



The report card on competition in schools

By

Steve Bradley and Jim Taylor

Department of Economics, Lancaster University

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Contents

Foreword: About the Better Education Project	3
Executive summary	4
1. The search for equity and efficiency	5
2. Reform of the secondary sector	6
Supply side reforms	6
Demand side reforms	7
Changing incentives	7
3. Did the reforms create a market?	9
Table 1: Admission to secondary schools	10
4. The effect on schools' efficiency	11
Performance of different schools and pupils	11
Table 2: Exam performance in schools	12
5. The effect on equity	15
6. Conclusions	16
References	18

Bibliographical information

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Foreword

The better education project

This report is one in a series of ten policy papers to be published this year as part of the work of the Adam Smith Institute's Better Education project.

The aim of the project is to define practicable policies — ones which can be made real within a single Parliament — for maximising educational outcomes, based on the principles of competition and choice, and targeted at delivering better quality, value for money, efficiency, access, responsiveness, and inclusion.

In a wide-ranging research and discussion programme involving key figures in education in both public and private sectors, in the UK and overseas, the project is calibrating options politically and commercially as part of a process to widen and deepen public debate. Working through the details of these options, the ultimate goal is to develop practicable proposals that can and will be implemented.

In this important paper, the authors Steve Bradley and Jim Taylor examine the practical effects of the more competitive environment for schools following the Education Reform Act of 1988. They suggest that some elements of a 'market' in education were created by that initiative, and that, like the customers of other markets, parents have sought out quality. Exam performance standards have risen as schools feel the effects of competition and have tried to meet this new, more discriminating, parental demand.

The authors also discover that, while there is some evidence that the gap in the social composition of schools has widened — a key objection often made against choice and market principles being brought into education — the effect is small. And they suggest that it can be mitigated even further by innovative policies to ensure that low-income families can achieve fair access to the schools that are performing best.

For us, the message that seems to come out of this detailed research is clear. The rudimentary 'market' in education created by the 1988 Act spurred parents to seek out quality and created the incentives for schools to provide it, without creating the forecast problems of social polarisation and unfairness. Should we not be celebrating diversity in the provision of education, and building on it, instead of constraining our schools and our teachers within detailed central control?

Dr Eamonn Butler (Director)
Matthew Young (Special Projects Director).

Executive summary

Britain's education system was radically transformed by the Education Reform Act (1988). The objective of these reforms was to raise educational attainment through the establishment of a quasi-market based on greater parental choice of school and the transfer of control of resources from local education authorities to the schools themselves. Annual *School Performance Tables* were published in order to help parents make a more informed choice of school.

This report asks whether these reforms were actually successful in bringing competitive forces into education, and what the effects have been in terms of efficiency and equity.

Analysis of data from 3000 publicly funded schools provides these answers:

- (1) Parents have sought quality. Schools with a 'good' exam performance relative to their local competitors have taken a bigger share of the market.
- (2) The exam performance of schools is positively related to school size. Small schools are at a disadvantage in terms of exam performance.
- (3) Exam performance has risen as schools feel the effects of competition and try to outdo the achievement of other schools nearby.
- (4) There is some evidence of a widening gap in the social composition of schools, though this is small.

However, factors other than competition may have produced the improvement in exam performance. Government efforts to expand higher education may increase the pressure to 'do well' in GCSEs. There is a growing realisation that in the information age, job prospects are linked to educational performance. And with the publication of performance tables, schools may have focused on the headline A* to C grades rather than more diffuse targets.

Since the introduction of market forces has had a positive impact on the exam performance of schools, it seems appropriate to use the market mechanism as a means to deliver further improvements. Attention needs to be focused more directly, however, on improving the performance of pupils from lower-income groups, since this is where the problem of poor performance mainly lies.

In terms of future policy, an obvious extension of the competition approach is to provide incentives to get the best teachers and the best school management teams into the schools with the worst performance.

An alternative policy is to create incentives for schools with 'good' exam results to take a greater proportion of their pupils from low-income families, allowing them greater resources to offset the disadvantages of their family background. Such a policy would help pupils from low-income families to benefit from peer-group effects on their performance, thereby raising the average level of educational attainment.

1. The search for equity and efficiency

This paper reviews the findings from an on-going programme of research into the potential effects of introducing market forces into the secondary education sector in England. There is a long running debate about the role of markets as a method of providing education (Friedman 1962) and this continues to rage in both the United Kingdom and the United States. Central to this debate is the efficiency-equity trade-off. Those in favour of state provision of education argue that the consequence of introducing market forces will be an increase in the socio-economic segregation of pupils and greater income inequality.¹ Wider social benefits generated by education, such as the promotion of citizenship, a deeper sense of community, support for democracy, and knowledge spillovers to the rest of society, can only be achieved, it is claimed, through centralised provision.

In contrast, those who favour a greater role for the market in the provision of education argue that state provision has led to a reduction in efficiency. In the absence of appropriate incentives, resources are wasted, costs are higher and the quality of education is lower. *Productive* efficiency is therefore reduced. Because parents and pupils have less control over their choice of school under state provision, there is also a greater possibility of mismatch between pupil and school, leading to poorer academic performance and hence *allocative* inefficiency. Others go further and argue that under a market-based system of educational provision, households are more likely to make optimal decisions regarding the investment in their children's education.²

In spite of this long-standing debate, there have been very few empirical studies into the efficiency and equity effects of different education systems. Educationalists have sought to address these issues, but have adopted a qualitative approach, drawing upon case studies of selected schools or school districts.³ Valuable though these studies are, they nevertheless suffer from the limitation that their findings cannot easily be generalised. We have departed from this approach in a series of recent papers. We have assembled a database of all secondary schools in England, covering the period 1992-2000, which we have used to undertake a more rigorous statistical analysis of the effect, on efficiency and equity, of introducing market forces into education.⁴

This paper summarises the key findings of the research, addressing the following questions:

- (1) What reforms have been implemented in the secondary education sector to create a market?
- (2) Have the reforms actually created a market in secondary education provision?
- (3) What has been the effect of market forces on the efficiency of secondary schools?
- (4) Have market forces led to an increase in the polarisation of pupils of different social backgrounds between 'good' and 'bad' schools?

¹ See Levin (1991a, 1991b); Chubb and Moe (1988).

² See Hoxby (1996); Le Grand (1991).

³ See Levacic and Hardman (1998).

⁴ See Bradley and Taylor (1998); Bradley, Crouchley, Millington and Taylor (2000); Taylor and Bradley (2000); Bradley, Johnes and Millington (2001); Bradley and Taylor (2002).

2. Reform of the secondary sector

The provision of education in Britain was radically transformed following the Education Reform Act (1988). The primary motivation for these educational reforms was to create a *quasi-market* in education, with a view to raising educational standards and pupil performance: many people had become dissatisfied with the relatively poor performance of our educational system, compared to other economically advanced nations, such as Germany. In particular, too many pupils left school without any qualifications and a relatively low proportion of pupils continued their education beyond the minimum school leaving age.⁵ This in turn created a less skilled workforce with relatively low productivity, giving rise to a so-called 'skills gap'. At a macroeconomic level, this could have led to a loss of competitiveness in world markets.

To help remedy these deficiencies, the Conservatives introduced reforms in the 1980s and early 1990s, aiming to create a quasi-market in education. The two key elements to these reforms were greater parental choice and allowing schools to compete for pupils. Both the demand side and the supply side of the market were therefore affected. It was also expected that a school's exam performance would play a similar role to price, insofar as it signalled to parents the quality of education being provided.

Supply side reforms

The powers of the Local Education Authorities (LEAs) over educational provision were curtailed as a result of three major changes to education policy. First, the introduction of formula funding based on age-weighted pupil numbers; second, the local management of schools; and third, up until the election of the Labour Government in 1997, the opportunity to opt out of LEA control.⁶

Research reveals that formula funding has had a major effect on school budgets. Changes in the school roll, for example, mean that schools can face drastic year-on-year changes in funding.⁷ Furthermore, an increasing number of schools decided to opt out of LEA control during the 1990s in order to gain even greater control of their own budgets.⁸ Although the Labour Government subsequently decided to abolish grant-maintained schools, there has been no reversal of the policy to reduce the LEA's control over the funding of schools. Indeed, the willingness of the Government to bring in the private sector to 'manage' those schools where the LEA has been deemed to fail illustrates the point.

Control over school budgets has therefore been delegated to the schools themselves because it was felt that expenditure decisions on school inputs would be more optimal. The schools themselves now have far greater control over the way in which resources are allocated. Each

⁵ See Prais (1995); Keep and Mayhew (1988, 1999).

⁶ The erosion of LEA control has been matched by greater central government control over the curriculum and funding of schools in England.

⁷ See Levacic and Hardman (1998).

⁸ According to our database, the number of schools acquiring grant maintained status increased from 216 in 1992 to 638 in 1998.

school's management team, including the governors and head teacher, now take key decisions regarding the recruitment and promotion of staff as well as the termination of staff contracts. In addition, 'open enrolment' has removed the upper limit on the number of places available at the most popular schools, which had previously been set by the Department for Education and Employment (DfEE) in conjunction with the LEAs. Popular schools are now free to grow in size, subject to the short-run constraint of physical capacity.

Demand side reforms

On the demand side, the introduction of technology colleges, grant-maintained schools and, more recently, the facility for schools to acquire 'specialist' status, together with the policy of open enrolment, has increased parental choice. In fact, the Government went so far as to state that '... no child should be refused admission to a school unless it is genuinely full' (DES, 1988). Allowing schools to acquire 'specialist' status means that the content of the curriculum is likely to become more varied between schools, leading to greater choice. For parents to make informed choices, however, information must be available for all schools on a consistent basis to allow comparisons to be made. This information is made available through the annual publication of the *School Performance Tables*, which report each school's performance in public examinations and its truancy rate. Parents also have access on the internet to OFSTED's latest school inspection reports if they want more detailed information about a school's activities and performance.

Changing incentives

We argue that the reforms described above have changed the incentives facing parents, schools and the LEAs. Parents generally want the best education for their children and the reforms have increased their ability to choose an appropriate school. The exam performance of a school is likely to be a major factor influencing this choice. The LEAs are charged with providing an acceptable level of education and are ultimately responsible for maintaining the quality of educational provision in LEA-controlled schools.

The objectives of the school are more complicated. They exist primarily to provide a 'good' education for their pupils, which can be demonstrated through their exam performance. However, by encouraging schools to compete for pupils, additional incentives have been introduced. Since popular schools are expected to attract more pupils, and given that educational resources follow pupils, school managers have an incentive to expand pupil numbers. Moreover, the expansion of pupil numbers could eventually result in an increase in the physical capacity of the school.

But why should we expect school managers to adopt a growth strategy? One reason is that the salaries of a school's management team, particularly the head teacher, may be linked to the number of pupils in the school. Furthermore, an increase in the school roll may mean that staff have a greater opportunity to specialise in what they want to teach, leading to greater job satisfaction.

In this competitive environment, less-popular schools have an incentive to improve their performance in order to maintain pupil numbers, and thus the number of teachers in the school. In fact, improved performance may be necessary in order to survive. The creation of a

quasi-market was therefore expected to improve educational standards because of a more competitive environment.

But popular schools might fear that their performance could be jeopardized if they grow too big. To ensure they keep their competitive edge, they may try to become more selective in their recruitment of new pupils.⁹ Ostensibly non-selective schools (i.e. comprehensives) may therefore implicitly adopt a selective policy. In addition, the creation of specialist schools could provide new opportunities to select on the basis of academic ability. Recruiting high ability pupils to maintain educational standards is clearly one possible strategy until the physical capacity constraint becomes binding.¹⁰ However, this strategy may have a downside insofar as the education system becomes more 'polarised', by which we mean that the socio-economic composition of schools may diverge.

⁹ See West, Pennell and Noden (1998).

¹⁰ Open enrolment means that schools cannot operate a selective policy since schools can be forced to take pupils if they have the capacity to do so. However, the existence of a capacity constraint gives schools the ability to operate a selectivity policy implicitly. The ways in which schools have pursued a selection admissions policy is discussed in West, Pennell and Noden (1998).

3. Did the reforms create a market?

Before we can begin to discuss the consequences of introducing market forces on educational outcomes, it is necessary to establish that a market has been created. In what ways, if any, has increased competition, together with the policy of open enrolment, affected the distribution of pupils between schools? If a market exists, the number of new admissions to a school should be influenced positively by a school's performance: schools that perform well compared to their competitors should grow — admitting more pupils, and perhaps building new classrooms — faster than schools that perform badly.

So does this happen? Using data for over 3000 publicly funded secondary schools in England, we have estimated the impact of a school's exam performance (relative to other schools in the same locality) on its annual intake of new pupils. In doing this, it is necessary to control for a wide range of other determinants of a school's new admissions.¹¹ New admissions to a school depend, for example, on variables such as the type of school, the admissions policy of the school, the school's truancy rate, the family background of the school's pupils and the physical capacity of the school.

Table 1 shows that schools funded directly by the DfES increased their admissions by over 16% between 1992 and 2000 compared to an increase of under 4% for county schools, which are controlled by the school's local education authority. Table 1 also shows that schools with a selective admissions policy have increased their admissions by nearly 20% compared to only 4.4% in comprehensive schools. By controlling for these and other influences on new admissions, we are able to isolate the specific effect of a school's own exam performance as well as the effect of the exam performance of a school's immediate competitors in the same locality.

It turns out that new admissions are positively related to a school's own exam performance and negatively related to the exam performance of its competitors. An improvement in exam performance of 10 percentage points (compared to competitor schools) is associated with an increase in the rate of change in new admissions of around 5 percentage points. Similarly, the best-performing schools grow the fastest. The effect is not large, however — which may be a consequence of the reluctance of schools to expand unless they believe that the increased demand for places will persist. A further reason may be that the most popular schools are capacity constrained, which our analysis confirms.

In light of these findings, we also examined the impact of the demand for places on each school's pupil capacity. Where schools face a continuous excess demand for places, they can grow only by increasing the school's physical capacity. Our findings suggest that an excess demand for places of 10 per cent is associated with a subsequent increase in physical capacity of 3 per cent. Schools have therefore responded to an excess demand for places by increasing their pupil capacity. Again, the effect is not large, but does nevertheless indicate that the introduction of market forces into secondary education has had the expected effect.

¹¹ We have used multiple regression techniques to do this.

Our statistical analysis of all publicly funded secondary schools in England during the 1990s therefore provides convincing evidence that a quasi-market has indeed been created as a result of the educational reforms.

In the next two sections we explore the effects of the quasi-market on the efficiency of secondary schools and on the polarisation of pupils from different socio-economic backgrounds between schools.

TABLE 1. Admissions to secondary schools in England, 1992-2000

School characteristic	Number of schools	% change in new admissions 1992-2000
<i>School governance</i>		
County	2030	3.6
Voluntary assisted / controlled	603	4.9
Funded directly	497	16.4
<i>Admissions policy</i>		
Comprehensive	2787	4.4
Secondary modern	179	15.3
Selective	164	19.8
All schools	3118	5.8

Notes:

1. Schools funded directly from the DfES include City Technical Colleges.
2. The characteristics of schools refer to their status in 2000.
3. Schools have been able to apply for special status (for funding purposes) since 1997.
4. Not all secondary schools could be included since information for each school in 2000 had to be matched up with information for the same school in 1992 and this was not possible for all schools. There are 3202 and 3156 schools in the original 1992 and 2000 data sets respectively.

Sources: School Performance Tables, 1992 and 2000; Schools' Census, 1992 and 2000.

4. The effect on schools' efficiency

Now we know that quasi-market forces exist in education, we need a measure of school performance in order to estimate whether they have had the desired effect on school outcomes. In our statistical analysis of secondary schools, we have used the number of pupils obtaining five or more GCSEs at grades A* to C *per teacher* as our performance measure. We have investigated the effect of the educational reforms on this variable in over 3000 publicly funded secondary schools in England during the 1990s.

This indicator of performance has obvious shortcomings. First, schools do far more than produce exam results and it could be argued that focusing entirely on exam performance provides only a very narrow view of a school's true performance. Our response is that exam performance is one of the critical variables determining school choice and is therefore used by parents as a key performance indicator. The advantage of using exam results as a measure of performance is that published data exist for all publicly funded schools from 1992 onwards.

The second drawback of exam performance is not as serious. It has been argued that trends in exam results over time may not reflect true changes in performance due to changes in assessment methods. In other words, the continuous improvement in exam results during the 1990s may inflate the true improvement in exam performance. The recent five-yearly review of standards for a range of GCSE subjects by the Qualifications and Curriculum Authority offers no support for this view.¹² The QCA concluded that standards had been maintained during 1995-99. Even if standards had fallen, this would not affect the value of exam results as a performance measure in the statistical work that we have undertaken. This is because we use exam results not to measure the *absolute level* of exam performance but to compare the *relative* exam performance of schools in competition with each other. Our intention is to discover the extent to which schools have affected each other in their exam performance as a result of the establishment of the quasi-market.

The exam performance of schools varies considerably according to a school's characteristics. Table 2 shows that county schools achieve a much lower proportion of exam successes than either voluntary assisted schools or directly funded schools. It also shows that the selection of pupils on academic grounds has the expected effect, with selective schools having a success rate of almost 100%. Exam performance is also higher in certain types of specialist school, with those specialising in languages or technology having higher exam success rates.

Performance of different schools and pupils

There is considerable *prima facie* evidence that the fundamental cause of these disparities in exam performance between different types of school is the socio-economic mix of pupils. The extent to which a school's pupils come from families on income support is reflected in the proportion of pupils entitled to free school meals. And the very strong negative

¹² See *Five-yearly Review of Standards Reports: Summary*, Qualifications and Curriculum Authority, 2001 (www.qca.uk).

TABLE 2. Exam performance in secondary schools in England, 1992-2000

School characteristic	Number of schools	% pupils with 5 or more A* to C grades	% pupils with 5 or more A* to C grades	Change in % pupils with 5 or more A* to C grades 1992-2000	% pupils eligible for free school meals 2000
	2000	1992	2000		2000
<i>School governance</i>					
County	2030	32.7	42.1	9.4	20.0
Voluntary assisted / controlled	603	43.1	55.5	12.4	14.9
Funded directly	497	43.1	56.9	13.8	11.3
<i>Admissions policy</i>					
Comprehensive	2787	34.2	44.9	10.7	18.6
Secondary modern	179	19.7	33.3	13.6	16.3
Selective	164	90.7	97.1	6.4	2.7
<i>School specialism</i>					
Technology	305	38.0	52.7	14.7	15.8
Languages	99	50.5	62.5	12.0	10.7
Sport	65	33.8	44.6	10.8	19.4
Arts	56	36.4	46.8	10.4	18.5
Non-specialist	2605	35.6	45.8	10.2	18.1
<i>School size</i>					
Under 600 pupils	415	26.0	35.2	9.2	24.0
600-799 pupils	628	33.8	43.8	10.0	20.0
800-999 pupils	744	38.5	48.6	10.1	17.7
1000-1199 pupils	612	38.8	50.7	11.9	15.4
1200 pupils and over	731	39.6	51.6	12.0	13.8
<i>Eligibility for free school meals</i>					
Under 5.8%	625	60.1	72.3	12.2	3.5
5.8% to 10.1%	628	42.1	55.2	10.1	7.8
10.2% to 16.5%	626	34.3	45.2	10.9	13.0
16.6% to 28.3 %	625	26.5	36.6	10.1	21.7
Above 28.3%	626	17.8	25.7	7.9	42.3
All schools	3118	36.2	47.0	10.8	17.6

Notes: See notes to Table 1.

Sources: School Performance Tables, 1992 and 2000; Schools' Census, 1992 and 2000.

relationship between the proportion of pupils on free school meals and a school's exam performance provides powerful evidence that a school's exam performance is very largely predetermined.

This is the case for all of the school characteristics identified in Table 2. Thus, schools specialising in languages have by far the highest exam success rate and by far the lowest proportion of pupils on free school meals. We observe the same result if we compare LEA-controlled schools with directly-funded schools. County schools have the lowest proportion of exam successes and the highest proportion of pupils on free school meals. The opposite result is obtained for directly-funded schools. Pupils from poor family backgrounds are far

less likely to do well in exams. This result is well known and has been found in a substantial body of empirical research.¹³

It is also clear from Table 2 that the *improvement* in exam performance during the 1990s has varied between different types of school. The improvement has been greater, for example, in directly funded schools than in LEA controlled schools. Schools specialising in technology and languages have also improved their performance compared to non-specialist schools. A further result of interest is that schools with a low proportion of pupils on free school meals have experienced a much greater improvement in their exam performance than schools with a high proportion of pupils on free school meals.

If competition between schools was working as intended, we would expect to see schools trying to improve their performance relative to their nearby competitors. The better the exam performance of rival schools, the more likely it is that a school will attempt to improve its own performance to encourage higher demand for places and to ensure it maintains its market share (see section 2 above). The loss of market share for small schools in localities in which there are many competitors could ultimately lead to closure. We therefore expect a school's exam performance to be positively affected by the exam performance of other schools in the same locality.

But competition between rival schools is not the only factor likely to affect a school's exam performance. Educational attainment is determined by many factors.¹⁴ The most important of these is the socio-economic background of a school's pupils. Schools that are able to attract a large proportion of their pupils from high-income families, for example, are more likely to have a higher success rate in exams. This is because wealthier families have more resources to supplement state-funded education. In addition, wealthier parents are more able to finance the extra travel costs resulting from widening the geographical limits of potential schools that their child can attend. Parents with high educational qualifications are also likely to have greater expectations of their children reaching high levels of attainment. Schools themselves may affect educational outcomes through their teaching methods, the resources employed, the general ethos of the school and the policies adopted by the school's management in order to achieve successful outcomes in exams.

We have estimated the determinants of a school's exam performance by controlling for all potential determinants simultaneously. This approach allows us to estimate the *specific* impact of competition on a school's exam performance. Our results indicate that an improvement in the exam performance of a school's competitors does indeed stimulate an improvement in its own exam performance. We estimate that an improvement of 3 percentage points in the exam performance of a school's competitors is followed by an improvement of 1 percentage point in the school's own exam performance.

Several other factors were found to have a substantial effect on a school's exam performance, the most significant being the socio-economic composition of the school's pupils. All statistical analyses of exam performance observe a very strong negative relationship between exam performance and the proportion of pupils eligible for free school meals. There are very few instances of schools with a high proportion of pupils on free school meals achieving a 'good' exam performance.

¹³ See Bradley and Taylor (1998, 2001) for references.

¹⁴ See Hanushek (1986) for a review of the earlier literature.

School size was also found to be an important influence on exam performance. Large schools perform better in exams than small schools. Estimates indicate that exam performance improves steadily as school size increases up to around 1200 pupils for 11-16 schools and 1500 pupils for 11-18 schools. This is possibly because larger schools can offer more choice than smaller schools; and teachers can concentrate more on their own specialist areas in larger schools.¹⁵

Subject to these other influences on a school's exam performance, our statistical analysis therefore indicates that the increase in the competition for pupils has had significant positive effects on exam performance.

¹⁵ See Bradley and Taylor (1998) and Bradley, Crouchley, Millington and Taylor (2000) for more details of the factors affecting exam performance.

5. The effect on equity

Has the greater competition for pupils between schools had any adverse effect on the way in which pupils from different socio-economic backgrounds are distributed between schools? Have the best-performing schools been more selective in their pupil intake? Have the worst performing schools had to take an increasing proportion of pupils from low-income families?

As an indicator, we again take the proportion of pupils on free school meals, which as we have seen reflects the social mix of the school and local community, the latter being very highly correlated with the unemployment rate in the local district.¹⁶

The effect of increased competition on the social segregation of pupils between schools can be estimated by first identifying the potential determinants of the social composition of schools. These include variables such as the socio-economic mix of the area in which a school is located, the exam performance of the school and the exam performance of its competitors. The specific effect of a school's performance (relative to its competitors) on the social composition of schools is then estimated by regression methods. Our statistical analysis indicates that schools with 'good' exam results (compared to other schools in the same locality) have experienced a *reduction* in the proportion of pupils coming from low-income families. Conversely, schools with a comparatively 'poor' exam performance have experienced an *increase* in the proportion of pupils coming from low-income families.

Although there is evidence of an increase in the polarisation of pupils between 'good' and 'poor' performing schools, the estimated impact is actually quite small. This suggests that the anticipated negative effect of market forces on the social segregation of pupils has not so far occurred to any significant extent.

¹⁶ At the district level, an increase of 1 percentage point in the unemployment rate is associated with an increase of 3 percentage points in the proportion of pupils eligible for free school meals.

6. Conclusions

Britain's education system was radically transformed following the Education Reform Act (1988). The objective of these reforms was to raise educational attainment through the establishment of a quasi-market based on greater parental choice of school and the transfer of control of resources from local education authorities to the schools themselves. These reforms were supported by the annual publication of the *School Performance Tables*, which were introduced in order to help parents to make a more informed choice of school.

Our research into the effects of the establishment of a quasi-market has focused solely on publicly funded schools in the secondary education sector. We have constructed a database for over 3000 publicly funded schools for the period 1992-2000 from data obtained from the annual *Schools' Census* and the *School Performance Tables*. Since this database consists of a large number of variables describing schools and their pupils, we have been able to control for differences between schools in order to investigate the specific effect of increased competition on variables such as new admissions and exam performance.

The main findings of our research to date are as follows.

- First, there is evidence that increased competition has affected the distribution of pupils between schools. Schools with a 'good' exam performance relative to their immediate competitors in the same locality have taken a bigger share of the market.
- Second, the exam performance of schools is positively related to school size. Small schools are therefore at a disadvantage in terms of exam performance.
- Third, our research supports the contention that the increased competition for pupils has had a positive effect on exam performance. Schools have been positively affected by the exam performance of other schools in the same locality.
- Fourth, there is some evidence of a widening gap in the social composition of schools, though this has not yet occurred to any great extent.

While our research indicates that the introduction of market forces has led to an improvement in exam performance, it is unlikely that this improvement is a result of market forces alone. Other factors may also have been at work. The most obvious of these is the determination of successive governments since the 1980s to raise participation in higher education. As higher education institutions have expanded to accommodate more students, the incentive to 'do well' in GCSE exams has increased, thereby leading to better exam performance at the end of compulsory education. Another factor that may have led to better exam performance is the increasing realisation of the close link between educational attainment and success in the labour market. Finally, the schools themselves may have deliberately focused on the target of getting more pupils to achieve five or more A* to C grades rather than on achieving other targets such as providing a more broadly based education.

Although the introduction of market forces has led to improvements in exam performance, there is still plenty of scope for further gains. But this will require a more focused approach. Our research has clearly demonstrated that the major determinant of poor performance at both the individual level and the school level is the socio-economic background of pupils. Poor performance in exams is very highly correlated with poverty. This suggests that the

effort to improve educational outcomes needs to be concentrated in those schools with a high proportion of pupils from low-income families.

Exactly how the exam performance of schools with poor exam results can be improved is a major challenge to policy makers. An obvious extension of the market-based approach is to provide appropriate incentives to get the best teachers and the best school management teams into the schools with the worst performance. An alternative policy is to create incentives for schools with 'good' exam results to take a greater proportion of their pupils from low-income families. Greater resources will allow schools to provide more appropriate methods of tuition, such as smaller classes for pupils needing extra tuition to offset the disadvantages of their family background. Such a policy would help pupils from low-income families to benefit from peer-group effects on their performance, thereby raising the average level of educational attainment.

Since our research indicates that the introduction of market forces has had a positive impact on the exam performance of schools, it is our view that the market mechanism is an appropriate vehicle for devising further market-based schemes for improving performance. Attention needs to be focused more directly, however, on improving the performance of pupils from lower-income groups since this is where the problem of poor performance mainly lies.

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