10 Operating costs and quality of service

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Introduction

10.1. An evaluation of the competitive performance of companies requires consideration of not only prices and profitability, but also of quality of service and efficiency. We examined the main parties' operating costs and capital investment at both group and store levels and quality of service. The prices paid for goods purchased for resale are considered in more detail in Chapter 11. Land and building costs (which comprise the bulk of a multiple's investment in fixed assets) are discussed in Chapter 12. In this chapter we concentrate on operating costs and quality of service.

10.2. We first provide a brief description of the main components of operating costs. This is followed by a summary of the main parties' views on the monitoring of costs and efficiency. We then

describe our analysis of store costs for the main parties, where we employed regression analysis to test for the presence of economies of scale, examine the impact of sales density, and evaluate the differences in store costs between the main parties. Next, we look at the quality of service provided (in terms of range of products, queuing times, additional services and so on) and attempt to assess its impact on store costs. We then turn to non-store costs, and examine whether there is evidence to suggest the presence of economies of scale at the company level. Finally, we consider international cost comparisons.

Operating costs

10.3. On average, the cost of supplying groceries from Asda, Morrison, Safeway, Sainsbury and Tesco comprises:

(a) the cost of goods for resale (83 per cent);

(b) operating costs, comprising:

(i) staff costs (9 per cent);

(ii) other operating costs, consisting of non-staff operating costs, including utilities, outsourced activities and bought-in services (for example cleaning), but excluding rent and rates (5 per cent); and

(iii) capital costs, comprising land-related costs, rent, rates, and depreciation of land and property (3 per cent).

However, as shown in Table 10.1, there are significant differences between the multiples. For example, Netto, a hard discounter, has much lower operating costs as a percentage of the total than the other companies shown.

TABLE 10.1 **Operating costs as a percentage of total costs for a sample of the main parties, 1998/99**

Item	*Asda*	*Morrison*	*Netto*	*Safeway*	*Sainsbury*	*Somerfield*	*Tesco*	*Waitrose*
Cost of goods for resale Staff costs Other operating costs Capital costs	*Figures omitted. See note on page iv.*							

Source: CC survey.

10.4. Staff costs and other operating expenditure are incurred in all aspects of the main parties' operations. For Asda, Morrison, Safeway, Sainsbury and Tesco operating costs are principally incurred in:

(a) store costs (75 per cent);

(b) distribution costs (13 per cent); and

(c) overheads (12 per cent).

Again, there are significant differences between the operators.

Monitoring costs and efficiency

10.5. We asked the main parties how they measure performance at the store level and in their distribution operations.

Stores

10.6. All the main parties measure store efficiency and productivity, although the extent varies from company to company. The types of measures used (often described as key performance indicators) are similar, broadly falling into five main areas:

(a) sales, although some companies concentrate on total sales volume—particularly those with relatively consistent store sizes—while others concentrate on sales per sq metre or year-on-year sales growth;

(b) costs—the majority monitor labour costs, several also monitor other store-controlled costs;

(c) profitability/contribution—most monitor store profit or contribution, although precise definitions of these terms differ between companies;

(d) stock levels and availability—the majority monitor stock losses;

(e) human resources; and

(f) customer service.

Distribution

10.7. On distribution, similar efficiency measures were referred to, although there was rather more difference in the detail than is the case of stores. This may partly reflect differences in operation, with some companies carrying out all distribution in-house, some contracting it out completely and some using a mixture of both (see paragraph 10.67). The most significant measure mentioned was costs, although some concentrate on total cost, some on cost per case and some on labour cost per case. No other factor was mentioned by more than four of the main parties.

Benchmarking

10.8. Most main parties told us that they only benchmarked themselves against their most direct UK competitors. Some mentioned benchmarking against overseas retailers, but only on the basis of published information. Some benchmarked their distribution operations against non-grocery retailers.

10.9. Tesco, Sainsbury, Safeway and Somerfield carry out fairly extensive benchmarking, both routine and one-off, against their main rivals. Safeway told us that it benchmarked itself against Tesco, Sainsbury, Asda and Morrison.

10.10. Asda said that, although it carried out external benchmarking, it regarded internal benchmarking as more important. Budgens and Waitrose said that they benchmarked themselves against their UK competitors (Tesco, in the case of Budgens) on key financial ratios, while Booth said that it maintained an interest in the performance of its competitors. Budgens said that it received information on overseas operators from Rewe, its major shareholder. M&S and Iceland said that they had attempted benchmarking but had found comparisons difficult for most of their activities because their operations were rather different from those of other grocery retailers. CWS said that it had only started to undertake benchmarking since centralizing its retail operations in 1997. Prior to that, it had been clear that its performance was well below the levels being reached by the major retailers.

10.11. Morrison, Aldi and Netto said that they did not undertake any external benchmarking.

10.12. Sainsbury said that it had carried out a major one-off benchmarking exercise, comparing its performance with that of Tesco, Safeway and Asda, at the end of 1998. [

Details omitted. See note on page iv.

]

[

Details omitted. See note on page iv.

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10.13. We return to the question of the relative costs of Asda, Morrison, Safeway, Sainsbury and Tesco in paragraph 10.38.

Technical innovation

10.14. The parties stressed the importance of technical innovation in reducing costs. This section considers innovations in terms of operations; for product innovations, see paragraph 6.72.

10.15. We asked the main parties to describe the main technological innovations they had implemented in the last five years, giving indications of how these had improved efficiency and productivity, and any other benefits. We also asked them to describe any further innovations the company was considering implementing in the year ahead.

10.16. These questions elicited a very wide range of responses. However, the vast majority of innovations were IT-based. Those most consistently mentioned were:

(a) use of EPOS data as a basis for implementing sales-based ordering systems and for stock control; and

(b) improved electronic communications, such as extended email within the organization and EDI with other parties, particularly suppliers.

These have sometimes been implemented as part of the more general initiative known as efficient consumer response (ECR); further details of this are given in Chapter 11.

10.17. Other innovations mentioned include computer programs for improved transport routing; customer self-scanning; improved checkout technology; and cash accounting. Apart from IT-based developments, the most frequently mentioned innovations were: energy saving improvements (for example improved refrigeration equipment in stores); loyalty cards; and home shopping.

Cost trends

10.18. As an indication of the trend in costs, we calculated over the five years to 2000, gross margins less operating margins for Asda, Morrison, Safeway, Sainsbury and Tesco. The results are shown in Table 10.2.

TABLE 10.2 **Operating costs* as a percentage of turnover, 1996 to 2000†**

per cent

	1996	*1997*	*1998*	*1999*
Asda Morrison Safeway Sainsbury Tesco	*Figures omitted. See note on page iv.*			
Weighted average	18.6	18.8	19.3	19.6

Source: The companies.

*Calculated as gross margin less operating margin.
†Financial years do not all have the same end date (see Chapter 8).

Table 10.2 indicates that the overall trend in unit operating costs is upward. Between 1996 and 1999, operating costs as a percentage of sales rose by one point, around half of which was covered by increased

gross margins, while the other half reduced operating margins. A number of factors have influenced this trend, not least the fact that, in nominal terms, retail prices have changed little while costs have been subject to inflationary pressure. Throughout the period shown, Tesco experienced both falling gross margins and falling operating margins, leaving operating costs fairly constant. Asda's and Morrison's operating costs are substantially below average, while Safeway's and Sainsbury's are [✂]. However, both Sainsbury and Safeway told us that the figures in Table 10.2 were misleading, since the operating margins and gross margins used in their calculation were prepared on a different basis, and therefore incomparable. As we discuss below (see paragraphs 10.38 and 10.61), most, if not all, of these differences may result from variations in factors such as store size and format, and may not necessarily be because of differences in efficiency.

Factors affecting operating costs

10.19. Operating costs are affected by a range of factors, such as scale, quality of service and efficiency. For the purposes of our report we were interested in examining:

(a) whether there are economies of scale at the store level which might benefit customers in terms of lower prices;

(b) how the level of sales affects costs;

(c) how costs are affected by the main parties' decisions on quality of service (queue length, opening hours, range of products and so on);

(d) to what extent costs are affected by decisions to provide additional facilities (such as crèches, in-store bakeries and free car parks, for example);

(e) how location and region impacts on store costs; and

(f) whether there are economies of scale at the company level (for example, in operating an efficient distribution system) which might act as a barrier to any potential new entrants.

The first five issues relate to costs at the store level, which is where the bulk of operating expenditure is incurred. The last relates to non-store costs (in particular, group overheads and distribution).

Store costs

10.20. The operating costs of individual stores vary widely, both between operators and according to size, location and other factors. For this analysis we concentrated on Asda, Morrison, Safeway, Sainsbury and Tesco.

10.21. The major direct cost of running a store is labour, which varies between 3 and 13 per cent of the total. Costs are lowest for the hard discounters and highest for retailers which use quality of service as a major selling point. Other costs include, among other things, utility bills, service contracts (for example, for cleaning), rent and rates.

Staff costs

10.22. Staff costs at a given store depend upon:

(a) the size of the store (as measured, for example, by net sales area);

(b) the level of activity at the store (as measured, for example, by the level of sales);

(c) the quality of service offered (in terms of range of products, queuing time, opening hours and so on);

(d) the level of additional services provided (bakeries, crèches, cafes and so on);

(e) location (since wage rates differ across the country);

(f) company pay rates and other terms and conditions of service;

(g) the amount of manufacturing, processing and packing performed in-store; and

(h) levels of efficiency.

Most of the above affect staff numbers; *(e)* and *(f)* affect wage rates.

Cost models

10.23. The relationships between staff costs and some of the factors listed in paragraph 10.19 are illustrated diagramatically in Appendix 10.1. These scatter diagrams show strong correlations between staff costs and store size and between staff costs and sales, although the relationships appear not to be linear. In order to analyse these relationships further, we used regression analysis to construct models of staff costs. The modelling techniques employed are described in detail in Appendix 10.2.

10.24. Our models predicted the staff costs of each store from its size (in terms of net selling area) and sales density (sales per square metre). They were a very good fit for the actual data, explaining over 90 per cent of the variation in staff costs. As an illustration, Table 10.3 shows how staff costs predicted by the models for an average store compared with the actual average value. For some of the parties, the models failed standard diagnostic tests (see Appendix 10.2). In these cases, the results from the models should be treated with a degree of caution. However, we are satisfied that the conclusions we reach are unaffected.

TABLE 10.3 **Observed staff costs compared with modelled staff costs**

	Asda	*Morrison*	*Safeway*	*Sainsbury*	*Tesco*
Actual staff costs (£'000)*	*Figures omitted.*				
Predicted staff costs (£'000)†	*See note on page iv.*				
Difference (%)					

Source: CC analysis of data from CC survey.

*Simple mean of predicted staff costs based on the sample store data.
†Simple mean of staff costs for stores in the sample store data.

10.25. The models were very similar for each of the major parties, with the exception of Morrison (see Appendix 10.2 for the detailed figures). This is discussed in paragraph 10.38.

10.26. The figures in Table 10.3 are for sales excluding petrol. The models give different results for sales figures including petrol. They predict that, for two stores having the same net sales area and sales, one selling petrol and one not, the former will have lower staff costs. This is because petrol filling stations require relatively little staffing in proportion to sales when compared to sales of grocery items. Since petrol filling stations tend to be found in larger stores, the inclusion of petrol sales introduces a bias in the results, exaggerating any benefits of economies of scale (see Appendix 10.2 for a more detailed discussion). For this reason, we excluded petrol sales from all further analysis.

Economies of scale

10.27. Economies at the store level will arise if significant elements of store costs do not increase proportionately as store size increases.

10.28. Few of the main parties made any specific comments on economies of scale at the store level. Those that did suggested that any such economies were modest. For example, Tesco said that they only existed at relatively small sizes of store and quickly disappeared as store size increased.

10.29. In its 1998 report, *Driving Productivity and Growth in the UK Economy*, McKinsey Global Institute claimed that, based on a combination of interviews and regression analysis, store size appeared to have a significant impact on labour productivity. It identified three reasons why store size should have such an impact:

(a) management costs as proportion of total labour costs fall;

(b) labour costs of additional services as a proportion of total labour costs fall as store size increases; and

(c) improvements in goods flow mean that workers make proportionally fewer trips in order to stock shelves.

By contrast, academic research has found little evidence of store-level economies of scale in grocery retailing.[1]

10.30. The results from our analysis suggest that, with the exception of Morrison, there are statistically significant, but limited, staff cost economies of scale at the store level. For Morrison, the analysis indicated that staff costs increase faster than store size, implying diseconomies of scale. However, most of Morrison's stores are in a limited size range—between 3,000 and 4,000 sq metres—and the model cannot be extrapolated reliably to very different store sizes (the same is also true, to a lesser extent, of Asda).

10.31. The impact of scale economies on staff costs is best illustrated with an example. Comparing a store of 3,000 sq metres net sales area and a store with a 50 per cent larger sales area (4,500 sq metres) at the same sales density (say £8,500 per sq metre per year), our models indicate that the latter would have staff costs which were only 44 per cent higher (other things being equal) than the former. This would reduce the total cost of running the store as a percentage of sales by about 0.4 per cent. Safeway told us that it believed the staff cost benefits of scale were significantly greater, but that these might be hidden, for example, by larger stores' having increased services and facilities. Economies of scale measured this way diminish as store size increases[2] and are greatest for relatively small stores as shown in Figure 3 in Appendix 10.1.

10.32. Tesco told us that 'the true relationship between staff costs per sq foot and sales … is flat for reference stores, demonstrating that scale economies do not exist with respect to staff costs'. When we tested this (see Appendix 10.2) we found that there were continuing economies of scale for Asda, Sainsbury and Tesco, and ambiguous results for Safeway. Morrison only has large stores and no economies of scale over the range.

10.33. In summary, then, our analysis suggests that there are indeed economies of scale in staff costs, but that these are most significant for smaller stores. Above about 3,000 sq metres, the impact on total store costs is modest and, for some of the main parties, seems to disappear completely.

Sales density

10.34. Among the larger main parties, the average sales density of a store is around £9,000 per sq metre per year. This varies from about £8,000 per sq metre per year for Morrison and Safeway, to around £11,500 per sq metre per year for Sainsbury and Tesco; Asda's sales density is at the average level. For the smaller main parties, sales densities are rather lower, with Netto and Budgens having sales of around £5,500 per sq metre.

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[1]For example, Tilley and Hicks ('Economies of scale in supermarkets', *Journal of Industrial Economics*, Vol 19,1 pp1–5, 1970) examined a number of small UK stores, and found that store expenses relative to store size appeared to decrease initially, and then increase; Savitt (*Economies of scale in Canadian supermarkets*, Canadian Association of Administrative Science conference proceedings, University of Alberta, 1975) showed that, while store size had little impact on costs, sales density had a significant effect; Thorpe and Shepherd (*Some aspects of economies of scale in food retailing*, Retail Outlets Research Unit, Manchester Business School, Research Report 26, 1977) found evidence suggesting that, in relative terms, labour costs declined with store size, while other operating costs showed no relationship with store size; and Shaw, Nisbett and Dawson ('Economies of scale in UK retailing: some preliminary findings', *International Journal of Retailing*, Vol 4,5, pp12–26, 1989) found slight economies of scale in relation to labour costs, and diseconomies in other store costs.

[2]A 50 per cent increase in size will give the same reduction in operating costs for any store; hence, a much larger absolute size increase is required to achieve a given level of savings at a large store.

10.35. Sales density is a measure of store utilization. Unlike store size, it is not under direct management control. For a particular store, it will depend on the product range offered, the demand for that particular range in the locality, and the proportion of the demand which the store supplies, given its competitive position. We examined the relationship between sales density and variables that we considered to be potential determinants of sales density and for which data were available. We found that older stores, stores with a larger product range and those with longer opening hours tended to have higher sales densities. We were unable to consider many other likely determinants, such as business acumen, due to the difficulty of obtaining valid data.

10.36. The results from our regression models (see Appendix 10.2) showed that a given increase in sales density will lead to a proportionally lower increase in staff costs. Moreover, they showed that this effect has a much more significant impact on staff costs than economies of scale.

10.37. We examined the relationship between sales density and store size. Sales density depends on transaction size and transaction frequency. The relationship between transaction size (in monetary terms) and store size is shown in Figure 7 of Appendix 10.1. This suggests that, with the exception of Asda, transaction size increases with store size and supports the view that customers welcome the opportunity to purchase a wide range of goods in a single visit. The relationship between transactions per week and store size is shown in Figure 8 of Appendix 10.1. Unsurprisingly in a given period of time, larger stores tend to serve a greater number of customers than smaller stores. However, sales density will only increase if the increases in the number of transactions and in average transaction size are sufficient to offset the increase in store size. The relationship between sales density and store size, which is shown in Figure 10 of Appendix 10.1, gives a rather mixed picture. Safeway's and Asda's sales densities appear to remain fairly constant, suggesting sales and store size increase at an approximately proportional rate. Tesco's, Sainsbury's and Morrison's larger stores seem to experience marginally higher densities, indicating that sales rise at a slightly faster rate than store size. Combining these results with those on scale economies earlier (see paragraph 10.33), suggests that Tesco's and Sainsbury's larger stores benefit from economies of both scale and sales density.

Differences in staff costs

10.38. We examined the differences between Asda, Morrison, Safeway, Sainsbury and Tesco in terms of their staff costs and relative efficiency in the use of manpower. As Table 10.4 shows, at the aggregate level there are significant differences between the five in the average number of employees per store, the ratio of sales to employees, and the ratio of selling space to employees. Asda and Morrison have significantly larger stores on average than Tesco or Sainsbury, and Safeway has much smaller ones. Looking at selling space per employee suggests that, relative to their average store size, Morrison and Safeway tend to use less labour than the others, while Sainsbury uses significantly more. Tesco and Sainsbury achieve the highest sales per square metre, but Sainsbury's more intense use of labour means that it is Tesco and Asda who achieve the highest sales per employee. The average cost per employee is highest at Sainsbury and lowest at Morrison.

TABLE 10.4 **Staffing efficiency measures, 1998**

	*Average number of employees per store**	*Average net store area sq metre*	*Net selling space per employee sq metre*	*Average annual sales including VAT per store £'000*	*Sales per employee £*	*Average employee cost per year £†*
Tesco	150	2,421	16.1	*Figures omitted. See note on page iv.*		
Sainsbury	179	2,628	14.7			
Asda	224	3,934	17.6			
Safeway	95	1,934	20.4			
Morrison	183	3,316	18.1			

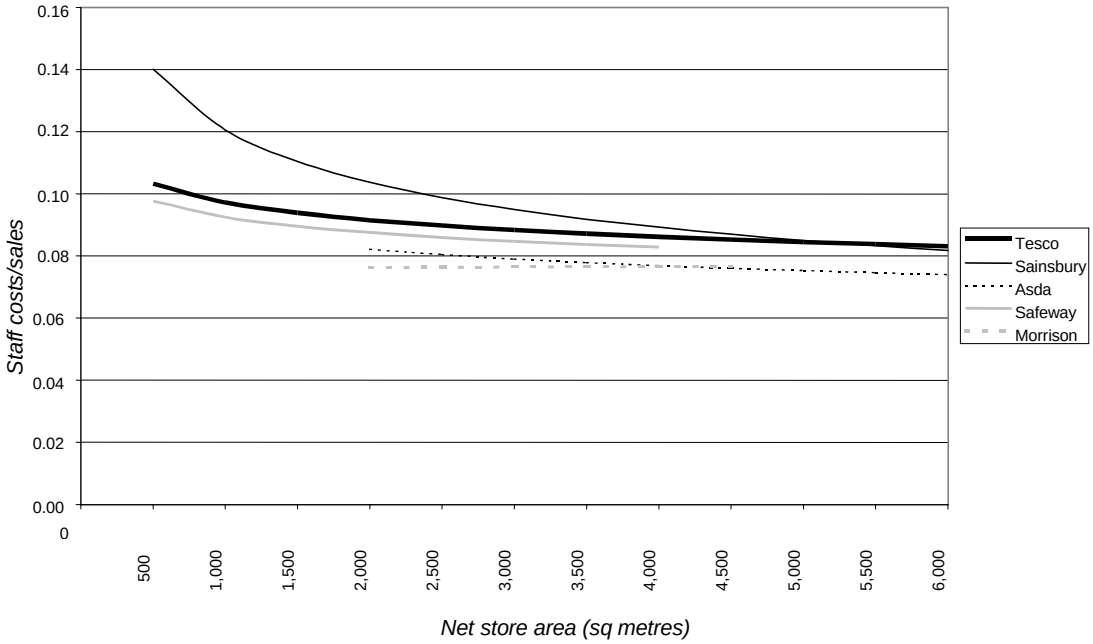
Source: CC calculations from CC survey.

*Full-time equivalents.
†Based on total staff costs/full-time equivalents.

10.39. Based on our regression analysis, Figure 10.1 shows how staff costs vary between the major parties at different store sizes. For smaller stores there are significant differences, with Sainsbury having the highest staff costs as a proportion of sales, while Asda and Morrison have the lowest. However, for the largest stores, staff costs converge at about 8 per cent of sales value.

FIGURE 10.1

Staff costs to sales at varying levels of store size



Source: CC calculations based on CC survey.

Note: Staff costs are calculated at average densities for each major party; sales are calculated as the product of net store area and average density.

10.40. Sainsbury told us that it costs it around £[✂] million extra a year in staff costs to run its stores than it would cost Tesco (see paragraph 10.12). Using our staff cost models, we found very similar results. We estimated that Sainsbury would make a saving of £[✂] million if its store staff costs were at same level as those of Tesco.

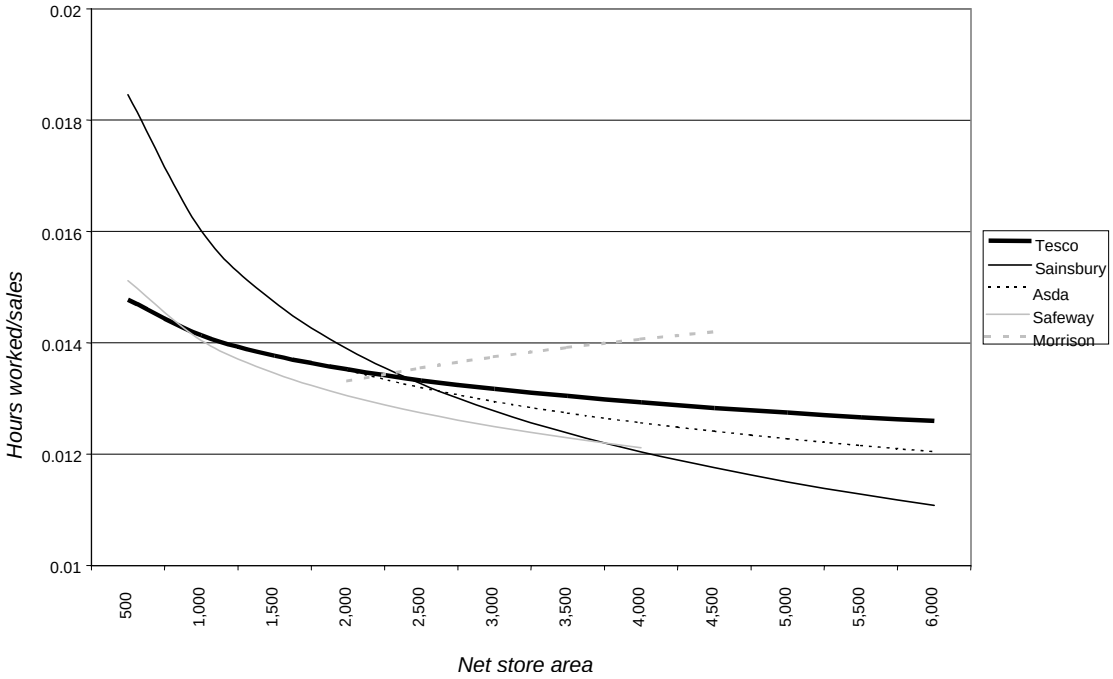
- *Hours worked and wage rates*

10.41. Table 10.4 shows that there are significant differences between the parties both in the number of people they employ and in their pay rates. Either may explain differences in staff costs. In order to examine this, we repeated our regression analysis replacing staff costs with hours worked (see Appendix 10.2). We used hours worked, as we considered that there was likely to be more consistency in reporting this measure of input than in reporting in terms of full-time equivalent staff numbers.

10.42. The results were broadly consistent with those from our staff cost model; the only significant difference was that, in the case of Morrison, the impact of sales density became more pronounced. Figure 10.2 shows the ratio of hours worked to sales at different levels of store size. The relative performance of the five is rather different from that shown by staff costs alone, as shown in Figure 10.1, with Morrison performing rather better in terms of labour costs, and Sainsbury rather worse. In part, this reflects differences in wage rates (see Table 10.4).

FIGURE 10.2

Hours worked to sales plotted against store size



Source: CC analysis of CC survey data.

Note: Hours worked are calculated at average densities for each major party; sales are calculated as the product of net store area and average density.

- *Regional effects*

10.43. One possible reason for the fact that Morrison has lower wage rates than average is that it is based predominantly in the North. We extended our regression models by including variables to indicate which region of the country each store is based in (see Appendix 10.2). This demonstrated that wage rates do indeed vary by region, tending to be higher for all the major parties examined in London and the South-East and, for those that operate there, in Northern Ireland.

10.44. We examined the wage rates paid by Asda, Morrison, Safeway, Sainsbury and Tesco in different regions, and compared them with wage rates in general, based on data from the New Earnings Survey. Our analysis showed that the wage rates of the major parties tended to reflect the national pattern but in a less pronounced fashion (see Table 10.5), suggesting that their pay policies tend to some extent to offset regional variations. However, Morrison tends to pay its employees less than the other major parties in almost all regions and Sainsbury tends to pay more. This indicates that Morrison's lower wage rates are not simply due to its largely northern base.

TABLE 10.5 **Regional wage deviations**

per cent

Region	*Full-time non-manual males on adult rates (wholesale and retail trade)**	*Full-time non-manual females on adult rates (wholesale and retail trade)**	*Major party stores†*
East	1.6	5.9	3.6
East Midlands	–5.9	–9.9	–5.9
London	17.0	20.0	13.3
North-East	N/A	–14.85	–5.8
North-West	–6.8	–8.0	–7.3
Scotland	–12.1	–10.2	–4.4
South-East	14.5	15.6	5.6
South-West	–13.2	–12.4	–3.2
West Midlands	–5.4	–11.5	–3.3
Wales	–21.9	–16.0	–4.1
Yorkshire and Humber	–11.3	–13.3	–7.9

Source: CC calculations based on CC survey.

*New Earnings Survey 1999 Part E, ONS.
†Based on weighted averages for Asda, Morrison, Safeway, Sainsbury and Tesco.

Quality of service

10.45. Differences in staff costs between the main parties may be due to differences in store size and sales density, or they may be due to differences in efficiency. However, differences in staff costs may also be due to variations in quality of service. Quality of service here refers to all aspects of the store offering other than the quality of the products themselves, including: range and availability of goods on sale; store ambience (aisle width, quality of fittings and so on); level of amenities and services provided; opening hours and queuing time.

10.46. All the major multiples told us that their customers expected high quality in all these areas and that failure to provide services or amenities provided by their competitors would lead to loss of trade. Some pointed to the lack of market penetration by the hard discounters as evidence that customers in the UK are prepared to pay for higher quality of service.

10.47. The provision of higher quality standards will generally lead to additional direct costs, but they may result in cost reductions elsewhere. For example, it was suggested to us by one of the main parties that the employment of bag-packing staff leads to an improvement in customer flows, which can reduce costs in other areas. Also, if these higher standards or additional amenities result in increased sales there will be offsetting efficiency gains.

10.48. With the exception of additional services such as crèches and cafes, the main parties were able to provide us with only limited information relating to service quality. Nevertheless, we used this data to examine each of the main aspects of quality, and make an assessment of its impact on staff costs.

Range of products

10.49. We examined how product range varied with store size (see Figure 13 in Appendix 10.1). As expected, the number of lines of both grocery and other products increased steadily with store size for Safeway, Sainsbury and Tesco. Asda's larger stores stocked only marginally more lines than its smaller stores, while Morrison told us that all its stores stocked the same number of lines. We also found that, generally speaking, the proportion of non-grocery lines increased at larger sizes of store.

10.50. There are limits to the extent to which the range of grocery products can sensibly be extended and the largest stores tend to carry significant ranges of other goods, such as clothing and electrical equipment, which are outside our terms of reference. This creates scope for cross-subsidization. The stocking of non-grocery products may provide the opportunity of selling groceries at lower cost but equally, a secure profit stream from groceries may allow other goods to be sold below full cost. This requires allocating costs between fast-moving, low-margin groceries and slow-moving, high-margin consumer goods or clothes.

10.51. One of the most significant non-grocery products is petrol. Some main parties told us that they regarded petrol filling stations as an important attribute, since they encouraged more customers to visit the store. For a detailed discussion of the impact of petrol sales, see Appendix 10.2.

Additional services and facilities

10.52. Multiples offer a wide range of additional services and facilities in order to make their stores more attractive to customers. These range from additional in-store facilities (for example, bakeries, meat and fish counters) through additional services (such as crèches) to the provision of space for third parties to offer services or facilities (such as financial services, dry cleaning and so on). Some of these may be offered free or below cost, being subsidized by general sales; others may generate a profitable stream of income (for example, in the form of rent) but represent an opportunity cost, by restricting the space available for profitable sales.

10.53. We used our staff cost models to examine the impact on costs of various additional services and facilities which might be provided free or might be subsidized (see Appendix 10.2 for details). The results showed that, for each of the five major parties examined, there was at least one service which improved the explanatory power of the models, but the facilities varied in each case and there was no facility or service which had a consistent effect across all the major parties.

10.54. Some of the services do not require employment of supermarket staff. Others which do may be occupying space that would have otherwise been used for grocery sales, which may require higher staff costs per unit of area. In addition, many of the elements of quality that affect costs directly are also likely to have an indirect effect on costs through their impact on sales density. Overall, therefore, we found little evidence to suggest that a particular store's costs will be significantly higher than others of the same size because it provides additional services.

Other factors

10.55. We examined three other service quality factors: number of checkout lines, opening hours and complaints received. We examined how each of these factors varied with store size for Asda, Morrison, Safeway, Sainsbury and Tesco (see Figures 14 and 15 in Appendix 10.1).

10.56. We found that the number of checkout lines increased proportionally with store size, with all five major parties having around 15 checkout lines for stores of about 2,000 sq metres, and around 30 checkout lines for stores of about 4,000 sq metres.

10.57. Opening hours were very similar across the major parties, and tended to increase with store size. Smaller stores of up to 2,000 sq metres net store area were open for 60 to 70 hours a week, while larger stores of 4,000 sq metres and above were usually open from 90 to 100 hours a week. For both Tesco and Asda, a significant proportion of stores (20 to 25 per cent) were open 140 hours a week or more.

10.58. For Morrison, Safeway and Tesco, the number of complaints received (both verbal and written) was of a similar magnitude, and increased less than proportionally with store size. For Sainsbury, the recorded number of complaints was far higher than for the other parties examined since all customer feedback is recorded as a complaint. Sainsbury told us that it would regard as complaints 'suggestions for new recipes and store improvements, requests for products not stocked by a store and requests for dietary information and educational material'. Although the numbers of complaints recorded at Sainsbury's stores appear to increase more than proportionally with store size, this may be due to larger stores attracting a greater than proportional amount of customer feedback.

Other operating costs

10.59. We carried out a similar analysis to that of staff costs for other operating costs (see Appendix 10.2 for details). For our present purposes, we took these to be utilities (power, heat, light, water and telecommunications), bought-in and outsourced services, wastage and other costs (excluding loyalty cards and price discounts). We excluded rent, business rates and depreciation.

Impact of scale and sales density

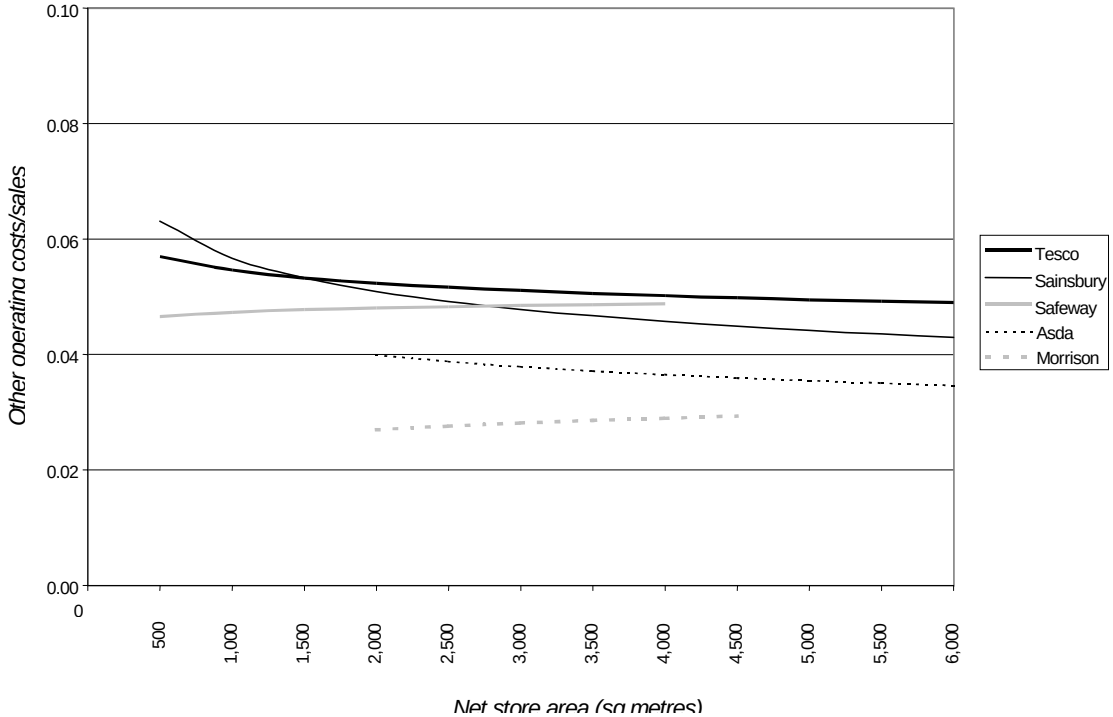
10.60. Regression analysis resulted in models which were similar to those for staff costs but there were some significant differences. There were no scale economies for Safeway, and those for Tesco and Asda were less significant than for staff costs. All five major parties showed significant returns from increased sales density. Hence, the results indicated that economies of scale derived from other operating costs are less significant than those from staff costs (which in themselves are small). These returns were notably greater for other operating costs than for staff costs in the cases of Sainsbury, Asda and Morrison, and notably less in the case of Tesco.

Differences between the major parties

10.61. The levels of other operating costs predicted by the models are shown for each of the major parties in Figure 10.3, which illustrates how, for a given density, costs vary with store size. It can be seen that, for all but very small sizes of store, there are no significant economies of scale. However, it should be noted that there are greater differences between the multiples than for staff costs and there appears to be no convergence at larger sizes of store. For Asda and Morrison, other operating costs as a percentage of sales are significantly lower than for Tesco, Safeway and Sainsbury. These differences will reflect both quality of service differences and variations in efficiency.

FIGURE 10.3

Other operating costs to sales at varying levels of store size and average densities



Source: CC calculations based on CC survey.

Note: Other operating costs are calculated at average densities for each major party; sales are calculated as the product of net store area and average density.

Capital costs

10.62. We briefly examined capital economies of scale for Asda, Morrison, Safeway, Sainsbury and Tesco by looking at how fixed assets varied with increasing store size.

10.63. We used gross fixed assets, since not all of the companies provided cumulative depreciation data, and excluded land from the figures, so that we could better assess the impact of size on construction and fitting costs. We also excluded leased property, given that capital costs were likely to be lower than for freehold property, and the stores generally smaller. Finally, we used gross area as a measure of store size rather than net area, since the former was likely to be more directly related to construction costs.

10.64. The relationship between gross fixed assets (excluding land) and gross store area is shown for the major parties in Figure 11 of Appendix 10.1. This suggests that Tesco, Sainsbury and Asda exhibit a fairly constant gross fixed assets to gross area ratio as gross area rises, indicating that there are minimal economies of scale in these cases. Morrison and Safeway show slight diseconomies of scale although the observations are over too narrow a size range to draw any firm conclusions for Morrison. Overall, therefore, based on this limited analysis it appears that there are few or no economies of scale for capital costs.

10.65. It has been suggested[1,2] (although not by the main parties themselves) that one of the benefits of larger stores is that the proportion of selling space to total space would increase, because the amount required for offices, warehousing and so on would not grow in line with the net selling area. Examination of the data (see Figure 12 in Appendix 10.1) does not confirm this. For Tesco and Sainsbury, net sales area does seem to increase slightly as a proportion of gross area as store size increases, while for Safeway the proportion appears fairly constant. However, for Asda and Morrison, the graphs suggest that net selling space falls as a proportion of gross space for larger stores. On the basis of this limited analysis, there is little evidence to support the view that the ratio of net sales area to gross area increases with store size. Some of the parties suggested that one reason for this was restrictions on the proportion of selling space in planning consents that were tighter than the total restriction on gross space.

Non-store costs

10.66. Having considered store costs in some detail we next turn to non-store costs. The two main elements of these are distribution costs and central overheads. Together, for the larger multiples, distribution and overheads are typically equivalent to 6 to 7 per cent of turnover, each representing 2.5 to 4 per cent, as shown in Table 10.6. This table shows the total sales (excluding petrol) for several of the largest of the main parties, together with their distribution costs and overheads (marketing and central costs).

TABLE 10.6 **Company distribution and overhead costs, 1998**

Item	*Tesco*	*Sainsbury*	*Asda*	*Safeway*	*Somerfield*	*Morrison*	*Waitrose*
Sales excluding petrol (£m)	*Figures omitted. See note on page iv.*						
Distribution costs (£m)							
Distribution cost/sales (%)							
Overheads (£m)*							
Overheads/sales (%)							
Non-store costs/sales (%)							

Source: CC survey.

*Overheads consist of costs related to marketing, development and building depreciation, and central costs.

Notes:

1. Asda's distribution costs exclude buildings depreciation which is included in the £[✂] million building depreciation figure.
2. Somerfield's figures include Kwik Save.
3. Tesco's figures exclude £[✂] million of profit share.
4. Sainsbury's figures include profit share.
5. Safeway's figures are for all stores, including non-reference and non-UK stores.

Distribution

Organization

10.67. All the main parties told us that they used a two-tier system of distribution for the great bulk of their supplies: primary distribution to the regional distribution centres, and secondary delivery to

[1]McKinsey Global Institute, *Driving productivity and growth in the UK economy*, McKinsey & Company, October 1998.
[2]London Economics, *Rip-off Britain: myths and realities*, a report for the British Retail Consortium, 2000.

stores. Primary distribution (that is, to the distribution centre) is usually undertaken by the supplier, but there are significant benefits if lorries returning from stores to the distribution centre are able to pick up suppliers' goods en route, a practice that is becoming increasingly common. Secondary distribution is managed by the main parties, and either carried out using their own resources or contracted out.

10.68. In general, the distribution centres handle the vast majority of groceries which main parties sell. The most common exceptions are milk, bread and (for those that sell them) newspapers and magazines. For the first two, there are considerations of freshness, and for the latter there are existing distribution networks which provide the required service. Some main parties mentioned other goods, such as breakfast cereals (because of their bulk) and CDs (for security reasons). In addition, some of the smaller chains did not have full-scale distribution systems in place for all their products (for example, Netto could not deliver frozen goods to its stores in the South).

10.69. The number of distribution centres depends on the size of the organization, ranging from as few as one for Booth and two for Netto to more than 20. Many of the larger main parties have specialist distribution centres for some products (for example, fresh produce, frozen goods and wine), according to individual circumstances.

10.70. There was a wide divergence among the main parties to the extent to which distribution was outsourced. M&S said that it outsourced all transport and warehousing, while Aldi, Morrison and Netto did almost everything in-house. Most main parties are in between with some in-house distribution and some outsourced.

10.71. Where operations are outsourced, contracts are usually let by open tender and subject to regular renewal, typically at five-year intervals. However, M&S said that it was in the process of moving to this arrangement from a system of open-ended (or 'evergreen') contracts, and Waitrose said that it had a long-term arrangement for one distribution centre.

10.72. The form of outsourcing of warehousing varies. In some cases, all facilities and equipment are owned and all the associated costs paid by the multiple. In such cases, the operator is paid a management fee (which may be performance related). In other cases, the site and facilities may be owned by the operator, who then charges a rate per unit.

10.73. Most of those who have mixed distribution systems cited the ability to benchmark between in-house and outsourced services as a significant advantage.

Cost trends

10.74. The main parties said that a variety of factors had, over the past five years, tended to affect distribution costs. Some factors had reduced costs, while others had increased them.

10.75. They gave a fairly consistent picture of the factors tending to increase distribution costs. The main issues raised were:

— increases in vehicle excise duty;

— increases in fuel prices;

— increases in driver costs and lack of availability of good-quality drivers;

— increased traffic congestion; and

— restrictions on delivery times and routes to stores.

10.76. A number of main parties also mentioned changes to their businesses which increased distribution costs, including expansion (more stores, more widely spread); increases in product range; longer opening hours; and more chilled/frozen products.

10.77. By contrast, a wide variety of efficiency improvements which had reduced costs was cited. The most frequent responses were:

— improved distribution centre network (in some cases more centres, in some cases fewer but better sited; use of consolidation warehouses);

— improved stock management;

— improvements in vehicle technology;

— increased use of return journeys (see paragraph 10.67);

— improved relationships with suppliers (for example, suppliers making up store requirements to avoid double handling); and

— radio frequency communication systems for product stock and picking.

As for other technical innovations (see paragraph 10.14), some of these had been implemented as part of ECR (see paragraphs 11.64 and 11.65 for details).

10.78. Some parties saw these improvements as a means of containing the factors that had increased costs (see above), rather than as cost reductions in their own right. Others saw them as a means of improving service at no extra cost. Two said that they accepted some inefficiencies in distribution as these could give greater savings in-store.

Home delivery

10.79. Home delivery is discussed in detail in paragraphs 6.101ff. At the time of our inquiry, normal distribution costs had not been affected by home delivery services and home shopping deliveries. These were either picked at the store and treated as store costs, or had discrete distribution systems.

Overheads

10.80. Overheads are all costs other than those incurred at stores and in distribution. The two main items are marketing and advertising costs, and head office costs. Depreciation may also be included at this level. As shown in Table 10.6, overheads as a percentage of sales range between 2.5 and 3.7 per cent for the major multiples.

Company level economies of scale

10.81. Economies at the company level may arise in several ways:

(a) from spreading fixed costs over a larger sales volume;

(b) from using more efficient distribution; and

(c) from buying in larger quantities.

It should be noted that some of the company level economies may more properly be considered as economies arising from regional concentration. In particular, efficiencies in distribution may be achievable by relatively small regional companies. We consider this further in paragraph 10.84.

10.82. Several of the main parties referred to the benefits of larger groups, in terms of buying in larger quantities and improved supply chain efficiency. There may be significant efficiency gains in buying in very large quantities but it is also possible that the size of some of the main parties, and hence their significance for their suppliers, gives them disproportionate buyer power. We consider this in paragraphs 11.102 to 11.117.

10.83. None of the main parties considered that there were any specific benefits in having a particular number of stores, although Aldi and CWS referred to a 'critical mass' (Aldi said about 50 stores). Sainsbury referred to Booth (25 stores) as an example of a successful small chain. However, Booth said that economies of scale and other factors were now such that it was difficult both for new companies seeking to enter the market and small established players such as itself to keep pace.

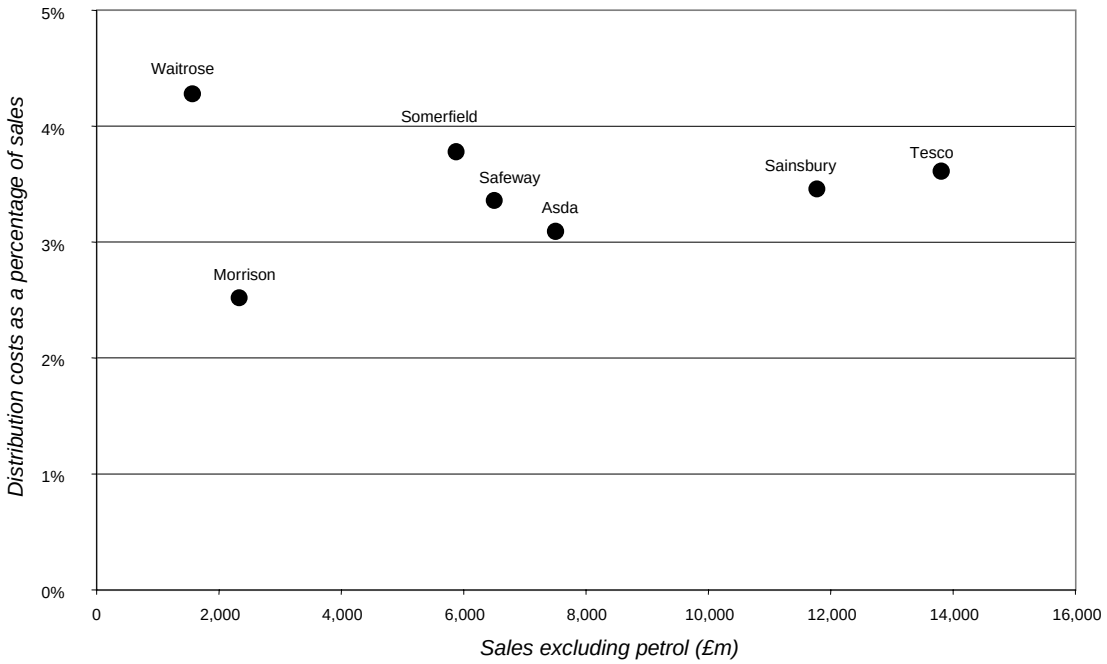
10.84. We examined the main parties' distribution costs and overheads for evidence of company level economies of scale in distribution and other centralized costs.

10.85. Taken together, distribution costs and overheads, as a percentage of sales, were similar for all the companies, with the exception of Waitrose. This suggests that there may be no significant further economies of scale for the largest retailers. The different figures for Waitrose are most likely explained by its having smaller, and more dispersed, stores, and a different value-for-money offering from the others.

10.86. Looking at distribution costs alone, the figures for the parties were very similar. However, the main feature of the data appears to be the very low distribution costs of Morrison. This may reflect its degree of regional concentration and the fact that it carries out all its distribution in-house.

FIGURE 10.4

Distribution costs as a percentage of sales plotted against sales

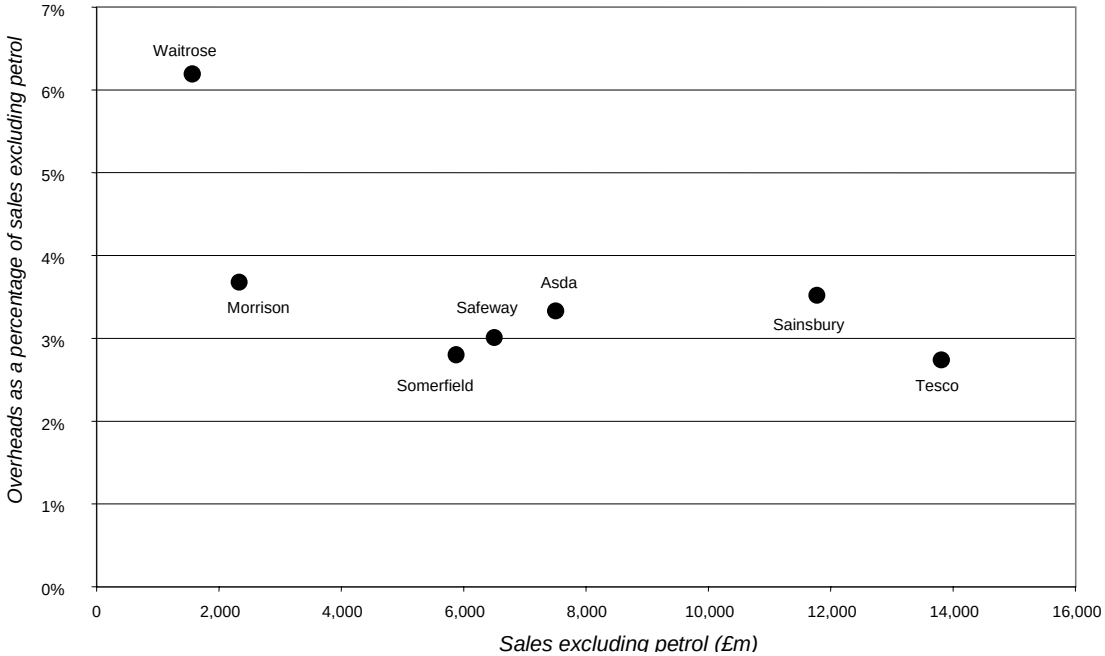


Source: CC survey.

10.87. Overheads as a percentage of sales were similar for all the companies considered, except Waitrose. In this case Morrison was not out of line.

FIGURE 10.5

Overhead costs as a percentage of sales plotted against sales



Source: CC survey.

International comparisons

10.88. International cost comparisons are, in principle, attractive since they allow a direct answer to the question of what proportion of any international price differences are due to cost differences. However, they present considerable practical and conceptual difficulties. We did not consider it feasible in the time available for us to carry out our own international comparison of operating costs. However, we considered two reports prepared by consultancies, which compared grocery retailing in the UK with that of other countries. These reports, which we discuss in the following sections, were brought to our attention by the main parties, who viewed them positively.

The McKinsey report

10.89. In October 1998 the McKinsey Global Institute produced a report which sought to benchmark the productivity of the UK food retailing sector against those in France and the USA.[1] The main conclusion it reached was that, in spite of having the lowest labour productivity of the three countries, the overall productivity of UK food retailing was equal to that of France and around 15 per cent higher than that of the USA. This was attributed to the fact that the level of space productivity in the UK was around 50 per cent higher than that found in France and 70 per cent higher than in the USA. McKinsey defines space productivity as gross margin per square metre of selling space, and calculates that gross margins are 10 per cent higher, and sales density 38 per cent higher, in the UK than in France.

10.90. The low level of labour productivity found in UK food retailing, which, according to McKinsey, was 25 per cent below France and 10 per cent below the USA, was said to be caused by two different aspects of external regulation. First, UK retailers were able to exploit flexible labour markets to provide customers with a large range of additional services, such as bag packers, which would not make economic sense for French retailers owing to France's relatively high labour costs. This depressed the estimate of labour productivity in the UK, which was based on hours worked rather than labour costs.

10.91. Second, the complex land use system in the UK made it difficult and expensive for retailers to expand. This affected labour productivity in two different ways. First, it led to the UK having a greater

[1]See footnote 1 to paragraph 10.65.

proportion of employment in small convenience stores, which were relatively inefficient in terms of their use of labour. Second, the larger-format stores in the UK tended to be smaller than those found in France and the USA, which limited labour productivity gains associated with scale. McKinsey also suggested that, by increasing the cost of land, the land use system may lead retailers to concentrate more on space productivity rather than labour productivity.

10.92. In the light of these findings, McKinsey recommended that the UK Government keep labour markets flexible and take into account the economic costs of land use restrictions. It claimed that UK planning regulations had arrested the growth in productivity in food retailing and other sectors of the economy into which food retailers might have expanded, creating an umbrella under which inefficient operators were able to survive.

London Economics' international comparisons

10.93. As a response to the proliferation of 'Rip-off Britain' stories in the press, the British Retail Consortium commissioned London Economics (LE) to write a report on international price comparisons.[1] The report's stated aim was to identify a set of conditions necessary for price convergence of goods retailed in different countries.

10.94. LE argued that there are two components that make up the price of a retailed product: the cost of the product itself, and the cost of the retail service. Consequently, there are two possible explanations for differences in retail prices across countries: restrictions on competition in the supply of goods sold by retailers, and variations between countries in terms of the cost of providing retail services. It is the view of LE that the most serious restrictions on competition in the supply of groceries are due to state intervention, mainly Common Agricultural Policy regulations, and taxation. Furthermore, LE claims that the cost of providing retail services will differ across countries due to differences in property costs, staffing and transport costs, variations in the degree to which economies of scale are achievable, and differences in pricing strategies.

10.95. According to LE, property and transport costs are higher in the UK than in the USA and other major EC countries, while labour costs—despite lower wage rates—are similar (see Appendix 10.3 for details). Furthermore, UK consumers demand higher quality standards than their USA and EC counterparts, and are less focused on price when making buying decisions.

10.96. LE also claimed that UK retailers are unable to benefit from economies of scale to the same degree as those in other countries, mainly due to the limited availability of sites. It said, quoting Deutsche Bank Research, that the UK has significantly fewer hypermarkets (defined as greater than 5,000 sq metres) than elsewhere in Continental Europe or the USA, and its hypermarkets are also considerably smaller (see Table 10.7). The UK also has fewer supermarkets, but these are larger than in France or in Germany, although still considerably smaller than in the USA.

TABLE 10.7 **Comparisons of food retailing density in the UK, Continental Europe and the USA, 1999**

	Spain	*France*	*Italy*	*UK*	*Germany*	*USA*
Hypermarkets						
Number of stores	267	496	157	71	635	650
Number of sq metres ('000)	2,138	4,270	1,009	391	10,457	10,000
Average store size ('000 sq metres)	8.01	8.61	6.43	5.51	16.47	15.38
Sq metre/1,000 population	53	71	18	7	124	40
Supermarkets						
Number of stores	5,670	8,820	6,073	4,720	23,680	22,000
Number of sq metres ('000)	4,540	10,350	5,491	7,600	16,908	85,000
Average store size ('000 sq metres)	0.80	1.17	0.90	1.61	0.71	3.86
Sq metre/1,000 population	113	173	98	127	201	340
Totals						
Total number of sq metres ('000)	6,678	14,620	6,500	7,991	27,365	95,000
Sq metre/1,000 population	166	244	116	133	326	380

Source: Global Food Retailing, Part 1, Deutsche Bank Research, 1999.

[1]See footnote 2 to paragraph 10.65.

10.97. LE said that all these factors needed to be taken into account when making international price comparisons, in addition to the problems posed by exchange rate movements, variations in product specifications, and differences in typical shopping baskets and consumer preferences.

Our assessment

10.98. In many ways, the McKinsey and LE reports confirm the difficulties in carrying out international comparisons of this kind for while much of what they say is indisputable, it is not necessarily complete, and it may be open to alternative interpretations.

10.99. In particular, the McKinsey report states that the UK has lower labour productivity in terms of total gross margin (as a measure of value added) per employee per hour than France or the USA. As the McKinsey report acknowledges, in a view endorsed by LE and the main parties—particularly Aldi—this is at least in part because UK retailers offer a higher level of service (see paragraph 10.46); the lower cost and greater flexibility of labour in the UK make it more attractive to offer, for example, a bag-packing service. To the extent that customers want, and are prepared to pay for, this level of service, this is a positive rather than negative aspect of retailing in the UK. The McKinsey interpretation of capital (or space) productivity is also open to different interpretations. In any event, as McKinsey suggested, in a country in which capital costs are relatively high and labour costs are relatively low (according to LE), retailers may be expected to optimize capital productivity at the expense of labour productivity. In countries where the reverse is the case, retailers would be more concerned to optimize labour productivity.

10.100. There are many different aspects of costs and the LE report demonstrates that some of these will be higher in the UK and some lower. As labour is the single biggest component of cost it might be expected that if, as LE states, labour is cheaper in the UK than France, Germany or the USA, and service levels are at a comparable level across the different countries, then this would largely offset higher costs in other areas.

10.101. Even within relatively narrowly defined cost headings, full comparisons can be very difficult. For example, the cost of operating lorries is significantly higher in the UK than elsewhere as a result of higher taxes (see Appendix 10.3). However, this will be partly offset by the higher population densities and higher sales density, which will allow distribution to be more efficient. These in turn will be partly offset, as some main parties observed, by higher levels of traffic congestion and restrictions on delivery times. In addition, it would be necessary to take into account differences in labour costs, the widespread use of tolls on roads in some countries, and other factors.

10.102. One area where the results of our analysis did not support the views of the consultancies was the question of economies of scale. A number of analysts have suggested that costs may be lower in other countries where store sizes are much greater (see, for example, Appendix 10.3). However, while permitting the building of larger stores may, as McKinsey suggests, have advantages in that it would allow food retailers to compete more vigorously in selling other products, our analysis suggests that it would not reduce the cost of selling groceries significantly.