

GEOGRAPHIC MARKET DEFINITION IN THE GROCERIES INQUIRY

GENERAL OVERVIEW

1.1 **The groceries sector is fiercely competitive.** This can be seen by the fact that prices are falling, range, quality and service are increasing, and that the overall customer offer is better than ever before.

1.2 **We have always argued that there is a single national market for groceries.** This is because competition takes place at a national level on all major aspects of the customer offer, such as price, quality, range, and service – any variation between stores is extremely small. The offer in a Tesco store in Southampton is more similar to a Tesco store in Aberdeen, than it is to an Asda or Sainsbury's store in Southampton. National retailers have opened up throughout the country and internet shopping is becoming increasingly important.

1.3 **The Competition Commission (the CC) previously found that markets were local with national characteristics.** In the 2000 Supermarkets Inquiry and the 2003 Safeway merger investigation, the CC found that the relevant market was essentially local but with national dimensions. In practice, it considered that the relevant local market covered only a small area of 10-15 minutes. This was because most customers shop locally, and most customers live close to their store. However, while this approach might intuitively sound sensible, it is no longer the accepted way of defining markets.

1.4 **Competition experts the world over agree that the correct approach to market definition is a test known as SSNIP.*** The SSNIP test does not look at the behaviour of "most" customers, but focuses on the behaviour of marginal customers. This is because it is the behaviour of marginal customers that drives the actions of retailers (in a similar way, elections are won and lost on the basis of the floating voter).

1.5 **Even if an individual customer has access to only one store, he or she is protected by the ability of marginal customers to switch to the stores of competing retailers.** This ensures that all customers have access to the same offer from a particular retailer wherever in the country they shop. (Large numbers of customer also have access to internet shopping, which provides the same offer everywhere – further protecting customers and widening the markets in which they can shop.)

1.6 **The CC has since formalised that it must carry out the SSNIP test to determine the size of the market.** Since the 2000 Inquiry, the CC has become subject to new legislation – the Enterprise Act makes market definition even more important than before. Its own Guidelines commit the CC to use the SSNIP test to define the market.

1.7 **Applying their new test shows local markets are much wider than previously thought.** We do not think that the market should be defined locally, because customers throughout the country get the same offer. But we have applied the CC's new test to the local markets that the CC has previously found. Our extensive evidence shows that in the overwhelming majority of cases, the approach taken in the

2000 Inquiry – if applied today – would seriously underestimate the size of the relevant market. **In fact, far from markets being 10/15 minutes wide, almost 90% of all stores are in markets that are *at least* 30 minutes wide.**

1.8 **Why does this matter?** In 2000, the CC based its assessment of competition on the number of stores present in a local area. Using SSNIP shows that such markets are considerably bigger than previously thought (and may be national). On the basis of its 2000 approach, the average number of stores in a local market was around four. But defining markets according to the CC's new test shows that the average number of stores in each market is six times as many as the 2000 Inquiry approach would suggest. On average, each relevant market contains 23 stores.

* SSNIP – small but significant and non-transitory increase in price

TECHNICAL OVERVIEW

The CC needs to define the market

1.9 The legislation under which the CC operates in relation to the Grocery Inquiry requires it first to define the market or markets, and then to consider whether there are any competition problems within those local markets. The aim of market definition in a competition law context is to identify a market within which competition takes place. This means that relevant markets for the purposes of a competition inquiry may differ from “markets” used for day-to-day business analysis.

1.10 In competition cases, markets are typically defined on two dimensions – products (which operators and products are to be included in the market?) and geography (what is the area in which the relevant operators and products compete?). In its Emerging Thinking, the CC did not come to a definitive view on product market definition and our view is that we compete in a wide product market. Contrary to the CC’s previous findings, we believe that M&S and the discounters are part of the relevant product market, as are smaller stores such as mid-range stores (our Metro stores would fall into this group, for example).

1.11 However, the focus of this response is the appropriate definition of the geographic market and it is to this issue that we turn.

The market is national

1.12 In relation to the geographic market, we strongly believe that the appropriate definition of the market is national. In the UK, competition takes place at a national level.

- All the major operators compete nationally on pricing, range, quality and service.
- Our products are the same price and quality in all our one stop shop stores.
- We have national advertising campaigns.
- The targets we set internally in our business, for example to monitor our “one in front” pledge on queue lengths, are identical across the country.
- Other retailers have national competitive strategies. The CC’s evidence shows that all the major retailers have national pricing policies.
- Since 2000, grocery retailers have set up new stores in every part of the country.
- The growth of internet shopping means that customers anywhere have access to the same offer.

1.13 As a result of this, the differences in our retail offer across the country are trivial compared to the differences between the retail offer of different providers in the same area. A Tesco store in Southampton is much more similar to a Tesco store in Aberdeen than it is to an Asda store in Southampton.

Deciding on narrow local markets would be flawed

1.14 The CC's view of geographic market definition has historically been that markets are local. Its arguments have been that customers shop locally and that there are some small variations in the competitive offer as between different stores – for example, one store may have more money-off vouchers distributed to its customers than another, or more space devoted to one product rather than another.

1.15 The CC has previously concluded (based on its findings in the 2000 Grocery Inquiry) that the relevant size of the local market is 10 minutes drivetime in urban areas and 15 minutes in rural areas because around two-thirds of customers at a particular store lived within 10/15 minutes of that store.

1.16 We disagree with the approach of “Going Local”. But even if the CC were to find that markets were local, it would have substantially underestimated the appropriate size of the relevant market. To show this, we have provided major new empirical evidence on customer shopping behaviour and switching opportunities. This shows that the geographic market is, at the least, substantially wider than the CC has previously found. In fact, for almost 90% of stores, the market would be **at least** 30 minutes wide – or at least two or three times as wide as the CC has previously found.

We have applied the “SSNIP test” as set out in the CC’s Guidelines

1.17 Our new evidence is based on a detailed technical analysis of the “SSNIP test” – where SSNIP stands for a “small but significant and non-transitory increase in price”. This is the test set out in the CC’s Market Investigation Guidelines as being the appropriate way to carry out market definition. It is also widely used in competition authorities across the world, including the European Commission and the US Department of Justice.

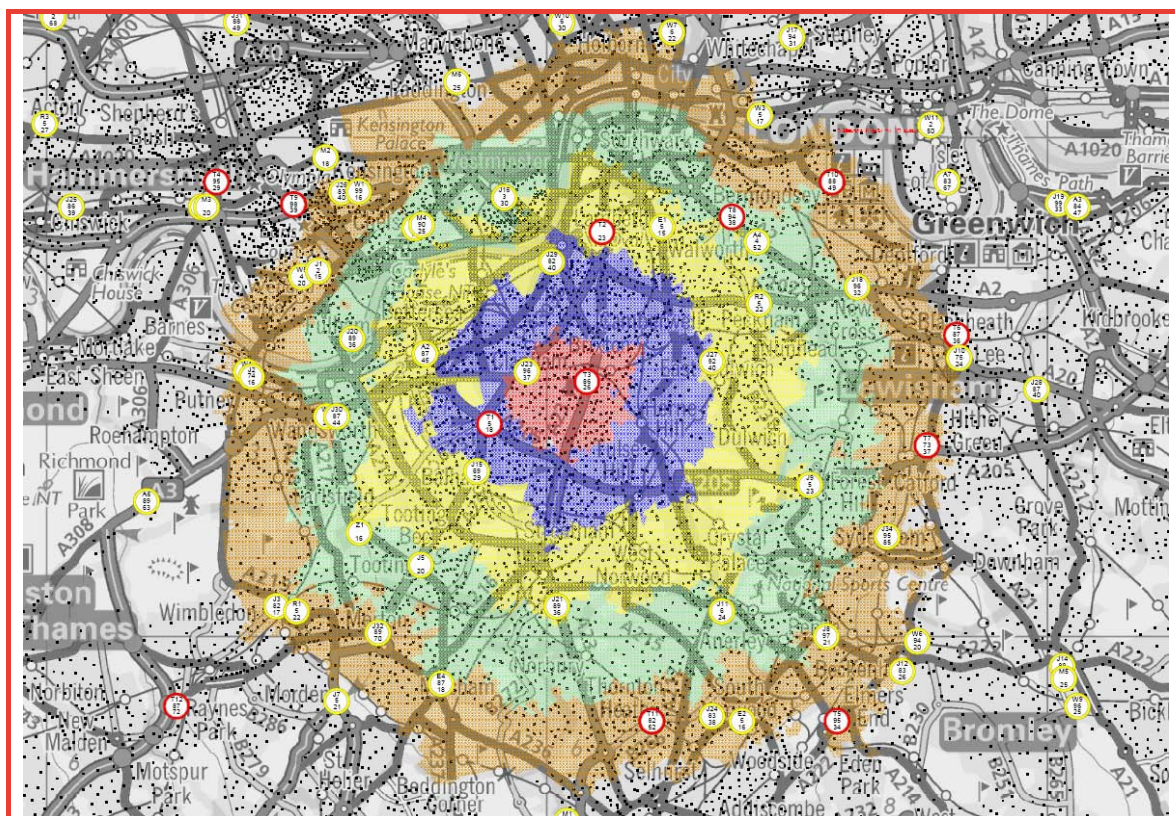
1.18 The SSNIP test asks whether a group of stores in a particular area constitutes a local market. It does this by working out whether a firm that controlled all those stores could profitably raise prices by a small amount. If such a price increase would not be profitable, then those stores by themselves are not a separate market. In effect, if this firm (known as a ‘hypothetical monopolist’) cannot profitably impose a price increase, then this area can’t be a market. If so, it is necessary to widen the area until a SSNIP is profitable.

1.19 Price increases can be unprofitable if they provoke enough “marginal” customers to switch away to other stores. Marginal customers are those customers who have the best switching options. To determine the size of the market, it is crucial to look at the number of marginal customers in each individual area and their switching options. The CC’s previous approach does not take marginal customers into account.

The example of Brixton shows why markets must be wider

1.20 As set out above, the SSNIP test is a rather abstract theoretical tool. To show how the SSNIP test would calculate the size of the relevant market in practice – and why it gives completely different results to the approach in the 2000 Inquiry – we use the example of Brixton.

1.21 Stores and customers in Brixton are set out in the Figure below. The red and yellow circles show the locations of stores. The concentric red, indigo, yellow, green and brown areas represent 5, 10, 15, 20, and 25-minute drivetimes respectively around the Brixton store. Each black dot represents an area of population covering around 100 households.



Stores and customers around Tesco (Brixton)

1.22 The CC’s previous approach states that the Tesco store in Brixton was in a market which contained only the stores within a ten minute drive of that store – shown as the indigo circle at the centre of the map. It is easy to see that there are three stores in this potential “market”.

1.23 We can check whether this actually is a market using the SSNIP test. If this is a market, a firm which controlled these three stores could profitably raise prices by 5%. We need to see whether customers in the 10 minute drivetime would switch to stores outside the 10 minute drivetime – if enough of them would switch, this price increase would be unprofitable.

1.24 The diagram shows that there are 7 stores between 10 and 15 minutes away from the Brixton store. Many customers that are just inside the 10 minute drivetime are likely to be able and willing to switch their purchases to the stores just outside the 10 minute drivetime. This strongly suggests that any such price increase would be unprofitable – and so this can’t be a market.

1.25 To carry out the SSNIP test properly we need a more sophisticated model which looks in detail at customer behaviour, rather than relying on intuition. We’ve have developed such a model, and applied the SSNIP test to the case of Brixton (and

all our other GB one stop shop stores). Our model uses empirical data on the locations of stores and customers, the willingness of customers to switch in response to price increases, and the profits that the hypothetical monopolist would lose on customers that switch away.

1.26 We find that the relevant market in Brixton isn't 10 minutes – nor is it 15, 20, or 25 minutes wide. Our model shows that the relevant market is **at least** 30 minutes wide. As a result, the market is **at least** three times wider than would have been the case using the CC's previous approach.

1.27 This much wider market dramatically affects the CC's competition analysis. The CC's previous approach would suggest that the market for our Brixton store would have three separate stores in it (the stores within the 10 minute isochrone). But the SSNIP test approach shows that the market contains most of South London – at least 45 stores.

The SSNIP test analysis shows that the CC's previous approach would greatly underestimate the competitiveness of the grocery sector

1.28 We have carried out this approach for all our 568 “one-stop” stores in Great Britain . We find that the market defined in the 2000 Inquiry is too narrow for 97% of these stores – and the market is at least 30 minutes wide for 87% of these stores. In other words, almost every market is at least two or three times as wide as the CC previously found.

1.29 This new evidence has major implications for the CC's competitive assessment. The average number of stores in the markets defined on the 2000 Inquiry basis is just under 4. But the average number of stores in the markets properly defined on a SSNIP test” basis is just over 23 – around six times as many. This shows that, if the CC were to employ an incorrect local market definition, it could severely underestimate the competitiveness of the grocery sector.

1.30 We have submitted extensive details of the methodology and results of this analysis to the CC and these are summarised in this paper. Details of the results can be found in **Annex A** of this paper. Details of the methodology can be found in **Annex B** of this paper. An example of the output – showing that the results we get are intuitive – can be found in **Annex C**. We have also provided the CC with all the data necessary to reproduce our results.

1.31 The CC's guidelines state that it will apply the SSNIP test wherever it is feasible to do so (and see also the CC quote from its market definition working paper set out at para 4.3 of our ET Overview). We have shown that it is feasible for the CC to apply the SSNIP test in this inquiry and we fully expect it to do so. We are confident that this approach will provide further substantive evidence to show that the groceries sector is fiercely competitive, and delivers great benefits to consumers.

ANNEX A

Results of SSNIP Test

1. We have applied the SSNIP test approach set out in **Annex B** below to every Tesco store above 1,400 sq. m in Great Britain.

2. The results show that in **98%** of urban areas the market should be based on drivetime isochrones of greater than 10 minutes and that in **91%** of rural areas the market should be based on drivetime isochrones of greater than 15 minutes. This analysis demonstrates that our application of the SSNIP test is feasible and that the CC's previous market definition frequently and significantly underestimates the appropriate market size – which is at least 30 minutes in the vast majority of cases.

Further results from national SSNIP

3. We have applied the SSNIP test to 568 areas around Tesco stores above 1,400 sq. m (this was the set of stores explored in the CC's 2000 Inquiry and is without prejudice to our views that the product market is wider than this).

- The first step is to estimate the proportion of customers that would switch in response to a price increase of 5% by the hypothetical monopolist (the *HM*). We assume that a customer would switch outside of the hypothesised local market (the *HLM*) if the cost of switching is less than the extra cost associated with a 5% increase in the price of his basket.
- The second step is to estimate whether the price increase would be profitable to the HM. To do this, we combine the estimate of the proportion of customers that would switch with an appropriate estimate of margin.

4. Based on these assumptions, the table below shows that a SSNIP of 5% is unprofitable on 98% of occasions for stores in urban areas and 91% of occasions for stores in rural areas – or 97% of all stores. The implication is that a 10-minute catchment area around stores is not the correct size of geographic markets in urban areas and neither is a 15-minute catchment area in rural areas.

	Urban areas (10 minutes)	Rural areas (15 minutes)
Number of areas	491	77
Number of areas that fail SSNIP test	479	70
% of areas that fail SSNIP test	98%	91%

Table 1: Results of the SSNIP test ([●] per hour travel time, [●] margin)

Source: Tesco estimates

5. Indeed, the results of the SSNIP test show that the markets are considerably wider than 10 and 15 minutes. The table below shows the proportion of markets that are at least as wide as if based on particular drivetime isochrones.

	10 minutes	15 minutes	20 minutes	25 minutes	30 minutes+
Urban areas	98%	96%	95%	92%	89%
Rural areas	-	91%	88%	82%	77%

Table 2: Results of the SSNIP test ([●] per hour travel time, [●] margin)

Source: Tesco estimates

6. The table above shows there are many stores whose markets ought to be at least 15 minutes wider than the CC has suggested: 89% of urban areas should be based on drivetime isochrones of greater than 30 minutes as should 77% of rural areas – or 87% of all stores. The implication is that the relevant geographic market must be at least 30 minutes wide – and potentially much wider – in these areas. We have not currently extended the analysis further than 30 minutes as we think it unlikely that there could be any competition problem in a local market that was greater than 30 minutes. Indeed, 98% of Tesco stores of greater than 1,400 sq. m have at least two competitors within 30 minutes of them.

7. If the average margin across the sector were lower, use of Tesco’s cost structure could potentially somewhat overestimate the size of the market. It is not clear why this would be the case at a store level unless other operators had less efficient operations. However, in order to examine the sensitivity of our conclusions to the margin estimate, we have obtained the results of the SSNIP test using a margin estimate two percentage points below the figure of [●] that we employed.¹ The results show that our conclusions do not change materially: the relevant markets are likely to be significantly larger in many areas than the CC’s previous definition has suggested.

	Urban areas (10 minutes)	Rural areas (15 minutes)
Number of areas	491	77
Number of areas that fail SSNIP test	475	69
% of areas that fail SSNIP test	97%	90%

Table 3: Results of the SSNIP test ([●] per hour travel time, [●] margin)

Source: Tesco estimates

	10 minutes	15 minutes	20 minutes	25 minutes	30 minutes+
Urban areas	97%	95%	94%	91%	88%
Rural areas	-	90%	87%	81%	75%

Table 4: Results of the SSNIP test ([●] per hour travel time, [●] margin)

Source: Tesco estimates

8. As a further sensitivity, we have also run the SSNIP test using different assumptions, namely a value of [●] for the cost of travel time and a margin of [●]. This cost of travel time is very close to the upper bound of the estimates of cost of travel time we have found using different specifications. We find that the results remain broadly unchanged. 95% of urban stores (compared to 98% in the base case) fail the SSNIP test using the CC’s previous findings of 10 minute isochrones. 90% of

¹ The CC has reported Tesco’s operating margin in 2005/2006 as around 6% while the average was about two percentage points lower at 4%. Emerging thinking, paragraph 38.

rural catchments (compared to 91% in the base case) fail the SSNIP test using the CC's previous findings of 15 minute isochrones.

9. We therefore view our base case results as being highly robust to changes in the key assumptions driving the model. Moreover, we view these results as being – if anything – conservative, since many of the assumptions that we have made would tend to underestimate switching possibilities as set out in **Annex B** below.

ANNEX B

SSNIP test methodology

1. Section 134(1) of the Enterprise Act 2002 sets out the legal obligations of the CC. It makes clear that the CC shall decide whether any feature “*of each relevant market*” prevents, restricts or distorts competition. It is clear, therefore, that defining the relevant product and geographic markets is an essential pre-requisite to reaching any decision that there is any feature of such a market or markets giving rise to a competition concern². Once the relevant market(s) have been robustly defined, it is necessary to analyse the competitive conditions in each of those markets.

2. The correct approach to defining the market, as set out in the CC’s Market Investigation Guidelines, is by using the hypothetical monopolist (“HM”) or “SSNIP” test (a SSNIP is a small but significant and non-transitory increase in price). The CC has stated that it will apply the SSNIP test “wherever feasible”.³

3. This Annex describes the methodology underlying of a formal application of the SSNIP test to the hypothesised “local market” around Tesco stores above 1,400 sq. m (as set out above this is to be consistent with the CC’s approach in the 2000 Inquiry and is without prejudice to our view that this is the incorrect product market). This approach uses actual data and conservative assumptions on customer locations and shopping behaviour. For the purpose of this paper, we use the CC’s previous definition of the local market – 10 minute isochrones around stores above 1,400 sq. m in urban areas and 15 minute isochrones around stores above 1,400 sq. m in rural areas – and the CC’s set of effective competitors (all stores above 1,400 sq. m with the exception of the discounters and M&S).

4. We have provided the CC with all the data it requires to replicate and verify our results.

5. In setting out the methodology, we should note that we have had helpful discussions with the CC on the reasons for various modelling assumptions and their impact on the results. We believe that all these queries have been satisfactorily addressed, and the assumptions we have made either result in no systematic bias or are conservative. In addition, the sensitivity analysis reported in Annex B shows that the results are highly robust to reasonable changes in the key parameters.

The appropriate test for determining the extent of the local market is set out in the CC’s Market Investigation Guidelines

6. The CC has argued that the markets are local primarily because customers shop locally. But whether the shopping decision is local is not the appropriate formal test for delineating the geographic market. This is because the correct test – the SSNIP test – looks not at the distance an average customer travels, but the switching options of marginal customers.

² A point that was reinforced by the Competition Appeal Tribunal in *Aberdeen Journals Limited v DGFT* (19 March 2002), Case No. 1005/1/1/01.

³ CC, Market Investigation Guidelines, paragraph 2.2.

7. The correct test is set out at paragraphs 2.2 and 2.24 of the CC's Market Investigation References guidelines:

“The generally accepted conceptual approach to market definition, used in many jurisdictions, is the SSNIP test (also known as the hypothetical monopolist test). The Commission will adopt this approach wherever it is feasible to do so.” (paragraph 2.2)

“In considering the geographic market, the test looks at whether a SSNIP of the products in the relevant product market in a narrowly defined region would be profitable. If a SSNIP would not be profitable, for instance because customers switch to products in neighbouring areas, then these areas are added to the market and the procedure is repeated. The relevant market is defined as the smallest area in which a hypothetical monopolist (HM) could sustain a SSNIP profitably.” (paragraph 2.24)

8. The CC has not, to our knowledge, investigated formally whether the SSNIP test holds for the local markets that it has identified in previous inquiries into the sector.

9. A proper application of the SSNIP test would show that, at the very least, the geographic markets in many areas are significantly wider than the CC has previously suggested – and the fact that competition takes place nationally on all key parameters such as price, range, quality and service suggests that the market is most appropriately defined to be national. If the CC were to decide that markets were local, the results in **Annex A** show that the vast majority of local markets are at least 30 minutes wide.

The methodology requires two main steps – estimating switching levels and calculating the change in profit

10. We consider the HM of one stop shopping – one stop shop sales made in stores above 1,400 sq. m from the list of effective competitors used in the 2000 Inquiry (i.e. excluding M&S, the discounters, Budgens and Iceland). The trade-off implied by the SSNIP test is a simple one. Will the profit that an HM loses as a consequence of customers switching to another local area in response to the SSNIP be more than offset by the additional profit that it earns from customers that do not switch? If yes, the SSNIP test is failed and this is not a market. If no, the SSNIP test is passed – this is a market.

11. To implement the SSNIP test we have undertaken two steps.⁴

- First, we have estimated the proportion of customers that would be likely to switch from one local area to another in the event of a 5% price increase.⁵
- Second, having estimated the proportion of customers that would be likely to switch, we have evaluated whether the price increase would be profitable

⁴ These cover the points raised in paragraph 2.12 of the CC's Market Investigation Guidelines.

⁵ This is consistent with the CC's proposed approach in paragraph 2.8 of the Market Investigation Guidelines, where it states that it will “normally use 5% for the SSNIP test”.

given the margin that the HM would lose on forgone sales compared to the increased margin on retained sales.

12. The analysis uses data on the actual locations of customers and stores, the cost of customers' travel time, and customers' basket sizes, to determine whether in each individual case the SSNIP test is passed or failed. This allows a finely detailed assessment – we consider the decisions of households in every Census Output Area in the hypothesised local market around each store. This involves considering in some cases the decisions of over 100,000 households around a particular store depending on the individual population in that area.

13. Originally we selected 20 areas in order to pilot our formal application of the SSNIP test and so we chose the areas to get a reasonable mix of urban and rural areas, from a highly densely populated area such as South London to a less densely populated area such as the South West. The results in these 20 areas provided a *prima facie* case that the CC would need to investigate the SSNIP test approach, but were not nationally representative.

14. We subsequently applied the SSNIP test model to all 568 Tesco stores above 1,400 sq. m in Great Britain. The results are set out in **Annex A**. The 2000 Inquiry isochrones fail the SSNIP test in the overwhelming majority of cases, and the vast majority of cases also fail the SSNIP test at 30 minutes. In other words, in most cases the market is at least 30 minutes wide.

15. We describe our approach in further detail below.

Estimating the proportion of customers that would switch

16. To estimate the proportion of customers that would switch, we have made some simplifying conceptual assumptions that we believe are consistent with the spirit of the SSNIP test and make its application more straightforward. We also believe that these assumptions are conservative in that they tend to underestimate the impact on the profits of the HM from raising prices.

The hypothesised local market uses the CC's previous market definition for one stop shopping

17. As an initial starting point, we have assumed that the local market around a one stop store is a 10 minute isochrone in urban areas and a 15 minute isochrone in rural areas. This is without prejudice to our views that these isochrones are too small even to describe customer shopping patterns accurately and that the market is national.

The analysis explores "one stop shopping" only and uses the CC's effective competitor set

18. The isochrone sizes referred to above relate to the CC's previous market definition of the "weekly one stop shop" from the 2000 Inquiry – relating to stores above 1,400 sq. m only. We use the CC's list of effective competitors, so exclude smaller stores and the larger stores of M&S, the discounters, Budgens and Iceland. If customers were to treat smaller stores as options this would increase their switching possibilities and so this assumption is conservative.

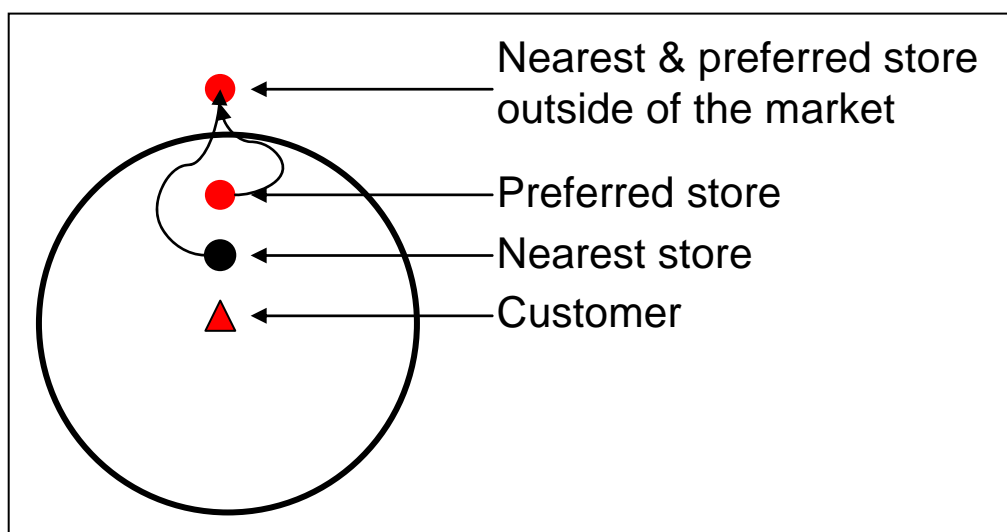
19. Since we exclude smaller stores, the model underestimates the potential level of switching away from the HM and hence underestimates the size of the geographic market. This is because in response to a SSNIP by the HM customers could also switch to smaller stores inside the hypothesised local market. Since currently the model does not allow customers to exercise this choice, incorporating it would increase the level of switching away and so widen the geographic market. Effectively, to impose a profitable SSNIP the HM would need to monopolise stores over a wider geographic area to compensate for this extra switching possibility.

All customers shop at their nearest store

20. We make this assumption for two reasons. First, under the SSNIP test all stores within the hypothesised local market are operated by the HM and do not have different offers. Second, implicit in the concept of a local market is that customers prefer to shop locally.

21. We have considered what might happen to the results if the HM's products were differentiated. In this case, customers might prefer to shop at a different store inside the HM's catchment area to the one that we have assigned them to and may choose a different store outside of the catchment area in the event of a SSNIP. Because both the store at which they would choose to shop inside the HM's catchment area and the store to which they would switch in the event of a SSNIP would change, there is no obvious reason why, on average, the travel time between the stores would change. Since it is this travel time that drives the SSNIP results, it is not clear why the results would change.

22. A stylised example of a situation whereby the profitability of a SSNIP would be overstated by using this assumption is illustrated by the diagram below. The assumed geographic market is denoted by the black circle. In this situation, our analysis would assume that the customer (the red triangle) shopped at the store denoted by the black circle.



23. In the event of a SSNIP, we would assume that the customer would have to travel the distance between the black circle inside the market and the red circle outside of the market to avoid the SSNIP (the nearest store outside the market

coincides with the preferred store in this example). However, if the customer had in fact shopped at the red circle inside the market and we had assigned the customer according to his preferences, the additional distance the customer would have to travel to the red circle outside of the market would be smaller. In this example, the customer would be more likely to switch than we have estimated and therefore we would overstate the profitability of a SSNIP.

24. On average, this situation is as likely to arise as the reverse situation – where customers would have to travel further in response to a SSNIP. As a result, we do not consider that this simplification gives rise to any systematic bias.

25. In addition, we excluded customers that are closer to stores outside of the catchment area than they are to stores inside of the catchment area. We believe that this is a conservative assumption for the following reason.

26. If, instead, we had assumed that these customers shopped at a store inside of the catchment area, it is highly likely that they would switch in response to a SSNIP. This is because these customers are closest to a store outside of the catchment than any of the other customers inside the catchment area. The high propensity of these customers to switch would tend to reduce the profitability of a SSNIP and therefore increase the size of the market.

All stores in the hypothesised market raise their price by 5%

27. If the HM owns more than one store in the catchment area, we assume that the price of all of its stores increase by 5%. In principle, it might be appropriate to consider whether the HM could raise prices in some but not all the stores that it opens, and hence lead to narrower markets than our SSNIP test model currently estimates. However, the CC's approach to this issue in the Archant/INM merger suggested that it is only likely to be relevant when there is evidence of substantial current price discrimination in the marketplace. No such price discrimination exists in the grocery retail sector as made clear by the CC's ET findings that major multiples have national pricing and the extent of any local price variations is extremely small.^{6,7}

Customers switch in response to a price increase if the extra transport costs from switching are lower than the price increase

28. A customer faced with a 5% increase in the price of their grocery shopping would switch provided that the savings associated with obtaining cheaper shopping baskets are greater than by the costs associated with travelling to a more distant store. For example, if a customer's average weekly shopping bill was £50, a 5% increase in its price would result in a customer paying an additional £2.50 per week. This

⁶ This has been true for several years. In *Safeway* (2003), the CC reported that Morrisons, Sainsbury's, Tesco, Asda and Safeway all set their prices nationally (paragraphs 5.30 to 5.34) with no variations.

⁷ Moreover, in practice, it is not clear that it would be feasible to incorporate such a sensitivity. Allowing for price differences across the stores of the hypothetical monopolist would substantially increase the complexity of the model and lead to difficulty interpreting the results.

customer would switch to a store outside of its catchment area if the costs that the customer incurred by doing so amounted to less than £2.50.⁸

29. For example, suppose that the customer mentioned above incurs a cost of £1.20 to travel to and from the nearest store inside the catchment area and a cost of £2.00 to travel to and from the nearest store outside the catchment area – a difference of £0.80. If his nearest store inside the catchment area increased its prices by more than £0.80, the customer would be better off going to the store outside of the catchment area. In this example, the customer would switch because a 5% increase on his average weekly shop of £50 would amount to £2.50 – £1.70 more than the extra cost of travelling.

30. We have used an estimate of the cost of travel time based on an econometric analysis that we had previously commissioned in relation to the drivers of store choice. This is the only estimate of the cost of travel time that we are aware of that is based on customers' actual grocery shopping behaviour. Using information about the store choices that customers actually make (based on TNS Superpanel data) compared to the options that they had available to them (based on our database of stores), it is possible to evaluate the savings that customers forgo when they are unwilling to travel to a more distant, but cheaper, store. This analysis controls for a host of other relevant factors such as size, range, quality and other store characteristics. This approach yields a cost of travel time estimate of [●] per hour.⁹

31. This cost of time estimate is used in the model to apply to all customers. It is possible that some customers will have a lower cost of time and others will have a higher cost of time. Other things equal, customers with a lower cost of time will be more likely to switch than customers with a higher cost of time.

32. However, for such differences between customers potentially to lead to the profitability of a SSNIP being understated and therefore to overestimate the size of the market, it would have to be the case that (i) customers with higher costs of time tend to have larger baskets *and/or* (ii) customers with higher costs of time tend to be in areas where customers have greater switching possibilities.

33. In relation to point (i), the relationship could go either way, and we believe that the converse is true. Customers that have a higher value of time may be inclined to buy smaller baskets on the way home from work rather than earmarking an hour or so for a large weekly shop. This is confirmed by analysis of the data. Further econometric analysis suggests that the cost of time falls as basket size increases – for example, a £30 basket has a cost of time of around [●] per hour associated with it whereas a £60 basket has a lower cost of time of around [●] per hour associated with it. This evidence suggests that our results are conservative, since if we were to incorporate this feature in the model this would lead to more switching.

34. In relation to point (ii), it is not clear how there could be any systematic relationship between a customer's cost of travel time and their store options inside and

⁸ This is consistent with the approach set out in paragraph 2.25 of the CC's Market Investigation Guidelines.

⁹ The econometric approach taken was to use a multinomial (conditional) logit model.

outside a particular HLM. We do not therefore propose to investigate this further as there is no reason to think this omission has led to any systematic bias in the results.

Customers switch their entire basket

35. It is assumed that if customers switch, they switch their entire one stop shopping basket to the new store. This is implicit in the concept of a market for weekly one stop shopping as previously found in the CC's 2000 Inquiry – since customers are assumed to value the benefits of a one stop shop and not to split their purchases. (Note as before that we do not agree that this is the correct basis for product market definition.)

36. We do not consider the effect on non-one stop shop purchases. The HM of one stop shopping cannot distinguish between raising prices to one stop shop customers and to other customers. If the HM raised prices across the store, it would lose secondary shopping customers to other mid-range and convenience stores within the isochrone – since these are not part of the relevant market. We do not consider this effect, since it would add a considerable layer of complexity. However, we believe that this is a conservative assumption since such customers would be likely to switch to stores within the isochrone and there are many such stores, so exacerbating the negative impact on the HM's profits.

37. We assume that customers do not remain with the HM and scale down their grocery purchases instead (e.g. by switching to eating out). This is because we believe that market demand for groceries is likely to be highly inelastic.

There is variation across customers in terms of basket size

38. Customers have different basket sizes and are located in different places relative to stores. Customers which have larger baskets will be more likely to switch in response to a SSNIP – the cost of travel is a fixed cost, but the impact of a SSNIP on a £100 basket (£5) is twice as much as the impact of a SSNIP on a £50 basket (£2.50). Customers that would only have to travel 1 minute more to the nearest store outside the hypothesised local market (compared to the nearest store within the market) would be more likely to switch than customers who would have to travel an extra 10 minutes. Consequently, whether an individual customer would switch depends on two factors.

39. First, we use geographic information at the Census Output Area (“COA”) level to work out how far different customers are from stores. There are over 200,000 COAs in the country accounting for on average around 200 households in each area, so this is a fine-grained analysis (it is the smallest available measure of area). This allows us to be confident that our calculations of the extra distance that customers would be prepared to travel to avoid a SSNIP are highly accurate.

40. Second, we use an appropriate distribution of one-stop shop basket sizes in our analysis. The HM monopolises one stop shopping, so we use the TNS Worldpanel data to identify the distribution of the size of one-stop shopping baskets by assuming that a one-stop shop is a basket that represents 60% or more of a customer's average weekly shopping expenditure, and finding the distribution of such baskets by size. The TNS Worldpanel data is the most robust set of consumer data available,

comprising a panel of 10,000-15,000 households, allows for the analysis of the entirety of a customer’s shopping behaviour, and is the basis for the market shares commonly reported by the industry.

41. We have split the basket size distribution into £5 bands and treated all customers in that band as having baskets the size of the mid-point of the band, so that all customers in the £35-£40 band are assumed to have baskets of £37.50. We assume that all COAs have the same distribution of basket sizes within them. The results are not materially different if a threshold of 70% or 80% of average weekly shopping expenditure is used.

42. Table 5 shows the basket size distributions for those baskets that represent at least 60%, 70% and 80% of a household’s weekly expenditure on groceries purchased in different stores, to identify baskets that are most likely to represent a “one-stop shopping trip” as defined by the CC.

Basket ranges	60% criterion	70% criterion	80% criterion
£0 - £10	2.14%	1.47%	1.05%
£10 - £20	12.07%	9.91%	8.09%
£20 - £30	18.61%	16.82%	15.36%
£30 - £40	18.35%	18.06%	17.39%
£40 - £50	15.33%	16.08%	16.34%
£50 - £60	11.50%	12.56%	13.36%
£60 - £70	8.30%	9.29%	10.19%
£70 - £80	5.48%	6.27%	7.12%
£80 - £90	3.23%	3.73%	4.29%
£90 - £100	2.01%	2.33%	2.72%
> £100	11.50%	12.56%	13.36%

Table 5: Average basket size distributions of one-stop shopping trips, based on the 60%, 70%, and 80% criterion.

Source: TNS Superpanel. Data for fascia that would normally fall into the CC’s definition of a one stop store namely Asda, Morrisons, Tesco Extra, Tesco Superstore, and Sainsbury Main Stores (using TNS nomenclature).

43. We have used 60% in the results as this is a conservative assumption. The distributions do not change radically if the definition is changed to relate to 70% or 80% of a household’s weekly expenditure on groceries but would increase the chances of any particular hypothesised local market failing the SSNIP test – in other words, our assumption is conservative and local markets may well be wider.

44. Using the above approach for all COAs, we can estimate the proportion of customers that would switch to a store outside of the HM's catchment area if the HM increased its prices by 5%.¹⁰

45. We do not think that just using one-stop shop baskets will systematically bias the results. If anything, we think that excluding secondary shopping is a conservative assumption. This is for the following reasons.

46. On the one hand, secondary shopping customers will tend to have smaller baskets than one-stop shopping customers. Obviously, the additional cost associated with a 5% SSNIP is lower for smaller baskets than it is for larger baskets. The implication is that the cost of switching to a store outside of the catchment area will be relatively large for these customers. This would tend to increase the profitability of a SSNIP.

47. On the other hand, secondary shopping customers would be able to switch to non-one-stop stores *within the catchment area* in order to avoid the SSNIP. The cost associated with travelling within the catchment area is very likely to be lower than the cost of travelling outside of the catchment area (because the stores will be closer to the customers). The implication is that the cost of switching to a suitable alternative store will be relatively small for these customers. This would tend to reduce the profitability of the SSNIP.

48. We suspect that, since there are approximately 25-30 stores under 1,400 sq. m for each store above 1,400 sq. m that it would tend to reduce the profitability of a SSNIP. It is certainly not clear that there is any systematic bias in the results.

Customers switch immediately in response to a price increase

49. If in theory customers were ill-informed as to the choices available to them, a SSNIP would be more profitable to the HM as the level of switching would be reduced and the speed with which switching occurred would decline. However, we do not think that there is a material lack of information in the grocery retail sector. Indeed, it is hard to think of a sector which has greater information and transparency.

- (a) Customers shop on a regular basis, often once a week or more.
- (b) Customers switch regularly from retailer to retailer: on average customers shop at three retailers in a 4-week period.
- (c) Customers learn about the prices charged by different retailers from a number of sources, including family and friends, retailers' websites, and retailer advertising (retailers outside the HLM could easily and quickly target customers within it with leaflet drops). There is extensive media reporting of supermarket actions, such that if an HM were to raise prices in a particular area, it is highly likely that this would be rapidly publicised (the HM would

¹⁰ We do not explore whether the cellophane fallacy holds. Given the CC's finding in 2000 that the market was "broadly competitive" and the OFT's finding in its Reasons to Refer that prices have fallen, we do not think that there is any evidence that prices are currently above the competitive level.

probably be accused of operating a “postcode lottery”). Customers could use these various sources of information to formulate a judgment as to whether it would be worth switching to a store outside the HM’s catchment area.

- (d) Furthermore, even if a customer did not know the prices charged by stores outside of the HM’s catchment area, they may still choose to incur the cost of travelling to the store to find out. This is because the cost incurred by the customers to check prices at the store outside the catchment area is only incurred once, whereas the potential benefit is that the customer will save money every time he goes shopping.

50. For all these reasons, we think that this sector does not suffer from a lack of information that would be sufficient to materially bias the results of the SSNIP test.

Evaluating whether the price increase would be profitable

51. After a SSNIP, the HM loses the margin that it would have made on the customers that switch, but earns a higher margin on those customers that do not. By applying these margins to the data on the proportion of customers than would switch, we can determine whether the SSNIP would be profitable.

52. We use data on Tesco’s store margins to understand this trade-off. The appropriate margin depends upon the extent to which it would be possible for the HM to reduce its costs as a consequence of serving fewer customers over the course of, say, a year (the length of time implicit in the SSNIP test’s approach to a “non-transitory” price increase).¹¹

53. To take account of these possibilities, we have made a judgement as to how store costs vary with store sales. The cost components are illustrated in the table below. These costs fall into three groups as follows.

- Costs that vary one-for-one with sales (“variable costs”).
- Costs that are fixed with respect to sales and cannot be reduced within a year (“fixed costs”).
- Costs that could be reduced to some extent, but are unlikely to reduce one-for-one with sales (“semi-variable costs”).

54. These proportions are set out in the table below.

[●]

55. For variable costs we have assumed that the HM could save 100% of those costs in response to reduced sales. For costs that are semi-variable we assumed that the HM could save the proportion of those costs that are variable (as used in our internal accounting), and for costs that are fixed we have assumed that 0% could be saved.

¹¹ See paragraph 2.7 of the CC’s Market Investigation Guidelines.

56. Using this approach, we estimate that an appropriate margin to use for the application of the SSNIP test would be [●].

57. The estimate of profit loss will also be conservative given that we sell non-food products as well. Some customers that switch their grocery basket in response to an increase in grocery prices will also switch their non-grocery spend as well.¹² This is a further reason to believe that the results we report are an underestimate of the true constraints on the hypothetical monopolist.

Conclusion

58. We have set out above the methodology that we have used to operationalise the SSNIP test. We believe that this is an appropriate and sensible approach to this issue and have benefited from several helpful questions from the CC, the answers to which have been incorporated in these results. As a result, we consider that the findings in Annex A are robust: using the CC's previous approach to market definition would greatly underestimate the competitiveness of the sector.

¹² The TNS data on basket sizes reported above covers only “classic grocery” including items such as toothpaste, but does not include non-food purchases such as clothes or TVs.

ANNEX C

An example of the results – Holbeach store

59. The application of the SSNIP test can be illustrated graphically. The map below shows the area around Tesco's Holbeach store, which is in a rural location. The hypothesised local market – defined by a 15 minute isochrone around the store – is shown by the black line. There are two stores in the catchment that would be owned by the HM if this were a local market – the Tesco store in Holbeach and a Morrison store in Pinchbeck. There are several stores outside the proposed local market – an Asda and a Somerfield in Boston, a Sainsbury in Spalding, and an Asda, Morrison and Co-op in Wisbech – to which customers could switch in the event that the HM were to raise prices by a SSNIP.

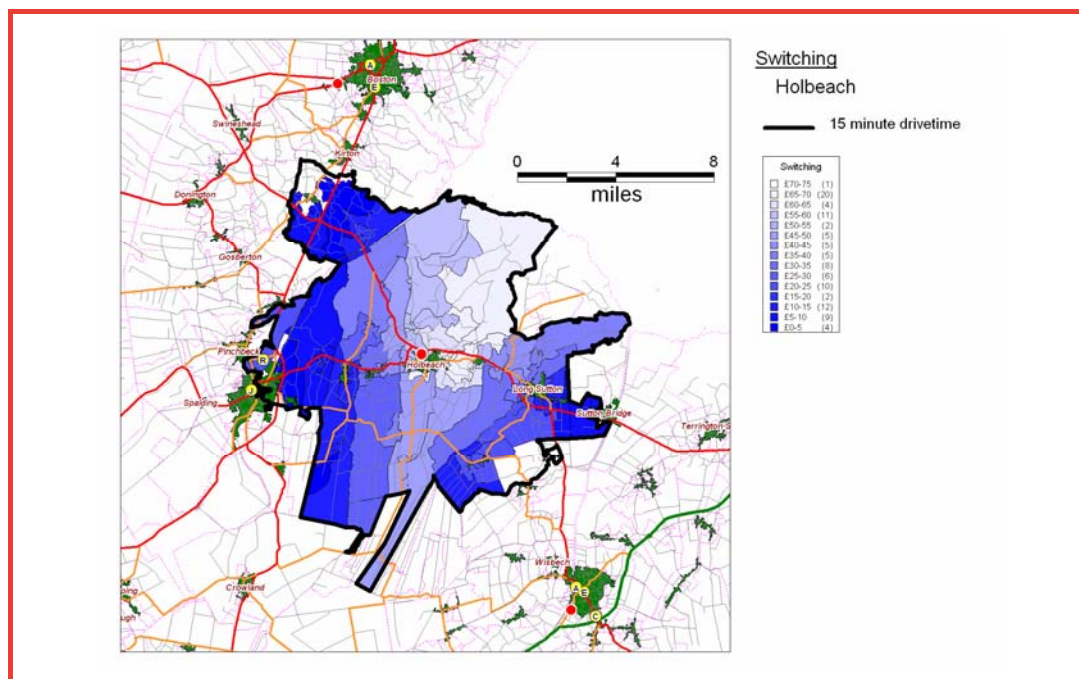


Figure 1: The application of the SSNIP test in Holbeach

Source: Tesco. (£70-75 denotes that all customers in that COA with baskets £72.50 and above would switch, £65-70 denotes that customers in that COA with baskets £67.50 and above switch and so on). Stores are given codes by fascia. Tesco = red circles, Asda = A, Morrison = R, Sainsbury = J, Somerfield = E, Waitrose = W. Only one stop shops are shown.

60. The application of the SSNIP test is shown by the blue shading of the COAs in the isochrone. The darker the shading, the greater is the proportion of households in the area that would switch to a store outside of the catchment area after a SSNIP. For the areas with the darkest shading, customers would switch if they had baskets above £2.50 (the mid-point of the £0-£5 band). For areas with the lightest shading, customers would switch only if they had baskets greater than £72.50 (the mid-point of the £70-£75 band).¹³

¹³ A few customers in the North West and South East corners of the map – shown as white areas – are closer to a store outside the isochrone than inside, and so are assumed to be shopping outside the isochrone before any price increase by the HM.

61. It can be seen that there is more switching in the areas where customers have better access to store options outside the isochrone. In the north of the isochrone, many customers will switch to the stores in Boston in response to a SSNIP. In the west of the isochrone, many customers (originally shopping at the Morrisons in Pinchbeck) will switch to Spalding. In the southeast of the isochrone, customers are more likely to be switching to stores in Wisbech. In the northeast of the isochrone, customers would have to travel a greater distance to their nearest store outside the isochrone, and it is only worth their while switching if they have larger baskets.