

Research in PUBLIC POLICY

Bulletin of the Centre for Market and Public Organisation



Choice and Competition in Public Services

- Julian Le Grand, former Downing Street adviser, on why public service reform is essential
- Carol Propper on regulating health care providers
- Simon Burgess on making school choice work

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One of the biggest current debates in UK public policy is about whether and how to extend choice for users of health care, education and other public services. A closely related question is about how to increase competition among providers so that they have stronger incentives both to use resources efficiently and to improve the quality of the public services they deliver.

In this issue of *Research in Public Policy*, former Downing Street adviser and London School of Economics professor **Julian Le Grand** makes the case for properly designed reforms involving choice and competition as the only way to achieve high quality, responsive and equitable public services.

Professor Le Grand particularly commends the research contribution of the Centre for Market and Public Organisation (CMPO) in this area, and in the next two articles, CMPO researchers Professors **Carol Propper** and **Simon Burgess** explore the conditions of success for the choice and competition agenda in, respectively, health care and education.

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 To listen to a podcast interview with the author, visit: <http://www.bris.ac.uk/Depts/CMPO/audio/main.htm>

Choice and Competition in Public Services

Public service reform is essential, according to LSE professor and former Downing Street adviser *Julian Le Grand* – and while performance management and ‘voice’ have a role, the long-term answer lies in real choice for users and increased competition among providers.

When Labour came to power in 1997, it found public services that in many respects were creaking at the seams. The NHS was a classic example: the system was inefficient, wasteful and unresponsive to patients’ needs. A year after the government was elected, 185,000 patients were still waiting more than nine months for elective surgery in England; 67,000 were waiting more than 12 months. Despite these waiting lists, a CMPO/King’s Fund study found that as late as 2002, 98% of the population lived within an hour’s travel time of up to 100 available and unoccupied NHS beds and 76% lived within an hour of 500 beds (Damiani et al, 2005).

Even equity – the founding principle of the NHS – was not being achieved. A review by the LSE and the Department of Health found that although use of GP services was broadly equitable, that of the (much more expensive) specialist services favoured the better off.

Education was not in much better shape. According to the recent education White Paper, in 1997, one third of children left primary schools without having mastered the basics in English and maths. Indeed, less than a half of the country’s primary schools had good or excellent teaching as judged by Ofsted, and only just over half of secondary schools.

Of course, part of the problem was money. The Wanless Report estimated that relative to average spending in the European Union on an income-weighted basis, the cumulative underspend on the NHS was £267 billion in 1998 prices. This is the equivalent of more than five times what we currently spend on the NHS. And spending is going up: public spending on both the NHS and education has risen by more than 50% in real terms between 1997/8 and 2004/5 and is projected to rise substantially more by 2008/9.

But money was not the only problem. Although the resources being put in now are historically unprecedented in magnitude, previous governments have put large sums into public services and not seen positive results. Even now the Welsh, Scottish and Northern Irish health services – which in some ways are similar in structure to that prevailing throughout the UK in the 1970s and 1980s – are struggling to reduce waiting lists despite having had more resources per head than England.

These problems all arose from a failure to address the key difficulty of old-style public service provision in the UK: monopoly. NHS patients had little choice over where, when and

how they were treated. And although in theory parents were supposed to have choice in education, in practice, for a variety of reasons, the opportunities properly to exercise that choice were severely limited.

All this was bad in and of itself because it disempowered patients and parents. But even more importantly, it was destructive because it meant that there were few incentives for providers to improve. Giving providers a monopoly has never been a good way to improve a service of whatever kind – and the ‘old’ health and education systems were no exception.

So some kind of reform was essential. The question was: what form should this take? One strategy for dealing with monopoly is top-down performance management: telling providers that they have to provide a good service, compelling them to undertake specific actions, setting targets and imposing penalties for failure.

This has been a part of the government’s strategy so far and in many ways it has been quite successful. Most NHS targets have been met and some aspects of service delivery (particularly waiting times) sharply improved, at least in England. Numeracy and literacy in primary schools have improved substantially, not least because of the top-down imposition of a numeracy and literacy hour.

So performance management can work – at least in the short term. But heavy performance management from the top is not trouble-free. A ceaseless bombardment of instructions from above demotivates and demoralises providers – especially when those providers include professionals used to a high degree of autonomy and trust.

Targets also have their own problems. They distort priorities: what is not targeted is ignored. They can lead to ‘gaming’: simple fiddling of the figures or more subtle changes of behaviour that mean the target is attained but with long-term consequences that are undesirable. As has often been said, you can hit the target and miss the point. And since missing targets can happen for reasons beyond managerial control, the penalties can seem arbitrary and unfair, which again is demotivating and demoralising.

Performance management is not a long-term solution. What is needed instead is a system with incentives for reform *embedded*

within it. Then providers will automatically provide a high quality service without orders from the top. And these incentives should come from the users of public services: it is their needs and wants that have to be satisfied and they are the ultimate authority on what those needs and wants are.

One way of empowering users is through strengthening the institutions of 'voice'. Voice mechanisms are ways in which users can express their dissatisfaction by some form of direct communication with providers. This can be through informal face-to-face communication – talking to teachers about one's child, for example – or more formal ways such as complaints procedures, talking to or even becoming a parent governor, speaking to patient representatives, joining a hospital board and so on.

Strengthening voice has its place in public service reform. But it is not the answer to the fundamental problem: the absence of incentives. Without choice, voice mechanisms provide no incentives for improvement. If a provider has a monopoly on the supply of a service, it can ignore the complaints of its users with relative impunity. Only if it knows that the dissatisfied can go elsewhere does it really have an incentive to improve. Choice gives power to voice.

Properly designed reforms involving choice and competition are the 'least worst' way of achieving high quality, responsive and equitable public services

Another problem with voice is that it favours the better off. The loud voices and sharp elbows of the middle classes mean they are much better at manipulating bureaucratic systems than the poor. It is not surprising that the latest British Social Attitudes Survey and a similar study by the Audit Commission found that it is the poor and disadvantaged who want choice *more* than the better off: the latter are doing all right from the system as it stands.

So if we cannot rely on performance management or voice to reform public services, what can we do? The answer lies in choice and competition and the key elements are: **user choice**; **money following the choice**; and **new forms of providers**.

The foundation of the policy is user empowerment through choice. This is desirable in and of itself because it directly empowers patients. But it is also essential from a system perspective as a way of breaking down the monopoly power of providers and providing incentives for them to improve.

But certain conditions have to be fulfilled if choice is to work in the way desired. First, **money must follow the choice**. If being chosen has no favourable consequences and not being chosen has no unfavourable ones, then choice will not deliver the required incentives. This reasoning lies behind 'payment-by-results' in the NHS, whereby hospital and other providers are paid according to the treatments they actually provide, and

formula funding in education, whereby schools are paid according to the number of pupils they attract.

Money following the choice encourages providers to be attractive to would-be users and to be efficient in their use of resources. If providers can raise quality from the same resources, they will attract users and make a surplus, which they can spend on raising the quality of service and improving the pay and working conditions for staff.

A second condition for choice to provide the appropriate incentives is that there must be alternative providers from which to choose. The illusion of choice is worse than none at all. Research evidence from other parts of the economy suggests that the entry of new providers is the best way of driving up productivity. Hence the policy requires **new forms of providers** such as foundation trusts and independent sector treatment and diagnostic centres in health, and academies and trust schools in education.

Of course, there are many other conditions that have to be fulfilled if incentives are to work properly and the injection of choice and competition is to achieve the ends that we want. If patients and parents are to make choices on the basis of quality, they need to have good information on quality – which is not always easy to provide. There have to be ways of dealing with failure: what to do about hospitals and schools that are not chosen. And anti-competitive behaviour by providers has to be addressed by appropriate regulation.

The challenge for government policy is to design the choice and competition reforms so that they can avoid or directly overcome these difficulties. CMPO research has already been highly influential in this whole area, and the following articles by Carol Propper and Simon Burgess continue this tradition, with their incisive demonstration of some of the problems and the ways they can be resolved.

Overall, some kind of public service reform is essential. This could include stronger performance management or strengthening the institutions of voice. But while reforms of this kind have their place, they also have severe limitations as the principal instruments of reform.

Ultimately, there seems to be little alternative to the introduction of reforms involving choice and competition. As long as these are properly designed they seem to be the 'least worst' way of achieving high quality, responsive and equitable public services.

Julian Le Grand is Richard Titmuss Professor of Social Policy at the London School of Economics and CMPO associate. The CMPO/King's Fund study is 'Mapping Choice in the NHS: Cross-sectional Study of Routinely Collected Data' by Mike Damiani, Jennifer Dixon and Carol Propper, *British Medical Journal*, 2 February 2005.

Regulating

Health Care in the World of Choice

One key condition of success for the choice agenda is addressing potential anti-competitive behaviour by providers. *Carol Propper* underlines the importance of economic regulation in health care – particularly of proposed hospital mergers – and considers which organisation would be the ideal regulator.

The UK government is once again experimenting with choice in the health care market. From 2006, all GPs in England will be required to offer patients a choice of four health care providers for their elective care. From the end of 2008, patients can expect to be allowed to choose any provider that has been licensed by the Healthcare Commission.

These providers will not just be traditional NHS hospitals as the government has been encouraging the entry of new providers. Some of these are from the existing private sector, others are new entrants. The government has also set a national tariff of prices that will apply to each type of treatment.

These changes all pave the way for greater competition between providers of health care, both within and outside the NHS. The government argues that this competition will promote greater responsiveness of hospitals to patients' needs, cut waiting lists and reduce inequity in the receipt of health care.

The evidence to support these claims is by no means unequivocal. What is clear is that the 'devil is in the detail': the impact of competition in health care markets depends on the precise nature of the policies introduced and the interaction between them. It is also clear that if competition is to be promoted, it needs an effective regulatory framework.

Competition is intended to increase pressure on health care providers, something that they, just like other firms in a market, are likely to want to avoid. In the United States, hospitals have tried to reduce this pressure by entering into preferential pricing agreements with insurers, by negotiating access rights to selected buyers or by merging. The first two routes are not open to English hospitals under the national tariff arrangements. So it is likely that they will try to reduce competitive pressure by merging or forming alliances with other providers.

Providers seeking to merge are likely to appeal to the fact they are 'not-for-profit' and that they serve local communities. This

defence has been used by hospitals in the United States and – in some cases – accepted by the courts. But the US experience suggests that the benefits of mergers between not-for-profits may well be exaggerated by those appealing to their community-orientated motives: it appears that the weakening of competition that follows such mergers has an equally negative impact on outcomes as mergers by for-profits.

The government needs a pro-competitive regulatory strategy in health care if it is to reap the benefits of competition

The national tariff of prices is intended to promote a 'level playing field': all providers will be paid the same amount for each type of treatment. But the evidence suggests that these kinds of payment systems give hospitals incentives not to accept more severely ill patients ('dumping'), to 'undertreat' such patients ('skimping') and to seek to attract the less severely ill and 'overtreat' them ('creaming'). These incentives are present whether or not there is competition, but they are intensified when hospitals are subject either to actual competition or competition based on league tables.

Two features of the current regime may make such incentives quite sharp. First, the 'payment-by-results' system currently makes a large component of a provider's income depend on a prospective fixed price per case payment. Second, the publication of data on outcomes is increasing and poor outcomes will contribute negatively to a hospital's measured performance. Even though the controls for variation in severity are likely to improve, it is never possible to account fully for all factors. The implication is that there will be both a financial and a 'league table' impact from high severity patients.

All of this suggests that if the benefits of competition are to be reaped, the government needs a pro-competitive strategy. The tasks include the regulation of mergers and the scrutiny of behaviour with respect to the national tariff.

Proposed mergers will need to be subjected to more rigorous evaluation than mergers have been in the past. Historically, the Department of Health has been rather in favour of mergers, both on the grounds of rationalisation of service provision and as a way of dealing with hospitals in financial difficulties. The Treasury has tended to support this stance, glad to avoid duplication of facilities within the public sector.

So any pro-competitive strategy will need to reverse a historical legacy that assumes that excess capacity is bad. There will also be a need to check that greater patient choice is not limited by provider selection of patients.

Health care regulation requires both an understanding of the market for health care and of the economics of markets

The choice of regulator is also up for grabs. The market for regulators in UK health care is not an empty one, and there are several organisations jostling for the prize of market regulator. Most of them currently undertake some kind of quality regulation, either setting standards or judging financial probity. While these are both important tasks – and quality regulation will interact with market regulation (most obviously by not allowing some providers to enter the market) – the regulation of quality is not the same activity as market regulation.

The type of regulation needed to ensure that competition leads to positive outcomes requires both an understanding of the market for health care and of the economics of markets. None of the existing organisations in health care regulation possess the latter. The Department of Health is certainly ruled out as it both runs the NHS and sets ‘the rules of the game’. In addition, the existing regulatory landscape is chaotic, with overlapping targets and regulatory bodies.

All these factors suggest that what is needed is the separation of quality regulation and economic regulation, a reduction in the extent of overlap in regulatory functions and an increase in the importance of economic regulation.

One way to achieve the last objective might be to charge the competition authorities that operate in the rest of the economy with the promotion of competition in the health care sector. Other solutions may be available, but all will require an understanding of economics as well as politics.

This article draws on research evidence summarised in *Will More Choice Improve Outcomes in Education and Health Care: The Evidence from Economic Research* by Simon Burgess, Carol Propper and Deborah Wilson, CMPO, March 2005 (<http://www.bris.ac.uk/Depts/CMPO/choice.pdf>).

To listen to a podcast interview with the author, visit: <http://www.bris.ac.uk/Depts/CMPO/audio/main.htm>

Making

Government plans to increase school choice for parents and pupils have led to a heated debate. CMPO research by *Simon Burgess* and colleagues sheds light on the central issues, demonstrating what’s wrong with our current education system and how we can ensure that reform delivers its promised benefits.

The government’s school reform bill is making its way through Parliament at an appropriate time of year. Parents are learning the school to which their child has been assigned and, as always, not all will be happy with the outcome. One of the bill’s aims is to change this system but its progress has been beset by controversy. Against a backdrop of widespread rebellion on Labour’s backbenches, the House of Commons Education Select Committee proposed a set of amendments many of which, after much haggling, have been adopted.

The debate has seen some strange political positions being taken. The main alternative to ‘choice’ schooling is children being assigned to their local school – ‘neighbourhood’ schooling. But such a system scores poorly against a progressive agenda of reducing the role of family income in determining the quality of school a child attends.

Neighbourhood schooling entrenches privilege as the route to a place in a good school through buying an expensive house nearby. We might expect to see this system defended by those on the right rather than the left. In principle, a well-functioning choice system offers a way to detach family background from quality of school, a pro-poor outcome.

What’s wrong with the existing system?

Part of the reason for this confusion is a misunderstanding of the nature of the present system. Contrary to some views, it is simply not the case that we currently have neighbourhood schooling and that the bill is introducing choice for the very first time. Our research shows that around half of secondary school pupils in England do not attend their local (nearest) school. So parents are already making choices of some kind.

But nor are we in a system where choice works well. Our research shows that in parts of the country where choice is more feasible, pupils are more highly segregated across schools. We also find

School Choice Work

that where rich and poor children live in the same place and have the same measured ability, the poor child is less likely to go to a good school.

Both of these findings show that the current system is only working for some, favouring children from more affluent families. Removing choice in favour of neighbourhood schooling would be a regressive step. What is needed is to reform the current system of school choice.

The reforms need to focus on the two main problems with the current system. First, the capacity to exercise and implement choice differs between people – choice is not available to all. The bill addresses this issue straightforwardly by subsidising transport costs over a wider geographical range and providing informational support for choices of schools.

Second, popular schools do not have sufficient flexibility to be able to expand. In this case, 'choice' reverses and it is schools that do the choosing. This is perhaps the greatest issue: once a popular school has to ration places, it seems likely that distance from the school will again be used to make the cut. So the aim of detaching family background from quality of school attended requires either ballots for places or a capacity and willingness to expand popular schools.

The evidence suggests that children from poorer families are not getting a good deal from the English school system

A greater freedom to expand is part of what is embodied in trust status for schools. But such freedom could also give greater scope for selection by ability, responding to incentives in the schools system. This obviously works directly against a better deal for children from poorer families, and the Select Committee's proposals to strengthen and monitor the code are very important here.

What should school choice be for?

Taking a step back, we should ask what school reform is for. 'Raising standards' is one obvious response. In England, this seems to be a particular problem at the lower end of the achievement scale, with large numbers leaving school with no qualifications. Another response is that it should be targeted at giving children from poorer families a better deal in the

education system. Either way, the focus should be on lower achieving pupils.

The school choice agenda has a broad aim of raising standards in all schools. The central idea is that competitive pressure is applied to schools that are vulnerable to losing pupils whose parents see a better chance for their children elsewhere. This potential loss of children and funds will stir schools to raise their game, and push up standards everywhere. If this worked, it would be beneficial to all pupils.

If the reforms do have more effect on lower achieving children, then it could be the lower scoring schools that feel vulnerable to this pressure. There is strong evidence that this competitive pressure matters in the United States, where the role of vouchers and district choice has been intensively studied. There is very little evidence for England on this issue, and what there is shows no strong results.

School choice reform should also aim to reduce the link between children's family income and the quality of the school they attend. Currently, this link is all too apparent. Our research provides some new evidence on this.

Our current system of partial, unequal choice is a long way from a cosy world where most children attend their local school

We consider all state secondary school children in England, and look at children who live somewhere equidistant between a good school and an average or low-scoring school. Taking account of the children's gender, ethnicity and scores in the Key Stage tests, we show that children eligible for free school meals are around 40% less likely to go to the good school than are their better-off peers. So despite being the same distance from both schools and having the same test score history, something in the way the system works is creating a systematic tendency for poorer children to go to the less good school.

Furthermore, if we look at children who live in essentially the same place (the same full postcode) again comparing similar children, those from poorer families go to lower-performing schools. Of course, this is all on top of the fact that more affluent children are much more likely to live near good schools in the first place. This evidence suggests that children from poorer families are not getting a good deal from the English school system.

How should school places be allocated?

Part of the hope for reformed school choice is that it is one way to reduce the importance of income in the allocation of school places. Certainly, compared with most of the alternative ideas, it should produce an outcome less dependent on family circumstances. Assigning children to schools on the basis of performance in a qualifying test (such as the 11+) opens a large role for a better-off family to pay for tutoring and so on.

Neighbourhood schooling scores poorly against a progressive agenda of reducing the role of family income in determining the quality of school a child attends

A common alternative is neighbourhood schooling, in which all children simply go to their nearest school. This seems to be the desired policy for many critics of school choice. But it tends to produce highly segregated communities clustered around good schools. This policy makes it very difficult for children from poorer families to stand a chance of getting a place in a good school.

Banding is another popular idea – that local rules force each school to take a certain fraction from different ability bands. While this may work well in small markets such as London local education authorities (LEAs), in large urban or mixed LEAs, it is likely that a child's address will continue to play a substantial role in allocating school places.

The most radical policy would be to hold ballots for places in oversubscribed schools. This would obviously ensure that all applicants faced an equal chance of getting a place. The Select Committee recommended that this strategy be investigated.

Is school choice really practical?

One objection to school choice often raised is that it is simply not practical. In fact, our research shows that this is not true. School choice is feasible for most secondary school pupils in England, in the straightforward sense that they have more than one school near to where they live.

In fact, over 80% have at least three schools within 5 kilometres. Obviously, this varies over the country. In rural areas, the numbers are lower (but still around 40% have at least three schools within 5 kilometres) and in London, almost all pupils do. Put another way, three quarters of all secondary school pupils have at least three secondary schools within 4 kilometres from their home.

The evidence also suggests that we are a long way from a cosy world where most children attend their local school. In fact, only a half of all secondary school pupils in England attend their nearest school. One in two pupils are not going to their 'default' school – so we are already in a world with a lot of 'choice'.

It is important to see that not all of this movement away from the local school is 'choice' in the sense of consumer choice with a desired outcome. The school system has been a more-or-less closed system: roughly speaking, there are as many school places as children and each school can neither expand nor contract very rapidly (though there are excess places in some areas and schools can change size).

A useful analogy for the system is a modified game of musical chairs: there are enough chairs for everyone, but some are more desirable than others. The point is that one person's choice of chair has implications for the places available to others. Unlike in most situations of consumer choice, choice by one person has 'spillover' effects on others. The issue for reform is how things look when the game finishes – which pupils are going to which schools.

Detaching family background from quality of school attended requires either ballots for places or a capacity and willingness to expand popular schools

What are the effects of this system of partial choice now, before the reforms? Our research shows that areas of the country with greater school choice are also areas with stronger sorting of pupils. This takes account of the sorting of where people live. So over and above the fact that rich and poor tend to live in different places, we see that unequal choice tends to increase segregation in schools. This is true both in terms of ability sorting, and in terms of not producing an even social mix in schools.

This article draws on research evidence summarised in *Will More Choice Improve Outcomes in Education and Health Care: The Evidence from Economic Research* by Simon Burgess, Carol Propper and Deborah Wilson, CMPO, March 2005 (<http://www.bris.ac.uk/Depts/CMPO/choice.pdf>); and *School Choice in England: Some Facts* by Simon Burgess, Adam Briggs, Brendon McConnell and Helen Slater.

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School Achievements of Ethnic Minorities

How do England's minority ethnic groups get on at school? Research by *Deborah Wilson* and colleagues confirms that some do better and some do worse than their white counterparts. But it also finds striking new evidence that all make more progress than white pupils, especially in the run-up to GCSEs.

The fact that there are substantial differences in the educational attainments of minority ethnic groups in England is nothing new. Our research evidence supports the kind of findings in most previous studies: in the GCSE exams taken at age 16, pupils from some minority ethnic groups – notably Black Caribbean and Pakistani – achieve considerably lower on average than white pupils; while, in contrast, pupils of Indian or Chinese origin score much higher than their white peers.

But we also have three surprising new findings. First, when we account for a small number of personal characteristics, *all* minority ethnic groups make greater progress on average than white pupils between the ages of 11 and 16. Second, much of this improvement is between the ages of 14 and 16, that is, in the run-up to GCSEs. And third, for most minority ethnic groups, this gain relative to white pupils is pervasive, happening in almost all secondary schools.

The accumulation of human capital is one key to the economic success of an individual and a community. It has a major impact on earnings and, more broadly, on social standing. Formal schooling is the context for much of this and hence has been an important focus for studies investigating the roots of racial and ethnic disadvantage. But while there is a large literature in the United States on ethnic differences in test scores and skills, there is less evidence for the UK. Moreover, most of the existing evidence comprises snapshots of a sample of pupils.

Our study follows two cohorts of pupils in state maintained schools in England, one through most of primary schooling (from 7 to 11)



and one through secondary schooling (from 11 to 16). Using linked test score records, we are able to document the relative progress of different minority ethnic groups through school.

We use the PLASC/NPD dataset from the Department for Education and Skills, which covers all pupils in primary and secondary schools in England, including information about their age, ethnicity, gender, eligibility for free school meals (an indicator of low household income), special educational needs

status, home postcode and whether English is the language spoken at home. These are the factors we control for in order to isolate the influence of ethnic background on educational attainment at different stages in a pupil's schooling.

We use test score data from the Key Stage (KS) tests that pupils take as part of the National Curriculum. For the first cohort, we use results from KS1 at age 7 taken in 1998 and KS2 at age 11 taken in 2002. The second cohort we follow right through compulsory secondary schooling: from their KS2 tests taken just before school entry at age 11 in 1997, through KS3 at age 14 in 2000, up to KS4 (GCSE) at age 16 in 2002.

Figure 1 illustrates our first two findings. Each panel of the figure shows the two cohorts: the primary school cohort between the ages of 7 and 11 and the secondary school cohort between the ages of 11 and 16. The fact that the primary cohort outperforms the secondary cohort at KS2 reflects the general improvement in KS2 test scores over time (from 1997 to 2002) for all minority ethnic groups.

All minority ethnic groups make greater progress on average than white pupils over the course of their secondary schooling

The minority ethnic groups are split across two panels to make the graphs readable. In both cases, these groups' performance is being compared with that of white pupils, which has been set to zero so as to focus on the dynamics of relative progress. The vertical axis shows the average standardised test scores at each age by ethnicity.

There are a number of things to see in the figure. First, over the course of secondary schooling, the attainment of *all* minority ethnic groups improves relative to whites. Some groups make very substantial gains, in particular Bangladeshi, Indian and Black African pupils. Pupils with Black Caribbean and Black Other heritage remain on average below their white peers at age 16 although the gap between them closes.

Second, the situation is more mixed in the primary school cohort, with pupils of Asian ethnicity generally gaining but pupils with Black heritage losing ground.

Third, the strongest gain in secondary school is between the ages of 14 and 16. This is true for all groups, but especially Bangladeshi, Pakistani and Black African pupils.

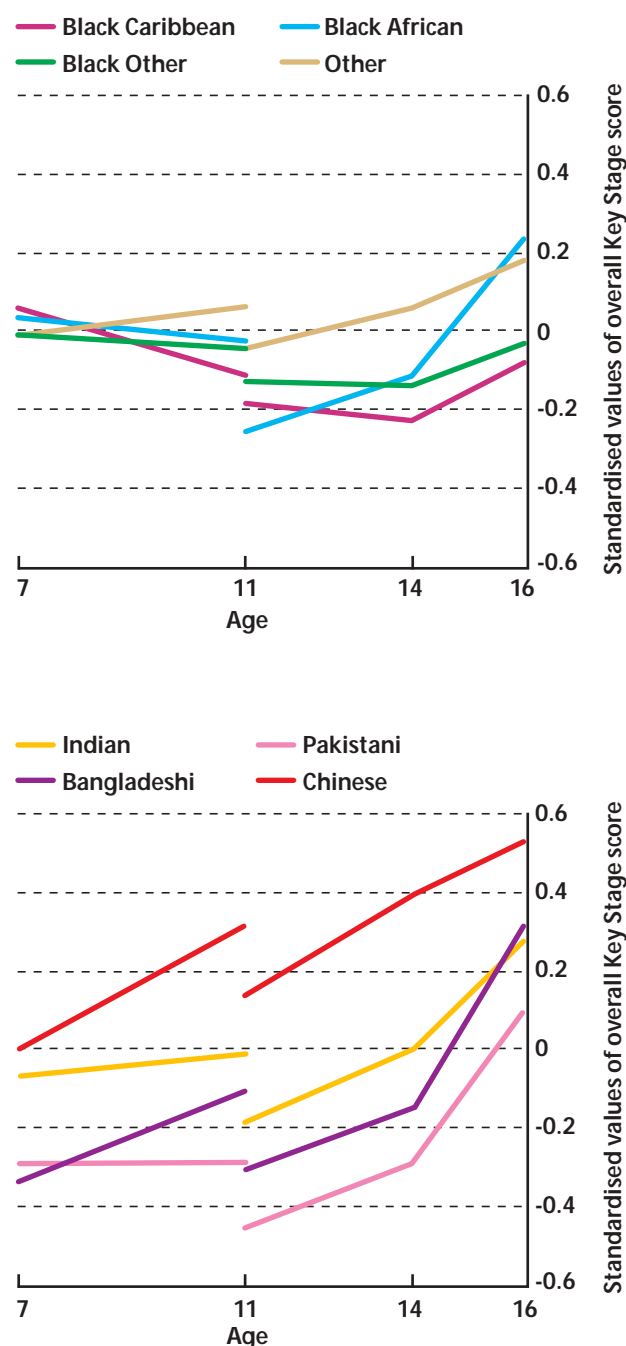


Figure 1: Progress of minority ethnic groups relative to white pupils, controlling for individual characteristics

So what emerges is a mixed picture, both with respect to relative progress at different stages in schooling and with respect to differences across the minority ethnic groups. What may be causing the different patterns, bearing in mind that they already take account of several key individual characteristics such as low income?

Our results suggest that differences in language may account for about a third of the gain of Black African and Indian pupils. (The data don't allow us to investigate this factor for other groups.) We find little evidence of any impact of systemic differences in marking and/or assessment procedures or teacher expectations. And we find some evidence that differences in school quality matter for the performance of Black Caribbean and Black Other pupils, but less so for other groups.

Finally, we investigate whether practices within secondary schools may help or hinder the educational progress of minority ethnic groups between 11 and 16. To the extent that these practices are not universal, we would expect to see important differences between schools in terms of relative progress. In fact, we find that for most groups, pupils improve relative to white pupils in almost every school.

Table 1 illustrates this finding. For each state maintained secondary school in England and for each minority ethnic group, we ask whether that group achieves higher average progress between KS2 and KS4 relative to white pupils. The table shows the percentage of schools for which that group improves relative to whites.

A key part of the relative progress of minority ethnic groups comes just ahead of GCSEs, the most important, high-stakes exams

For the three South Asian groups, the number is over 90%; for Black African pupils, it is 87%; and for Chinese pupils 86%. The two groups for which there is not almost universal average progress are Black Caribbean and Black Other pupils, who improve relative to whites in about half of schools.

This suggests that different school processes and practices may have an important influence on outcomes for Black Caribbean and Black Other pupils but not for the other minority ethnic groups. This ties in with the finding that school quality appears to matter only for these two groups.

These findings suggest that systemic factors may play an

Table 1: Percentage of state maintained secondary schools in England where the minority ethnic group's educational attainment improves relative to white pupils between Key Stage 2 and Key Stage 4

Black African	86.7%
Black Caribbean	52.8%
Black Other	55.6%
Bangladeshi	91.9%
Indian	95.4%
Pakistani	92.4%
Chinese	85.8%
Other	72.8%

important role in educational outcomes. One often proposed is the importance of aspirations and values inculcated by families and reinforced by communities, notably the importance of education for getting on in life. Modood (2005), for example, refers to the 'Asian trajectory... social mobility by education, self-employment and progression into the professions'. He also notes the roles that communities may play in fostering such aspirations.

Our finding that a key part of the relative progress of minority ethnic groups comes in the most important, high-stakes exams lends some support to this view. Whether the differential aspirations and the importance ascribed to education are an ethnic difference or a feature more generally of (relatively) recent immigrants is beyond the scope of our study. But the results offer a useful addition to the debate.

This article summarises 'The Dynamics of School Attainment of England's Ethnic Minorities' by Deborah Wilson, Simon Burgess and Adam Briggs, CMPO Working Paper No. 05/130. For the full paper, see: <http://www.bris.ac.uk/Depts/CMPO/workingpapers/wp130.pdf>

Tariq Modood's 2005 study is 'The Educational Attainments of Ethnic Minorities in Britain', published in *Ethnicity, Social Mobility and Public Policy* edited by Glenn Loury, Tariq Modood and Steven Teles, Cambridge University Press.

To listen to a podcast interview with the author, visit: <http://www.bris.ac.uk/Depts/CMPO/audio/main.htm>

Measuring Productivity in Public Services

To assess how efficiently public money is being spent and how effectively reforms are being implemented, we need robust productivity measures for public services. In the light of the recent Atkinson Review, CMPO associate *Helen Simpson* discusses the challenges of developing such measures.

Does the introduction of NHS Direct result in better value for money in the delivery of health care? Does the use of new learning technologies in schools improve the quality of teaching that each teacher can deliver? Being able to answer these kinds of questions relies on measuring public sector productivity – or the efficiency with which public services are delivered.

Measuring productivity boils down to capturing how effectively an organisation transforms inputs, such as doctors, nurses and medical equipment, into output, the health care received by the patient. Productivity measures can be used to assess whether for a given amount of resources, service providers are delivering increases in output over time or, put another way, whether they are able to deliver the same quality of service using fewer resources. Similarly, productivity comparisons across providers can help in understanding whether – and why – some are more efficient than others.

Measuring the productivity of any organisation or sector is no easy task. Doing so for public sector services brings its own challenges. Much of the discussion around the measurement of productivity in public services focuses on the measurement of outputs.

Productivity comparisons across different hospitals or schools could take account of the characteristics of individuals using the service

It is difficult to define a measure of the output of a GP's surgery – the amount of health care received by patients – or of a school – the amount of education received by pupils. Information that is typically available comes in the form of counts of *activities*, such as the number of consultations carried out by doctors or the number of pupils taught in schools. But as indicators of actual outputs these may be far from ideal.

The information available may not be comprehensive enough to reflect accurately all of the outputs of public services that are actually valued by society. For example, just as people are willing to buy contents insurance even though they may never make a claim, they may also place a value on the fact that hospital treatment or help from the police is available should they ever need to use it.

Productivity comparisons based purely on measurable activities might be highly misleading in cases where a substantial part of the service provided is very hard to measure, such as fire or crime prevention. A decrease in the number of fires extinguished in a given year might incorrectly imply a fall in measured productivity if the output measure used is unable to capture an offsetting increase in the extent of fire prevention activity. For other public services like defence, which are consumed collectively by society, no activity or output measures may be available at all.

Using measures of activities can also make it very difficult to measure improvements in the quality of service provided or to capture increases in output when technological developments or changes in the mode of delivery reduce the number of activities required to deliver the same service. For example, if improvements in medical technology mean that fewer consultations with a doctor are required to treat a particular condition successfully, then this might be wrongly recorded as a decrease in output.

This problem suggests that trying to measure outputs though information on *outcomes*, such as levels of health or crime, which will capture quality, might be an alternative approach. But this poses a difficult measurement problem in terms of isolating the marginal improvement in, for example, health that is due to public health care provision as opposed to other factors not driven by that service provider, such as changes in diet.

Where possible, using information on a comprehensive range of activities may still be the best way forward. But to measure the overall output or productivity of an individual service provider or a whole sector like education, it is often necessary to combine these various activities into a single output measure. The issue then is how to do so.

Ideally, different outputs should be weighted together using information on the marginal valuation of a unit of each type of output as a weight. In market sectors, prices provide the necessary information on people's marginal valuations of different goods and services. But most public services are provided free at the point of use, so no price information is available to reflect the relative values of the various activities.

Potential solutions to this problem include using information on marginal costs to proxy marginal valuations or, for example, in the health sector, aggregating different treatments using information on how each affects individuals' 'quality-adjusted life years', which would also capture information on quality.

Sir Tony Atkinson's recent review of the measurement of government output and productivity made a number of recommendations for the measurement of output for public services. Table 1 summarises some of the methods used by the Office for National Statistics and some of the recommendations from the final report.

Many of the recommendations surround increasing the comprehensiveness of the output indicators collected for each service, improving the weights used to aggregate the different indicators and incorporating better measures of quality change. For example, with regard to quality change in education, suggestions include using information on exam results at different ages and considering an adjustment to reflect the valuation of education for future earnings.

Constructing productivity measures also requires information on inputs, which is typically easier to come by. But in both the public and private sectors, there are still issues about how to measure quality accurately. For example, input measures, such as simple headcounts of staff, can be improved by taking account of numbers of hours worked and the skills of those employees.

In the case of some public services, the individuals using them can in a sense be thought of as inputs themselves. It might be desirable for productivity comparisons across different hospitals or schools to take account of the characteristics of individuals using the service, such as their underlying health or initial literacy skills.

One way to do this would be to make comparisons only between providers operating in similar environments, for example, by comparing the productivity of hospitals serving areas with similar demographic characteristics. An alternative would be to try and adjust the output measures used, for example, using value-added measures of education outputs to take account of the fact that different schools may take in pupils of different abilities.

Incorporating quality adjustments into measures of output for the NHS and the education sector are an important step forward

None of these measurement issues are trivial to overcome. But progress towards robust productivity measures for public services at the aggregate and provider level together with other measures of performance is crucial in the context of public service reforms and in assessing how efficiently public money is being spent. Recent initiatives to experiment with incorporating quality adjustments into measures of output for the NHS and the education sector are an important step forward.

Helen Simpson is programme director of the productivity and innovation research sector at the Institute for Fiscal Studies.

The final report of the Atkinson Review, *Measurement of Government Output and Productivity for the National Accounts* (2005), is available at:

http://www.statistics.gov.uk/about/data/methodology/specific/PublicSector/Atkinson/final_report.asp

To listen to a podcast interview with the author, visit:
<http://www.bris.ac.uk/Depts/CMPO/audio/main.htm>

Table 1: Measuring government output – current measures and recommendations for selected functions

Function	Percentage of government spending, 2000	Main components of output measures	Main recommendations from the Atkinson Review
Health	30.3%	Hospital cost weighted activity index, Family Health Services (number of GP consultations, etc.)	Better measures for primary care Movement towards measuring whole courses of treatment Ideas for measuring quality change
Education	17.1%	Pupil numbers – quality adjustment of 0.25% to primary and secondary schools	Measure pupil attendance not pupil numbers Update the quality measure for schools and develop a new extended measure, which might include measuring the value of education through increased earnings New measures of output for initial teacher training and publicly funded nursery places
Administration of justice	3%	Number of prisoners, legal aid cases, court cases and probation cost weighted activity index	More detailed measures for Criminal Justice system, with possible quality adjustment to reduce the value accorded to overcrowded prison cells
Fire	1.1%	Number of fires, fire prevention and special services	Measure output on the basis of weights that reflect the cost to the community of fire
Personal social services	7.4%	Children and adults in care and provision of home helps	Wider and more detailed coverage in the measure of adult social services output Extension of children's social services output measure Development work on quality adjustments

Britain's Public-Private Pay Gap

There are large differences between the public sector and the private sector in the raw data on pay and working conditions. Our analysis of working age men in the British Household Panel Survey indicates that average incomes are 14% higher in the public sector, and income dispersion – the gap between the highest and lowest paid workers – is 25% smaller in the public sector (a phenomenon called 'income compression').

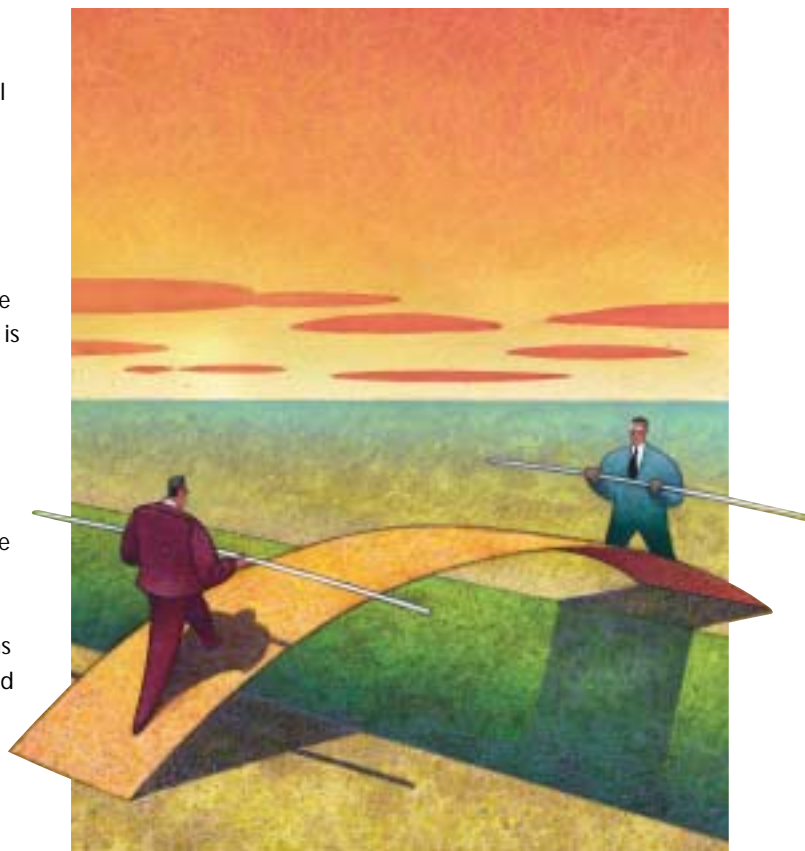
Income mobility is lower too: the probability of remaining in the same fifth of the income distribution from one year to the next is on average 16% higher in the public sector than in the private sector. And so is job mobility: the average yearly job loss rate in the public sector is a little over half the average job loss rate in the private sector.

Of course, this first look at the data does not take account of the likelihood that the individuals observed in each sector are different. It is possible that the bulk of these raw differences reflects differences in the composition of the workforce in terms of both observed characteristics, such as age and education, and unobserved characteristics, such as 'public service motivation'.

For example, public sector employees are markedly more educated than their private sector counterparts: 43% of them have obtained a qualification higher than A-levels compared with 23% of private sector employees. Taking all such differences into account in our estimation of the public gap, average income is only 3.4% higher, income dispersion 10% smaller and the job loss rate 19% lower in the public sector.

These findings confirm the prominent part played by non-random sorting of workers across employment sectors in explaining the apparent public premium. For example, blue collar workers tend to be willing to 'queue' to obtain public sector jobs whereas highly-skilled workers are notoriously hard to recruit and retain in the public sector.

Income and employment dynamics as well as income levels are quite different between the two sectors. This matters to forward-looking individuals as they anticipate changes in their employment status, sector of employment and income level within a given sector. Comparisons of cross-sections are not very



informative in the presence of income mobility, particularly when there are cross-sector differences in income mobility.

It is thus desirable to use a criterion that takes account of all aspects of the differences between sectors in order to give a more comprehensive and accurate picture of the comparison between employment in the public sector and the private sector.

Public sector employees are markedly more educated than their private sector counterparts

We do this by estimating 'lifetime values' of employment in each sector. These are simply the present discounted sums of income flows over an individual's lifetime. We first carry out this exercise assuming that individuals are employed in either sector for the duration of their working lives – what we call the 'job for life' assumption.

Are public sector workers better paid than their private sector counterparts? Simple income measures suggest the answer is a clear yes. But *Fabien Postel-Vinay* and *Hélène Turon* argue that assessing the 'public premium' should take account of worker quality and the lifetime value of employment in each sector.

Taking account of the 'selection premium' arising from the fact that individuals who select themselves into the public sector tend to have different characteristics from individuals who select themselves into the private sector, we find that the average value of a job for life is slightly higher in the public sector than in the private sector, with a public premium of about 2-3%.

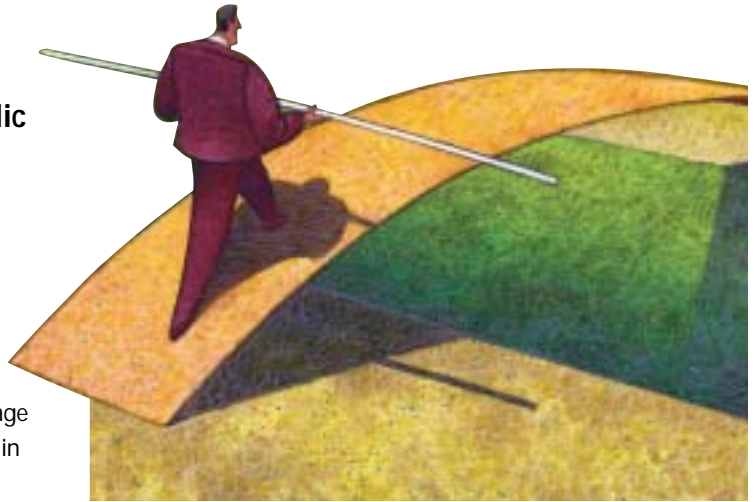
Our research also reveals that there is considerably less compression in the public sector relative to the private sector in terms of lifetime values than in terms of income flows. We interpret this phenomenon as the result of income mobility offsetting differences in cross-sectional incomes.

Intuitively, thinking of incomes as comprising a permanent individual component and a transitory random component, both sector-specific, our results suggest that most of the observed income compression in the public sector is due to a lower dispersion of the transitory component of income, which is averaged out when taking lifetime values.

We thus argue that the greater dispersion of private sector incomes relates to the transitory component of income. In other words, we find income inequality to be greater yet less persistent in the private than in the public sector, and inequality in lifetime values to be much more similar across sectors than current income inequality.

In a second exercise, we simulate both income and employment trajectories for all individuals in the sample. In this case, each individual is simulated to start as employed in either sector in the initial period and is allowed to switch employment status or sector thereafter.

Under this assumption, the lifetime public premium is essentially zero among workers that we categorise as 'high-employability' individuals based on their low unobserved propensity to become unemployed. The reason is that the UK labour market is sufficiently mobile to ensure a rapid allocation of these workers into their 'natural' sector. We do, however, find some evidence of job queuing for public sector jobs among 'low-employability' individuals, whom we estimate to face large potential premia from public sector employment.



The above summarises our main results from a sample of British men over the period 1996 to 2003. Let us add two remarks on cross-sector differences in pension systems and on potential future work on the public premium for women.

'Low-employability' individuals face large potential lifetime pay premia from public sector employment

The popular view is that public sector pensions are more generous than private sector pensions and this may have an impact on our calculation of lifetime values. Our data suggest that pension packages are more generous in the public sector in that they allow earlier retirement, but we find very small differences in terms of replacement rates. These differences are transmitted to lifetime values in a largely attenuated way, as retirement is still many years away for most individuals in our sample and hence differentials in retirement conditions across sectors tend to be heavily discounted.

Finally, our research to date has restricted the analysis to men. Looking at the data on women raises additional issues. First, average hours worked and the extent of part-time work vary substantially across sectors, and would require a finer description of women's labour supply behaviour. Second, non-wage job characteristics, such as different provision of maternity benefits and flexible hours of work, are likely to influence the selection of women across sectors.

This article summarises 'The Public Pay Gap in Britain: Small Differences That (Don't?) Matter' by Fabien Postel-Vinay and Hélène Turon, CMPO Working Paper No. 05/121.

For the full paper, see:

<http://www.bris.ac.uk/Depts/CMPO/workingpapers/wp121.pdf>

Executive Compensation and

Over the past decade or so, a series of high-profile reports have looked at the governance of the UK's leading companies. New research by Paul Gregg, Sarah Jewell and Ian Tonks assesses the impact of these reports on the relationship between executive compensation and corporate performance.

Over the course of the 1990s and into the new millennium, executive compensation in the UK has received increasing attention, notably with the publication of a series of reports recommending changes to the governance of UK companies. These recommendations included splitting the roles of chairman and chief executive (Cadbury, 1992), greater disclosure of executive pay, strict performance criteria for incentive compensation and the setting up of remuneration and audit committees (Greenbury, 1995), changes in the numbers and responsibilities of non-executive directors on the board (Hampel, 1998) and independence of non-executives (Higgs, 2003).

Our research documents the substantial increase in UK executives' compensation over the period 1994-2002 and examines the relationship between executive compensation and corporate performance. This period is an ideal testing ground because of the dramatic increases in stock returns during the late 1990s and the subsequent fall in stock returns after the millennium.

Executive compensation is typically made up of three main components: first, cash compensation, including base salary and annual bonuses; second, incentive payments such as stock options and long-term incentive plans; and third, income from the value of directors' shareholdings and directors' trading.

The dataset comprises 415 companies that were constituents of the FTSE 350 stock market index over the period January 1994 to September 2002. For each company in the dataset, two annual measures of directors' cash compensation (the first component) were collected from Datastream company accounts: the remuneration of the whole board and the pay of the highest paid director. Total board pay includes the total of directors' fees, emoluments for management services and pensions or pension fund contributions paid to or on behalf of directors.

The pay of the highest paid director represents the highest amount of remuneration paid to any director for the period.

Normally this will be the pay of the CEO, but it may apply to a different director each year, and again the amounts include pension contributions and bonuses.

We also included various forms of incentive pay in the remuneration of executives (the second component). Since it is not always possible to identify the highest paid director, incentive payments could only be included for the whole board. These payments are defined as the realised gains from incentive schemes (including bonuses given as shares, deferred bonuses, long-term incentive plans, profit share schemes and share investment plans) and options exercised in the firm's accounting year. These are all given as reported trades in the Hemscott directors' trading dataset.

As measured by pay, executive compensation has increased substantially since 1994 without much relationship to corporate performance

Finally, for the third component, we estimated realised annual wealth changes for the whole board from changes in the value of each director's stockholding plus the value of shares traded during the year. We collected information on board shareholdings from the PWC Corporate Register for successive years and merged this in with directors' trades from the Hemscott directors' trading dataset.

Table 1: Descriptive statistics of executive compensation variables

Variable	Number of observations	Mean	Median	Percentage growth in mean 1995-2002
1 Real pay of highest paid director	2,851	£680,031	£507,243	60%
2 Real board cash compensation	2,857	£2,421,880	£1,787,620	33%
3 Real board realised incentive payments(>0)	1,715	£1,067,342	£267,248	257%
4 Real board realised incentive payments(all)	2,859	£640,256	£21,948	
5 Real change in holdings-related wealth of board	2,387	£2,307,989	£217,463	
6 Real dividend income on board holdings	2,387	£632,503	£69,271	
7 Real board total compensation (sum of rows 2, 4, 5 and 6)	2,387	£6,050,673	£2,627,973	

Corporate Performance

Table 1 reports descriptive statistics for the main compensation variables inflated to 2002 prices. The mean (median) total board compensation of £6,050,673 (£2,627,973) is 2.4 (1.4) times larger than the mean (median) cash compensation of £2,421,880 (£1,787,620) so holdings-related income makes a substantial difference to the definition of pay.

The trend in median cash pay and total compensation is plotted in Figure 1. The dip in total compensation reflects the slowdown in the growth of equity values at the end of 1999.

Realised incentive payments and dividends payable on shareholdings are both just over £600,000 per annum. At £680,031, the CEO's average base salary is consistent with the board compensation numbers, since on average there are four executive directors on each board.

We next examine the sensitivity of executive compensation to corporate performance as measured by the excess returns on the company's share price over the relevant accounting year. Previous research has identified only a low correlation between executive pay and company performance.

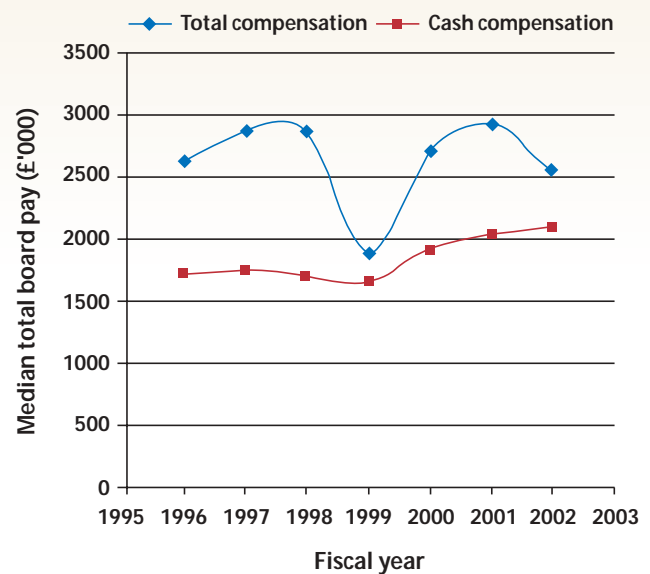
Our initial analysis seems to confirm this, suggesting that a 10% increase in total shareholder returns will lead to a 0.4% increase in total board pay and a 0.6% increase in the pay of the highest paid director.

A 10% increase in total shareholder returns translates into a £7,150 increase in board cash pay at the median level of total board pay of £1,787,621. In the case of the pay of the highest paid director, a 10% increase in total shareholder return translates into a £3,043 increase in highest paid director pay at the median level of £507,243. These figures are low, suggesting little sensitivity of pay to performance.

Taking account of board shareholdings shows that the relationship between executive compensation and company performance is much stronger

But adding in realised incentive payments more than doubles the sensitivity of total board remuneration to a 10% increase in total shareholder returns. And the results are even more dramatic when we consider the impact of changes in the value of directors' shareholdings.

Figure 1: Median real board cash pay and total compensation 1995-2002



These suggest that a 10% increase in total shareholder returns will lead to a £3,269,322 increase in total compensation at the median level of total board compensation of £2,627,973. This is a much higher degree of pay-performance sensitivity, and suggests that the interests of executives and shareholders are more closely aligned than previous research (which only focused on cash compensation) suggested.

The conclusions of this research are that as measured by the pay of the highest paid director or total board pay, executive compensation has increased substantially over the period 1994-2002 without much relationship to corporate performance. But when account is taken of board shareholdings, the relationship between executive compensation and company performance is much stronger.

This article summarises 'Executive Pay and Performance in the UK 1994-2002' by Paul Gregg, Sarah Jewell and Ian Tonks, CMPO Working Paper No. 05/122.

For the full paper, see:

<http://www.bris.ac.uk/Depts/CMPO/workingpapers/wp122.pdf>

Building and Managing Facilities for Public Services

Contracts under the UK's Private Finance Initiative (PFI) now cover most forms of public service provision, including health, education, defence, prisons and roads. Between 1998/9 and 2003/4, private sector investment in public services through PFI made up 10-13.5% of total investment in public infrastructure, with 451 PFI projects completing construction. These included 34 hospitals, 119 other health schemes and 239 new and refurbished schools.

There are two major differences between PFI and previous arrangements for developing new public infrastructure. First, PFI typically involves the 'bundling' of the design, building, finance and operation of the project, all of which are contracted out to a consortium of private firms for a long period of time, usually 25-30 years. The consortium usually includes a construction company and a facility management company, and it is responsible for all aspects of service.

Economic analysis can show whether it is desirable to 'bundle' the design, building, finance and operation of PFI projects

Second, PFI features a set of output specifications, in which the government specifies the service it wants (and some basic standards) but leaves the consortium with control rights over how to deliver the service. The consortium has responsibility for the infrastructure facility for the contract period, during which it may implement innovative approaches to service delivery. It may also use the facility for additional income-generating activities provided the basic standards of service provision are not violated.

There is no specific rule on what happens to PFI facilities at the end of their contracts. In practice, in the few contracts that have been completed, school, hospital and prison facilities have been returned to the public sector while accommodation and general information technology systems have been kept by the private sector.

PFI contrasts sharply with the way public services have traditionally been procured. Under traditional procurement, the different stages of an infrastructure project are contracted out separately to different private firms using an input specification approach, in which the government keeps ownership of the facility both throughout the contract period and after the contract ends.

Evidence on the performance of PFI relative to that of traditional procurement is mixed. On the one hand, a greater proportion of projects is being delivered on time and within budget than under traditional procurement. Some PFI prisons, for example, incorporate innovative designs, and there is evidence that greater benefits and lower costs are being achieved. On the other hand, the quality and cost of some early PFI schools have been worse than under traditional procurement.

Our research analyses the factors underlying these stylised facts. First, we study the desirability of the two defining characteristics of the PFI model: whether it is optimal to bundle the different stages of production and whether control rights should be given to the private firm(s).

Second, we focus on an important practical concern for public infrastructure projects involving long-term private investments: the residual value of the facility and its ownership once the contract expires.

Our first set of results shows that synergies between the stages of the project play a critical role, although they do not necessarily work in favour of PFI. A building or design innovation that increases the social benefits from a project may be associated with either reduced costs at the management stage (what we call a 'positive externality') or increased costs at the management stage (what we call a 'negative externality').

For example, the design of a prison with better sightlines for staff

In what circumstances is it best for governments to organise the provision of public services by contracting out to the private sector? Research by *John Bennett* and *Elisabetta Iossa* looks at the Private Finance Initiative, now widely used as a way of building and managing public infrastructure in the UK.

that improve security (a social benefit) may yield the positive externality that the required number of security guards is reduced. In this case, bundling is always optimal since it allows 'internalisation' of the positive externality.

But while an innovative hospital design, using recently-developed materials, may lead to improved lighting and air quality (and therefore better clinical outcomes), it may also have the negative externality of increased maintenance costs. In this case, unbundling may become optimal, making a consortium undesirable.

The prospect of a possible transfer of ownership to the public sector improves a PFI consortium's investment incentives

This is because in a world where it is not possible to specify all dimensions of a contractor's activities, the firm may fear expropriation of its investment and thus underinvest. To attenuate the underinvestment problem, it may become optimal to induce the firms not to internalise the negative externality since internalisation would further depress the firm's incentives to invest.

Our next set of results relates to the issue of optimal ownership and thus control rights. We show that with a positive externality, control rights should lie with the firm/consortium if there is relatively great scope for investment to reduce management and maintenance costs and/or increase residual value. Control rights should lie with the government if there is relatively great scope for investment to increase social benefits.

Innovation during the contract period is also related to how the facility will be used after the contract expires. According to our analysis, assuming a positive externality, whether the facility is retained by the consortium or transferred back to the public sector does not affect the rationale for bundling.

Furthermore, the prospect of a possible transfer of ownership to the public sector – if this can be achieved by voluntary negotiation and the payment of agreed compensation – improves a consortium's investment incentives. But given the unverifiability of investments and residual value, an automatic transfer clause in the PFI contract is not necessarily optimal because it blunts these incentives.

Our analysis leads to specific results about the circumstances that favour the use of PFI. PFI is more likely to be optimal if the externality is (more strongly) positive, if the effect of innovation on social benefits is relatively small and if the effect of investment on residual value is relatively large.

PFI is also more likely to be optimal the more probable it is that the private residual value will be higher than the public residual value, and the lower the specificity of the facility for public, rather than private, use at the end of the contract. These results are generally consistent with empirical evidence on PFI.

This article summarises 'Building and Managing Facilities for Public Services' by John Bennett and Elisabetta Iossa, CMPO Working Paper No. 05/137.

For the full paper, see:

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'Home Bias and Stock Market Development. The Polish Experience' by Anna Zalewska – No. 05/136

The Centre for Market and Public Organisation

Department of Economics
Mary Paley Building
12 Priory Road
Bristol
BS8 1TN

Telephone: 0117 954 6943

Fax: 0117 954 6997

Email: cmpo-office@bristol.ac.uk

Website: <http://www.bris.ac.uk/Depts/CMPO/>



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