

# Working paper on barriers to entry

## Introduction

1. This paper examines barriers to store entry into local areas for the retailing of groceries in the UK<sup>1</sup>. Key barriers to entry discussed in this paper include: the planning regime and the need test; strategic conduct by grocery retailers; and, cost advantages of incumbent retailers. After considering these barriers to entry, the paper looks at trends in concentration and local store entry since 2000.
2. A barrier to entry is commonly defined as anything that permits an incumbent to raise price above the minimal average costs of production and distribution without attracting entry<sup>2</sup> (known in the economic literature as an *antitrust barrier to entry*<sup>3</sup>). Where a barrier to entry is present, supra-competitive store margins (ie margins greater than those found in more competitive local areas) may be observed. In the absence of any barriers to entry, we would expect store margins across localities to vary only to the extent that costs vary between those areas. Our preliminary margin analysis has suggested significant variation of store margin in relation to local concentration;<sup>4</sup> this is therefore consistent with the presence of a barrier to entry of some description in those areas. In this paper, we examine the degree of historic entry into concentrated local areas and consider the possibility of strategic conduct on the part of the incumbent retailers, and also make direct observations on the barriers to entry that exist.

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<sup>1</sup> We have not yet specified a definition of the geographic market. For details see our working paper on market definition (May 2007): [http://www.competition-commission.org.uk/inquiries/ref2006/grocery/pdf/working\\_paper\\_market\\_definition.pdf](http://www.competition-commission.org.uk/inquiries/ref2006/grocery/pdf/working_paper_market_definition.pdf)

<sup>2</sup> See Bain, J: *Barriers to new competition: their character and consequences in manufacturing industries*, Cambridge, MA: Harvard University Press, 1956.

<sup>3</sup> See McAfee, Mialon and Williams: "*What is a Barrier to Entry?*", pp 491-465, and Schmalensee, R: "*Sunk Costs and Antitrust Barriers to Entry*", pp 471-475, both in *American Economic Review*, v94, No.2, May 2004. The *antitrust* definition is reflected in the relevant CC guideline: CC3 (Market Investigation References) which notes that barriers to entry are features of the market that may prevent or restrict firms from exploiting profitable opportunities in a market and hence enable existing suppliers to raise prices above costs persistently without significant loss of market share. (paragraph 3.22)

<sup>4</sup> See our working paper on market definition paper (May 2007)

3. In its 2000 report<sup>5</sup> the CC identified barriers to entry in grocery retailing in the form of:
  - (a) limitations on site acquisition arising from changes to the planning regime in the early 1990s;
  - (b) economies of sales density at a store level, and economies of scale at a retailer level, the latter consisting of efficiencies in buying terms and distribution costs; and
  - (c) the use of restrictive covenants and the existence of land sites that had been purchased without being developed, although the CC was less certain that these factors were resulting in entry being blocked.
  
4. The barriers to entry identified in the 2000 report are also relevant to the CC's current investigation. For the purposes of the analysis in this paper, we have categorised possible barriers to entry as follows<sup>6</sup>:
  - the planning regime generally and the 'need' test specifically (see paragraphs 9 to 15);
  - conduct by incumbent grocery retailers aimed at impeding entry in local areas, including strategic land holdings, manipulation of the planning system, and building a reputation for an aggressive competitive response to local entry (see paragraphs 16 to 26); and
  - cost advantages arising from factors such as distribution, national branding activities, and purchasing terms (see paragraphs 27 to 35).
  
5. In considering possible barriers to entry to grocery retailing, it is worth distinguishing between different groups of potential entrants, in particular:

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<sup>5</sup> *Supermarkets: a report on the supply of groceries from multiple stores in the UK*, TSO, October 2000.

<sup>6</sup> These categories might also be identified by classification in the CC Market Investigation guidelines: CC3 (para 3.23 to 3.35). Under those classifications the types of barrier described would be "Regulatory", "Strategic" and "Natural" respectively.

- (a) national or regional grocery retail chains that already have large established networks of stores within the UK that might be seeking to enter a new local area (eg Tesco, Somerfield);
  - (b) smaller regional grocery retailers that may have a small number of stores but do not have a national brand (eg Pareto, Proudfoot); and
  - (c) international grocery retailers with large established networks of stores but which are not present in the UK (eg Carrefour, Metro).
6. The focus in this paper is predominantly on the barriers to entry facing existing national or regional grocery retail chains, as the size and coverage of their network of stores make these retailers the most likely entrants in any given area. However, we also consider the effects on the other possible entrants identified above.
7. The key findings in this paper are as follows:
- The sequential approach of the planning regime, by encouraging development in town centres, may have restricted entry by new grocery stores of a scale sufficient to compete with incumbent stores. However, we are still examining the extent to which smaller stores provide a competitive constraint on larger stores, and thus the significance of this barrier to entry.
  - The ‘need’ test forms a potential barrier to entry across all areas in which it operates. Based on data from the local planning authorities<sup>7</sup> (LPAs), it may form an actual barrier to entry, in that an LPA considers either that its area has no ‘need’ for the development of further grocery retail floorspace, or that the need is for less space than would be accounted for by a single large grocery store. It appears from our data that more than 50% of LPAs consider at least one of these scenarios to be present in their area.

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<sup>7</sup> See Annex A for more details of this data

- There are a number of instances of the four largest grocery retailers owning land in locations where they already have a high share of net sales area. We are still undertaking work to assess whether this may be indicative of strategic holdings designed to prevent entry by competitors and thus protect a strong local position.
- An analysis of recent changes in grocery retailers' share of approximated sales, by postcode area, shows that in those areas where a grocery retailer has had a strong local position, this has not been eroded by the entry or expansion of competing retailers. This may be indicative of the presence of barriers to entry that are preventing the erosion of the strong local positions of different grocery retailers. However we are seeking to extend this analysis to smaller geographic units on the basis that postcode areas are substantially larger than the area currently being considered by the CC as the relevant geographic market.

### **Planning regime and the need test**

8. The working paper on planning published alongside Emerging Thinking in January 2007 provides an overview of the planning framework in the UK<sup>8</sup>. In particular, the working paper sets out the town centre first, or sequential, approach to retail development and the requirement to demonstrate the 'need' for retail development for those sites that are in an edge-of-centre or out-of-centre location.
9. Other relevant aspects of the planning system include the requirement to demonstrate that a development is of an appropriate scale for the catchment it services, and the requirement to submit a retail impact assessment for any development larger than 2,500 sq metres of gross floor area that is in an edge-of-centre or out-of-centre location and is not in accordance with an up-to-date development plan.

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<sup>8</sup> [http://www.competition-commission.org.uk/inquiries/ref2006/grocery/pdf/emerging\\_thinking\\_planning.pdf](http://www.competition-commission.org.uk/inquiries/ref2006/grocery/pdf/emerging_thinking_planning.pdf)

10. Two possible barriers to entry appear to arise from these requirements. First, the sequential approach, by prioritizing retail development in town centres, may inhibit the opening of new grocery stores of a scale capable of competing with existing stores. Our working paper on planning issues identified a trend over the period 2001 to 2006 towards the development of smaller grocery stores, which is consistent with a greater focus on stores being built on smaller, more centrally located sites.
11. In our working paper on market definition (May 2007)<sup>9</sup>, we indicate that smaller grocery stores provide a limited constraint on larger grocery outlets, and that the extent of the competitive constraint provided by a smaller store on a larger store is likely to be influenced by the relative size of the two stores. This indicates that, in those areas already served by one or more large grocery retail outlets, the town centre first policy may have impeded the entry of new stores capable of providing an effective competitive constraint on existing larger stores. However, we are still examining the extent to which smaller stores provide a competitive constraint on larger stores, and thus the significance of this possible barrier to entry.
12. Second, the assessment of need that is required by the planning system for edge-of-centre and out-of-centre developments, and in particular, the formal need test, has been highlighted by some parties as creating a barrier to entry to grocery retailing. The need test primarily operates by assessing the demand and supply for grocery floorspace in an area. Thus the application of the need test invariably involves a pre-judgement of the opportunity, and therefore the desirability, of further entry. This judgement pre-empts the assessment of potential entrants and as such has the

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<sup>9</sup> [http://www.competition-commission.org.uk/inquiries/ref2006/grocery/pdf/working\\_paper\\_market\\_definition.pdf](http://www.competition-commission.org.uk/inquiries/ref2006/grocery/pdf/working_paper_market_definition.pdf)

potential to form a barrier to entry in edge-of-centre and out-of-centre locations throughout the UK<sup>10</sup>.

13. The extent to which the need test will form an *actual* barrier to entry to edge-of-centre and out-of-centre development in a given local area will depend on whether the local authority considers that the need for grocery retail space is, or is not, currently being met or will, or will not, be met in the future. We obtained information from 61 Local Planning Authorities (LPAs)<sup>11</sup> regarding their assessment of the need for retail floorspace. (Further details of our analysis are in Annex A.) We found that 70 per cent of those surveyed had an up-to-date need study, which measured the projected need for convenience retail floorspace. Those LPAs that did not have a study were either waiting for one to be completed or relied on need assessments submitted with a planning application.
  
14. Around 75 per cent of LPAs that had an up-to-date need assessment had identified a need over the horizon of the planning period (on average out to 2013) for further convenience<sup>12</sup> retail floorspace (representing 60 per cent of all LPAs that responded). In some cases, however, the need was relatively small (ie less than the size of a single large grocery store). Taking this into account, we consider that in somewhat less than half of all local authority areas, the need test would not, at present, represent a binding barrier to entry for large grocery stores in edge-of-centre or out-of-centre locations. However, in the remaining local authority areas, the need test may form a binding barrier to entry. Furthermore, in those areas where the need test is not currently a binding barrier to entry, it may become one after further entry has occurred which fulfils the prescribed need.

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<sup>10</sup> See Annex A, in which we discuss the operation of the need test across the UK.

<sup>11</sup> There are 468 Local Planning Authorities in the UK.

<sup>12</sup> This refers to convenience retailing in the planning terminology which covers a wide variety of uses beyond what we might term convenience retailing.

## **Conduct by grocery retailers to impede entry**

15. Grocery retailers may engage in a number of different kinds of conduct aimed at impeding entry by competitors into local areas. We consider in this section:
- strategic land holdings;
  - manipulation of the planning system; and
  - building a reputation for aggressive competitive responses to local entry.

### ***Strategic land holdings***

16. A grocery retailer may seek to block the entry of a competitor into a local area through purchasing and holding the land that would be required by the competitor for the construction of a store. This might involve, for example, purchasing an entire site and holding it undeveloped or leasing it out for an alternative use. Alternatively, the purchase of a relatively small parcel of land, rather than a complete site sufficient on which to build a store, may be enough to deter entry. Control of such a land parcel might signal to a potential entrant that its plan to enter is futile; that the identified opportunity for entry can be removed by the incumbent. The theory being that the incumbent's control of a land parcel gives it a first mover advantage in any entry race that might begin at a later date.
17. If incumbent grocery retailers are strategically blocking entry through their control of land, the most likely candidate areas are those where the incumbent retailer has a large share of the net sales area. (Our working paper on market definition (May 2007) shows a link between local concentration and higher grocery store profit margins<sup>13</sup>.)
18. Table 1 shows the proportion of stores larger than 1400 sq metres for each of the four largest grocery retailers (Asda, Morrisons, Sainsbury's and Tesco) in terms of

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<sup>13</sup> [http://www.competition-commission.org.uk/inquiries/ref2006/grocery/pdf/working\\_paper\\_market\\_definition.pdf](http://www.competition-commission.org.uk/inquiries/ref2006/grocery/pdf/working_paper_market_definition.pdf)

their share of the net sales area (of all grocery stores larger than 1400 sq metres<sup>14</sup>) within a 10-minute drive time<sup>15</sup>. The table also sets out the proportion of stores within each of these categories where the relevant retailer also has a controlled landsite<sup>16</sup> within a 10- or 20-minute drive-time. In those areas where a grocery retailer has a greater than 50 per cent share of net sales area, the extent to which the retailer in question also has a controlled landsite within a 10-minute drive time ranges from 10 per cent of these areas for [X] to 25 per cent for [X]

19. For example, at 39 per cent of [X] stores larger than 1400 sq metres, [X] has more than half of the net sales area of grocery stores larger than 1400 sq metres within a 10 minute drive time of that store. Of these stores, almost one-quarter (ie 10%/39% in Table 1) have more than 50 per cent of the net sales area *and* a [X] controlled landsite within a 10 minute drive time.

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<sup>14</sup> Based on a share of net sales area for grocery stores larger than 1,400 sq metres in a 10-minute drive time isochrone around a store larger than 1,400 sq metres.

<sup>15</sup> In our working paper on market definition (May 2007), we note that our analysis of the 1,400 sq metre threshold as a boundary between types of stores that may be able to exercise a competitive constraint on each other does not indicate, at this point, particular significance for this size threshold. In relation to the geographic market, we continue to consider that the market is local and that the most significant competitive constraint occurs between stores that are located less than 15 minutes' drive-time from one another.

The store size and drive time divisions used for Table 1 do not necessarily reflect the results presented in our working paper on market definition. However, we consider that the table still provides a useful indication of the relationship between store holdings, local concentration and land holdings.

<sup>16</sup> Here, we define a controlled landsite to be one over which the retailer retains the ability to prevent a rival using the site for grocery retail, regardless of the use to which the retailer puts that site (e.g. leased to third party) or whether the retailer owns the land site in question (e.g. restrictive covenants on any landsite not owned by the retailer). Sites that were wholly, or in part, used on 1 July 2006 for retail or retail support are excluded from this definition.

**TABLE 1 Concentration and controlled land: stores > 1,400 sq metres**

	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
<i>Tesco: 531 stores &gt; 1,400 sq metres</i>											
Proportion of Tesco stores larger than 1,400 sq metres with > x% share of net sales area for grocery stores larger than 1400 sq metres within 10 minutes drive time											
—and a Tesco controlled landsite within 20 mins											
—and a Tesco controlled landsite within 10 mins											
<i>Sainsbury's: 397 stores &gt; 1,400 sq metres</i>											
Proportion of Sainsbury's stores larger than 1,400 sq metres with > x% share of net sales area for grocery stores larger than 1400 sq metres within 10 minutes drive time											
—and a Sainsbury's controlled landsite within 20 mins											
—and a Sainsbury's controlled landsite within 10 mins											
<i>Asda: 297 stores &gt; 1,400 sq metres</i>											
Proportion of Asda stores larger than 1,400 sq metres with > x% share of net sales area for grocery stores larger than 1400 sq metres within 10 minutes drive time											
—and an Asda controlled landsite within 20 mins											
—and an Asda controlled landsite within 10 mins											
<i>Morrisons: 347 stores &gt; 1,400 sq metres</i>											
Proportion of Morrisons stores larger than 1,400 sq metres with > x% share of net sales area for grocery stores larger than 1400 sq metres within 10 minutes drive time											
—and a Morrisons controlled landsite within 20 mins											
—and a Morrisons controlled landsite within 10 mins											

Source: CC analysis.

**TABLE 2 Concentration and controlled land: stores > 280 sq metres**

	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
<i>Tesco: 722 stores &gt; 280 sq metres</i>											
Proportion of Tesco stores larger than 280 sq metres with > x% share of net sales area for grocery stores larger than 280 sq metres within 10 minutes drive time											
—and a Tesco controlled landsite within 20 mins											
—and a Tesco controlled landsite within 10 mins											
<i>Sainsbury's: 486 stores &gt; 280 sq metres</i>											
Proportion of Sainsbury's stores larger than 280 sq metres with > x% share of net sales area for grocery stores larger than 280 sq metres within 10 minutes drive time											
—and a Sainsbury's controlled landsite within 20 mins											
—and a Sainsbury's controlled landsite within 10 mins											

Source: CC analysis.

20. Table 2 extends the analysis presented in Table 1 for Sainsbury's and Tesco to encompass all grocery stores larger than 280 sq metres.<sup>17</sup> (Asda and Morrisons do not have any stores smaller than 1,400 sq metres). In those areas where Sainsbury's or Tesco has a greater than 50 per cent share of net sales area for stores larger than 280 sq metres within a 10 minute drive time isochrone<sup>18</sup>, the proportion of areas in which each of them also has a controlled landsite is broadly the same as when the analysis focuses on stores larger than 1,400 sq metres.
21. The existence of land holdings in areas where a retailer already has a high proportion of the net sales area does not necessarily mean, however, that the retailer is seeking to block or impede entry by a competitor into that area, or that such holdings are having this effect. We continue to look at this issue in terms of: the duration of land holdings; the internal appraisal undertaken by grocery retailers at the time of acquiring certain land holdings; their reported strategy in relation to individual land holdings; and other relevant factors.

### ***Manipulation of the planning system***

22. The working paper on planning published with Emerging Thinking in January 2007 analyses the extent to which retailers have manipulated the planning system in order to forestall entry by competitors. This working paper found some evidence of retailers applying to extend their stores in response to anticipated entry, but few objections by retailers (other than [X]) to rival entry.

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<sup>17</sup> Based on a share of net sales area for stores larger than 280 sq metres in a 10-minute drive time isochrone around a store larger than 280 sq metres.

<sup>18</sup> The share of net sales area defined here is that of all Tesco (or Sainsbury's) stores within a 10 minute isochrone that are larger than 280 sq metres as a proportion of the net sales area of all the stores that are larger than 280 sq metres within the same 10 minute isochrone.

### ***Building a reputation for fighting entry***

23. A number of academic works have considered the importance of reputation in creating barriers to entry in the retail sector. Selten's chain store paradox<sup>19</sup> showed at a theoretical level that an incumbent without a cost advantage over an entrant would never seek to discourage entry (e.g. through unprofitable price reductions or improvements in the retail offer). This analysis was based on the entrant being certain that in the last local market (or one-shot game) the incumbent would have no incentive to fight entry and would therefore accommodate entry. Knowing this, the entrant would enter and be accommodated in each local market.
24. However, by introducing uncertainty over the costs of the incumbent, Kreps and Wilson<sup>20</sup> showed that an incumbent might rationally fight entry in order to create the belief among potential entrants that it has lower costs. This reputation building would then protect it from entry in other markets and therefore create sufficient profit to cover the costs of implementing the strategy. The cost of strategically building a reputation might be expected to be less prohibitive for the incumbent when the threat of entry comes from small retailers who are capital constrained. This is because the deceit would not be expected to last for long against such entrants and hence would cost less to carry out. As such, we would expect this strategy to prove more attractive to incumbents facing smaller entrants.
25. Many of the largest grocery retailers have submitted that they introduce defensive improvements to their retail offer only when a national rival opens in the vicinity.<sup>21</sup> This conflicts with the theory of entry deterrence outlined above, as these are the

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<sup>19</sup>Selten, R: 'The Chain-store paradox', *Theory and Decision*, v9, 1978, pp127–159.

<sup>20</sup>Kreps, D and Wilson, R: 'Reputation and imperfect information', *Journal of Economic Theory*, v28, 1982, pp253–279. Similarly Milgrom, P and Roberts, J: 'Predation, reputation, and entry deterrence', v27, *Journal of Economic Theory*, 1982 pp280–312. Milgrom and Roberts allow incumbents to pre-commit to an investment that made fighting a rational strategy.

<sup>21</sup>Responses to the Main Parties' Questionnaire.

very retailers that are likely to have the resources and knowledge such that they would not be expected to be deterred from entering.

26. Despite the apparent targeting of these responses at other national retailers, it is possible that smaller potential entrants may also be deterred from entering by these strategies. However, the significance of this possible barrier to entry is not clear at this point.

### **Cost advantages for incumbent retailers**

27. A barrier to entry common to many markets is the prospective entrant's inability to match the cost efficiencies achieved by the incumbent. Where this is the case, profitable entry opportunities are restricted and potential entrants are discouraged from entering. This allows the incumbent to maintain a price above average cost.
28. In the case of grocery retailing, these cost advantages might be related to scale either at a local or national level. Examples of the source of possible cost advantages include local distribution costs, national branding and purchasing terms. We consider these below.

### ***Distribution costs***

29. Large grocery retailers are likely to gain substantial economies of scale in distribution by clustering their stores in close proximity to a depot. These retailers can then achieve lower distribution costs by supplying a large number of stores from a single depot. The fixed cost of operating the depot is spread over a larger number of stores and the cost of distributing to any one of those stores is reduced.
30. The geographic nature of these efficiencies dictates that this is not simply a matter of scale. A depot may, for example, function at capacity while still retaining the

potential to offer further efficiencies. In particular, as it opens new stores the retailer would be able to reallocate its stores between depots in order to reduce the total drive-time between the depot and the stores that are served by the depot. Alternatively, specialist depots, as seen at some of the national grocery retailers, may become viable as the number of the retailer's stores in a region increases.

31. The nature of these efficiency effects may be such that in areas where the retailer lacks a nearby depot it will prefer not to enter. It would rather locate closer to its existing depots, despite the potential sales cannibalization this may involve. If the entering retailer sets prices in line with a national pricing policy, then it may not be able to profitably enter those areas more distant from its depots at all. It may be deterred from entering since the competitive offer would entail negative profits (or at least profitability below the rate of return that it generally expects from its stores, ie the hurdle rate) given its existing distribution system.
  
32. In terms of the different types of grocery retailer, we would expect potential entrants with no retail presence in the UK to find this form of barrier particularly difficult to overcome. However, existing grocery retailers may also encounter similar barriers when entering into areas in which they are less established. In this context, we note that [✂] response to our Emerging Thinking stated that the national scale of Tesco allowed it to spread fixed costs, one example of which is regional infrastructure costs, across a large number of densely distributed stores. It argued that these cost advantages, combined with non-food buying economies and the ability to take advantage of declining variable costs associated with opening new stores, allow Tesco to bid more aggressively for new sites. This in turn acts as a barrier to local entry.

33. To the extent that such a barrier to entry is significant, we might expect to see entry focused on areas where the incumbent retailer already has a significant presence.

### ***National branding and purchasing terms***

34. In its reply to our Emerging Thinking, [redacted] told us that Tesco's advertising expenditure could, like its distribution and other fixed costs, be spread over a larger number of stores. It believes that Tesco's national share of sales reduces the advertising costs for individual stores<sup>22</sup> which allow it to bid more aggressively for new sites, thereby forming a barrier to entry. However, we would generally expect such barriers to have a greater effect on small retailers that lack a national brand presence rather than retailers with [redacted] advertising expenditure.
35. The extent to which large retailers are able to gain substantial purchasing advantages over smaller retailers is the subject of detailed analysis in our investigation. We will be providing a separate analysis of this issue in the lead up to our provisional findings.

### **Recent entry into local areas by grocery retailers**

36. This section reviews the extent to which entry has occurred in recent years. In all, 565 grocery stores larger than 1,400 sq metres have opened in the UK since June 2001<sup>23</sup>. These new openings have been concentrated among the existing national grocery retailers (see Table 3). This might indicate that barriers to entry are more substantial for small retailers and international retailers than for existing grocery retailers with a national or regional scale.

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<sup>22</sup> [redacted] also points to the benefit of non-food cost economies as discussed in the previous section.

<sup>23</sup> We focus on stores larger than 1,400 sq metres due to the comparable data available in CC's 2000 *Supermarkets* report

TABLE 3 Store openings since June 2001 (larger than 1,400 sq metres)

	<i>New builds</i>	<i>Acquisitions</i>
Morrisons	37	221
Tesco	93	27
Asda	47	27
Sainsbury's	26	29
Waitrose	15	22
Somerfield	0	17
Co-op	2	1
Booths	<u>0</u>	<u>1</u>
Total	220	345

Source: CC analysis.

37. We have then assessed whether postcode areas<sup>24</sup> featuring high concentration levels for grocery retailing in 1999 have attracted entry from competitors during the period to 2006. To measure grocery retailers' share of sales in 2006, we have used their share of net sales area in individual postcode areas. This is because the revenue data provided by retailers for the current investigation is incomparable across fascia. For 1999, we have used the share of sales data featured in the CC's 2000 report, although we note that these figures were based on a subset of each retailer's stores<sup>25</sup>. Therefore, neither approximation is a perfect measure of the share of grocery sales, and there may be different biases which influence the apparent trends. As such, these figures should be interpreted with care<sup>26</sup>.

38. Given these caveats, Table 4 shows the estimated average gain in share of postcode area sales by grocery retailer between 1999 and 2006 in those postcode areas where the grocery retailer had less than 30 per cent, between 30 and 50 per cent and more than 50 per cent of the total sales<sup>27</sup>. Across all areas, Tesco and

<sup>24</sup> A postcode area includes all locations with the same one or two letters at the beginning of the postcode (e.g. G (Glasgow) or TW (Twickenham)). There are 124 Postcode Areas in the UK.

<sup>25</sup> See appendix 5.2 and paragraph 5.14 of *Supermarkets: a report on the supply of groceries from multiple stores in the UK*, TSO, October 2000.

<sup>26</sup> By contrast, the figures in table 5 are drawn from data collected by the CC during the current market investigation, and we therefore place more weight on the conclusions that are drawn from them. We note that these endorse the results presented in table 4.

<sup>27</sup> Postcode areas are substantially larger than the area currently being considered by the CC as the relevant geographic market. However, our analysis focuses on postcode areas due to data availability constraints.

Asda made the largest gains in share of sales over this period (6.5 and 8.1 percentage points respectively). Notably, each retailer has made larger gains in postcode areas where it was relatively weak in 1999 compared to those where it was relatively strong. In postcode areas where they were strong, the three largest grocery retailers have also grown their share of sales, but at a slower rate. For example, Table 4 shows that in postcode areas where Tesco held more than 50 per cent of grocery sales in 1999, on average, it had by 2006 gained an additional 2.5 per cent share of the sales in that postcode area..

TABLE 4 Percentage point changes in share of sales in postcode area, 1999 to 2006, by retailer

<i>Retailer's share of a postcode area's sales in 1999</i>	<i>Tesco</i>	<i>Asda</i>	<i>Sainsbury's</i>	<i>Morrisons*</i>	<i>All (excluding Morrisons)</i>
<30%	8.4	8.3	1.8	0.7	6.2
30-50%	2.2	4.8	0.1	-7.0	1.6
>50%	2.5	N/A	6.8	N/A	3.2
All	6.5	8.1	1.4	-0.5	5.4

Source: CC analysis.

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\*Morrisons figures should be treated with care since this is a comparison of a combined summed figures for Morrisons and Safeway in 2000 with the combined entity, Morrisons, in 2006.

39. This analysis suggests that, at a postcode area level at least, there would not appear to be a functioning adjustment mechanism by which grocery retailers with a strong local position are subject to entry over time that erodes the strength of their position.
40. Table 4 is based on *approximate* changes in the share of sales over time. In contrast, Table 5 measures the net sales area of new stores opened by retailers<sup>28</sup>. It includes new builds and acquisitions but excludes expansions of existing stores. Thus, it focuses on the entry that has occurred by postcode area since 2001 and

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<sup>28</sup> Net Sales Area is defined as the sales area within a building (i.e. all internal areas accessible to the customer) but excluding checkouts, lobbies, concessions, restaurants, customer toilets and walkways behind the checkouts.

how this relates to the concentration levels that were observed in those areas in 1999. It shows that more grocery stores larger than 1400 sq metres were opened in the postcode areas where no retailer had more than 30 per cent share of sales in 1999, and less in the postcode areas in which a retailer had a “strong” position (i.e. a share of sales between 30 per cent and 50 per cent, or greater than 50 per cent, respectively) in 1999.

TABLE 5 **Store openings since 2001**

<i>Any retailer's share of the postcode area's net sales area in 1999</i>	<i>Total new net sales area 2001-2006 as a % of net sales area in postcode area in 2006</i>	<i>Share of new net sales area 2001-2006 accounted for by the firm that was "strong" in the postcode area in 1999</i>
<30%	31.5	N/A
30-50%	27.2	21.6
>50%	21.5	31.6
All	28.9	21.6

Source: CC analysis.

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41. In summary, it appears that less floorspace is being opened in areas in which an individual retailer already has a large share of the net sales area. Furthermore, of the relatively small amount of new floorspace in these areas, a larger proportion is being opened by the retailer that was already in a strong position. Nevertheless, we note that other retailers have still opened nearly 70 per cent of the new floorspace in these areas.

## The need test

### Introduction

1. The responses to Emerging Thinking provided a number of clarifications and raised some concerns about the planning paper, particularly with regard to the need test. These responses are summarized below in terms of comments on:
  - whether the need test should be kept, modified or abolished; and
  - our interpretation of regional aspects of the need test.
  
2. In setting out the various comments on the need test, we describe Asda's analysis of the need test and also provide our own analysis of the extent to which the need test is acting as a barrier to entry based on information collected from a number of Local Planning Authorities (LPAs).

### Retailer views on the need test

3. Responses from the retailers varied. While Waitrose and the ACS want to retain the need test, other retailers want it to be modified or withdrawn:
  - Morrisons believes that the need test is protecting existing out-of-centre retail facilities from potential competition at edge-of-centre locations. It proposes that the turnover of existing out-of-centre facilities in the need test should be discounted, because this would further encourage new retail development at locations in and on the edge of town centres that would have a beneficial effect on both town centres and customers, without undermining the vitality and viability of existing centres which are dependent on a food store.
  - Sainsbury's suggests that the need test should be replaced rather than just removed, otherwise it would lead to uncontrolled development and have an adverse effect on town centres, suggesting that a range of economic, social and environmental issues should be considered.

- Asda argues that the need test restricts and distorts competition with harmful effects for consumers and thus constitutes a feature of the market that has an adverse effect on competition.
  - Tesco knew of no case where an application had failed solely because of need. The need test does make the planning process longer and more expensive. The planning regime would be easier to navigate if it did not include a need test (which is not necessary for the purpose of preserving town centres, as this is secured by the sequential test and retail impact assessments). For these reasons, Tesco stated that it would be pleased if the need test were abolished.
  - M&S emphasizes that the need test, operating in tandem with the sequential test, focuses the search for development opportunities on the primary shopping areas of town centres. M&S also suggests that the main element of the need test is quantitative need and that qualitative need is only a secondary consideration.
4. By way of comparison, the Barker Report, published in December 2006, recommends supporting the town centre first policy and the impact and sequential tests that help to deliver it, but removing the requirement to demonstrate need as part of the planning application process.

***Asda's analysis of the need test***

5. Asda believes that the restriction of local competition in grocery retailing arising from the planning regime is substantial. Asda is concerned that the planning regime and in particular the need test:
- acts to restrict entry in absolute terms and to impede the normal process of competition;
  - results in incumbents in local markets with restricted competition being able to reinforce their position of strength; and

- acts to restrict entry and therefore competition beyond that necessary to promote the policy objective of “town centres first”.
6. Asda suggested that, as a result of these factors, the normal competitive process does not operate properly in at least three distinct ways. First, in a substantial number of local markets, grocery consumers face a restricted number of fascias, and in some cases the absence of their preferred fascia. Second, local concentration in grocery retailing implies that consumers are likely to face higher prices and lower service qualities than if local markets were more competitive. Third, retailers are insulated from the “natural selection” process that is present in most other markets, namely that of a rival entering the market, stealing customers and displacing the least efficient incumbent.
  7. Asda, in responding to our Emerging Thinking, referred to an earlier presentation it made to CC staff, which illustrated the ability of a grocery retailer to enter an area with a store of 20,000 sq feet or larger. Asda’s analysis is explained in further detail below. Asda commented that its analysis is limited to the direct restrictive effect on competition of the need test. It does not consider the other adverse effects that the planning regime (in particular the need test) has on competition (e.g. dynamic issues due to lack of exit from the market).
  8. Asda’s analysis produced two sets of results; population centred and location centred. The population centred analysis suggests that 67 per cent of the urban population in Great Britain have fewer than four one-stop shop (OSS) fascias and hence restricted choice according to the CC’s previous approach to assessing OSS competition (within a 10-minute drive-time).
  9. Asda’s location centred analysis was based on a drive-time analysis. It started with 32,000 UK locations covering mainland Great Britain to build up a network of 10-

minute drive-time isochrones. It then only used the isochrones that had a population of 20,000 or more in the subsequent analysis. The analysis identified 501 areas that covered 31 million people on mainland Great Britain.

10. Asda then performed a simple calculation that involved:
  - applying an average OSS spend per head to the population in each area to generate a total demand ('need') for each area (the calculation used £1,173/head);
  - calculating supply by applying an average sales/area to the total OSS sales area in each area (£873/sq foot<sup>29</sup>); and
  - converting the excess or shortage to square feet of store space.
  
11. If the resulting need in an area was less than the equivalent of 20,000 sq feet of floorspace, Asda classified that area as having a "planning restriction". [REDACTED]. If there was more need, the area was classified as representing a "capacity opportunity". Asda indicated there was only a minor difference if the floorspace cut-off was 15,000 sq feet instead of 20,000 sq feet.
  
12. Asda told us that its analysis showed that the need test was a substantial barrier to entry for one-stop shops in many local areas with restricted competition. Of the 501 areas it had identified, 384 areas (77 per cent) had fewer than 4 one-stop shop fascias, 367 (73 per cent) had a "planning restriction" while 276 (55 per cent) had both fewer than 4 one-stop shop fascias and a "planning restriction", as shown in Table 1. Asda also provided evidence indicating that it considered that [REDACTED] out of its

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<sup>29</sup>Calculated as the arithmetic average of Tesco, Safeway, Sainsbury, Asda, Somerfield, Morrison and Co-op sales/sq foot.

[X] target areas<sup>30</sup> had both fewer than 4 one-stop shop fascias and a planning restriction for one-stop shop entry as a result of the need test.

13. Asda considered that even where an area has four supermarkets, the barrier to entry imposed by the need test means that these may not be the four fascias that would maximize consumer welfare.

TABLE 1 **Asda analysis of effect of the need test based on drive-time areas**

<i>501 areas</i>	<i>&lt;4 different OSS fascias</i>	<i>&gt;=4 different OSS fascias</i>
OSS planning restriction	276	91
OSS capacity opportunity	108	26

Source: Asda.

## **Analysis**

14. A number of issues arise out of Asda’s analysis. First, its assessment is an attempt to model the impact of the need test on a fairly abstract basis—divorced from the LPAs that actually administer the test in practice. Second, the Asda approach to assessing need is static and measures the present day position only. It does not take account of any growth in demand that might support increased retail development. Finally, the analysis is based on actual consumer expenditure and retailer actual average sales per area. Subject to the accuracy of the assumptions used, it must produce a result that shows that across the UK, supply meets demand and there is therefore no need.<sup>31</sup> In practice, except for a few areas in balance, it is likely to show that broadly 50 per cent of areas are planning constrained and 50 per cent have a capacity excess. Asda’s results show that over 50 per cent are planning constrained because it sets a benchmark of 20,000 sq feet of spare capacity and assumes that all areas with less than 20,000 sq feet of need are planning constrained.

<sup>30</sup> Asda had identified [X] target areas based on the population centred analysis

<sup>31</sup>By this we mean that in total across the UK (average sales per sq foot) x total sq foot must equal (average spend per customer) x total customers. So, across the UK the two must be in balance.

## ***LPA data on need assessments as a barrier to entry***

15. We wished to understand from the LPAs the extent to which a lack of identified need might be creating a barrier to entry. For example, Sainsbury's cited the case of Braintree, where the North Essex Authorities Retail Study 2006 states there is 'no capacity for additional convenience goods floorspace up to 2021', [✂]. A short email survey was performed with the LPAs that responded to our original questionnaire. The questions asked are shown in Appendix 1. Sixty-one responses were received, representing 15 per cent of all LPAs and 58 per cent of those we sent the follow-up questions to. These responses showed that the LPA performs a more dynamic analysis than the Asda approach would suggest, using a number of techniques to evaluate how need will develop over the plan period. The following points were highlighted by the responses:

- Most (70 per cent) of the respondents had an up-to-date study, generally performed by consultants, that calculated the quantitative need for convenience retail floorspace. Although there is no published methodology for need assessment,<sup>32</sup> in practice the methodologies used to assess need varied between consultants but were essentially similar. An example of the approach used by one consultant, Colliers CRE, is shown in Appendix 2. The approach is in principle similar to the approach used by Asda, but is more complex and takes more account of dynamic considerations.
- All the consultant studies were forward looking, taking into account population growth. Across the LPAs that responded, the average horizon year for the surveys was 2013.
- Many LPA respondents use surveys to get a clear view of the existing utilization of retail space by assessing the pattern of shopper behaviour (including flows into and out of the area), the quality of existing floorspace and whether the stores are over- or under-trading.

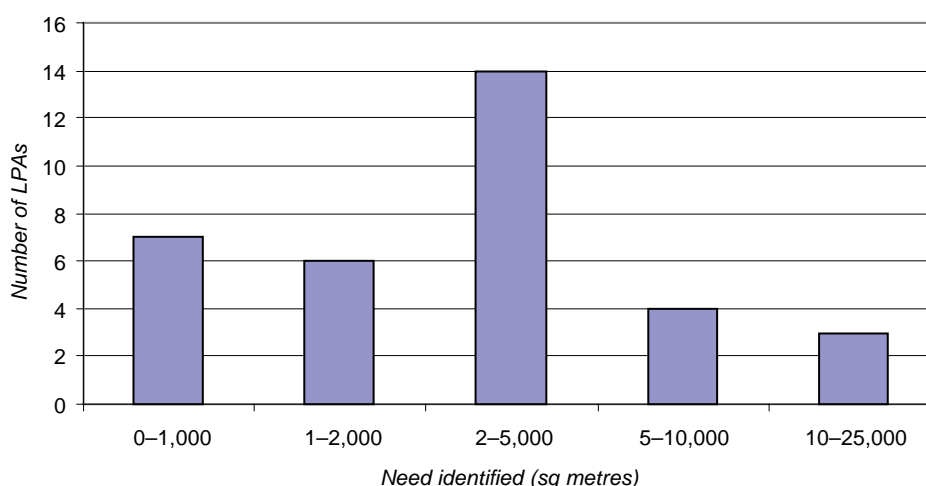
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<sup>32</sup>The Government has been due to publish a methodology since PPS6 was published but has not yet done so.

- The studies assess the balance between supply and demand to identify whether and when there will be need over the plan period.
- The LPAs that did not have an up-to-date study were either waiting for a study to be completed or relied on the need assessment analysis submitted with a planning application.
- 62 per cent of LPA respondents<sup>33</sup> confirmed that they had an identified need over the planning period. The need was on average assessed to 2013 and the average amount of need identified was 4,600 (median 2,500) sq metres. However, many LPAs that said they did not have an identified need were those that did not have an up-to-date study. Only ten LPAs (18 per cent<sup>34</sup>) had performed the retail study and concluded that, over the period of the study, they did not have a need.
- However, in a number of cases the need assessed was relatively low and in a number of cases it was unclear whether it would have been enough to justify building a large store, instead of satisfying it through smaller developments or additions to existing stores. Figure 1 shows the distribution of need requirement by number of LPAs.

FIGURE 1

**Need identified by LPAs**



Source: CC short survey of selected LPAs.

<sup>33</sup>Fifty-five out of the total of 61 responded to this question. Three LPAs that did not have an up-to-date retail study had an identified need, the others all had an up-to-date retail need assessment.

<sup>34</sup>Again out of 55.

16. None of the retailers have suggested abandoning either the sequential test or the retail impact assessment, which are both particularly directed towards ensuring the health of existing town centres. It is, however, difficult to see how these tests could be applied without some concept of need. For example, how would an LPA be able to assess whether a planning application for an out-of-centre store would have an impact on retailers in the centre without knowing the balance of supply and demand (and hence need) in the area? However, as a number of retailers have argued, it is difficult to see what the need test as a separate test adds to the sequential test and retail impact assessment.

## **Regional analysis of the impact of the need test**

### ***Scotland***

17. Respondents have commented that the need test is interpreted in a more complex manner in Scotland than we have assumed. The planning system works on the basis of a presumption in favour of the development plan, and places heavy reliance on ensuring that developments satisfy the sequential test.
18. Asda, Sainsbury's, Morrisons and M&S all told us that need should therefore implicitly be taken into account in the preparation of the development plan and Morrisons also told us that need was effectively taken into account in the assessment of planning applications that were outside the development plan. Morrisons suggested that, on this basis, it should be expected that there would not be a significant difference in the proportion of large stores built in Scotland compared to England and Wales.

### ***Wales/Northern Ireland***

19. [X] suggested that the reason that applications were approved more quickly in Wales was because the need test was applied less rigorously. This was because development and investment imperatives were strong and took priority.
  
20. [X] believed that in Northern Ireland the policy framework relating to retail need was operated in a relatively relaxed way, focusing on the benefits from development. (The need test was only introduced in July 2006, in draft guidance.) The NIIRTA suggested that the lack of a need test until recently had meant that more larger supermarkets had been built in Northern Ireland. However, the sample size for Northern Ireland was too small to be considered significant and we did not draw any meaningful conclusions from the Northern Ireland figures.

### ***Conclusion on regional variations***

21. We discussed in the previous section the way that we would expect need to be considered even if there was not an explicit test. The regional trends suggest that this is what has happened in practice.

## Supplementary LPA questions

### Clarification questions

- 1) Do you have an up to date study (i.e. completed within the last three to five years) that calculates the quantitative need for convenience retail floorspace in your area (Y/N)

If you answer no to this question please go to question (5)

- 2) If you answered yes to question 1, please explain briefly (in one or two sentences) how the need was assessed.
- 3) If you answered yes to question 1, please identify whether you currently have an identified need for convenience floorspace or, if you don't currently have a need, when do you see the lack of need continuing until? (If you assess need separately in more than one region please identify the position by region).
- 4) If your most recent study quantified a need for convenience floorspace, please tell us how much floorspace the need was for. Please indicate how much, if any, of this need has subsequently been met through new retail floorspace. (If you assess need separately in more than one region please identify the position by region).

Thank you for your responses.

- 5) If you answered no to question 1, please explain briefly (in one or two sentences) how you assess need.
- 6) Please could you identify whether you currently have an identified need for convenience floorspace or, if you don't currently have a need, when do you see the lack of need continuing until? (If you assess need separately in more than one region please identify the position by region).
- 7) If you have a need for convenience floorspace, please tell us how much floorspace the need is for. (If you assess need separately in more than one region please identify the position by region).

Thank you for your responses.

## CRE methodology for assessing quantitative retail need/capacity (taken from Belfast metropolitan area draft plan June 2003)<sup>35</sup>

Colliers CRE  
June 2003  
Belfast Metropolitan Area Plan: - Retail Sector Study  
Department of Environment, Planning Service

### Methodology for Assessing Quantitative Retail Need/Capacity

#### Step 1 Catchment Area Definition and Study Time Frame

**Step 1A** The catchment (or survey) area should be defined with regard to the study objective.

**Step 1B** The catchment should then be subdivided into zones (or sub-areas) to reflect the number and location of retail centres and the accessibility between them.

The number of zones will depend on the size of the sample for the household survey. Ideally a minimum of around 100 interviews should be carried out within each zone.

Zone boundaries are normally defined in terms of ward boundaries or postal geography.

**Step 1C** An assessment will normally adopt the current year as its starting point or 'base year'. The end year, or 'forecast year', will normally be determined by the end date of the Plan.

In preparing quantitative need studies it is normally helpful to also produce need estimates for selected intermediate years, since this will show how floorspace need (if any) changes or grows over time.

**Step 1D** A constant price base must be adopted for the quantitative need assessment. Thus all monetary figures are given in real values and discounted for the affects of price inflation.

#### Step 2 Analyse Consumer Demand

**Step 2A** Population estimates for each zone at the base year are required. Each of the zone populations must then be projected forwards to the forecast year(s).

**Step 2B** Estimates of retail expenditure per head are required for either the catchment area as a whole or ideally for each zone.

Estimates are also likely to be required for different categories of goods; the most common are: convenience goods, non-bulky comparison goods and bulky comparison goods.

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<sup>35</sup>Available on:

[http://www.planningni.gov.uk/areaplans\\_policy/Plans/BMA/draft\\_plan/03TechnicalSupplements/techsupp4/T4V2.pdf](http://www.planningni.gov.uk/areaplans_policy/Plans/BMA/draft_plan/03TechnicalSupplements/techsupp4/T4V2.pdf).

All expenditure data providers produce estimates for user defined areas which reflect the socio-demographics and affluence of the localities.

It is essential that the expenditure per head estimates are adjusted to the correct price base (see Step 1D) and also that spending on special forms of trading is excluded (i.e. this is expenditure that does not take place in shops e.g. that through mail order, through vending machines and also over the internet).

### **Step 2C Projection of Expenditure Per Head Estimates Through to the Forecast Year(s)**

National growth rates are published by a number of organisations (e.g. MapInfo, CACI or Experian). Alternatively, it may be more appropriate to 'model' bespoke growth estimates.

### **Step 2D Total available retail expenditure (for each goods category) should be calculated for the survey area and the constituent zones at both the base year and the forecast year(s). Thus the 'growth' in available expenditure can be identified.**

Total available expenditure at any particular year will originate from two sources:- inside the survey area and from outside the survey area.

Within the survey area—generated expenditure is calculated by multiplying the resident population by the estimate of average spend per head. This calculation can also be undertaken for each zone.

Outside the survey area—it is likely that there will be an in-flow of retail expenditure from people living outside the survey area. This is likely to be particularly significant if the survey area contains higher order centres and/or a popular tourist centre. The main types of in-flow are as follows:

- Long distance shopping trips – the amount of spending from this source can be determined from household surveys carried out in adjoining areas or should be estimated by reference to the best available sources.
- Workers—a large daily working population will generate retail expenditure. For major commuter areas the spending produced by workers who live outside the survey area should be estimated and included.
- Tourists—visitors from the UK and overseas may for certain locations be an important generator of retail expenditure. Using survey data where available the spending from this source must also be estimated and included.

Estimates must be made of the extent to which the scale of in-flow retail expenditure will change through to the forecast year(s) and in real terms.

### **Step 3 Analyse Retail Supply**

#### **Step 3A** The existing stock of retail floorspace in the Plan area must be determined by the main goods categories analysed at Step 2B. This is essential since it is virtually impossible to provide a robust estimate of future quantitative need if the current floorspace supply is unknown.

All retail floorspace must be included—in centre, out of centre and out-of-town.

If existing stock figures are unavailable, it will be necessary to undertake or commission a thorough retail audit of the current retail provision. As well as

estimates of floorspace quantity, a survey of retail occupiers should ideally be carried out. This will ascertain information on the quality of the retail offer, the physical condition of the floorspace stock (e.g. size and configuration of units) and the trading performance of the shops.

The combination of comprehensive information on both the quantity and quality of the existing retail offer/floorspace stock will inform the assessment of whether the retail economy is currently trading at equilibrium or not (see Step 4A below).

**Step 3B** A household survey should be commissioned to establish the existing pattern of shopper behaviour and retail consumer expenditure flows within the Plan area and between the Plan area and adjoining areas.

This survey as a minimum should cover the whole of the Plan area. However, there are important benefits if the survey can be extended to cover other adjoining and nearby areas (i.e. it can then inform on the extent of in-flow expenditure from beyond the Plan area).

The most cost-effective form of household survey is by telephone. As stated at Step 1B, a minimum of 100 completed interviews per zone is recommended.

The survey should quantify shopper behaviour separately for the three main goods categories:-convenience goods, and non-bulky and bulky comparison goods.

**Step 3C** The household survey results can then be applied to the totals of available expenditure by zone (from Step 2D) in order to estimate the existing retail turnovers of centres and stores within the Plan area.

For centres which attract long distance shopping trips and/or which benefit from commuter and tourist expenditure (see Step 2D), allowances must be made for turnover contributions from these sources.

The actual centre and store turnovers derived from the household survey should, wherever possible, be cross-checked against actual turnover figures from other sources (e.g. the retailers themselves) where these are available.

The household survey will determine the actual levels of available retail expenditure retained by individual centres and the Plan area as a whole. These are the base year market shares and can be calculated for each main category of goods.

**Step 3D** A 'benchmark' turnover for each of the main goods categories must be derived for the Plan area as a whole and for each centre. When compared to the actual turnovers calculated at Step 3C, this allows one to determine whether the existing floorspace is under or over-trading.

The best way to identify whether the existing floorspace is over or under-trading is to carry out a survey of the retailers themselves. If this is not possible, then published company average sales densities for leading retailers may be used, although this will only give a partial view. In any event, company averages should be weighted up or down as appropriate to reflect local circumstances (e.g. the affluence of the area, the type and size of stores and the costs of the location to retailers).

#### **Step 4 Retail Demand vs. Retail Supply in the Base Year**

**Step 4A** It is necessary to test the adequacy of existing retail provision in the Plan area. If actual turnovers (from Step 3C) exceed the benchmark turnovers (from Step 3D) then it can be said that the current floorspace stock is over-trading, and that there is an existing need for additional floorspace.

Conversely, if actual turnovers are less than the benchmark turnovers then there is an existing over-supply of floorspace. Lastly, if actual and benchmark turnovers are the same (or close) then the Plan area's retail economy for that category of goods can be said to be in equilibrium.

The extent of the existing retail floorspace over or under-supply can be estimated by converting the existing turnover surplus or deficit into floorspace by applying an appropriate average sales density.

#### **Step 5 Changes in Retail Demand and Retail Supply through to the Forecast Year(s)**

**Step 5A** Step 2D estimated the total available retail expenditure within the Plan area at the forecast year(s) for each of the main goods categories. The base year market shares (from Step 3C) may then be applied in order to obtain estimates of the levels of retained available expenditure at the forecast year(s).

It should be considered whether the application of the base year market shares are appropriate at the forecast year(s) in relation to the Plan area as a whole and/or individual centres. If it is considered that expenditure outflow (or leakage) is too high, or a centre is not achieving its true retailing potential, then a case could be made for increasing the market share(s). Alternatively, if it is thought that the proportion of expenditure being retained is too high, then the market share(s) could be reduced.

In either situation, the adjustment of the market shares should be the result of an interactive process, which focuses on realistic expectations of trade retention within individual zones within the Plan area.

It should also be borne in mind that adjusting the market share of a centre will have direct implications for the market shares of other centres. Similarly, increasing the market share for the Plan area as a whole will mean adjoining areas will lose their share of available expenditure.

This will require collaboration and agreement with nearby Planning Authorities otherwise double counting of available expenditure is likely.

**Step 5B** Step 3C estimated the actual retail turnover generated within the Plan area in the base year for the main categories of goods. These turnovers must then be projected to the forecast (year(s)) by taking into account any expected improvements in store efficiency (i.e. sales densities). In addition, the turnovers of any retail commitments (normally taken as comprising floorspace under construction or with planning consent) within the Plan area, must be added. It may also be appropriate to take into account the turnover associated with the re-use of vacant space.

**Step 5C** The monetary difference between the total potential retained expenditure at 5A and the forecast retail turnover at 5B gives a measure of the quantitative need for additional retail floorspace within the Plan area since the base year. If there is an expenditure surplus this is converted into a floorspace total by dividing through by

an appropriate average sales density. Similarly, if there is an expenditure deficit, a floorspace over-supply can be calculated in the same way.

**Step 5D** To arrive at a final estimate of overall quantitative need the floorspace outputs from Step 5C must be combined with the existing floorspace over/under supply figures derived at Step 4A.