

**DIRECTORATE FOR FINANCIAL AND ENTERPRISE AFFAIRS  
COMPETITION COMMITTEE**

**Cancels & replaces the same document of 14 May 2019**

**Working Party No. 2 on Competition and Regulation**

**The operation of market forces in the market for schools – Paper by Simon Burgess  
Roundtable on Publicly Funded Education Markets**

**3 June 2019**

This paper by Simon Burgess was submitted by the author as part of the background material in support of their presentation for Item 3 of the 67th meeting of Working Party 2 on Competition and Regulation on 3 June 2019.

This paper was not commissioned nor vetted by OECD Secretariat; the opinions expressed and arguments employed herein are exclusively those of the author and do not necessarily reflect the official views of the Organisation or of the governments of its member countries.

More documents related to this discussion can be found at

<http://www.oecd.org/daf/competition/publicly-funded-education-markets.htm>

**JT03465408**

## *The operation of market forces in the market for schools*

By Simon Burgess<sup>1</sup>

### 1. Introduction

1. The provision of education is the main channel through which public policy can affect human capital and skills. The processes underlying the formation of human capital, the delivery of effective education, and the returns to schooling form the ‘fundamentals’ of the market. The systemic issue is to design an education system that facilitates the best outcome given those fundamentals. The structure of the system affects the distribution of skills; for example, whether the system increases or decreases the inequality of educational outcomes. The system has to work well in a world of (very) imperfect information, with substantial variation in attributes and across children, allowing for a diversity of outcomes, whilst also respecting other goals such as children’s wellbeing and rights, parents’ rights, and democratic processes.

2. This is the issue briefly addressed here: how do ‘market forces’ work in the schools’ market? How can we best design market rules to make those market forces work best? The goals of such rules would also need to be defined, but are likely to include: raising average pupil achievement, reducing (or at least not worsening) inequality, facilitating social mobility, and allowing schools to provide in some sense an “escape route” out of poverty.

3. As economists know, our tools of analysis are of use in much more than just regular markets for ordinary goods. The education system, whether it is set up like a market or not, has actors who have goals and constraints and who interact in some form or other of allocative mechanism. This is well-suited to an economic analysis, and specifically the tools of industrial organisation. Typically in Europe and the US, education does not function as a straightforward unregulated marketplace, so there has been interest in other forms of accountability to replace pure market discipline.

4. There is a huge amount of work exploring the behaviour of and optimal regulation for a range of different industries, including energy, water, communications, and also in health care providers. We are not so advanced yet in thinking about this process for schools: how should we think about regulating the schools’ market?

5. The rest of this paper is organised as follows: the next section reviews the evidence on the ‘market fundamentals’ in England. Section 2 introduces the idea of competition and market rules in education. Section 3 focusses explicitly on ‘market forces’ in a dynamic sense of whether a competitive market structure is working properly and why not (since it is not). Section 4 moves on to consider a more recent policy approach of a more oligopolistic bent, switching the focus away from individual schools competing onto school groups or chains, school take-over and so on. Section 5 concludes.

---

<sup>1</sup> This paper is based in part on various pieces of joint work with: Rebecca Allen, Ellen Greaves, Leigh McKenna, Dave Thomson, Anna Vignoles, Deb Wilson; and in part on my review Human Capital and Education: The State of the Art in the Economics of Education, <http://www.coeure.eu/wp-content/uploads/Human-Capital-and-education.pdf>

## 2. Competition in the market for schools

6. Before we consider its operation, a prior question is: why have competition in education? There is a long-standing, strong and widespread view that in any market, competition and ‘market forces’ are good for productivity (see for example Porter, 1990; Nickell, 1996). And indeed many studies find a correlation between competition and productivity (for example see very recently, Backus, 2019). The interpretation of the correlation depends on how it arises and there are two main channels. First, there is a direct treatment effect: competitive threat simply makes producers more productive, perhaps working harder or being more focussed on what the market wants. Second, the selection effect operates by selectively removing the least productive suppliers and shifting demand to the higher productivity units.

### 2.1. What competition should do

7. To benchmark a view of how we might expect the schools market to work, I briefly review how a regular private sector market works.

8. A conventional small firm making a popular product for which there is high demand faces very clear incentives to expand production. This is because the price will rise as demand is higher than the available supply, and so profit per unit will rise. The desire to make more profit will lead to the firm producing more. As it does so, costs per unit may rise, stay constant or fall; the price will also tend to fall back down as supply increases. Expansion will continue until the point where profit is maximized. This is the classic mechanism behind the market producing more of popular products (and less of unpopular ones).

9. The scale of the expansion depends on two things: the shape of the cost function and the degree of popularity. Costs may be relatively flat as more is produced if it is straightforward to simply add more identical capacity to the firm – one more team, or one more production line, or one more delivery van. However, even in this case, eventually costs will start to rise with expansion as there are fixed factors that constrain the capacity to add identical units. This may be physical space, or the ability of the management to coordinate more and more production units. Alternatively, costs may rise steeply with only a small expansion if existing equipment has to be worked harder through overtime or extra shifts.

10. One important issue determining the nature of any expansion is the efficient scale of operation. This will vary enormously between different industries: consider cafés and car factories. All else equal, optimal expansion in a private firm would mean reaching the efficient scale, and then setting up another production facility and bringing that to the efficient scale and so on. This obviously relates to the issue of schools, school chains and federations, discussed in the next section. There is an additional issue in service industries as opposed to manufacturing plants: the scale of operation itself may affect demand – small cafes may be more desirable than large ones, small schools may be more desirable than large ones, which we re-emphasise below.

11. However, on top of this basic economic model of expansion, there are two specific issues that need to be considered. First, this model of expansion assumes that all inputs into production are infinitely available. This will not be the case if there are important fixed factors that cannot be reproduced: for example, a unique location or an individual with a

special skill. The presence of unique factors may mean that the only option is to increase output at the first location, rather than create new facilities.

12. Second, there are cases in the private sector where it is not profit-maximising to expand, when staying small is best. Very popular restaurants, hotels, and clubs, for example, gain some of their popularity precisely from not expanding to meet the demand. The exclusivity is part of the attraction and allows high prices to be charged. The calculation must be that an expansion would reduce demand so much that profits would fall. To get around this problem, popular restaurants and chefs open new restaurants, rather than making the original one a lot bigger.

13. I return to these points below, when reflecting on the operation of the schools market in England.

## **2.2. Competition, schools and market rules**

14. We can imagine that competitive pressure might conceivably operate in the market for schools<sup>2</sup>, depending on supplier behaviour and most strongly on the market rules. These rules derive from the system's assignment mechanism: what decides which children go to which school. Every nation's education system has such a mechanism, whether based on choice, on geography, or on some measure of ability. These define the incentives and constraints for schools.

15. Assignment of pupils through a choice system fits naturally with school competition but is neither necessary nor sufficient for competition. Not necessary because we know from other markets that having a competition to be a monopoly local supplier can be effective; and not sufficient as there are other requirements too. These are discussed below, but briefly, for competition to be effective in raising average achievement at least the following conditions need to hold:

- Choice must be feasible – that is, families must typically have several suppliers that they can choose from. And it must be feasible in the sense that the choices made by families do affect the outcome.
  - Choosers must value highly the outcome of interest – market mechanisms provide what consumers want; for the market to raise achievement, families must value educational excellence in schools.
  - Choosers must be able to identify the levels of achievement generated by different providers. This is crucial, otherwise families are choosing blind. In turn, this requires there to be a valid common metric (a common, remotely assessed terminal exam) that is public and comprehensible.
  - Popular providers must respond by providing more, and less popular providers by providing less. The final link in the chain is that the system must respond to choice, and so the incentives for producers must encourage this.
16. Some evidence on these conditions is presented below.

---

<sup>2</sup> School leaders I have spoken to in England certainly see themselves as competing and having known competitors which they keep an eye on.

### 2.3. International evidence on choice, competition and achievement

17. In the economics literature on school choice and school competition, ‘choice’ is used in different senses. It is used to describe a systemic method for assigning pupils to schools; and it is used in the sense of an additional option for schooling, given to a subset of pupils, typically in the form of vouchers. Epple, Romano and Urquiola (2017) provide a very thorough review of the evidence on school vouchers and conclude that: “the evidence to date is not sufficient to warrant recommending that vouchers be adopted on a widespread basis; however, multiple positive findings support continued exploration.” I summarised the causal evidence on choice as an assignment mechanism in Burgess (2017) and also found there to be no clear picture. There are certainly some positive, though often contentious, findings, but null results are more common. Certainly for England, the consensus is for no effect, and I discuss the possible reasons for this below.

## 3. Market Forces 1: Competition and Dynamics

18. It is most useful for policy to move beyond the simple “does school competition work?” question and try to understand the underlying market dynamics. I illustrate this with evidence from England, with one of the longest running school market systems, and also great educational data. The little robust causal evidence we have for England suggests that school choice and competition have little effect on attainment outcomes. (See three causal studies: Gibbons et al, 2010; Burgess and Slater, 2006; Allen and Vignoles, 2010.) The interesting question is why – what are the market and policy failures?

### 3.1. The links in the chain: Evidence on schools in England

19. The conditions needed for school competition to ‘work’ in raising attainment are set out in Allen and Burgess (2010), reviewed briefly here.

20. First, choice must simply be feasible in that most people must have a practical choice between schools. This condition is met in England for almost everyone. Most have easy access to several schools within relatively short distances of their home. Furthermore, there is good evidence that in many cases the parents’ choices are decisive, as high fractions of families get into their top choices.

21. Second, it must be the case that the choosers value highly the attribute that policy wants to raise, namely pupil achievement. If all that parents cared about was the smartness of the school uniform then choice would drive that. Our estimate of parental preferences for school attributes shows this to hold (see Burgess et al 2015); parents do strongly value school performance. Third, choosers must be able to identify the levels of attainment generated by different providers. In England, this criterion is met through the school performance tables, which provide detailed performance data on an annual, comparative basis. This information is functional in helping parents to choose schools (see Allen and Burgess, 2013).

22. The final criterion is key to understanding why market competition does not work as it should. Popular providers must respond to demand from choosers by providing more, and less popular providers by providing less. If this does not happen then unmet demand and unwanted supply will just leave families frustrated with their options and no amount of strengthening school choice and competition will yield the desired market outcome.

23. The next sub-section presents evidence that this criterion is not met, and the implications of this for the role of market forces.

### 3.2. Effective Demand, Supply Dynamics

24. The relationship between school growth and school performance can be addressed empirically using the long run of school data now available in England<sup>3</sup>. The data follows schools from 2002 to 2011, focussing on the intake to secondary school, year 7. The school performance indicator uses measures of publicly available school performance data relative to its local competitors. Second, the measure of school growth differentiates changes in long-run capacity from small, ephemeral ups and downs in numbers<sup>4</sup>. The other potential driver of school growth is local population growth, which we measure as the number of age-appropriate pupils living near to the school<sup>5</sup>.

25. The results are in Figures 1 – 4 and Table 1. Figure 1 simply graphs the fraction of schools increasing capacity against academic performance for the full period and for all schools in the sample. While there are variations, clearly there is no overall relationship. Figure 2 splits the time line in half and again we see no relationship in either sub-period. Figure 3 addresses the issue of whether areas with declining populations have the scope to encourage more growth in higher performing schools. In fact, the split by population growth reveals no differences. Finally, in Figure 4, to avoid potential aggregation issues, I take one large city and follow the paths of individual schools. There is no difference in the evolution of the size of schools between high-performing, low-performing or average schools.

26. Table 1 reports regression results correlating school growth measures with academic performance, with local population growth and an initial size condition. Local population growth matters enormously and school academic performance not at all. School growth was driven purely by demographics, and not at all by performance or (assumed) popularity.

### 3.3. Implications

27. Finally in this section, I consider the implications of this for simple competitive market forces in the schools market. The key point is this: for schools in the state sector in England, the link between popularity and expansion is entirely missing.

28. The first effect of this is that the operation of market forces does not generate more good places in schools. This can lead instead to improving schools becoming more

---

<sup>3</sup> This work was begun with Rebecca Allen, reported in Allen and Burgess (2012), and I have now extended it.

<sup>4</sup> Since there is no robust historical capacity data, we take an increase of 20 or more students as this measure. Schools typically expand in units of a whole class (say 25-30 pupils) and a cut-off of 20 will likely pick most of those up. It is worth noting that a secondary school increasing capacity by 20 pupils in year 7 will have to deal with 100 extra pupils in school in steady-state.

<sup>5</sup> Local authorities are too large to capture “local” so we count the number of year 7 pupils living in a neighbourhood round the school. Specifically, we take the number of year 7 pupils living in the nearest 25 lower super output areas (LLSOA) to the school. For scale, a typical LLSOA has 22 year 7 pupils.

restrictive in their intake if they are isolated; schools improving as a group will not have that tendency. There is no price, and often the queue is not very visible.

29. The second effect is a spill-over from the first effect. In a system that is constrained overall in terms of the total number of places, the competitive threat to under-performing schools is severely undermined if they are not going to shrink in size. The spill-over effect from non-expanding good schools is non-contracting underperforming schools.

30. The implication is that the two channels by which competition can induce greater productivity (the selection/reallocation effect and the direct competitive threat effect) are weakened by this disconnect between popularity and growth.

31. The policy failure is that there are no incentives for the growth of good schools. While schools are incentivised to get better, good schools have no incentive to spread that goodness around more. Consequently, the incentive on low performing schools to get better is much less powerful.

32. This is not to deny that parents may have a preference for smaller schools, nor that there are likely to be limits to the cost-effective size of a school, as discussed above. But set against these points, the systemic benefits of market responses to quality are neglected.

33. There are two broad categories of reasons why popular schools may not expand: they do not want to; or they do want to but can't. The former includes factors such as wanting to maintain a reputation for high quality and believing the peer group to be important, wanting to maintain the exclusivity and enjoying the long queue at the door, or simply preferring an easy life over the difficulties in securing an expansion. The latter might be because of physical space and planning regulations, or from lack of capital funding or current funding for extra teaching or management capacity. It can also sometimes be that local public opinion is vociferously against school expansion, though that is more an issue for a Local Authority than for an individual school.

34. The key factor governing schools' responses to higher demand is the nature of schools' incentives and constraints. The actors are school Headteachers and Governing Boards. For Headteachers, the typical incentives are likely to include: pay; career concerns; effort and hassle; perhaps a "mission" orientation, professional pride or prestige (probably all linked to academic quality). For school Governors, probably also "mission" and professional pride, and wealth as measured by local house prices. None of these things suggest that school expansion will be beneficial to leaders, and indeed is likely to generate far more hassle and effort.

#### 4. Market Forces 2: An Oligopolistic Market

35. The conclusion of the previous section is that either by default or by design, competition is not going to work through popular schools expanding. In turn, this relaxes the pressure on low-performing schools. If we are to treat individual schools as essentially fixed in size, then the alternative way for high-performing schools to expand is through 'take-over'. This suggests a different kind of 'market forces': of take-overs, chains and groups of schools<sup>6</sup>.

---

<sup>6</sup> We discussed this in Allen and Burgess (2012) and in Burgess et al (2005), as an alternative to school growth.

36. Much of the recent debate in education in England relates to groups of schools, although focussing on other aspects of the groups. The key point is this: school groups should be the alternative instrument for school improvement, not simply a mechanism for reaping economies of scale. There is also a significant possibility that larger groups of schools might be harder to subject to market/accountability discipline, and might find ways of hiding or cushioning coasting schools.

37. In this section, I will discuss the optimal formation of school groups, starting from the perspective of market competition and therefore school improvement. The idea is to contrast what policy might want from this process with what the market might provide. Part of this optimal formation is about the internal structure of the school group, and this leads on to the discussion of school autonomy.

#### **4.1. Optimal formation of school groups**

38. The key questions are: which schools should form groups with each other? What should be the nature of the contract between them? Are the optimal groups likely to arise from current market incentives, or perhaps the opposite? What regulations or mechanism do we want to manage the formation of groups?

39. As I noted above, the alternative to the straightforward expansion of an existing facility is the creation (or take-over) of new facilities. A typical example is a restaurant: a restaurant is set up, and proves very popular, with long waiting lists for tables. The owner decides to open up a new one with some explicit connection in the name, and if the set-up works and there is still more demand, more might follow in other cities, with explicit chain branding. This expansion is ‘bottom up’ and seems wholly positive.

40. One of the most important things we want policy to achieve with school chains is to mimic the operation of a market, in the following sense: we want highly successful schools and leaders to provide education for more pupils and unsuccessful ones for fewer. The formation of school groups can help a lot to achieve this. We want existing high performing schools to “form a group with”, essentially, to take over, a nearby low-performing school. Or an existing chain of high-performing schools to do that. A method or style of teaching might easily be scalable; similarly school management methods may also be equally applicable to groups of schools.

41. There seems to be little point in encouraging just random assemblages of schools to join together beyond pooling back-office functions and bulk-buying stuff. More clearly, we would surely want to rule out a group of all local low-performing schools banding together. Why? Two reasons – first it removes effective choice from parents if all local schools are of the same ‘brand’. Secondly, by removing choice it also removes the pressure to improve. As the number of school take-overs and chains and ‘brands’ increases, there will be issues of market power to think about. This is a major issue in hospitals, and should become so in schools.

42. A much looser form of school group would be a simple partnership where schools support each other, but there are no stronger links. These partnerships may involve the better-performing school giving advice and support to the others. Many Headteachers may relish this opportunity to help other Headteachers. Others may find it a diversion of their effort and time, and in any case none are likely to put as much effort into another school as into their own (particularly if the other is local and so in principle a rival). Is advice enough

to turn a school around?<sup>7</sup> Policy needs to find a way to engage more deeply the head of the high-performing school; for that person to act as if the other school was an extension of their own, but without a formal take-over. There are a number of possibilities here, which could combine financial rewards and more reputational devices. For example, the name of the advising Headteacher could be publicly linked to the low-performing school to increase their personal stake in its progress; or the advising school or head could share in the financial rewards of the other school as it improved its performance.

## 4.2. Autonomy

43. One particular aspect of the contract and formal structure of a school group is governance. Where does control lie? Are individual schools wholly controlled by the group? Or is it a much looser association with schools retaining autonomy?

44. There is great scope for irony now in the discussion of autonomy in school groups in England. The rhetoric around the formation of Academy schools and their rapid expansion under the Coalition government focussed on the “freedom” of the new schools from Local Authority control. By becoming an Academy, they would gain greater autonomy in running their own affairs. In fact, under a policy called Local Management of Schools, the constraints on schools’ policies were few and weak. The irony is that academies are now being coerced into school groups, most of which are likely to provide their schools with very little autonomy.

45. The evidence does suggest that school autonomy is positive in boosting attainment. This evidence comes principally from the US where researchers can use lotteried admission to autonomous schools to isolate a causal effect. Autonomy typically means operational control, curriculum design, accountability, and freedom over pay and conditions. Loosing autonomy would probably be a retrograde step.

46. How much autonomy do schools have within a chain? And if the most effective chains are the ones keeping the tightest grip on their schools, did we get wrong the level at which to increase autonomy? Should it perhaps be groups of schools that have autonomy (chains and of course, ironically, local authorities), rather than individual schools? While commentators champion autonomy, this is usually meant as autonomy from government rather than autonomy from Chain HQ. While one widespread current view is that what school groups do is aid collaboration, it is actually not clear that collaboration in the everyday sense is what effective school chains do. In some cases it is more that the over-taking chain does some possibly rather un-collaborative turning around of the taken-over school. This is surely what policy makers and local parents would want. That may not always work, but I think it is a mistake to see chains as synonymous with collaboration. In summary, collaboration may not be what the few effective chains do, and there is little evidence that collaboration works to raise attainment.

## 4.3. What school groups do

47. There are different types of school groups. There are a few tightly structured chains with a very strong corporate ethos and strong central control, for example ARK schools.

---

<sup>7</sup> The piece of evidence typically cited to argue that school cooperation is enough is the role of the London Challenge in driving the higher test scores in London; this role is challenged, however.

There are also much looser groupings, with individual schools retaining all their power. Some groups are geographically spread out, others are local including for example the Cabot Learning Foundation in Bristol has 6 local secondary schools. The recognised variants of collaboration<sup>8</sup> include a multi-academy trust (where one academy trust governs a group of schools through a single set of members and directors); an umbrella trust (in which the schools retain the autonomy of having their own trust, but agree a structure with a group of schools to allow shared governance, collaboration and procurement); and a collaborative partnership model (in which academies work together in an informal chain, with the schools involved continuing to exist as separate academy trusts without any joint governance structure). There was also a commitment to support others embedded in any school becoming an academy<sup>9</sup>: “Every school that has become an academy will have committed to supporting another school, whether through a formal chain or more informal arrangement. ... Being a sponsor [to an under-performing school] is a challenging but valuable role for the lead school. It means a high standard of education is also made possible for pupils in the sponsored school. It will give the lead school the opportunity to share good practice, build on their reputation and develop the careers of their staff.”

48. There has been a tendency (until very recently, basically a blind hope) to see all chains as good things – highly effective or at worst, benign. But some recent work has suggested that perhaps just a couple of chains are transformative (ARK and Harris), and the others are pretty average. One chain, AET, has been strongly criticised by OFSTED. However, the recent White Paper proposes a policy that is much more restrictive and proscriptive about groups of schools, promoting the multi-academy trust (MAT) model above all others. This policy is still evolving, and it is only slowly becoming clear what schools will have to do.

## 5. Conclusion

49. As in any market for goods with public-good-like features, the market for education is important. The main product of the market is a certain level and distribution of skills. This matters for many key items on the domestic policy agenda – growth and prosperity; inequality and fairness; social mobility and social cohesion.

50. There are a set of market regulation issues that are much broader than the simple question “should we have school competition?” I have outlined some of these here. They further imply the need for policy decisions on different facets of market operations. For example, what rules govern market entry? Or for exit, who decides when schools should close and what does closure mean here. Does the market information structure need to be strengthened? What should be measured? What incentive structure needs to be put in place for school leaders and governing boards? Answers can be offered to these questions based on the above discussion, but the evidence base is not yet fully water-tight.

---

8

<http://www.education.gov.uk/schools/leadership/typesofschools/academies/academiesfaq/a0068041/academy-chains-faqs#faq1>

9

<http://www.education.gov.uk/schools/leadership/typesofschools/academies/academiesfaq/a0068041/academy-chains-faqs#faq13>

51. Evidence is accumulating, but is not straightforward. Cross-national evidence comes from the study of educational institutions and comparable test score outcomes, with the portfolio of work from Hanushek and Woessman to the fore. These are very useful, but causality is difficult to establish in such studies. Causal statements – which are clearly key for policy prescriptions – generally have to be based on local studies, undertaken in a single country, and driven by a circumstance or experiment that allows proper identification. When both sorts of evidence agree, this feels more secure, and offers progress.

## References

- Allen, R. and Burgess, S. (2013) 'Evaluating the provision of school performance information for school choice.' *Economics of Education Review*, vol.34, pp. 175-190.
- Allen, R. and Burgess, S. (2010) *The future of competition and accountability in Education. 2020 Public Services Trust at the RSA Report*. Royal Society of Arts: London.
- Backus, M. (2019) *Why is Productivity Correlated with Competition?* NBER Working Paper No. 25748.
- Burgess, S. (2017) *Education systems: Assignment, admissions, accountability and autonomy*. In Blundell, R. et al (eds) 'Economics without Borders: Economic Research for European Policy Challenges'. Cambridge University Press, Cambridge.
- Burgess, S. and Slater, H. (2006) 'Using Boundary Changes to Estimate the Impact of School Competition on Test Scores.' CMPO DP 06/158. CMPO.
- Burgess, S., Greaves, E., Vignoles, A. and Wilson, D. (2015) *What parents want: school preferences and school choice*. *Economic Journal* vol. 125 pp. 1262-1289
- Epple, D., Romano, R. and Urquiola, M. (2017) *School Vouchers: A Survey of the Economics Literature*, *Journal of Economic Literature* 2017, 55(2), 441–492
- Gibbons, S., Machin, S. and Silva, O. (2010) 'Choice, competition, and pupil achievement.' *Journal of the European Economic Association*, vol. 6 (4),pp. 912–947
- Nickell, S.J (1996) *Competition and Corporate Performance*. *Journal of Political Economy* vol. 104, pp. 724 – 746.
- Porter, M.E. (1990) *The Competitive Advantage of Nations*, Macmillan, London

**Annex A.**

**Figure 1. School Growth and Performance, 2002 – 2011**

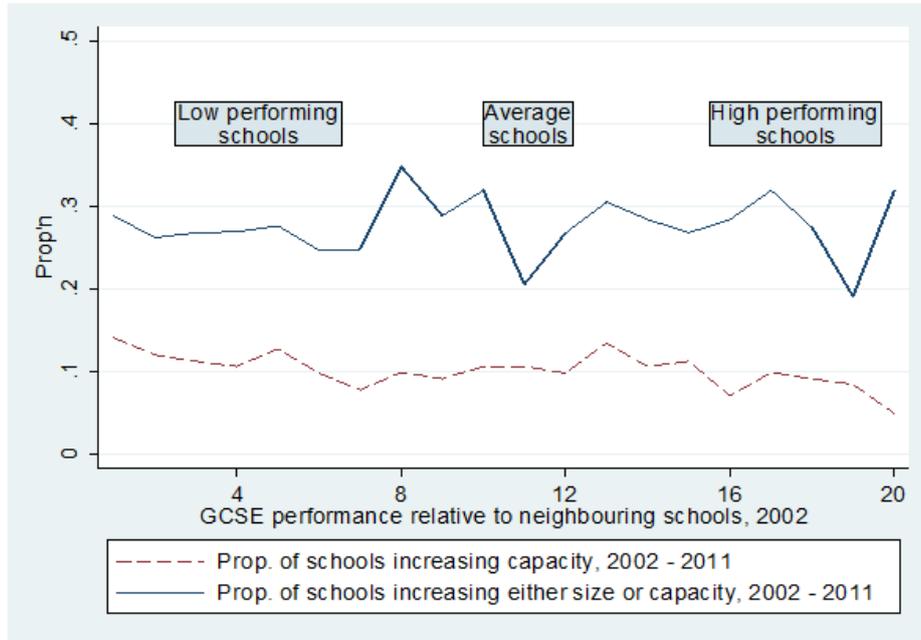
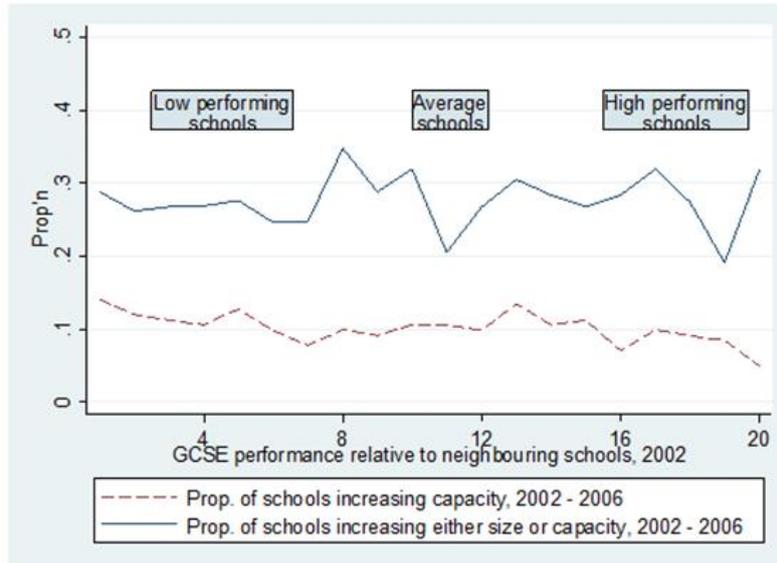


Figure 2. School Growth and Performance, 2002 – 2006, 2006 – 2011

2002 – 2006



2006 – 2011

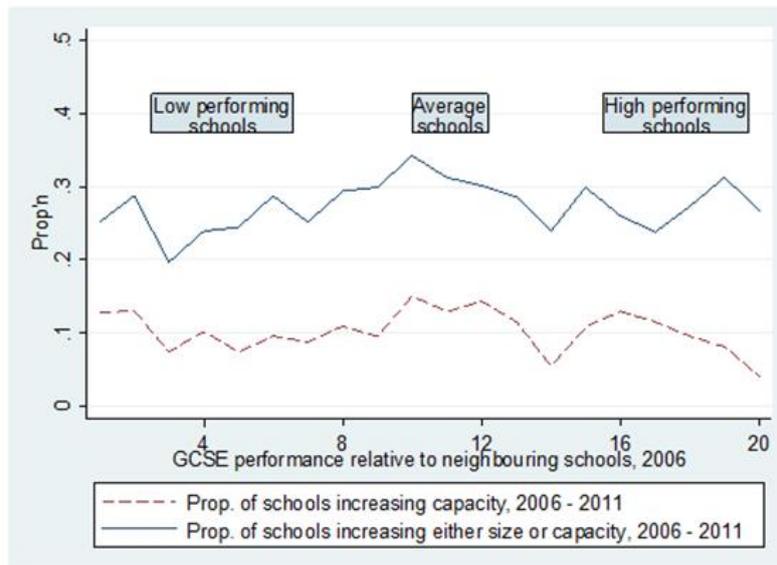
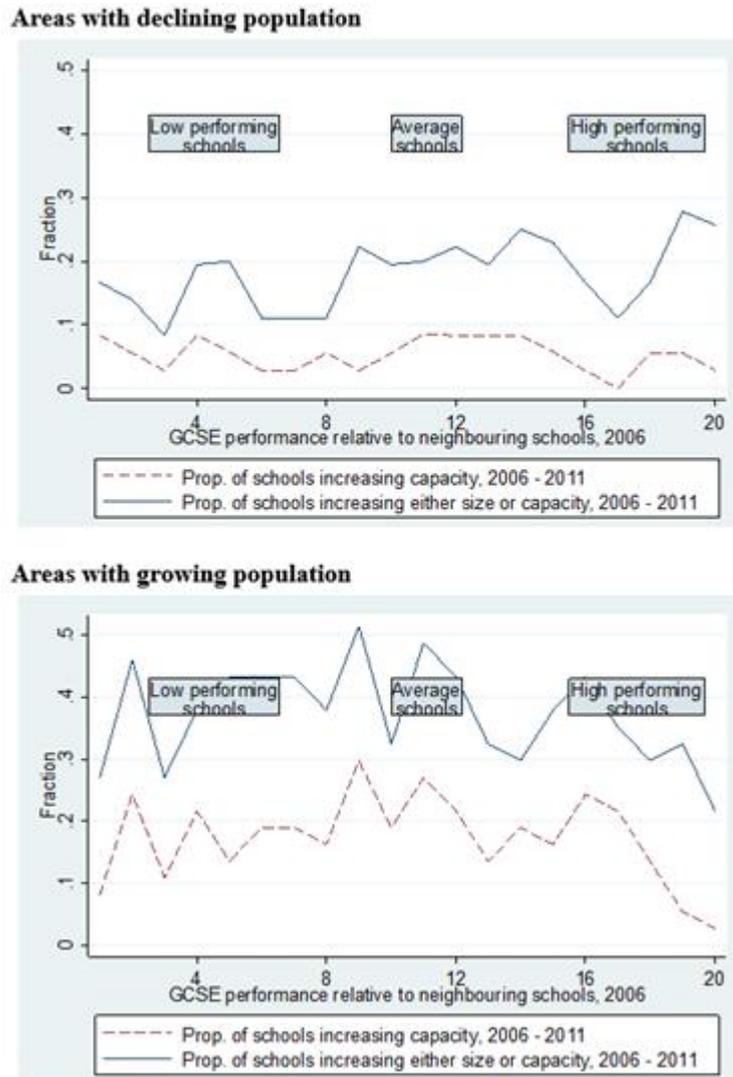
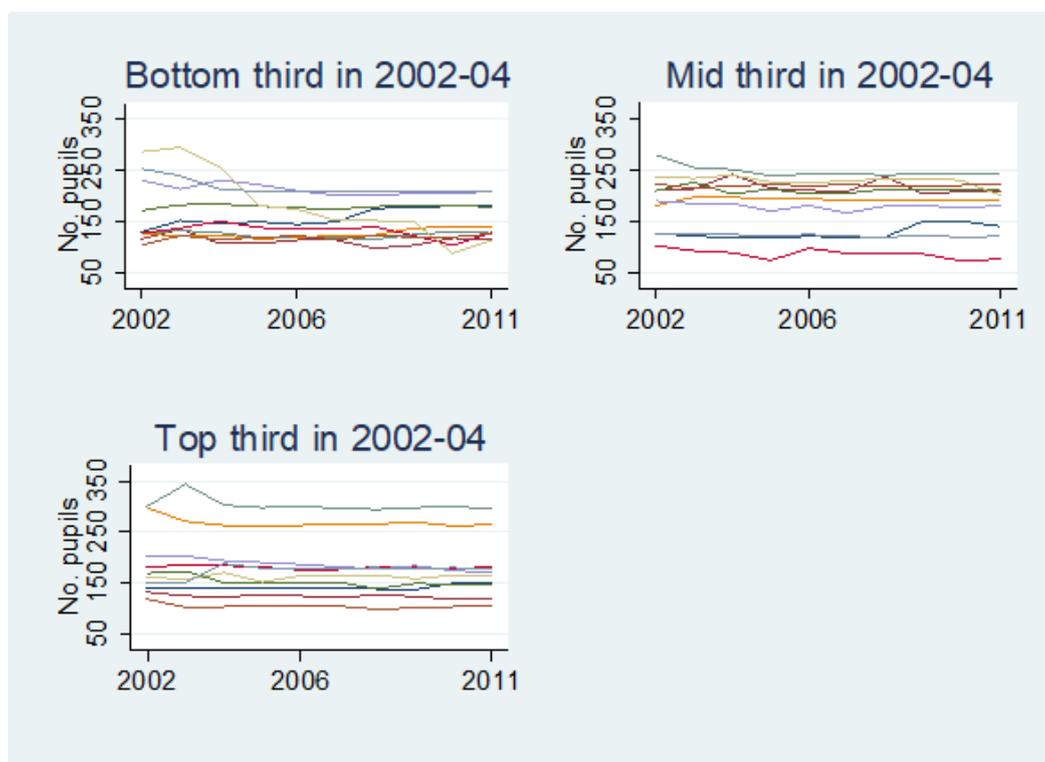


Figure 3. School Growth and Performance by Neighbourhood Population Growth



**Figure 4. School Growth and Performance, School-by-School in One City**

*Note:* Birmingham: 10 randomly chosen schools from each of the top, mid and bottom third of relative quality distribution over 2002-2004.

**Table 1. The Likelihood of Capacity Increase in Secondary Schools**

Capacity increase: growth of more than 20 pupils				
	(1)	(2)	(3)	(4)
Quality measure		0.902 (1.63)	0.928 (1.19)	1.012 (0.09)
Size (2002)	0.475*** (9.02)	0.475*** (9.00)	0.475*** (9.02)	0.475*** (9.03)
Change in local population	1.987*** (8.98)	1.986*** (8.96)	1.986*** (8.96)	1.987*** (8.98)
N	2351	2351	2351	2351

*Note:* Odds ratios reported; size and change in local population are normalised (mean 0, sd 1). Quality measures are: (2) GCSE score relative to neighbours, 2002; normalised; (3) GCSE score relative to neighbours, averaged 2002 – 2004; normalised; (4) Above the local neighbours in at least 8 years out of 10; binary.