OFFICE OF FAIR TRADING

Assessing the impact of public sector procurement on competition

Summary

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Prepared for the Office of Fair Trading by •econ
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1 SUMMARY

Background

1.1 Public procurement – the purchase of goods and services by the public sector – accounts for a significant proportion of both public expenditure and demand for good and services in the economy. Although there is some degree of uncertainty over the total size of public procurement in the United Kingdom (estimates range from 11 per cent to 18 per cent of GDP[1]), in some markets the public sector is likely to be by far the largest buyer, and thus in a position to affect competition through its purchasing behaviour.

1.2 The precise nature of competition effects from public procurement can be expected to vary considerably across different procurement settings, reflecting that:

- procurement covers a wide range of very different goods and services
- procurement practices vary considerably with the nature of the goods and services bought, and
- the potential impact of procurement on competition depends on market conditions.

1.3 Competition may be defined in most general terms as process of rivalry between firms to sell their products or services to customers – end users, other firms or, indeed, the public sector. This rivalry can take place in many dimensions – price, quality, innovation – and its intensity depends on a number of factors such as the ease with which customers can switch between suppliers, the ease with which suppliers of a

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[1] HM Treasury estimates that public procurement, excluding public corporations, was worth £117 billion in the financial year 2002-3, which is around 11 per cent of GDP. Figures used by the European Commission (2004, p.4 f) suggests that public procurement in UK was worth 18.4 per cent of GDP in 2002.

particular product can switch to supplying a different one, whether new firms can start supplying customers without much difficulty, and so forth. There are no hard and fast rules that would allow one to assess whether competition becomes more or less intense as a result of a particular change in market conditions, and therefore we will have to focus on indicators such as the number of suppliers in a market, whether they are similar or different, or the level of entry barriers which generally affect the level of competition.

1.4 Competition effects from procurement can be both positive and negative. The public sector, by virtue of its overall demand in certain markets, may be in a position to protect and promote competition, for example by maintaining a competitive market structure through deliberately sourcing its requirements from a range of suppliers, by providing incentives to suppliers to invest and innovate, or by helping firms to overcome barriers to entry. It may, however, also restrict and distort competition, e.g. by adopting procurement practices that have the effect of restricting participation in public tenders and that might even discriminate against particular types of firms. Last but not least, the public sector may fail to contribute towards an improvement of competitive conditions where it could in principle do so.

1.5 Owing to the complexity of competition effects of public procurement, there are few (if any) hard and fast rules that would suggest where public procurement might raise competition concerns. This means that procurement practices will ultimately have to be assessed on a case-by-case basis, and against the background of the specific market within which procurement takes place.

1.6 Even though ultimately a detailed assessment of individual procurement practices is required, a more general and conceptual analysis of the basic mechanisms through which public procurement can affect competition is helpful because it:

- provides a framework for the detailed review of specific procurement practices in particular markets

- might provide guidance to the public sector in its decisions how to buy and how to design procurement processes, and

- assists in the identification of markets where competition concerns are most likely to arise, and where further investigation might be most appropriate.

1.7 This report, commissioned by the Office of Fair Trading:

- provides a detailed economic analysis of when and how public procurement might affect competition, including an analysis of the differences between public and private sector buyer power and an assessment of some key procurement practices

- suggests an approach for identifying sectors in which further investigation of public procurement processes might be justified, and

- uses readily available sectoral data for the United Kingdom to identify a number of sectors for further consideration by the OFT.

1.8 In the course of our research, we have conducted a number of case studies into specific procurement processes or procurement settings. These case studies are provided in a separate document. The purpose of these case studies has been to inform the theoretical analysis and provide a valuable cross-check. For the avoidance of doubt, our selection of case studies was in no way based on a preconception of where competition issues might arise. There is no relationship between the case study selection and the identification of markets for further investigation.

1.9 Perhaps closest to the research agenda covered in this report is the Kelly report (OGC, 2003), which explicitly addressed the question how public procurement could contribute to a strengthening of competition and an improvement in long-term capacity planning. The main findings of the Kelly report suggest that, at present, the public sector does not take sufficient account of the impact of its procurement decisions on the long-term structure of supply markets. The report explicitly states that the public sector needs to show 'a greater willingness to take a view about the market structures best suited to competition and security of supply, and a willingness to use legitimate ways of influencing those structures.' Developing a better understanding of how competition can be affected by procurement decisions – which is one of the main themes of this report - should help achieve this.

Public and private sector buyer power

1.10 For public procurement to be capable of affecting competition in a market, the public sector needs to possess buyer power. Like private sector buyer power, public sector buyer power may arise for many reasons, but all of these fall in one of two main categories:

- buyer power may be related to the size of demand of the public sector relative to the total demand in a particular market, or

- a buyer may enjoy power because it is a strategically important customer for its suppliers.

The two categories are closely related, though, because the strategic importance of a buyer tends to be associated with its size. Thus, in practical terms a powerful buyer is a buyer who is large relative to the total demand within a market.

1.11 The 'public sector' comprises many independent agents. It would therefore be inappropriate to conclude from the fact that public sector demand is large that the public sector enjoys buyer power. If public sector demand is fragmented, and if different public sector bodies act in an un-coordinated fashion, there may not be any significant public sector buyer power (although there would be the prospect of attaining buyer power through consolidation of demand and co-ordinated action where the public sector accounts for a large proportion of demand in a market).

1.12 Whereas the sources of buyer power may be broadly similar in the public and the private sector, public sector buyer power can be expected to differ from private sector buyer power in two respects.

1.13 First, there is a legal and regulatory framework for public sector procurement that does not apply to the private sector. The EU Directives on public procurement define rules that have to be followed by contracting authorities, and which may make it more difficult for the public sector to exercise buyer power. Transparency and non-discrimination obligations together with formal requirements with which procurement processes have to comply may limit the exercise of public sector buyer power.

1.14 Second, decisions about how to organise purchases by the public sector may differ from those that a private sector buyer with similar buyer power would make, for a number of reasons:

- The public sector may be more risk averse and reluctant to experiment with novel ways of organising its procurement, or to choose new suppliers. Where customers of private firms are normally able to seek out alternative suppliers if any particular firm cannot deliver, this option does not normally exist in the case of public services. Any failure of procurement that jeopardises the ability of the public sector to provide services to the public is highly visible, and may have significant detrimental effects. As a result, avoiding failures is a high priority for the public sector. This may lead to an overly strong incentive to limit participation in public tenders to large and reputable firms, or to stick with incumbent suppliers.

- Public sector procurement decisions are not driven by a desire to maximise profits. As a result, the public sector may be considered less likely to engage in the exercise of buyer power with the objective of gaining unfair advantages over other buyers of similar goods and services. Where a powerful private sector buyer might extract concessions from its suppliers to discriminate against other buyers, which would then make it more difficult for them to compete downstream, the public sector typically does not have such incentives.

- Unlike private sector buyers, the public sector may pursue other policy objectives through its procurement. Such objectives could potentially lead to (or perhaps even require) a restriction or distortion of competition amongst suppliers. In some instances, these policy objectives are embodied in regulations governing the supply of goods or services (e.g. the Drug Tariff or the Pharmaceutical Price Regulation Scheme), which arguably have an impact on competition. Although some policy objectives may be in line with the broad objective of improving competition, for example minimising barriers for SMEs to participate in public tenders, others may have an adverse impact on competition.

Competition effects of procurement

1.15 Public procurement can affect competition in a number of ways. Our analysis distinguishes between:

- short-term effects on competition amongst potential suppliers, i.e. effects on the intensity of competition amongst existing suppliers in a particular tender, for example, taking the number of firms in the market, the range of products available and the underlying production technology as given

- long-term effects on investment, innovation and the competitiveness of the market, i.e. effects that capture changes in market structure and technology caused by public procurement, which would be reflected, for example, in the level of competition in future tenders

- knock-on effects on competition in the supply of other buyers; other buyers are, for example, affected by changes in market competitiveness or technology. They might both benefit from, or be harmed by, attempts by the public sector to use buyer power in order to obtain better terms and conditions from its suppliers.

1.16 These effects can sometimes work in opposite directions. Notably, strong promotion of short-term competition amongst suppliers can reduce long-term competitiveness, or may discourage innovation and investment.

1.16 Where the public sector, through its procurement, exercises countervailing buyer power, it keeps a check on supplier market power, making suppliers compete more vigorously for public contracts than they otherwise would. The exercise of countervailing buyer power may sustain a competitive market in the long term, or even help new suppliers overcome entry barriers. On the other hand, a strong public sector buyer may also reduce competition, e.g. by increasing the gap between large and small firms within a market, or by forcing some firms to leave the market altogether.

1.17 An obvious question is why the public sector might possibly want to restrict or distort competition amongst suppliers. More intense competition should result in lower prices and better quality, and thus promoting competition amongst suppliers is an obvious strategy for achieving value for money. However, the competition effects of choices made in the design of procurement processes are complex and often require a trade-off between costs (e.g. the administrative cost of running a tender with more bidders) and benefits (e.g. the expected reduction in price as a result of more intense competition). Where these decisions are made on the basis of distorted incentives, it may be the case that public procurement fails to promote competition as much as it could, or leads to avoidable restrictions or distortions of competition.

Short-term effects

1.18 In the short-term, the main competition effects from public procurement relate to the impact of procurement decisions on:

- the level of participation in a particular tender

- the similarity of bidders

- the incentives and ability of bidders to engage in tacit collusion.

1.20 A rule of thumb is that more bidders make for more intense competition, resulting in lower prices and better quality. Even though the incremental benefits from having more participants in a tender may become smaller as the number of bidders increases, in most circumstances adding bidders increases the level of competition. This suggests that any feature of public procurement processes that limits participation has a detrimental impact on competition in the short-term.

1.21 However, there are also good reasons for limiting participation:

- Evaluating bids is costly, in particular where the buyer's needs are complex and requirements cannot be specified in a simple way. The buyer therefore has to trade off the higher costs of assessing a larger number of bids against the likely decrease in purchase cost as a result of fiercer competition amongst bidders

- Limiting the number of bidders on the basis of criteria such as reputation and a proven ability to meet the particular requirements may be efficient in cases where the characteristics of the goods or services are difficult to define contractually

- More bidders may not always lead to lower prices. There are conditions in which increasing the number of bidders can lead to higher prices because everyone bids more cautiously. This is the case where bidders are concerned about the risk of winner's curse – an outcome in which the winner of a competitive tender has bid too low and will make a loss as a result of having won the tender.[2]

- Competition in a tender is generally more intense the more similar the bidders are. This means that increasing the number of bidders may not necessarily increase competition where the additional bidders are known to be weaker.

1.19 More generally, designing procurement processes in a way that ensures that participants are more alike tends to increase competition, whereas processes that lead to participants being very dissimilar are likely to reduce competition. This may be particularly important with regard to setting prequalification criteria for restricted tenders, which determine not just the likely number of bidders, but also their characteristics and thus their similarity.

1.20 The design of the procurement process can also affect the likelihood of collusion, which appears to be a frequent concern in procurement auctions. Generally, it is more difficult to sustain collusion as the number of bidders increases, and as bidders become more dissimilar (which may counteract the positive impact on competition as a result of more similarity across bidders). Other factors that may impact on the likelihood of collusion include:

- **Transparency**: collusion is more easily sustained if bidders can observe when other firms are trying to charge prices below the collusive level. The more likely such under-bidding would be

[2] Such concerns arise, for example, where there is considerable uncertainty about the likely cost of meeting the buyer's requirements, and bidders differ largely with respect to their best estimate of this cost. If bidders were simply to bid in line with their cost estimates, the bidder with the lowest cost estimate would win the tender, but this bidder would most likely have under-estimated the cost of delivering the required goods or services. Therefore, rational bidders will bid with a sufficient safety margin to avoid an outcome in which having won a tender will lead to losses. This safety margin is larger the more uncertain is the true cost, and the larger the number of bidders, so that the price paid by the buyer can increase as a result of allowing more participants to submit bids.

detected, the more effective is the threat of retaliation by other firms which ultimately sustains the collusive outcome. This means that increased transparency such as information about the terms and conditions offered by winning and losing bidders in a competitive tender may increase the risk of collusion.

- **Frequency of interaction**: collusion is more easily sustained when bidders interact repeatedly, either in the same market over time, or in different markets, because repeated interaction allows for more effective punishment of firms trying to charge prices below the collusive level. This means that splitting up a requirement across multiple tenders can increase the risk of collusion.

- **Stability of demand**: collusion is more easily sustained in markets where demand is relatively stable and predictable. This is because demand volatility makes it more difficult to detect attempts by firms to grab a larger share of the market by charging lower prices, and the incentives to under-bid competitors are larger if demand is large at present, but expected to fall in the future. This means that a constant, predictable flow of demand from the public sector may increase the risk of collusion.

1.24 One implication of this is that excluding smaller firms does not have a significant impact on competition (although it would clearly affect these firms as competitors) where such firms are at a disadvantage in providing the goods or services required. For example, excluding SMEs in cases where the buyer's requirements are subject to strong economies of scale or scope, or where size and reputation are essential from the perspective of the public sector buyer, would not significantly reduce competition. By contrast, excluding such firms where they are in a comparable position to larger competitors (e.g. in cases where the focus is on innovation, and there are no reasons to expect that smaller firms are at a disadvantage in this regard), excluding small firms could potentially reduce competition significantly.

Long-term effects

1.21 Long-term effects require that changes in market structure and market position caused by short-term restrictions or distortions cannot be easily reversed, and that the threat of potential competition from new entrants is not effective. If, for example, entry barriers were low or absent, then it would not matter if unsuccessful bidders for a public tender were forced to leave the market – the threat of potential competition from new entrants would persist and would constrain the market power of firms in the market. However, where there are significant entry barriers, and where winning public contracts is crucial for the viability of firms, the public sector can affect market structure by awarding contracts to a larger or smaller number of firms.

1.26 In these cases, the public sector may also help firms to overcome entry barriers. For example, NHS Supplies assisted a new supplier of medical gases in entering the UK market through facilitating contact between the firm and the agencies responsible for regulation of supply of such gases, and by seeking commitment from NHS trusts to purchase from the new entrant.

1.27 Even without changing the number of suppliers in the market, public procurement can have long-term effects on competitiveness by increasing the gap between market leaders and other suppliers, or by creating incumbency advantages for public contractors in future tenders. Such incumbency advantages may be due to the public contractor developing a better understanding of the public sector's requirements, or having made investments that give it a cost advantage over other firms. If the incumbent is in a privileged position when it comes to the re-tendering of a particular contract, this may discourage participation of firms with low chances of winning, and may weaken competition overall.

1.28 Where repeated selection of the same firm increases incumbency advantages (e.g. through learning-by-doing, or as a result of specific investments made by the successful bidder), a buyer awarding a contract to the cheapest supplier in a series of tenders may find itself with a rather restricted choice of suppliers in the long term. To the extent that sector bidders anticipate such an outcome, they have an incentive to reduce their price when a new requirement is first put out to tender in the expectation of little competition and higher profits in the future. Where the public sector is focused on short-term value-for-money gains, there may be a risk that competition is reduced over time. This may affect not only the public sector at the re-procurement stage, but also other buyers as a result of an increasing gap between market leader and smaller firms, resulting in less vigorous competition in the market as a whole. Systematic discrimination against smaller firms whether such firms would be viable competitors can be expected to have similar effects.

1.29 Such a reduction of competition can be prevented by awarding multiple contracts and by selecting a different bidder for each of those contracts, even if bidders do not offer the lowest price (even though this implies that the public sector is not realising some cost savings in the short term). Where incumbency advantages have developed, they may have to be neutralised, e.g. by paying new entrants to invest in getting up to speed with requirements, as in the case of the Inland Revenue re-tendering its IT outsourcing contract. In order to enable more firms to compete effectively, the IR paid for bidders to undertake design and implementation studies, and decided to fund the unique costs caused by the transition and not to take such costs into account in the evaluation of bids.

1.30 Through bundling its requirements, the public sector may also affect the vertical organisation of supply. Buying bundles of services across the value chain can provide advantages to vertically integrated suppliers, and affect decisions of firms to integrate vertically. Conversely, by insisting on purchasing services unbundled, the public sector might remove or weaken incentives for vertical integration.

1.31 For example, we observe that local authorities are increasingly procuring integrated waste management services, often combining waste collection and disposal contracts, and that this goes hand in hand with increasing vertical integration amongst suppliers. This might limit the number of competitors that can be sustained in the long term because of potentially significant scale economies in waste disposal. Even if many more firms could provide efficient collection services (as there are no pronounced scale economies in this activity), discrimination in favour of firms capable of supplying both collection and disposal services might eventually force such firms out of the market and lead to a supply sector that consists of only a small number of vertically integrated firms.

1.32 Public procurement can also have significant effects on investment and innovation. An overly strong focus on price in public tenders, for example, may discourage innovation because bidders might not be able to recoup their investments. At the same time, significant public sector demand can be used to provide incentives for investment and innovation, not least in order to ensure that capacity in the long term is sufficient to meet the public sector's needs (as discussed in the Kelly report, OGC 2003).

1.33 Where procurement is used in order to promote investment and innovation (as, for example, in the case of public procurement of broadband services, where public demand was initially regarded as one of the main drivers of roll-out), it may determine the range of products available, and the firms supplying them. Thus, public procurement decisions may be the main factor determining competition in the market at large, having helped to create it in the first place.

Knock-on effects on other buyers

1.34 Where the public sector accounts for much, but not all demand in a market, other buyers will be affected by the impact of procurement decisions on the number of suppliers, the range of products available, and the technologies used. To the extent that other buyers do not enjoy buyer power, they may be much more exposed to a long-term lessening of competition than the strong public sector buyer.

1.35 In addition to these side-effects, there may also be cases in which the public sector benefits at the expense of other buyers. For example, where public contractors gain advantages over those firms not supplying the public sector, and these advantages result in restricted or distorted competition in the supply of other buyers, intense competition for the public sector contract may arise. Expected profits from restricted competition in the supply of other buyers would be competed away in the form of better terms and conditions for the public sector.

1.36 It is at least theoretically possible that the public sector could improve the terms and conditions it obtains from bidders in public tenders if increasing the extent to which public contractors are advantaged in the supply of other buyers. An example of the underlying mechanism is given by the procurement of continence care products for hospitals. Because being selected as a supplier into the hospital sector is an important determinant of a firm's market share in the much larger supply to the community, and because the selection of suppliers into the hospital sector is relatively competitive, the terms and conditions offered for hospital supplies are significantly better than those that apply to supply into the community (where price competition is muted as a result of the Drug Tariff).

An assessment of some key procurement practices

1.37 We demonstrate the interaction of competition effects of public procurement by analysing a number of key procurement practices. In doing so, we focus on general practices that have raised concerns with regard to their effects on potential bidders for public contracts and the extent to which the public sector obtains value for money, namely:

- participation restrictions and artificially inflated participation costs
- contract aggregation, and
- the decision to self-supply rather than buy certain services.

Restriction of participation and increasing participation costs

1.38 Public procurement is often said unnecessarily to restrict participation unnecessarily and to increase participation costs, in particular for smaller bidders, thus discriminating in favour of larger firms who regularly take part in public tenders. Factors that are said unnecessarily to increase participation costs and to discriminate against smaller firms include:

- restricted communication and publication of contract opportunities
- excessive information requirements (although this would in effect be against Government procurement policy), and
- overly narrow pre-qualification criteria, placing too much emphasis on past experience or firm size

1.39 We know that there are both benefits and costs associated with increasing participation. The key question is therefore whether the public sector achieves the right balance between the increased costs of having more bidders and the expected reduction in prices as a result of fiercer competition, both in the short and the long term.

1.40 Pursuing a value-for-money objective should normally ensure that this trade-off is made correctly, but there are a number of reasons why it might be distorted:

- The administrative costs of procurement may be more visible than the cost savings achieved as a result of more intense competition. This might lead to too much weight being given to administrative procurement costs, and too much restriction of participation
- Risk aversion may result in favouring well-established suppliers and incumbents over new entrants, restricting participation too much (and perhaps not doing enough to ensure a level playing field). Fear of delivery failure may also make the public sector particularly sensitive to winner's curse concerns, contributing further to a situation in which participation is restricted too much.

1.41 Concerns may arise in particular where the public sector is reluctant to use novel ways of purchasing (such as electronic auctions, where appropriate), which could significantly reduce the administrative costs of procurement and would thus allow greater participation. In these instances, the justification for choosing procurement processes that limit participation are weak, and the potential benefits from increased participation should be a major driver for the public sector.

1.42 In addition to distorted incentives, the procurement rules might prevent the public sector from making the right trade-off. For example, because a strong incumbent is expected to win, other bidders might be reluctant even to incur the cost of participating in a tender. In this case, incumbency advantages limit participation. Although the obvious solution to this problem would be to remove or neutralise incumbency advantages, the EU Directives may limit what the public sector can do to achieve this. Explicit discrimination against the incumbent or in favour of new suppliers, which might well be the most efficient way of dealing with the problem, would not be possible under the EU Directives. Although the public sector might be able to employ other mechanisms (e.g. encouraging new entrants to participate in the tender), these might be costly and their effects might be limited.

Contract aggregation

1.43 Contract aggregation refers to the bundling of requirements into fewer, larger contracts being tendered less frequently. The effects of contract aggregation, and the costs and benefits associated with such a practice, are complex.

1.44 Contract aggregation may lead to lower prices paid to the extent that there are economies of scale or scope in the provision of the goods and services procured, which are reflected in lower prices for larger quantities.

1.45 Contract aggregation also tends to reduce the cost of procurement in terms of:

- the cost of conducting tenders, reducing the number of tender processes that need to be conducted, which would tend to reduce total tender cost (even allowing for the fact that the cost involved in tendering a larger contract may be higher)

- the on-going contract management costs, through reducing the number of contracts that need to be managed.

1.46 The competition effects of contract aggregation are ambiguous. It may have a negative impact on competition for the following reasons:

- It limits participation, both directly by excluding smaller firms who are unable to meet all of the requirements bundled together, and indirectly by reducing the chances of winning a contract.

- It removes the scope for yardstick competition, comparing the performance of different contractors providing similar requirements, or for in-contract competition where demand may be moved between contractors at the margin, or where a contractor may take over if another fails to perform. The threat of moving demand at the margin may be a powerful incentive to ensure compliance with the supply contract. Being able to benchmark performance can help reduce the cost of monitoring and enforcing compliance with the contractual obligations. These advantages are lost if a single contract is being awarded. The decision by the NHS to award regional contracts under its NPfIT provides a good example for the value associated with maintaining in-contract competition, which is foregone if the public sector opts for contract aggregation.

- Contract aggregation amplifies the extent of incumbency advantages compared with letting multiple contracts, where a number of firms can draw on their expertise in providing the services at the re-procurement stage.

1.47 However, contract aggregation can also promote competition through:

- reducing the scope for tacit collusion, making bidders compete more aggressively for the market; Letting fewer but larger contracts more infrequently removes the scope for frequent interaction between the same bidders. It introduces a certain volatility in demand and increases the cost of losing compared to smaller, more frequent tenders – after a large contract has been awarded, there will be no further demand for a number of years

- providing the scope for helping firms to overcome entry barriers through committing a significant amount of business to the successful bidder

- stimulating investment by committing a significant volume of demand to a single supplier. A single long-term contract creates a situation in which the buyer is as dependent on the supplier as the supplier is on the buyer. This may limit the risk of opportunism on behalf of the buyer (and the seller) in terms of renegotiating the contract terms, and encourage investment and innovation in the long term. By contrast, if the buyer had the choice of moving demand to another supplier, it would be in a better bargaining position relative to the supplier, and may be tempted to re-negotiate contract terms after the supplier had made an investment specific to the supply relationship, which in turn would undermine the incentives for making such an investment in the first place.

1.48 As in the case of participation restrictions, the right trade-off balances the costs and benefits associated with bundling requirements in terms of the positive and negative effects on competition (and thus expected prices), the administrative costs of procurement, and the likely extent of scale and scope economies. As these effects are more complex in the case of contract aggregation, making the right trade-off is more difficult, but again one should expect that value-for-money considerations would imply that the right balance is struck.

1.49 Nevertheless, the same reasons that might lead to distorted choices with regard to participation restrictions might lead to too much contract aggregation. Too much emphasis on the administrative costs of procurement might be responsible for too much contract aggregation. In addition, there may be concerns about too much emphasis being given on short-term cost savings at the expense of maintaining competitiveness in the long term, both in terms of in-contract competition and a potentially larger number of firms at the stage of re-tendering associated with letting multiple contracts.

1.50 Contract aggregation may be of particular concern where the public sector has been reluctant to explore the possibility of using alternative methods for market-testing the extent of scale and scope economies, such as, for example, various auction formats. If carefully designed such methods can increase participation and intensify competition. However, setting an appropriate auction format with the necessary detailed rules is a complex task and becomes more so, the more difficult it is to specify the required goods and services. Even the simple case of allowing tenderers to bid only for parts of the requirement put out to tender might help increase participation and competition, and contract aggregation may raise concerns where this option is not available to bidders. Currently, only 22 per cent of tenders allow bidders to bid for less than the entire contract.

1.51 Encouraging successful bidders for large contracts to seek sub-contractors is sometimes regarded as a way of mitigating the potential negative impact of contract aggregation on long-term competitiveness. However, measures to facilitate subcontracting (or an explicit requirement to sub-contract) may have undesirable competition effects because they could reduce participation and facilitate collusion. For example, such arrangements may provide incentives for bidders to form consortia, which will limit the number of bids the procuring agency will receive. Where the main contractor engages in significant sub-contracting, that may indicate that there are no strong economies of scale or scope for one contractor to undertake the contract.

Self-supply

1.52 In many cases, the public sector may have the option to satisfy its requirements through self-supply rather than procurement. The self-supply option can be a very effective measure to limit the risk of tacit collusion. It provides a credible fall-back option for the public sector if bids are considered to be inflated, as well as a benchmark for assessing whether the terms and conditions offered by bidders are realistic. Even where self-supply is not feasible (as in tenders for prisons built under the PFI), calculating the cost of self-supply can help to reduce collusion risks (and Prison Services are indeed calculating a so-called 'public sector comparator' in these cases, reflecting the cost that would have to be incurred for in-house provision).

1.53 Self-supply may also impact on competition in the supply of other buyers to the extent that the decision by the public sector not to procure goods and services externally limits the size of the market, and reduces the number of suppliers that the market can sustain. If the public sector engaged in extensive self-supply, this might imply that other buyers face less competition than if the public sector decided to source a significant part of its requirements from third parties.

1.54 Whether self-supply decisions strike the right balance is closely linked to the question of efficient self-supply and market-testing of in-house provision. Such market-testing seems to be relatively straightforward in the case of a competitive supply market where the market price can be compared with the cost of in-house provision and the cheaper option can be chosen.

1.55 Where the supply market is not perfectly competitive, such a simple comparison is not possible. Rather than using current market prices, the public sector would have to consider the prices it could obtain as a powerful buyer, taking account of the impact its demand would have on market size and competition. However, predicting the terms and conditions that the public sector might achieve may be difficult. Thus, self-supply decisions may be biased in favour of in-house provision where the market is very uncompetitive at present, even though market competitiveness might improve dramatically in response to significant public sector demand. Thus, there might be a case of inefficient self-supply in the case where the cost of in-house provision is below current market prices, but above market prices that would result if the public sector were to purchase externally and use its buyer power to promote competition.

1.56 Another case of inefficient self-supply could exist where the cost of in-house provision is above the current market price, and where the public sector appears to be discriminating in favour of in-house provision and against external suppliers, as has been alleged, for example, in the BetterCare case.[3] In principle, such inefficient self supply might arise in the case where the public sector faces a perfectly competitive supply market with increasing marginal costs, and where the decision to reduce external demand may be driven by the desire to reduce the overall cost of providing a certain level of public services. However, the conditions under which such behaviour would be rational are very restrictive, and such an outcome is therefore not very likely.[4]

Screening methodology for procurement-related competition problems

1.57 The discussion of potential competition effects of procurement demonstrates clearly that such effects are often complex, that they depend on the particular details of the procurement settings, and that they can be both positive and negative. Thus, a detailed analysis of procurement practices in a particular market would be required in order to establish whether they cause competition concerns.

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[3] See Decision of the Office of Fair Trading under the Competition Act 1998 (CA98/09/2003) of 18 December 2003 in BetterCare Group Ltd/North & West Belfast Health & Social Services Trust (Case no CE/1836-02).

[4] This case of inefficient self-supply corresponds to the standard textbook case of a monopsonist pursuing a strategy of strategic demand reduction in order to reduce input prices.

1.58 Clearly, it would not be possible (nor efficient) to undertake such a detailed analysis of all public procurement. Rather, a detailed investigation should only be undertaken where there are sufficient reasons to suspect that procurement could cause competition problems. For this reason, the OFT has requested the development of a screening approach that would allow one to identify those markets in which procurement is most likely to cause competition concerns.

1.59 Obviously, such a screening approach has to be based on information that is available prior to undertaking a more detailed analysis - detailed and market specific data would have to be collected as part of the investigation. This creates severe limitations because generally available statistical indicators are not normally collected on the basis of economic markets, but according to industry classifications. Thus, any feasible screening approach will have to look at sectors rather than markets. Because industry boundaries are not normally aligned with boundaries of economic markets, this requires some caution in the interpretation of screening results.

Competition effects and competition concerns

1.60 The way in which public procurement can 'cause' restrictions of competition includes both the failure to exercise countervailing buyer power (e.g. in cases where the public sector could promote competition, but fails to do so) and the exercise of buyer power in a way that gives too little emphasis to the promotion of competition (and, for example, too much emphasis on limiting the administrative costs of procurement). This leads us to the following classification of competition concerns:

- Category I: failure by the public sector to exercise countervailing buyer power against suppliers with market power

- Category II: restrictions on competition arising from procurement practices such as participation restrictions, high participation costs, excessive contract aggregation or long-term contracts. There may be additional long-term effects, and effects on other buyers, and

- Category III: excessive focus on short-run price competition at the expense of long-run, non-price competition. There may be additional long-run effects in some cases.

1.61 Table 1.1 below maps the three categories of competition concerns discussed above to the principal mechanisms by which procurement can impact competition, and indicates how they are related to the extent to which the public sector obtains value for money.

Conditions that suggest competition concerns

1.62 **Category I**: Assuming that the public sector is generally aiming to exercise its buyer power to achieve value for money, failure to exercise countervailing buyer power is most likely to arise in the case where public sector demand is fragmented. The procurement process does not in itself have a negative impact on competition, but fails to produce the positive impact on competition it could have. The main features of this situation are that:

- the public sector accounts for a significant proportion of demand within a sector, but
- this demand is fragmented across individual purchasing agencies, acting in an un-coordinated way, and
- supply is uncompetitive.

Table 1.1: Competition effects, competition concerns and the relationship to value for money

	Category I	Category II	Category III
Short-run effects	Public sector fails to ensure that suppliers compete effectively; Failure to achieve value for money	Public sector contributes to reduced competition amongst suppliers (e.g. by restricting participation too much); May fail to produce value for money.	Public sector makes suppliers compete too aggressively, for example by offering few large contracts; Value for money achieved
Long-run effects	Failure to maintain competition or promote competition; Failure to achieve value for money	Competition in the long run does not improve; May fail to achieve value for money, but could sustain good terms and conditions at expense of other buyers	Reduction in competition over time, resulting in strong incumbency advantages or reduced incentives for investment and innovation; Less good at achieving value-for-money to the extent that effects of reduced competition cannot be overcome by countervailing buyer power
Knock-on effects	Other buyers miss out on benefits from improvements in competition, which the public sector could bring about	Other buyers obtain worse terms because of reduced competition and choice.	Other buyers suffer from lessening of competition in the long run without benefiting from strong competition in the short run

1.63 **Category II**: There are a variety of ways in which public procurement could contribute to a restriction of competition between suppliers. For example, contracts may be aggregated to an extent where only a subset of competitors in the market can fulfil the requirements or public procurement may restrict participation in public tenders through unnecessary pre-qualification criteria. The main features of a situation in which there are possible restrictions on competition are:

- the public sector accounts for a significant proportion of demand within a sector
- procurement is centralised/co-ordinated and buyer power is being exercised, and
- supply is uncompetitive.

1.64 **Category III**: Procurement processes may place undue emphasis on short-run competition at the expense of long-run, non-price competition. A narrow focus on short-run cost savings may undermine investment and innovation incentives or may even force unsuccessful bidders out of the market. The main features of this situation are:

- the public sector accounts for a significant proportion of demand within a sector
- procurement is centralised/coordinated and buyer power is being exercised, and
- suppliers are not making excess profits although there is likely to be significant and possibly increasing concentration.

Indicators

1.65 Having established in very broad terms the conditions that would have to hold for there to be competition concerns, our next step is to identify indicators that would suggest where these conditions hold and where there may be competition problems. Ideally such indicators should be based on data relating to particular economic markets, but such data are unlikely to be available prior to undertaking a market investigation.

1.66 However, even at the sectoral level, there are a number of useful indicators for identifying conditions that suggest potential competition problems, namely:

- the share of domestic supply purchased by the public sector
- whether this is centralised
- the level and trend in supplier concentration
- the extent of supplier churn
- openness to imports
- market growth, especially growth in residual demand (which comprises private sector demand and exports), and
- various indicators of entry barriers unrelated to procurement.

1.67 We propose a screening approach that first uses the share of domestic supply consumed by the public sector to identify sectors in which the public sector is, or could be, enjoying buyer power. The share of supply purchased by the public sector needs to be sufficiently large for any of the three categories of problems to occur. A sufficiently high share of public sector demand is therefore a precondition for sectors to be considered for further investigation.

1.68 In a second step, we propose to use measures of industry concentration, international openness and churn to eliminate sectors in which competition problems are unlikely to occur, and to identify how likely competition concerns might be in the others. All three categories of competition problems are likely to require that there is a sufficient level of concentration amongst suppliers.

- Category I concerns can only arise where there is supplier market power, for which high levels of concentration can be used as a proxy.

- Category II concerns would be associated with moderate to high (and potentially increasing) levels of concentration, reflecting restrictions of competition flowing from procurement decisions.

- Category III concerns would lead to strong increases in concentration (perhaps starting from a relatively lower level).

1.69 Similarly, competition concerns in all three categories require that churn is relatively low (suggesting that the market is not open to entry and exit) and that it is not internationally open (in which case strong competition from foreign suppliers could reduce the scope for public procurement to impact on competition). If the churn measure includes both firms entering and leaving the market, we might see higher levels of churn in combination with increasing concentration in the case of Category III concerns, suggesting that churn is mainly driven by firms exiting the market.

1.70 The remaining indicators are then used to identify the potential competition concerns, and their severity:

- Where public sector demand is fragmented, the most likely concern is failure to exercise countervailing buyer power (Category I).

- There are a range of potential indicators of market entry barriers. Although imperfect, the most common measures used are: the investment to output ratio; the advertising to sales ratio; and the R&D to turnover ratio. Where concentration is high in the face of low entry barriers, this may indicate that public procurement is contributing towards restrictions of competition (Category II/III).

- Where residual demand is growing strongly, competition concerns related to public procurement may be transient. Fast growing private demand may provide opportunities for new entrants, and may help to overcome any restriction of competition caused by public procurement.

1.71 Table 1.2 provides an overview of competition concerns and the corresponding indicators.

Table 1.2: Competition concerns and indicators

Indicator	Category I	Category II	Category III
Public sector demand	High and fragmented	High	High
Concentration	High and not decreasing	Moderate to high and possibly increasing	Increasing
International openness	Low	Low	Low
Churn	Low	Low	Medium (if including firms exiting the market)
Growth in private demand	Low	Low	Low
Indicators of entry barriers unrelated to procurement	Medium to high	Low to medium	Medium to high

Screening results

1.72 Application of the screening methodology described above is complicated by the fact that data on public procurement is sparse. Although data have been collected, for example in the context of the Kelly report (OGC, 2003), and the OGC collects data on contracts awarded by public authorities in the UK on an on-going basis, there is no comprehensive dataset that would allow us to identify the value of all public procurement on a sectoral basis (let alone by economic market). For this reason, we have used the UK input-output tables compiled by the ONS as a source of information on government expenditure, despite a number of shortcomings such as the relatively long reporting delay and the relatively coarse sector classification.[5] Expenditure figures combine government final consumption and gross capital formation.

1.73 The first step of our screening analysis is to select sectors in which government expenditure accounts for a significant proportion of domestic supply. Given that we are reliant on sectoral data rather than data reflecting economic markets, and that industry sectors tend to be wider than relevant economic markets, we use a conservative threshold for classifying the public sector as a significant purchaser. Specifically, we discard all sectors in which government expenditure accounts for less than 10 per cent of domestic supply (domestic production plus imports).

1.74 We consider a number of competition metrics in order to establish where public procurement faces supply markets that are insufficiently competitive (and where, therefore, the public sector could fail to exercise countervailing buyer power), or where procurement is potentially contributing to a lessening of competition (at least in the long term). Specifically, we compute:

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[5] The most recent available input-output tables include data for 2001, and separately identify 123 different sectors.

- the proportion of total turnover accounted for by the five largest firms (C5) in each sector, and the average annual change in this proportion, as a measure of the level and trend of concentration

- import penetration (measured as the proportion of domestic supply accounted for by inputs) as a measure of international openness

- sector-wide churn (the number of firms leaving the sector in the previous year plus the number of entrants in this year as a proportion of the number of firms in the previous year), which measures the extent to which firms enter and leave the market, and which reflects the likely magnitude of entry barriers.

Competition problems are more likely where concentration is high and increasing, churn is low and the market is not very open internationally. Therefore, further investigation of sectors which have these characteristics is likely to be more appropriate, compared with sectors where concentration is relatively low, or where churn and international openness are high.[6]

1.75 For the purposes of our screening approach, we compare the levels of these indicators for each sector with the corresponding values across all sectors, defining various cut-off points for our competition metrics. Our classification scheme combining the relative size of public sector expenditure and prima facie indicators of competition problems is summarised in Table 1.3. Based on this classification scheme, we would suggest that there is a good case for a detailed investigation of sectors in groups A to C.

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[6] Given the way in which we measure churn, high levels of churn combined with high and increasing penetration would give cause for concern as they would indicate that churn is large driven by firms exiting the market.

Table 1.3: Sector classification scheme

Public sector expenditure as a proportion of domestic supply	Indicators of competition problems	Group
More than 10 per cent	**Strong indication of competition problems** Concentration very high and not falling Sector not at all open Churn not very high	**A**
	Reasonable indication of competition problems Concentration high and not falling Sector not particularly open Churn not very high	**B**
	Weak indication of competition problems Concentration significant Sector not very open	**C**
	No evidence of competition problems	**D**
Less than 10 per cent	**Not applicable**	**E**

1.76 In order to prioritise sectors, and in order to help in identifying the likely nature of the potential competition concern, we have looked at further metrics such as:

- the proportion of government final consumption accounted for by local government, which we can use as a measure of the extent to which public sector demand might be fragmented
- the average growth of residual (private) demand, and
- a ranking of the likely barriers to entry based on measures of investment, advertising and R&D.

1.77 Group A contains only one sector, namely sewage and refuse disposal, sanitation and similar activities, with a share of government expenditure of 22.5 per cent, a very high and increasing level of concentration, and very low import penetration. Public sector demand in this sector is highly fragmented, and therefore there might be concerns about failure to exercise countervailing buyer power (Category I).

1.78 Group B contains the following sectors:

- Manufacture of weapons and ammunition, with a share of government expenditure of more than 70 per cent, and high and increasing levels of concentration. Entry barriers are above average, but in terms of the measures available do not seem to be extremely high, and therefore there may be concerns that the public sector contributes towards restricting competition through its procurement (Category II).

- Human health services, with a share of government expenditure of somewhat below 40 per cent, with a moderate but strongly increasing level of concentration. This sector does not rank very highly in terms of indicators of entry barriers, and public procurement may contribute towards increasing concentration (Category III), or fail to counter such a trend (Category I).

- Building and repairing of ships and boats, with a share of government expenditure of slightly less than 25 per cent, moderate but increasing levels of concentration, and very little indication of non-procurement related entry barriers. The main concerns in this sector are likely to be that public procurement contributes towards restrictions of competition in the long term (Category III).

- Manufacture of pharmaceuticals, medical chemicals and botanical products, with a share of government expenditure of somewhat above 20 per cent. Concentration is high and increasing, and entry barriers unrelated to public procurement in this sector are high as well. In this case, one might be more concerned about failure by the public sector to exercise countervailing buyer power (Category I), not least because of the role played by regulation in the pharmaceutical sector.

1.79 Group C contains the following sectors (government share in parentheses):

- Manufacture of electronic industrial process control equipment (20.9 per cent)
- Manufacture of cement, lime and plaster (15.0 per cent)
- Manufacture of aircraft and spacecraft (14.8 per cent)
- Site preparation (14.5 per cent)
- Building of complete constructions or parts thereof; civil engineering (14.5 per cent)
- Manufacture of office machinery and computers (12.3 per cent)
- Research and experimental development on natural sciences and engineering (11.9 per cent) and
- Research and experimental development on social sciences and humanities (11.9 per cent).

1.80 The last two of these (research in natural and social sciences respectively) would seem to have relatively low priority. Concentration is only just above the cut-off point, and stationary or decreasing. These sectors have only just met the criteria for being included in group C.

1.81 In the case of the manufacture of aircraft and spacecraft, there is strong growth in residual demand, which might suggest a declining role of public sector demand. However, private demand is likely to be of little relevance in markets where the public sector is a major buyer (e.g. military aircraft, in particular those that are not based on civilian designs). Non-procurement related entry barriers in this sector are, however, high, and therefore one might be mainly concerned about the extent to which the public sector exercises countervailing buyer power. With procurement very centralised, however, there should be little reason to suspect problems in this area. Therefore, this sector, too, may be given relatively low priority.

1.82 In the construction-related sectors and the procurement of office machinery, public sector demand is significantly fragmented. Thus, concerns may be related mainly to the failure to exercise countervailing buyer power (Category I). In the manufacture of electronic industrial process and control equipment, concentration is only moderately high, but increasing strongly. Given the presence of some entry barriers, this could suggest that public procurement might contribute to a lessening of competition in this sector (Category II/III).

1.83 Table 1.4 summarises those sectors for further investigation identified by our screening approach.

Table 1.4: Sectors for further investigation

Group	Sector	Potential concern
A	Sewage and refuse disposal, sanitation and similar activities	Failure to exercise countervailing buyer power (Category I)
B	Manufacture of weapons and ammunition	Restriction of competition, in the short run (Category II)
	Human health activities	Failure to prevent, or contribution towards, reduction in competition (Category I/III)
	Building and repairing of ships and boats	Lessening of competition in the long term (Category III)
	Manufacture of pharmaceuticals, medicinal chemicals and botanical products	Failure to exercise countervailing buyer power to help overcome entry barriers and arrest increasing concentration (Category I)
	Manufacture of cement, lime and plaster	Failure to exercise countervailing buyer power (Category I)
	Site preparation	
	Building of compete constructions or parts thereof, civil engineering	
	Manufacture of office machinery and computers	