# Key aspects of the economic analysis for Stage 1 of the local competitive effects methodology

## Part 1   Introduction

1.    Stage 1 of our local competitive effects methodology involves identifying a local market in which to apply a screening rule. The local market has a product-market dimension (ie which fascias and sizes of store compete with each other) and a geographic-market dimension (ie how wide their customer catchment areas are). This appendix summarizes four key aspects of the economic analysis undertaken at Stage 1.

2.    Our findings are that:

- the product market used at Stage 1:

  — should not include the LADs, ie Aldi, Lidl and Netto, nor Marks & Spencer; but

  — should include all stores of 280 sq metres (3,000 sq feet) or more (including one-stop shops);

- the geographic market used at Stage 1 should use 5-minute drive-time isochrones for urban stores and 10-minute drive-time isochrones for rural stores; and

- in circumstances where an acquired store's local market share was higher pre-merger (ie where it appears to have faced less competition) its margins also tended to be higher, especially in rural areas. A corollary of this result is that the local markets for which acquired stores' market shares have been calculated by Somerfield may be relevant markets, especially in rural areas.

3.    The remainder of this appendix is organized as follows. Part 2 reports the results of an analysis of the impact on Somerfield and Kwik Save sales of the opening of various competitor fascias, which helps to define the product market (ie which competing fascias constrain Somerfield and Kwik Save). Part 3 reports the results of an analysis of NOP's survey results and how much customers spend at Somerfield, which also helps to define the product market (ie which sizes of store compete with each other). Part 4 reports the results of an analysis of Somerfield customer loyalty card data and NOP's survey results on how far customers travel to Somerfield stores, which helps to define the geographic market (ie how wide is a store's catchment area). Part 5 reports the results of an analysis of pre-merger margins over direct cost at the acquired stores and their local market shares, which helps to define both the product and geographic markets, and helps assess the degree of competition removed by the acquisition. There is a technical annex.

## Part 2   Product market definition: competitor opening impact analysis

4.    Somerfield submitted that, in assessing competition in local grocery retail markets, account must be taken of all competing fascias including LADs (ie Aldi, Lidl and Netto), Marks & Spencer and the symbol groups (eg Londis, Spar). Somerfield also provided an analysis of the impact on Somerfield, Kwik Save and Gateway sales of

competitor store openings.[1] The data underpinning Somerfield's analysis may also be used to assess whether the LADs and Marks & Spencer should be included in the set of effective competitors.[2] This section uses regression analysis of that data to help assess whether the LADs and Marks & Spencer may be considered part of the appropriate competitor set.

5.     We note that there are two aspects to product market definition in our inquiry: which sizes of store compete effectively with each other and which fascias compete effectively with each other. This section deals with the latter, which we refer to as the 'competitor set'.

6.     The results of our analysis suggest that:

- For both Somerfield and Kwik Save, the competitor fascias that had the biggest impact on sales when they opened in the area were Morrisons (including Safeway), then Tesco, then Asda. The opening of an Aldi, Lidl or Marks & Spencer had a significantly smaller impact on sales, implying that they may not be part of the competitor set.

- The impact on sales of a competitor store opening was greater for Somerfield stores than for Kwik Save stores (by [✂] percentage points, on average) and the relative effects of different competitor fascias (and other factors) also varied depending on whether the affected store was a Somerfield or a Kwik Save. This is significant because, although our results for Somerfield and Kwik Save are similar (eg both appear to suggest the LADs and Marks & Spencer could be excluded from the competitor set), they are not identical. Any differences in their respective competitor set raise the issue of whether Somerfield's competitor set should be some union of our results for Somerfield and Kwik Save.

7.     Two caveats to our results, which concern the data, are in order, however:

- Somerfield has measured the impact on its stores' sales by comparing two months' trading figures after the date of opening of the competitor store with an equivalent two months' trading figures before the date of opening of the competitor store, both periods being within six months before or after the date of opening of the competitor store—when the sales impact according to Somerfield is usually stabilized—and at a distance of 8km or less.[3] Somerfield submitted that its impact measure reflects the commercial reality of its defensive investment and marketing decisions.[4]

- Somerfield has not been able to provide us with the number of stores in an area prior to the competitor fascia opening, nor whether the opened fascia is a new-build or an acquisition, both of which may affect its impact.

8.     Our results are summarized in Figure 1, which shows the fascia-specific effect of each competitor's store openings, holding constant other things that might affect

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[1]Somerfield submitted this as evidence that the major multiple grocery retail chains (MMGRs)—and especially their one-stop shops—constrain its mid-range supermarkets.
[2]Somerfield's competitor impact data cannot be used to help assess whether the symbol groups may be considered part of the competitor set, however, because their openings are not recorded in the data.
[3]We suspect this may affect the impact of competitor store openings in rural areas more so than in urban areas because customers tend not to travel more than 8 km in urban areas. We do not know which competitor store openings are in urban and rural areas in Somerfield's data, so we have been unable to explore this point.
[4]Further, Somerfield submitted that, for nine of the affected stores, the sales impact at two months differed in absolute terms from the sales impact after one year by only three percentage points on average.

Somerfield and Kwik Save sales.[5] That is, the results summarized in Figure 1 control for the size of both the affected Somerfield or Kwik Save and the size of the competitor store opened, as well as the drive-time from one to the other, macro-economic factors (ie movements in the business cycle and regional differences in, for example, income) and whether there are multiple openings of competitor stores in the catchment area of each Somerfield or Kwik Save.

FIGURE 1

**Estimated effect (per cent) on Somerfield and Kwik Save sales two months after competitor fascia openings**

*Panel A: effect on Somerfield sales*              *Panel B: effect on Kwik Save sales*

[✂]                                                   [✂]

*Source*: CC calculations on Somerfield data.
*Notes*: Number of openings per fascia in parentheses. Fascias with statistically significantly different effects to Tesco (in Panel A) and Asda (in Panel B) in bold.

9.    The estimated effects of various competitor fascia openings on Somerfield sales appear, from Panel A in Figure 1, to organize themselves into two distinct groups:

- fascias (in bold) with a sales impact statistically lower than that of Tesco, including two of the LADs (Aldi and Lidl, but not Netto) and Marks & Spencer (with an impact averaging [✂] per cent), as well as Budgens and Co-op (with an impact averaging [✂] per cent); and

- fascias with a sales impact not statistically different from that of Tesco, including Waitrose, Netto, Asda, Sainsbury's, Morrisons and Safeway, averaging [✂] per cent. (Plausibly, one might argue that this group could be further divided into Waitrose and Netto, averaging [✂] per cent, and Sainsbury's, Asda, Morrisons and Safeway, averaging [✂] per cent. However, the estimated effects of Waitrose and Netto are not statistically different from Tesco, although they are quantitatively different.)

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[5]The individual fascia effects underlying the results in Panel A of Figure 1 are estimated relative to Tesco and Asda in Panel B, although they are expressed in Figure 1 in absolute terms for ease of interpretation.

10. A similar picture emerges for Kwik Save from Panel B in Figure 1 where competitors appear also to organize themselves into two distinct groups:[6]

- fascias (in bold) with a sales impact statistically lower than that of Asda, including **Marks & Spencer, Co-op, Lidl, Aldi, Waitrose** and **Sainsbury's** with an impact increasing sales by [✂] per cent on average;[7] and

- fascias with a sales impact not statistically difference from that of Asda, including Iceland, Tesco, Morrisons and Safeway (averaging [✂] per cent).

11. The remainder of this section is organized into results and analysis.

## *Results*

12. Somerfield submitted that the LADs should be included in the competitor set partly because of [✂] Somerfield stores in the data described below that were affected by a Lidl store opening; [✂] have subsequently closed.

13. To assess this claim, we analysed data submitted by Somerfield on the impact of [✂] competitor store openings of 18 fascias from March 1998 to November 2004 on Somerfield sales. We also looked at the impact of [✂] competitor store openings of 14 fascias from April 1998 to August 2004 on Kwik Save sales[8] using regression analysis to control for the size of both the competitor fascia opened[9] and the affected Somerfield or Kwik Save, the drive-time from one to the other, the date the competitor fascia opened (to control for business-cycle movements in the macro economy), regional effects (eg differences in income) and whether there are multiple competitor fascia openings in the area in the time period. Details of our analysis are set out in paragraphs 24 to 34. Somerfield's data measures the impact on its stores' sales by comparing two months' trading figures after the date of opening of the competitor store with an equivalent two months' trading figures before the date of opening of the competitor store, both periods being within six months before or after the date of opening of the competitor store.

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[6]In line with the second bullet of paragraph 6, we note that the sales impact on Kwik Save in general of competitor store openings is lower than on Somerfield, by [✂] percentage points on average for the ten fascias common to both panels in Figure 1 (ranging from [✂] percentage points for Aldi to [✂] percentage points for Waitrose).
[7]One might plausibly argue this group could be further divided into Sainsbury's ([✂] per cent), and the rest (increasing sales by [✂] per cent on average).
[8]Somerfield submitted data on [✂] competitor openings in total ([✂] Kwik Save, [✂] Somerfield and [✂] Gateway) but we excluded [✂] Gateway, competitor opening, as well as [✂] Kwik Save and [✂] Somerfield openings, where relevant data was missing. We also excluded one Somerfield competitor opening from October 1989.
[9]We also interacted competitor fascia and size (by multiplying the indicator variables for each fascia with size) because some fascias operate only in certain size ranges whereas others operate in many sizes, which may mean the effect of competitor size on Somerfield sales is not constant over fascias. These interaction terms were collectively statistically insignificant for Somerfield competitor store openings but collectively statistically significant for Kwik Save competitor store openings. See Tables 14 and 15 in the annex.

TABLE 1  **Average change in monthly sales at [✂] Somerfield stores two months after competitor openings, March 1998 to November 2004**

*Average change in Somerfield monthly sales, per cent*

| Competitor fascia | Openings | Average | Biggest | Smallest | Unadjusted for other factors | Adjusted for other factors* |
|---|---|---|---|---|---|---|
| Aldi | | | | | | |
| Asda | | | | | | |
| Budgens | | | | | | |
| Co-op | | | | | | |
| Lidl | | | | | | |
| Marks & Spencer | | | | | | |
| Morrisons | | | | ✂ | | |
| Netto | | | | | | |
| Safeway | | | | | | |
| Sainsbury's | | | | | | |
| Tesco | | | | | | |
| Waitrose | | | | | | |
| Total | | | | | | |

*Source:* Somerfield and CC calculations.

*Estimated by regression analysis, controlling for sizes of Somerfield and competitor stores, drive-time from Somerfield to competitor, date, region and whether there are multiple openings in the area in the period. Fascia effects that are individually statistically different to Tesco in bold.

TABLE 2  **Average monthly change in sales at [✂] Kwik Save stores 2 months after competitor openings, April 1998 to August 2004**

*Average monthly change in Kwik Save sales, per cent*

| Competitor fascia | Openings | Average | Biggest | Smallest | Unadjusted for other factors | Adjusted for other factors* |
|---|---|---|---|---|---|---|
| Aldi | | | | | | |
| Asda | | | | | | |
| Co-op | | | | | | |
| Iceland | | | | | | |
| Lidl | | | | | | |
| Marks & Spencer | | | | | | |
| Morrisons | | | | ✂ | | |
| Safeway | | | | | | |
| Sainsbury's | | | | | | |
| Tesco | | | | | | |
| Waitrose | | | | | | |
| Total | | | | | | |

*Source:* Somerfield and CC calculations.

*Estimated by regression analysis, controlling for sizes of Kwik Save and competitor stores, drive-time from Kwik Save to competitor, date, region and whether there are multiple openings in the area in the period. Fascia effects that are individually statistically different to Asda in bold.

14.   The estimated fascia-specific effects of each competitor's store openings, holding constant other things that might affect Somerfield and Kwik Save sales, are shown in Table 1 for Somerfield and Table 2 for Kwik Save, alongside the average, maximum and minimum sales impacts unadjusted for these factors.

15.   Adjusting for the other factors mentioned in paragraph 13 explains some 60 per cent of the variability between the maximum and minimum fascia impacts on Somerfield in Table 1 (and an extra 38 per cent over just the fascia effects) but leaves the average

effect of each fascia largely unaltered with the exception of Asda.[10] Adjusting for the other factors mentioned in paragraph 13 explains some 70 per cent of the variability between the maximum and minimum fascia impacts on Kwik Save in Table 2 (and an extra 46 per cent over just the fascia effects) and noticeably lessens the unadjusted impact of five fascias (Aldi, Co-op, Lidl, Marks & Spencer and Waitrose) while noticeably increasing the unadjusted impact of Iceland.[11]

16.     For technical reasons (described in paragraph 26), the individual fascia effects are estimated relative to Tesco for Somerfield and relative to Asda for Kwik Save, which raises the question of how much more or less than Tesco (for Somerfield) or Asda (for Kwik Save) the impact of a competitor fascia opening needs to be to include or exclude it from the competitor set. However, the estimated effects of various competitor fascia openings on Somerfield sales appear to organize themselves into two distinct groups: one including Tesco and one with a significantly smaller impact including two of the LADs (Aldi and Lidl) and Marks & Spencer. Similarly, the estimated effects of various competitor fascia openings on Kwik Save sales appear to organize themselves into two distinct groups: one including Asda and one with a much smaller impact including the LADs and Marks & Spencer.

17.     This is illustrated in Table 3, which gives the estimated competitor fascia effects shown in Table 1 and Table 2 and the standard errors associated with them, and reports tests of whether each individual competitor effect is significantly different from Tesco (for Somerfield) or Asda (for Kwik Save).[12]

18.     The test results in Table 3 are summarized in graphical form in Figure 2 (for Somerfield) and Figure 3 (for Kwik Save).

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[10]A regression of Somerfield's sales impact on only the competitor fascia effects, which gives the unadjusted average effects in Table 1, explains 22 per cent of the variability in the data. The extra factors controlled for in our specification significantly increase this explanatory power ($F_{52,107}$=780.95, p=0.000 rejects the null hypothesis that they can be excluded from the regression without significantly worsening its explanatory power).

[11]A regression of Kwik Save's sales impact on only the competitor fascia effects, which gives the unadjusted average effects in Table 2, explains 24 per cent of the variability in the data. The extra factors controlled for in our specification significantly increase this explanatory power ($F_{46,86}$=200,000, p=0.000 rejects the null hypothesis that they can be excluded from the regression without significantly worsening its explanatory power).

[12]Conventionally, if the P-value associated with each test statistic is smaller than 5 per cent (ie 0.05), we say that the individual fascia effect is significantly different from Tesco (for Somerfield) or Asda (for Kwik Save).

TABLE 3 **Estimated competitor fascia effect on Somerfield and Kwik Save sales adjusting for other factors, and tests of significance**

| | Somerfield | | | | Kwik Save | | | |
|---|---|---|---|---|---|---|---|---|
| Competitor fascia | Effect* | Standard error | Test† | P-value | Effect* | Standard error | Test† | P-value |
| Aldi | | | 4.450 | 0.000 | | | 3.940 | 0.000 |
| Asda | | | 0.550 | 0.587 | ‡ | | −1.110§ | 0.272 |
| Budgens | | | 2.910 | 0.004 | | | | |
| Co-op | | | 2.100 | 0.038 | | | 4.780 | 0.000 |
| Iceland | | | | | | | 0.940 | 0.349 |
| Lidl | | | 4.330 | 0.000 | | | 4.980 | 0.000 |
| Marks & Spencer | ✂ | | 3.520 | 0.001 | ✂ | | 3.510 | 0.001 |
| Morrisons | | | −0.130 | 0.897 | | | −0.560 | 0.579 |
| Netto | | | 0.980 | 0.331 | | | | |
| Safeway | | | −0.550 | 0.583 | | | −0.970 | 0.337 |
| Sainsbury's | | | 0.680 | 0.496 | | | 2.260 | 0.026 |
| Tesco | ‡ | | −3.700§ | 0.000 | | | 0.410 | 0.685 |
| Waitrose | | | 1.520 | 0.130 | | | 2.700 | 0.008 |

*Source*: CC calculations.

*Estimated as linear combination of regression coefficient on fascia indicator, plus constant, plus regression coefficient on fascia indicator multiplied by competitor size, plus coefficient on competitor size all multiplied by average size of fascia in sample.
†Test of whether fascia effect is significantly different to Tesco (for Somerfield) or Asda (for Kwik Save) (null hypothesis, no difference), not whether fascia effect is significantly different to zero.
‡Estimated as linear combination of constant plus regression coefficient on competitor size multiplied by average size of fascia in sample.
§Test of whether fascia effect is significantly different to zero (null hypothesis, no difference).

19. Figure 2 shows the differences between the estimated impact of Tesco on Somerfield's sales and the estimated impact of the other 11 competitor fascias, as well as the 95 per cent confidence interval for each difference. For example, Figure 2 shows that Morrisons' impact on Somerfield sales was, on average, virtually no different from Tesco's (ie [✂] percentage points less) and that with 95 per cent probability, this difference could be between [✂] percentage points and [✂] percentage points. Thus, Morrisons' impact on Somerfield sales does not appear to be different from Tesco's and the test result in Table 3 reflects this (ie the P-value is much greater than 0.05). The first 95 per cent confidence interval in Figure 2 that does not cross zero (ie no difference from Tesco) is Co-op[13] (though Waitrose is close), for which the P-value in Table 3 is smaller than 0.05 (but not much). An analogous argument applies to Figure 3.

20. It is worth noting from Figure 2 that Netto is estimated to have a sales impact that is [✂] percentage points less than Tesco (ie about the same as Waitrose) but—because there is only one Netto opening in the data—the imprecision of its estimated difference from Tesco is such that the 95 per cent confidence interval is very wide (ie from [✂] percentage points fewer than Tesco to [✂] percentage points greater), so that we cannot be sure statistically that there is any difference between them and the test result in Table 3 reflects this (ie the P-value is greater than 0.05).

[13] Co-op's difference from Tesco in its impact on Somerfield sales averages [✂] percentage points from Figure 2.

FIGURE 2

**Estimated difference from Tesco in competitor sales impact on Somerfield,
adjusting for size, drive-time and other factors,
and 95 per cent confidence interval**

[✂]

*Source:* CC calculations.

FIGURE 3

**Estimated difference from Asda in competitor sales impact on Kwik Save,
adjusting for size, drive-time and other factors,
and 95 per cent confidence interval**

[✂]

*Source:* CC calculations.

21.    If Tesco is accepted as being the benchmark against which competitive intensity for the Somerfield fascia is judged, then the results in Table 3 appear to be consistent with the set of effective competitors excluding two of the LADs (Aldi and Lidl) and Marks & Spencer.[14] If Asda is accepted as being the benchmark against which competitive intensity for the Kwik Save fascia is judged, then the results in Table 3 appear also to be consistent with the LADs and Marks & Spencer being excluded from the competitor set.[15]

22.    Lastly, the results for Somerfield and Kwik Save appear to show that store openings had a greater impact on Somerfield stores than on Kwik Save stores, by [✂] per-centage points on average for the ten fascias common to both Table 1 and Table 2 (ranging from [✂] percentage points for Aldi to [✂] percentage points for Waitrose). This is not surprising given we have been told that Kwik Save targets a slightly different consumer demographic group and prices lower than the other major supermarket chains.

23.    Two caveats to our results are in order, however:

•    Somerfield was not able to provide us with the number of stores in an area prior to the competitor fascia opening, nor whether the opened fascia is a new-build or an acquisition—both of which may be thought to affect its impact on Somerfield and Kwik Save sales, but neither of which we have been able to take into account. For example, we have been told that a sufficient number of different types of fascia opening in close enough proximity to one another may make an area a shopping destination, meaning that the effect of openings is to reduce the sales of incumbent grocery retailers less than proportionally because the size of the grocery market in that area increases (ie each retailer's slice of the pie may be shrinking but the size of the pie is increasing).

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[14]We note that our results are qualitatively unaffected by measuring the effect on Somerfield sales of competitor openings relative to any other MMGR fascia (eg Sainsbury's, Waitrose, Asda) that the CC has previously found to be part of the competitive set for mid-range stores.
[15]Although the CC has not previously assessed Kwik Save's competitor set, we note that our results are qualitatively unaffected by measuring the effect on Kwik Save sales of competitor openings relative to any other MMGR fascia.

- Somerfield has measured the impact on its stores' sales two months after the opening of the competitor store, the date at which we understand the sales impact is usually stabilized, 8 km or less away.[16] This means that the estimated statistical impact on sales of each opening may be overstated (in absolute terms).[17] However, we know of no reasons why this should affect the ranking shown in Figure 1, Table 1 and Table 2 (ie is not likely to be overstated in relative terms). Moreover, Somerfield submitted that its two-month sales impact was not overestimated in any event, since—for nine of the affected stores—the two-month sales impact and the impact after one year differed in absolute terms by only three percentage points on average.

## *Analysis*

24. As described in paragraph 13, we regressed the change in sales two months after a store opening on indicator variables for the competitor fascia, controlling for other factors affecting the sales impact. Regressions were done separately for Somerfield and Kwik Save stores and are reported in the annex.

25. We considered as other factors possibly affecting the sales impact:

- drive-time (calculated by Somerfield) between the opening store and the Somerfield/Kwik Save store;

- the size of the opening store, also interacted with (ie multiplied by) the indicator variable for each competitor;

- the size of the Somerfield store;

- whether there was more than one opening in an area;

- indicator variables for the quarterly time period of the opening (to control for cyclical movements in sales[18]); and

- indicator variables for the ten of the ONS standard statistical regions of the UK that are represented in Somerfield's data (to control for local variations in, for example, income).[19]

## *Competitor fascia*

26. We estimated the impact on sales of different competitor fascias using a 1/0 indicator variable for each fascia. It is not possible to take account of every competing fascia in

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[16]We do not know whether there are other competitor openings further away than 8 km, following which Somerfield or Kwik Save experienced a sales impact, that could have been included in Somerfield's data.

[17]We note that Somerfield provided the impact two months after competitor openings because, it submitted, this reflects the commercial reality of its defensive investment and marketing decisions.

[18]These had a significant effect on sales impact for Somerfield and Kwik Save, meaning the explanatory power of our regressions was significantly worse without them (see the F-tests in Tables 14 and 15 in the annex).

[19]The ten regions were East Anglia, East Midlands, London, North-East, North-West, South-East, South-West, Scotland, Wales and Yorkshire & Humberside. These did not have a significant effect on sales impact for Somerfield and Kwik Save, meaning the explanatory power of our regressions was not significantly worse without them (see the F-tests in Tables 14 and 15 in the annex). Somerfield submitted that, were one to think that competing fascias' relative strengths are different in different regions, then one should interact the fascia and regional dummies, and not include only the regional dummies. Doing this did not qualitatively affect our results (the fascia/region interaction terms were insignificant, $F_{10,97}=0.95$, $p=0.491$ for Somerfield and $F_{10,76}=1.38$, $p=0.205$ for Kwik Save). Somerfield submitted that including extraneous regional dummies may inflate the standard errors on the other explanatory variables and consequently change our inference. We consider that the most likely effect of this, if true, would be to make some of the estimated fascia effects that are not significantly different from Tesco and Asda significantly less instead, which would strengthen our results. Further, our results are qualitatively unaffected by excluding the regional dummies.

our statistical analysis in this manner (one indicator variable has to be left out for statistical reasons, with the effect of the remaining fascias being estimated relative to it). For Somerfield, we decided to omit the indicator variable for Tesco from our analysis since it had the most openings and appears to be one of Somerfield's strongest competitors. Our results are qualitatively unaffected by omitting the fascia indicator variable for any other major multiple grocery retailer instead of Tesco. For Kwik Save, we decided to omit the indicator variable for Asda from our analysis because it had the most openings and, we understand, is considered a lower-price competitor.[20] Our results are qualitatively unaffected by omitting the fascia indicator variable for any other major multiple grocery retailer instead of Asda.

27.     Our competitor fascia indicator variables collectively had a significant effect on both Somerfield and Kwik Save sales impact, suggesting different competitor fascias have varying impacts on sales when they open in the area.[21]

   - Six of the 12 competitor fascias we looked at (Asda, Morrisons, Netto, Safeway, Sainsbury's and Waitrose) had a similar impact on Somerfield sales to Tesco (which itself had a significant impact) but five of 12 competitor fascias had a significantly smaller impact (Aldi, Budgens, Co-op, Lidl and Marks & Spencer).

   - Conversely, six of the 11 competitor fascias we looked at (Aldi, Co-op, Lidl, Marks & Spencer, Sainsbury's and Waitrose) had a significantly smaller impact on Kwik Save's sales than Asda (although Asda itself did not have a significant impact) but four of 11 competitor fascias did not (Iceland, Morrisons, Safeway and Tesco).

*Drive-time*

28.     Drive-time from the competitor store opened significantly affected sales impact for both Somerfield and Kwik Save.[22] An increase in the drive-time to the new store's location of 1 minute reduced the negative impact of that new store opening by [✄] percentage points. We also used distance in kilometres instead of drive-time but our results were qualitatively unaltered.[23] We present the results using drive-time because it appears to be more consistent with the way supermarkets think about their catchment areas and with the way customers think about their journeys, according to our survey.

*Size*

29.     We considered accounting for store size in three different ways: using the three market segments previously mentioned by the CC (ie convenience, mid-range and one-stop shop); using the five OFT candidate market segments (ie convenience and one-stop shop plus three mid-range segments: close-to-convenience, mid-range and close to one-stop shop); and using a continuous size variable. When using the CC and OFT segments, we found their effects were conflated with our competitor fascia indicators, making it impossible to distinguish between them[24] and therefore decided to use a continuous size variable, both individually and interacted with our competitor

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[20]For example, the CC's 2000 Supermarkets monopoly inquiry found local prices tended to be lowest when Asda was a competitor (see Appendix 7.7 of the 2000 report).
[21]See the F-tests in Tables 14 and 15 in the annex.
[22]We tried interacting drive-time (and distance) with the indicator variables for competitor fascia (in case some competitors had a policy of opening next to Somerfield or Kwik Save) but our results were qualitatively unaltered.
[23]We found that the sales impact on both Somerfield and Kwik Save was [✄] percentage points less for each 1km further away was the competitor store opening. (This implies an average road speed used in Somerfield's data of 30 kmh, or 19 mph, which seems reasonable by reference to the road speeds used in the 2003 Safeway inquiry.) Including both drive-time and distance left their effects essentially unaltered but made them statistically insignificant (because of collinearity, we suspect).
[24]This problem is collinearity.

fascia indicator variables to allow for the fact that some supermarkets operate only a narrow range of store sizes, whereas others operate across many sizes (meaning the competitive effect of a store of a given size opening may not be constant over fascias).[25]

30. We found that competitor size and Somerfield size generally were not significant factors affecting the impact on Somerfield's sales of a store opening in the area. This implies that any competitor size effect was picked up by the use of individual indicator variables for the different competitor fascias (interacted with size in the cases of Aldi and Safeway).[26]

31. For Kwik Save, both own- and competitor-size had a significant effect on sales impact for Kwik Save. The effect of the size of Kwik Save on the sales impact it feels from the opening of a competing fascia is [✂] percentage points greater for every 90 sq metres (1,000 sq feet) increase in the size of the Kwik Save (ie bigger Kwik Saves are harder hit, but only minimally).

32. The effect of competitor size was minor overall for Kwik Save—with an increase in the size of a competitor fascia of 90 sq metres reducing its impact on Kwik Save sales by [✂] percentage points—but varied significantly according to competitor fascia: from [✂] per cent for Marks & Spencer (so Kwik Save sales increased by [✂] percentage points for every 90 sq metres opened by Marks & Spencer) to [✂] percentage points for Co-op (so Kwik Save sales increased by [✂] percentage points less when a Co-op of 1,900 sq metres (20,000 sq feet) opened than one of 1,800 sq metres (19,000 sq feet)[27]). This positive impact of competitor size on Kwik Save sales seems counter-intuitive but could be due to the agglomeration effect of a large store opening nearby, making the location a shopping destination and bringing more customers to the area.

*Multiple openings*

33. We do not have information on the stores present in the area prior to the new store opening but we included the number of competitor store openings in the area, which we consider may act as a proxy for this.[28] In the data given, there were no examples of more than two openings in an area.

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[25]We found that using indicator variables for each competitor's different types of fascia, where appropriate (eg Tesco Express, Tesco Extra, Tesco Metro and Tesco Superstore, which operate in fairly distinct size bands), instead of multiplying our competitor indicator variables by competitor size (which may also capture this differential size effect) produced results that were qualitatively the same. Somerfield submitted that it thought it more appropriate to capture any differential size effect by including a dummy variable taking the value 1 when the competitor fascia was at least 75 per cent of the size of the affected Somerfield or Kwik Save and 0 otherwise, though Somerfield did not explain why. To us, it seems counter-intuitive to deliberately suppress variation in the data in this way.
[26]Again, we omitted the Tesco indicator variable multiplied by its store size for Somerfield, and Asda with its store size for Kwik Save, for the same reasons as discussed in paragraph 26 (ie collinearity). Somerfield submitted that it did not think the fascia/size interaction variables were collinear—and that, consequently, we should have included the Tesco indicator variable multiplied by its size. To see why there is collinearity, suppose there are just three competitor openings A, B and C with sizes $x_A$, $x_B$ and $x_C$. The matrix of fascia indicators interacted with size is then $\begin{bmatrix} x_A & 0 & 0 \\ 0 & x_B & 0 \\ 0 & 0 & x_C \end{bmatrix}$, the elements of which add up to the same as the vector of competitor sizes [$x_A$, $x_B$, $x_C$].
[27]The estimated effect for Co-op is [✂] percentage points for every 90 sq metres but the Co-op fascia effect is positive, meaning the opening of a Co-op increases Kwik Save sales but a larger Co-op increases Kwik Save sales less than a smaller one. The average size of a Co-op in the data is [✂] sq metres ([✂] sq feet).
[28]We may expect the impact on sales of a new store opening to be less in an area where there are already other competitors. Where there has been more than one opening, this may act as a proxy for other competition being present in the area. Somerfield submitted that it did not think that our indicator variable for multiple openings was an appropriate proxy for the missing existing competitor variable.

34.     The effect of two openings was positive and significant for Somerfield; where there were two competitor openings the impact on sales of the second was [✂] percentage points less than where there was only one competitor opening. The effect of two competitor openings on Kwik Save, however, was negative and significant; where there were two competitor openings the impact on sales of the second was [✂] percentage points more than where there was only one competitor opening.

## Part 3    Product market definition: analysis of Somerfield shopping baskets

35.     The CC has previously defined primary shopping in stores over 1,400 sq metres (15,000 sq feet) as a separate, relevant product market partly because most customers did primary ('one-stop') shopping and one-stop shopping involved buying a wide range of products, which is only possible in a large store. Somerfield submitted that—although primary shopping could be identified as a distinct segment on this basis—it is much more difficult to draw the distinction between convenience and secondary shopping because there is substantial substitutability between convenience and secondary shopping trips, particularly in terms of the type of store which the consumer might use for each. Somerfield also told us that the logic of the SSNIP tests dictates that any product market must be defined over something concrete that can be monopolized—like mid-range supermarkets—rather than a shopping mission. This section analyses data on basket value and store size, and NOP survey responses, to see if there appears to be a relationship between shopping mission and store size, ie whether it is sensible to delineate the candidate product market by store size.

36.     Our results suggest that the largest proportion of Somerfield revenues (almost [✂] per cent) come from customers carrying out planned top-up shops, but that a significant proportion of revenues also come from main grocery shopping. It appears that planned top-up shopping is carried out in similar proportions in stores of different sizes (although we have limited data on stores under 280 sq metres (3,000 sq feet)), and that the average basket value of planned top-up shops does not increase once store size exceeds 650 sq metres (7,000 sq feet). Customers also carry out main grocery shops in stores of all sizes, but the proportion of customers carrying out a main shop and the amount spent increases with store size.

37.     These findings suggest that while the logic driving product market definition in previous CC inquiries (that shopping need affects a customer's basket value and choice of store size) is valid, it is less distinct when considering the market in which mid-range stores operate, in which planned top-up shopping accounts for a large proportion of revenues. That is, supermarket product market definition may be asymmetric, in that stores above 1,400 sq metres that cater largely for customers carrying out main grocery shops are less constrained by mid-range stores than the other way round.

38.     As such, for the majority of stores in this inquiry which are between 280 and 1,400 sq metres in size, we consider that all fascias within the competitor set above 280 sq metres in size could be effective competitors to the acquired stores.

## *Analysis of NOP survey responses relating to basket size*

39.     The consumer survey carried out by NOP at 54 mid-range stores (between 280 and 1,400 sq metres), one convenience store (smaller than 280 sq metres) and one one-stop shop (larger than 1,400 sq metres) asked respondents to describe the purpose

of their shopping trip and recorded the amount spent on groceries that day.[29] The results show that:

- almost half of customers ([✂] per cent) surveyed were carrying out planned top-up shops;

- almost half of revenues ([✂] per cent) from the surveyed customers were from planned top-up shops;

- the percentage of customers and revenues from customers carrying out planned top-up shops did not vary across store sizes;

- [✂] per cent of customers surveyed were carrying out their main grocery shop, accounting for [✂] per cent of revenues and this percentage varied across store size, with customers being more likely to carry out a main grocery shop in larger stores; and

- the amount spent by customers varied with both shopping mission and store size.

40. Table 4 shows the percentage of customers and the percentage of revenues from customers carrying out different shopping missions, according to store size. The results show that the majority (between [✂] and [✂] per cent) of Somerfield revenues come from customers carrying out planned top-up shops. Further, they suggest that the proportion of customers carrying out a planned top-up shop (on the day of the survey) does not vary much by size of store (varying from [✂] per cent in smaller stores to [✂] per cent in stores above 650 sq metres in size).

TABLE 4  **Relationship between shopping mission and store size**

*per cent*

*Percentage of customers and revenues from different shopping missions, that day*

*Store size, sq metres*

| Shopping mission | <650 | | 650–1,000 | | >1,000 | |
|---|---|---|---|---|---|---|
| | *Customers* | *Revenues* | *Customers* | *Revenues* | *Customers* | *Revenues* |
| Main grocery shop | | | | | | |
| Planned top-up shop | | | | | | |
| Buying a treat | | | | | | |
| Buying something to eat/ drink straight away | | | ✂ | | | |
| Purchasing items urgently needed | | | | | | |
| Buying a one-off item | | | | | | |
| Other | | | | | | |
| Total | | | | | | |

*Source:* NOP survey.

41. The proportion of customers carrying out their main grocery shop in the surveyed stores varied from [✂] per cent (on average) in stores below 650 sq metres in size to [✂] per cent in stores above 1,000 sq metres in size. The proportion of revenues spent on main grocery shopping varied more widely across the store sizes, suggesting that customers spend more on their main grocery shop if they go to a larger store.

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[29]The question asked 'which phrase best describes your grocery shopping at this store today?'

42.    This result is supported by the data in Table 5, which shows the average amount spent by shopping mission and store size. These results show that there is a strong relationship between shopping mission and amount spent. The average amount spent on a main grocery shop is more than double the average amount spent for planned top-up shops for all store sizes. Further, the amount spent on 'distress purchases' (all other types of shopping) tends to be less than on a planned top-up shop.[30]

TABLE 5  **Amount spent by shopping mission and store size**

*Approximate cost of shopping in store that day*

*Store size, sq metres*

| | *<650* | | *650–1,000* | | *>1,000* | |
|---|---|---|---|---|---|---|
| *Shopping mission* | *Average, £* | *%\** | *Average, £* | *%\** | *Average, £* | *%\** |
| Main grocery shop | | | | | | |
| Planned top-up shop | | | | | | |
| Buying a treat | | | | | | |
| Buying something to eat/ drink straight away | | | | | | |
| Purchasing items urgently needed | | ✂ | | | | |
| Buying a one-off item | | | | | | |
| Other | | | | | | |
| Total | | | | | | |

*Source:* NOP survey.

*\*Of revenue for stores of this size.*

43.    There also appears to be some relationship between the amount spent and store size. In particular the average amount spent on main grocery shopping and planned top-up shops is greater in stores above 650 sq metres than in smaller stores. However, the average amount spent on a planned top-up shop in a store greater than 1,000 sq metres in size is still only two-thirds of the average amount spent on a main grocery shop in a store below 650 sq metres in size.

### *Analysis of Somerfield shopping basket data*

44.    Somerfield submitted that baskets worth £50 or more (which it defined as one-stop shop baskets) account for [✂] per cent of the turnover of Somerfield stores over 900 sq metres (10,000 sq feet) and that the proportion does not increase as the store gets larger. Somerfield also submitted that average weekly household expenditure on groceries (excluding the hard discounters Aldi, Lidl and Netto) was £64 in 2004. In the 2000 Supermarkets report, the CC's consumer survey suggested that a basket of 80 per cent of average weekly grocery-spend could be considered to be one-stop shopping,[31] which might mean that a basket of around £50 (ie 80 per cent of £64) could constitute a one-stop shop. On this basis, Somerfield's analysis indicates that one-stop shopping takes place in stores as small as 900 sq metres.

45.    Our analysis of the distribution of the value of shopping baskets for 778 Somerfield stores in April 2005 indicates that to the extent that the main type of shopping trip in a store is captured by basket size (see paragraphs 39 to 43), there is some relationship

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[30]We note that the average baskets in Table 5 are underpinned by a large amount of variation. While the average amount spent per shopping mission varies from store to store, this variation is not related simply to whether the store is urban or rural, nor to whether respondents always/sometimes/rarely/never do a main grocery shop.
[31]See Figure 2.1. Other parties' views in the 2000 report are consistent with a basket of 80 per cent of weekly grocery-spend constituting a one-stop shop (see, for example, paragraphs 4 and 5 in Appendix 4.1).

between type of shopping trip and store size but this relationship is not strong, ie it appears to confirm Somerfield's analysis and is consistent with the survey results. The results of our analysis are summarized in Table 6 which shows that:

- there appears to be a large increase in the average value of a basket as the size of the Somerfield store increases from close-to-convenience to mid-range, but the relationship between average basket value and store size for stores above 650 sq metres is weaker; and

- smaller stores have a higher proportion of revenues from baskets below £5 and larger stores have a higher proportion of revenues from baskets above £50. Other than this, there is not a large amount of variation in the proportion of revenue generated from different basket sizes across stores of different sizes.

46. This is consistent with the results of our survey (see Table 5) which shows that the proportion of revenues from top-up shops does not vary much across store size, that the proportion of revenues from main grocery shops increases and that the proportion of revenues from 'distress purchases' decreases when store size exceeds 650 sq metres. The survey, however, suggests that the average value of a main grocery shop is between £[✕] and £[✕], depending on store size.[32]

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[32]Somerfield also submitted that a primary shopping basket could be £30.

TABLE 6  **Distribution of sales revenue from 778 Somerfield stores for shopping baskets of various sizes, 7 November 2004 to 30 April 2005**

*Proportion (per cent) of sales revenue from baskets of size*

| *Store type* | *Size (m²)* | *Stores* | *Average basket value £* | *<£5* | *£5–£10* | *£10–£15* | *£15–£20* | *£20–£25* | *£25–£30* | *£30–£35* | *£35–£40* | *£40–£45* | *£45–£50* | *>£50* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Convenience | 0–280 | 114 | | | | | | | | | | | | |
| Close to convenience | 280–650 | 223 | | | | | | | | | | | | |
| Mid-range | 650–1,000 | 211 | | | | | | | | | | | | |
| Close to one-stop shop | 1,000–1,400 | 141 | | | | | | | | | | | | |
| One-stop shop | 1,400+ | 89 | | | | | | | | | | | | |

*Source:* Somerfield and CC calculations.

*Based on 736 Somerfield stores 7 November 2004–30 April 2005, not 778 stores (67 convenience, 227 close to convenience, 214 mid-range, 140 close to one-stop shop and 88 one-stop shops).

## Part 4  Geographic market definition: analysis of Somerfield loyalty card data and NOP survey results

47. The CC has previously found that the vast majority of a mid-range store's custom (ie revenue and/or customers) accrues within a 5-minute or 10-minute drive-time isochrone depending on whether the store is urban or rural. Somerfield submitted that, although competition is local, it would be unwise to adhere rigidly to such an arbitrary time- or mileage-based isochrone when evaluating the competitive constraints acting on mid-range stores for a number of reasons.[33] However, we consider that for the purpose of our Stage 1 analysis, it can be useful to assess competition within a generic isochrone. This section analyses Somerfield customer data on travel times and NOP survey results on travel-time, distance and mode of travel to help assess the boundaries of the geographic market.

48. Our results suggest that, for mid-range stores, a 5-minute drive-time isochrone in urban areas and a 10-minute drive-time isochrone in rural areas captures the vast majority (ie 80 to 90 per cent) of a store's custom.

49. This section is organized as follows. Paragraphs 50 to 52 analyse travel-time data submitted by Somerfield for over 12,000 Saver Card customers at 11 'problem' mid-range stores. Paragraphs 53 to 61 analyse travel-time, distance, travel-mode and expenditure data for nearly 5,000 respondents to NOP's survey of mid-range Somerfield stores.[34]

### *Analysis of Somerfield Saver Card data*

50. Somerfield submitted travel-time data for 12,203 of its customers with Saver Cards for 11 of the mid-range problem stores identified by the OFT (we do not know whether these travel times are drive-times). Somerfield submitted that its Saver Card data for the acquired stores is immature, which is why it did not submit data for all of the OFT's problem mid-range stores.

51. Analysis of this data appears supportive of the drive-times used by the CC for mid-range isochrones (ie 5 minutes in urban areas and 10 minutes in rural areas).[35]

52. The results of this analysis are given in Table 7. The CC has previously taken the distance travelled by the 'vast majority' (ie 80 to 90 per cent) of a supermarket's customers/trade as the isochrone border. Applying the same rule, Table 7 shows that:

- the vast majority of Somerfield customers at the 11 mid-range stores in the data travelled less than 10 minutes, for which the CC has previously used a 5- to 10-minute isochrone (depending on whether the store is urban or rural); and

- the vast majority of urban customers travel less than 5 minutes and the vast majority of rural customers travel less than 15 minutes (with [✂] per cent travelling less than 10 minutes).

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[33]Essentially (i) because of the presence of one-stop shops with larger catchment areas, which constrain mid-range stores, outside the smaller catchment areas of those mid-range stores, (ii) because of loyalty cards, which encourage secondary shoppers especially to travel further, (iii) because many shoppers travel to and from places other than home for secondary shopping and (iv) because of Internet shopping, which tends to have a delivery radius of 20 miles.
[34]Excluding Newark and Prestwick, whose surveys were completed too late for inclusion in our analysis.
[35]Somerfield accepted that the majority of Saver Card customers live within the drive-time indices previously used by the CC. but suggested that Saver Card customers could be more local than the population of all customers, given their apparent loyalty.

TABLE 7   **Distribution of travel-times for 12,203 Saver Card customers for 11 Somerfield mid-range stores, May 2005**

| | | | | | |
|---|---|---|---|---|---|
| | | | | | *per cent* |
| *Mid-range Somerfield stores* | | *Proportion of customers travelling\** | | | |
| *Type* | *Number* | *Less than 5 minutes* | *5–10 minutes* | *10–15 minutes* | *Over 15 minutes* |
| All | 11 | | | | |
| Urban | 6 | | ✂ | | |
| Rural | 5 | | | | |

*Source*: Somerfield and CC calculations.

\*It is not clear from Somerfield's data whether these travel-time categories are mutually exclusive.
*Notes*:
1.  CC 2000 Supermarkets and 2003 Safeway reports used the distance travelled by the 'vast majority' (ie 80 to 90 per cent) of a supermarket's customers/trade as the isochrone border.
2.  Figures in bold refer to travel-time category with a cumulative 80 to 90 per cent of customers.

## *Analysis of NOP survey responses*

53.    NOP surveyed 5,030 Somerfield customers at 52 acquired mid-range stores asking about shopping mission, expenditure, alternatives and travel (time, distance and mode).[36] From 4,997 of these survey responses, we have calculated the revenue for each surveyed store accruing from different travel modes, travel times and travel distances.[37] Analysis of this data suggests that:

   - because a high proportion of revenue for rural stores comes from customers driving, the vast majority of rural stores' revenue can be said to come from a 10-minute drive-time isochrone; however

   - because a lower proportion of revenue for urban stores comes from customers driving, the vast majority of urban stores' revenue comes from a 5-minute drive-time *or equivalent* isochrone.

54.    Our results are given in Table 8 which shows that—across the 13 rural stores in the NOP survey—the average proportion of revenue accounted for by customers driving to the store is [✂] per cent. The vast majority (ie 80 to 90 per cent) of revenue from drivers to rural stores accrues within a 10-minute drive-time isochrone, which means that the vast majority ([✂] per cent) of rural stores' revenue from all modes of transport also accrues within a 10-minute isochrone.

55.    For the 41 urban stores in the NOP survey in Table 8, the analysis is more complicated, for three reasons:

   - First, typically just over [✂] of an urban store's revenue comes from drivers, the vast majority (ie 80 to 90 per cent) of which tends to come between 5 and 10 minutes' drive-time.[38]

   - Secondly, a sizeable minority (typically [✂] per cent) of an urban store's revenue comes from walkers whose foot speed will be only a fraction of road speed for drivers. Table 8 shows that [✂] per cent of revenue from walkers tends to come from 15 minutes' walk-time or less. In this respect, we note that the average

[36]In all, NOP surveyed 5,444 Somerfield customers at 56 acquired stores, 54 of which were mid-range. Results for two mid-range stores—Newark and Prestwick—were too late for inclusion in this analysis.
[37]4,997 respondents gave answers on travel distance.
[38]As over [✂] per cent comes from 10 minutes or less.

distance walked by these respondents is only [✄] miles, a distance that could have been covered in less than [✄] minutes, on average, by the respondents driving to these stores (given their average reported road speeds).

- Thirdly, the CC has previously drawn 5- and 10-minute drive-time isochrones based on average road speeds, rather than the time taken for the whole journey reported by respondents to NOP's survey.[39] We think it is reasonable to assume that the total journey time is dominated by time in transit for car journeys (since many of the Somerfield stores in NOP's survey had car parks[40] and parking would seem to be the largest non-transit component of a car journey), especially in rural areas, which implies that respondents' reported travel times are a good measure of the transit times used in drawing 10-minute drive-time isochrones.[41] We think it is reasonable also to assume that total journey time is dominated by time in transit for walkers. However, we do not think it is reasonable to assume the same is true for public transport.[42] Hence, NOP survey respondents' reported travel times for public transport may well be best regarded as upper bounds on their transit time but we do not know by how much.

56. The effect of expressing the travel times of walkers as equivalent drive-times[43] is demonstrated in Table 9, which shows that—on average—[✄] per cent of an urban store's revenue from walkers accrues within a 5-minute drive-time isochrone.

57. Taking account of these complications, the evidence in Table 8 and Table 9 supports the CC's previous finding that the vast majority of an urban, mid-range store's revenue comes from a 5-minute drive-time isochrone, or equivalent.

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[39]NOP's survey asked 'How long did it/will it take to get between here and there, in minutes? Just your best guess will do.' 'Here' and 'there' refer to where respondents set out from and were returning to.
[40]Several more had public car parks very close by.
[41]The average road speed implied by NOP survey respondents' reported drive-times and distances is 27 kmh (17 mph) for rural areas (ranging from 21 to 35 kmh (13 to 22 mph)), 22kmh (14 mph) for urban areas (ranging from 8 to 40 kmh (5 to 25 mph)) and 11 kmh (7 mph) for London (ranging from 10 to 14 kmh (6 to 9 mph)), all of which are very similar to the average A-road speeds used in the 2003 Safeway report for these areas.
[42]For example, the average road speed implied by NOP survey respondents' distances and reported travel times by bus is 21 kmh (13 mph) for rural areas, which one might expect to be much closer to average road speeds by car (27 kmh (17 mph)) were respondents giving only transit time and not time spent waiting at bus stops (not withstanding the stop/start nature of bus journeys).
[43]Calculated for the average road speeds for each store reported by survey respondents who drove to each. One surveyed store had no drivers, so we used the average road speed for drivers at all other stores.

TABLE 8 **Proportion of revenue by mode of transport and travel time for urban and rural surveyed stores**

| | *Percentage of revenue by transport mode* | | | *Cumulative percentage of revenue by transport mode and travel time\** | | | | | | | | | | | |
| | | | | *Drove†* | | | *Walked* | | | *Public transport/other‡* | | | *All modes* | | |
| *Surveyed store* | *Drove†* | *Walked* | *Public transport /other‡* | *5 mins* | *10 mins* | *15 mins* | *5 mins* | *10 mins* | *15 mins* | *5 mins* | *10 mins* | *15 mins* | *5 mins* | *10 mins* | *15 mins* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 41 urban 13 rural | | | | | | | | | | | | | | | |

*Source:* NOP survey and CC calculations.

*Travel times are upper bounds and are not exclusive, so that '5 mins' is read 5 minutes or less, '10 mins' is read 10 minutes or less and '15 mins' is read 15 minutes or less.
†As driver or passenger in car or van, by taxi or by motorcycle.
‡Other includes bicycle and some combination of various forms of transport.

TABLE 9  **Proportion of revenue by equivalent drive-time for walkers to urban surveyed stores**

| | *Percentage of revenue by equivalent drive-time* | | |
|---|---|---|---|
| *Surveyed store* | *5 mins or less* | *10 mins or less* | *15 mins or less* |
| All urban | ( | ✂ | ) |

*Source:* NOP survey and CC calculations.

*Somerfield's comments on analysis of NOP survey responses*

58.	Somerfield submitted that there was no justification for distinguishing between customers using different modes of transport in analysing NOP's survey responses. The justification was that, as stated in paragraph 47, the CC had previously defined isochrones based on drive-time, observing that the vast majority of a one-stop shop's custom was from car drivers. For consistency, we analysed travel-time as equivalent drive-time. We further understood that drive-time isochrones were the industry 'norm' and that available mapping software generated only drive-time isochrones.

59.	Somerfield was concerned that our analysis used respondents' reported travel-times to determine catchment areas, instead of drive-times based on average road speeds combined with respondents' reported postcodes, as the CC had previously done. Somerfield suggested using respondents' reported travel-times might be less reliable.

60.	We investigated this by drawing 10-minute drive isochrones for rural stores based on average road speeds (built in to MapInfo® software), and calculating what proportion of drivers accounting for 80 per cent of a rural store's revenue from drivers (which defines an isochrone) accrued from respondents whose reported postcodes were in the estimated 10-minute isochrone. We were able to do this only for seven of the first tranche of 27 stores surveyed by NOP.

61.	Our results suggested that [✂] out of [✂] respondents ([✂] per cent) had postcodes that suggested they would have travelled less than 10 minutes by car at average road speeds, as their survey responses indicated.[44]

## Part 5  Margin-concentration analysis

62.	Somerfield submitted that the CC's analysis of the potential for an SLC must be based on market shares combined with an assessment of actual and potential competition. Market share presupposes the definition of a relevant market and the identification of firms competing in it and, in this regard, Somerfield submitted that the candidate market definitions of the CC were too narrow in terms of both the product and geographic markets (see Parts 2, 3 and 4); and that even in circumstances where Somerfield is the only fascia within a local market, it nevertheless continued to be subject to effective competitive constraints both inside the local market and outside. This section uses econometric analysis of data submitted by Morrisons on

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[44]Over the seven surveyed stores, the proportion of drivers within the estimated 10-minute drive-time who said that they travelled less than 10 minutes varied from [✂] per cent to [✂] per cent. There are maps of the 10-minute drive-time isochrones and the postcodes of respondents in the annex for Kelso, Peebles and Pocklington, which had [✂], [✂] and [✂] per cent of drivers respectively in the 10-minute isochrones.

pre-merger margins and by Somerfield on local market shares to help assess the boundaries of the relevant market and these competitive constraints.[45]

63.    The results of this analysis suggest that, in circumstances where an acquired store's local market share was higher pre-merger (ie where it appears to have faced less competition) its margins were also higher, especially in rural areas. A corollary of this result is that the local markets for which acquired stores' market shares have been calculated may be properly-defined relevant markets, especially in rural areas.

64.    The results of this analysis are summarized in Figure 4. This shows the relationship between pre-merger margins at the acquired stores and their pre-merger shares of the candidate geographic market measured by 5-minute isochrones for urban areas (Panel A) and 10-minute isochrones for rural areas (Panel B), and the candidate product market of fascias of all sizes of the competitor set excluding the LADs, ie Aldi, Lidl and Netto, and the symbol groups (eg Londis, Spar).

FIGURE 4

**Relationship between pre-merger margins over direct costs and share of candidate market for urban and rural acquired stores**

Panel A: urban stores                                Panel B: rural stores

[✂]                                                        [✂]

*Source:* Morrisons, Somerfield and CC analysis.

65.    Panel A of Figure 4 shows that there is a positive relationship between pre-merger margins over direct cost (ie cost of sales, staff costs and distribution costs) and pre-merger market share in 40 acquired urban stores but this relationship is not statistically significant.[46] Panel B of Figure 4 also shows that there is a positive relationship between pre-merger margins over direct cost and pre-merger market share in 48 acquired rural stores, a relationship that is statistically significant.[47]

66.    Taken literally, the results of our margin-concentration analysis suggest that—if Somerfield and Morrisons had identical PQRS offers[48] or if customers cared only about convenience (in the narrow sense of location[49])—then the acquisition could result in Somerfield's margins over direct cost increasing by:

- [✂] percentage points (to [✂] per cent[50]) for a two-to-one merger in rural areas (an 11 per cent increase in margins); and

- [✂] percentage points (to [✂] per cent[51]) for a three-to-two merger in urban areas (a 26 per cent increase in margins).[52]

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[45]Somerfield was not able to submit pre-merger margin data for the acquired stores and the purpose of our margin-concentration analysis partly is to help assess the boundaries of the local markets in which the acquired stores competed before Somerfield acquired them, so we used Morrisons' data.

[46]The line in Panel A is the linear prediction plot of the regression in Table 17, which shows the positive relationship between margins and market share controlling for other factors. This relationship is significant ($F_{10,29}=2.93$, p=0.012). However, the positive relationship between margins and market share alone is not significant at the conventional 5 per cent level ($F_{1,29}=3.69$, p=0.065).

[47]The line in Panel B is the linear prediction plot of the regression in Table 16, which shows the positive relationship between margins and market share controlling for other factors. This relationship is significant ($F_{11,36}=7.13$, p=0.000). The positive relationship between margins and market share alone is also significant ($F_{1,36}=39.11$, p=0.000).

[48]That is, there was no brand repositioning following a merger.

[49]Implying no brand repositioning following a merger because competing stores do not move location.

[50]Standard error 0.4 per cent.

67.    In calculating these illustrative margin increases, we note that the simple average of pre-merger margins (over cost of sales, staff costs and distribution costs) at the acquired stores was [✂] per cent in urban areas and [✂] per cent in rural areas; that the median fascia count was three in urban areas and two in rural areas; that the average pre-merger market share was [✂] per cent at acquired stores in urban areas and [✂] per cent at acquired stores in rural areas;[53] and that Somerfield's average pre-merger market share was [✂] per cent in urban areas and [✂] per cent in rural areas.[54]

68.    The rest of this section presents the results of our margin-concentration analysis and some background on margin-concentration analysis, and discusses Somerfield's comments on the analysis.

## *Results*

69.    Somerfield submitted that the candidate market definitions of the CC and the OFT were too narrow in terms of both the product and geographic markets; and that even in circumstances where Somerfield is the only fascia within a local market, it nevertheless continued to be subject to effective competitive constraints both inside the local market and outside.[55]

70.    To help assess this claim, we analysed data submitted by Morrisons' on its pre-merger margins over direct cost (ie cost of sales, staff costs and distribution costs[56]) and data submitted by Somerfield on its local market shares for 48 acquired mid-range rural stores and 40 acquired urban mid-range stores (ie 88 of the 100 acquired mid-range stores).[57] If there appears to be no systematic relationship between margins and local market shares, then this could be consistent with Somerfield's view that the relevant market is wider than those for which market shares have been calculated (wider either geographically or for the product market, eg the set of effective competitors, or both) and/or the market definition is correct but there are other constraints on the exercise of market power (eg low entry barriers). Conversely, if there appears to be a positive relationship between margins and local market shares, this could be consistent with the view that *(a)* the candidate markets are properly defined and *(b)* the merger might be expected to increase margins as a consequence of Somerfield's market share increasing.

## *Margins*

71.    Were competition between supermarkets to take place only on price, gross margins (ie sales less cost of sales, as a percentage of sales) would be the measure normally

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[51]Standard error 1.5 per cent.
[52]We note that post-merger market shares are known to be poor predictors of post-merger price increases in differentiated-good ('branded') markets.
[53]This average rural market share includes one estimate of [✂] per cent (for the Kirkwall store) and one of [✂] per cent (for the Ullapool store). Omitting these, Morrisons' average pre-merger market share in rural areas was [✂] per cent.
[54]The increase in Somerfield's margins is estimated as the linear prediction from the regression results in the annex with market share set to [✂] per cent (rural areas) or [✂] per cent (urban areas), fascias set to 1 (rural areas) or 2 (urban areas) and all other variables at their sample means.
[55]Somerfield submitted that—although a significantly lower proportion of its stores were trading at its lowest price tier in isochrones where no other fascias competed—nearly [✂] per cent of acquired mid-range 'monopoly' stores (and nearly [✂ per cent of all mid-range 'monopoly' stores) were still trading at its lowest price tier. Somerfield apparently considered this a smaller proportion that one should expect but did not explain why. Somerfield acknowledged that its analysis did not take account of costs as well as price, so—given the importance Somerfield apparently attached to non-price factors in competition between supermarkets—we are unclear what weight should be attached to this analysis.
[56]Morrisons provided several margin measures for the acquired stores for the year ending April 2004, including two measures of gross margins (sales less cost of sales, and sales less cost of sales and write-downs, eg stock loss), net margins (ie sales less cost of sales, staff costs, distribution costs, overheads, depreciation and rent) and several measures of margins over direct costs.
[57]Data limitations prevented us analysing 12 acquired mid-range stores, the three acquired convenience stores and the 12 acquired one-stop shops.

used in our analysis. In the present case, however, because Somerfield (and others) submitted that competition between supermarkets takes place on PQRS, we consider margins over direct cost a better measure, since this would seem to better capture the non-price aspects of PQRS that could be worsened in response to less competition.[58] That is, prices could be increased and the range of products stocked altered to favour more expensive items—both of which would increase revenue—and the quality of goods or service could be worsened to decrease costs: the net effect being an increase in margins.[59]

72.   We should note that there may be reasons unrelated to competition why margins over direct costs could be higher in rural areas: namely, the way distribution costs have been allocated in the data submitted.[60] Somerfield submitted that it could be the case that rural areas are more concentrated because they are more remote and the cost of servicing a remote area with a distribution network is higher; meaning a given rural, local market will support fewer supermarkets than an urban one, all else being equal.[61] Because total distribution costs for all stores have been allocated to individual stores in accordance with revenue,[62] rather than in accordance with 'remoteness', in the data submitted by Morrisons, it is possible that margins over direct costs will appear to be higher in these remote, concentrated areas but this effect is an artefact of the allocation of distribution costs and not a consequence of less competition. However, Morrisons submitted that its allocation did accurately reflect distribution costs per store.[63]

*Market shares*

73.   Somerfield provided estimates of its local market shares calculated on two bases:[64]

- The first involved summing total UK grocery spend from the accounts of the major multiple grocery retailers (ie Asda, Morrisons/Safeway, Sainsbury's, Tesco and Waitrose) plus other multiple grocery retailers (ie Budgens, Co-op, Iceland, Kwik Save, Marks & Spencer and Somerfield)—but not the LADs (Aldi, Lidl and Netto), nor the symbol groups (eg Londis, Spar)—and then dividing by the total number of households in Great Britain (not the UK).[65] The resulting average weekly household grocery expenditure (of around £64) was then multiplied by the

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[58]We note that our results are qualitatively robust to other measures of margin, however.

[59]Somerfield strongly disagreed that variations in margin correspond to variations in the PQRS offer to consumers in the way described, suggesting there is no evidence that they do. However, we note that it is a cornerstone of economics, that if firms have the ability and incentive to do something profitable, then they will. Somerfield submitted a statement of policy on quality, range and service that demonstrates it has the ability to worsen them. Somerfield's own analysis demonstrates it has the ability to increase price in response to less competition. The loss of competition brought about by the merger provides the incentive to increase margins by worsening PQRS.

[60]Further, Somerfield told us that differences in local tastes for fresh produce, which has higher margins than other groceries, could mean margins were higher is some places than in others for reasons unrelated to competition. However, Somerfield suggested no reason why differences in local tastes for higher-margin fresh produce should be positively related to less local competition (as suggested by our results) and, absent such a reason, we are unsure what weight should be attached to Somerfield's observation. Moreover, a store facing less local competition could still 'force' customers to buy more higher-margin fresh produce (by stocking more) in the same way it could shift any other part of its grocery range towards higher-margin products.

[61]Somerfield also suggested to us that margins are related to capacity utilization and not competition, and that capacity utilization is higher in rural areas for similar reasons. However, a store's choice of capacity utilization may not be independent of the degree of local competition it faces.

[62]Morrisons told us that distribution costs were allocated on the basis of store sales from [✂] retail areas ([✂]) as a percentage of total Safeway sales from these retail areas. This percentage is then applied to the distribution cost pool.

[63]Somerfield also told us that Morrisons' pre-merger margins may not be representative of local competition because, in the period immediately prior to disposing of the stores to Somerfield, Morrisons was not undertaking promotional activity, for example.

[64]Both bases estimate the total UK grocery market to be around £75 billion to £80 billion annually, which is consistent with the size of the UK grocery market as estimated by TNS Superpanel, an industry source (which is survey based). Somerfield submitted that these two methods are used by grocery retailers needing estimates of local market shares, eg for due diligence.

[65]Somerfield submitted that only Iceland, Marks & Spencer, Safeway, Somerfield and Tesco operate in Northern Ireland. Somerfield submitted that Tesco's revenue includes non-food grocery expenditure but the others do not.

number of households in the relevant 5- or 10-minute isochrone to arrive at the local market size.[66] Sales only within the isochrone at the acquired and proximity Somerfield stores (which Somerfield estimated[67]) were then divided by the value of the local market to get pre- and post-merger market shares.

- The second involved use of Experian's Chorus data (Experian is a provider of business information for eg credit scoring, direct marketing), a self-completion survey of 1.2 million UK consumers for 2003, which reports total food and non-food grocery spend at respondents' main supermarkets.[68] The Chorus data reports this by census output areas (roughly 100 households). Somerfield summed food and non-food grocery expenditure for the 250 census output areas typically within each isochrone to arrive at local market size.[69] Sales only within the isochrone at the acquired and proximity Somerfield stores (which Somerfield estimated) were then divided by the value of the local market to get pre- and post-merger market shares.

74. Because both measures estimate grocery expenditure only within an isochrone, they underestimate market size as an isochrone is the area of equal drive-time accounting for the vast majority (ie 80 to 90 per cent) of a store's business and not the area accounting for all a store's business. However, we do not think this will systematically affect Somerfield's market share estimates because we think that an estimated share of 80 to 90 per cent of a local market is likely to be similar to an estimated share of 100 per cent of a local market.

75. Our analysis uses local market shares calculated via the first method because market shares calculated from the Chorus data:[70]

- include non-food grocery expenditure;

- are for 2003, whereas the margin data is for 2004 (and there have been store openings or expansions in [✂] of the 115 local markets since 2003); and

- includes grocery expenditure for all grocery retailers, whereas the first method excludes the LADs and symbol groups (ie market shares calculated on the first method are for narrower candidate product markets, which is preferred in margin-concentration analysis).[71]

76. We should note that Somerfield submitted estimates of its pre- and post-merger local market shares and we have estimated pre-merger market share at the acquired stores, which we relate to Morrisons' pre-merger margins, as Somerfield's post-merger market share less its pre-merger market share. However, there are [✂] local markets where more than one Morrisons store was operating pre-merger but Somerfield only acquired one of them. This implies that our estimate of acquired

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[66]We note that Somerfield's estimates do not take account of regional differences in the size of households or income. However, the general concordance between these estimates and those based on the Chorus survey described below—which does allow for socio-demographic factors—suggests to us that this may not be too much of a shortcoming.

[67]Somerfield submitted that its methodology for doing this was conservative because, even for proximity stores at the boundary of an isochrone, the proximity-store revenue attributed to the isochrone was 'less than 50 per cent on only five occasions'.

[68]The Chorus data does not separate how much respondents spent at each supermarket but instead allocates all expenditure to each respondent's main supermarket. For this reason, Somerfield considered estimates of its competitors' local market shares derived from the Chorus data to be unreliable.

[69]The average UK food and non-food grocery expenditure per household in the UK in 2003 implied by this method was £61.

[70]Indeed, Somerfield submitted that the market shares calculated from the Chorus data should be used as a 'cross-check' on its estimates obtained via the first method, which it considered 'useful and reliable'.

[71]The product market used to calculate market shares on Somerfield's first method is that used in the first stage of our local competitive effects methodology with the exceptions that *(a)* it includes the convenience stores of the major multiple grocery retailers and *(b)* it includes Marks & Spencer. Excluding Marks & Spencer from total UK grocery expenditure only reduces average weekly household grocery expenditure to £61 and we do not imagine its inclusion materially affects our results.

stores' pre-merger market shares will be an underestimate in these areas (since Somerfield's post-merger market share will not include Morrisons' entire pre-merger market share). We included an indicator variable in our analysis to attempt to control for this.[72]

77. Our results suggested that, for rural stores, a 10 percentage point increase in pre-merger market share increases pre-merger margins over direct cost by [✂] percentage points, a result that was statistically significant. Average pre-merger market share at the acquired stores was [✂] per cent in rural areas. Somerfield's average pre-merger market share was [✂] per cent in rural areas. For urban stores, our results suggested that a 10 percentage point increase in pre-merger market share increases pre-merger margins over direct cost by [✂] percentage points but this result was not statistically significant.[73] Average pre-merger market share at the acquired stores was [✂] per cent in urban areas. Somerfield's average pre-merger market share was [✂] per cent in urban areas.

*Fascia count*

78. Somerfield submitted that measuring competition between supermarkets using a fascia count—as the CC has previously done when looking at local and national unilateral and coordinated effects in its 2003 Safeway inquiry—is inappropriate in the present inquiry partly because a fascia count fails to take account of the different pull on customers that may be exerted by stores of different sizes and PQRS offers.

79. To help assess this claim, we also included in our analysis the pre-merger count of competitor fascias (submitted by Somerfield) excluding the LADs and Marks & Spencer. For rural stores, we found that reducing the number of competing fascias by one was estimated to increase margins by [✂] percentage points but this result was not statistically significant.[74] The median fascia count was two in rural areas. We found that the number of fascias had no effect on margins in urban areas.

*Other factors*

80. Somerfield submitted that opening hours also were taken into account in setting prices and we included these in our analysis. We found that opening hours had a small but positive and statistically significant effect on margins for both urban and rural stores: for urban stores, opening 1 hour longer a week was estimated to increase margins by [✂] percentage points and by [✂] percentage points for rural stores. Average weekly opening hours were [✂] for urban stores and [✂] for rural stores.

81. In addition, we included an indicator variable for whether the store had a petrol forecourt because Morrisons' store revenue data included petrol revenue but we were unable to strip out the sales, staff and distribution costs associated with petrol retailing from Morrisons' cost data to generate non-petrol margins. Our indicator variable did not have a statistically significant effect for either urban or rural stores' margins.

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[72]The estimated coefficient on this indicator variable is small and insignificant for rural stores (only [✂] of the [✂] local markets with more than one Morrisons pre-merger are rural) but large, positive and significant for urban stores, for [✂] of which it suggests Morrisons' pre-merger market share is underestimated by [✂] per cent (see the annex). We note that our results are qualitatively unaffected by dropping these [✂] local markets from our analysis.
[73]At the conventional 5 per cent level. It is significant at the 6.5 per cent level.
[74]At the conventional 5 per cent level. It was significant at the 10.8 per cent level. For rural stores, the estimated coefficient on fascia count when the pre-merger market share at the acquired store was excluded was [✂] (standard error [✂]), which is significant. Estimates of the other coefficients were unaffected but the $R^2$ of the regression fell to 0.343.

82.    The CC has previously considered that availability of car parking is an attraction to supermarket customers. We included the number of car parking spaces at each store (where applicable, zero where not) in case customers driving to a store tended to spend more than those arriving by other means[75] but the cost of serving them was not any higher. We found that the number of car parking spaces had no effect on margins for either urban or rural stores.

83.    Lastly, we included a set of indicator variables identifying the standard statistical region (as defined by the Government) in which each store was located, as we might expect prices and costs to vary across regions in a manner unrelated to competition in local markets (eg because of differences in household size or income). We found that there were significant differences in margins between rural stores in the six relevant regions but not for urban stores.

## Margin-concentration analysis

84.    The economic intuition behind margin-concentration analysis is that higher concentration is frequently assumed to be associated with greater market power. Market power is commonly thought to result in higher margins (ie higher prices; a narrower, more expensive range; and/or lower quality or service, which lower costs), so the basis of the analysis is to compare margins in different markets in order to see whether those markets in which concentration is higher also tend to be those where margins are higher.[76] Margin-concentration analysis works best where the markets for which concentration is calculated are the narrowest plausible, and where there is sufficient variation in both margins and concentration across the narrow candidate markets examined.

85.    If there appears to be no systematic relationship between a scatter of margins and a range of concentration across these narrowly-defined candidate markets, then this could be consistent with the view that the relevant market is wider than those for which concentration has been calculated (wider either geographically or for the product market, eg the set of effective competitors, or both) and/or the market definition is correct but there are other constraints on the exercise of market power (eg low entry barriers).[77]

86.    Conversely, if there appears to be a positive relationship between margins and concentration, this could be consistent with the view that *(a)* the candidate markets are properly defined and *(b)* the merger might be expected to increase margins as a consequence of concentration increasing.

87.    In standard economic models of competition between producers of differentiated products (often called 'brands') in concentrated industries, like supermarkets, the price-cost margin of a brand is inversely related to its elasticity of demand.[78] So a supermarket that is very 'convenient' (eg in terms of its location or longer opening hours), or one that is distinctive in its PQRS offer, may be expected to earn higher margins and have a higher share of market revenue.

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[75]For example, see NOP's survey results.
[76]We note that market power might result in some effects which would not be taken into account in this analysis, for example managerial slack, which would not necessarily impact margins in the short term.
[77]We note that the absence of any positive relationship between margins and concentration may also indicate that local competition between supermarkets is not best captured by margin data, in which case an SLC and consequent consumer detriment arising from increased market power that is not related to this particular measure of supermarket performance would still be consistent with these results in our margin-concentration analysis.
[78]This is known as the Lerner condition.

88. In these standard models, the effect of a merger is to encourage the merged entity to raise the price of one or more of the brands it controls post-merger (or to worsen PQRS in the case of supermarkets) because it can internalize the effect of customers substituting between its jointly-owned brands. The extent to which the merged entity worsens PQRS depends on the degree of substitutability between customers of the merged brands: the higher the degree of substitutability, the greater the scope for post-merger price increases.[79]

89. The result is that the demand faced by other supermarkets is increased and these competitors react unilaterally to the increase in demand. This unilateral reaction will generally involve an increase in their unit sales at somewhat higher prices (because the merged entity usually reduces output by more than the total market reduction in output).

90. The higher prices of competitors here are not an accommodating response, however, such as they would be in standard economic models of competition in concentrated markets where competing products are relatively undifferentiated and firms compete by choosing how much of each undifferentiated product to produce subject to some market price.[80] (In these standard models, concentration—specifically HHI—matters because the relative shares of competing firms dictate their willingness to accommodate.) Rather the higher prices are a result of unilateral profit maximization given the greater demand that competitors face.

91. The implications for our margin-concentration analysis are that:

- pre-merger market share at the acquired store, rather than (say) HHI, should be a sufficient statistic for market concentration in our analysis (ie a positive relationship between pre-merger margins and pre-merger market share in our analysis may indicate the local markets are properly defined);[81] but

- post-merger market shares (ie the sum of Somerfield and Morrisons' pre-merger market shares) may not be good predictors of competitive effects because they may not capture the closeness of pre-merger competition between Morrisons and Somerfield (ie although a positive relationship between margins and market share may imply that the merger might be expected to increase margins as Somerfield's market share increases, it is not likely to accurately say by how much).[82]

*Somerfield's comments on the margin-concentration analysis*

92. Somerfield disagreed with the results of the margin-concentration analysis, submitting that:

- it would not be profitable for grocery retailers to exploit market power by degrading Q, R and S (for more on this see paragraphs 94 to 97);

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[79]We note that marginal cost reductions from the merger are also likely to be passed on to customers at a greater rate, the greater is the substitutability between the merged brands, which is partly why we consider it more appropriate to examine the relationship between margins and concentration than between (say) price and concentration.
[80]The accommodating responses of competitors in these standard economic models are sometimes referred to as multilateral effects to distinguish them from the unilateral effects discussed here. Both multilateral and unilateral effects should be distinguished from coordinated effects, which occur when a group of firms, as a result of the increased concentration and perceived interdependence between them brought about by a merger, attain greater market power.
[81]We note that the Lerner condition may imply the existence of simultaneity bias in the coefficient on Morrisons' pre-merger market share in our econometric analysis, further reducing the ability of our analysis to simulate post-merger margin increases arising from worsening PQRS. The possible existence of this simultaneity bias does not impede the usefulness of our analysis as a tool of market definition, however.
[82]Further, Somerfield plans to re-brand the acquired Morrisons (most of which still had a Safeway fascia at the time of the acquisition) and it is hard to predict post-merger increases in margins from the standard economic model in the presence of this brand repositioning.

- there is only a weak relationship between the amount of local competition a Somerfield store faces and which national price tier it is in;[83] and

- any such difference in price between 'monopoly' Somerfield stores and those facing more competition averaged less than [✂] per cent across the Somerfield estate.[84]

93. We did not find this convincing for two reasons (for more on this, see paragraphs 98 to 105):[85]

- the relationship between Somerfield's price levels and local fascia count appeared to us to be strong and not very weak—the correlation between the proportion of stores on Somerfield's lowest price tier and the number of competing fascias those stores faced locally was [✂] for the 97 acquired mid-range stores; and

- the price differences between 'monopoly' stores across the estate and stores facing more local competition are based upon a price index calculated for the same basket of shopping bought on high and low price tiers but this ignores the ability of stores facing less local competition to skew their offering (outside the defined basket) towards more expensive items instead of cheaper ones, for example by stocking a greater range of expensive items and a narrower range of cheaper ones, or by allocating more shelf space to more expensive items instead of cheaper ones within the same range.[86]

*Analysis of service intensity at acquired stores*

94. Somerfield noted that the CC had explored a non-price (ie quality, range and service) theory of local competitive harm, in respect of which it submitted that the main lever that affects the level of customer service is the ability to flex the amount of labour budgeted for a particular store, which—for Somerfield—is determined centrally and does not take into account the competitive environment in which the store operates. Somerfield added that an analysis of whether customers at 'monopoly' locations get worse service than those where more competitors are present could help to evaluate the likelihood of the acquisition giving rise to anticompetitive effects.

95. To investigate this, we analysed data supplied by Morrisons on staff costs and revenue for the acquired stores, which we used to construct a measure of 'service intensity per sq metre', ie how much has to be spent on staff costs per sq metre to garner £1-worth of revenue.[87] We examined how our measure varied with the level of local competition pre-merger at the acquired stores, which we measured with our

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[83]Somerfield submitted that there was a very weak relationship between its price tiers and concentration (measured by fascia count) in the local markets in which [✂] of the acquired mid-range stores and [✂] of the mid-range stores across its estate operated.

[84]Somerfield submitted that its current prices in [✂] mid-range stores differed by less than [✂] per cent between local 'monopoly' stores and those stores that face competition from one rival fascia in their local markets, and by [✂] per cent for those stores that face competition from four rival fascias.

[85]See also footnotes 55, 60, 61 and 63.

[86]Moreover, it is not clear what the basket value used by Somerfield to calculate these price differences actually measures. For example, Somerfield says a basket on its high-price tier (C) is [✂] per cent more expensive than on its low-price tier (A). This is based on comparing the average of the median price within four categories of products (categories defined essentially by how well the products in each sell) on tier A with the average of the median price within the same four categories of products on tier C.

[87]Somerfield submitted that staff costs could be used for just such an exercise. Somerfield submitted that an analysis of service intensity per sq metre would be more appropriate than an analysis of service intensity (ie staff costs as a percentage of revenue) because the staff cost of a grocery store is a function of its size rather than its revenue and local monopoly stores may be more efficient without providing lower service quality. That is, if two stores are the same size then they will have similar staff costs. However, if one of these is a local monopolist with higher sales per sq metre (because it is more efficient) its staff cost per £ of revenue will be much lower. Its staff cost per sq metre for every £ of revenue should not be, however, unless it is exercising market power to worsen service intensity.

estimates of Morrisons' pre-merger market share, derived from Somerfield's estimates of its pre- and post-merger market shares as described above.[88] The results are given in Figure 5, which shows that service intensity per sq metre appears to have declined dramatically as the degree of local competition faced by the acquired stores pre-merger lessened: a monopoly store having had to try as little as one-quarter to one-third as hard to win business as a store that faced the greatest amount of competition.

FIGURE 5

**Relationship between pre-merger service intensity per sq metre and local competition**

[✂]

*Source:* Morrisons, Somerfield and CC calculations.

96.     However, Somerfield submitted other qualitative evidence on Q, R and S that contradicted this: namely, customer feedback concerning the effects of the acquisition, in the first two weeks of June 2005 for [✂] of the acquired stores. We note that any harmful effects on Q, R and S may already have been felt well before this (meaning disgruntled customers may have already abandoned Somerfield by the time this customer feedback was collected, whereas customers who are satisfied will have stayed), but there does not appear to be any relationship between the proportion of positive or negative comments received and the degree of worsening of local competition, as measured by the fascia count.

97.     Of a total of [✂] comments summarized by Somerfield, [✂] were positive ([✂] per cent), [✂] were negative ([✂] per cent) and [✂] were mixed or neutral ([✂] per cent) so, on balance, Somerfield customers thought the acquisition had a negative effect. When account is taken of the fact that some of the [✂] stores have far more customers than others, meaning they may be more likely to have any customer feedback (ie when the proportions of positive and negative responses are weighted), [✂] per cent of responses are negative and [✂] per cent positive.[89] However, Table 10 shows that there is no relationship between the proportion of both positive and negative responses, and the number of fascias in the isochrone post-merger.[90]

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[88]We excluded the [✂] (out of 115) local markets where more than one Morrisons was operating pre-merger but where Somerfield acquired only one. We also excluded [✂] stores where staff, revenue or store size data was missing and [✂] where our estimate (based on Somerfield's calculations) of Morrisons' pre-merger market share was greater than 100 per cent. Our results are not affected by excluding these [✂] stores.

[89]We account for the fact that some stores have more customers than others by calculating averages weighted by the number of customers at each store in the week ending 3 April 2005, the latest data at our disposal. We get the same results if we weight instead by the number of responses per store and if we do not weight the average proportion of respondents at all.

[90]An F-test cannot reject the null hypothesis that there are no differences in the proportion of positive and negative responses by fascia count, $F_{5,41}=0.47$ (p=0.79) for the proportion of positive responses and $F_{5,41}=0.85$ (p=0.52) for the proportion of negative responses. These F-tests do not pool 4, 5 and 6 fascias into '4 or more'.

TABLE 10  **Proportion of positive and negative customer feedback at [✂] acquired stores, June 2005**

|  |  |  | *Proportion of responses, %* | | | |
|---|---|---|---|---|---|---|
|  |  |  | *Positive* | | *Negative* | |
| *Fascias* | *Responses* | *Stores* | *Weighted average\** | *Standard deviation* | *Weighted average\** | *Standard deviation* |
| 1 | | | | | | |
| 2 | | | | | | |
| 3 | | | ✂ | | | |
| 4 or more† | | | | | | |
| Total | | | | | | |

*Source:* Somerfield and CC calculations.

*Weighted by the number of customers at each store in the week ending 3 April 2005, which is the latest data at our disposal.
†[✂] stores and [✂] respondents are in isochrones with 4 fascias, [✂] stores and [✂] respondents are in isochrones with 5 fascias, and [✂] store and [✂] respondents are in isochrones with 6 fascias.

### *Analysis of price tiers and basket value at acquired stores*

98. Further to paragraph 93, we analysed the relationship between the degree of local competition faced by [✂] of the acquired stores (as measured by the number of fascias in the relevant isochrone) and the price tier as well as the average 'basket value' (ie revenue divided by the number of customers, that is average spend per customer).

99. Our results are given in Table 11, which shows that there is a strong, positive relationship between the proportion of acquired stores in Somerfield's cheapest price tier (tier A) and the degree of local competition faced by the acquired stores: [✂] per cent of 'monopoly' acquired stores are on the cheapest price tier, [✂] per cent of acquired stores facing one competitor are on tier A, and [✂] per cent of acquired stores facing between two and five competitors are on this tier. Indeed, the correlation between the number of fascias in an isochrone and the proportion of acquired stores on Somerfield's cheapest price tier is [✂].

TABLE 11  **Price tiers and basket values in [✂] acquired stores**

| | *Number of stores* | | | *Basket value w/e 3 April 2005, £\** | | | |
|---|---|---|---|---|---|---|---|
| | | *In price tier A* | | | | | |
| *Number of fascias* | *Total* | *Number* | *Percentage* | *Average* | *Standard deviation* | *Minimum* | *Maximum* |
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | ✂ | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |

*Source*: Somerfield.

*We note that these basket values do not appear to be affected by store size. That is, average basket value per sq metre declines from £[✂] with 1 fascia, to £[✂] with 2, £[✂] with 3, £[✂] with 4, £[✂] with 5 and £[✂] with 6. These differences are not statistically significant the conventional 5 per cent level, however (they are significant at 8 per cent, $F_{5,103}$=2.02, p=0.08).

100. Table 11 also shows that—instead of the price of the same basket of goods costing less than [✂] per cent extra in monopoly stores—the average value of baskets of goods actually sold at monopoly stores (£[✂]) is between [✂] per cent cheaper for

acquired stores in isochrones with two fascias (£[✂]) and [✂] per cent cheaper for acquired stores in isochrones with six fascias (£[✂]).[91] These differences are statistically significant.[92, 93]

101. Somerfield submitted that local competition is better measured using market shares than fascia counts. The relationship between average basket value and Somerfield's post-merger market share—analogous to the relationship between average basket value and fascia count in Table 11—is given in Figure 6, which shows a strong, positive relationship between post-merger average basket values and post-merger market share at [✂] of the [✂] acquired stores.

102. The slope of the line in Figure 6 also suggests that—instead of the price of the same basket of goods being less than [✂] per cent more in monopoly stores—the effect of a [✂] percentage point increase in Somerfield's market share (roughly the increment arising from the merger) is to increase average basket value by [✂]p.[94] From Table 11, this represents a price premium from the merger of between [✂] per cent for acquired stores facing one competitor (ie £[✂]/£[✂]=[✂]) and [✂] per cent for acquired stores facing five competitors (ie £[✂]/£[✂]=[✂]).

[91]The correlation between the number of fascias and the average basket value is [✂].
[92]For all fascias $F_{5,104}$=3.18 (p=0.010). All other average basket values are significantly different to the one-fascia basket-value except for the £[✂] for stores in isochrones with five fascias and the £[✂] for stores in isochrones with six fascias (the latter is significant at the 11 per cent level instead of the conventional 5 per cent but this is because there are only two stores).
[93]Somerfield submitted these differences were inconsistent with the results of the margin-concentration analysis summarized in paragraph 65, which it said were equivalent to a price rise for merger to monopoly of less than [✂] per cent. In fact, our margin-concentration analysis predicts an increase in margins of less than [✂] percentage points (not per cent) for merger to monopoly in rural areas (see paragraph 65), which is an 11 per cent increase in margins. This is equivalent to an 11 per cent increase in price with costs unaltered, not [✂] per cent.
[94]The slope of the line in Figure 6 may only approximate the true underlying relationship between basket value and concentration.

FIGURE 6

**Relationship between average basket value (revenue/customers) for week ending 3 April 2005 and Somerfield's estimated post-merger market share for [✂] acquired stores**

[✂]

*Source*: Somerfield.
*Note:* Excludes three acquired stores where Somerfield's estimated post-merger market share is greater than 100 per cent ([✂], [✂] and [✂]). Results are robust to the exclusion of these stores.

103. We should note that there may be reasons unrelated to the degree of local competition why the average basket value at acquired stores decreases as the number of competing local fascia in the isochrone increases. For example, customers' shopping missions may differ between local areas with few competitors (where Somerfield stores may have a greater share of primary shopping) and local areas with many competitors (where Somerfield stores may have a greater share of secondary or distress shopping, especially if there is a one-stop shop in the isochrone).

104. The results of NOP's survey suggest that this may not be the case, however. Table 12 shows that the proportion of survey respondents doing a main shop does not noticeably decrease until there are three fascias in the isochrone and even these differences are not statistically significant.[95]

TABLE 12  **NOP survey respondents doing main shop and number of fascias in isochrone**

*Respondents doing main shop per store*

| Number of fascias | Average number | Standard deviation | Average % of all respondents | Standard deviation, % |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | ✂ | | |
| 4 | | | | |
| 5 | | | | |

*Source:* NOP survey.

105. Somerfield submitted that it expected basket size and the level of local competition to be correlated because if a customer has fewer places to shop, then the customer will spend more in each of the shops they use, but this did not mean that customers who buy higher-value baskets are subject to the exercise of market power.

106. Again, however, the results of NOP's survey suggest that this may not be the case. There were [✂] respondents who only used the acquired Somerfield, for all their shopping, [✂] of whom were doing a main shop. Were Somerfield's point correct, we might expect there to be no systematic difference between average expenditure for these customers according to the number of locally competing fascias because these customers do not take account of the number of shops locally (as they always shop at Somerfield) and are all on the same main shopping mission (so any differences in their expenditure are not because they are top-up shopping). (That is not to say there

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[95]For example, tests that the average proportions of main shoppers at surveyed stores in isochrones with four ([✂] per cent) and five ([✂] per cent) fascias are the same as the [✂] per cent of main shoppers at surveyed stores in isochrones with three fascias return t=0.79 (p=0.430) and t=1.26 (p=0.210) respectively, suggesting the proportions are the same.

will be no differences in average expenditure—because of local differences in income and tastes, for example—but only that any such differences for these customers should not, by Somerfield's reasoning, be systematically related to differences in local competition.) In fact, however, Table 13 shows that average expenditure for these customers declines systematically as local competition increases.[96]

Table 13 **Expenditure on main shop for survey respondents loyal to Somerfield**

|  | | *Main shop expenditure £* | |
|---|---|---|---|
| *Number of fascias* | *Respondents* | *Average* | *Standard deviation* |
| 1 | | | |
| 2 | | ✂ | |
| 3 or more* | | | |

*Source*: NOP survey.

*[✂] respondents in isochrones with three fascias, [✂] respondents in isochrones with four fascias and [✂] respondents in isochrones with five fascias.

107.    Similarly, Somerfield submitted that prices could be higher in remote rural locations because distribution-costs are higher, meaning remote areas are likely to support fewer fascias all else being equal. This could generate a spurious negative relationship between price and the number of local fascias that is unrelated to the degree of local competition. Conversely, Co-op submitted that prices could be higher in urban areas because rents are higher[97] (urban acquired stores are [✂] times more likely to be leasehold than freehold and over [✂] times more likely to be leasehold than rural stores[98]) but densely-populated areas may be likely to support more fascias all else being equal.[99] This could generate a spurious positive relationship between price and the number of local fascias that is unrelated to the degree of local competition. There seems no reason to suppose one effect is stronger than the other and we do not have the data to investigate this.

[96]By 'systematically' we mean that these differences are statistically significant. $F_{2,224}=4.45$ (p=0.013) rejects the hypothesis that there are no differences between the average expenditure on main shopping by survey respondents across the fascia counts in Table 13.
[97]We understand that the high opportunity cost of alternative uses other than grocery retailing for shop space in urban areas drives rents up.
[98][✂] acquired stores in rural areas are leasehold and [✂] acquired stores in urban areas are leasehold. Conversely, [✂] acquired stores in rural areas are freehold and [✂] acquired stores in urban areas are freehold. This implies urban acquired stores are over [✂] times more likely to be leasehold than are rural acquired stores (as [✂]/([✂]+[✂])=[✂] gives the proportion of rural stores that are leasehold, ([✂]/([✂]+[✂])=[✂] gives the proportion of urban stores that are leasehold and [✂]/[✂]=[✂]).
[99]Somerfield submitted that salary costs could be higher in urban areas. In our sample of acquired stores, pre-merger staff costs per sq foot of store size averaged £[✂] for urban stores (standard deviation £[✂]) and £[✂] for rural stores (standard deviation £[✂]).

# Competitor opening impact analysis regression results

TABLE 14  **Regression results for Somerfield stores**

| Independent variable | Coefficient | Standard error | t statistic | Pr t>T | 95% confidence interval |
|---|---|---|---|---|---|
| Drive-time | | | 5.720 | 0.000 | |
| Aldi | | | 2.890 | 0.005 | |
| Asda | | | 0.170 | 0.867 | |
| Budgens | | | 0.260 | 0.792 | |
| Co-op | | | 0.070 | 0.942 | |
| Lidl | | | 2.430 | 0.017 | |
| Marks & Spencer | | | 1.930 | 0.057 | |
| Morrisons | | | −0.330 | 0.743 | |
| Netto | | | | | |
| Safeway | | | −2.150 | 0.033 | |
| Sainsbury's | | | −0.320 | 0.748 | |
| Waitrose | | | −0.710 | 0.477 | |
| Competitor size ('000ft$^2$) | | | −1.430 | 0.156 | |
| Aldi x size | | | −2.690 | 0.008 | |
| Asda x size | | | 0.220 | 0.827 | |
| Budgens x size | | | 0.460 | 0.644 | |
| Co-op x size | | | 0.770 | 0.443 | |
| Lidl x size | | | −1.000 | 0.319 | |
| Marks & Spencer x size | | | −1.270 | 0.208 | |
| Morrisons x size | | | 0.450 | 0.650 | |
| Netto x size | | | 0.570 | 0.570 | |
| Safeway x size | | | 2.260 | 0.026 | |
| Sainsbury's x size | | | 1.020 | 0.310 | |
| Waitrose x size | | | 1.010 | 0.315 | |
| Somerfield size (000ft$^2$) | | | 0.680 | 0.495 | |
| Multiple Openings | | | 2.170 | 0.032 | |
| 1998Q2 | | | | | |
| 1998Q3 | | | −2.510 | 0.014 | |
| 1998Q4 | | | −2.190 | 0.031 | |
| 1999Q1 | | | −1.870 | 0.064 | |
| 1999Q2 | | | −0.400 | 0.691 | |
| 1999Q3 | | | −0.900 | 0.368 | |
| 1999Q4 | ✀ | | −1.840 | 0.068 | ✀ |
| 2000Q1 | | | −1.230 | 0.220 | |
| 2000Q2 | | | −2.110 | 0.037 | |
| 2000Q3 | | | −1.920 | 0.057 | |
| 2000Q4 | | | −1.030 | 0.306 | |
| 2001Q1 | | | −1.540 | 0.126 | |
| 2001Q2 | | | −0.570 | 0.572 | |
| 2001Q3 | | | −1.260 | 0.210 | |
| 2001Q4 | | | −0.370 | 0.715 | |
| 2002Q1 | | | 0.280 | 0.782 | |
| 2002Q2 | | | −2.420 | 0.017 | |
| 2002Q3 | | | −0.560 | 0.579 | |
| 2002Q4 | | | −1.410 | 0.160 | |
| 2003Q1 | | | 1.340 | 0.183 | |
| 2003Q2 | | | −0.780 | 0.437 | |
| 2003Q3 | | | −1.410 | 0.160 | |
| 2003Q4 | | | 0.320 | 0.747 | |
| 2004Q1 | | | −1.180 | 0.243 | |
| 2004Q2 | | | −4.810 | 0.000 | |
| 2004Q3 | | | −0.420 | 0.678 | |
| 2004Q4 | | | −2.640 | 0.010 | |
| East Anglia | | | −0.210 | 0.831 | |
| East Midlands | | | 0.010 | 0.990 | |
| London | | | 0.500 | 0.618 | |
| NorthEast | | | −1.380 | 0.169 | |
| North-West | | | 0.190 | 0.848 | |
| South-East | | | 0.040 | 0.964 | |
| South-West | | | 0.010 | 0.994 | |
| Scotland | | | 0.940 | 0.350 | |
| West Midlands | | | 0.220 | 0.826 | |
| Yorkshire & Humberside | | | −0.210 | 0.834 | |
| Constant | | | −2.930 | 0.004 | |

| Independent variable | Coefficient | Standard error | t statistic | Pr t>T | 95% confidence interval |
|---|---|---|---|---|---|
| *Diagnostics* | | | | | |
| $R^2$ | 0.6106 | | | | |
| Observations | [✂] | | | | |
| F-test of fascia dummies | $F_{10,107}=2.68$ | p=0.006 | | | |
| F-test of fascia dummies x size | $F_{11,107}=1.37$ | p=0.197 | | | |
| F-test of quarterly dummies | $F_{26,107}=3.37$ | p=0.000 | | | |
| F-test of regional dummies | $F_{10,107}=0.87$ | p=0.562 | | | |

*Source:* CC calculations.

*Notes:*
1. Dependent variable is percentage change in sales at Somerfield store.
2. Method of estimation is ordinary least squares.
3. Standard errors are robust to heteroscedasticity and serial correlation of arbitrary form.
4. Coefficients significant at 1 per cent in bold italics.
5. Coefficients significant at 5 per cent in bold.
6. Coefficients significant at 10 per cent in italics.

| Independent variable | Coefficient | Standard error | t statistic | Pr t>T | 95% confidence interval |
|---|---|---|---|---|---|

TABLE 15 **Regression results for Kwik Save stores**

| Independent variable | Coefficient | Standard error | t statistic | Pr t>T | 95% confidence interval |
|---|---|---|---|---|---|
| Drive-time | | | 4.570 | 0.000 | |
| Aldi | | | −0.570 | 0.573 | |
| Co-op | | | 5.920 | 0.000 | |
| Iceland | | | | | |
| Lidl | | | 3.270 | 0.002 | |
| M&S | | | | | |
| Morrisons | | | 0.280 | 0.778 | |
| Safeway | | | 2.120 | 0.037 | |
| Sainsbury's | | | 2.010 | 0.047 | |
| Tesco | | | 1.540 | 0.127 | |
| Waitrose | | | 1.810 | 0.075 | |
| Competitor size ($'000ft^2$) | | | 2.290 | 0.025 | |
| Aldi x size | | | 1.400 | 0.165 | |
| Co-op x size | | | −4.190 | 0.000 | |
| Iceland x size | | | 2.250 | 0.027 | |
| Lidl x size | | | −0.700 | 0.485 | |
| M&S x size | | | 3.570 | 0.001 | |
| Morrisons x size | | | −0.440 | 0.663 | |
| Safeway x size | | | −2.170 | 0.033 | |
| Sainsbury's x size | | | −0.810 | 0.418 | |
| Tesco x size | | | −1.220 | 0.227 | |
| Waitrose x size | | | −1.250 | 0.214 | |
| Kwik Save size ($'000ft^2$) | | | −2.120 | 0.037 | |
| Multiple Openings | | | −2.140 | 0.036 | |
| 1998Q2 | | | −0.700 | 0.487 | |
| 1998Q3 | | | 0.390 | 0.699 | |
| 1998Q4 | | | −0.700 | 0.489 | |
| 1999Q1 | | | −1.020 | 0.312 | |
| 1999Q2 | | | −0.840 | 0.404 | |
| 1999Q3 | ✂ | | −1.260 | 0.211 | ✂ |
| 1999Q4 | | | −0.970 | 0.334 | |
| 2000Q1 | | | −0.980 | 0.330 | |
| 2000Q2 | | | −0.740 | 0.459 | |
| 2000Q3 | | | −1.030 | 0.306 | |
| 2000Q4 | | | −1.080 | 0.284 | |
| 2001Q1 | | | −1.190 | 0.238 | |
| 2001Q2 | | | −0.660 | 0.509 | |
| 2001Q3 | | | −0.660 | 0.510 | |
| 2001Q4 | | | −2.320 | 0.023 | |
| 2002Q1 | | | | | |
| 2002Q2 | | | −0.590 | 0.555 | |
| 2002Q3 | | | −1.410 | 0.163 | |
| 2002Q4 | | | −0.780 | 0.437 | |
| 2003Q1 | | | −0.870 | 0.388 | |
| 2003Q2 | | | −0.250 | 0.805 | |
| 2003Q3 | | | −0.760 | 0.452 | |
| 2003Q4 | | | 0.570 | 0.570 | |
| East Anglia | | | 0.610 | 0.541 | |
| East Midlands | | | 0.840 | 0.401 | |
| London | | | 1.290 | 0.202 | |
| North-East | | | 1.210 | 0.228 | |
| North-West | | | 1.840 | 0.069 | |
| South-East | | | −0.920 | 0.360 | |
| South-West | | | −1.150 | 0.253 | |
| Scotland | | | 0.510 | 0.610 | |
| West Midlands | | | 1.990 | 0.050 | |
| Yorkshire & Humberside | | | −0.850 | 0.400 | |
| Constant | | | −2.05 | 0.044 | |

*Diagnostics*

| | | |
|---|---|---|
| $R^2$ | 0.7051 | |
| Observations | [✂] | |
| F-test of fascia dummies | $F_{8,86}$=9.91 | P=0.000 |
| F-test of fascia dummies x size | $F_{10,86}$=5.32 | P=0.000 |
| F-test of quarterly dummies | $F_{22,86}$=5.98 | P=0.000 |
| F-test of regional dummies | $F_{10,86}$=0.96 | P=0.484 |

## Margin-concentration analysis regression results

TABLE 16  **Regression results for rural stores**

| Independent variable | Coefficient | Standard error | t statistic | Pr t>T | 95% confidence interval |
|---|---|---|---|---|---|
| Pre-merger revenue market share at acquired store | | | 5.600 | 0.000 | |
| More than one pre-merger Morrisons indicator | | | 1.030 | 0.308 | |
| Fascia count | | | −1.650 | 0.108 | |
| Midlands regional indicator | | | 2.130 | 0.040 | |
| North-East regional indicator | | | 3.100 | 0.004 | |
| North-West regional indicator | ✄ | | 3.360 | 0.002 | ✄ |
| Scotland regional indicator | | | 2.440 | 0.020 | |
| South-West regional indicator | | | 1.140 | 0.262 | |
| Store opening hours per week | | | 2.280 | 0.028 | |
| Car parking spaces at store | | | 0.370 | 0.714 | |
| Petrol forecourt at store | | | −0.680 | 0.502 | |
| Intercept | | | −0.930 | 0.357 | |

| | | |
|---|---|---|
| $R^2$ | 0.665 | |
| Number of observations | 48 | |
| Regional dummies significance | $F_{5,36}=3.60$ | p=0.010 |

*Source:* CC calculations.

TABLE 17  **Regression results for urban stores**

| Independent variable | Coefficient | Standard error | t statistic | Pr t>T | 95% confidence interval |
|---|---|---|---|---|---|
| Pre-merger revenue market share at acquired store | | | 1.920 | 0.065 | |
| More than one pre-merger Morrisons indicator | | | 6.290 | 0.000 | |
| Fascia count | | | 0.640 | 0.529 | |
| London regional indicator | | | −0.130 | 0.896 | |
| North-East regional indicator | ✂ | | −0.570 | 0.571 | ✂ |
| Scotland regional indicator | | | −0.610 | 0.543 | |
| South-East regional indicator | | | 0.050 | 0.960 | |
| Store opening hours per week | | | 3.560 | 0.001 | |
| Car parking spaces at store | | | −0.680 | 0.502 | |
| Petrol forecourt at store | | | −0.140 | 0.891 | |
| Intercept | | | −0.910 | 0.370 | |

| | | | |
|---|---|---|---|
| $R^2$ | 0.503 | | |
| Number of observations | 40 | | |
| Regional dummies significance | $F_{4,27}=0.17$ | p=0.952 | |

*Source:* CC calculations.

*Notes*:
1. Dependent variable is pre-merger margin over direct cost (ie sales less cost of sales, staff costs and distribution costs) at acquired store.
2. Method of estimation is Ordinary Least Squares.
3. Standard errors are robust to heteroscedasticity and serial correlation of arbitrary form.
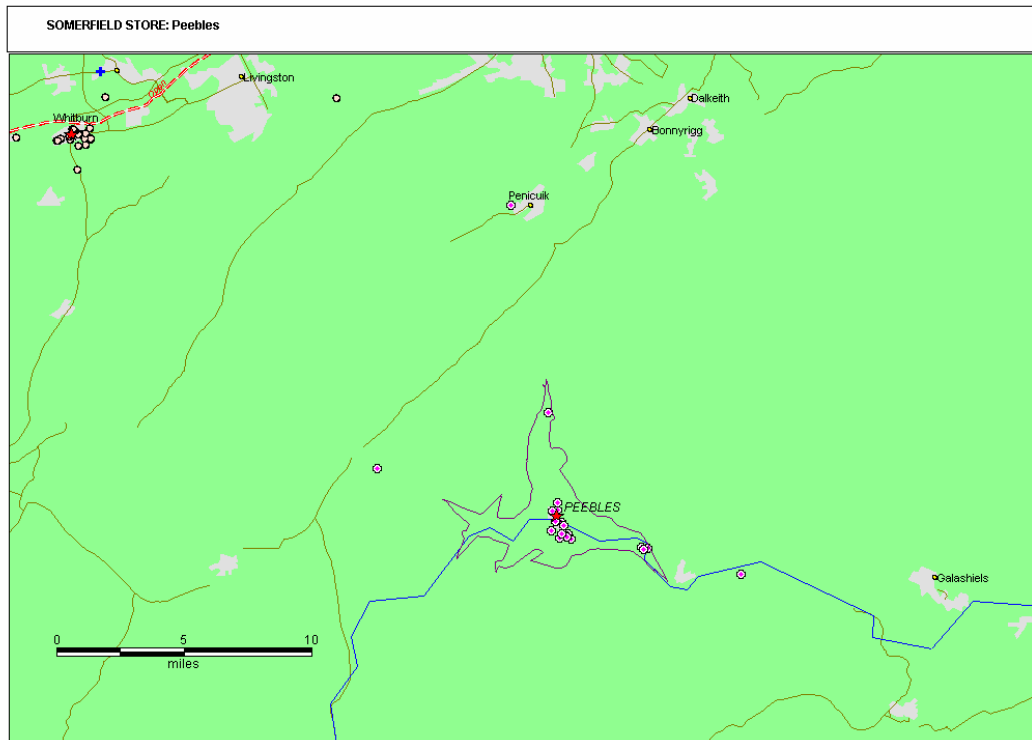4. Anglia is omitted regional indicator variable.

FIGURE 7

**Maps with 10-minute drive-time isochrones and postcodes of survey respondents accounting for 80 per cent of store's revenue from drivers**
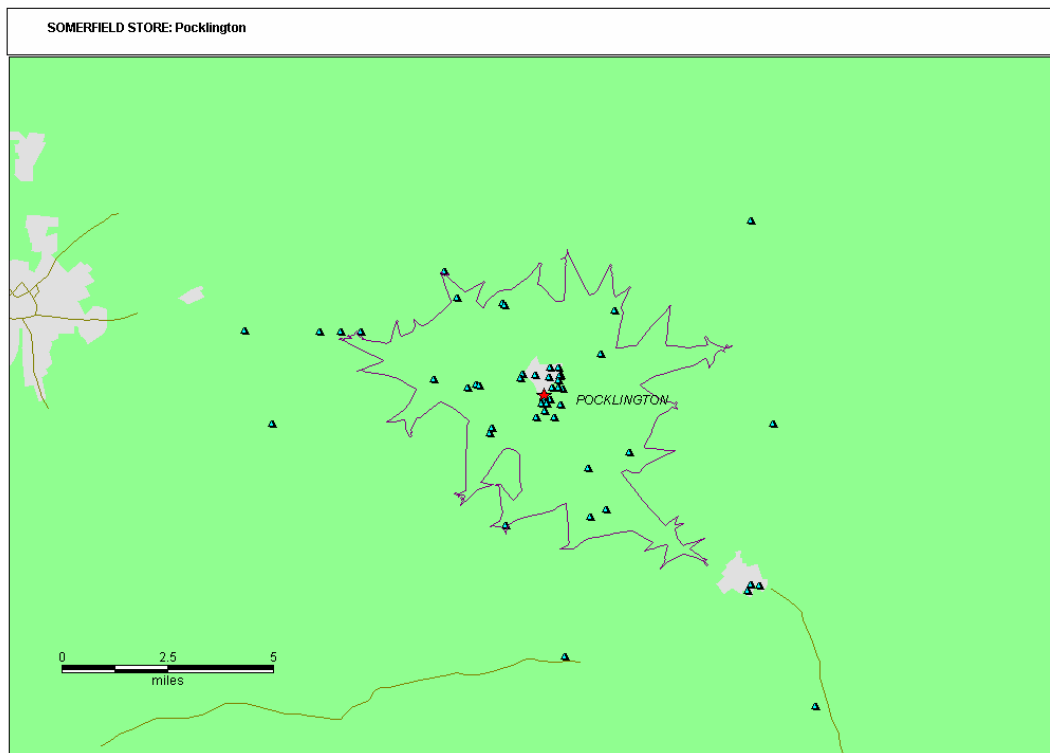
*Kelso*



SOMERFIELD STORE: Kelso Roxborough Street
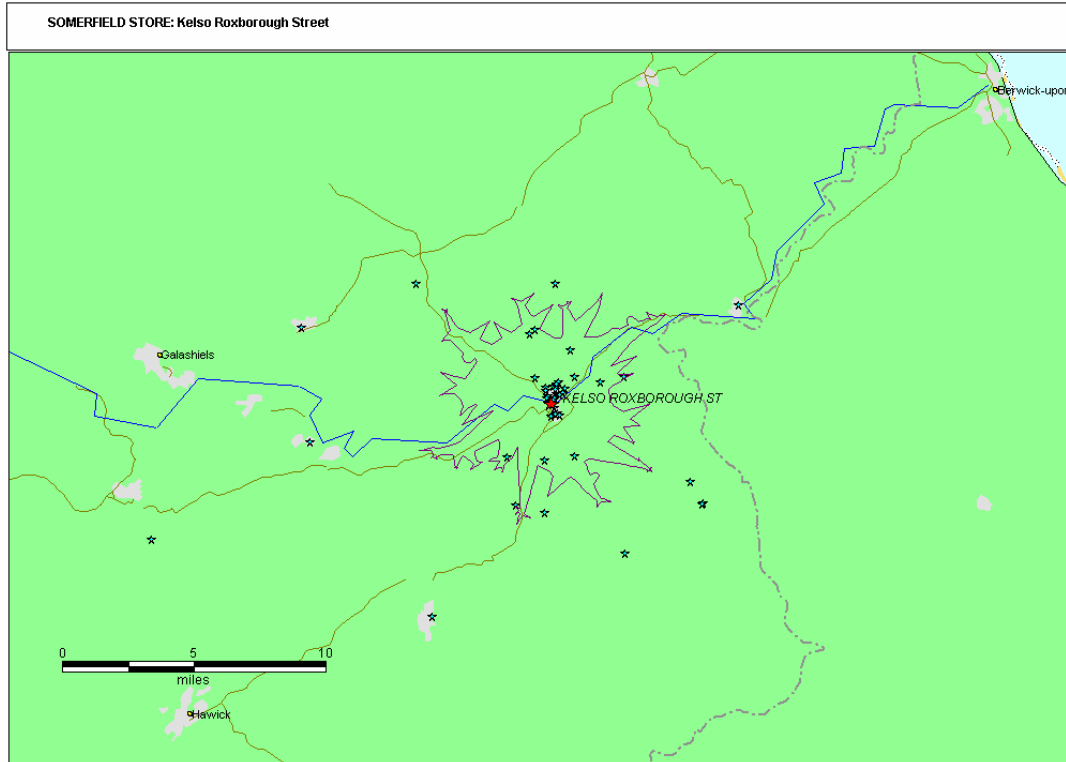
## *Peebles*



## *Pocklington*



*Source:* CC study from NOP survey.