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## Joined-up thinking?

### ASSESSING UNILATERAL AND CO-ORDINATED EFFECTS IN MERGER CASES?

*The Competition Commission's decision on a series of bids to acquire Safeway, the UK's fourth largest supermarket, has drawn the spotlight on to the way in which the Commission analyses the risks that a merger will have "unilateral" or "co-ordinated" effects inimical to consumers' interests. This bulletin explores the issues involved in making these assessments, highlights possible tensions between them, and raises some questions about the Commission's approach.*

In March 2003, the UK Secretary of State for Trade and Industry referred four separate propositions for the acquisition of Safeway to the Competition Commission (CC). The prospective bidders, Tesco, Asda, Sainsbury, and Morrison, were respectively the first, second, third, and fifth largest UK supermarkets; their target, Safeway, was the fourth. After scrutiny, the CC decided to prohibit the acquisition of Safeway by any of the "Top 3", while clearing Morrison to bid – subject to the disposal of 52 stores<sup>1</sup>. Morrison's acquisition of Safeway was accepted by Safeway's shareholders in February 2004. →

This bulletin explores the reasons for the CC's decision, focusing on its treatment of the so-called "unilateral" and "co-ordinated" effects of mergers. It describes the theory underlying both types of concern, and explores the tension between them. Since some factors exacerbate the likelihood of unilateral effects but diminish the prospect of co-ordinated effects (or vice versa), a balance has to be struck in the overall assessment. In conclusion, we raise some questions about the way the CC reached its judgement, in particular in relation to its focus on market structure measures.

### START WITH THE GUIDELINES

Fundamentally, the Commission is trying to assess whether a merger will result in customers getting a worse deal – notably, but not exclusively, because it may result in them being charged more. As the Commission's Merger Guidelines<sup>2</sup> indicate, this may occur because of either a merger's:

- *unilateral effects* – if the merged firm finds itself under less competitive pressure and so feels able to raise prices – or its;
- *co-ordinated effects* – if the smaller number of firms now operating in the market effectively cease to compete, by tacitly co-ordinating their behaviour.

In either case, there is a danger that prices will rise. But there is a key distinction between the two. If the merged firm has an incentive to raise its prices above the pre-merger level, independent of the anticipated reactions of rival firms, the Commission will be concerned about unilateral effects. Where the merged firm only has an incentive to raise prices post-merger if it anticipates that other firms will do the same, the risk to be explored is of co-ordinated effects.

The distinction can, however, become blurred. Confusion often arises when considering these two effects because, if the merged firm does unilaterally raise prices, rival firms may well follow suit, also unilaterally. This may have the effect of exacerbating the overall unilateral effects to be expected from a merger; but it is categorically different from co-ordination.

Another way of thinking about the distinction is to view unilateral effects as the outcome of a reduction in the number of players in a relatively unchanged competitive game. In assessing whether co-ordinated effects will occur, by contrast, we must explore whether the nature of the competitive game will change fundamentally, with players exploring new strategies based on tacit understandings between them.

### WHAT'S THE COMPETITION...

Any assessment of the likelihood of unilateral effects has to start with an understanding of the way in which firms compete in the market concerned. Price, after all, is by no means the only focus of competition. It can, as the economics literature richly illustrates, take a number of very different forms. The three listed below are merely examples, albeit important ones.

- Capacity. In many industrial markets, investment in expensive plant or infrastructure is a precondition for production. Since, once capacity is in place, firms have a strong incentive to use it as fully as possible, a key competitive decision is how much to create in the first place.
- Product differentiation. Some markets are characterised by products that are slightly differentiated in the eyes of the consumer – by appearance, brand, flavour and so on. Retail markets in particular are generally differentiated by location, since customers tend to shop close to where they live or work. The impact of mergers in such markets depends upon (amongst other things) whether consumers generally view the products of the merging firms as close or distant substitutes.
- Innovation. Different models have been developed to help analyse the nature of competition in markets characterised by rapid technological change. Important

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issues include whether innovations create entirely new products or result in incremental improvements to the existing products, and whether competition is "winner-takes-all" or there is space for more than one successful innovation in the market.

Analysis of any particular merger may require consideration of more than one aspect of competition. No single framework will fit all situations, and the choice of the appropriate model is an empirical one.

### ...AND CAN IT BE SUBVERTED?

Under normal circumstances, firms cannot avoid competing with each other – however much they might wish for a quiet life. To co-ordinate – that is, reach a tacit understanding that enables prices to be maintained above the competitive level – is not easy. There are two main difficulties in developing such tacit understandings.

First, firms have to arrive at a common view of what level of price (or output) should be maintained. The greater the dissimilarity between the firms involved, the harder this will be to achieve. Where market information is limited, or noisy, agreement will also be hard to achieve.

Second, firms have to secure adherence to such understandings. Each of them faces a choice: whether to stick with the understanding, or deviate from it. Let us assume the agreement is on price. Deviation (cutting prices) may bring a substantial bonus in the short term, if the resultant gain in market share outweighs the reduction in the margin on each sale. But deviation also brings the risk of retaliation. If the result is that the understanding breaks down completely, and all firms compete fiercely, the original deviant firm may find itself much worse off. If this long-term "punishment", in the form of lower margins with no gain in market share, weighs more heavily on the mind of the potential deviant than the potential short-term bonus, he will stick with the understanding. The maintenance of such understandings therefore depends critically on the anticipation of punishment.

Put formally, firms will only continue to maintain understandings if the net present value of the *co-ordinated profits* exceeds the net present value of the *deviation profits* plus the *punishment profits*. Since these hypothetical levels of profit cannot generally be observed directly, the analysis by competition authorities tends to concentrate on:

- the characteristics of particular industries and markets that are relevant to the values of these profits, and hence to the prospects for co-ordination, and;
- the extent to which incentives to co-ordinate are likely to be changed by a particular merger.

In seeking to assess whether a market is susceptible to sustainable co-ordination, both the UK and EU competition authorities use a checklist of industry and market characteristics. Such a checklist is set out in, for example, the CC's Merger Guidelines. Market structure naturally features strongly, since – as the CC emphasised in the Safeway investigation – a high degree of concentration is generally seen as a necessary condition for co-ordination. Plainly, this is also relevant to the analysis of the change that can be expected to result from a merger.

### DOUBLE OR QUILTS

In arriving at an overall judgement, competition authorities have to weigh up the combined risk of unilateral and co-ordinated effects. The elements on their checklists can be divided into three groups.

Some factors *increase the likelihood of both unilateral and coordinated effects*. As we have already noted, a high degree of concentration in a particular market is generally supposed to increase the risk of one or both effects. The most commonly-used measure of concentration is the Herfindahl-Hirschmann Index (HHI), the sum of the squared

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market shares of firms within the industry. However, as we shall see below, this index may not always provide the best measure by which to differentiate between different bids.

Another factor likely to increase the risk of either effect is the level of barriers to entry within the market under review. High barriers will usually tend to reduce the intensity of competition in the market, and so increase concerns that a merger will have unilateral effects. New entrants will find it hard to compete market share away from large incumbents. Equally, such barriers make it easier to maintain co-ordination: such firms within such arrangements have the reassurance of knowing that it will be difficult for them to be undercut by new entrants.

Other factors *reduce the likelihood of unilateral effects, but increase the likelihood of coordinated effects - or vice versa*. The degree of competition between a group of companies falls into this category. The greater this is, the less likely it is that a merger would give rise to unilateral effects. Its consequences for co-ordination are, however, more mixed. On the one hand, in a fiercely competitive market a tacit agreement not to compete might seem less likely to hold – a potential deviant firm might suppose it had much to gain from undercutting the others. But on the other hand, potential deviants are likely to be deterred by the threat of serious "punishment", since there would be much to lose from a return to fierce competition if an agreement broke down. Paradoxically, therefore, fierce competition may actually increase the risk of co-ordinated effects.

The degree of symmetry in a particular market – that is to say, the extent to which firms in that market have similar competitive capabilities – is another example of factors in this category. Mergers between firms with symmetrical market shares may result in smaller increases in concentration, as measured by the HHI index, than mergers between asymmetrical firms. (This is illustrated by the calculations of the HHI index for possible supermarket mergers with Safeway, shown in the table below.)

Such differences in the index would seem to suggest that asymmetrical mergers pose a greater risk of unilateral effects. However, it is clear that the greater the degree of symmetry, the greater the risk of co-ordinated effects. Where there is symmetry, each member of the arrangement will have similar incentives to co-ordinate rather than deviate. Asymmetries make some firms more likely, and some less likely, to deviate. Since it only takes one firm to deviate and bring the whole co-ordinated arrangement down, asymmetries within the group may substantially weaken the chances of successful collusion. At the very least, this suggests that it may not be appropriate to place too much weight on the HHI when comparing symmetrical and asymmetrical mergers.

At the same time, the risk of co-ordinated effects is likely to be increased by the degree of asymmetry between "insiders" and "outsiders". The tacit understanding needs to embrace all those with sufficiently strong competitive capability to threaten its sustainability. There must, in other words, be a sufficient gap, or "asymmetry", between insiders and the strongest outsider.

Some factors *may work either way, with respect to both unilateral and co-ordinated effects*. Take, for example, switching costs. If these are high, competition for customers may not be very intense, which in turn means firms might derive little benefit from co-ordination. So some economists have concluded that high switching costs reduce the risk of collusion. However, this presumption needs to be tested in each case, because the pressures may in practice work in either direction. Any firm that deviates from a tacit arrangement may find it relatively hard to win customers from the rest of the group, improving the prospects for co-ordination. But at the same time, the risk of punishment to the deviator may be less, since rivals will find it equally difficult to poach customers from the deviator. So the net profit calculations described above could yield positive or negative answers in different circumstances.

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These three groups of effects simply illustrate the fact that there are no simple rules as to the effect of different market circumstances – no "bright lines" linking particular characteristics and the two types of effects.

### THE SAFEWAY STORY

The CC's assessment of the bids for Safeway illustrated a number of these conflicts and paradoxes. As the Commission itself commented in its final report, some market conditions "that facilitate co-ordinated behaviour...might make unilateral action difficult".

The Commission took the view that the most important dimension of competition between the supermarkets was that they were geographically differentiated. Since consumers' shopping patterns were primarily local, the CC's analysis of unilateral effects focused on the implications of each merger for choice and competition in each local area. It concluded that these problems could in principle be solved by appropriate divestments. For each of the proposed mergers, the CC developed a list of stores that would have to be divested in the event that a bidder were cleared to bid, based on whether there was local overlap between the merging parties, and whether the CC considered that sufficient choice and competition would remain in that area.

However, the CC also recognised that there were national elements to competition, on supply chain efficiency, branding, and innovation (for example, in the introduction of new ranges), and that it was necessary to review the broader national impact of each proposed merger. The Commission concluded that an acquisition by any of the Top 3 could be expected to result in co-ordinated effects at a national level, which could not be resolved by any realistic number of store divestments because of the loss of a credible fourth player. However, since Morrison was smaller, and did not have national coverage, the CC's view was that there would be no reduction in the number of national players, and co-ordination would not therefore take place between the remaining four firms. This concern was clearly critical to its ruling, since – unlike unilateral effects – the risk of co-ordination effects could not be dealt with by local divestment.

In analysing the danger of co-ordinated effects, the Commission sought to answer the two questions we identified above, namely:

- does the market have the characteristics likely to lead to co-ordination; and
- what would change as a result of a particular merger?

The inquiry was conducted against the backdrop of the commission's finding (in the 2000 Supermarkets Inquiry) that the market was competitive, with no evidence of co-ordination. So whilst the Commission considered a long list of factors in relation to the first question, such as barriers to entry, price transparency, and switching costs, the key question was the second: what would change as a result of one or other proposed merger?

### MARKET STRUCTURE AND COORDINATION

Whilst many factors were considered by the CC in its co-ordinated effects analysis, its conclusions were drawn heavily from market structure and concentration measures, notably the HHI. The table shows the pre-merger shares for the top five firms and their post-merger market shares, and increment to the HHI that would result from each possible outcome in the absence of any divestments<sup>3</sup>.

The Commission's conclusions hinged on its view of four issues: the effect of a reduction in the number of national firms; the increase in HHI scores in a market in which they were already high; the number of local markets in which each player "met" its rivals; and the players' average local shares. On each of these issues, its conclusions are open to debate.

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Safeway merges with...					
	Pre-merger	Tesco	Asda	Sainsbury	Morrison
Tesco	32	45	32	32	32
Asda	20	20	33	20	20
Sainsbury	20	20	20	33	20
Safeway	13				
Morrison	7	7	7	7	20
Other	7	7	7	7	7
HHI	2042	2874	2562	2562	2224
Increment to HHI		832	520	520	182

Table 1: Market shares and HHI increments.

Source: CC, Safeway. Market shares refer to one-stop grocery sales; "Other" includes Waitrose, Co-op and Somerfield; for purposes of HHI calculation, "Other" has been taken as many firms each with zero share and thus slightly underestimates industry HHI.

### *The number of firms*

The Commission placed much weight on two key arguments: that it is substantially more difficult for four firms to co-ordinate than it is for three, and that Morrison by itself would not be able significantly to challenge a co-ordinated arrangement between the top three. The Commission provided an explanation of why it believed Morrison would have difficulty in destabilising any co-ordination that occurred between the other firms, resting on its view that the planning system had created serious impediments to immediate expansion. But it did not fully explain why it believed the prospects for co-ordination would change so dramatically if the number of national firms dropped from four to three.

### *Market concentration*

In assessing whether the degree of concentration was great enough to meet the necessary conditions for co-ordination, the Commission relied on the fact that the HHI score was already at a level above 2,000, and would be substantially increased by mergers between Safeway and Tesco, Asda or Sainsbury. While the HHI score would also be increased by a merger with Morrison, the increase would – as Table 1 illustrates – be considerably less.

However, the HHI may not be the best point of comparison for different mergers. For, as explained above, co-ordinated effects are more likely to occur where firms have symmetrical market shares, even though the increase in the HHI score is greater when firms have more asymmetric market shares.

The four possible mergers under scrutiny would have altered the degree of symmetry in different ways.

- A merger between Safeway and Tesco would have increased asymmetry between the top three, since the combined firm would have been substantially larger than the next biggest. This would have resulted in the largest increase in the HHI; however, it would at the same time have been likely to reduce the risks of co-ordination. This effect would offset to some extent the impact of the reduction in the number of national firms to three.
- Mergers between Safeway and Asda or Sainsbury would have increased symmetry between the two largest firms, with the third some way behind. In these cases too, therefore, there would have been considerable asymmetry between the top three. It is not clear, therefore, whether identifying this group as the likely "co-ordinators" was appropriate. Sainsbury, for example, argued that a Safeway merger with Asda would lead to co-ordination between the merged firm and Tesco, leaving Sainsbury and Morrison as the "outsiders" – an argument with which, however, the commission did not agree.

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- As the table makes clear, a merger between Morrison and Safeway would involve the smallest increase in the HHI, but the degree of symmetry amongst the top four would be substantially increased. While Tesco would remain the largest firm, the other three would have all been of a similar, and substantial, size. This could potentially increase the prospects for co-ordination between the four – or at least partly offset the benefits of having a fourth national player. Such a merger also removes the largest fringe firm, increasing the degree of asymmetry between "insiders" and "outsiders".

The Commission did not consider the potentially offsetting role of asymmetry in reducing the prospects for co-ordination. Had it done so, its views on the relative merits of different prospective mergers in relation to co-ordinated effects may have been influenced.

Of course, any conclusions would need to take account of the pattern of required divestments. A merger involving any of the top three could be expected to be conditional on a substantial programme of store sales to avoid the risk of unilateral effects in certain areas. The consequence would have been that the merged firm would have seen its share reduce relative to that indicated in the table, while the other firms would see their shares increase (depending on who bought what). In general, one would expect these shifts to have increased symmetry, and therefore enhanced the prospects of co-ordinated effects. But it is questionable whether the pattern that would have resulted would have shown as great a degree of symmetry between the top four as that resulting from a Morrison-Safeway merger.

#### *Market contact*

The CC devoted a large part of its analysis to assessing the number of local markets in which the merging firm would "meet" its other main rivals. Prior to the merger, Tesco, Asda and Sainsbury met all their competitors frequently, Morrison less. Greater contact following a merger was expected by the Commission to result in increased opportunities and incentives for co-ordination.

Two aspects of the Commission's approach raise questions. First, such a view on co-ordination risks conflicts with the analysis of unilateral effects. In this respect, an increase in the number of times rivals meet is generally thought to be beneficial to competition. Tesco and Asda argued to the Commission that consumers would benefit from their presence in more locations, putting price pressure on higher-priced rivals. In this debate, however, they seemed to find themselves between a rock and a hard place, because the more they pointed out this pro-competitive effect, the more the Commission seemed to fear the risk of co-ordination.

Secondly, as the CC itself recognised, the increase in the number of locations in which the supermarkets would meet their competitors is greatest for a merger involving Morrison – simply because Morrison was not originally present in many locations. On this argument, it might therefore be supposed that a Morrison merger would be the most problematic.

#### *Local market shares*

The CC considered that the higher its average local market share, the more likely it was that a firm would wish to co-ordinate. Firstly, it would have less to gain from aggressive competition, since it would have less market share to acquire; and secondly, it would have more to lose from retaliatory action.


The Commission's reasoning on this issue is somewhat hard to follow. It would seem that what it is seeking to describe is not in fact a co-ordinated effect, but a unilateral one. Having "less to gain from aggressive competition" translates into a reduced unilateral desire to cut prices. One could also argue that, to the extent that firms with high market shares have gained these as a result of being effective competitors, they would be better placed in a competitive situation.

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**CONCLUSION**

The CC's conclusion that the proposed mergers involving Tesco, Asda and Sainsbury should be blocked, whilst that of Morrison should be allowed, was widely supported by commentators. However, it is less clear that the motivation for the decision – the potential for co-ordinated effects to arise – was convincingly argued. The CC's findings on co-ordinated effects were strongly driven by the view that the prospects for co-ordination are dramatically different for three national firms than they are for four. But their analysis did not consider the offsetting and potentially important role of asymmetry. Nor does the report fully explain why there should be such a change from a situation that had previously been found to operate in a generally competitive manner.

*Frontier Economics advises Tesco on competition issues.*

<p><b>SOURCE</b></p>	<ol style="list-style-type: none"> <li>1. <i>In its report, the CC required 53 stores to be divested by Morrison. Morrison was subsequently successful in persuading the OFT that the number of stores to be divested should be reduced to 52.</i></li> <li>2. <i><a href="http://www.competition-commission.org.uk/rep_pub/rules_and_guide/pdf/15073compcommguidance2final.pdf">http://www.competition-commission.org.uk/rep_pub/rules_and_guide/pdf/15073compcommguidance2final.pdf</a></i></li> <li>3. <i>An important caveat: the post-merger market shares shown in the table assume that no stores are divested. In fact, of course, the Commission made its clearance of Morrison's bid subject to a recommendation that 52 stores should be sold (see footnote 1). The purchasers were most likely to be the other large firms. Had the bigger bidders been cleared, many more stores might have had to be divested, and the actual post-merger market shares would have been even more different from the figures in this table.</i></li> </ol>
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