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# Agenda

Advancing economics in business

# Attack of the isochrones: an emerging approach to defining local markets

**Geographic market definition is an important aspect of many merger inquiries, particularly those involving chains of outlets in several localities. In light of recent UK Competition Commission and Office of Fair Trading decisions regarding cinema and supermarket mergers, is it possible to identify an emerging consensus on assessing local market definition?**

In most merger cases, market definition is critical in determining the market shares of the merging parties, and will often be the issue on which the prospects of the merger rest. There are two aspects to defining the relevant market: the product market (the types of product which effectively compete with one another) and the geographic market.

This article focuses on geographic market definition, and in particular market definition in local markets. Analysis of this type has developed substantially in recent years, from drawing concentric circles of various sizes around sites, to the use of sophisticated mapping software to define coherent geographic markets according to the characteristics of the surrounding road network.

Over the past three years, two sectors in particular, supermarkets and cinemas, have been the subject of several investigations by the UK competition authorities—including *Safeway et al* and *Odeon/UCI*.[1] The importance of these cases lies in the Office of Fair Trading (OFT) and Competition Commission having adopted a coherent methodology based on isochrone analysis (see below). It therefore seems likely that future mergers, whether in these sectors, or in others with a similar pattern of local competition, will be assessed within this framework.

## Local geographic markets: the basics

The UK competition authorities' approach to defining local geographic markets was set out in detail in the report on the bids for the Safeway supermarket chain. This complex inquiry considered the likely competitive effects of the acquisition of Safeway by four competing supermarket chains; as such the Competition Commission elected to consider both national and local issues.[2]

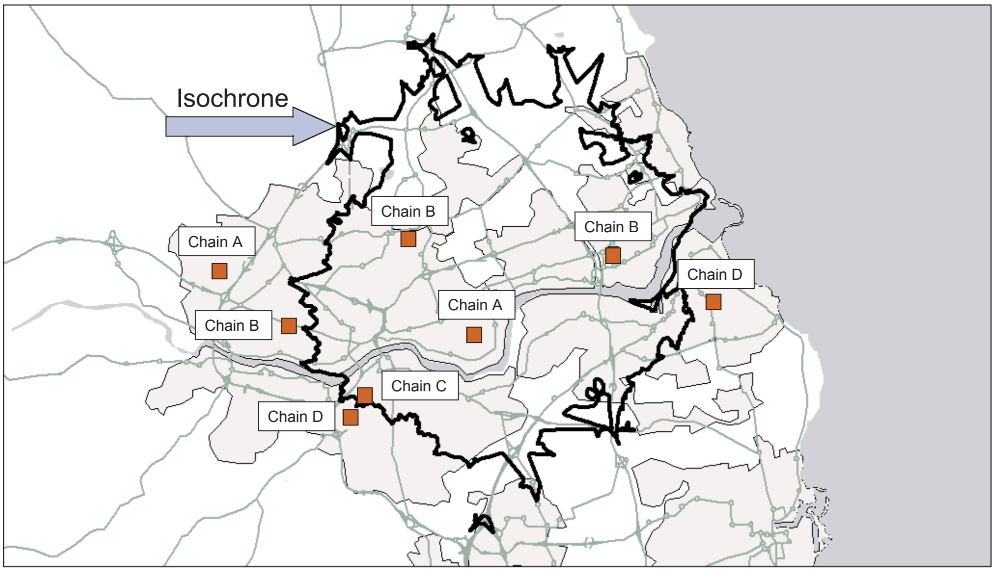
The local issues were analysed according to an isochrone methodology. An isochrone is a line which joins together all of the points that can be reached within a constant journey time from a given starting location. The cinemas and supermarkets cases used a two-stage isochrone methodology.

- *Determining the length of time consumers are willing to travel to reach the location of purchase*—in the cinemas and supermarkets cases, this was done on the basis of observations of the proportion of consumers at the acquiring and acquired parties' outlets who had travelled within a given catchment area. The locus of the isochrone for the supermarkets case was defined such that 80–90% of customers at any one store would have come from within the isochrone.

- *Constructing an isochrone*—having determined the size of the isochrone, the second step is to construct it, usually with mapping software containing a road matrix and a set of speeds for travelling on each of those roads. Boundaries are then drawn around the outlets of both the acquiring and acquired parties, and the relevant geographic market is defined as all points that fall within that boundary. The locations of all outlets within the relevant product market are plotted; those lying within the isochrone boundary are treated as part of the same relevant market for the purposes of assessing the merger. The outcome of this process is a series of local markets in various areas.

An important feature of both the cinemas and the supermarkets inquiries was the market share required for a merger to represent a substantial lessening of competition (SLC). In many competition cases, the focus is on the market share of the firms as defined by turnover of the merging parties. However, in both

**Figure 1 Hypothetical example of an isochrone**




Note: The irregular shape of the isochrone is a result of the underlying pattern of the road network.
Source: Oxera.

cinemas and supermarkets, this was not the primary analysis used. Rather, 'fascias' were the factor determining whether, post-merger, there would be sufficient competition within each relevant market. A fascia is a chain of the producer in question—for example, if an isochrone had three Tescos, two Sainsbury's and an Asda within it, there would be three fascias. If Asda were to take over Sainsbury's, there would then be only two fascias within that isochrone.

A hypothetical example of an isochrone is provided in Figure 1. Outlets are denoted across the city by the squares, and the specific chain labelled. The dark line, which encircles a branch of Chain A, represents the isochrone. The isochrone to some extent tracks the major arterial roads, as these allow faster travel than the smaller local roads. As can be seen, there are three fascias within this example isochrone; Chain D, despite having two outlets in the same city, is not taken into account as competing with the city-centre branch of Chain A.

## Putting isochrones into practice

The basic methodology outlined above has been used in several cases in both the cinema and supermarket sectors, as referred to above.

### Cinemas

In *Odeon/UCI* and *UGC/CineUK*,[3] the OFT defined a viable competitor as having a minimum of three screens and 696 seats (three times the size of the average seating capacity of a single screen at the main cinema chains in the UK). In each case, two sizes of isochrone were considered for each cinema. The main isochrone used was a 20-minute drivetime around each cinema, a distance chosen to reflect the cinema's core catchment area. In addition, a 30-minute isochrone was used as a check on these basic results. No distinction was made between rural and urban cinema locations, possibly due to the small proportion of cinemas owned by the main chains located in rural areas.

The only part of the country in which isochrone analysis was not used was central London, where drivetimes were not considered as giving an accurate reflection of the distances consumers travel to reach the cinema, due to the diversity of modes of transport in that area. This contrasts with *Safeway et al*, where isochrones were used even in central London—perhaps reflecting the perceived inconvenience of using public transport for one-stop shopping relative to using it to visit the cinema.

In the cinema cases, isochrones were drawn only around the cinemas of the two merging parties—no isochrones were drawn around the cinemas of third-party firms, in contrast to the Competition Commission's supermarkets inquiry (see below). The OFT did not provide a rationale for this, although one reason may be the role of choice in the two sectors, with differentiated output for supermarkets, but essentially homogeneous output between the large cinema chains. Hence, the concern in the cinemas market is more likely to be with increased market power than with the choice elements, which were important in the supermarkets merger. Furthermore, a regional concentration rule, as applied to supermarkets (see below), was not applied in the case of cinemas, which may reflect differences in the willingness of consumers to travel for necessities (groceries) relative to discretionary leisure services (cinemas).

### Supermarkets

The relevant competitors in *Safeway et al* were more complex than those defined in the cinemas case, with restrictions on both the size of the supermarket and the identity of the competitor, even where the minimum size threshold was passed. As regards size, the market for groceries was split into three categories, each representing a separate relevant market for competition analysis:[4]

- *one-stop shops*—the largest size of grocery outlet, these are of a sufficient size that a consumer could purchase all their grocery requirements for one week;
- *mid-range stores*—not in general sufficiently large to meet an individual's shopping needs for an entire week, but can be used for 'top-up' shopping;
- *convenience stores*—the smallest stores.

The Competition Commission adopted two isochrones, depending on the location of the one-stop shop in question. For those designated as being in urban areas (a settlement with a population of at least 10,000), the drivetime was set at ten minutes. For those in rural areas, the drivetime was set at 15 minutes, creating commensurately larger geographic markets.

A further analytical rule adopted by the Commission, but disputed by the parties, was the 'regional concentration' rule. This states that, where an isochrone contains only one or two fascias, it should be extended in five-minute drivetime steps until a further competing store is found, and this new isochrone should be used to determine whether there was an SLC.

For one-stop shops, the Commission also focused on consumer choice as well as any market power which might be attained by any of the chains. This is due to the differentiated products which are sold in supermarkets—the goods on sale in Waitrose and Morrisons may vary significantly. To take this into account, a further set of isochrones was drawn, centring on competing (non-merging) supermarkets. These supermarkets will themselves not have experienced any change in their conditions of competition—the number of competing supermarkets in the locality will not have changed, and thus nor will their market share by either turnover or capacity. However, some consumers may now have a more limited choice of fascias.

## How many is enough?

In the cinemas cases, the minimum number of fascias within an isochrone in order for competition to remain effective was considered to be four, with the OFT stating that few markets had more competitors than this even prior to the merger. This minimum included independent cinemas as long as they met the size conditions outlined above. As a result of this analysis, in *Odeon/UCI*, ten problem areas (local markets) were found to exist, while in *UGC/CineUK*, four areas were considered problematic.

Analysis of this type to some extent relies on an assumption, explicit or implicit, that there are significant barriers to entry which prevent the market position of incumbents being undermined. In the case of cinemas and one-stop shops, the most important sources of barriers to entry are likely to be similar—the planning system creating both limited opportunities for new development, and long lead times for entering markets. It is for this reason that the Competition Commission (and subsequently the OFT) chose to ignore any competition effects in the convenience store market; stores of this size are common and it is relatively easy to obtain a change of use for their premises.[5]

A further complexity in this area arose in *Safeway et al* in situations where more than one one-stop shop was being acquired within an isochrone. In such a case, whether it was sufficient simply to dispose of just one Safeway store, so that the number of fascias in any isochrone was not reduced as a result of the merger, depended on national market shares. If there were competition concerns at a national level with the acquiring party, all acquired Safeway stores in the local area would need to be divested; however, if the acquiring party did not cause national concerns, the divestment of a single Safeway store would have been deemed sufficient. This is due to the impact of local market shares on determining a firm's price on a national basis.[6]

Overall, the fascia approach used by the OFT and Competition Commission is relatively simplistic, and will not always correspond fully with the realities of a market. While the number of competitors is represented, their relative sizes (beyond a minimum threshold) are not taken into account. There may be cases where the acquisition of a single outlet with low market share can trigger the requirement for a disposal, particularly where one or more of the other fascias within the isochrone has multiple outlets. More sophisticated analytical techniques have the potential to improve outcomes in this area, including price-concentration analysis based on a range of definitions of market share, or unilateral-effects analysis (whether the combined chain would raise its price), as in the landmark US case, *Federal Trade Commission v Staples Inc*.[7]

## Population recentring

Population recentring was an aspect of *Safeway et al* and the two cinema cases. The general idea is to reflect more accurately the choices that consumers face when they decide which outlet to use. Instead of an isochrone being drawn around an outlet, it is drawn around a population centre (which can be defined in several ways). Again, whether there are sufficient fascias within the isochrone can then be determined.

In *Odeon/UCI*, the recentring undertaken led to two additional divestments being required (in south-east London and Basildon). In both cases, the merger reduced the number of fascias from two to one. In two further areas of population recentring where there was a reduction in fascias below the four at which effective competition is thought to exist, the OFT ruled that there was no SLC.

## Conclusions

The OFT and Competition Commission have clearly indicated that, when determining the size of an isochrone, each case will be considered individually. The rule of thumb appears to be that the geographic market will be defined by reference to the time for which 70–90% of an outlet's customers are prepared to travel. Due to the need for clear market definitions, it seems that the isochrone used will be an average of the willingness to travel across the entire industry being considered, except where there are clearly verifiable conditions pertaining to some outlets, which would tend to systematically change the geographic market (eg, a rural location).

In all, the use of isochrones represents an improvement on drawing concentric circles when delineating local markets. This new technique can be used in a variety of industries where geographic market definition is of importance, ranging from hospitals and pharmacies to waste treatment and holiday accommodation. Some issues involved when using isochrones still need further development—for example, how many fascias in an isochrone are needed to maintain effective competition?

[1] Competition Commission (2003), 'Safeway plc and Asda Group Limited (owned by Wal-Mart Stores Inc); Wm Morrison Supermarkets PLC; J Sainsbury plc; and Tesco plc: A Report on the Mergers in Contemplation', September. Office of Fair Trading (2005), 'Acquisition by Terra Firma Investments (GP) 2 Ltd of United Cinemas International (UK) Limited and Cinema International Corporation (UK) Limited', January 7th; undertakings accepted May 9th. Oxera acted for the merging parties in this latter transaction.
[2] The Commission found that competition between the major supermarkets essentially took place on a local basis. However, for the major chains, many of the crucial parameters of competition, including decisions regarding pricing policies, range stocked, and marketing activity, are established at a national level, providing a rationale for also taking into account this alternative geographic scope of the market. This differs substantially from cinemas, which do not operate national pricing policies and for which marketing is mainly local 'time and place' advertising. National issues were not raised in the cinema mergers.
[3] See OFT (2005), 'Completed Acquisition by the Blackstone Group of UGC Cinemas Holdings Limited', May 5th.
[4] The markets are in fact asymmetric—in a merger of convenience stores, one-stop shops nearby would be considered, but in a merger of one-stop shops, mid-range stores within the isochrones would be disregarded.
[5] Competition Commission (2003), op. cit., para 5.343.
[6] Competition Commission (2003), op. cit., para 5.287.
[7] *Federal Trade Commission v. Staples, Inc.,* US District Court, District of Columbia, 1977, 970 F. Supp. 1066. See also Baker, J. (1999), 'Econometric Analysis in *FTC v. Staples*', *Journal of Public Policy and Marketing*, **18**:1, Spring, 11–21.