The waterbed effect

Introduction

1. In this appendix we consider a possible distortion of competition in the retail supply of groceries originating from a 'waterbed effect'. The waterbed effect has been discussed before, both in the UK and abroad,[1] albeit without the benefit of fully developed theoretical models. The possibility of a 'waterbed effect' distorting competition has been raised in this inquiry by the ACS which, through its advisers (Europe Economics and Professor Roman Inderst), submitted an economic model ('the ACS model') to explain how such an effect might work to the detriment of consumers.[2] In July 2007, we published a working paper presenting a detailed analysis of the ACS model. Subsequently, the ACS submitted a response to our working paper maintaining that 'under the circumstances prevailing in the UK's grocery market the operation of a waterbed effect is both possible and likely'.[3]

2. A waterbed effect is one way in which the exercise of buyer power by grocery retailers could distort competition and adversely affect consumers. Such a distortion to competition could arise because of an increase in the disparity between the competitive position of large and small retailers, and the disparity between the prices that each group pays for supplies. Small retailers may lose sales, which, in turn, reduces their share of the market, and they may end up raising prices (as in the ACS model), or go out of business altogether. The waterbed effect results in harm to small retailers; however, consumer detriment arises only in specific circumstances.

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[1]The CC has previously referred to waterbed effects—for example, in the Safeway inquiry in 2003, where it commented that 'there may be some waterbed effect for some classes of suppliers' (paragraph 2.248). However, it did not have enough evidence to come to a firm conclusion on this issue. The EC Guidelines on horizontal agreements also explicitly contemplate the possibility of waterbed effects. See *Guidelines on the applicability of Article 81 of the EC Treaty to horizontal cooperation agreements* (2001/C 3/02), paragraphs 126 and 135.

[2]*The 'Waterbed Effect': How Non-Cost Related Discounts to Large Retailers can Harm Consumers*. Published at: www.competition-commission.org.uk/inquiries/ref2006/grocery/pdf/main_party_submissions_acs_waterbed_effect.pdf.

[3]ACS submission, 'Response from the Association of Convenience Stores to the Competition Commission working paper on the waterbed effect', 27 July 2007.

3. In this appendix, we begin by explaining the waterbed effect theory. We then provide an in-depth discussion of the ACS model. This discussion is informed not only by a more detailed study of the model, but also by submissions from Tesco and Sainsbury's that offer a critique of the ACS model, as well as discussions between CC staff, the ACS and its advisers. We first highlight the ACS model's key assumptions and present the conditions under which consumer welfare declines. We then review third-party submissions on the ACS model. Next, we assess each key assumption of the ACS model. Finally, we attempt to test the necessary conditions for a waterbed effect to occur in practice against available evidence. In this part, we also consider the latest round of submissions from the ACS.

4. In light of our assessment of the ACS model (including its response to our working paper in July 2007), third-party submissions and the available evidence, we consider that it is unlikely that a waterbed effect operates in the UK grocery retail sector to a material extent. To the extent that small retailers suffer a decrease in non-price aspects of their supplies of groceries (a point which has not been explored in submissions from the ACS), we have not seen evidence to suggest that this effect is sufficiently systematic to give rise to competition concerns.

5. While the Act does not require us to consider consumer detriment as part of our consideration of the existence of an AEC, we have also reviewed the submissions that the ACS has provided to us regarding the likelihood of a waterbed effect leading to consumer detriment. We consider that it is unlikely that UK grocery consumers have been adversely affected as a result of any possible waterbed effect.

The theory of the waterbed effect

6. The intuition behind the theory of the waterbed effect can be expressed in the following terms. The starting point is that the size of a buyer determines its buyer

power vis-à-vis its suppliers. Large buyers therefore always obtain better terms than small buyers. The reason for this stems from the ability of large buyers to leverage their position. Should a large buyer stop purchasing, this would affect the profitability of its suppliers far more than in the case of a small buyer. Moreover, when a large buyer withdraws its orders with a specific supplier, this would generally have little effect on its own business. The same cannot be said for small suppliers.[4] In sum, for the waterbed effect to operate, the bargaining strength of buyers should depend solely on their size.

7. Because large retailers are able to secure better deals from their suppliers, they incur lower input costs than small retailers. These lower costs then translate into a cost advantage when large retailers compete with small retailers for final consumers. The waterbed effect occurs when large retailers become larger, through, for example, the acquisition of additional stores. As their bargaining position improves even further, they obtain better terms of trade from suppliers, which translate into a greater competitive advantage vis-à-vis small retailers. As small retailers lose customers to large retailers, their scale diminishes, which further deteriorates their bargaining position. With less buyer power, small retailers are even less likely to extract discounts from suppliers.[5]

8. The offer to final consumers by retailers with less buyer power may worsen (eg the price charged by these retailers to final consumers may increase). If this were to happen, the customers of the small retailers would clearly be worse off. Whether *on average* consumers will be adversely affected depends on the way in which large retailers set their retail offer. If the large retailers' offer does not improve enough as a

[4]In the ACS model, this happens, as all buyers are supposed to face the same fixed cost of accessing an alternative source of supply to the one they are currently using. For large retailers, it is then easier to switch away from their existing suppliers. This greater ease of switching implies that large retailers are able to negotiate a better deal with their suppliers.

[5]The usual analysis of waterbed effects (including the analysis presented to us in the ACS model) focuses on price effects. In theory, a waterbed effect could also operate with respect to non-price factors. We consider this issue further below.

result of their improved terms of trade, the net effect in the short term on average downstream prices or quality might be negative.

The ACS model

Key assumptions

9. In a highly stylized economic model, the ACS formalizes the intuition behind the waterbed effect. While we recognize that any modelling exercise will inevitably require some simplifications that will not match real world conditions, a formal model provides a rigorous and consistent presentation of an economic argument. However, to determine the applicability of a model to a particular industry, we must assess whether the model's predictions rest on a particular set of simplifying assumptions, and test the model's predictions against the available data.

10. In this section, we highlight the key assumptions that underpin the economic model submitted by the ACS. In a subsequent section, we will discuss the validity of each assumption in turn, and the robustness of the ACS results when each assumption is relaxed.

(a) Retailers purchase directly from a monopolistic supplier

11. In the ACS model, retailers purchase their goods directly from a monopolistic supplier, and have an option of switching supplier at some additional cost. However, the ACS model does not consider different degrees of competition in the upstream market, and there is also no formal analysis of the wholesale sector. Although this assumption appears to be unrealistic, it is often made for analytical convenience in the related economic literature on supplier-retailer interaction. It is usually accepted on the basis that it provides a benchmark against which to measure different aspects of buyer power.

(b) A retailer's size determines its buyer power

12. In the ACS model, a retailer's size determines the extent of its buyer power. The exercise of buyer power allows large retailers to extract significant non-cost-related discounts from their suppliers compared with small retailers.

13. This is formalized in the model by assuming that all retailers face a fixed cost of switching away from the monopolistic supplier.[6] This determines a situation where retailers earn discounts that are proportional to their size.[7]

(c) Discounts affect the unit (wholesale) price and are non-cost-related

14. The ACS model assumes that contracts between suppliers and retailers take the form of simple wholesale prices (linear prices) and do not include lump sum payments. The ACS acknowledges that supply contracts in the retail industry are often highly complex.[8] However, the ACS points out that the qualitative results of the model should extend to other forms of contract, so long as the discounts obtained by retailers affects the unit price.

15. With this assumption of simple linear pricing, when retailers obtain a discount, they will have an incentive to lower final consumer prices (ie to pass on part of the discount they obtain from suppliers). By contrast, if discounts are given exclusively in the form of lump-sum payments, they result purely in a transfer of profits between suppliers and retailers without affecting the final retail price. With this latter type of payment arrangement, there is no scope for a waterbed effect to arise.

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[6]The theory predicts that the outcome of a bargaining process depends on the parties' 'outside options', which represent what they could achieve if negotiations broke down. A fixed cost of switching supplier makes the large retailers' outside option a better one relative to the small retailers'. As a result, large retailers will fare better in the negotiating process.

[7]Several theoretical explanations have been put forward for why size may confer buyer power. First, a large buyer may, by virtue of its size, have better outside options than small buyers. This is the case in Katz (1987) where a large buyer may more credibly threaten to integrate backwards, thereby rendering the supplier itself redundant. Another reason why large buyers may get better deals from suppliers may reside in the production technology of the supplying industry. In Chipty and Snyder (1999), small buyers negotiate over volume to be produced in addition to the one already destined to large buyers; if suppliers operate with increasing marginal costs, this leads to small buyers obtaining worse terms. Another possible explanation is that large buyers may be more likely to destabilize collusion, as in Snyder (1996). Alternatively, size may confer buyer power if suppliers are risk averse, as in De Graba (2003).

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16. It is only when large retailers extract discounts that affect the unit price paid to suppliers that the waterbed effect may occur. In this case, part or all of the discounts will be passed through to final consumers in the form of lower retail prices.

(d) Large retailers' gains are small retailers' losses

17. In the ACS model, the lower prices charged by large retailers have the effect of winning over a share of the small retailers' customers. This is because firms compete over a market of fixed size, implying that one firm's gain is another firm's loss. This further reduces the small retailers' size and consequently worsens their bargaining position vis-à-vis suppliers. As mentioned above, this process could lead to small retailers charging higher prices while large retailers charge lower prices.[9] The net average effect for consumers, under conditions set out in the next section, can be negative.

(e) Large retailers' pass-through depends on competition from small retailers

18. In the ACS model, the incentive that large retailers have to pass through their input price reductions is determined by competition with small retailers.

Necessary conditions for a negative impact on consumers in the short run

19. In the ACS model, although the waterbed effect may occur, it does not automatically lead to consumer detriment. As large buyers grow larger, they tend to charge lower prices to consumers. Facing such low prices, small retailers may then be forced to react by lowering prices. If ultimately retail prices of large and small retailers decline, consumers would gain in the short run.

[9]The small retailer faces two opposing incentives in relation to setting its retail prices. On one hand, it has an incentive to raise its retail price as it would like to pass through its higher input prices. On the other hand, it would like to lower its retail price to respond to the price reduction of its larger competitors. Whether the net effect is a price increase or a price reduction will depend on the specific value of the parameters of the model.

20. However, the ACS model predicts that under specific circumstances, the waterbed effect can negatively affect consumer welfare. For this to happen it must be the case that small retailers, having less buyer power, end up charging higher prices. The waterbed effect will lead to higher prices at small retailers (and to higher average prices to consumers) when initially there is a significant differential between the buyer power of large and small retailers (ie size is a very important determinant of buyer power). It follows that consumers who continue shopping at small retailers' outlets will be worse off.

21. Furthermore, a high market share for the large retailers increases the likelihood of a waterbed effect materializing and adversely affecting consumers on average. This happens because in the ACS model, the larger the retailer, the less competitive pressures it faces. This, in turn, reduces a large retailer's incentive to cut retail prices. Consequently, large retailers pass through a relatively small percentage of their input price reduction while small retailers may increase their prices significantly. As a result, even though a larger share of total consumers gets a (marginally) better deal, the average price paid increases as a minority of consumers are significantly worse off.

The waterbed effect in the long run

22. The ACS also presents a stylized version of the waterbed effect model in a dynamic setting. It surmises that a greater exercise of buyer power will reduce suppliers' profits. As some suppliers exit because of the low margins earned from large retailers, this adversely affects the bargaining position of all retailers, since there is an adjustment of the upstream market towards increased concentration. However, small retailers may be more significantly affected than large retailers, given their lack of buyer power. Further, if some small retailers exit the market (or are acquired by

large retailers), large retailers may become even larger whilst small retailers further decrease in size. Both these changes may reinforce any waterbed effect.

Third party views on the ACS model

23. Tesco specifically addressed the ACS model in its reply to our working paper on buyer power. Sainsbury's advisers (RBB Economics) also commented on the ACS model in a specific submission.[10] Both argued against the existence of waterbed effects of the kind envisaged by the ACS model.

Tesco's criticisms

24. Tesco submitted that there were three main weaknesses in the ACS model:

(a) The model assumes that all retailers face the same fixed cost of switching supplier, so the cost of switching supplier is proportionately more expensive for small retailers. Tesco submitted that, in effect, the model assumes that there are unlimited economies of scale in grocery retail. If such economies existed, large retailers would always operate at lower costs than their rivals. This is equivalent to an assumption that retail industries are natural monopolies, which Tesco submits is clearly not the case.

(b) For a price increase by a supplier to result in a waterbed effect, Tesco submitted that it is not sufficient to show that small retailers face more intense competition from large retailers. It must also be shown that facing more intense competition actually reduces small retailers' incentives to invest in lower costs and greater efficiency. In contrast, in Tesco's experience, competition from rivals only increases the incentive to invest in achieving lower costs and greater efficiency.

(c) Tesco submitted that the ACS model assumes that suppliers choose to use contracts which damage the competitiveness of their small customers and so

[10]RBB Economics, *The potential for 'waterbed effects' in the UK grocery retail industry*, March 2007, published at: www.competition-commission.org.uk/inquiries/ref2006/grocery/pdf/main_party_submissions_sainsbury_response_to_acs.pdf.

ultimately weaken their own bargaining position against large retailers. If it was true that suppliers faced the type of market dynamics assumed to exist in the model, suppliers would not use the per-unit-type cost structure for negotiations with retailers that the model assumes. Suppliers would have an incentive to use other cost structures, such as charging both a per-unit price and a lump sum, to counter the potential damage to small customers.

Sainsbury's criticisms

25. RBB, on behalf of Sainsbury's, also stated that some of the assumptions on which the ACS model is built are not relevant to the reality of the retail industry. RBB criticized the dynamic version of the waterbed effect, highlighting its inconsistencies and omissions. Below we summarize the salient points of RBB's submission:

(a) RBB submitted that as there are countless examples of upstream competition, the hypothesis of a single monopolistic supplier is unrealistic. If, instead of a monopoly, the upstream market operates in perfect competition, RBB contended that no waterbed effect would arise. With perfect competition, all buyers would purchase at a price close to the marginal cost of production. As a result, no retailer would be able to extract better deals than others. Alternatively, no supplier could charge higher prices to a subset of buyers.

(b) As retailers purchase from a variety of suppliers, and there are countless examples of multi-sourcing, RBB submitted that the hypothesis of a fixed cost of switching supplier is unrealistic. RBB presented an alternative model that leads to retailers multi-sourcing and produces lower final prices for consumers.

(c) RBB also contended that the dynamic version of the waterbed effect is contrived on a theoretical level. As each retailer faces a monopolistic supplier, it is not clear how a reduction in the number of suppliers affects the bargaining position of buyers. In fact, RBB argues, it would appear that each retailer's fallback option (ie

vertical integration) remains unaffected. And without a deterioration of the bargaining strength of small buyers, there is no waterbed effect.

(d) Finally, RBB maintains that in a dynamic setting, firms' incentives to invest and improve their cost efficiency matter, and that the ACS model fails to take into account this aspect of competition. By incorporating this aspect into the ACS framework, the waterbed effect gives retailers an incentive to become more efficient. As they lower their marginal cost, retailers lower their price and gain additional sales. This increased scale of business gives the efficient retailer greater leverage to extract better terms of trade with their suppliers.

Assessment of the key assumptions of the ACS model

26. To determine the relevance of the ACS model to the UK grocery sector, we examine each of its key assumptions in the following paragraphs. In particular, we discuss the relevance of each assumption to the reality of this sector, and how robust the ACS results might be when these assumptions are relaxed.

Assessment of assumption (a): retailers purchase directly from a monopolistic supplier

27. The ACS asserts that the results of its model are robust to a modification of this assumption. However, we consider that altering this assumption is likely to impact on the magnitude of the waterbed effect, and thus this assumption limits the applicability of the ACS model to the UK grocery sector.

28. The degree of upstream competition is not an innocuous assumption. Taking the polar case of perfect competition upstream, suppliers will charge marginal cost, and there is no scope for suppliers to charge large and small retailers different prices. Without any difference in input cost, there is no waterbed effect in this setting. It follows that in a highly competitive upstream market, it is unlikely that the waterbed effect would arise to any significant extent.

29. In addition, the wholesale sector is an important feature of the UK groceries sector that is absent from the ACS model. Because of their buyer power, wholesalers, as well as 'symbol groups', may act to reduce the advantage enjoyed by large retailers. In the ACS model, a buyer's bargaining strength is directly related to its size. If small retailers can aggregate their purchases, which is the function of the wholesale sector and of 'symbol groups', they may obtain better terms of trade than if they were acting independently. In this case, the difference in input costs between large and small retailers either diminishes or vanishes. The presence of a wholesale sector therefore reduces (or eliminates) the waterbed effect.

Assessment of assumption (b): a retailer's size determines its buyer power

30. In the ACS model, the size of the buyer determines its ability to obtain non-cost-related discounts. As a result, large retailers always pay less than small retailers. But for the waterbed effect to materialize, the difference in the prices paid must widen as large retailers become bigger. For example, a large grocery retailer may increase in size through the acquisition of other grocery stores. These acquisitions strengthen the bargaining position of the retailer, and ultimately enable it to obtain better terms of trade.

31. There are many theoretical arguments that point to a direct relationship between buyer size and buyer power.[11] However, we consider that the connection between size and buyer power is not a straightforward issue. From a theoretical viewpoint, it is not size per se that determines a retailer's bargaining strength but the way in which size relates to the damage that the retailer would inflict on a supplier by switching to another supplier, or to the ease with which a retailer may switch. In technical terms, size is only relevant in so far as it affects suppliers' and retailers' outside options.

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[11]Some arguments relate to a greater ease for large buyers to integrate upstream. Another argument considers that if suppliers produce with increasing returns to scale, small retailers may get a worse deal if their purchases are seen by the supplier as being 'negotiated at the margin' and therefore more expensive to produce. Alternative explanations suggest that large buyers find it easier to break collusive agreements between suppliers, or relate to suppliers' risk aversion.

32. We also note that the fixed cost of switching hypothesized in the ACS model does not have a clear correspondence in actual negotiations. While we understand that this hypothesis is a modelling device to link size and buyer power, we consider that this is a serious shortcoming of the model when it comes to its practical relevance for the UK groceries sector.

33. It appears that there are many possible justifications for the existence of fixed costs of switching of the kind hypothesized in the ACS model. As a result, the relationship between buyer size and buyer power is ultimately an empirical question.

34. We consider that given the lack of consensus on the role of size in determining buyer power, an empirical analysis of the relationship between buyer size and buyer power would shed light on the question. One way to empirically assess this relationship is to analyse prices paid by grocery retailers of different sizes to suppliers. In the 2000 investigation, the CC conducted various analyses to assess whether there were significant differentials between the prices paid by large and small retailers for grocery supplies. The CC found that, on average, there were differences, but that there were cases where small retailers paid lower prices. In some cases, there was no statistically significant difference between 'large' retailers, even though they were of different sizes (eg Tesco and Sainsbury's).

35. For the present investigation, [✂] submitted an analysis of supplier-retailer negotiations conducted by [✂].[12] The authors interviewed the sales directors of eight suppliers of varying sizes on a range of issues concerning negotiations with retailers. The majority of suppliers interviewed stated that the largest customers would 'almost always' obtain the best trade terms. This implies that a number of factors other than sheer size may also impact the outcome of negotiations between suppliers and

[12] [✂]

retailers. For example, the authors mentioned that growth potential and 'legacy' effects could also impact the terms of trade.

36. Prior to publication of Emerging Thinking in January 2007, we conducted an analysis of price data for 15 suppliers of branded goods. Whilst the analysis was preliminary, it did not indicate the presence of systematic price differentials in favour of large grocery retailers. Since the publication of Emerging Thinking, we have expanded the analysis, requesting additional data from suppliers. Our analysis of the prices charged by 29 suppliers indicates that increases in purchase volumes will tend to lead to customers paying less (see Appendix 8.1). However, our results indicate that the data is consistent with a non-linear relationship, which could imply that benefits from scale are exhausted beyond a certain threshold. Our results also appear to be largely driven by the size-price relationship that pertains to non-primary brands. This implies that we have not found any strong evidence supporting a waterbed effect (as it is formalized in the ACS model) with respect to primary brands in particular.

Assessment of assumption (c): discounts affect the unit (wholesale) price and are non-cost-related

37. We consider that assuming that contracts take the form of a simple unit price is a strong assumption. Relaxing this assumption would alter the predictions of the ACS model. As already discussed, assuming that contracts take the form of linear pricing implies that any change in the terms of trade between suppliers and retailers will lead to a change in the final consumer price. If, instead of assuming linear pricing, we posit the polar case, such that the contracts take the form of a two-part tariff, the retailer would pay a lump sum to its supplier, and the unit price would be close to the marginal cost of production. In this case, any change in the terms of trade would take the form of a change to the fixed part of the tariff and therefore would hardly affect the final retail price. In this setting, the ACS model would not show any waterbed

effect. As a result, we do not consider that the qualitative results of the ACS model could be extended to these forms of contracts.

38. We also note Tesco's comment that suppliers would have an incentive to negotiate on the lump-sum element of the tariff, and consider that it is not clear that the qualitative results of the model would extend to a setting where two-part tariffs are employed.

39. When contracts between suppliers and retailers include fixed payments, and when the two parties negotiate over these payments, the discounts obtained by large suppliers would not be passed on to consumers in the form of a lower retail price. As a consequence, small retailers would therefore not lose business to large retailers.

40. Next, we consider the evidence on the type of contracts used between suppliers and retailers and whether negotiations focus on the unit price or on the fixed part of the tariff.

41. The supplier survey conducted on behalf of the CC by GfK[13] indicates that around 70 per cent of suppliers make regular or occasional payments to grocery retailers as marketing contributions or other promotional investments. Other forms of payment are less common. However, 43 per cent of respondents stated that they paid some 'other rebates' to retailers. Overall, this suggests that in trading between grocery retailers and suppliers, contracts are not of the form assumed by the ACS in its model. In fact, tariffs tend to have multiple parts, where the unit price is only one portion.

[13] *Research on suppliers to the UK grocery* market (January 2007). Available at: www.competition-commission.org.uk/inquiries/ref2006/grocery/pdf/uk_grocery_market.pdf.

42. The qualitative survey conducted by Dobson and Inderst on supplier–retailer negotiations also provides some useful insights. In their small sample, all suppliers interviewed said that they would resist as much as possible any reduction in unit costs, preferring to differentiate in terms of their trade investment.[14] Consistent with this, they also found that a substantial proportion of the difference in trade terms obtained by different customers would not show up in the 'headline' or invoice price.

43. We understand that in the real world, the 'naive distinction' between linear and two-part tariff may not characterize the whole of the relationship between suppliers and retailers. However, we note that the assumption of linear pricing in the ACS model favours the ACS's hypothesis. This is not to say that in a more complex environment, the waterbed effect will not materialize. But in the absence of a proper formalization, multi-part tariff contracts appear to work against the waterbed effect, limiting its extent. In sum, the use of contracts with multi-part tariffs in the UK grocery sector tends to militate against the possibility of the waterbed effect operating in a material fashion.

Assessment of assumption (d): large retailers' gains are small retailers' losses

44. In the ACS model, large and small retailers compete over a market of fixed size. Any gains of large retailers translate into a loss for small retailers. This ignores market expansion effects which would make a waterbed effect and consumer harm less likely, by extending the number of consumers who benefit from the low prices charged by large retailers.

45. We note that the data provided in the OFT's reference decision for the current market investigation regarding the evolution of market shares over time in the UK grocery

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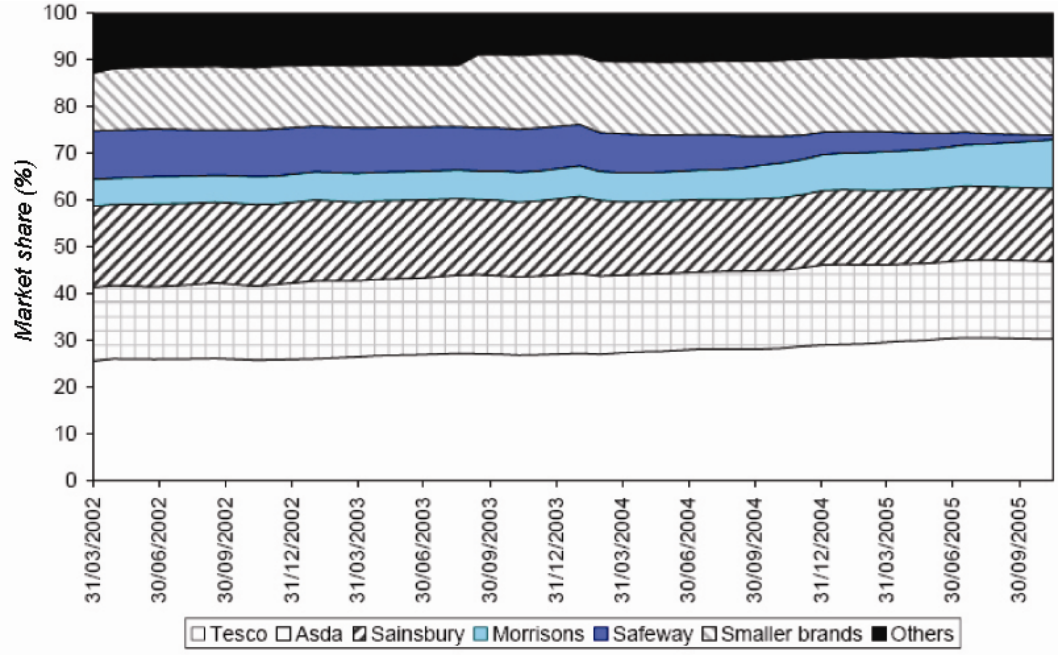
[14] [✂]

sector do not appear to support a clear relationship between grocery retailers' prices and sales. The data is reproduced in Figure 1.

FIGURE 1

Grocery national shares of supply by value, 2002 to 2005



Source: TNS data, till roll.

46. Figure 1 shows that the share of 'smaller brands' (which includes symbol groups, such as Spar and Costcutter) has actually increased since 2002. Because these shares are measured by sales value, we interpret this figure with caution. However, if the price of smaller brands were to increase as predicted by the waterbed effect theory, sales value of these smaller brands (ie revenue) is unlikely to rise.[15] In addition, for a waterbed effect to be at work, we should observe a significant increase in the relative prices charged by such 'smaller brands' over time. We have seen no evidence that this is the case.

[15]If the price elasticity of demand for these smaller brands is elastic, a price rise would imply a net fall in the total revenues. Specifically, the percentage decrease in quantity is greater than the percentage increase in price. This can be explained by the competitive constraint exerted by a large grocery retailer, as per our market definition in Section 4 of these provisional findings. This constraint implies that an increase in the price of smaller brands should be associated with a fall in their sales value, and consequently a decline of their share of sales. However, we do not observe such a decline in Figure 1.

Assessment of assumption (e): large retailers' pass-through only depends on competition from small retailers

47. The incentive that large retailers have to pass through their input price reductions is determined solely by competition with small retailers. This ignores the possibility that competition among large retailers may determine a higher pass-though rate.

48. In addition, a higher pass-through rate would make consumer harm less likely, as the large proportion of consumers served by large retailers would enjoy a bigger discount.

49. We consider these issues further in the next section, as we review the evidence we have on the existence of a waterbed effect in the UK grocery sector and of any consequent consumer harm.

Evidence on the existence of a waterbed effect and of harm to consumers

50. In this section, we consider direct evidence of the existence of a waterbed effect, and its possible effect on consumer welfare.

Direct evidence of a waterbed effect

51. We considered data from the GfK survey of suppliers which addresses more directly the interaction between the terms offered to large and small retailers. Considering price first, the GfK report shows that only 7 per cent of suppliers 'agree' or 'strongly agree' that when large customers negotiate a lower price, prices are increased to small customers. However, effects on non-price factors seem more common. For example, 40 per cent of suppliers indicate that when demand from large customers increases, there could be supply shortages to small grocery retailers, although it seems likely that any such shortages would be occasional and temporary, and might not be sufficiently systematic or pronounced to give rise to a waterbed effect. More generally, 21 per cent of suppliers indicate that when large customers require better

or additional services, service levels to small customers become worse as a result. The extent to which this could lead to a waterbed effect would depend on the impact of service levels on the ability of small retailers to compete, and on whether the effect of decreased service levels was systematically related to buyer size.

52. Moreover, the vast majority of suppliers (93 per cent) do not agree that there is a waterbed effect in relation to the price aspects of the supply of groceries to retailers. This suggests that any waterbed effect taking place is likely to be limited to a minority of suppliers, or that it affects aspects of the offer other than price.

Evidence of consumer detriment

53. In the ACS model, the impact of the waterbed effect on consumer welfare is ambiguous. The large retailer will reduce its price, while the effect on the retail price at small stores is not clear-cut. In the model, it is only in some conditions that consumers will be worse off on average. But as has been acknowledged by Professor Inderst, the assessment of consumer detriment is complex, and in the absence of direct testable proposition, we can evaluate this in qualitative terms.[16] In the rest of this section, we present a qualitative assessment of the likelihood of a consumer welfare loss resulting a from a waterbed effect.

54. As already discussed above, for consumers to be worse off on average, it must be the case that the large retailer will pass on to consumers a small portion of the input price reduction that it extracts from the supplier. If instead, competition is sufficiently intense downstream, large retailers will be pressured to pass through a large portion of the non-cost-related discounts. As a result, the presence of competition between large grocery retailers will tend to benefit consumers, even in the presence of a waterbed effect. While we have reached a provisional finding that there are

[16] [✂]

combinations of features of certain local markets, including high and persistent levels of concentration, which prevent, restrict or distort competition in those markets, we have also observed that there is vigorous competition between grocery retailers in other local markets. Where competition between retailers is vigorous, discounts will result in lower retail prices that benefit consumers on average as a large proportion of the market would reap the benefit of those steeper discounts.

55. We also noted above that in the ACS model, large retailers' gains are small retailers' losses. However, allowing for market expansion will further mitigate the negative impact on consumers on average. That is, low retail prices also attract new consumers. In the presence of a significant market expansion, the impact on consumer welfare is likely to be positive. Although it is difficult to empirically separate the market expansion effect from the 'business stealing' effect, it is likely that lower retail prices allow some consumers to purchase products that were previously not affordable.

56. In Section 3 of the main report, we have shown that prices in food have declined in real terms since 2000. This is reproduced in Figure 2.

FIGURE 2

Trend in real food prices since 2000

Source: CC analysis of ONS data.

57. In order for a waterbed effect to have been in operation and harming consumers on average during a period in which real prices for food products have decreased, we would expect to have witnessed a very substantial deterioration in the price and non-price offer at small retailers. We have not seen evidence of such a deterioration. We understand that there has been a recent upturn in real food prices, although it would be speculative to associate this change with an increased waterbed effect.

58. This data supports the view that if any waterbed effect is in operation, it probably only affects prices in a marginal way. Furthermore, even if a waterbed effect is changing the conduct of some suppliers, this would not lead to significant increases in retail prices. Unfortunately, we do not have data on trends in the non-price elements of the retail offer over time.

Direct evidence of a long-run effect

59. The dynamic version of the ACS model predicts that the number of suppliers would decline over time as large retailers exercise a greater degree of buyer power. We note in our working paper on supply chain profitability[17] (published with Emerging Thinking in January 2007) that we do not have strong evidence suggesting that buyer power has led or is leading to suppliers of groceries exiting the market in numbers greater than what might be expected to arise from normal competitive behaviour.

60. While there has been a significant decline in the number of non-affiliated independent convenience stores in recent years, a large number of these stores have become affiliated with various symbol groups. The presence of a waterbed effect is also difficult to reconcile with our observations in Appendix 5.3 that entry by a supermarket into a high street or local shopping centre during 1999 to 2006 has had no identifiable effect on convenience stores.

Conclusion

61. We have been provided by the ACS with a formalized model of the waterbed effect. For the reasons set out above, we have concerns regarding the validity of the assumptions in the ACS model in the context of the UK groceries sector, and note that changes to certain of the assumptions (such as the introduction of wholesalers, or allowance for a competitive upstream market) could considerably reduce, or entirely negate, the operation of any waterbed effect. In light of third-party submissions regarding the ACS model, and our own assessment of the model, we consider that the ACS model does not provide a basis for concluding that a waterbed effect operates in the UK grocery sector.

[17] Available at: www.competition-commission.org.uk/inquiries/ref2006/grocery/pdf/emerging_thinking_supply_chain_profitability.pdf.

62. Moreover, the evidence that we have reviewed does not support a conclusion that a waterbed effect operates in UK grocery retailing to any material extent. If a waterbed effect had been operating in recent years, we would have expected to observe an increased disparity in the input costs paid by large and small retailers, increases in the relative prices charged to consumers by small retailers and a shift of overall consumer demand from small retailers to large retailers. The evidence that we have reviewed in relation to these variables for recent years would suggest that at least one or more of those expected observations has not transpired.

63. Accordingly, we consider that, to the extent that any waterbed effect exists in the UK grocery retailing sector, it is likely to be of limited impact, affecting a minority of suppliers of groceries and largely not affecting the price aspects of the retail offer. In addition, we consider that the likelihood that a waterbed effect is resulting in material detriment to UK consumers of groceries appears, at this stage, to be very small.