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**PUBLIC POLICY: USING
MARKET-BASED APPROACHES**

Lessons and Guidance
for Policy Makers

SEPTEMBER 2005



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for Policy Makers

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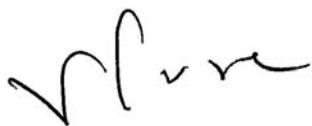
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Foreword

There is increasing interest in how market-based approaches can be used to meet public policy goals. Economic theory suggests that more market-based mechanisms can have advantages over more traditional policy designs. This document summarises the main lessons arising from a report, commissioned by the DTI and completed by a team at LECG, examining how competition and market forces can be used to improve the way that public policy is implemented. It develops the evidence base surrounding the benefits and pitfalls of using competition and market-based approaches and draws out practical lessons that will help policy makers in future policy development.

The analysis presented here is relevant to a wide audience. It draws upon economic research and the experiences of officials, from the Home Office, ODPM, DTI and DEFRA, and other stakeholders, such as local government officials and representatives of business. I am particularly grateful for the co-operation of all those who contributed their experiences, insights and funding to this study. I am also grateful to the Competition Forum, which provided the motivation for this work and has, since its establishment in 2004, helped bring together Government Departments and the independent Competition Authorities to promote a shared understanding of UK and EU competition issues.

This work contains several important messages. Significant benefits can be realised from the use of market mechanisms, even in apparently unpromising policy areas. But the scale of these benefits depends on how the mechanism is implemented. For this reason, it is important that the lessons of this study are used in order to capture these benefits.



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Using market-based mechanisms

Introduction¹

This paper, commissioned by the Department of Trade and Industry, examines how competition and market forces can be used to improve the way that public policy is implemented.

Public policy often involves either the direct provision of services by the public sector, or the public sector regulating how the private sector behaves. For some services, this has involved replacing the market with administration by the public sector, so that public-sector officials ultimately decide how much of a service is provided. However, public policy interventions can instead be designed in ways that:

- introduce competition between service providers;
- allow individuals a degree of choice over the services they receive and who provides them; or
- create markets where rights and obligations can be traded.

We call these policy designs ‘market-based mechanisms’.

Using a market-based mechanism in place of traditional policy designs can create significant benefits, in the form of lower costs and better services, but only if sufficient care is given to their design and implementation.

This paper brings together the main lessons we have learned from our analysis of the use of market-based mechanisms. Our main report² contains a more detailed analysis, including three case studies that illustrate how different market-based mechanisms have been applied in the UK. Through the case studies, in particular, we have gleaned practical insights as to how market-based mechanisms can be best designed and made to work successfully. These lessons provide valuable guidance for policy-makers across government on how market-based policies can achieve a range of policy objectives more effectively.

1 We are grateful for comments and suggestions from Elaine Bailey, Richard Beaton, Myriam Borgi, Fazleen Ismail, Alina Jardine, Adam Land, Andrea Lee, Sasha Maguire, Christopher Moir, Amy Newland, Siobhan Pointer, Sheetal Radia, Andrew Rees, and Frances Walker. We are also grateful for the co-operation and assistance of the various organisations and companies interviewed during this research: Camden Council, the Department for Environment, Food and Rural Affairs, Harborough District Council, Kirklees Metropolitan Council, the National Offender Management Service, the Office of the Deputy Prime Minister, Premier-Serco, SGS United Kingdom Ltd and Twin Valley Homes. This research was supported by funding from the DTI and the OFT.

2 DTI Economics Paper no.14 (2005) ‘Public policy: using market-based approaches’

This paper is structured as follows. In the rest of section 1 we describe our generic conclusions on applying market-based mechanisms to the public sector. In section 2 we discuss specific lessons that apply to each of the three particular mechanisms we have studied: competitive tendering, user choice and tradable permits.

Continuing role for the public sector

Our first lesson may seem paradoxical. Market-based mechanisms – even where a service is contracted out to private sector providers – do not remove the role of the public sector in managing or regulating how services are provided. Instead, they involve a different kind of government intervention. When a service is transferred to the private sector through a competitive tender, for example, the public sector still has to manage the contract with the external supplier. Total public-sector resource requirements may be more, less or the same as before, but they are likely to be of a different kind.

There is often a sound rationale for government intervention in a market. Without government, certain goods may not exist at all. Others may be provided only to a minority of users, in an undesirable quantity or at an excessive price. Without compulsory taxation, for example, prisons may not exist. While all (law-abiding) citizens benefit from the protection provided by their existence, individual citizens benefit whether or not they pay for them. In economic jargon, prisons are a **public good** as the service they provide to society is non-rival³ (my neighbour's consumption does not affect my consumption) and non-excludable (all benefit whether they contribute or not). Conversely, although the free market may provide education without government, this may be only for those able to pay for it. This might be considered unacceptable in a fair society and may conflict with the government's **social objectives**.

Although a pure free market may lead to too little education, it can lead to too much production of other products. Without government controls and restrictions, pollution would rise to unacceptable levels. In the absence of government intervention, for example, a factory owner will not bear the costs that pollution emitted from his factory imposes on others. As a result the factory may find it cheaper to use a technology that produces higher levels of pollution, despite the fact this leads to a higher cost for society. In economics, the impact of the factory's decision on the rest of society is known as a negative **externality**.⁴

Other goods may again be provided by the market, but at excessive prices. Economies of scale in production may make it inefficient to have more than one national electricity grid. Without government intervention, the monopoly producer could take advantage of its **market power** by charging very high prices to consumers.

3 The same is not true of prisons themselves, which do display rivalry characteristics: one detained prisoner occupies a prisoner place that could have been used by another offender.

4 Externalities arise when the cost of a good to society is different from the cost to the individual. Pollution is a negative externality as the cost to society is greater than the private cost, education is a positive externality as the benefit to society can be greater than the private benefit.

These examples of market failure suggest there can be a legitimate role for government in many sectors of the economy.⁵ Market failure alone is a necessary but not sufficient condition for government intervention. In some cases government intervention may lead to other problems, such as inefficiency and corruption, that could outweigh the original market failure. If there is a government intervention that can reduce the market failure without giving rise to additional problems, then government intervention can be beneficial.

However, state intervention can take many forms. An administrative system can lead to services being provided at an excessively high cost or poor quality if the incentives to minimise costs and improve quality are weak. Services may also be provided in the wrong quantities if there is no signal to tell providers which goods are most popular and so should be produced in greater quantities. In the private sector rising demand encourages firms to produce more but under a pure ‘administrative’ system, it can just lead to longer queues.

Careful use of market mechanisms by government can reduce or eliminate these problems. We emphasise ‘careful’ since such mechanisms require the public sector to devote significant resources to their design, implementation and operation in order to achieve the desired result. In Table 1 we list a number of market-based mechanisms which can be used to address the problems with pure private provision identified above, while avoiding some of the inefficiencies of an administrative system. The choice regarding which market-based mechanism to use will depend on a number of factors. However, a useful starting point is the nature of the market failure that provides the rationale for government intervention in the first place. In Table 1 we link market failures to possible market-based mechanisms.

Table 1
Market failures and market-based mechanisms

Market failure	Potential market-based mechanisms
Market power	Competitive tendering Removing entry barriers
Public goods	Competitive tendering User choice
Externalities	Marketable permits Taxes and subsidies
Social objectives	Competitive tendering User choice

5 An additional rationale relates to the cost of obtaining relevant information. For example, if consumers lack information on the quality of different products they may inadvertently purchase a poor-value product, or the risk of making such a mistake could mean that they do not make any purchase at all. Governments can alleviate this issue by trying to disclose information. This is not dealt with at length in our report.

The common feature of these market mechanisms is that they involve a different role for the public sector than before. This need not always be a reduced role. One of our case studies examined the experience of local authorities switching from an administrative system for allocating social housing to a more market-based system of user choice. This new scheme removed the need to employ local authority officers to make decisions on which property to allocate to which potential tenant. However, it introduced new demands on local authorities' resources, which meant there was no reduction in the overall resources required to administer the provision of social housing. The scheme delivered other benefits instead: the new system was found to be more efficient in terms of the speed of response and also to be more popular with users.

MAIN MECHANISMS REVIEWED

Our case studies explored the practical application of three different market-based mechanisms. These mechanisms are summarised below.

Competitive tendering

Where the public sector takes responsibility for providing a service – either because it is a public good, or to avoid problems arising from provision by a private sector monopolist – it may be possible to hold a competitive tender to choose the supplier of the service. This tender might allow both public-sector and private-sector suppliers to compete to become the chosen supplier. Competitive tendering allows the benefits of competition (such as improved efficiency and innovation) to be introduced to situations where there is a single supplier of the service. Competitive tendering can introduce competition *for* the market where competition *in* the market might not be possible or desirable. We examined the competitive tendering of prison services.

User choice

In other situations it may be possible to introduce competition in the provision of public services by having competing suppliers of the public service. This competition can be between public service providers, private-sector suppliers, or both. In each case the individual users of the service are given the right to choose a service provider. The most popular providers gain users and the less popular lose them, creating incentives for providers to be more responsive to customer needs. User choice often provides users with a 'voucher' or entitlement that can be exchanged for a specified service, although our case study on choice-based lettings involved a different approach.

Tradable permits

The examples above involve using market-based mechanisms in the provision of services by the public sector. Tradable permits are a means of introducing a market discipline to the regulation of private-sector activities. Regulation is often used to address problems of externalities, for example, by placing a control on the quantity of a pollutant that can be emitted by individual firms. Tradable permits are often used in this context. They involve setting an overall limit on the total level of emissions by all firms, and issuing permits up to this limit. Firms can then trade these permits amongst themselves. Those firms with a high cost of cutting emissions will buy permits from firms with a low cost of cutting emissions. Trading permits in this way allows emission reductions to be focused on those firms who can reduce emissions most easily. These firms will also be rewarded financially for doing so by those firms that find it more expensive to cut emissions. Our case study examined the impact of the UK emissions trading scheme to control greenhouse gas emissions.

Market-based mechanisms produce benefits compared to traditional policy designs

Evidence, both from our case studies and from previous studies of the use of market-based mechanisms, shows that significant benefits can be achieved when traditional policy designs are replaced with a market-based mechanism. These benefits arise from two main sources.

- **Benefits of competition on the supply side:** market-based mechanisms can be used to create competition between suppliers of public services. Introducing competition creates incentives for providers of public services to operate more efficiently and innovate in the way they provide services. This sharpening of incentives can lead to significant cost reductions. It can also encourage service providers to improve the quality of the services they provide, particularly when the end users of the service are given a direct choice over which service provider to use.
 - These benefits of competition can be achieved both when provision is transferred to the private sector and when provision stays within the public sector.
 - When competition is introduced in one area it can create benefits elsewhere. The techniques that are used to reduce costs or improve quality can be copied and applied even where competition has not been introduced.
- **Benefits of choice on the demand side:** benefits can be achieved when individuals or firms are allowed to make informed choices. For example, the recipients of public services can benefit from the ability to choose who provides them with a public service, such as which school or hospital they use. The mere fact that the user can make a choice will increase the likelihood that they receive the service they need in the way that is most convenient for them. The exercise of user choice can also provide better information for the public sector on which services are needed in which area.

Market-based mechanisms can also create ‘softer’ benefits that are difficult to measure but can be just as important as those listed above. Market-based mechanisms can introduce transparency and provide both policy makers and the public with greater information. A tradable permit scheme can reveal the cost of reducing emissions, while a system of user choice can provide better information on the type of services users prefer and, if implemented correctly, provides users with information on differences between service providers. This increase in transparency can improve the accountability of public-sector service providers and, by increasing efficiency, it can help make public policy objectives easier to achieve.

Market-based mechanisms require creative thinking

The allocation of social housing would at first glance appear to be a situation where market mechanisms could not be used. Social housing is provided entirely by 'not-for-profit' organisations, with supply fixed by the available social housing stock. Demand for social housing vastly exceeds supply in most parts of the UK. The price mechanism cannot be used to allocate this scarce resource because the government wishes to make social housing available to those in most need at below-market rents. These are not auspicious conditions for introducing a market.

However, creative thinking allows the more effective allocation of such housing. Traditionally, applicants for social housing had to wait until they reached the top of the waiting list, and were then told that they had been allocated a particular property selected by a public-sector official. Under the new arrangements, known as 'choice-based lettings', all vacant properties are advertised and marketed to all eligible applicants. These applicants view the properties and register their interest. The property is then allocated to the most eligible applicant, which is normally the applicant highest up the waiting list, although they could be far down the waiting list if the property has not attracted many other applicants. In practice, applicants can choose whether they wish to wait until a more desirable property becomes available or take a less desirable property in order to reduce their waiting time.

Although the introduction of choice based lettings may seem a minor change, it has resulted in a more transparent system, a faster allocation of properties and greater satisfaction among users. There is anecdotal evidence that tenants allocated properties under this scheme keep them in better condition, which may be because they have 'chosen' their property themselves rather than someone else choosing it for them.

Importance of design and implementation

The benefits achieved by a market-based mechanism depend on how the mechanism is designed and implemented. A badly designed market mechanism can be worse than traditional alternatives. The importance of implementation is perhaps best illustrated by the contrast between the UK and US experience of competitive tendering of prison services. Several studies have pointed to failures in competitive tendering of prison services in the US. In contrast we found that competitive tendering of prison services in the UK has, on balance, been a success. The difference here seems to be due to differences in policy design and implementation rather than any inherent differences between the UK and US. In particular, UK policy makers have learned from the US experience and taken measures to address problems found there. Differences in UK and US experiences are explained in more detail in the section 2.

In the rest of this section we identify some lessons for policy design and implementation that are relevant to all, or most, market-based mechanisms. In section 2, we identify some lessons that are relevant to the specific market-based mechanisms we have examined.

EXPECTED COSTS AND BENEFITS OF A MARKET-BASED MECHANISM

When a market-based mechanism is used, there should be a clear view on the net benefits that this is expected to deliver relative to a more traditional policy design. The benefits produced by market-based mechanisms were described above. The extent to which these will be realised depends on whether certain features are present: the benefits of competition will only be realised if there are sufficient competing providers to guarantee a competitive process; the benefits of choice will only be realised if users are able to exercise choice. Clarity on the expected benefits and costs will help policy makers to assess whether the conditions for achieving these benefits exist or, where they are not, how this problem can be addressed.

Clarity on the expected benefits and costs will also make it easier to evaluate the performance of the mechanism once it is in place. As with all public policy initiatives, the outcome of the market mechanism should be evaluated once information on its performance is available. Comparing actual performance against expectations helps to identify any potential areas for improvement and lessons for future programmes.

THE RIGHT PEOPLE NEED TO BE INVOLVED IN THE DESIGN

When designing a market-based mechanism, it is essential that the design team includes people with an appropriate balance of skills. An inappropriately balanced team can lead to a process that does not take into account all the different skills and perspectives required for a successful solution. For example, the design team for a competitive tender process might need to include procurement specialists. Such specialists can bring experience from procurement in other areas in order to get the lowest price and best quality service for the public sector.

The importance of quality makes it desirable for a design team to include people with experience in the day-to-day operation of the service. Such people can anticipate specific problems with the use of a market-based mechanism in that particular area that may not be apparent to outsiders. Moreover, even where problems can be easily identified, operational people can propose the most appropriate ways to overcome those problems. One of the lessons we drew from our case study on competitive tendering in prisons is the importance of maintaining service quality. The overall conclusion from our case study was that the large number of quality measures used by the Prison Service have been successful in keeping service quality at an appropriate level. However, not all service quality targets have been equally effective. One target required all

broken items in the prison be replaced within 24 hours, and suppliers failing to meet the target incurred penalties. This target nearly undermined an initiative by one prison operator to provide toasters for prisoners, because a broken toaster accrued the same penalty as a more serious broken item.

Similarly, the inclusion of operational staff in the design of performance targets can help to ensure that they are designed appropriately. Some of the benefits of competitive tendering come from new suppliers introducing fresh ideas into the provision of public services. Performance targets should safeguard quality while at the same time providing opportunities for innovation. In prisons, there has been a change in the type of performance target over time from targets that controlled virtually every aspect of prison life, to those that allow some room for innovation while safeguarding quality. A target that measures the success of education in prison by exam results arguably provides better scope for safeguarding quality and innovation than one that requires a set number of hours in the classroom.

Policy-makers and economists should also be an integral part of design teams. Policy-makers can help ensure that the scheme is consistent with overall government policy. Policy-makers should seek to see that the rationale for the policy is clear, define the expected benefits and costs, set out how they will be achieved and ensure that the scheme is part of a coherent approach to dealing with an identified problem.

Economists also have a valuable role to play. Economists can ensure that the mechanism and its implementation reflect the underlying market failure. Economists can also assist in predicting the likely effects of the mechanism and in evaluating the evidence on its performance.

Lessons for the design and implementation of specific mechanisms

Introduction

This section summarises some of the main lessons drawn from our review of the theoretical and empirical literature and the three case studies we conducted. We focus here on the three mechanisms covered by our case studies: competitive tendering, user choice and marketable permits. Further detail on these and other mechanisms can be found in our main report.

Competitive tendering

Competitive tendering has been widely used in many countries in different areas of the public sector. The wide-ranging application of this mechanism means there is much experience to draw on in designing a system of competitive tendering. This experience suggests that two main issues are likely to arise:

- market power of suppliers; and
- maintaining the quality of the services provided.

Some actions that reduce one of these problems may exacerbate the other. Policy makers may therefore need to take a view on the relative risks of these problems and decide which one takes priority.

MARKET POWER

Two market power issues can arise.

The first market power issue is when an **incumbent supplier** has a significant advantage over potential competitors for a contract and, as a result, none of these potential competitors are willing to go to the trouble of bidding against it. This situation typically arises when the incumbent possesses information that competitors lack, or owns assets that can be used to fulfil the tender that competitors do not possess.

A number of actions can be taken to reduce incumbency advantages, some of which should be taken into account when the contract is initially let in order to avoid creating an incumbency advantage in the first place:

- ensuring that information held by the incumbent is shared with potential bidders (this has been the case for prisons, where the incumbent has to share information on the costs of running a prison with rival bidders) and maintaining public ownership, or third-party ownership, of specific assets, will help to reduce the advantage possessed by an incumbent;
- breaking up the contract into a series of smaller contracts, which are not all let to the same supplier, will ensure that there are a number of incumbents who will be potential competitors for each other's existing contracts;
- a longer contract period may encourage more firms to bid, since they are more likely to recover the fixed costs of bidding-although this may have implications for quality of service, as discussed below; and
- it is generally desirable to transfer as much risk as possible to the supplier since this increases the incentive faced by the supplier to operate efficiently. Risk transfer could be achieved through contractual design, for example by ensuring that the supplier rather than the public sector bears the risk of cost overruns. However, where it is clear that the supplier cannot control some risks (where some input costs are beyond its control, for example) it may be beneficial for the public sector to bear, or share some of, these risks in order to encourage more suppliers to compete in the tender.

The second market power issue is when there are a number of potential bidders but a high **risk of collusion** between them. Collusion is most likely to occur when:

- there are a relatively small number of bidders, so that it is easy to organise a cartel, and there are barriers to entry that prevent new suppliers, outside of the cartel, from bidding;
- there are a number of very similar contracts so that potential suppliers can share the contracts between each other in the expectation that each will generate similar profits; and
- there is a transparent tendering process that allows the bidders to monitor each other and ensure that all are complying with the collusive agreement.

Given these factors, the following actions might reduce the risk of collusion:

- removing any unnecessary entry barriers, such as excessive or disproportionate pre-qualification criteria;
- avoiding the creation of a series of identical contracts and instead creating contracts that vary in size; and
- avoiding an auction design that is too transparent-a system of sealed-bid auctions may be preferable to an open auction if the risk of collusion is high, although this may also deter potential bidders in some circumstances.

In general, auction design is a subject on which expert economic advice should be sought.

COLLUSION IN FLORIDA AND TEXAS MILK CONTRACTS

We did not find any suggestions that collusion had occurred in our case study of competitive tendering for prison services in the UK. However, the tendering of school milk contracts in Florida and Texas provides an illustration of how a poorly designed public procurement process can create the ideal conditions for collusion. A large number of very similar small contracts were created (in total several hundred a year between the two states). In each school district contracts were awarded independently of one another and at different dates. Each school district also published details of all bidders for the contract and the price bid by each. The transparency created by this system made it easy for bidders to collude (either on price or by sharing out contracts) and to detect when any firm cheated on the cartel. The frequency of contracts deterred firms from breaking ranks and undercutting the cartel, because the gains from doing so on any individual contract were likely to be small and because any such attempt could quickly be punished by the other cartel members undercutting on the next contract.

QUALITY

When services are contracted-out to a private-sector supplier, the supplier will normally have strong incentives to reduce costs. The introduction of incentives to minimise costs can raise concerns that costs will be reduced at the expense of quality of service. In principle, this concern can be addressed by specifying appropriate quality standards in the contract between the public sector and the supplier. However, experience suggests that this can be difficult to do: quality can be difficult to define and measure, and suppliers may have an incentive to focus on improving dimensions of quality that can be measured while ignoring other dimensions that may be more important.

These problems are not unique to competitive tendering. Where there is no competitive tender it can still be difficult to measure quality and set appropriate targets for public-sector service providers, such as schools and hospitals. The difference is that when services remain wholly in the public sector, and there is therefore no legally-binding contract with the supplier, it can be easier to adjust measures and targets in the light of experience than it is to renegotiate a contract with a private-sector supplier.

In practice, this problem is most likely to arise during the first round of tendered contracts. In subsequent tenders it should be possible to learn from experience in order to improve how quality is defined, measured and monitored – as has been the case with the competitive tendering of prison services in the UK, which is discussed below. This problem suggests that in the first round of tenders it may

be necessary to include some flexibility, allowing for quality measures to be reviewed and improved, for example. Flexibility may, however, create uncertainty and costs for suppliers and deter investment if there is a risk that changes to the contract will make this investment unprofitable. It may therefore be desirable to have some element of flexibility in the first round of tenders, but phase this out as the public sector becomes more experienced at writing contracts.

Even where it is not possible to fully define all aspects of quality, service providers will have an incentive to maintain or improve quality if they know that this aspect of their performance will be taken into account when the contract is re-tendered. This incentive, and the need to allow for contracts to be reviewed, suggests that tender lengths should not be too long, at least in the first round of tenders, if concerns regarding quality of service are high.

PRISON SERVICES IN THE UK

In the US, the private-sector provision of prison services has been associated with poor quality provision of services. As a result some commentators have suggested that prisons are not suited to competitive tendering. In contrast, the UK experience has been successful, with few instances of the quality problems found in the US. A number of factors may have led to these different outcomes, but the following appear likely reasons for the relative success in the UK:

- Problems in the US have often been associated with speculatively built prisons. In the UK, providers of prison services are selected by the public sector, and selection involves a strong emphasis on quality as well as cost.
- Sophisticated measures of quality have been developed in the UK that have been closely monitored. These measures have developed over time, learning from experience.
- Contract lengths in the UK were initially relatively short (five years). This approach allowed for contracts to be revised and improved, although it may have had a negative impact on incentives for investment. Contracts are now longer but allow for some degree of renegotiation.
- Contracts in the UK now include both penalties for poor performance and rewards for good performance.

User choice

Experience in the application of user choice suggests the following issues may arise:

- designing an allocation mechanism;
- providing sufficient information; and
- risks of inequality of access.

ALLOCATION MECHANISM

Introducing user choice will not necessarily mean that all users will be able to exercise their first choice on all occasions. Capacity is likely to be limited. For example, it would be inefficient for every school to have the capacity to offer a place to every child in its education authority area. As a result school places are likely to be limited at the most popular schools and not every parent will be able to send their children to these schools.

Given these capacity constraints, some mechanism is needed to ration the capacity of popular service providers between competing users. In private-sector markets this role is performed by the price mechanism: those who are willing and able to pay more bid up the price until demand matches available supply. Since allocating places on the basis of willingness to pay may conflict with public policy objectives, it may be necessary to find an alternative allocation mechanism for public services. Users will need to understand that their ability to choose will be constrained by available capacity and they may have to accept something less than their first choice, which may still be preferable to no choice at all.

CHOICE-BASED LETTINGS

In the case of choice-based lettings a number of different mechanisms have been used to allocate properties between rival potential tenants. Some involve awarding points based on a number of objective factors (such as length of time waiting for a property and whether the person is disabled). Others simply rank applicants based on the length of time they have been waiting, but allow certain applicants priority for certain properties. In all cases applicants are awarded some form of 'currency', such as points or a position on a waiting list. Properties are then let to the applicant possessing the most currency. A key difference with the traditional administrative system is that all eligible applicants can view the available properties. As the properties are advertised weekly in local media, applicants can choose properties that they prefer, rather than having a choice made for them. It also means that those lower down the waiting list are able to choose the less popular properties, which may be rejected by those at the top of the list, so that unpopular vacant properties can be re-let more quickly.

Although capacity is likely to be fixed in the short run, it may be possible to alter it over the long run-by deciding whether or not to close one school and expand capacity at another, for example. User choice will provide information on user preferences that we would expect to be used to influence these decisions. Incorporating information from actual user choices may work best when users have the option of using private-sector providers. Private-sector providers are likely to have more freedom than public sector providers to raise the capital needed to finance an expansion in capacity. So involving private-sector providers may make supply more responsive to user preferences.

INFORMATION

Users can exercise an informed choice only if they possess sufficient relevant information. A system of user choice therefore requires that the public sector devote resources to communicating information on available choices to potential recipients.

Care needs to be taken to provide information that is easily understood and allows for comparisons between providers, without over-simplifying complex differences in quality. For example, consider the problem of assessing school quality. Exam league-tables may to some extent reflect the quality of education provided by different schools, but exam results might not be a complete measure of the quality of education provided. Good results may simply reflect a school's ability to attract bright pupils and users may therefore need guidance on how to interpret and use the information provided.

ENSURING EQUALITY OF ACCESS

A related issue is that some users will find it easier than others to interpret information and exercise their right to choose. Those less able to exercise their right to choose might include users with less education, those for whom English is a second language and those who find it more difficult to access information because they live in a rural location with poor transport links. Inequalities in the ability to choose may lead to inequality in the allocation of services, with the more advantaged participants receiving better services than those who are less able to exercise their right to choice.

The experience of choice-based lettings shows that if these issues are recognised at the outset, then measures can be taken to assist any disadvantaged groups of participants. These measures include providing information in different languages, ensuring that information reaches all potential users and employing staff to provide guidance and advice to users, for example.

Tradable permits

Tradable permit schemes have now been employed in a number of countries, mainly to control pollution emissions. Key implementation issues include:

- allocating permits;
- differences in environmental impacts; and
- the liquidity of permit markets

INITIAL ALLOCATION OF PERMITS

Permits need to be allocated to firms or individuals. This allocation might be achieved through 'grandfathering', where permits to pollute are issued on the basis of existing levels of pollution or industrial output. Grandfathering has the merit that firms who previously had the right to produce pollution maintain that right without any direct cost, but now face an opportunity cost from continuing to pollute (this opportunity cost is the income they could receive from selling their permits). This system also tends to be easier to introduce.

However, grandfathering may create perverse incentives, since it can, in effect, reward firms for past pollution and penalise those firms who have already reduced emissions. Grandfathering can also, in some circumstances, stifle competition if it creates market power by disadvantaging new entrants who will have to buy permits from incumbent firms.

These problems are avoided if, at the outset of the scheme, permits are sold in some form of auction. The auction allocates permits to those who value them most, but forces them to pay for the right to pollute. However, care needs to be taken in the design of the auction to ensure that it produces a fair and efficient market price, and does not create any of the problems discussed below. Auction design is a complex subject, and the correct auction design is likely to vary from case to case. This is a subject on which expert advice should be sought.

THE UK EMISSIONS TRADING SCHEME

The UK emissions trading scheme involved an auction in which firms bid to obtain funding in exchange for offering to make greenhouse gas emission reductions. The auction was designed by independent auction experts and was subject to review by stakeholders before implementation. This initial auction resulted in the government purchasing emissions reductions at a price of £18 per tonne of carbon dioxide per year. Subsequent experience has shown this price is significantly above the market price for allowances, which were later trading in the range £2 – £4 per tonne. A subsequent analysis by economists, commissioned by the National Audit Office, suggested an alternative auction design that might have reduced the initial payments made by the UK government.

LIQUIDITY

A successful tradable permits scheme requires that there is a liquid market in permits: by this we mean that it must be possible for buyers and sellers to trade permits at a price close to the underlying market price without significant delay. They should not need to wait for other traders to appear or pay a high penalty for trading quickly. Liquidity is likely to be highest if:

- there are a large number of buyers and sellers, which suggests that tradable permit schemes should generally be large-one large scheme is likely to be more liquid than a number of smaller schemes;
- a trading infrastructure exists, such as an exchange where buyers and sellers can meet; and
- rules allow for trading by proprietary or arbitrage traders-traders who do not need permits for their own purposes, but buy and sell for profit. These traders can be an important source of liquidity.

DIFFERENCES IN ENVIRONMENTAL IMPACTS

Some pollutants have different impacts depending on where they are released. For example, emissions of effluents into rivers may have different impacts depending on the river where emissions take place or the location along the same river. For some other pollutants, such as greenhouse gases, location is not an issue, but some greenhouse gases have a more intensive effect on climate change than others.

Where different impacts exist, they might suggest that separate schemes are needed to reflect these differences. However, as explained above, larger schemes are generally desirable because they increase liquidity. There is a trade-off here between environmental quality and efficiency objectives. It may be possible to resolve this tension and include emissions with different impacts within the same scheme if the differences in impact are predictable. This is the case with different greenhouse gases, for example. The UK-ETS therefore includes all types of greenhouse gases with set 'exchange rates' to determine how permits can be used to meet obligations regarding different greenhouse gases.

Conclusion

Using a market-based mechanism in place of traditional policy designs can create significant benefits, in the form of lower costs and better services. However, the extent of these benefits will depend on how the mechanism is implemented. This paper has set out a number of lessons, drawn both from the theory of market-based mechanisms and the significant body of experience that now exists in many countries, which suggest how these benefits can be maximised.



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