

Agenda

Advancing economics in business

Under examination: the OFT's study into the private healthcare market

Following a study into privately funded healthcare services in the UK, in December 2011 the Office of Fair Trading provisionally referred the market to the Competition Commission for a full market inquiry. A wide range of techniques are available for defining markets in the private healthcare sector, but which of them should be applied in future competition analysis in the UK?

The OFT study

The private healthcare (PH) market is becoming an increasingly important part of the UK economy. This is due, in part, to the higher demand for healthcare services arising from an ageing population. The UK's publicly funded National Health Service (NHS) is also changing as a result of ongoing government reforms, such as the forthcoming Health and Social Care Bill. Given these developments in the private and public healthcare sectors, competition policy in healthcare is an area of increasing interest to competition authorities, regulators and policy-makers.

In a 2011 market study into PH services, the UK Office of Fair Trading (OFT) provisionally found that the market is characterised by a number of features that could prevent, restrict or distort competition.¹ In late 2011 it launched a consultation on its findings, and is due to reach a final decision in early 2012 on whether to refer the market to the UK Competition Commission for a market investigation.

The OFT's main concerns are in relation to the existence of information asymmetries, pockets of high market concentration, and barriers to entry, as follows.

- **Information asymmetries**—the OFT found that insufficient information is available to patients, general practitioners (GPs) and private medical insurance (PMI) providers with regard to the quality of PH facilities and consultants.² It also found that there is insufficient information available to patients and GPs about the pricing of PH. PMI-funded patients are not provided with enough information to assess whether the consultant's fee might exceed their PMI provider's benefit maxima,³ in which case the patient would have to pay the additional amount themselves. For self-pay patients, there are difficulties in

comparing the prices charged by different PH facilities. This lack of information on pricing and quality limits patients' and GPs' ability to stimulate competition between PH facilities, since they cannot easily make informed price/quality trade-offs between the options available to them.

- **Concentration**—the OFT uses the Herfindahl–Hirschman Index (HHI)⁴ to conclude that the market is concentrated at the national level (ie, the HHI is above 1,000). At the local level, the OFT finds 27 PH facilities where there is no rival PH facility within a 30-minute drive (these are referred to as 'solus' PH facilities). In addition, the PMI providers have identified 39 'must-have' facilities (ie, those that account for a large proportion of PMI providers' spend or are the only PH facility to provide a particular specialism or procedure in the local area). The OFT finds that the existence of these solus and must-have facilities gives PH providers bargaining leverage over PMI providers, and thus limits PMI providers' buyer power. PMI providers need to purchase PH services in most local areas, including the solus PH facilities and must-have facilities, in order to provide national coverage. Also, as patients are referred to consultants by GPs, and consultants choose which PH facilities to use in the majority of cases, PMI providers have little say in the choice of patients' PH facilities. In light of this evidence, the OFT concludes that PMI providers do not have countervailing buyer power, and therefore that the larger PH providers may have a degree of market power.
- **Barriers to entry**—the OFT found that a number of features of the market can act as barriers to entry to new PH facilities. First, it found that some PH providers can impose conditions on PMI providers (upon the PMI provider recognising the PH provider's

This article is based on Oxera (2011), 'Techniques for Defining Markets for Private Healthcare in the UK: Literature Review', prepared for the OFT, November, available at www.oxera.com.

facilities as part of its network), which could restrict the PMI provider's ability to recognise a new entrant as part of its network. This could include the condition that the recognised PH provider is consulted about the recognition of a new PH provider as part of the network. Alternatively, the recognised PH provider could impose a price rise on the PMI provider if a new PH provider is recognised. Second, the OFT found that the fact that many consultants treat most of their private patients at one main PH facility may be a barrier to entry—if a new PH facility is not recognised by all the main PMI providers, consultants may be unwilling to switch their main practice to the facility because they will not be able to treat patients there whose insurer does not recognise the facility. Lastly, the incentives that PH providers pay to consultants to encourage them to treat their patients at facilities owned by the PH provider may also represent a barrier to entry for new PH providers.

In order to identify PH facilities that do not face local competition, the OFT used a 30-minute drivetime isochrone (a technique that it had used in previous merger cases). Nevertheless, the OFT decided that, as part of the market study, it would be useful to examine alternative market definition techniques in order to inform future competition analysis in the PH sector, including future merger cases. In addition, some lessons from the review may have wider applicability to the healthcare market, including competition analysis carried out in the NHS sector.

The remainder of this article summarises the findings of an Oxera report commissioned by the OFT into the market definition techniques reviewed in the literature.⁵

Market definition in private healthcare

Certain features of the market for PH mean that standard market definition techniques are difficult to apply:

- the majority of private patients pay for their PH through PMI. As such, they may not be sensitive to price changes made by individual hospitals.⁶ Standard techniques that define local markets by imposing hypothetical price rises are therefore not well suited, since a price rise at a PH facility would have little or no impact on the PMI prices paid by patients using that facility;
- the majority of patients may not have the knowledge or experience to determine which hospital or consultant will provide them with the best treatment, and may therefore not be able to determine the correct trade-off between price and quality;

- unlike in many other markets, each healthcare treatment involves interactions between a number of parties, including patients, PMI providers, consultants, private hospitals or private patient units, and GPs.

An appropriate market definition technique in PH needs to account for all of these features.

The assessment of market definition typically involves considering competitive constraints on both the product and geographic dimensions of the market. However, the product market definition in PH will often draw on clinical expertise and judgement, and may also depend on the particular attributes of the competition case being considered. For this reason, the focus in the PH market is often the techniques for geographic market definition. However, it is useful to bear in mind that the geographic market definition is likely to be affected by the product market definition. A reasonable hypothesis would be that patients may be willing to travel distances of varying lengths depending on the type of treatment required.

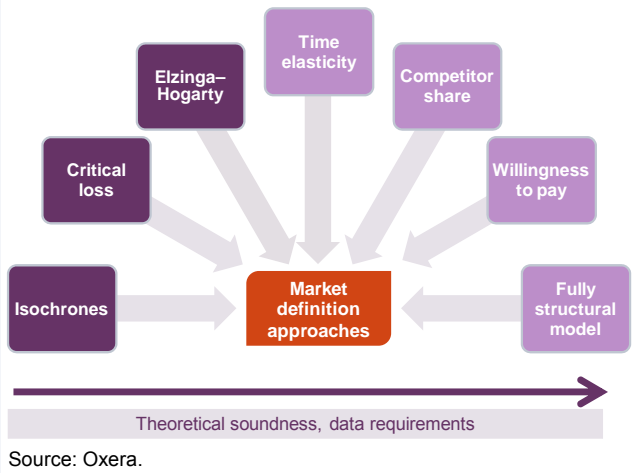
Geographic market definition in PH is likely to have both national and local aspects. National contracting occurs between PMI providers and suppliers of PH, but in most cases patients have to travel to hospitals to receive treatment, and, because consumers prefer to minimise the distance travelled, there will also be a local element to geographic market definition.⁷ Much of the academic literature and case law on PH market definition has focused on quantifying this local geographic element.

Techniques for geographic market definition in private healthcare

Techniques for geographic market definition in PH have been examined in great detail in the academic literature, as well as in government reports, competition investigations and court cases. The majority of the literature differentiates between the traditional, simpler techniques developed in the 1980s and 1990s, and the more complex recent approaches. Overall, these techniques represent a broad spectrum of approaches (see Figure 1 below) that are characterised by different degrees of theoretical soundness, complexity, data requirements, and the extent to which they have been tested empirically or have established precedent.

The earlier techniques are often conceptually less well-grounded, but benefit from a simplicity of application and lower data requirements; these are catchment area analysis and isochrones/fixed radii; critical loss; and Elzinga–Hogarty. The more recent ones are more sophisticated, but are also complex to apply and characterised by substantial data

Figure 1 Spectrum of the main techniques for geographic market definition in the literature



requirements; these are time elasticity; competitor share; willingness to pay; and fully structural merger simulation model approaches. Some empirical studies also use more informal approaches to explore

geographic markets based on the roles of other key market participants, such as isochrones/fixed radii around consultants or GP practices. See the box below for definitions of the techniques.

The literature review reveals that the earlier techniques typically do not capture certain characteristics of PH markets. Academic studies in the USA suggest that the use of these techniques may lead to a broad definition of geographic markets, and there is therefore some precedent in accepting such broad markets.⁸

Empirical evidence is increasingly calling these earlier decisions into question by showing that relevant markets for hospitals can be very narrow, especially in urban areas, and that earlier acceptance by courts of broad markets may have permitted mergers that led to a significant increase in market power. This resulted in the development of more sophisticated approaches that seek to align the model assumptions with the realities of the PH market. The assessment of techniques for geographic market definition therefore needs to account for the following characteristics of PH markets.

Techniques for geographic market definition in private healthcare

- **Catchment area analysis and fixed radii/isochrones**—this captures the distance around the hospital where its patients reside. The geographic market around a hospital is then defined as either a fixed radius (eg, 30 miles) or a fixed drivetime (eg, 30 minutes) from the catchment area.
- **Critical loss**—this approach, which is widely used to define markets in other sectors, is based on the premise that if a hypothetical monopolist of a set of products (or in a particular geographic area) would be able to raise prices profitably, the relevant market is no wider than that set of products (or area). The test trades off the two effects of a price rise: an increase in revenue and a reduction in demand.
- **Elzinga-Hogarty**—this uses hospitals' patient-flow data to expand the geographic area around the focal hospital(s) gradually until the inflows of patients from outside the area into local hospital(s) and the outflows of local patients to external hospitals both fall below a certain threshold (eg, 10–25% of all patients).

The complex techniques are primarily merger simulation models, but they can be used to define geographic markets by identifying sets of hospitals whose merger would substantially increase market power.

- **Time elasticity**—in this approach, the geographic market is defined according to how many consumers would switch to competing healthcare providers in response to, typically, a hypothetical 10% increase in

- travel time to the merging parties. The estimated effects of the merger on the time-elasticities of patient demand are transformed into equivalent changes in the price-cost margin for the hospitals.
- **Competitor share**—this approach is based on the intuition that the ability of hospitals to raise prices following the merger depends on the substitutability between the merging hospitals, which largely depends on the extent of overlaps in the types of patient treated by the merging hospitals. It therefore estimates price elasticities for hospitals before and after the merger as a function of market shares of other competitors in each type of treatment.¹
- **Willingness to pay**—this method is based on the notion that patients commit to a network of medical providers covered by their insurer at the time of choosing their PMI provider, but before knowing their medical needs. The value of the network to a consumer is then based on how well they expect the firms in their insurer's networks to meet their needs when they arise. The approach thus estimates the effect of a merger between hospitals on their value for the PMI provider's network, and, therefore, on their bargaining power in hospital-PMI price negotiations.²
- **Fully structural model**—in addition to simulating patients' hospital choices, like the three other complex techniques, this method models the strategic interaction of the competing hospitals in the market, especially the potential effects of reduced competition among hospitals belonging to the same chain following a merger.

Notes: ¹ See, for example, Capps, C.S., Dranove, D., Greenstein, S. and Satterthwaite, M. (2001), 'The Silent Majority Fallacy of the Elzinga-Hogarty Criteria: a Critique and New Approach to Analyzing Hospital Mergers', Working Paper 8216, National Bureau of Economic Research (NBER), Cambridge (Mass.). ² See Capps, C.S., Dranove, D. and Satterthwaite, M. (2003), 'Competition and Market Power in Option Demand Markets', *Rand Journal of Economics*, 34, pp. 737–63. Source: Oxera (2011), op. cit.

- **Heterogeneity of patients and hospitals**—a good geographic market definition technique would recognise that preferences (such as willingness to pay or willingness to travel) may differ among patients; such a technique would also recognise that hospital characteristics can differ (for example, by location or quality of service).
- **Lack of patient price sensitivity**—the majority of consumers pay for their PH through PMI, and are therefore insensitive to immediate increases in the price of treatment. Therefore, any technique that relies on the patient's direct reaction to price is unlikely to capture the geographic market accurately. In the long run, when high treatment prices translate into higher PMI premiums, the likely outcome would be a reduction in demand for PMI rather than switching between hospitals; this is known as the 'payer problem'.
- **Hospital networks**—competition between hospitals in the PH market often takes place between hospital chains as well as between individual hospitals.

The next step is to consider which of the geographic market definition techniques are suited to the UK market. To do this, it is useful to consider some of the key features of how this market works and how it may be different from other markets, such as those in the USA and the Netherlands, which have received considerable attention in the literature. These UK-specific features include:

- the central role of GPs as 'gatekeepers' for private care;
- the presence of the NHS alongside the PH market;
- limited data availability because of the separation between the NHS and private hospitals;
- significant functional separation (and often separate billing of patients and PMI providers) between the contributions of a consultant and a private hospital to any given medical treatment.

These market features indicate that some considerations (such as data availability) are likely to be more important than others in selecting the right geographic market definition technique. In addition to data availability, four criteria may be most usefully used to assess which techniques are best suited to the UK: theoretical underpinning; complexity; conceptual suitability for the UK market; and established case practice.

An assessment of the older techniques against these five criteria shows that the techniques suffer from conceptual shortcomings, in particular having arbitrary cut-off points; not recognising the heterogeneity of hospitals and patients; and not addressing the lack

of price sensitivity of patients. However, there are practical solutions which could alleviate these problems to some extent, such as adopting narrower product market definitions and undertaking sensitivity checks around the cut-off points. On the other hand, these techniques score well on the criteria of data availability and complexity of application, since the data required to apply the techniques may be accessible in the context of competition investigations or can be obtained by means of a survey; and all models are relatively straight-forward to apply in practice. There is also established precedent of using the techniques in competition cases in the UK and in other countries.

An assessment of the more recent techniques shows that they have more solid theoretical foundations than the earlier ones. The time-elasticity and willingness-to-pay approaches recognise that patients do not pay for treatment directly, but that the treatment is paid for through their PMI. The willingness-to-pay approach also has the advantage of reflecting the option demand nature of the market in circumstances where PMI providers' hospital networks do not have full coverage. The fully structural model and the competitor share approach both attempt to model more realistic competitive behaviour between hospitals.

All models suffer from some drawbacks, however, often caused by sensitivity to the underlying assumptions. Furthermore, none of the models fully takes into account all the characteristics of the UK PH market discussed above. The advanced techniques also require highly detailed data, which would be difficult or impossible to obtain in the UK due to the effective separation of the NHS and the individual networks of private hospitals. This constrains the extent to which these methods could be applied.

Overall, a comparative assessment of the techniques reveals that there is a trade-off between theoretical soundness and the feasibility of applying a technique in practice. In general, no single technique scores highly on every one of the suitability criteria.

Conclusions

An assessment of geographic market definition techniques in PH shows that advanced techniques based on merger simulation are likely to be useful in the UK only in rare cases, where data availability is very good (and the competition authority has the resources/capacity and time to undertake advanced analysis). In light of the conceptual appeal of the more complex techniques, and given that the current level of data does not allow for their application, it may be desirable for public authorities to introduce measures that encourage the recording and storage of the data required for the more advanced techniques, so that they could be used in future competition cases.

The earlier techniques are appropriate in many circumstances where the time or budget available for analysis is more limited, or where detailed patient-level data is unobtainable. If the techniques are applied in the right way, it is possible to avoid, or at least mitigate, the concerns levelled at these techniques in the academic literature. When applying the earlier techniques, it makes sense to avoid assessments

that bundle together treatments or groups of patients with systemically different willingness to travel, since such bundling can lead to a definition of overly broad markets. Assessments should also take into account the potential heterogeneity of hospitals, so it may be appropriate to apply different-sized isochrones to different types of hospital.

¹ Office of Fair Trading (2011), 'Private Healthcare Market Study: Report on the Market Study and Proposed Decision to Make a Market Investigation Reference', December.

² Consultants are defined by the OFT as 'specialist senior doctors who typically base their work in hospitals and clinics'. Office of Fair Trading (2011), *op. cit.*, para 3.13.

³ The PMI provider might pay consultants' costs up to a certain limit only (referred to as the benefit maxima). This limit is usually set out in the fee schedule operated by the PMI provider.

⁴ The HHI is used to measure the size of a firm relative to the industry or the overall level of concentration in the industry.

⁵ Oxera (2011), 'Techniques for Defining Markets for Private Healthcare in the UK: Literature Review', prepared for the OFT, November. The report does not necessarily represent the views of the OFT, and should not be taken to indicate the range of evaluation methods that the OFT may use in future cases.

⁶ The OFT uses several terms, such as 'PH facilities'; but for ease of reference the Oxera report refers mainly to 'private hospitals'.

⁷ This assumes that there is no perfect chain of substitution covering the whole of the UK.

⁸ See, for example, Haas-Wilson, D. and Garmon, C. (2011), 'Hospital Mergers and Competitive Effects: Two Retrospective Analyses', *International Journal of the Economics of Business*, 18:1, pp. 17–32, discussed in Ashenfelter, O., Hosken, D., Vita, M. and Weinberg, M., 'Retrospective Analysis of Hospital Mergers', *International Journal of the Economics of Business*, 18:1, pp. 5–16; Capps et al. (2001), *op. cit.*; and Gaynor, M., Kleiner, S.A. and Vogt, W.B. (2011), 'A Structural Approach to Market Definition with an Application to the Hospital Industry', Working Paper 16656, NBER working paper series; all of which suggest that the markets defined by Elzinga–Hogarty analysis tend to be too broad.

If you have any questions regarding the issues raised in this article, please contact the editor, Dr Gunnar Niels: tel +44 (0) 1865 253 000 or email g_niels@oxera.com

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