achievements into GCSE and post-16 outcomes. Whilst the 'London effect' is translated into higher levels of participation in Key Stage 5, higher GCSE results in Manchester and Birmingham do not translate into higher levels of Key Stage 5 participation. This suggests that whilst a focus on primary schools is important in ensuring that disadvantaged students are equipped with the necessary skills to reach attainment benchmarks at the end of compulsory schooling, secondary schools have a role to keep those students on track to ensure they achieve the higher levels necessary to access Key Stage 5 and further study.
- Second, partly because of the power of early achievements, improvements will take a long time to become visible in national results. Improvements in primary schools in London from 1999 through to 2003 became visible at GCSE between 2004 and 2008 and have only recently become part of accepted wisdom.

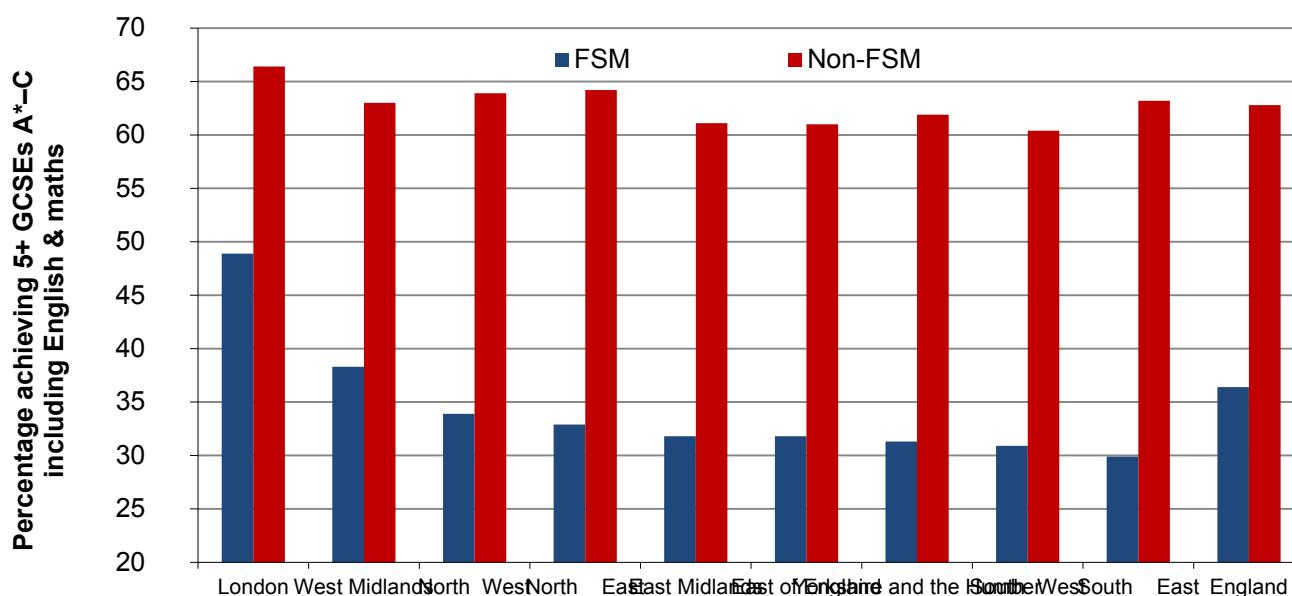
- Third, given that achievements take a long time to become visible, we need to attribute recent improvements to policies much further back in time. Improvements in London seem more likely to have primarily resulted from changes occurring in the late 1990s and early 2000s, such as the National Strategies, than from recent policy initiatives such as the London Challenge or the Academies Programme.

Introduction

Successive governments have sought to narrow the achievement gap between pupils from advantaged and disadvantaged backgrounds, as part of wider efforts to improve social mobility. For future policy to be most effective, it is important to learn from successful examples of where the achievement gap has been narrowed. The improvement in London schools over the past decade stands out as an important example of improvement in academic achievement, and most crucially as a narrowing of the achievement gap (as has been documented in work by Centre Forum, the all-party parliamentary group on social mobility and numerous articles by Chris Cook in the *Financial Times*²).

Figure 1 illustrates the narrower achievement gap in London than in the rest of England. For each region, it shows the proportion of pupils eligible for free school meals (FSM) who achieved five or more GCSEs or their equivalent at A*–C (including English and maths) in 2013, as well as the proportion not eligible for FSM who achieved the same standard. We focus on this measure of GCSE performance as it represents the culmination of compulsory schooling and is often a condition for being accepted into Level 3 qualifications at Key Stage 5. It is also an important benchmark for employers, is frequently focused on by commentators and has been a major marker of performance in school league tables (until recently). We also examine performance across other GCSE outcomes later in the report to confirm that trends we observe are not unique to a single measure.

Figure 1 Percentage of pupils achieving five or more GCSEs at A*–C including English and maths (or equivalent), by region, 2013



Source: Department for Education, GCSE and equivalent results in England, 2013.

² Wyness (2011); All-Party Parliamentary Group on Social Mobility (2013); Cook (2013).

As can be seen, attainment gaps by FSM exist across all regions of England. However, they are much narrower in London and this is principally because poorer pupils in London achieve higher GCSE results than poorer pupils in other regions of England. For example, around 50% of poorer pupils in London achieved this benchmark in 2013, compared with just 30% in the rest of the south-east of England.

The key question for policymakers interested in narrowing the achievement gap is whether the 'London effect' can be replicated across the rest of the country. In order to answer this question, we must understand, first, when the performance of disadvantaged pupils in London improved and, second, why this might have happened.

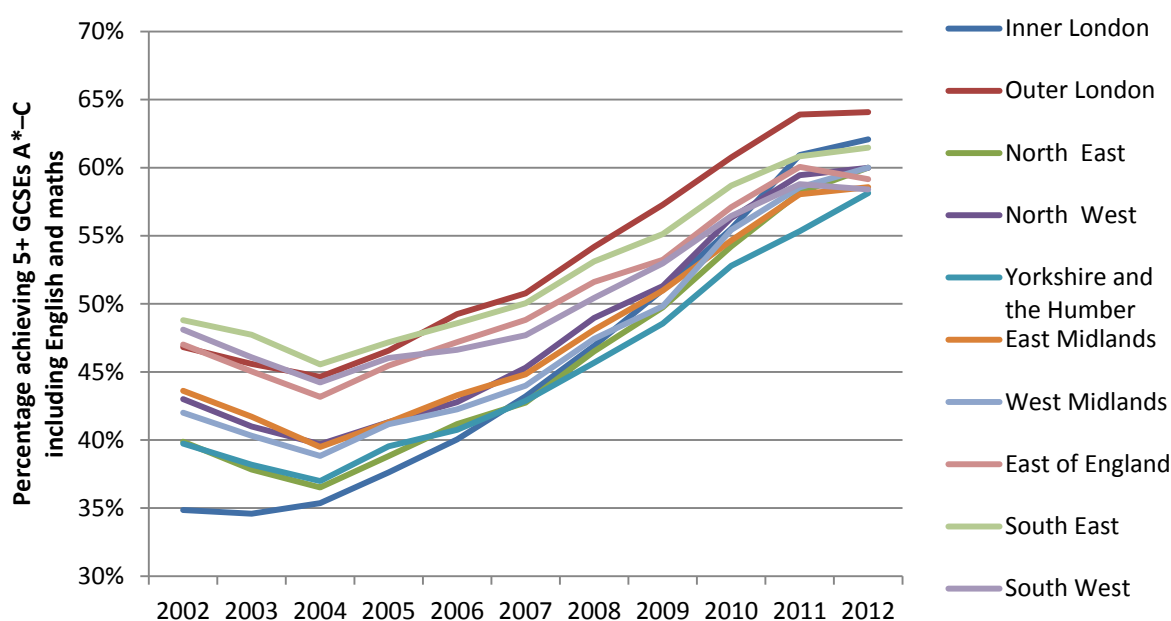
We will examine the following in turn:

1. *When* London's secondary schools began to improve, by showing the average Key Stage 4 performance of different areas of the country over time.
2. The extent to which the improvements we see in London and other big cities can be explained by changes in pupil characteristics, such as the composition of pupils and families. We also examine whether improvements at Key Stage 4 can be explained by differences in prior attainment at Key Stage 2.
3. The performance of disadvantaged pupils at Key Stage 2 in English and maths to see if and when, and in what subjects, disadvantaged pupils in London began to improve relative to the rest of the country.
4. Whether improvements at Key Stage 4 are sustained into Key Stage 5 and whether differences in post-16 outcomes are influenced by Key Stage 4 attainment.
5. *Why* London's schools might have improved by considering the plausibility of different explanations.
6. The implications for policy and the future outlook for attainment gaps.

1. When did London's secondary schools begin to improve?

The average performance of schools in London at GCSE has significantly improved over the last decade, particularly in Inner London.³ As Figure 2 shows, the proportion of all pupils in Inner London achieving five or more GCSEs or their equivalent at A*–C (including English and maths) was lower than in any other region of England in 2002. The proportion achieving this benchmark grew in every region over the last decade. However, the growth in performance is clearly highest in Inner London. As a result, Inner London had the second-highest GCSE results across regions by 2012. The only region with higher results was Outer London, where results have been consistently high over the past decade.

Figure 2 Percentage achieving five or more GCSEs at A*–C including English and maths (or equivalent), by region, 2002–12



Source: Authors' calculations using National Pupil Database 2002–12.

A large part of the improvement in GCSE performance across the country has been attributed to the increased take-up of GCSE-equivalent qualifications.⁴ These are qualifications such as vocationally related qualifications, BTECs and NVQ Levels that counted towards school performance on national league tables. Some of these qualifications may be of limited economic value in the labour market.⁵ The greater improvement in performance in areas that appear to have pulled away could therefore be the result of greater take-up of GCSE equivalents rather than improvements in pupil learning. However, analysis later suggests that this appears not to have

³ We use the statistical definition of Inner London, which includes the following local authorities: Camden; City of London; Hackney; Hammersmith and Fulham; Haringey; Islington; Kensington and Chelsea; Lambeth; Lewisham; Newham; Southwark; Tower Hamlets; Wandsworth; and Westminster. Outer London refers to all other local authorities in the Greater London area.

⁴ Wolf (2011).

⁵ Wolf (2011).

been the case in Inner London: improvements are seen across a range of GCSE outcomes. The higher performance of pupils in Inner London also translates into higher levels of participation at Key Stage 5, which does suggest some real improvement. However, the same cannot be said of Manchester and Birmingham. In later analysis, we observe higher levels of attainment at GCSE amongst disadvantaged pupils in these cities than in the rest of England, but this is not translated into higher participation or attainment at Key Stage 5.

The Introduction showed that the achievement gap between rich and poor is much narrower in London than in the rest of England, primarily because children from deprived backgrounds perform better. We therefore focus on the educational performance of children from deprived backgrounds, as attainment during their compulsory schooling is likely to be a significant determinant of their later life chances and therefore likely to be a suitable target for efforts to improve upward social mobility.

Our main measure of disadvantage is whether pupils are eligible for free school meals (FSM).⁶ This is not an ideal measure of deprivation – not all pupils eligible for FSM are registered as such, it is a binary indicator (and so does not measure extreme deprivation and affluence) and there could be differences in the average levels of deprivation experienced by both those eligible and those not eligible for FSM across areas (for example, the composition of the FSM group in London could be very different from that in the rest of the country, as could be the composition of the non-FSM group). Indeed, as we will see in the next section, the proportion of students eligible for FSM is larger in Inner London than elsewhere but similar to that in other large cities such as Manchester and Birmingham. However, FSM eligibility is the only measure of individual deprivation available in the National Pupil Database. Area-level measures of deprivation (such as the Income Deprivation Affecting Children Index, IDACI⁷) would be relatively poor measures of deprivation in London as there can be very large differences in deprivation within small geographical areas in cities. We therefore focus on the absolute performance of pupils eligible for FSM, rather than on the gap with non-FSM pupils, thereby avoiding any results being directly driven by differences between the FSM and the non-FSM populations.

With these caveats in mind, Figure 3 shows that the average performance of disadvantaged pupils was higher in Inner London than in any other region, even in 2002, closely followed by Outer London. Since then, the performance of such pupils in Inner London has improved even further relative to outside London. By 2012, 54% of pupils eligible for FSM in Inner London achieved five or more GCSEs (or their equivalent) at A*–C, compared with 40% of pupils eligible for FSM in the West Midlands (the region outside London showing the next-best results) and 30–35% of pupils eligible for FSM in other regions outside London.

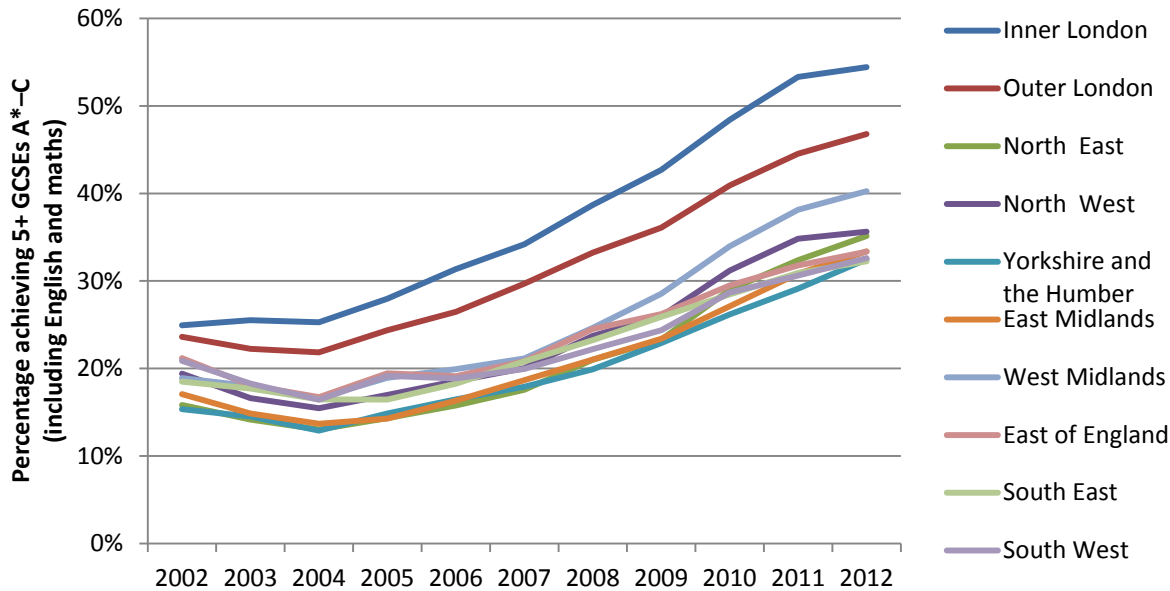
The picture looks even more dramatic if we look at a measure of high performance at GCSE (achieving eight or more GCSEs at A*–B or their equivalent, including English and maths), as is shown in Figure 4. Pupils in London (and Inner London in particular) are much more likely to achieve this standard than pupils outside London, and the difference has increased over time. By

⁶ Throughout, when we use the term ‘disadvantaged’ pupils, we are referring to those pupils who are eligible for free school meals (FSM).

⁷ <https://www.gov.uk/government/publications/english-indices-of-deprivation-2010>.

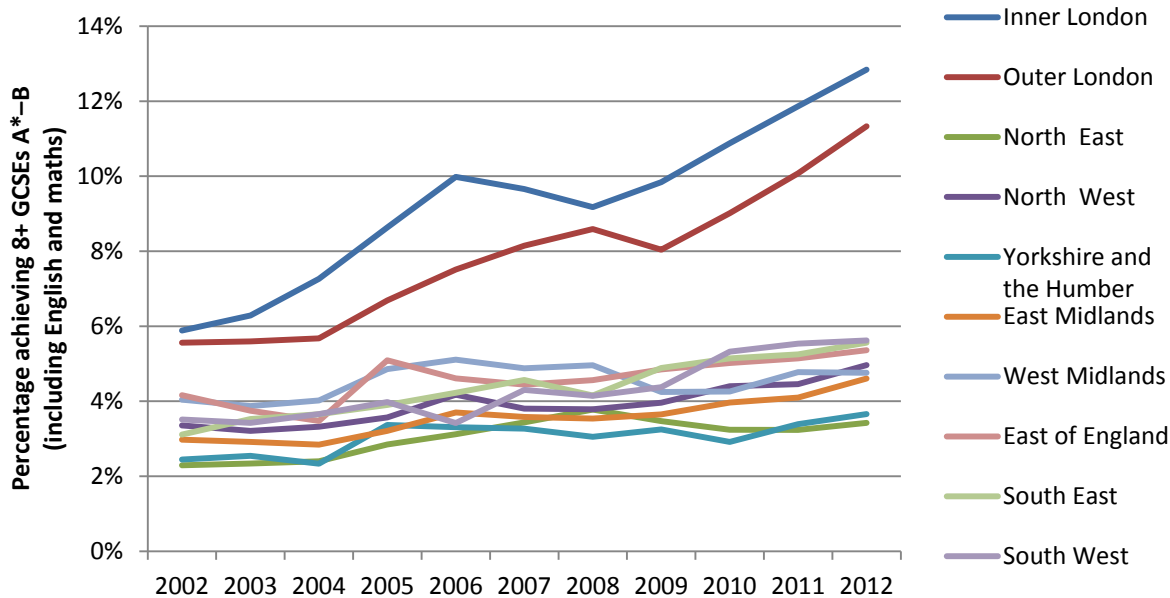
2012, nearly 13% of disadvantaged pupils in Inner London achieved this higher benchmark, compared with less than 6% of disadvantaged pupils outside London. By way of comparison, about 26% of pupils who were not eligible for FSM achieved this benchmark in London as a whole in 2012, compared with about 21% of pupils outside of London.⁸

Figure 3 Percentage of pupils eligible for FSM who achieve five or more GCSEs at A*–C including English and maths (or equivalent), by region, 2002–12



Source: Authors' calculations using National Pupil Database 2002–12.

Figure 4 Percentage of pupils eligible for FSM who achieve eight or more GCSEs at A*–B including English and maths (or equivalent), by region, 2002–12

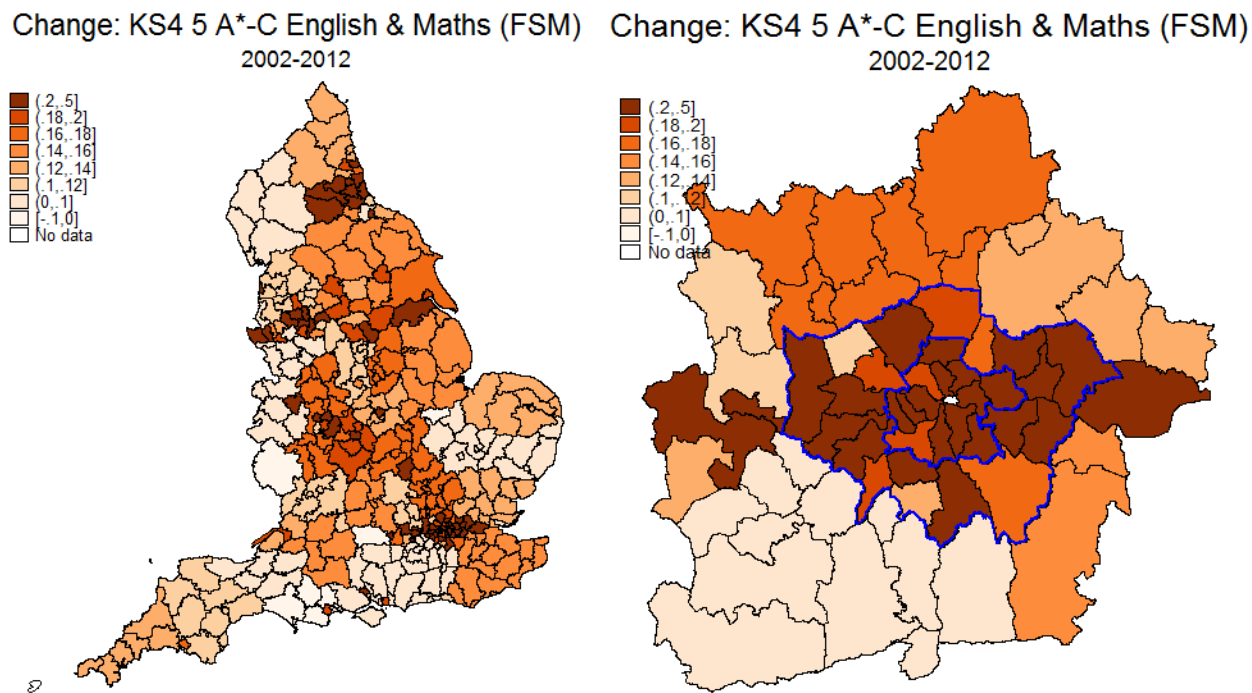


Source: Authors' calculations using National Pupil Database 2002–12.

⁸ Authors' calculations using National Pupil Database 2012.

Figure 5 shows which local authorities have seen the fastest improvements in results for disadvantaged pupils. It shows that the Inner London local authorities achieving the fastest improvements were concentrated in south and east Inner London, such as Tower Hamlets, Southwark and Lambeth. However, if we look across the rest of England, we also see rapid improvements in other large cities, such as Birmingham and Manchester, as well as in areas of the North East. There have also been improvements in other large cities, such as Bristol, Leeds and Sheffield, but not such large ones. For this reason, and for the sake of brevity, we have chosen to focus on London, Manchester and Birmingham in the rest of this report.

Figure 5 Change in proportion of pupils eligible for FSM achieving five or more GCSEs at A*–C including English and maths (or equivalent), across local authorities, 2002–12



Source: Authors' calculations using National Pupil Database 2002–12.

The data appendix contains further analysis of the trends in attainment over time among FSM-eligible pupils. It shows that there are similar patterns across local authorities in terms of the proportion of pupils achieving eight or more GCSEs at A*–B or equivalent (Figure A1). The data appendix also shows that local authorities in Inner London have lower levels of variation in GCSE scores (based on the interquartile range of GCSE standardised points score, as seen in Figure A2). This indicates that there is less educational inequality in Inner London for deprived students within local authorities.

Summary

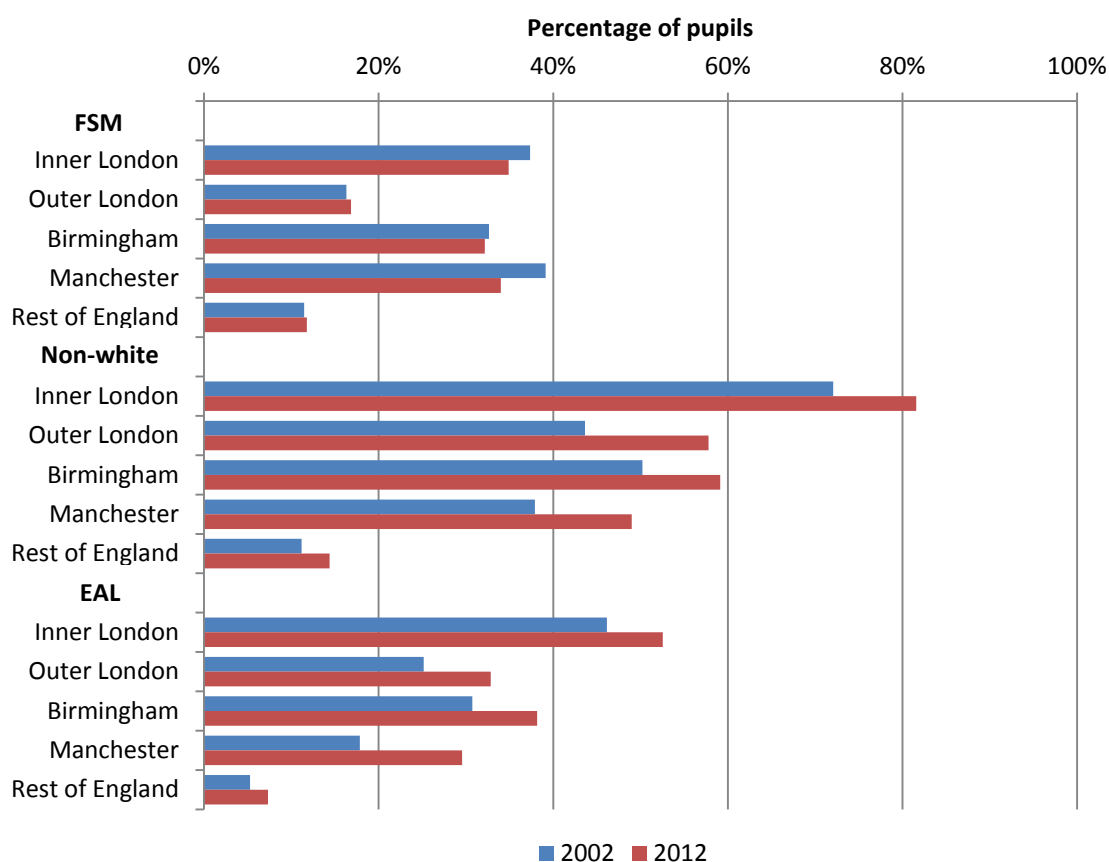
- Average GCSE performance in London has improved over the past decade, particularly in Inner London.
- Disadvantaged pupils performed better in Inner London than in other regions a decade ago and have pulled even further ahead over the past decade.
- This is not purely a 'London effect'. There have also been improvements in other large cities across England, such as Birmingham and Manchester.

2. Accounting for the improvements at GCSE

How do pupils in London differ from those in the rest of England?

Differences in the characteristics of pupils in London compared with the rest of England may be one potential explanation for why pupils in London, and disadvantaged pupils in particular, perform better than those in other areas of England. Changes in these characteristics over time could also explain the improvement in results shown in the previous section. Figure 6 shows the differences in some key pupil characteristics across Inner London, Outer London, Birmingham, Manchester⁹ and the rest of England (for both 2002 and 2012).

Figure 6 Average pupil characteristics for London, Birmingham, Manchester and the rest of England: pupils in Year 11 in 2002 and 2012



Note: 'FSM' stands for eligible for free school meals. 'Non-white' stands for pupils not recorded as white British. 'EAL' stands for English recorded as an additional language in the home.

Source: Authors' calculations using National Pupil Database 2002 and 2012.

Clearly, a greater proportion of pupils in Inner London are from deprived backgrounds, with over 35% of pupils eligible for FSM compared with around 10% of pupils in the rest of England (excluding Outer London, Birmingham and Manchester). The Inner London rate is not dissimilar from the proportion eligible for FSM in Manchester or Birmingham and there has not been much change over time across any of these cities, with only a slight reduction in the proportion eligible

⁹ Here and elsewhere, Manchester refers to the city of Manchester and not to the Greater Manchester area.

for FSM. On this measure, Outer London is less deprived than Inner London, Birmingham or Manchester, but more deprived than the rest of England.

There are more substantial differences between Inner London and the rest of the country in the ethnic mix of pupils. Over 80% of all pupils in Inner London were from non-white backgrounds in 2012, compared with 14% in the rest of England, and the proportion from non-white backgrounds in Inner London has very clearly grown over time (non-white here refers to pupils not recorded as white British¹⁰). Birmingham, Manchester and Outer London also have relatively high proportions of pupils from non-white backgrounds (about 50-60% of pupils in 2012), but not as high as Inner London. The proportion of pupils from non-white backgrounds has also grown over time across Outer London, Birmingham and Manchester.

The large differences in the ethnic mix between areas are important and could explain some of the differences and changes in attainment. Previous research has suggested a high level of variation in the performance of different ethnic minorities, with children from all ethnic minority backgrounds making more progress than white British pupils up to Key Stage 4 (KS4) assessments.¹¹ Ongoing work by Simon Burgess examines in more detail the role of ethnic differences in explaining the 'London effect' at KS4 and in progress measures from KS2 to KS4. Our analysis of the National Pupil Database shows that when focusing on the ethnic mix amongst FSM-eligible pupils across areas, a greater proportion of FSM-eligible pupils in Inner London come from ethnic minority backgrounds than in other parts of the country and this heterogeneity in ethnicity has increased as the proportion of non-white British has increased over the last decade (see Figure A3 in the data appendix). It will therefore be important to account for the ethnic background of pupils in a detailed way when seeking to explain differences in attainment amongst disadvantaged pupils across England. Nevertheless, as our later analysis shows, improvements in the performance of FSM-eligible pupils in London and other big cities remain after we control for pupil characteristics, suggesting that pupils of the same broad ethnic groups perform better in London than in other areas of the country. This is consistent with previous analysis by others showing that pupils from white backgrounds who are also eligible for FSM perform better in London than in the rest of the country.¹²

The pattern across areas is similar for the proportion of pupils having English as an additional language (EAL), with over half of pupils in Inner London recorded as having EAL in 2012 compared with about 30-40% in Outer London, Birmingham and Manchester, and about 7% in the rest of England. The proportion of pupils with EAL has also very clearly grown over time across London, Birmingham and Manchester. This is important as those with EAL may represent relatively recent immigrants, who may have different characteristics from people of ethnic minorities who have been in the UK for much longer and speak English as a first language.

Figure 7 compares additional characteristics of these populations and shows how they differ by area (using data from the two most recent Censuses). The populations of Inner and Outer London

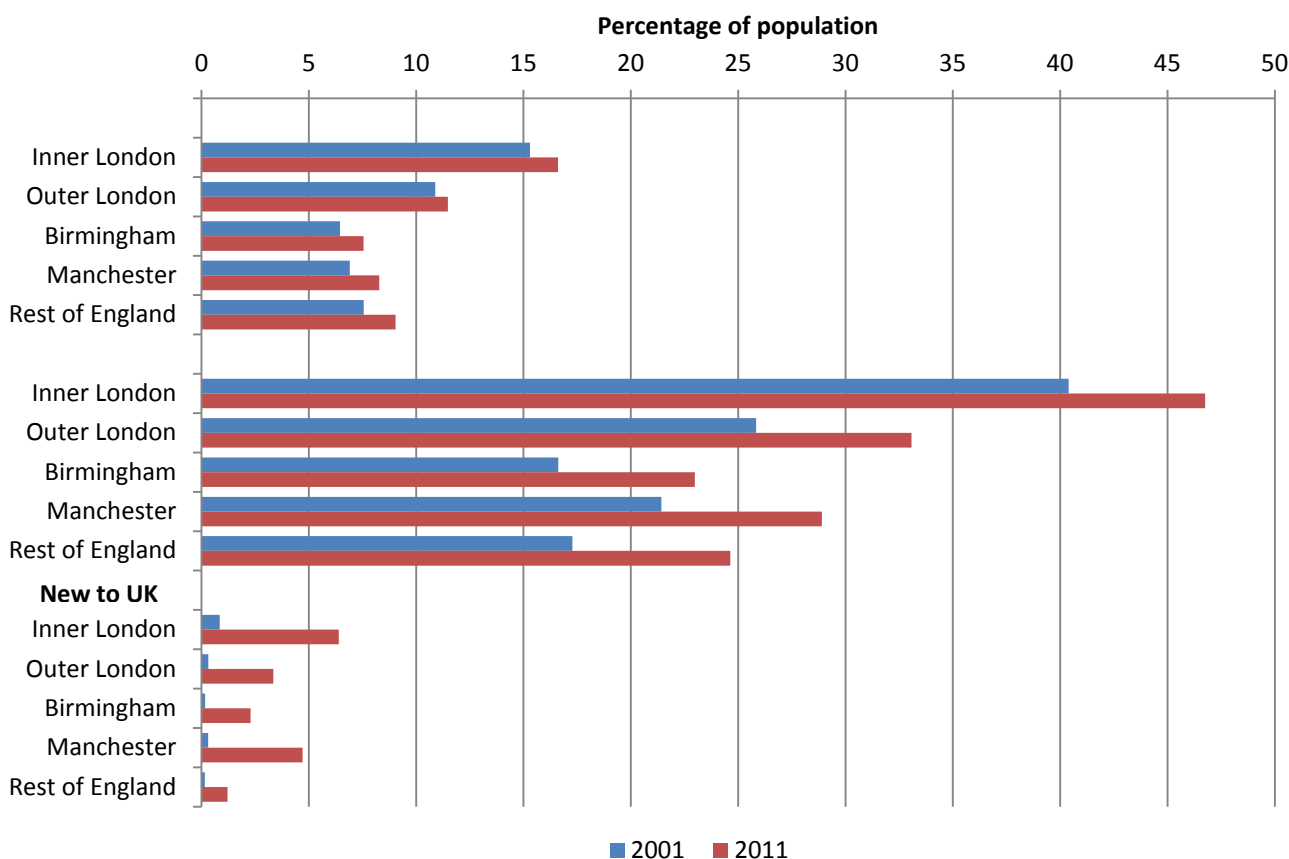
¹⁰ Pupils from other white backgrounds represented just over 10% of all pupils in Inner London in 2012, compared with just over 3% in the rest of England.

¹¹ Wilson et al. (2011).

¹² Cook (2013).

are more likely to have an occupation classified as higher professional than populations elsewhere in England (including Birmingham and Manchester), are more likely to have a high level of education and are more likely to be newly resident in the UK. These differences could be important drivers of pupil attainment, with evidence suggesting that parental education and parental occupation have strong effects on pupil attainment,¹³ and recent immigrants may well have different outcomes from those of more established ethnic minorities. However, these patterns have not changed dramatically across regions between the two Census years, as there has been growth in the prevalence of these characteristics in all areas, suggesting that these differences are unlikely to explain the improvement in the performance of disadvantaged pupils over time.

Figure 7 Average Census characteristics for London, Birmingham, Manchester and the rest of England, 2001 and 2011



Note: 'High prof. occ.' stands for a higher professional occupation, defined according to the NS-SEC. 'Highly educated' stands for those with a Level 4 qualification or higher. 'New to UK' stands for having lived outside the UK one year ago for the 2001 Census and two years ago for the 2011 Census; these figures are therefore not directly comparable over time.

Source: Authors' calculations using average figures from the Census, downloaded from <http://www.nomisweb.co.uk/>.

Summary

- Inner London is more deprived than the rest of England and than Outer London, but has a similar level of deprivation to Manchester or Birmingham.
- A much larger proportion of pupils in Inner London come from non-white backgrounds than in the rest of England, and this proportion has grown over time. Disadvantaged pupils in

¹³ Goodman and Gregg (2010).

London also come from a greater range of ethnic backgrounds than in other large cities and the rest of the country.

- The populations of Inner and Outer London are more likely to have an occupation classified as higher professional than elsewhere in England (including Birmingham and Manchester), are more likely to have a high level of education and are more likely to be newly resident in the UK. These patterns have not changed dramatically between the two Census years, as there has been growth in the prevalence of these characteristics in all areas, suggesting that these differences are unlikely to explain the improvement in the performance of disadvantaged pupils over time.

Can changes in pupil characteristics explain improvements in GCSE outcomes?

The previous subsection showed the substantial differences in the composition of pupils in London and other big cities compared with the rest of England. We now explore whether these differences explain the higher and improved performance of disadvantaged pupils in London and other big cities. This will inform us about whether the ‘London effect’ is driven by London’s schools or by the changing observable characteristics of pupils in London’s schools. By ‘observable characteristics’, we mean characteristics that are available in the administrative data we use – we are not able to account for differences in parents’ educational aspirations or other factors that may differ across areas that we do not observe in the administrative data.

We start by calculating the raw differences in outcomes between disadvantaged pupils in Inner London, Outer London, Birmingham and Manchester compared with the rest of England for each year between 2002 and 2012. Here, we focus on the difference in the proportion of children eligible for FSM achieving five or more GCSEs or their equivalent at A*–C (including English and maths). The data appendix repeats the results we show here for two other Key Stage 4 outcomes (the proportion achieving eight or more A*–Bs in Figure A4(a) and the average GCSE capped points score standardised at the national level in Figure A4(b)). We refer to these results in the text and compare the results for the latest year of data in 2012. Tables in the appendix show whether the differences we describe here are statistically significant.

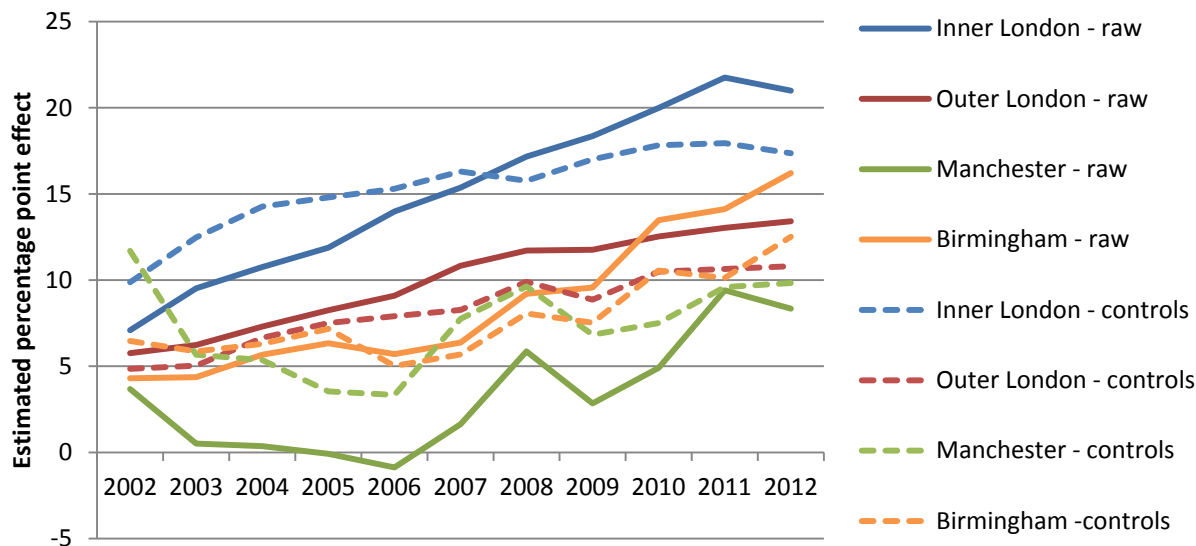
The raw differentials are shown by the solid lines in Figure 8 and confirm the results in the previous subsection: disadvantaged pupils in Inner London perform better than such pupils in the rest of England, and their results have improved much faster over time. Disadvantaged pupils also perform better in Outer London, Birmingham and Manchester and have shown sizeable improvement over time (the raw differences for Manchester are generally not statistically significant), although the level and the growth are not as substantial as for Inner London.

To examine the extent to which these differences can be explained by differences in pupil and school characteristics, we re-estimate the differential for these urban areas compared with the rest of England after controlling for a range of pupil and school characteristics.¹⁴ This is shown by the

¹⁴ The set of pupil characteristics we control for is as follows: gender; ethnicity (eight non-white minority groups, as in Figure A3); IDACI score; whether pupils have a statement of special educational needs (SEN); whether pupils have English as an additional language. The set of school characteristics is as follows: school type; number of pupils; proportion of pupils in their year group eligible for FSM; proportion of pupils in their year group with EAL; proportion of

dashed lines in Figure 8. We are now comparing the attainment of disadvantaged pupils in London with similar pupils elsewhere in the country in terms of their ethnicity, deprivation, gender and the types of schools they attend.

Figure 8 Estimated effect of being in London or other large cities on proportion of pupils eligible for FSM achieving five or more GCSEs at A*–C including English and maths (or equivalent), 2002–12, with and without controls (relative to rest of England)



Source: Authors' calculations using National Pupil Database 2002–12.

As can be seen, part of the improvement in results for Inner London can be explained by changes in pupil and school characteristics over time. Whilst the raw differential compared with the rest of England rises from 7 percentage points in 2002 to 21 percentage points by 2012, the differential after controlling for pupil and school characteristics rises from 10 percentage points to 17 percentage points. This means that about half of the growth in this measure of GCSE results in Inner London can be explained by changes in pupil and school characteristics. However, the difference compared with the rest of England is still very large and grows significantly over time even after controlling for pupil and school characteristics. Furthermore, as Table A1 in the appendix shows, the differences remain statistically significant.

Across the other large urban areas being considered, we see a similar pattern. Some of the improvement in the performance of disadvantaged pupils in Outer London and Birmingham compared with the rest of the country can be explained by changes in pupil and school characteristics. However, there is still significant growth over time and both still show higher levels of performance even after controlling for these pupil and school characteristics. Manchester is slightly different as disadvantaged pupils perform even better after controlling for pupil and school characteristics (and the estimates now become statistically significant), though the improvement in their performance is slightly muted after controlling for characteristics.

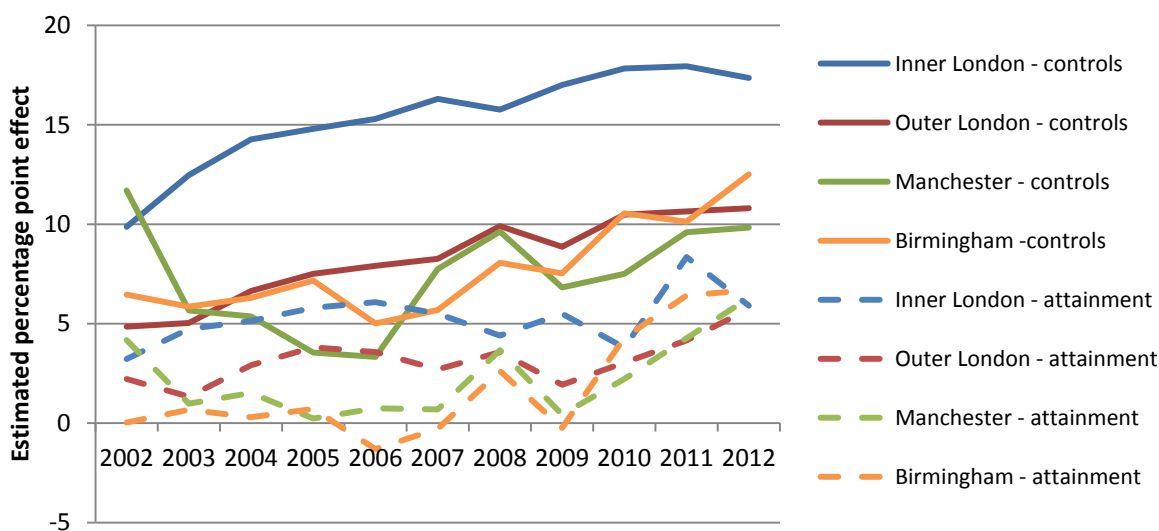
pupils in their year group with SEN; proportion of pupils in their year group in each quintile of IDACI; proportion of pupils in their year group from a non-white background.

Therefore, part of the explanation for the higher and improved performance of pupils in Inner London and other large urban areas is down to differences in pupil and school characteristics and their changes over time. However, there is still much that is unexplained, in terms of both the growth and the higher level of performance.

Can improvements in GCSE outcomes be explained by prior attainment at primary school?

Much work has shown the importance of prior attainment in primary school for explaining GCSE outcomes. A natural question to ask therefore is whether the higher and improved performance of disadvantaged pupils at GCSE in Inner London and other large urban areas can be explained by differences in their prior attainment. We do this by controlling for pupils' performance at Key Stage 2 in English and maths.¹⁵ The results are then interpreted as the 'London effect' on pupils' improvement from age 11 to 16, or the value added of secondary education in London over and above the child's attainment upon entry. The results of this are shown in Figure 9. The solid lines repeat the results from Figure 8 after controlling for pupil and school characteristics, whilst the dashed lines now show the results after additionally controlling for prior attainment.

Figure 9 Estimated effect of being in London or other large cities on proportion of pupils eligible for FSM achieving five or more GCSEs at A*-C including English and maths (or equivalent), 2002–12, with controls and prior attainment (relative to rest of England)



Source: Authors' calculations using National Pupil Database 2002–12.

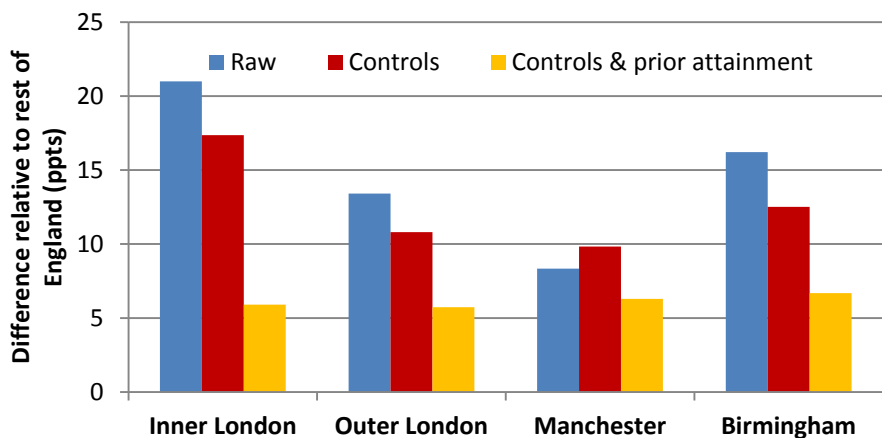
The differences in the level of performance for each urban area compared with the rest of England are now much smaller. Furthermore, there is no longer any improvement in the performance of disadvantaged pupils compared with the rest of England. It appears that once we account for differences in attainment upon entry to secondary schools, the 'London effect' is much reduced. London secondary schools are still performing significantly better than schools in the rest of the country, by about 5 percentage points on this measure. However, the 'London effect' appears to start in primary school rather than secondary school. For Manchester and Birmingham, the

¹⁵ Specifically, we control for KS2 maths and English scores, standardised on the national scales, and add quadratics in both.

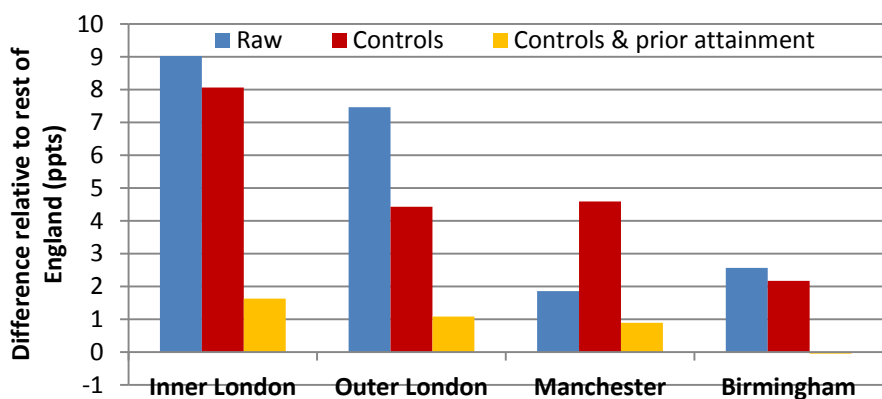
estimates are also greatly reduced after controlling for prior attainment and generally lose their statistical significance, though they are of a similar magnitude to those for London.

Figure 10 Estimated effect of being in London or other large cities on different GCSE outcomes for pupils eligible for FSM, with different sets of controls, 2012 (relative to rest of England)

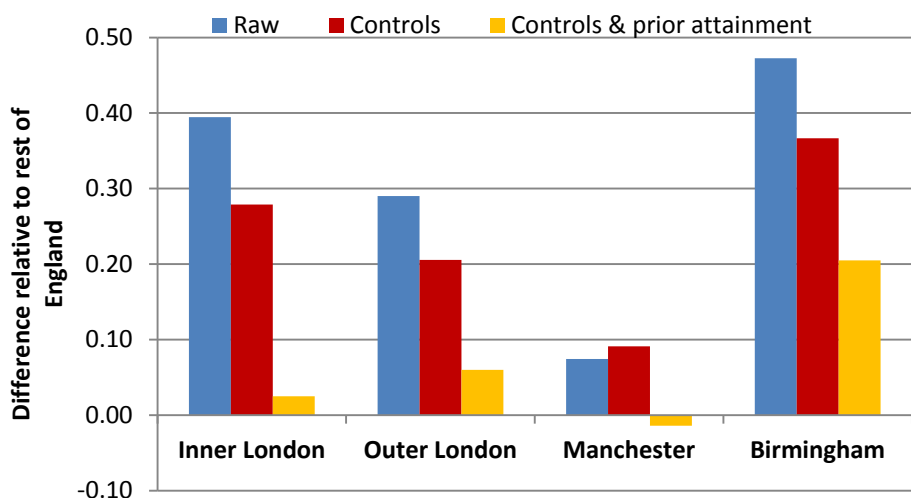
(a) Five or more GCSEs or their equivalent at A*-C (including English and maths)



(b) Eight or more GCSEs or their equivalent at A*-B (including English and maths)



(c) Average standardised capped points score at GCSE (including equivalents)



Sources: Authors' Calculations using National Pupil Database 2012.

This analysis is repeated for other GCSE outcomes in the appendix (Figure A5) and is summarised in Figure 10. For each outcome and urban area in 2012, we show the difference in outcomes for pupils eligible for FSM compared with the rest of England in raw terms, after controlling for pupil and school characteristics, and with additional controls for prior attainment.

In raw terms, FSM-eligible students in London, Manchester and Birmingham all perform better than FSM-eligible students elsewhere in the country across all three GCSE outcomes. Once we control for differences in pupil characteristics across areas, these differences are reduced in Inner London, Outer London and Birmingham, showing that some of the raw differential can be accounted for by differences in student demographics. However, the performance of FSM-eligible students in Manchester looks slightly better once we control for student demographics, suggesting that groups of pupils that perform better, on average, across the country perform less well in Manchester. These patterns are common across all three GCSE outcomes considered here, suggesting that student demographics can explain some of the higher level of performance of FSM-eligible students in London and Birmingham for a threshold measure and for a measure of high educational attainment, but certainly not all of it.

When we also control for prior attainment, differences in pupil performance compared with the rest of England are dampened significantly across all four urban areas and across all three GCSE outcomes. The reductions are largest for the measure of high performance (Figure 10(b)) and the average capped points score measure (Figure 10(c)). Controlling for prior attainment also seems to largely equalise the differential across urban areas. There are still positive urban effects, but these are much smaller and not significant in the case of Manchester and Birmingham. Prior attainment thus explains a large part of why FSM-eligible students in London, Manchester and Birmingham perform better than FSM-eligible students in the rest of the country.

One exception to these patterns is that for GCSE average point score in Birmingham. In this case, the raw differential is larger than that for Inner London and remains significant even after we control for prior attainment. However, even though Birmingham performs better in terms of average points score, this does not seem to be reflected in levels of high performance. As we shall see later, there appears to be no subsequent effect on Key Stage 5 participation in Birmingham either. The qualifications achieved by pupils in Birmingham do not therefore seem to be converted into improved participation at Key Stage 5.

The trends for these other GCSE outcomes are shown in Figures A4 and A5 in the appendix. For the measure of high performance, we see a very similar pattern for London as we saw for five or more GCSEs at A*–C. High attainment at GCSE has improved even more in London and there is more potential for a so-called ‘London effect’, as less of the difference from the rest of England is explained by differences in pupil characteristics. Although dampened when controlling for demographics and prior attainment, London secondary schools clearly have a higher proportion of disadvantaged students that are successful at higher levels of attainment than schools in Manchester and Birmingham.

However, again the growth in high GCSE performance is largely explained by changes in prior attainment, which suggests that the majority of the ‘London effect’ is related to prior attainment – and therefore likely to be related to the impact of primary schools. The trend for average point

score in GCSEs is slightly different, with no growth in the ‘London effect’ over time. However, disadvantaged pupils in London and other big cities do perform better on this measure and much of the difference is explained by prior attainment (as we see in Figure 10(c)).

This subsection has demonstrated that a very large part of the higher and improved performance of disadvantaged pupils in Inner London and other large urban areas can be explained by differences in prior attainment. Disadvantaged pupils entering secondary schools in Inner London and other big cities have higher levels of attainment at Key Stage 2 – which has contributed significantly to the greater improvement at GCSE over time compared with the rest of England. This is not to say that secondary schools in London, or in other big cities, are not adding value: there is a positive effect of being in Inner London or other big cities conditional on prior attainment. Furthermore, high-achieving disadvantaged pupils often fall behind in the secondary phase and London schools may be more effective in sustaining higher achievement.¹⁶ However, our results do suggest that a major part of the explanation for the London or Big City effect probably lies much earlier. To explore the mechanisms behind the ‘London effect’, we need to explore changes and initiatives in primary schools further back in time.

Summary

- Disadvantaged pupils in Inner London, Outer London, Manchester and Birmingham all perform significantly better than those in the rest of England even after we account for pupil and school characteristics.
- Some of the improvement in results over time for disadvantaged pupils in London and other big cities can be explained by changes in pupil characteristics over time, particularly changes in ethnic composition.
- The higher level and more rapid improvement in results for disadvantaged pupils in London and other big cities can be mostly explained by improvements in prior attainment at Key Stage 2, suggesting that changes in the performance of pupils in the primary phase may be important determinants of the growth in attainment in secondary schools.

¹⁶ As argued by Crawford et al. (forthcoming).

3. Improvements in primary schools

The previous section showed that a large part of the higher GCSE results for disadvantaged pupils in London and other big cities compared with the rest of England is accounted for by differences in prior attainment between pupils in these areas. To explore a little further when, how and why these differences in prior attainment might have occurred, we now examine differences in Key Stage 2 test scores in maths and English directly.

Figure 11(a) Estimated effect of being in London or other large cities on average standardised KS2 maths fine points score amongst pupils eligible for FSM, by year in which pupils took or will take GCSEs, 2002–18, with controls (relative to rest of England)

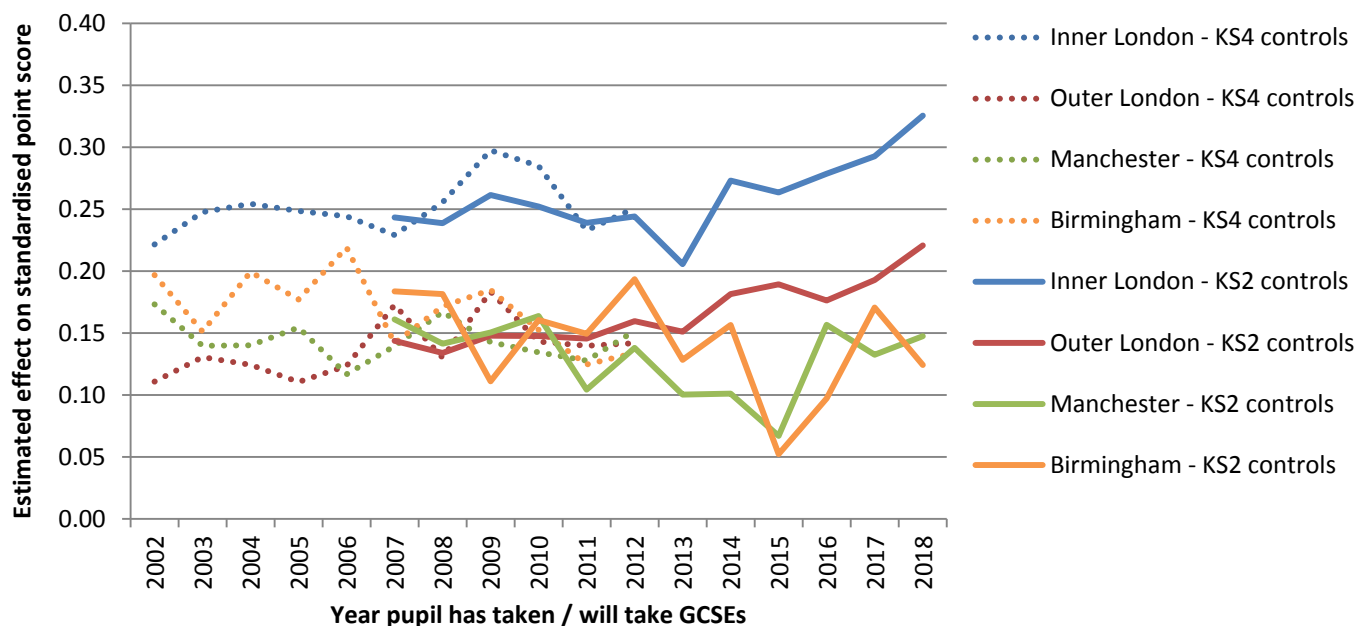
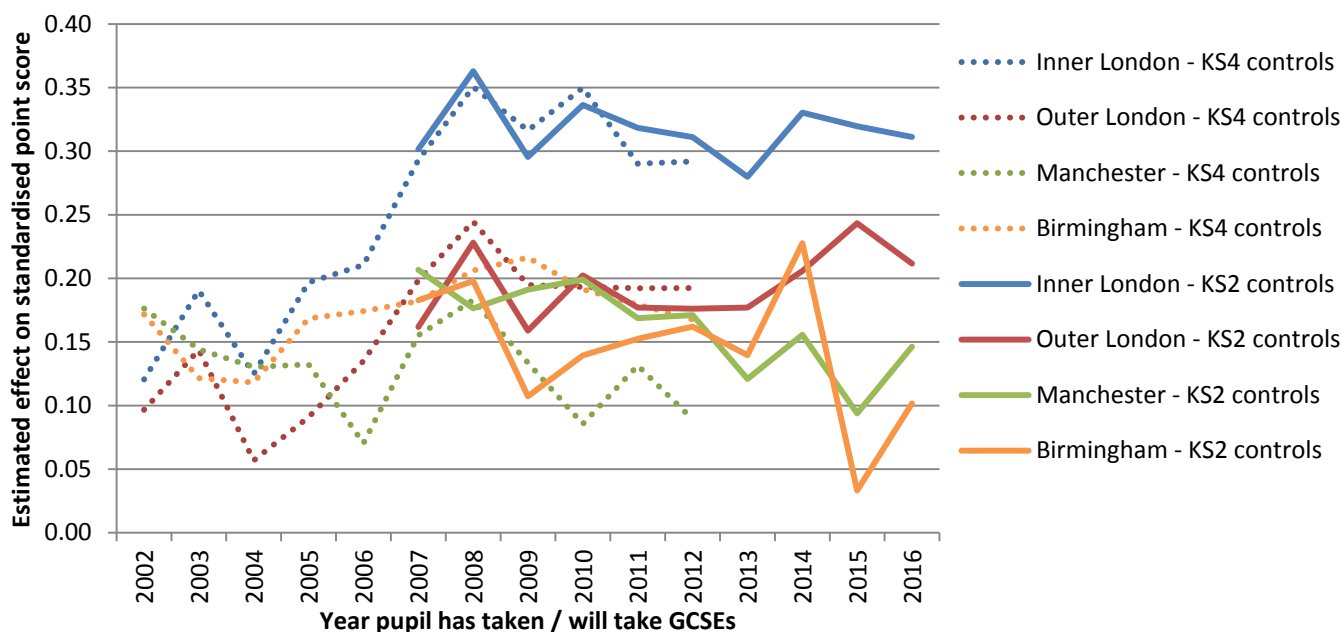


Figure 11(b) Estimated effect of being in London or other large cities on average standardised KS2 English fine points score amongst pupils eligible for FSM, by year in which pupils took or will take GCSEs, 2002–18, with controls (relative to rest of England)



Source: Authors' calculations using National Pupil Database 2002–12.

Figure 11 repeats the analysis from the previous section for Key Stage 2 (the detailed figures are shown in Tables A2 and A3 in the data appendix). The graph shows the estimated difference between each of Inner London, Outer London, Manchester and Birmingham and the rest of England in terms of the average Key Stage 2 maths and English fine points scores of pupils eligible for FSM after controlling for pupil and school characteristics. Key Stage 2 test scores are standardised on the national scale within each year. So that we can relate this directly back to the previous estimates for GCSEs, the year on the horizontal axis represents the year in which pupils took or will take their GCSEs. Detailed controls for pupil characteristics at Key Stage 2 do not exist for pupils taking their GCSEs before 2007. For these years, we have used pupil controls as measured when pupils took their GCSEs (Key Stage 4).¹⁷

The average maths scores of disadvantaged pupils in Inner London are much higher than those in the rest of England (by about 0.25 standard deviations for pupils taking GCSEs up to 2012). Maths scores are also higher for disadvantaged pupils in Outer London, Manchester and Birmingham, but to a lesser extent. However, there is not much change over this period for any of these big cities (except that we see a further pickup in maths scores in London for pupils taking GCSEs after 2013), suggesting that it is unlikely that improvements in Key Stage 2 maths scores caused the uplift in GCSE scores from 2002 onwards.

The average English scores for disadvantaged pupils in Inner London compared with the rest of England are also much higher (by about one-third of a standard deviation for pupils taking GCSEs in 2012). There are also positive differences for Outer London, Manchester and Birmingham, but not as large as the difference for Inner London. Interestingly, unlike for maths scores, there is a large increase in the difference in English scores of disadvantaged pupils in Inner and Outer London compared with the rest of the country for pupils taking GCSEs between 2004 and 2008: the differentials for Inner and Outer London increase by over 0.2 standard deviations over this period. This increase would have occurred for pupils taking Key Stage 2 tests between 1999 and 2003.

Summary

- Disadvantaged pupils in London, Manchester and Birmingham all perform significantly better at Key Stage 2 in both English and maths than those in the rest of England, with pupils in Inner London showing the highest level of performance (even after controlling for pupil characteristics).
- There was a large improvement in KS2 English scores for disadvantaged pupils in London between 1999 and 2003, which is likely to be a key reason why GCSE results in London subsequently improved between 2004 and 2008.

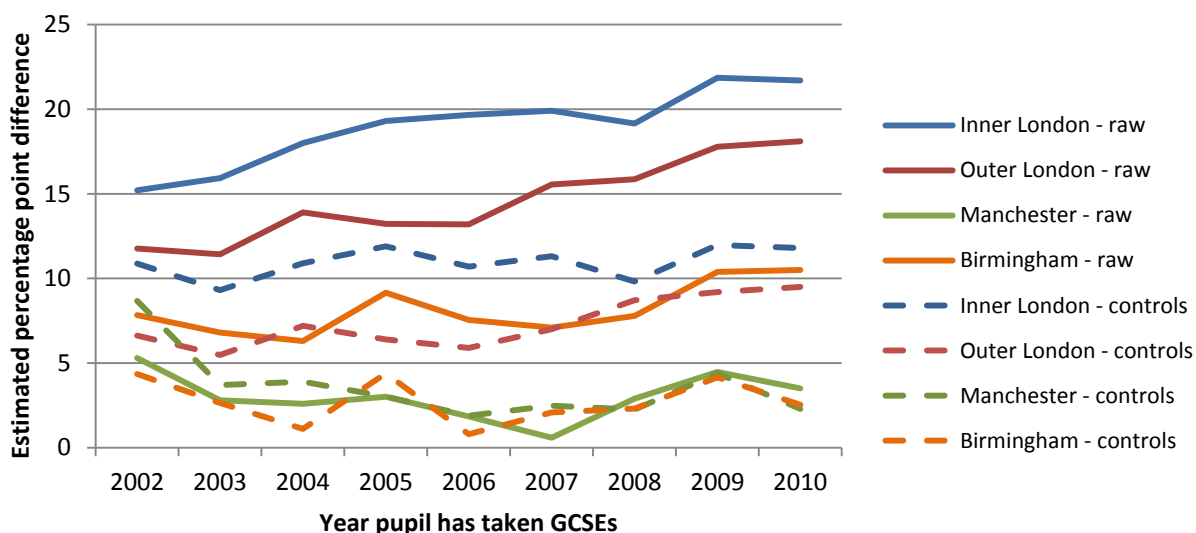
¹⁷ As we can use either KS2 or KS4 controls for some overlapping years, we can compare these two sets of estimates, which give reassuringly similar results.

4. Sustained improvements in post-16 outcomes

Before turning to potential explanations for why pupils in London may have seen improvements in Key Stage 2 test scores at age 11, it is important to consider whether the London and Big City effects are sustained into post-16 outcomes. We therefore examine differences across areas in the proportion of pupils enrolling in Key Stage 5 after age 16 and the average performance of those pupils who do participate at Key Stage 5. As in previous sections, we focus on disadvantaged pupils, defined by whether they were eligible for FSM at the end of compulsory schooling. Of course, there are alternative post-16 routes that will not be captured in Key Stage 5 data, such as studying towards vocational qualifications through a further education college (these data are found in the Individual Leavers Record data, which were not used here). Our focus is therefore on the more academic post-16 outcomes, which are strong predictors of making the transition through to higher education post-18 – a key determinant of later labour market outcomes.

Figure 12 shows the estimated raw difference in the proportion of pupils eligible for FSM who continue into Key Stage 5 after age 16 for Inner London, Outer London, Manchester and Birmingham compared with the rest of England (see Table A4 in the data appendix for detailed figures). In raw terms, disadvantaged pupils in Inner and Outer London are more likely to continue into Key Stage 5, compared with both those in the rest of England and those in Birmingham and Manchester. This difference has grown over time. After we control for differences in pupil and school characteristics, the difference is reduced, although disadvantaged pupils in Inner London are still estimated to be over 10 percentage points more likely to continue into Key Stage 5 than disadvantaged pupils in the rest of England. The ‘London effect’ for disadvantaged pupils therefore seems to be sustained into post-16 outcomes. This is likely to be linked to London’s higher levels of attainment at Key Stage 4, shown in the Introduction, but may also be related to differences in aspiration for higher education, which are not observable to us.

Figure 12 Estimated effect of being in London or other large cities on participation at KS5 for pupils eligible for FSM, 2002–10, with and without controls (relative to rest of England)

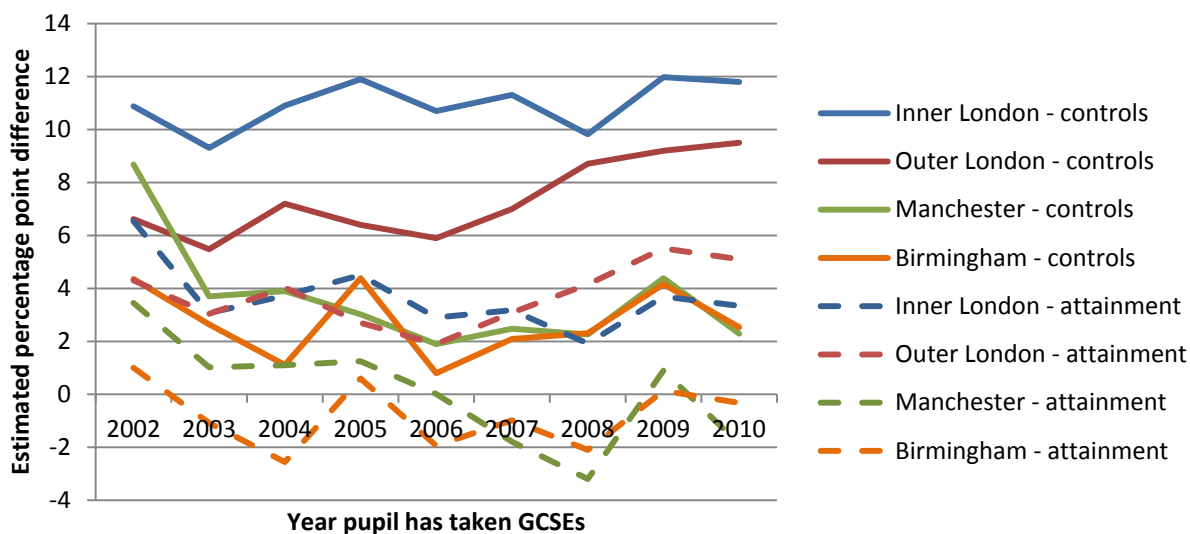


Source: Authors’ calculations using National Pupil Database 2002–12.

The same cannot be said of Manchester and Birmingham. Disadvantaged pupils in Manchester and Birmingham are only very marginally more likely to continue into Key Stage 5 than those in the rest of England, conditional on pupil and school characteristics, and the differences are often not statistically different from zero. The higher performance of disadvantaged pupils in Manchester and Birmingham at Key Stage 4 is therefore not sustained into post-16 outcomes.

This evidence for Birmingham is consistent with our earlier results showing that high attainment at Key Stage 4 is not significantly different in Birmingham from in the rest of England, as high attainment is often a requirement for many post-16 courses. One potential explanation is that part of the higher average performance of Birmingham comes from a greater use of GCSE equivalents. However, there are also a number of other potential explanations for contrasting trends for London, Manchester and Birmingham. First, there could be differences in the structure of post-16 education – for example, in the number of sixth forms attached to schools. Second, there are a large number of universities in close proximity to students in London, and more so than near students in Birmingham and Manchester. This could provide greater encouragement for pupils in London to attend university, and thus to continue into Key Stage 5 in order to achieve this aim. Third, there could be differences in labour market opportunities across these three cities that lead young people to make different education choices. Lastly, there could be other unobservable differences between pupils across cities that affect their propensity to continue in school after age 16 – for example, differences in aspirations.

Figure 13 Estimated effect of being in London or other large cities on participation at KS5 for pupils eligible for FSM, 2002–10, with controls and prior attainment (relative to rest of England)



Source: Authors' calculations using National Pupil Database 2002–12.

Figure 13 shows the estimated differences in Key Stage 5 participation after additionally controlling for prior attainment at age 16. The differences in participation across areas are now much smaller, as entry to academic post-compulsory education is often determined by attainment thresholds. However, even after controlling for differences in age-16 outcomes, disadvantaged pupils in Inner and Outer London are still more likely to continue into Key Stage 5. This suggests that something about London or its disadvantaged households is either allowing or encouraging

disadvantaged pupils to continue into Key Stage 5 after age 16 over and above their attainment at age 16.

This pattern is also evident when we consider Key Stage 5 performance, conditional on participation at Key Stage 5, across a range of measures including Key Stage 5 points score, the proportion of children achieving two or more A levels at A*–E and the proportion of children achieving A*–E in ‘facilitating subjects’ at A level.¹⁸ Figure A6 in the data appendix illustrates the estimated percentage point gain in the probability of achieving two or more A levels at A*–E (Level 3 equivalent¹⁹) for Inner and Outer London relative to the rest of England (excluding Manchester and Birmingham²⁰).

There is therefore strong evidence that disadvantaged pupils from London are participating more and performing better than disadvantaged students in the rest of England. As participation and attainment at Key Stage 5 is a strong predictor of participation and attainment in higher education, this suggests that disadvantaged pupils from London may have access to greater labour market opportunities and life chances relative to those in the rest of England as a result of their better performance at school.

Summary

- The ‘London effect’ is sustained into post-16 outcomes. Disadvantaged pupils in London are more likely to continue into Key Stage 5 even after accounting for differences in pupil and school characteristics.
- Disadvantaged pupils in London are more likely to attend post-compulsory education even after controlling for differences in prior attainment, suggesting that there is an extra benefit of being in London over and above differences in age-16 outcomes.
- Although they have better average GCSE results than disadvantaged pupils in the rest of England, disadvantaged pupils in Manchester and Birmingham are not more likely to continue into Key Stage 5 education.

¹⁸ For more information on ‘facilitating subjects’, see pages 24–25 of Russell Group (2013/14).

¹⁹ http://www.education.gov.uk/schools/performance/archive/16to18_08/d4.shtml.

²⁰ Given that this analysis is restricted to FSM-eligible children and is conditional on participation at Key Stage 5, we focus here only on Inner and Outer London as the samples become small and unreliable in Manchester and Birmingham.

5. Why have we seen an improvement in London?

We have shown that the major explanation for why disadvantaged pupils in London have seen substantial improvements in Key Stage 4 results over the last decade is the improvement in attainment at the end of primary school during the late 1990s, particularly in English. We now ask what might have driven these improvements in primary school attainment. Plausible explanations must fit with the timing of the improvement: what changed about primary schools in London during the late 1990s and early 2000s that could have affected pupils' attainment?

We focus on the potential role of the following explanations:

- pupil intake;
- resources;
- teachers;
- school governance;
- school competition;
- specific policy initiatives.

We should be clear from the outset that it is not possible to confirm the precise causes of the improvement in pupil attainment. We are able to say which explanations seem more plausible than others, however, and where future research could be directed towards better understanding the causes of the improvements in London over time.

Pupil intake

There are substantial differences between London, other large cities and the rest of England in terms of the ethnic mix of pupils. Previous sections demonstrated that some of the improvement in the performance of disadvantaged pupils in London, Manchester and Birmingham can be accounted for by changes in pupil and school characteristics – about one-half of the improvement for Inner London, for example. However, there are still substantial differences in school performance at Key Stage 4 even after controlling for pupil and school characteristics, as well as sizeable improvements in performance relative to the rest of England. Therefore, changes in the pupil intake over time are clearly an important part of the explanation, but not the whole explanation.

The major explanation comes from differences in the level of and changes over time in performance at the end of primary school (Key Stage 2 attainment). Pupils entering secondary schools in London, and to some extent Manchester and Birmingham, come with higher attainment (conditional on other factors). These higher results could come from differences and changes over time in the quality of primary schools or from changes in the school-readiness of pupils entering primary schools. To investigate the latter explanation, we re-estimate the differences in Key Stage 2 test scores after controlling for Key Stage 1 teacher assessment scores. This is not a perfect test: teacher assessments could be influenced by differences in teacher judgements; the tests are not measured at the beginning of primary school; primary school quality could influence Key Stage 1 test scores. The results in Figure A7 in the data appendix show that once we control for

differences in Key Stage 1 teacher assessments, the effect of being in London on Key Stage 2 English test scores is reduced by about one-half, although the differences between London and the rest of England remain substantial. This suggests that disadvantaged pupils in London perform better even after accounting for Key Stage 1 scores. Unfortunately, we can only extend this analysis back to pupils taking Key Stage 2 in 2002, so we cannot examine the period between 1999 and 2003 when Key Stage 2 English scores in London increased dramatically relative to the rest of the country.

Resources

Schools in London receive higher levels of funding than schools in other parts of the country. This reflects the facts that schools in London must pay higher teacher salaries (because of London weighting, to reflect the higher cost of living) and that there are higher levels of deprivation in London.²¹

In Figure A8 in the data appendix, we show the levels of funding per pupil in Inner London, Outer London, Birmingham and Manchester relative to the level in the rest of England, for the period 2003–10 and for primary and secondary schools separately. This confirms that funding per pupil is higher in Inner London than in the rest of England, by about 33% for primary schools and 40% for secondary schools. Outer London, Birmingham and Manchester also receive higher levels of funding than the rest of England, but not by as much as Inner London (the higher levels of funding for Birmingham and Manchester largely reflect funding targeted at deprivation – which was in place before the introduction of the pupil premium – as there is no formal weighting for higher teacher salaries in these areas). However, the differences relative to the rest of England are relatively stable over time and pre-date the improvements in pupil performance seen in these areas, meaning that changes in funding are unlikely to be a major explanation for the changes over time in the performance of disadvantaged pupils.

These figures only go back to 2003 and it could be that there were dramatic changes taking place in earlier years. However, earlier evidence suggests that higher levels of funding for London are longstanding.²² Furthermore, to explain the improvements in results for disadvantaged pupils in London, there would need to have been a dramatic change in the resources targeted at primary schools in particular. This collection of evidence suggests that changes in funding are unlikely to be a major explanation for changes in the performance of disadvantaged pupils in London.

Teachers

There is a large body of academic evidence arguing that variations in teacher quality play a large part in explaining variations in pupil attainment.²³ One potential explanation for the ‘London effect’ could be that higher-quality teachers are attracted to London and increasingly so in recent years, perhaps because of higher levels of teacher pay or other benefits of living in London. A number of

²¹ See Chowdry et al. (2008), Chowdry and Sibieta (2011) and Greaves and Sibieta (2014).

²² Department of the Environment (1990); West et al. (2000).

²³ For example, Slater et al. (2012).

schemes, such as Teach First, have sought to attract high-achieving graduates into teaching in deprived areas. Indeed, Teach First began in London in the early 2000s.

There are a number of potential limitations to differences in teacher quality as a major explanation for the 'London effect'. First, although teachers are paid more in the London area, this is mainly to compensate them for a higher cost of living, and recent empirical work finds little evidence that variations in pay around the London pay zone boundaries have a significant effect on pupil attainment.²⁴ Second, although evaluations of Teach First have found that it has had a modest positive impact on attainment,²⁵ Teach First only began in 2002 and was only extended to primary schools in 2011. Although Teach First may explain some of the higher value added by some London secondary schools, its arrival comes too late to explain the growth in primary school results in the late 1990s and early 2000s.

Of course, it may be that other factors, such as the desirability of living in London, could have attracted better-quality teachers to London. It is difficult to examine this hypothesis directly, as good measures of teacher quality do not exist in England and research suggests that teacher quality is only very weakly correlated with more easily observable teacher characteristics such as education level. Nevertheless, the data appendix shows that there have not been any differential trends in selected characteristics of teachers in London as compared with the rest of England²⁶ (see Figures A9 and A10). Teachers in London are younger on average and have been in their job for a shorter period of time, but trends are similar across London and other areas.

This does not completely disprove the idea that higher-quality teachers have become increasingly attracted to London over time, as we cannot examine direct measures of teacher quality. However, the lack of change in measured characteristics makes us doubt this explanation. Furthermore, to explain the improvements in results for disadvantaged pupils in London, it would need to be the case that higher-quality teachers had become increasingly attracted to *primary* schools in London from the late 1990s and to a lesser extent to secondary schools.

Either way, obtaining more reliable measures of teacher quality is clearly a priority for research on teachers. This would allow us to examine more fully whether the 'London effect' can be explained by improvements in teacher quality and even whether the 'London effect' was sustained because it *attracted* better-quality teachers (if teachers themselves are attracted to high-performing schools).

School governance

The number of academies in London has increased over the past decade. The first sponsor-led academies were set up in London in the early 2000s, with their numbers expanding over time. These generally replaced failing schools and were focused on deprived areas. It has been argued that these sponsor-led academies had a significant positive impact on pupil attainment.²⁷ Since 2010, very large numbers of existing schools have also converted to become academies, although

²⁴ Greaves and Sibieta (2014).

²⁵ Allen and Allnutt (2013).

²⁶ This was also the conclusion of the All-Party Parliamentary Group on Social Mobility (2013).

²⁷ Machin and Veroit (2011).

the impact of these schools on attainment is unclear. However, it seems unlikely that the Academies Programme could explain a large part of the London or Big City effect: the Academies Programme was focused on secondary schools until 2010. Even then, the number of sponsor-led academies only represented about one in nine secondary schools in London by 2010.²⁸

School competition

Another clear difference between London, other big cities and the rest of England could be the degree of school competition. Due to the higher level of population density, there are many more schools in close proximity to each other in London and other big cities. This gives parents more potential choice and may increase competition for pupils amongst schools. This higher level of school competition could drive up results and could explain why disadvantaged pupils perform better in London and other big cities. However, most of the empirical evidence finds little or only weak effects of school competition in England.²⁹ Furthermore, it seems unlikely that higher levels of school competition could explain the fast improvement in English test scores relative to the rest of England in London's primary schools specifically during the late 1990s and early 2000s. However, we cannot completely dismiss the hypothesis that increasing levels of school competition and school accountability could explain the improvement.

Specific policy initiatives

London has also been targeted by a large number of specific policy initiatives over the last decade, which could have contributed to the higher and improved performance of disadvantaged pupils relative to the rest of England. Other large urban areas, such as Manchester and Birmingham, also received considerable attention, though to a lesser degree than London.

London Challenge

One policy initiative often associated with the high and improved performance of disadvantaged pupils in London is the London Challenge.³⁰ This was established in 2003 to reduce the number of low-performing secondary schools in London. It involved a number of different elements, including: independent advisors who identified need and brokered support for individual schools; monitoring of performance; collaboration and partnerships between schools; tracking of individual pupils' performance within schools; and some additional resources. The London Challenge was then rolled out across the country in 2008 as part of the National Challenge, with specific City Challenge programmes in Manchester and the Black Country, though these differed in their approach from the London Challenge and covered larger geographic areas than just the cities of Birmingham and Manchester. A London Challenge programme for primary schools was also launched in 2008.

²⁸ Authors' calculations using <https://www.gov.uk/government/publications/schools-pupils-and-their-characteristics-january-2010>.

²⁹ Burgess and Slater (2006); Gibbons et al. (2008).

³⁰ Department for Education and Skills (2003).

The London Challenge has been credited with explaining much of the success of London's secondary schools in terms of their GCSE results.³¹ However, our results suggest that after accounting for differences in prior attainment and pupil characteristics, the difference between the performance of disadvantaged pupils in London and the rest of England is relatively small and has not changed much over the last decade. Instead, our results suggest that the main explanation for the improved GCSE performance of disadvantaged pupils in London over the last decade lies with their higher and improved performance in primary school during the late 1990s and early 2000s, long before the London Challenge or its primary strand began.

This is not to say that the London Challenge is unimportant in explaining the improved performance of disadvantaged pupils in London. There is still a positive effect of being in Inner London or other big cities after controlling for prior attainment, as shown in Section 3. Furthermore, high-achieving disadvantaged pupils often fall behind in secondary schools³² and the London Challenge may have helped sustain the higher levels of achievement we saw earlier, as well as had some effect on Key Stage 5 participation. However, our results do suggest that a major part of the explanation for the London or Big City effect probably lies much earlier.

Excellence in Cities

Looking further back in time, we turn to the Excellence in Cities (EiC) and the National Literacy and Numeracy Programmes. The EiC initiative started in 1999 for secondary schools, expanding to about 1,000 secondary schools. This combined extra resources with extra support, such as Learning Mentors, Learning Support Units and Gifted & Talented Programmes. The evaluation of EiC for secondary schools found positive effects on Key Stage 3 maths scores, but not on English or attainment at GCSE.³³ Therefore, EiC can probably only explain a small amount of the higher performance of disadvantaged pupils in London and other big cities at secondary schools. The primary version began in 2000. However, it seems unlikely that this could explain the improvements in London's primary schools: the start of the improvement pre-dates the start of EiC for primary schools, the primary strand was relatively small and the evaluation found very weak evidence of an impact on attainment.³⁴

Literacy and Numeracy Strategies

More plausible explanations for the improvement of London's primary schools are the National Literacy and Numeracy Strategies. These were rolled out nationwide from 1998–99 onwards, with the most high-profile elements being the National Literacy and Numeracy Hours. The timing of the introduction of these national strategies (late 1990s) and their focus (primary schools) make them a more plausible explanation for the improved performance of disadvantaged pupils in London over time. The national strategies were based on the National Literacy and Numeracy Projects, which were trialled in a number of local education authorities from 1996 to 1998 before the national roll-out, with a particular focus on poorly performing local education authorities. Those included in the trial are listed in Table 1 and were heavily drawn from Inner London, including

³¹ Hutchings et al. (2012); Berg (2013); Tomlinson (2013).

³² As argued by Crawford et al. (forthcoming).

³³ Machin, McNally and Meghir (2010).

³⁴ Emmerson et al. (2004).

many of the local education authorities that have seen the fastest improvements over the past decade. Furthermore, the evaluation of the National Literacy Programme noted some serious concerns with the standard of reading and writing prior to the programme, with a specific mention of Inner London,³⁵ suggesting that these local education authorities had scope to make significant improvements.

Table 1 National Literacy Programme (NLP) and ‘matched’ local education authorities (LEAs) for NLP cities (close geographically and with a similar level of educational achievement in 1996)

NLP LEAs	Control LEAs
<i>Inner London:</i> Hackney, Islington, Lambeth, Newham, Southwark, Tower Hamlets, Waltham Forest	<i>Inner London:</i> Camden, Haringey, Lewisham, Wandsworth
Sandwell	Walsall
Liverpool	Knowsley
Manchester	Rochdale
Sheffield	Rotherham
Newcastle	South Tyneside

Source: Machin and McNally, 2008, appendix table A1.

Encouragingly, the evaluation of the Literacy Hour found positive effects on literacy.³⁶ However, the effects were relatively small (about two percentiles of improvement in individual reading tests). Furthermore, as the programme was eventually rolled out nationwide, it is not immediately clear why gains in Inner London were not followed by improvements elsewhere in the country. Nevertheless, the timing and focus of the National Strategies make us speculate that they might be a part of the explanation for the improvement in the performance of disadvantaged pupils in London over time. However, we cannot yet reach a definitive conclusion. More research is needed to understand whether there are particular reasons why the National Strategies might have had more of an impact on Inner London and whether they coincided with other important changes in primary schools. Such work could provide valuable insights into how and why disadvantaged pupils have seen an improvement in their educational attainment over time.

³⁵ Machin and McNally (2008).

³⁶ Machin and McNally (2008).

6. Conclusions and implications for the future

We have shown that disadvantaged pupils in London and other big cities perform better than those elsewhere in England, and their GCSE performance has improved significantly over the last decade, particularly in Inner London. This is also sustained into higher levels of post-compulsory education and is therefore likely to be influencing further participation in higher education and other later life chances. The major explanation for this higher and improved performance does not seem to relate to the effectiveness of secondary schools and various initiatives targeted at London's secondary schools over the last decade, as is often suggested. Instead, the improvement is more likely to be due to the increase in attainment at primary school over time for disadvantaged pupils in London.

There was a particularly large improvement in the attainment of disadvantaged pupils in London's primary schools between 1999 and 2003, which accounts for a large part of the improvement in Key Stage 4 results over the last decade. This nearly coincides with the introduction of the National Literacy and Numeracy Strategies, although these initiatives were rolled out nationally by 1999–2000 (rather than being wholly targeted on Inner and Outer London). We cannot completely dismiss other potential explanations, however, such as increasing levels of school competition or unobservable changes in pupil cognitive ability or teacher quality over time. The increasing proportion of non-white pupils and those with English as an additional language may also explain part of this phenomenon. Ongoing work by Simon Burgess examines the role of these factors in more detail. More research is needed to understand whether the National Literacy and Numeracy Programmes were indeed an important source of London's improvement.

There are three key lessons for policymakers in seeking to narrow the achievement gaps between more and less disadvantaged pupils across the rest of England:

- First, the power of early achievement in primary schools is evident, particularly in terms of English scores: one of the major reasons why disadvantaged pupils in London and other big cities perform better at Key Stage 4 is that they had higher levels of achievement at Key Stage 2. This is consistent with a case for early intervention. Equally, however, we should not completely discount the role of secondary schools in sustaining achievements into GCSE and post-16 outcomes. Whilst the 'London effect' is translated into higher levels of participation in Key Stage 5, higher GCSE results in Manchester and Birmingham do not translate into higher levels of Key Stage 5 participation. This suggests that whilst a focus on primary schools is important in ensuring that disadvantaged students are equipped with the necessary skills to reach attainment benchmarks at the end of compulsory schooling, secondary schools have a role to keep those students on track to ensure they achieve the higher levels necessary to access Key Stage 5 and further study.
- Second, partly because of the power of early achievements, improvements will take a long time to become visible in national results. Improvements in primary schools in London from 1999 through to 2003 became visible at GCSE between 2004 and 2008 and have only recently become part of accepted wisdom.

- Third, given that achievements take a long time to become visible, we need to relate recent improvements to policies much further back in time. Improvements in London seem more likely to have primarily resulted from changes occurring in the late 1990s and early 2000s, such as the National Strategies, than from recent policy initiatives such as the London Challenge or the Academies Programme.

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