

Analysis of the Tesco SSNIP simulation model

Introduction

1. Tesco's quantitative model of a simulated SSNIP test was submitted to the Groceries market investigation in December 2006.¹ On the basis of this model, Tesco submitted that almost 90 per cent of its stores were in markets that were at least 30 minutes wide. This appendix describes Tesco's SSNIP simulation model and the CC's analysis of the sensitivity of this model to three critical assumptions.

Background on the SSNIP test

2. The generally accepted *conceptual* approach to market definition is the SSNIP test (also known as the hypothetical monopolist test). The principle behind the test is that a market is defined as a product, or collection of products, the supply of which can, hypothetically, be monopolized profitably.²
3. In conducting a SSNIP test, an initial candidate market, which should be the smallest market possible, is defined. If a hypothetical monopolist, in that candidate market, could not profitably impose a small but significant non-transitory increase in price (SSNIP) due to customers switching to other products, then the candidate market needs to be expanded. The process is repeated until a market is found in which a SSNIP could be profitably imposed.

Tesco's simulated SSNIP model

4. As with any quantitative model, Tesco's SSNIP model makes a number of simplifying assumptions to approximate the behaviour of consumers and suppliers, and ensures

¹A copy of this submission is on the CC's website at www.competition-commission.org.uk/inquiries/ref2006/grocery/main_party_submissions.htm

²See *Market Investigation References: Competition Commission Guidelines*, CC3, June 2003, pp10–11.

the tractability of the modelling exercise. In this section we describe these assumptions.

Consumers

5. In the Tesco model, consumers are assumed to shop at their closest store. That is, using census data, Tesco assumes that the population located in a Census Output Area (COA) within the isochrone will do its grocery shopping at the nearest store.
6. The cost to consumers of switching outside the market is proportional to the extra distance they must travel. Tesco claimed that this captured the difference between stores inside and outside the geographic market. Tesco said that there was no evidence to suggest that customers faced significant other costs of switching between stores. Tesco pointed out in its submission of 10 September 2007 that it had tested the sensitivity of this assumption on switching costs by ruling out 30 per cent of switching. It said that this had a limited effect on its results.³
7. All consumers are therefore assumed to incur the same travel cost, estimated at £6.10 per hour, regardless of income, household size, social group, location, and the size of the basket.
8. The grocery expenditure that accounts for 60 per cent of a household's weekly shop is defined in Tesco's simulation as the household's one-stop-shop expenditure. This 60 per cent naturally amounts to a larger absolute figure for those households with larger weekly grocery expenditure. As such, the model uses a distribution of observed weekly grocery expenditure in the UK to capture the possibility that different types of consumers might make different switching decisions. For example,

³That is 81 per cent of urban markets (and 71 per cent of rural markets) are wider than 30 minutes in this sensitivity test. We repeat this sensitivity test as part of our analysis (see paragraphs 28 to 30 and the results section).

a consumer spending £100 a week and a consumer spending £20 might reach different conclusions when choosing between a proportionate increase in price and an extra 2 minutes travelling to an alternative store. However, this distribution of expenditure is assumed to be the same across the UK. For example, 7.2 per cent of each COA will spend £45 to £50 weekly on 60 per cent of their groceries.

9. When consumers face a price increase, they are assumed to switch to another store if the price increase of their grocery basket is greater than the additional cost of travelling to the next closest store. There is no loyalty to a particular store or any other cost to the consumer of switching between stores.

Retailers

10. The Tesco model considers grocery stores with a net sales area greater than 1,400 sq metres. It uses only the effective competitor set defined by the CC in the 2000 Supermarkets market inquiry. Each of these stores is assumed to be an equal substitute for any of the others. This implies that they all provide an identical retail offer.

Simulating the SSNIP test

11. The model assesses the impact of a 5 per cent price increase at all stores owned by the hypothetical monopolist, and shows the profitability of a hypothetical price increase for the store (or group of stores) that increase prices. The store will gain revenues from consumers that do not switch (infra-marginal consumers), but will lose revenues from those consumers that switch to stores outside the control of the hypothetical monopolist (marginal consumers). The impact of these revenue changes

on profit is calculated using the average gross margin across all Tesco stores, with a net sales area larger than 1,400 sq metres.⁴

12. Tesco's SSNIP test starts with a 5 per cent price increase at all of the stores within a 10-minute isochrone drawn around a Tesco store. Where the SSNIP test fails in this candidate market the isochrone is then extended to 15 minutes and the test is repeated on the expanded set of stores. This process is repeated with the candidate market expanding in 5-minute intervals until the test is passed, and a local market is defined.

Tesco's sensitivity checks

13. Tesco has tested the sensitivity of its model to different travel costs, and reported that its results are not significantly impacted by the adoption of a substantially higher travel cost assumption. Tesco also reported that the results were not significantly impacted by the adoption of a lower store margin ([X] per cent which was chosen on the basis that it was two percentage points below Tesco's average gross margin across its stores, over 1,400 sq metres, of [X] per cent).
14. By assuming that 30 per cent of the customers at each store remain loyal after a price increase, Tesco was able to test the sensitivity of its model to the assumption that all stores are equal and immediate substitutes in the eyes of consumers. It reported that the relaxation of this assumption did not significantly affect the results of the model.

⁴We note that the average gross margin used in the model for this purpose ([X] per cent) is an average over all Tesco stores with a net sales area larger than 1,400 sq metres. In practice, the average gross margin of the stores in a particular geographic locality may vary substantially from this figure. This is because not all supermarkets larger than 1,400 sq metres are owned by Tesco, and there is substantial variation in the gross profit margin earned by both Tesco and other grocery retailers at these stores. This is a further simplifying assumption that may, or may not, be significant in its effect.

Testing the robustness of Tesco's simulation of the SSNIP test

15. The following paragraphs set out the results of our analysis of the Tesco SSNIP simulation. We alter three key assumptions of the model to check the robustness of Tesco's results. Prior to discussing the outcome of our analysis, we first discuss each of these assumptions in further detail.

Iterations of the SSNIP test

16. The Tesco analysis begins with all the stores that lie within a 10-minute drive-time (or isochrone) of a Tesco store. For each iteration of the test, Tesco expands the geographic market in 5-minute increments to include additional stores larger than 1,400 sq metres in the candidate market.
17. In our analysis, rather than expanding the market in 5-minute increments, we add one store at a time to the candidate market. Each time the SSNIP test fails, we expand the candidate market by including the closest substitute store to those controlled by the hypothetical monopolist. We consider this to be a closer approximation of the SSNIP test.
18. The initial candidate market is made up of two stores: the original Tesco store and its closest competitor. To determine the closest competitor, in the absence of demand elasticity estimates, we assume that the Tesco store will raise its price by 5 per cent. We then record the diversion ratios to neighbouring stores that are predicted by the model. The store that benefits the most from the price increase is identified as the closest competitor. This procedure accounts solely for geographic distance, but is in line with Tesco's assumptions about consumer demand.
19. Once we have identified the closest competitor to the Tesco store, we then conduct the SSNIP test on these two stores. If the test fails, we determine the next closest

competing store using the same procedure described above. That is, we take the stores under the control of the hypothetical monopolist and impose a 5 per cent price increase. We observe which outside store benefits the most from the price increase. We then include that store in the candidate market and repeat the SSNIP test until a profit-maximizing hypothetical monopolist can successfully increase prices by 5 per cent.

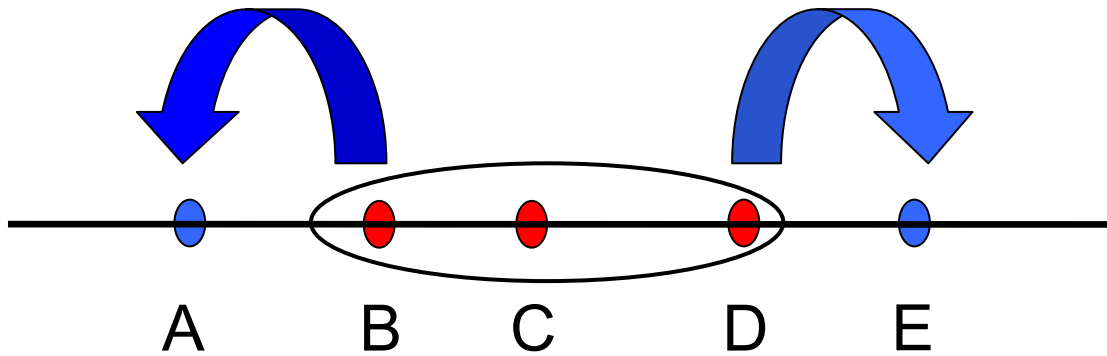
Assumption of uniform price increases by the hypothetical monopolist

20. As we set out above, the Tesco model, when implementing a price increase as part of the SSNIP test, assumes that the hypothetical monopolist increases prices by 5 per cent at each of the stores under its control. However, the hypothetical monopolist could increase prices by 5 per cent, on average, by increasing prices at some stores by more than 5 per cent and in other stores by less than 5 per cent (a practice often referred to as price flexing).
21. Price flexing increases the likelihood of a hypothetical monopolist being able to successfully increase prices (and thus increase profits) over a smaller number of stores. This is because the hypothetical monopolist increases prices at stores at which consumers have fewer outside alternatives, whilst raising prices by less at those stores at which consumers are more likely to switch to other alternatives. For the purposes of the SSNIP test, we consider it appropriate to assume that a hypothetical monopolist would engage in price flexing as this is the strategy that would allow it to maximize profits.
22. Tesco has submitted that, as grocery retailers have uniform national pricing, we should not consider the possibility of price flexing as part of the SSNIP test. We do not agree with this view. First, the SSNIP test is a hypothetical exercise. As a result,

it is by no means clear that the current pricing practices of grocery retailers, which could in practice be changed, should be used as part of the test.

23. Second, the hypothetical monopolist, by increasing prices in the candidate market, is engaging in price flexing relative to stores that it controls outside the candidate market. As a result, we do not see that a distinction should be drawn between the stores that the hypothetical monopolist controls inside the candidate market, and any stores that it controls outside the candidate market.
24. Finally, the real-world pricing practices of grocery retailers are not as clear-cut as suggested by the arguments that have been put to us. While many grocery retailers do have a degree of uniformity concerning their pricing, most grocery retailers operate multiple price files that reflect different fascias, store formats and, in some cases, competitive conditions.
25. Further, a price increase is only one means by which the hypothetical monopolist seeks to maximize profits across a candidate market. In the event that there were logistical issues with varying prices locally, a hypothetical monopolist could, in principle, vary other aspects of its retail offer other than prices to achieve the same outcome.
26. Prior to considering the impact of changing the uniform price increase assumption on the Tesco model, we first illustrate, in the figures below, a simple example of the effect of relaxing this assumption. In Figure 1, all stores are located on a line. The candidate market is made up of stores B, C and D. A uniform price rise at stores B, C and D will lead consumers located between A and B to switch to store A, and consumers located between stores D and E to switch to E. Consumer switching to outside stores (A and E), means that the price increase is unlikely to be profitable.

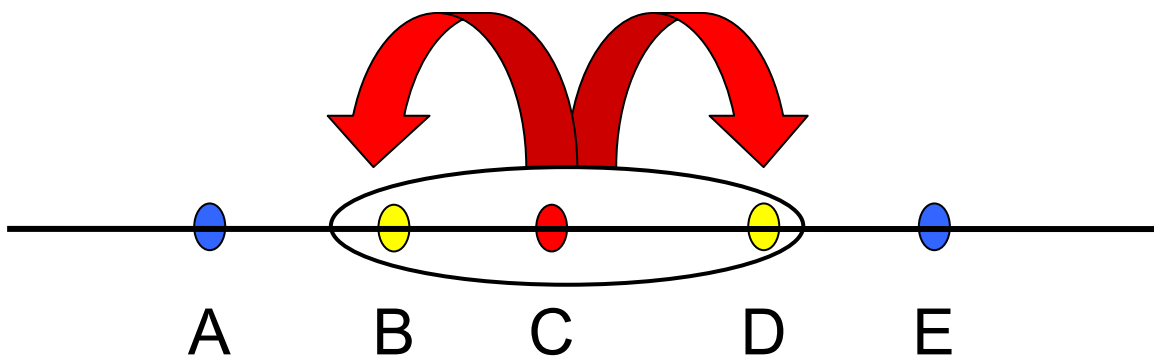
FIGURE 1



Source: CC.

27. Alternatively, consider the situation when only store C increases its prices, while stores B and D do not, as illustrated in Figure 2. In this case, many consumers located between B and C, and C and D, will switch to stores B and D that are under the control of the hypothetical monopolist. In this case, the price increase is much more likely to be profitable as the hypothetical monopolist will capture the sales lost from store C at stores B and D.

FIGURE 2



Source: CC.

Assumption that stores only vary in their prices and location

28. The starting point for Tesco's model is an assumption that all stores are equal substitutes. That is, all stores are equivalent in the eyes of customers and their choice between them will be purely driven by the price they charge and their location. In subsequent submissions, Tesco has tested this assumption by allowing 30 per

cent of consumers to remain loyal and not to switch away from their local store even after a price increase. Tesco reported that adopting this revised assumption resulted in 81 per cent of urban stores and 71 per cent of rural stores failing the SSNIP test at 30 minutes.

29. We have also relaxed the homogeneity assumption, using Tesco's own sensitivity test (ie 30 per cent of customers remain loyal following a price increase), and combined this with a relaxation of the uniform price increase assumption. Specifically, in each area where we have reassessed the local geographic market using Tesco's SSNIP model, we have one result that reflects a relaxation of the uniform price increase assumption, and a second result that reflects a relaxation of both the uniform price increase assumption and the homogenous store assumption.

Results of our analysis

30. Based on an analysis of 20 geographic areas, an application of the Tesco SSNIP model, under the different assumptions discussed above, results in a local market size of 5 to 24 minutes (see Table 1). This can be contrasted to the results using Tesco's assumptions whereby each local market is more than 30 minutes wide (the exception being Swansea which Tesco define as a 25-minute isochrone).

TABLE 1 Drive-times and store numbers in market defined by a price flexing SSNIP test

	<i>Homogenous</i>		<i>Differentiated</i>	
	<i>Max drive-time between stores in the defined market (mins)</i>	<i>No of stores in the defined market</i>	<i>Max drive-time between stores in the defined market (mins)</i>	<i>No of stores in the defined market</i>
Brixton	15.3	13	10.67	8
Taunton	7.13	4	7.13	4
Southampton	14.18	10	10.76	5
Llanelli	24.7	8	5.04	2
Exeter Vale	22.71	7	9.76	5
Lincoln	10.43	6	7.12	4
Maidstone	20.24	7	9.41	3
Milton Keynes	13.78	9	10.99	8
Derby	14.73	7	12.09	5
Norwich	19.87	11	12.02	6
Lunsford Park	22.82	12	16.97	4
Slough	22.58	14	10.61	4
Doncaster	13.58	8	5.44	2
Swansea	13.17	7	6.26	2
York	11.73	6	7.98	4
Ashford	21.14	7	6.84	4
Basingstoke	15.31	5	12.33	4
Leicester	10.39	6	10.39	5
Chester	17.28	6	17.28	6
Stoke	10.13	11	6.36	5

Source: CC analysis.

31. In Table 2, we report for each delineated market the different store level price increase, assumed by the CC, for each store under the control of the hypothetical monopolist. These are presented in terms of an average 5 per cent store price increase across the hypothetical monopolist's portfolio of stores. However, we note that the adoption of a smaller estimate of what constitutes a SSNIP would, all else being equal, lead us to define a smaller geographic market.

TABLE 2 Price increase employed at each store in the CC's relaxation of the uniform price increase assumption

Mins	0	5.38	9.41	14.81	13.71	20.12	13.38	Continued...			
Maidstone	Tesco	Sainsbury's	Morrisons	Sainsbury's	Asda	Tesco	Sainsbury's				
Homogenous	10%	10%	3%	8%	1%	1%	8%				
Differentiated	10%	0%	5%								
Mins	17.17	17.33	17.77	19.48	19.58	19.98	20.24				
Maidstone	Morrisons	Asda	Tesco	Sainsbury's	Sainsbury's	Asda	Tesco				
Homogenous	8%	7%	7%	6%	1%	0%	0%				
Mins	0	2.76	3	8.44	9.87	9.87	10.78	10.99	13.78		
Milton Keynes	Tesco	Sainsbury's	Asda	Morrisons	Tesco	Sainsbury's	Waitrose	M&S	Tesco		
Homogenous	9%	0%	9%	2%	0%	9%	8%	8%	0%		
Differentiated	7%	7%	7%	7%	0%	6%	6%	0%			
Mins	0	5.84	9.79	9	12.09	10.9	14.73				
Derby	Tesco	Sainsbury's	Sainsbury's	Sainsbury's	Asda	M&S	Morrisons				
Homogenous	1%	10%	0%	10%	0%	10%	4%				
Differentiated	10%	0%	0%	10%	9%	1%					
Mins	0	8.49	12.02	11.79	10.17	7.55	17.07	15.95	9.87	16.88	19.87
Norwich	Tesco	Asda	M&S	Sainsbury's	Morrisons	Sainsbury's	Tesco	Waitrose	Ind	Ind	Sainsbury's
Homogenous	9%	9%	8%	8%	8%	2%	1%	7%	1%	2%	0%
Differentiated	10%	0%	0%	10%	9%	1%					
Mins	0	13.59	7.55	16.97	18.93	22.82	15.51	Continued...			
Lunsford Park	Tesco	Asda	Sainsbury's	Sainsbury's	Tesco	Morrisons	Asda				
Homogenous	10%	0%	10%	9%	9%	1%	10%				
Differentiated	10%	0%	10%	0%							
Mins	15.7	17.76	18.86	21.17	21.27						
Lunsford Park	Tesco	Morrisons	Sainsbury's	Morrisons	Sainsbury's						
Homogenous	10%	1%	0%	0%	0%						
Mins	0	6.16	6.73	10.61	16.1	10.44	18.28	Continued...			
Slough	Tesco	Sainsbury's	Asda	Sainsbury's	Waitrose	Tesco	Tesco				
Homogenous	3%	2%	10%	10%	9%	9%	9%				
Differentiated	0%	10%	9%	1%							
Mins	16.65	17.77	13.46	14.5	22.58	21.4	18.44				
Slough	Tesco	Sainsbury's	Tesco	Sainsbury's	Tesco	Tesco	Co-op				
Homogenous	9%	0%	0%	9%	0%	0%	0%				
Mins	0	4.58	5.74	7.6	10.67	9.97	12.72	10.58	10.58	Continued...	
Brixton	Tesco	M&S	Sainsbury's	Tesco	Sainsbury's	Sainsbury's	Asda	Tesco	Sainsbury's		
Homogenous	1%	10%	10%	5%	0%	10%	0%	0%	10%		
Differentiated	10%	2%	10%	9%	0%	9%	0%	0%			
Mins	13.68	13.68	14.72	15.3							
Brixton	Somerfield	M&S	Morrisons	Sainsbury's							
Homogenous	10%	10%	0%	0%							

Mins	0	3.18	4.92	7.13						
Taunton	Tesco	Sainsbury's	Morrisons	Asda						
Homogenous	7%	7%	6%	0%						
Differentiated	7%	7%	6%	0%						
Mins	0	3.91	5.27	10.76	10.41	14.18	14.18	8.11	8.66	12.47
Southampton	Tesco	Sainsbury's	Sainsbury's	Waitrose	Waitrose	Sainsbury's	Sainsbury's	Asda	Asda	Waitrose
Homogenous	10%	10%	1%	0%	10%	10%	0%	10%	0%	0%
Differentiated	9%	9%	0%	0%	7%					
Mins	0	5.04	10.73	13.68	18.89	24.7	18.05	20.9		
Llanelli	Tesco	Asda	Somerfield	Tesco	Morrisons	Sainsbury's	Co-op	Tesco		
Homogenous	10%	1%	10%	0%	0%	10%	10%	0%		
Differentiated	1%	9%								
Mins	0	5.25	7.84	7.05	9.76	9.08	22.71			
Exeter Vale	Tesco	Sainsbury's	Co-op	Sainsbury's	Sainsbury's	Somerfield	Somerfield			
Homogenous	0%	10%	0%	5%	10%	0%	10%			
Differentiated	0%	7%	6%	6%	6%					
Mins	0	3.28	6.41	7.12	10.43	8.72				
Lincoln	Tesco	Co-op	Morrisons	Tesco	Waitrose	Co-op				
Homogenous	0%	6%	6%	6%	6%	6%				
Differentiated	0%	10%	10%	0%						
Mins	0	5.44	6.14	13.58	9.74	10.84	11.07	12.13		
Doncaster	Tesco	Morrisons	Sainsbury's	Asda	Asda	Sainsbury's	Tesco	Tesco		
Homogenous	7%	7%	7%	0%	7%	6%	0%	6%		
Differentiated	0%	10%								
Mins	0	6.26	6.56	12.36	10.6	13.17	11.78			
Swansea	Tesco	Somerfield	Morrisons	Sainsbury's	Tesco	Asda	Tesco			
Homogenous	7%	0%	7%	7%	7%	0%	7%			
Differentiated	0%	10%								
Mins	0	7.98	7.98	7.96	8.12	11.73				
York	Tesco	Asda	Sainsbury's	Sainsbury's	Morrisons	Tesco				
Homogenous	8%	8%	7%	6%	0%	0%				
Differentiated	6%	7%	7%	0%						
Mins	0	2.62	5.33	6.84	21.05	20.56	21.14			
Ashford	Tesco	Asda	Tesco	Sainsbury's	Tesco	Waitrose	Tesco			
Homogenous	10%	10%	3%	10%	0%	0%	1%			
Differentiated	6%	7%	7%	0%						
Mins	0	7.38	9.32	12.33	15.31					
Basingstoke	Tesco	Sainsbury's	Morrisons	Asda	Sainsbury's					
Homogenous	0%	8%	7%	3%	7%					
Differentiated	0%	10%	10%	0%						

Mins	0	5.56	10.32	9.8	10.39	8.41
Leicester	Tesco	Sainsbury's	Asda	Sainsbury's	Morrisons	Sainsbury's
Homogenous	10%	10%	1%	9%	0%	0%
Differentiated	0%	10%	5%	10%	0%	

Mins	0	6.36	9.68	8.89	8.89	17.28
Chester	Tesco	Morrisons	Sainsbury's	Morrisons	Co-op	Tesco
Homogenous	10%	10%	1%	5%	9%	1%
Differentiated	10%	0%	0%	10%	10%	0%

Mins	0	2.96	4.33	6.36	5.06	9.28	9.62	8.83	9.84	10.13	10.07
Stoke	Tesco	Morrisons	Sainsbury's	Morrisons	Sainsbury's	Sainsbury's	Asda	Morrisons	Tesco	Tesco	Somerfield
Homogenous	2%	2%	10%	0%	10%	10%	0%	10%	0%	10%	0%
Differentiated	9%	8%	8%	0%	0%						

Source: CC analysis.

How realistic is the Tesco simulation model in its predictions?

32. Any model is based on a set of simplifying assumptions. To determine whether a model is sufficiently close to the real world we can check its predictions. In this section we examine how realistic we find the predictions of Tesco's model regarding consumer switching behaviour.
33. Table 3 illustrates the result of a 5 per cent and a 1 per cent price increase at a single Tesco store in three of the areas we have analysed (Ashford, Southampton and Maidstone). The gains and losses to the store operator, implied by Tesco's model, are presented for both the homogenous and differentiated store variations of the model. Alongside this we provide the number of households that shop at both the Tesco and the closest competing store. We separate the households into those that shopped at the store before the price increase, and those that shopped there afterwards.
34. For example, in Ashford we see that a 5 per cent increase in price at the Tesco store causes all but four households to abandon the store (0.05 per cent of the original number of shoppers at the store). The vast majority of these shoppers relocate to the nearby Asda which approximately doubles the number of customers that it serves as a result of the price increase at Tesco. We also present the results of a 1 per cent price increase at the Tesco store. The results again show that more than 90 per cent of the shoppers at the Tesco store abandon it in favour of the nearby Asda store.⁵
35. We find these results to be highly unrealistic.⁶ The two predictions—first, that almost the entire customer base of a store leaves when it increases its price by a small

⁵We note that although these results are here presented in terms of dynamic responses to price changes, the model can be interpreted as reflecting existing price differentials between stores. As such, under the assumptions of this model, if prices differ by as much as 1 per cent, the slightly more expensive of two stores will have just 5 per cent of the customers at the slightly cheaper store.

⁶In Stoke we find a Morrisons store which, under the assumptions of Tesco's allegedly feasible SSNIP model, has no customers. This is true even if it charges identical prices to all its competitors.

percentage, and second, that the Asda store can accommodate a doubling of its customer base (given capacity constraints)—are so improbable as to undermine the credibility of the model. This casts considerable doubt on the results of this particular model.

36. In light of these issues with Tesco's model, we conclude that although the predictions of our sensitivity testing may in some cases appear unrealistic, this is attributable to the deficiencies identified in the base model.

TABLE 3 Results of simulated price changes

5% SSNIP at Tesco store: Ashford

SSNIP price increase assumption		5%				
<i>Homogenous stores</i>		<i>Differentiated stores</i>			<i>Households pre-SSNIP</i>	<i>Households post-SSNIP</i>
Gain	£0.48	Gain	£4,821.60	Tesco	7,400	4
Loss	£67,270.62	Loss	£47,089.44	Asda	7,482	14,340
Net gain	-£67,270.14	Net gain	-£42,267.84			

1% SSNIP at Tesco store: Ashford

SSNIP price increase assumption		1%				
<i>Homogenous stores</i>		<i>Differentiated stores</i>			<i>Households pre-SSNIP</i>	<i>Households post-SSNIP</i>
Gain	£112.36	Gain	£1,042.90	Tesco	7,400	718
Loss	£64,920.92	Loss	£45,444.64	Asda	7,482	13,635
Net gain	-£64,808.55	Net gain	-£44,401.74			

5% SSNIP at Tesco store: Southampton

SSNIP price increase assumption		5%				
<i>Homogenous stores</i>		<i>Differentiated stores</i>			<i>Households pre-SSNIP</i>	<i>Households post-SSNIP</i>
Gain	£7.04	Gain	£4,337.55	Tesco	6,650	23
Loss	£60,425.00	Loss	£42,297.50	Sainsbury's	15,552	20,789
Net gain	-£60,417.96	Net gain	-£37,959.96			

1% SSNIP at Tesco store: Southampton

SSNIP price increase assumption		1%				
<i>Homogenous stores</i>		<i>Differentiated stores</i>			<i>Households pre-SSNIP</i>	<i>Households post-SSNIP</i>
Gain	£377.08	Gain	£1,130.48	Tesco	6,650	1,693
Loss	£52,562.28	Loss	£36,793.59	Sainsbury's	15,552	19,423
Net gain	-£52,185.20	Net gain	-£35,663.12			

5% SSNIP at Tesco store: Maidstone

SSNIP price increase assumption		5%				
<i>Homogenous stores</i>		<i>Differentiated stores</i>			<i>Households pre-SSNIP</i>	<i>Households post-SSNIP</i>
Gain	£1,806.12	Gain	£262,464.04	Tesco	13,879	1,013
Loss	£118,612.15	Loss	£2,103,949.90	Sainsbury's	12,786	23,969
Net gain	-£116,806.04	Net gain	£1,841,485.86			

5% SSNIP at Tesco store: Maidstone

SSNIP price increase assumption		1%				
<i>Homogenous stores</i>		<i>Differentiated stores</i>			<i>Households pre-SSNIP</i>	<i>Households post-SSNIP</i>
Gain	£1,941.99	Gain	£70,514.50	Tesco	13,879	6,272
Loss	£85,526.71	Loss	£1,726,755.87	Sainsbury's	12,786	19,072
Net gain	-£83,584.72	Net gain	£1,656,241.37			

Source: CC.

Tesco's response to the CC's sensitivity testing of its SSNIP model

37. Tesco criticized the CC sensitivity testing of its model. It maintained that price flexing was not observed in the grocery market and hence to allow its use by a hypothetical

monopolist in the SSNIP test was excessively hypothetical. Secondly, it now rejected its own sensitivity test for differentiated stores in which 30 per cent of consumers remain loyal to a store after a price increase. Finally, it contended that the CC's analysis of its model was flawed. It submitted that by considering stores within 30 minutes of the initial store as the COAs potential choice set, the CC analysis is biased towards finding markets smaller than 30 minutes wide.⁷

38. We note first that neither Tesco nor the CC includes COAs further than 30 minutes from the initial store. This did not prevent Tesco's analysis finding the vast majority of markets to be more than 30 minutes wide.
39. The CC included in its analysis stores up to 30 minutes away from the initial store. This allowed the analysis to consider all stores in the area that takes an hour to cross by car. The Tesco simulation requires that the COAs whose switching options are considered relevant⁸ have the option of switching to a store not operated by the hypothetical monopolist. Since each of our results stands at well within 30 minutes, it should be clear that the marginal COAs do have the option of switching to stores within 30 minutes but not under the control of the hypothetical monopolist. For example, in our Brixton analysis, we consider 45 stores as possible options: the SSNIP test is passed with eight of them operated by a hypothetical monopolist. However, what matters in this model is that customers switch only to the nearest store, thus the number of alternatives is irrelevant to a COAs decision since it will only consider the closest one.
40. Nevertheless, in rare cases, likely to be rural in nature and lacking in a choice of store, the geographic arrangement of stores might create a small minority of

⁷See Tesco submissions of 10 September 2007 and 31 August 2007.

⁸The relevant consumers in the simulation are those whose closest store is operated by the hypothetical monopolist.

consumers whose closest second preference store is more than 30 minutes from the central store. If there were sufficient numbers of such consumers, the result might conceivably be affected in that the central store would be somewhat more constrained in its ability to increase its own price. However, it does not follow that the store more than 30 minutes away would then be included in the defined market. Instead the prices at the stores controlled by the hypothetical monopolist might be rearranged to reflect the switching options of these consumers. Alternatively, another closer store might be included in the monopolist's portfolio of stores in order to allow it to impose a profitable SSNIP.

41. Tesco highlighted the specific case of Taunton in Somerset in which it believed this applied. It pointed to stores in Minehead (35 minutes away), Tiverton (32 minutes), Collumpton (32 minutes) and Honiton (35 minutes away) which it believed to be relevant to the analysis but which had not been considered as possible options for the relevant consumers. We can confirm that after including the stores that Tesco suggested in the differentiated analysis, we continue to find that a SSNIP is profitable given the prices described in Table 2.⁹
42. In general, we do not consider that these cases would systematically affect the results as a whole and would certainly not result in a significant number of larger than 30 minutes.
43. Finally, we note that Tesco has recently submitted a new model which contained a model of heterogeneity on the part of consumers and stores. We are currently reviewing this submission to understand whether it affects the conclusions that we reach here.

⁹This is unsurprising since Minehead, for example, is 35 minutes away and therefore is a very poor alternative for the vast majority of the relevant COAs. However, it does serve to illustrate that this issue will in most cases be simply a theoretical curiosity rather than a major flaw as Tesco believed.