



Market and Public Organisation

Benchmarking in the Health Service

*Politicians are demanding better standards in the NHS, which raises the question of the principles that should guide the use of benchmarking in the service. **Andrew Jenkins, Paul Grout and Carol Propper** address this question and suggest that benchmarks with incentives should be introduced quickly but that they may have to be less high powered than in the private sector and may need to be team based.*

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Introduction

In the March 2000 Budget, substantial increases in funding for the UK health service were announced. The allocation of additional money to the NHS has been accompanied by demands from politicians for better standards and the spread of best practice throughout the NHS. Benchmarking

is a widely used method for disseminating best practice, and there are moves towards the introduction of several benchmarking frameworks in the health service. But what principles should guide the use of benchmarking in the NHS? Particularly crucial is whether incentives should be attached to the benchmarks. Would financial incentives help to raise performance? Would such incentives have any harmful side-effects, and how can adverse effects be minimised? This article attempts to answer some of these questions

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What is benchmarking?

Benchmarking can be thought of as the comparison of performance and practices across organisations with the aim of raising performance. It originated with a few large private sector companies in the early 1980s, most notably Rank Xerox. They were concerned about being out-competed by rival organisations and undertook in-depth comparisons of aspects of their business in order to determine where their particular strengths and weaknesses lay, and to find out how to improve the weaker areas. Benchmarking is now widely used in both the public and private sectors as a means of improving standards of performance. School league tables of exam results and the performance indicators of local authorities developed by the Audit Commission are two

current examples of benchmarking in the public sector.

Benchmarking in health

Comparative performance indicators have been used in the NHS for some years. The most recent systems of indicators for benchmarking in health are the High Level Performance Indicators (HLPis) and various measures of cost, including Reference Costs.

The HLPis cover six broad aspects of health care: improving people's health, fair access to services, delivering effective health care, efficiency, the experience of patients and their carers, and health outcomes. Several performance indicators are included within each of these headings with 41 indicators in total. Taken together the indicators are wide-ranging, encompassing many aspects of NHS activity, with the main emphasis on outcomes and patient experience rather than the traditional rather narrow focus on inputs and throughputs in earlier sets of indicators developed for the NHS.

The Reference Cost Index (RCI) was published in November 1998 and contains summary data on costs for each NHS Trust. Although the RCI made some adjustments for differences between the type of area served by NHS Trusts, it was criticised for not making distinctions between cost factors which were beyond the control of management. It was therefore inappropriate for comparative purposes. In response, a set of Casemix Cost Indices (CCI) were developed in 1999. These attempted to control for a range of exogenous factors which might not be under the control of management in either the short-term or the long-term. Any remaining cost variations between Trusts could, in principle, be attributed to variations in efficiency.

One of the potential problems with introducing a new set of benchmarks into the health service is that busy managers and clinicians will ignore them. Thus incentives may need to be put in place so that those in the health service respond to the benchmarks and use them to improve performance.

The role of incentives

Incentives, such as financial rewards, can play a key role in motivating individuals and groups to achieve good performance. In

competitive private sector industries, the profit motive provides such incentives. A benchmark comparison which reveals a firm to be under-performing with respect to its rivals or best practice is likely to lead to the firm re-examining its practices and processes in order to move towards the standard set by the benchmark.

In the public sector, even without financial incentives, individuals may still be well-motivated to deliver a good quality service. In part the motivation is likely to come from career concerns: the individual wishes to progress in the organisation or the industry concerned and performing well is more likely to lead to the achievement of this goal.

However sometimes incentives may be lacking or the career concerns of individuals not well-aligned with those of their employer. For example, the career concerns of academics may emphasise the importance of research while the university considers teaching quality to be paramount. In situations like this the introduction of incentive schemes, whether in the form of performance-related pay, bonuses or increased budgets, can play a role in improving performance. But there are also some dangers in introducing such schemes which need to be considered.

Multi-tasking

The main danger in using incentive schemes arises from the fact that most organisations perform multiple tasks, and some tasks are likely to be much harder to measure than others. The benchmarks will almost inevitably be defined in terms of the tasks which can be readily measured. If strong incentives are attached to the benchmarks, then workers will respond by seeking to improve their performance against the benchmarks, and this will most easily be accomplished by switching effort away from the difficult-to-measure tasks. The problems this causes may include:

- tunnel vision: concentrating solely on tasks covered by the performance indicator scheme
- sub-optimisation: pursuing narrow objectives but neglecting the overall objectives of the organisation
- myopia: focusing on short-term issues at the expense of the long-term

Individuals may be well-motivated to deliver a quality service without financial incentives

Some tasks are likely to be harder to measure than others

Workers will respond by switching effort away from difficult to measure tasks

These problems are likely to be significant in the Health Service. Almost all organisations within the NHS have multiple tasks. For example, Trusts have outputs that include many types of patient care, as well as teaching and research activities. It is not difficult to think of cases where existing performance indicator schemes have witnessed these kind of multiple task issues arising. In order to achieve waiting list targets, Trusts have focused a great deal of effort on reducing the lists, probably at the expense of other, less readily measurable, health care activities.

Individuals or teams?

Should the rewards be given to individuals or to teams? The effective delivery of health care usually relies on people working well as part of a team. Rewarding individuals in this situation could be counter-productive, as it is likely to encourage responses that lower or divert effort away from the most effective delivery of health care.

Teams encourage co-operation and inter-professional working. Groups of employees can monitor each other more effectively than can management, because they have access to better information. Thus team-working can discourage shirking and promote increased effort.

The standard argument against team rewards is that they will be prone to free-riding i.e. that team members may choose to reap the rewards while letting others put in the extra effort, but, in practice, there is lots of evidence from the private sector of group performance related pay schemes working well and there is also an accumulating body of evidence from the public sector that team-based rewards can improve performance.

How quickly should benchmarking be introduced?

Should benchmarking be introduced rapidly and perhaps refined over time, or should substantial effort be spent in developing the system before it is put into practice instead?

Evidence from the private sector utilities suggests that it takes a long time to get a system right. In the water industry, Ofwat undertook a large amount of data collection and analysis before the introduction of its benchmarking system (known as comparative

competition). However, despite all this work, the system has continued to be modified and improved over time. In the latest price review which came into effect in April 2000, significant changes have been made: for example, further work on modelling costs, reconsideration of the split between operating and capital costs and changes to the incentive system, allowing companies to retain cost savings for a full five years regardless of when they arise, rather than removing them automatically at the price review.

The evidence from the utilities demonstrates that it may be best to get a framework in place as soon as possible and then hone and refine it over time. It is probably unwise to expect that an ideal system can be established straight away.

Quality of Service

It is vital that benchmarks include quality as well as cost measures. As the discussion of multiple tasks has shown if a benchmark is set for one aspect of performance other aspects may end up neglected. To date the discussion of benchmarking in the NHS has tended to focus mainly on cost measures such as reference costs. But concentrating only on costs will send out misleading signals to health care professionals: that the NHS is concerned with a cheap service rather than a quality service at reasonable cost. The Department of Health has now begun to address this problem by putting forward measures of quality in the HLPs. Ideally, it should be possible to develop measures which cover both quality and cost issues.

Data

One frequent criticism made of benchmarks in other parts of the public sector and in the private sector is that selecting an appropriate comparator can be difficult, and that poor quality data and/or misrepresentation of the data are commonplace. This is likely to be an issue in the NHS. There is evidence that data, on both cost and patient outcomes, is not of high quality in the NHS and often falls significantly below that used in other European health care systems. It is clear that the data must be of better quality if a benchmarking scheme is to work appropriately and effectively.

It should be possible to develop measures which cover both quality and cost

Team-based rewards can improve performance

Conclusion

In the light of this discussion, we make the following policy recommendations:

- A benchmarking system should be implemented as soon as possible, amending and refining it over time, rather than enduring a long delay while trying to design an ideal system.
- Incentives have a significant role to play, but it must be borne in mind that some tasks are easier to measure than others. Applying strong incentives within a benchmarking regime is very likely to distort effort away from less easily measured tasks. Therefore incentives in the NHS may have to be less high-

powered than in other parts of the public and private sectors.

- Incentives paid to individuals in the NHS could well be divisive and harmful in at least some circumstances. The use of team-based incentives should be considered as an alternative.
- Benchmarks which measure quality of service must be developed alongside benchmarks which measure costs.
- The accuracy of data in the NHS is not as good as it should be, and action is needed to improve data quality.

Does Corporate Governance Reform Reduce Managerial Entrenchment?

*Business scandals such as the Maxwell missing pensions and the collapse of Polly Peck and BCCI highlighted the vulnerability of UK shareholders to management malpractice. The 1992 Cadbury Report sought to enhance shareholder protection by, inter alia, improving the structure of boards of directors. In this article, **Elisabeth Dedman** looks at whether board structure reform has succeeded in increasing managerial accountability.*

The problems that occur when ownership is separated from control in organisations have long been recognised by scholars¹. In order to prevent managers expropriating investor funds, whether by outright theft, or by failing to make decisions in line with shareholders' objectives, corporations needed to adopt governance measures. Available measures include internal control mechanisms, such as the structure of the board of directors and management compensation contracts, and external control mechanisms, such as the market for corporate control. In order to be persuaded to invest their funds in any enterprise, investors need to be assured that (a) there is little chance of directors absconding with their capital and (b) in the case of the enterprise being badly run, there is sufficient opportunity for control of the firm's assets to pass to another management team.

Background

Until fairly recently in this country, the way corporations provided assurance to investors was a matter of interest only to those two parties. However, following the sudden collapses of some large UK listed firms (Polly Peck, Maxwell, BCCI), corporate governance became a subject of much media and public interest. In particular, the Maxwell affair and its effect on such a vulnerable section of society, pensioners, made excellent copy. Failure to prevent the events at the Mirror Group was thought to be partly due to over-concentration of power in one individual, and the role and responsibilities of the board of directors became an issue of concern.

Although the Committee on the Financial Aspects of Corporate Governance (the Cadbury Committee) had already been formed by the time of the Maxwell collapse, its report was anticipated as providing at least a partial solution to the problems in UK governance that had allowed such a corporate disaster to occur. The Cadbury Report,

¹ See Adam Smith, 1777, *The Wealth of Nations* for early references.

published in December 1992, contained, inter alia, recommendations regarding best practice in board structure. It expressed concerns that combining the roles of Chief Executive Officer (CEO) and chairman of the board may lead to one individual enjoying 'unfettered power', and opined that it is generally better practice to divide these responsibilities. The report also recommended that the board include at least 3 non-executive directors. This would enable firms to establish independent nomination and remuneration committees.

Around the same time, institutional investor bodies such as the Institutional Shareholders' Committee (ISC) were urging their members to use their voting power more effectively. Many studies had shown that institutions were failing to use their votes, and a debate was beginning to emerge regarding whether the active use of shareholder votes was actually a legal obligation of fund managers. In 1991, in an attempt to contain the issue before regulation became likely, the ISC published a document, 'The Responsibilities of Institutional Shareholders in the UK', in which they stated,

"It is considered important that institutional shareholders support Boards by positive use of their voting rights unless they have good reasons for doing otherwise. Such shareholders should register their votes wherever possible on a regular basis. Where a Board has received steady support over a period of time, it should become a matter of concern to the Board if that support is not forthcoming on a particular matter." (p2)

The ISC's view was echoed by the recommendations of other investor bodies such as the Association of British Insurers (ABI), which represents 90% of UK insurance company investment; the National Association of Pension Funds (NAPF), which is the leading pension organisation in the UK; and the Pensions and Investment Research Consultancy (PIRC), an independent consulting firm which provides advice on investment and voting issues to many local government pension funds.

Managerial entrenchment and governance reform

One of the potential effects of a reform in corporate governance is the reduction in the problem of managerial entrenchment. Managerial entrenchment occurs when the

manager of a firm has taken actions to protect his position such that he is extremely difficult to remove. This can result in firms being badly run with shareholders unable to replace the top manager. The board may refuse to dismiss him, perhaps because he recruited board members with some affiliation to him, and the takeover market may be prevented from operating by anti-takeover measures adopted by the manager. Shareholders may be forced to simply sell their stakes in the enterprise at a discount, as managerial entrenchment causes the stock market to reduce its estimate of firm value. However, measures to increase the independence of the board of directors, and to reduce the power afforded to the top manager may reduce this problem, resulting in lower risk for shareholders, who will therefore be prepared to offer capital at lower interest rates. Reductions in interest charges and the returns required by equity holders translate into increased profitability and therefore greater international competitiveness for UK firms.

This article examines whether the Cadbury board structure reforms and the concomitant increase in pressure on institutional investors to act as monitors, have had any effect on the problem of managerial entrenchment. Where the problem is low, we may expect to observe a strong relationship between firm performance and the probability of a change in the top manager, generally the CEO. In the UK, there is such a relationship, with firms in the bottom 10% of performance much more likely to experience non-routine CEO turnover² than firms in the top 10%. This pattern is stronger in the post-Cadbury regime, suggesting a reduction in managerial entrenchment. Indeed, further analysis reveals that the labour market is disciplining managers more quickly post-Cadbury, with managers likely to lose their jobs following only one year of poor performance - prior to Cadbury, it had often taken two years.

In the US, Weisbach (1988)³ found evidence that having more non-executive directors on

² We define non-routine turnover as CEO departure *not* due to retirement, succession to chairman, death, illness or the CEO leaving to take up a new job.

³ Weisbach, M., 1988, Outside directors and CEO turnover, *Journal of Financial Economics*, Vol. 20, pp. 431-460.

Combining CEO and Chairman of the Board may give one individual unfettered power

The labour market is disciplining managers more quickly post-Cadbury

the board significantly increased the probability of CEOs departing poorly performing firms. This would suggest that the Cadbury Committee's recommendation that firms have a minimum of three non-executives on their boards would reduce managerial entrenchment. However, we find no evidence that this is the case in the UK, with neither the number nor proportion of non-executives on the board being associated with the likelihood of a firm experiencing a non-routine CEO departure. It is possible that firms are paying mere lip service to this requirement, and recruit non-executives with affiliations to the firm, e.g. ex-executive directors, or engage in cross-directorships, where an executive director of Firm A is a non-executive at Firm B and vice versa. However, these instances are not always easy to observe and it is not difficult to imagine how the spirit of the Cadbury Code may be circumvented with respect to the independence of outside directors.

Although we find no evidence that increasing the number of non-executives on board affects managers' power to resist removal, we do find an association between the division of the roles of CEO and chairman of the board and the probability of non-routine departure of the top executive. This implies that the Cadbury reforms have brought about a reduction in managerial entrenchment.

There is some indication that institutional owners and debt-holders have increased their monitoring role post-reform, with high ratios of debt to equity and high levels of institutional ownership being associated with CEO departure. Although recent research finds that institutional voting levels are still woefully low, this may fail to reflect what is going on 'behind the scenes', with institutions perhaps exerting less observable pressure on firms to comply with perceived best practice in governance.

Earlier work has consistently suggested that the amount of equity a CEO holds in the firm is strongly associated with his level of entrenchment. In support of this, we find that CEO share ownership powerfully affects the chances of that individual surviving in his post, even though there is no observable relationship between share ownership and firm performance. Our analysis reveals that there is no incidence of non-routine departure either pre- or post-Cadbury if CEO ownership

exceeds 10% of issued equity. At low levels of share ownership (<1%) the rate of non-routine departure is over 4% in both time periods. However, there is evidence of a reduction in its entrenchment effect in CEO ownership regions of 1% to 5%, with an increase in the rate of non-routine CEO turnover from 2% pre-Cadbury to 4.6% post-Cadbury. Prior to Cadbury, where ownership exceeded 5%, there was no incidence of non-routine departure; post-Cadbury there was an annual, non-routine turnover rate of 1.4%. It therefore appears that corporate governance reform has increased the likelihood of CEO turnover in poorly performing firms by reducing the protection offered by managerial share ownership.

Although there is evidence of a reduction in the entrenchment effect of managerial share ownership, it must be emphasised that there is still a significant amount of protection from removal afforded to managers with surprisingly low levels of share ownership. This must raise concerns about the recent trend towards paying executives an increasing proportion of their compensation in the form of shares and derivatives. This practice was advocated by the Greenbury Committee (1995), which looked at issues in directors' pay. Shareholders, hoping to align the goals of managers with their own objectives, could unwittingly be insulating managers from removal, even in the face of poor performance.

Conclusions

The Cadbury reforms aimed to increase the protection afforded to investors in UK firms. Our research has examined one aspect of this issue, concentrating on the impact of corporate governance reform on the problem of managerial entrenchment. This problem, which leads to top managers of poorly performing firms being extremely difficult to remove, seems to occur when the CEO also holds the position of chairman of the board, where levels of institutional monitoring are likely to be low, and where the level of CEO share ownership is high. We found evidence that the Cadbury reforms are associated with a reduction in managerial entrenchment, with both institutional investors and large debt-holders improving their roles as monitors of the firms in which they invest. Widespread compliance with the Cadbury recommendation that the roles of CEO and

chairman be divided has also increased the likelihood of managerial replacement in firms which perform badly relative to their peers.

Finally, the insulatory effect of CEO share ownership has been significantly reduced, though far from eradicated.

Physician Incentives in Health Maintenance Organisations

Intense public controversy and high stakes litigation has accompanied the incentive schemes designed to encourage physicians to control costs in US managed healthcare organisations. Martin Gaynor summarises his research into these incentive schemes. He finds that they have indeed been effective at reducing cost but, strikingly, finds that there does not appear to be a trade-off between costs and quality of care.

With over 78.8 million enrollees, managed care organisations¹ are the dominant form of health insurance in the United States. At the core of every managed care organisation is a system of financial and non-financial incentives that encourages physicians to control costs. These incentives have been the subject of high stakes litigation and intense public controversy. Critics argue that incentives to reduce costs leads to a dangerous erosion of health care quality. Government, according to this view, should regulate incentive pay arrangements or, at a minimum, force managed care organisations to make their incentive arrangements clear to the public. Defenders counter that, without incentives, physicians will drive health care costs to stratospheric levels without commensurate improvements in health outcomes. Public policy, in their view, is too blunt an instrument to use to shape delicate managerial decisions concerning incentive design. While the specifics of the institutions and the debate are particular to the United States, similar issues are arising around the world as health reforms attempt to utilise incentives to control costs. Indeed, the debate over general practitioner fund-holding in the

United Kingdom has reflected many of these same issues.

Insufficient research has hampered the debates surrounding Health Maintenance Organisation (HMO) incentives. Over the past decade economists have devoted increasing attention to the study of incentive systems generally. This literature offers important general insights, but it has largely overlooked incentives for health care providers. A parallel, but largely independent, literature focuses on the effects of HMOs on costs, treatment patterns and quality, and on the effect of financial incentives on physician decision making. Most of the studies compare physician practice under fee-for-service and managed care plans. Physician incentives within the HMO market segment, however, are varied and complex, and studies that examine the form of these incentives and their effect on outcomes are rare.

In a recent study James B. Rebitzer of Case Western Reserve University, Lowell J. Taylor of Carnegie Mellon University, and I have been analysing how the mix of financial rewards, group-based incentives, and the relative independence of physicians shape the cost and quality of care.² Our empirical investigations rely on a data set constructed for the years 1994-1997 from the internal records of an HMO with roughly 1500 independent, primary care physicians.

¹ Managed care organisations are health insurance plans that selectively contract with health care providers and use incentives or direct intervention to control health care utilisation and costs. Health maintenance organisations (HMOs) are the most common form of managed care organisation. HMOs integrate financing and delivery of health care services. They may contract with or directly employ health care providers, although contracting is the most prevalent arrangement.

² The paper can be downloaded from <http://equilibrium.heinz.cmu.edu/mgaynor/papers/HMOAbstract.htm>.

Critics argue incentives to reduce costs leads to a dangerous erosion of quality

The HMO we study runs an *independent provider* (IP) network. The term IP network refers to HMOs that contract directly with physicians in independent practices (or with associations of such practices) to provide medical services. Our focus on IP networks is important. These rarely studied entities comprise one of the largest segments of the managed care market, roughly 40 percent of total HMO enrolment in 1998.

The incentive system of the HMO we study combines three features commonly found in other IP networks and in other physician incentive systems. The first is that the network relies on primary care physicians (PCPs) to act as ‘gatekeepers’ to regulate access to medical resources. The HMO devotes considerable attention to regulating and monitoring the behaviours of these PCPs. It also writes incentive contracts that provide financial rewards to PCPs who successfully control costs and maintain quality.

The second feature, *group-based incentives*, rewards the performance of groups or panels of doctors rather than individual physicians. These group-based incentives reduce risk, but they also encourage ‘free riding’, i.e., the process by which one physician benefits from the cost reducing actions taken by others in the panel. Group-based incentives are very common in all sectors of the economy, but their workings are not well understood. In the economics literature, it is well known that ‘free riding’ undermines the effectiveness of group incentive systems. A less-well studied aspect of group based incentive systems is the informal social processes that take place within the group when incentives are put in place. In panels where physicians are able to monitor actions taken by other physicians, low powered group incentives and peer pressure can produce the same effect as high-powered financial incentives based on individual performance. Empirical studies regarding the interaction of ‘free-riding’ and peer pressure for physicians are scarce, but the phenomenon is likely to be found wherever HMOs rely on group-based incentive contracts.

A third feature of the incentive system we study is variation in the *independence of physicians*. Some physicians rely heavily on a particular HMO network for patients, while other physicians are relatively independent because their patient population is made up of

enrolees from a variety of different plans. There are strong psychological and economic reasons to believe that HMO incentives will be more potent for physicians who rely heavily on that HMO for patients.

The findings from our study are striking. We find that panels with stronger incentives have lower costs and higher quality. More specifically, panels with larger numbers of physicians have higher costs, consistent with the phenomenon of ‘free-riding’ in groups. Consistent with the logic of models of incentives, costs are also lower where the performance measures are most precise, i.e. in panels with many HMO enrolees. Consistent with the operation of mutual monitoring and peer pressure, we observe that panels composed of physicians in the same speciality have relatively low cost (although this finding is less robust than the others). Our results on cross-panel performance are strengthened by our finding that *within* panels, physicians with a large share of the panel’s HMO enrolees also have lower costs relative to the panel mean. Finally, and perhaps most striking, we do *not* observe a trade-off between costs and measured quality of care. Rather we observe that panels that control costs effectively also do well on quality measures. We provide some evidence that the phenomenon of ‘free-riding’ influences both cost and quality, suggesting that the positive association of high quality and low costs is due to features of the HMO’s incentive system that links payoffs for cost control and quality.

Our research raises four questions that we intend to investigate in subsequent research. First, we would like to examine how physicians understand the incentive system and how this understanding correlates with cost and quality outcomes. Along these same lines, we would like to learn more about the role played by the incentive system’s non-linear features. If incentive payments are limited to panels that meet target expenses, what happens if the targets are set too high or too low? Do panels with costs hopelessly above target give up? If so, then even small, unexpected changes in the demand for medical services may have a large effect on the operation of the incentive system.

Our second question concerns the importance of peer pressure and mutual monitoring within panels. The indicator of peer pressure/mutual monitoring we use currently is plausible but

imperfect proxy for the informal social interactions that take place within panels. In the future we hope to use surveys of physicians to construct more complete measures of informal panel interactions. If we succeed in developing such measures, will we find that peer pressure effects are less fragile and or larger in magnitude than those we observe in the current analysis?

Our third question concerns the relationship between HMO membership and cost control. Our finding that HMO enrolment influences the effectiveness of incentives has important implications for the nature of product market competition in this industry. If HMOs need to have some monopsony power over primary care providers for cost control incentives to

work, how can they also maintain networks of sufficient breadth to attract customers without violating antitrust laws?

Our final question is whether it is possible to construct incentive systems so that physicians become cost-conscious without sacrificing quality of care. The answer, based on the results in this paper, is a provisional yes. A more definitive answer will require analyses using more sophisticated quality indicators than are available to us at this time. Understanding the trade-off, if any, between cost and quality of medical care will have important implications for public policy as well as for the evolution of the managed care industry.

Improving State School Recruitment in Higher Education

The recent controversy in the press surrounding state school admissions to higher education has focused attention on the admissions process of universities and the question of whether admissions tutors are exercising bias in favour of private school pupils. Gervas Huxley and Eleanor Scott report on a study assessing each stage of the process and find that the reasons for low state school entrance into some universities is far more complex than the media reports might suggest.

Introduction

The admissions process at top-ranking universities has been the focus of intense debate in recent months. On the 25th May this year Gordon Brown criticised the elitist admissions procedures of Oxford University. The Chancellor's speech followed the rejection by Oxford University of Laura Spence, a sixth-form student at Monkseaton Community High School in North Tyneside, despite her 10 A grades at GCSE and predicted 5 A grades at A-level.

This criticism was echoed by the Sutton Trust, an independent body providing educational opportunities to non-privileged children. In a report published soon after the Chancellor's speech they provided statistics suggesting that Britain's top universities bias their admissions towards independent school pupils. While previous studies concentrated on Oxford and Cambridge when looking admissions, the

Sutton Trust's research extended beyond Oxbridge to other leading universities.

The University of Bristol was found to be one of the most socially exclusive of the leading universities, matched only by Oxford and Cambridge. Figures published by the Higher Education Statistics Agency showed that 72% of students with A-level grades sufficient to gain admission were from the state sector, whereas only 55% of the 1996/97 intake originated there. Moreover, more than 75% of students came from social classes I and II whereas the average for all universities is 52%.

Bristol is thus highlighted as a university that appears to exercise considerable bias in its admissions process, excluding students from comprehensive schools and lower socio-economic classes. This study investigates these claims. We shed light on how and why

this occurs by examining in detail the admissions process.

The University Admission Process

The mix of students at UK universities is the result of an application process that involves a complex sequence of decisions. School leavers, schools and universities all make decisions, and each of these influences the outcome.

A simple characterisation of the sequential nature of the admissions process is as follows:

1. **School-leaver decision:** School leavers apply to universities.
2. **Schools decision:** Schools make A-level predictions on their behalf.
3. **University decision:** Universities make conditional offers based on these predictions.
4. **School-leaver decision:** School leavers accept or reject these offers.

Most studies of the admissions process focus only on stage 1 and the outcome. However ignoring the intermediate stages does not give the full picture. This study reports on research looking at stages 2 – 4.

One criticism of the recent discussion of university admissions policies is the implicit assumption that the outcome is determined by universities alone, that others involved in the process react passively to decisions made by universities. This places responsibility for the outcome, and reform, of admissions procedures squarely on the shoulders of universities. However we show that this may exaggerate the influence of universities on the outcome, and if so their capacity to reform that outcome successfully.

Data

To shed light on this issue the University College Admissions Service (UCAS) forms of 870 home students applying to read Economics, Economics & Politics and Economics & Accounting at Bristol University in 2000 were examined.

Results:

Stage 1: School leavers. At this stage of the admissions process the composition of applicants is State 56%, Private School 44%. This would imply a considerable shortfall of state school applicants considering the number who are qualified to apply.

Stage 2: Schools. On average all schools over-predict A-level grades, however private schools appear to over-predict relative to state schools. In the sample state schools over-predicted by approximately one A-level grade per pupil, whilst private schools over-predicted by two grades.

Stage 3: Universities. Bristol's admission policy seeks to encourage applicants from groups currently under-represented. Analysis of the sample data suggests that two are particularly significant. (1) More offers are made to state school applicants, i.e. for applicants with a given set of observed characteristics, more offers are made to those from state schools than private schools. (2) More generous offers are made to applicants from state schools, i.e. for a given set of characteristics applicants from state schools receive lower conditional grade offers than those from private schools.

Stage 4: School Leavers. State school applicants disproportionately decline offers from Bristol. For a given set of characteristics an applicant from state school offered a place is 21% less likely to accept than one from private school. 37% of private school applicants offered places accept compared with only 16% of state school applicants.

Analysis of the results

Any assessment of our results needs to bear in mind two points. First, our research was conducted by looking at applicants to one department at one university. Clearly we need to be careful in drawing general conclusions from such limited data. Nevertheless we believe these results provide at least some insight into the university admissions process.

Second, before analysing the results for each stage of the admissions process one further point is worth emphasising. The decisions made by both schools and universities are relatively straightforward. Schools wish to maximise the probability that pupils enter the

All schools over-predicted, however private schools over-predicted relative to state schools

university of their choice. Universities, for the most part, seek to attract the best candidates. The choices made by school leavers are considerably more complex. Any assessment of university admissions procedures needs to bear in mind that the final outcome is influenced by the choices made by students, as well as those made by schools and universities.

Stage 2: Private schools over-predict A-level results relative to state schools. It is difficult to be certain what effect this has on the eventual outcome. There is no doubt that A-level predictions form the basis on which universities make their offers. It is also reasonable to assume that school leavers are influenced by these predictions when filling in their UCAS forms. School-leavers given over optimistic predictions are more likely to accept offers they fail to meet than students given more realistic offers. This could result in private school-leavers being disadvantaged by their schools' over-predictions. Alternatively they could be advantaged. Over-prediction increases the probability of an applicant being made an offer and this makes it more likely that the marginal student is from a private school.

It seems probable that on balance the over-prediction by private schools advantages their school-leavers. However, the magnitude of this effect is very difficult to judge. The obvious remedy is for the admissions process to be amended so that offers are made contingent on actual A-level results and not on predictions as at present. This would correct for any A-level prediction bias by private schools and perhaps, just as importantly, increase the transparency and perceived fairness of the system.

Stage 3: As indicated above the University's admissions policy seeks to encourage applicants from groups currently under-represented. We believe this policy is justified on grounds of both equity and efficiency.

Stage 4: If school leavers agreed on an objective, unique and complete ranking of universities, as is suggested by newspaper league tables, their choice would also be straightforward. The disproportionate rejection of Bristol by state school students suggests that the ranking of universities is not in fact objective in this way.

In choosing a university students are selecting not only the academic environment. If this were the only criteria students would choose the university, or department, with the best academic reputation. This would imply attending the best university their A-level results permitted. However, this is by no means the only criterion. In choosing a university students are also choosing between different regions of the country, different kinds of city or town and different student cultures.

With respect to some Universities the choice made by applicants is straightforward. In the sample no student offered a place at either Oxford or Cambridge turned down the offer in favour of Bristol. Virtually every student appears to strictly prefer Oxford and Cambridge to Bristol. There are almost certainly a large number of universities that most applicants rank in this way. For example the great majority of students probably have the same ranking for Oxbridge, a red brick university, and one of the new universities. Between these extremes however different applicants rank universities differently.

To clarify this point we appeal to the literature on product differentiation. This distinguishes between vertical and horizontal product differentiation. Models of vertical differentiation are concerned with situations in which firms sell goods that differ in terms of some characteristic, in respect of which all consumers share the same ranking. Models of horizontal product differentiation consider goods which consumers differ in respect to their ranking of alternatives.

We believe that Universities need to be differentiated along both a vertical and horizontal axis. Students rank some universities along the vertical axis. Most students will agree in their ranking of, for example Oxford and Bristol. Furthermore they will tend to agree on this ranking whichever of these universities they attend. Along this dimension students are ranking academic excellence and this can be judged by relatively objective criteria.

However, there is much less likely to be any such agreement on the ranking of, let us say LSE, Bristol, and Manchester. Judged in terms of academic merit LSE, Bristol and Manchester are all 'good universities'. It would be difficult to argue that any one of

The obvious remedy is for offers to be made contingent on actual results

them was unambiguously better than the others. But, these universities are differentiated along a different dimension. The most important differences between them are cultural rather than academic. Preferences between these institutions are largely subjective. In opting to attend one rather than another of these universities, students may have strong preferences but those preferences are largely a matter of personal choice.

Most importantly, along this dimension there may be systematic differences between the preferences of state and private school students. It is well known that universities such as Bristol, St Andrews, and Durham have a high proportion of public school students. It does not necessarily follow that these universities are 'better' than for example Sheffield, Manchester, or Southampton. Nor does it follow that students attending any of these universities are making the 'wrong' choice. Finally and perhaps most importantly the differences in the social background of the students attending these universities may not reflect any bias in the admissions procedures of these universities. They may to a significant degree reflect the preferences of the students themselves.

Conclusion

There are a number of conclusions that can be drawn from this research.

- The attempt by universities with high private school participation to encourage students from the state sector is a slow process. However there is widespread misunderstanding about the reasons for this and universities are only one element in the process. In choosing a university, students are choosing and creating a peer group and the student culture to which it gives rise. 37% of private school applicants in the sample studied accepted the offered places compared to only 16% of state school applicants.
- The finding that private schools tend to over predict A-level results relative to state schools provides support for the widespread criticism of current university admissions procedures. They place school leavers and universities in the difficult and unnecessary position of having to take decisions without full information and they probably advantage private school students. The obvious remedy is to reform the admissions process so that offers are made contingent on actual rather than predicted A-level results.
- We believe that equity and efficiency justify an admissions policy that differentiates between school leavers from different backgrounds. Moreover, many universities already have such policies.

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