



Merger control in Europe

A SELECTION OF FRONTIER BULLETINS ON COMPETITION POLICY

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Merger control in Europe

Since Frontier was founded in 1999, it has been involved in many of the most high-profile merger cases considered by the European Commission (EC). These bulletins, selected from the much larger number Frontier has published, have been chosen to illustrate the changing focus of the arguments about corporate behaviour.

In the early part of this period, there was much debate on the conditions that might increase the likelihood of tacit collusion on price between firms, a subject made topical by the EC's decision to block a series of mergers, from Nestle/Perrier (subject to undertakings) to Airtours/First Choice. The first bulletin therefore discusses the issues involved, focusing in particular on the implications for price collusion of capacity asymmetries post-merger. The second explores the potential in certain industries for collusion not just on price but on capacity

By the end of 2002, the EC was licking its wounds. The European Court of First Instance (CFI) had overturned the Airtours decision and two others (Schneider/Legrand and Tetra Laval/Sidel), and the EC had announced a number of changes in its processes. At that point, the EC was suggesting that the test it would apply in merger cases would continue to be based on the concept of "market dominance" rather than a "substantial lessening of competition". The third bulletin explores the difference. As a result of the ensuing debate, the EC finally decided that its "market dominance" test should be extended to an assessment of whether a merger would cause "a significant impediment to effective competition", bringing the EC regime more closely into line with the UK and the US.

Behavioural, as opposed to structural, remedies were brought into the spotlight by the Tetra Laval/Sidel case, since the CFI opined that these should have been considered as an alternative to a block on the merger. By 2005, when the fourth bulletin was written, much greater attention was paid to the effectiveness of alternative options.

Finally, the fifth bulletin discusses the outcome on appeal of one of the most famous cases of this period in which Frontier was involved: the decision by the EC to block the merger of GE and Honeywell, and the implications for new EC guidelines on non-horizontal mergers. These draft guidelines were issued in February 2007, and we end with an update on their contents.

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Fearful asymmetry

CAPACITY ASYMMETRIES AND MERGER ANALYSIS

One of the European Commission's main concerns about mergers in concentrated markets is the extent to which they may make these markets more susceptible to tacit collusion. A merger does not merely reduce the number of firms in the market; it may make collusion more or less likely by altering the degree of symmetry in their competitive capabilities. This bulletin explores the latest thinking on these issues in merger analysis.

A variety of factors, featuring on what is commonly known as the “collective dominance checklist”, are considered in EC merger investigations exploring the possibility of tacit collusion. These factors include, amongst others, market concentration, barriers to entry, product homogeneity, market share stability, demand growth, cost symmetry, multi-market contact, and price transparency.

Many of these elements are unlikely to change as a result of a merger, but may indicate whether the market concerned is generally susceptible to tacit collusion. Much has been written on the appropriate criteria for inclusion in the checklist on this basis, and on how the checklist should best be employed. By contrast, there has been relatively little discussion of how the checklist factors may be directly altered by a merger, and how such post-merger changes influence the likelihood of tacit collusion.

EXPLORING MERGER CHANGES

The likelihood of tacit collusion depends on answers to two main questions:

- What are the incentives and the ability for each firm to collude? (How great are the profits from collusion? Could agreement be reached tacitly?)
- What are the incentives and the ability for each firm to deviate? (How great is the profit from deviating? How severe is the punishment likely to be? Is the threat of punishment credible?)

From an economic perspective, merger analysis should concentrate on how mergers alter the balance of these incentives. For example, any merger will affect market structure. After all, the number of players will fall (unless there is divestment or resale of capacity to third parties not currently in the market) and market concentration will be increased. Every economic theory of tacit collusion would predict that, other things being equal, a reduction in the number of players will increase the likelihood of collusion.

However, other things are seldom equal. In particular, the merger may also result in an increase or decrease in the symmetry of competitive capabilities between firms. “Competitive capabilities” is a general term for factors that determine the competitive success of particular firms, such as marginal costs, capacity levels, and the strength of brands. In most cases, economic theory predicts that an

increase in asymmetry reduces the likelihood of tacit collusion, as firms' incentives become less closely aligned.

This effect can, in principle, more than offset the loss of a player. Consequently, it is necessary to investigate changes in market structure and symmetry simultaneously to determine the overall effect of a merger.

HOW MUCH CHANGE IS SIGNIFICANT?

Competition authorities have traditionally employed concentration-based measures, such as the Herfindahl-Hirschmann Index (HHI), as a screening device to provide thresholds of concentration (both in terms of levels and increments) above which mergers may be of concern. The HHI changes with both the number of firms and the degree of symmetry. However, the use of the HHI is based on the market power predictions of a particular economic model of oligopoly (the symmetric Cournot model), and its primary aim is to understand the possibility of a certain type of lessening of competition.

Unfortunately, therefore, the HHI may be an unhelpful measure in some circumstances. For example, where there are concerns about a lessening of competition in differentiated products markets, it is the level of overlap between two merging firms that is of primary interest and the HHI may give a misleading picture of this.

Similarly, problems may arise when tacit collusion is the main concern and a merger changes the level of symmetry in competitive capabilities (especially where these competitive capabilities are related to market shares). An increase in asymmetry reduces the likelihood of tacit collusion, but increases the HHI. (For example, two firms with market shares of 50% each generate an HHI of 5,000; two firms with market shares of 60%:40% generate an HHI of 5,200). As a result, the HHI is an inappropriate measure for assessing the implications of a merger raising collective dominance concerns and involving a rebalancing of competitive capabilities.

This difficulty suggests two alternative approaches may be more fruitful.

- Formal economic analysis: mergers could be assessed by developing formal economic models to capture the essential features of each case.
- An adjusted screening measure: perhaps a variant of the HHI – which compensates for the presence of asymmetry – could be developed for merger analysis.

The first option may be appealing in the limited number of cases where there is sufficient time to allow detailed scrutiny. We outline some of the recent approaches taken below, in the context of mergers that alter market structure in industries where capacity is an important strategic variable. However, competition authorities will need to take a preliminary view as to whether a merger raises sufficient concerns to require detailed scrutiny, and in this context formal economic modelling may be prohibitively time-consuming. So far as the second option is concerned, there seems to be a dearth of literature on the design of alternative screening devices to take explicit account of such asymmetries.

The existing economic literature indicates two basic approaches to formalising the impact of asymmetries on the likelihood of tacit collusion. The questions raised under each relate to:

- **Free riding:** what is the impact of changes in capacity asymmetry amongst firms on the incentives of those firms to form and take part in a collusive arrangement?
- **Enforcement:** What is the impact of changes in capacity asymmetry on incentives to deviate from an existing collusive arrangement?

Frontier Economics has carried out bespoke analyses of both aspects in recent merger cases.

FREE-RIDING

How do capacity asymmetries affect the likelihood that a group of firms will be able to form a tacitly collusive arrangement? This question can be expressed in the following way. Supposing that every other firm in the market had chosen to be part of a tacitly collusive arrangement; would the last firm prefer to join the arrangement or to “go it alone”? The firm’s decision rests on the profits it stands to make from restricting its output, compared with the profits it stands to make from free-riding on the restriction of output by others.

Frontier Economics has developed a model to investigate this question, which shows that capacity asymmetries increase the opportunities for free-riding¹. In particular, it is the smallest firm – with the lowest capacity share – that typically least wishes to form a collusive agreement, for two reasons. Firstly, the firm with the lowest share of capacity is likely to have the lowest share of collusive profits (the profit share effect), and so has least to gain from being a member of the arrangement. Secondly, the firm with the lowest share of capacity makes the least impact on prices by putting its output on the market (the market price effect), and therefore is most likely to wish to “go it alone”.

ENFORCEMENT

So far, this bulletin has explored whether firms would choose to join a tacitly collusive arrangement, given the option to do so. The analysis was primarily static: a key assumption was that there is no deviation from the agreement, once made. However, individual firms will always have an incentive to cheat on a collusive agreement, if there is no enforcement strategy to keep them in line. A firm’s decision to cheat will depend upon the profits to be made from cheating (large profits today, followed by a period of low “punishment profits”) compared with the constant stream of profits to be made from remaining part of the collusive arrangement. Critically, this decision depends upon the extent to which firms discount the future.

The less a firm cares about the future, the more likely it is to cheat, as it prefers the large deviation profits today to the stream of collusion profits tomorrow. There is a “critical discount factor” (CDF) for each firm – the discount factor that makes that firm just indifferent between deviating from the arrangement and sticking with it. The lower a firm’s CDF, the more likely it is to maintain a collusive arrangement and the less likely it is to cheat. We can then define the

“collusion critical discount factor” (CCDF) to be the discount factor for the firm that is most likely to deviate – the highest individual critical discount factor.

Using this framework, Frontier Economics has developed a model that indicates it is once again the firm with the smallest capacity share that typically sets the CCDF². The smallest firm is likely to gain the least share of collusive profit (the profit share effect), and so will have the least enthusiasm for sticking with the arrangement; it also has, as we have seen, the least impact on prices if it does deviate (the market price effect), and hence has the greatest incentive to cheat.

Both modelling analyses have the same key result: the smallest firm is frequently the “weakest link”. This result has a number of implications for merger analysis.

- Mergers not involving the smaller players in an oligopoly are less likely to raise tacit collusion concerns.
- Mergers involving the largest firm may weaken the relative position of smaller firms, and hence make collusion less likely (although, of course, concerns about dominance by a single firm may increase).
- Mergers involving two smaller players may raise more collusion concerns than a merger between a large and a small player.

CONCLUSION

It has long been recognised that asymmetries between firms make tacit collusion less likely. The modelling approaches outlined here investigate one particular form of asymmetry – capacity constraints. Others may have different implications; the economic framework developed above however gives an idea of how to approach their investigation. These approaches complement the traditional use of the collective dominance “checklist”, but are not straightforward and may be time-consuming to apply. One possible way to overcome this difficulty would be to develop a new screening device for collective dominance, perhaps based on the HHI, modified explicitly to account for asymmetries between market participants.

The right approach to testing for “collective dominance” was an issue of much debate in the early years of Frontier’s life, and we were involved in developing a number of models to assist the argument. Later in 2002, in its judgment on the appeal by Airtours (by then MyTravel) against the Commission’s prohibition of its merger with First Choice, the European Court of First Instance attempted to clarify the issues by setting out the three conditions essential for a collective dominance finding. These are explored in some detail in the third of these bulletins. Meanwhile, however, the specific issue of the possibility of collusion on capacity rather than price is explored in the second bulletin.

SOURCES

1. This modelling follows literature by Selten, R. (1973), “A Simple Model of Imperfect Competition where Four are Few and Six are Many”, *International Journal of Game Theory*, pp 351-368.
2. This modeling follows literature by Compte, O., Jenny, F., and Rey, P. (2000), “Capacity Constraints, Merger and Collusion”, *Mimeo, Institut d’économie industrielle, Université des Sciences Sociales*

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Unrepeatable games

OBSTACLES TO CAPACITY COLLUSION

European mergers are regularly scrutinised to determine whether they increase the risk of tacit collusion on prices. There is less understanding of the risk of tacit collusion on capacity decisions. Recent investigations have however begun to explore this issue.

To date, the most famous investigation of the possibility of capacity collusion is Airtours/First Choice, a merger in the package holiday sector. However, this case is far from typical. Capacity decisions in this sector are unusual in that they are remade frequently, involving as they do annual choices about the number of charter flights and hotel bookings for each year ahead. By contrast, in many industries (especially manufacturing sectors such as metals, chemicals, or paper), companies make investments in new capacity that are largely irreversible (the costs are sunk), generally lumpy (each plant accounting for a significant percentage of total industry capacity), and usually durable (depreciating over a long period).

Capacity tends to be a key strategic variable in such situations. In the short term, capacity levels will be fixed, since new investments take time – often years – to come on stream. Hence market prices will be driven by the interaction between demand and current capacity. In the long term, firms compete to introduce new capacity as technological change or demand growth make it profitable.

These characteristics, taken together, imply that new investments will be built relatively infrequently and are rival: if one firm builds a new plant, this profitable opportunity cannot be exploited by another firm. Mergers between large suppliers in such markets may raise collective dominance concerns.

In recent cases, the European Commission has considered two possible ways in which a group of firms might tacitly collude:

- by co-ordinating investment, in order to limit the introduction of new capacity into the marketplace, the aim being to raise the level of average prices in the long-run;
- by co-ordinating output downtimes (i.e., capacity utilisation rates), in order to support short-run prices during periods of limited demand.

This bulletin focuses on the first of these possibilities. It explores the characteristics of capacity investment in such industries, and their implications for the structure of any tacitly collusive agreements, as well as their chances of success. Would a merger allow a group of large suppliers to restrict the level of new capacity coming on to the market, in order to drive up prices? In practice, two steps would be involved in any such an arrangement.

- **An initial “restraint period”:** starting from the current level of capacity, the large suppliers would need to abstain from new investment until the desired (monopoly) level of industry capacity is reached.
- **A subsequent “investment rota” period:** the monopoly capacity level will be a moving target if demand or technology change over time. As a result, the large suppliers would need to decide who would undertake the necessary extra investment, for example by agreeing that they should take turns.

In reaching a view on the likely success of any such co-ordinated arrangement, there are a number of economic factors to be explored. These relate to two main issues.

- **Agreement.** Would the large suppliers agree to form a co-ordinated arrangement? Are the incentives amongst large suppliers sufficiently aligned for consensus to be reached on the appropriate levels of key variables? Would they have the ability to do so tacitly?
- **Enforcement.** Would large suppliers be able to enforce the collusive arrangement in the face of the individual incentives to cheat? Could a sufficiently powerful punishment strategy be developed? Would the threat to carry out that punishment strategy be credible?

These two issues are now discussed in more detail, with particular reference to the characteristics of new capacity.

ONE LUMP OR TWO?

In developing a co-ordinated agreement, the firms would need to ensure that the details of that agreement are clear to all parties, and that all parties would prefer to join in rather than go it alone. Agreements would have to cover a number of aspects, including the duration of the restraint period, the order of the investment rota, and how to alter the arrangement to take account of responses by fringe firms or changes in demand conditions. This task would be made more complex by asymmetries in strategies and incentives amongst the large suppliers, as then each firm may disagree on the appropriate numbers for key variables.

Agreement on these details could only be developed tacitly through regular market interactions between firms. These interactions may occur either through actual market behaviour (e.g., price, output or capacity decisions) or through the signalling of future behaviour (e.g., announcements relating to future plans). Such interactions are needed if patterns of behaviour and mutual understanding are to be developed. Attempts to achieve tacit collusion with respect to capacity present particular difficulties.

- **Lumpiness creates asymmetries.** If it were possible to increase capacity by small increments, each firm could agree to do so on a regular basis. However, since the capacity created by building new plants is normally substantial, and investments are rival, permission to introduce each “lump” would need to be allocated amongst the large suppliers in the investment rota phase. Consequently, the first in line would benefit from having an increased market share now; the last supplier would need to be content with “jam tomorrow”.

Since the rota might need to set long gaps – perhaps many years – between investments, there would be a substantial difference between the present value of profits of the firm that goes first and the firm that goes last.

- **Market interactions are rare.** Since capacity investments are lumpy, market interactions may only occur on a yearly basis, or even less frequently. The playing of a “repeated game”, which enables firms to develop a tacit understanding of each others’ proposed strategies, is not possible.
- **Signalling ability is limited.** Market conditions may change regularly, and to be optimal, the co-ordinated arrangement between suppliers would need to alter in response. Such flexibility is not easy to achieve without confusing the signals. For example, how would one large supplier respond to an increase in forecast market demand during the investment rota phase? From its point of view, the agreement should ideally accelerate the pace of new investment. However, since changes in the level of capacity are lumpy, costly, and irreversible, it would be necessary to signal this belief in ways that would not lead other large suppliers to suspect a deviation from the original agreement. These difficulties can be contrasted with those relating to pricing decisions, where incremental changes are usually feasible, market interactions are more frequent, and flexible responses are easier to achieve.

THIS IS GOING TO HURT ME MORE THAN YOU

All tacitly collusive arrangements have an internal tension: in the short term, the benefits to a firm from cheating on the agreement outweigh the benefit from sticking to that agreement. To sustain a tacit agreement, therefore, a punishment mechanism is required, which ensures that the future benefits from sticking to the agreement outweigh the short-term benefits from deviation.

Besides hurting the deviator, retribution will also hurt the would-be punishers. A well-designed punishment mechanism must therefore balance two requirements.

- The punishment must be powerful – that is, the deviator must suffer a substantial loss of profits.
- The punishment must also be credible – so that when faced with a deviation, punishers would indeed choose to inflict that punishment (at a cost to themselves) rather than accommodate the deviation.

Economic theory suggests that the optimal punishment strategy is one that involves a “short, sharp shock”: a short period of severe punishment, with the punishers often operating below the competitive level, followed by a swift return to the collusive arrangement. In this way, deviators are punished, whilst punishers themselves can foresee the prospect of a return to good times.

In the case of price collusion, optimal punishment strategies might typically entail a temporary price war: when the deviator cuts prices, the punishers cut harder. In the case of capacity collusion, a deviation might involve a firm “building out of turn” during the investment rota, and an appropriate response might therefore seem to be that all other firms also build new plant. This immediately illustrates the difficulties with collusive arrangements on capacity as opposed to price. Since investments are irreversible and long-lasting, “short sharp shocks” are ruled out.

Any would-be punisher must face the prospect that the punishment – and hence the cost to itself – will last for a long time. Moreover, punishers will not be inclined to do more than return to the competitive capacity level – in other words, to fill the “capacity gap” between the agreed monopoly level and the competitive level. Any greater punishment would not be credible, since punishers would be better off not enforcing it.

Moreover, once deviation has occurred, it is a *fait accompli* – the remaining firms cannot induce the deviator to remove its capacity as the investment is irreversible (the costs are sunk). If the deviator invests in enough new capacity to fill the “capacity gap” completely, the only possible response by the other large suppliers is a return to competitive investment behaviour over time. Active counter-investment is ruled out. The irreversibility of new capacity investments therefore gives the deviator a first-mover advantage.

Any tacit agreement on new capacity decisions would therefore be on a knife-edge, and restoring the collusive arrangement after any deviation would take many years. Once again, the opportunity to play a “repeated game”, so necessary for successful tacit collusion, is essentially lacking in the field of investment.

CONCLUSION

Tacit collusion theories tend to be underpinned by the assumption that players are engaging in games with two key features: that market interactions are frequent and readily reversible. These features are relevant to both the formation and the enforcement of any tacitly collusive arrangement.

- In order to form an agreement, frequent interaction may be required to develop a mutual understanding of each others’ strategies. Reversibility may be necessary to provide the flexibility to respond to changes in the market environment.
- In order to enforce an agreement, frequent interaction may be required to reinforce the future benefits of collusion compared with the short-term benefits of deviation. Reversibility may be required to restore an agreement after deviation and punishment have occurred, sufficiently quickly.

The characteristics of capacity investments in many (notably manufacturing) industries - in particular, their irreversibility, lumpiness and durability - are such that neither of these features is prevalent. This greatly decreases the likelihood of effective capacity collusion.

The European Commission considered these issues with respect to the merger between UPM Kymmene and Haindl in 2001. This merger was ultimately cleared without remedies, and since then the Commission has made no prohibitions on such arguments, perhaps reflecting the points of difficulty raised in this bulletin. In the meantime, it had been conducting a review of its processes, and the results, announced at the end of 2002, are analysed in the next bulletin.

Frontier advised UPM Kymmene during the EC investigation into UPM Kymmene.

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Competing tests

THE CHOICE OF REGIME FOR EUROPEAN MERGERS

Following the highly-publicised decision by the Court of First Instance to overturn three of the European Commission's merger prohibition decisions, it has announced a number of proposed changes to its decision-making process. These reforms aim to address the priority areas of the merger control procedure employed by the Commission and the resources available to it. However, no change is envisaged to the substantive "dominance" test - the Commission has decided that it does not propose to replace it by one seeking to establish whether the effect of a merger will be a "substantial lessening of competition". This bulletin explores some of the implications.

In 2001, the European Commission issued a Green Paper exploring options for reform of the EC Merger Regulation (ECMR). Amongst the many issues raised was the desirability of a move from the current "dominance" standard to the "substantial lessening of competition" (SLC) test that has been applied in both the United States and the United Kingdom.

Advocates of the SLC test have suggested that it would allow for the economic issues to be better reflected in the competitive assessment of mergers. Meanwhile defendants of the dominance standard maintain that it is able to capture all possible competition concerns.

Since then the Court of First Instance (CFI) has annulled, on appeal, three of the Commission's recent high-profile merger prohibition decisions – Airtours/First Choice, Schneider/Legrand and Tetra Laval/Sidel – on the basis that the Commission had failed to provide sufficient economic and factual evidence to prove its theories of competitive harm. Attention has therefore, quite appropriately, turned to the more pressing issue of improving the Commission's application of the ECMR and, on 11th December 2002, a number of proposed reforms were announced to its investigative practice and decision-making process¹.

This reform package includes management measures to improve the way investigations are conducted, enhancing the Commission's economic capabilities, introducing an internal peer review system, improving the parties' ability to defend their points of view, strengthening of the Hearing Officers role, more flexibility with regard to the timeframe for notifications and investigations, and enhancing the fact-finding powers of the Commission.

The Commission has also confirmed that it considers the dominance test enshrined in Article 2 of the ECMR to be capable of dealing with the full range of anti-competitive scenarios that mergers may engender. It is therefore to remain, and will not be replaced by the SLC test. However, the Commission

proposes to amend Article 2 of the ECMR effectively to redefine the dominance test to include non-collusive oligopolies.

The main argument for changing to SLC would be the clarity provided by the test in these cases. This article explains the nature of the perceived gap that the Commission is seeking to fill.

UNILATERAL EFFECTS

From a competition perspective, a merger may give rise to economic concerns if it results in an increase in market power; that is, if it increases a firm's ability to raise prices profitably above the competitive level. The debate over the most appropriate test hinges on the effectiveness of each in assessing three different ways in which this increased market power may come about.

Firstly, a merger may have "unilateral effects" – that is to say, a firm may be able to raise prices above the competitive level without the co-operation of, or co-ordination with, its rivals. Most obviously, a merger may have unilateral effects if it results in one large firm facing a number of smaller competitors that are unable to provide an effective competitive constraint.

More generally, concerns about unilateral effects can arise in oligopolistic markets. However, there is no general, robust relationship between market structure and market power. Simple measures of market concentration, such as market share or the number of firms, are insufficient to provide an unambiguous guide as to the effects of a merger.

There is no simple rule to determine whether a reduction in the number of firms will result in an increase in market power, and so in a rise in prices. This will vary greatly, depending on the nature of competition and the characteristics of the market.

So a variety of different economic models of oligopoly have been developed to capture the method of competition in particular industries, each of which will deliver different predictions as to the relationship between market power, market share, and the number of firms.

The three that follow are amongst the most important:

- **The Cournot model:** this models a situation in which full competition on price for each and every customer is not possible. Such a situation may arise if, for example, firms compete on investment as well as price, so that capacity constraints limit the number of customers each firm can serve. In such a situation, the strength of competition, as measured by the price-cost mark-up, increases with the number of firms. Any merger will result in some increase in market power for all firms, which will be greater the fewer they are in number and the higher the capacity shares of the merging firms.
- **The differentiated Bertrand model:** this models a situation in which rivals' product offerings are imperfect substitutes (e.g., branded goods, or those offered by firms that are located in different areas). The greater the degree of product differentiation, the higher the price-cost mark-ups. The impact of a merger is increased by the degree of substitutability between the products of

the merging firms, but decreased by the degree of substitutability between these products and those of the other firms in the market.

- **The pure Bertrand model:** this models a situation in which rivalry between firms is intense. Where products are close substitutes, and there are no impediments – such as capacity constraints or customer switching costs – to each of the firms serving every consumer in the market, price competition will be acute. The existence of a second firm is sufficient to create full competition, and to drive prices down to marginal cost. Mergers that still leave two or more firms operating in the market will therefore result in no increase in market power.

Further models of oligopolistic competition have been developed; there are special ones, for example, for markets characterised by customer switching costs, for markets in which firms compete on product innovation and R&D investment, and for markets in which customers enjoy buyer power. However, it is rare for a single economic model to capture all the salient features of a particular market. Rather than being “correct” or “incorrect” for the circumstances, therefore, different models will typically be more or less appropriate to the situation.

CO-ORDINATED EFFECTS

Secondly, a merger may give rise to economic concerns if it enhances the prospect of co-ordinated behaviour between the remaining firms in the market. The expression co-ordinated behaviour refers to situations in which firms, recognising their long-term mutual interdependence, cease to act unilaterally and in their short-term private interests, but instead act collectively to increase industry profits above the competitive level. This need not necessarily take the form of explicit cartel agreements; a tacit recognition by firms that it is in none of their long-term interests to rock the boat may be enough.

The analysis of whether a merger makes such tacit agreements more likely generally proceeds in two stages.

- The first is concentrated on the characteristics of the industry, in order to determine whether it is susceptible to tacit collusion. Do firms have the incentives and ability to collude tacitly, and would such arrangements be sustainable?
- The second stage proceeds from this understanding of the context to examine the extent to which changes in the market structure, following from the merger, alter the likelihood of tacit collusion. In general, reducing the number of firms enhances the prospects of co-ordinated behaviour. However, for reasons explained in the first Frontier bulletin in this booklet, increases in asymmetry between firms could offset this effect.

VERTICAL AND CONGLOMERATE EFFECTS

Thirdly, a merger may give rise to economic concerns with respect to foreclosure effects. The merging parties need not compete in the same product markets for such concerns to arise. Essentially, the issue is whether market power might be leveraged from one market to another, through actions that link markets, either

horizontally or vertically - such as bundling, tying, refusing to supply, or exclusive dealing.

These examples are perhaps the most obvious causes of a potential loss of competition, since they are predicated on the possibility of exit by rival firms. However, they are often also the most controversial. They frequently engender arguments, drawing on theoretical economics, about the rationality, and feasibility, of exclusionary strategies. The results can be highly sensitive to the specific assumptions made.

From an economic perspective, a merger control regime should seek to address the competition concerns raised by each of the three mechanisms described above. The current ECMR, based around the dominance standard of Article 82, has proven sufficiently flexible to capture most of these and to produce broadly convergent outcomes to the SLC test employed by the US and UK competition authorities.

So the practical importance of the dominance versus SLC debate should not be overstated. Nevertheless, for the reasons explained below, a perceived gap remains in that certain types of unilateral effects in oligopolistic settings may not be readily caught by either the single firm dominance or the collective dominance tests under the ECMR. Hence the Commission's desire to clarify the situation by amending Article 2 of the ECMR.

An important potential limitation of the dominance test for the purposes of merger control was the ability to address concerns over co-ordinated behaviour. This has changed with the rapid development of the concept of collective dominance. It is now established that the Commission can apply the concept of collective dominance in order to prohibit a concentration if it is able to show that this would create or strengthen the ability of the merged firm to benefit from tacit co-ordination with other firms in the market.

COMING TO JUDGEMENT

The CFP's recent judgment in *Airtours* has helped to clarify somewhat the interpretation of collective dominance:

...[a] collectively dominant position significantly impeding effective competition in the common market or a substantial part of it may thus arise as the result of a concentration where, in view of the actual characteristics of the relevant market and of the alteration in its structure that the transaction would entail, the latter would make each member of the dominant oligopoly, as it becomes aware of common interests, consider it possible, economically rational, and hence preferable, to adopt on a lasting basis a common policy on a market with the aim of selling at above competitive prices.²

In particular, this judgment goes on to say:

...three conditions are necessary for a finding of collective dominance as defined:

- first, each member of the dominant oligopoly must have the ability to know how the other members are behaving in order to monitor whether or not they are adopting the common policy;

- second, the situation of tacit coordination must be sustainable over time, that is to say, there must be an incentive not to depart from the common policy on the market;
- third... the Commission must also establish that the foreseeable reaction of current and future competitors, as well as of consumers, would not jeopardise the results expected from the common policy.

These economic considerations are relevant to the ability of, and the incentive for, firms to develop a sustainable tacitly collusive arrangement, and hence to concerns about co-ordinated behaviour. They are not relevant to an assessment of unilateral effects.

The CFI would thereby appear to have confirmed that the concept of collective dominance cannot be used to make an assessment of the general competitive effects of mergers in oligopolistic markets, confined its application to those where there is a real risk of the merger facilitating co-ordinated behaviour. However, this is not a view shared by all. The CFI only ruled on the specifics of the case before it, and did not explicitly rule on the possibility of addressing the effect of mergers in non-collusive oligopolies. It could therefore be argued not to have more generally limited the scope of application of the ECMR in oligopolistic markets.

IS THERE A GAP?

The CFI's judgment in *Airtours* could mean that the single firm dominance standard would need to be applied to all concerns about unilateral effects. Single firm dominance arises in a situation in which a firm is sufficiently large to act independently of its competitors and its customers – for example, if one large firm confronts a fringe of smaller competitors.

The European Court has held that, in the absence of exception circumstances, there is generally a presumption that a company has a dominant position if it has more than a 50% share of a particular market. At the same time, the conventional wisdom has traditionally been that a merger would not typically fall foul of the single firm dominance test unless the new entity's market share was over 40% and it faced no other sizeable competitor.

Although the Commission has stated that the possibility of a company being dominant cannot be discounted even where it has a market share of less than 40%, in practice this has been rare. We are aware of only one case under Article 82 where a firm has been found dominant at below 40% market share (39.7%).³ More recently, though, the Commission has subjected to careful scrutiny a number of mergers involving shares below 40%.⁴

This leaves two potential gaps in the regulation of mergers that give rise to concerns about unilateral effects. The first potential gap occurs where a merger results in the creation of one large firm, but with a market share of less than 40%. As discussed above, the key constraint on the behaviour of a merged firm is its rivals' ability to expand output and undermine the profitability of any price increase the merged firm attempts. There is no reason to expect that this will exist in all situations where the merged firm's market share is below 40%.⁶

SHARE OR MARGIN?

An example of the use of simulations can be given by analyzing a market in which firms are differentiated by means of retail location (to which the differentiated Bertrand model is most applicable.) The higher the degree of overlap between the merging firms, and the lower the degree of overlap between the merged firm and its rivals, the more the merged firm will be able to increase prices.

Suppose that the firms are randomly located, and hence the degree of overlap depends upon their market shares. Now we need to make assumptions about the level of pre-merger gross margins (the mark-up of price over marginal cost) for all firms in the industry (which in this model is equal to the reciprocal of the firm-specific price elasticity of demand). We then assume that no firm repositions its product, that the merger results in no efficiency savings, and that there is no entry of new firms post-merger, factors that would all complicate real-life analysis.

Table 1 illustrates the predicted price increases following two mergers. In the first example, the pre-merger market shares of eight firms are 20%, 15%, 10%, 10%, 10%, 10%, 10% and 5%, and the merger of the two largest therefore gives a share of 35%. Higher price increases are predicted for higher gross margins (reflecting a lower value of the elasticity of demand). In the second example, seven firms have market shares of 20%, 20%, 10%, 10%, 10%, 10% and 10%, so a merger of the two largest gives a market share of 40%. Predicted price increases are higher, but not dramatically so. Indeed, under these assumptions, it is the size of the gross margin rather than of market share that has the most effect on price.

Gross margin	Elasticity of demand	Predicted price increase (merged firm has 35% share)	Predicted price increase (merged firm has 40% share)
0.2	5	0.8%	1.0%
0.4	2.5	1.6%	2.0%
0.6	1.7	2.4%	3.0%

Table 1: Merged firm with 35%-40% market share and small competitors

Source: Frontier Economics modelling

Table 2 makes the same point. It illustrates the predicted price increases following a merger between the two smaller of only three firms, with market shares of 50%, 25% and 25% respectively. (Other assumptions about the nature of competition and the market characteristics remain as in Table 1.) Although the merged firm has a market share of 50%, the predicted price increases at levels of gross margin of up to 0.4 are still lower than for the firm with a 40% share at 0.6 margins.

Gross margin	Elasticity of demand	Predicted price increase (merged firm has 50% share)
0.2	5	1.4%
0.4	2.5	2.8%
0.6	1.7	4.2%

Table 2: Merged firm with 50% market share and one large competitor

Source: Frontier Economics modelling

The second - and perhaps more important - potential gap occurs where a merged firm faces one or more large rivals rather than a plethora of smaller competitors. Such a situation might give rise to an increase in the market power of each large firm in the market. Each of them, acting independently, may rationally take the actions and likely responses of other large firms into account in making their own decisions. To do so, they may not need actually to co-ordinate their behaviour, and hence inspection through the lens of collective dominance may not adequately deal with the issues.

So we cannot rely on a general presumption that a 40% market share acts as a robust dividing line between mergers that do, and those that do not, give rise to unilateral effects concerns. Nor can we demonstrate that unilateral effects concerns will never arise in oligopolistic markets that are served by more than one large firm.

We can illustrate the issues by use of simulated economic models, which (given the relevant assumptions about the initial market structure, method of competition, and characteristics of the market) enable us to arrive at estimates of price increases that might be expected after a merger. A specific series of examples of these kind of simulations is provided in outline in the box on the opposite page, and these illustrate the point that market share is not all-important, even at levels above 40%.

A GAP WORTH FILLING?

At least in theory, therefore, the traditional interpretation of the dominance standard suffers from an inability adequately to capture certain types of unilateral effects concerns. From the perspective of a merger control regime, however, this theoretical weakness is only of practical interest if such effects can be identified and investigated.

The CFI's recent judgments in *Airtours/First Choice* and *Tetra Laval/Sidel* confirm that it is insufficient for the Commission to develop a theory of potential economic harm without also substantiating its applicability to the market in question. So what are the implications?

The evidence needed to support an investigation of cases in the two perceived gaps is the same as would be collected by the Commission for analysis of other unilateral effects cases (i.e., where the merged firm has a market share of over 40% and is the only large firm). There would be a need to explore the nature of competition and the characteristics of the market - including the price elasticity of demand, the nature and extent of barriers to entry and expansion on behalf of rivals, the degree of buyer power and the size of any efficiencies that would affect marginal costs.

The evidence base required is therefore no more onerous or difficult to create than for unilateral effects cases, where the single firm dominance standard is more obviously applicable. For example, a review of mergers considered by the UK Competition Commission (formerly the Monopolies and Mergers Commission) over the last decade would reveal that a considerable number of its cases have fallen into one of these two categories.

The UK Director-General of Fair Trading therefore considered that:

...the threshold of market power that triggers intervention to maintain competitive incentives by preventing anti-competitive structural changes in markets ought to be lower than that which triggers liability for the breach of competition law prohibitions on firms that have become dominant.⁵

Commissioner Monti would seem to concur:

...with a view to enhancing transparency regarding the scope of our current test, I will be proposing a clarification of the notion of dominance contained in the current substantive test ... so as to make clear that the test also applies where a merger results in so-called "unilateral effects" in situations of oligopoly, a potential "gap" to which some commentators have pointed. The clarification which I will be proposing is consistent with how the ECJ has defined dominance in merger cases, but the approach has – I think – the advantage of not linking the definition of dominance under the Merger Regulation to any future interpretations given by the European Court of Justice to the concept of dominance under Article 82 of the Treaty.⁶

The disagreement between the advocates of the SLC test and the dominance standard is therefore not over the economic concerns the merger control regime should be seeking to address, but over the best means of so doing. The Commission's proposed solution is to insert a new Article 2(2) into the ECMR:

For the purpose of this Regulation, one or more undertakings shall be deemed to be in a dominant position if, with or without coordinating, they hold the economic power to influence appreciably and sustainably the parameters of competition, in particular, prices, production, quality of output, distribution or innovation, or appreciably to foreclose competition.⁷

This is to be accompanied by the following explanation:

Irrespective of the structure of the relevant markets affected by a concentration or of the manner in which economic power is manifested or exercised, dominance should be defined in such a way as to reflect a considerable level of economic power held by one or more undertakings.

CONCLUSION

Most mergers that require in-depth investigation involve markets that are oligopolistic, in which the decision-making of firms is interdependent, and the rest of the industry provides some constraint on the merged firm's conduct. Whilst many such mergers may be dealt with under the existing dominance standard, this article has identified two potential gaps in its coverage.

These could have been closed by switching to a different test, notably the SLC test recently adopted in the UK. The European Commission has chosen not to do so, arguing that these gaps are more apparent than real, and can be filled by clarifying the ECMR without abandoning the concept of dominance.

Whether there is in fact a unilateral effects gap between the prevailing dominance standard and the SLC test depends critically on two issues. The first is the interpretation of the CFI's judgment in *Airtours*. Some believe that it would not now be possible for the Commission to extend the concept of collective

dominance beyond tacit co-ordination. However, the CFI did not explicitly state whether tacit collusion is a pre-requisite for the application of the ECMR to oligopolistic markets - and so others consider this to remain an open question.

The second issue is whether the concept of single firm dominance could be stretched beyond the conventional interpretation to cover situations where the merged firm has a market share below 40% and/or where it faces other sizeable competitors. Either way, it seems clear that the effects of mergers in non-collusive oligopolies will now be fully scrutinised by the European Commission.

The concerns identified in this bulletin with respect to the limitations of the narrow “market dominance” test were shared by many, particularly in the UK, and led the European Commission to reconsider. Its final conclusion was that the test should be extended to capture not only “market dominance” but also conditions leading to a “significant impediment to effective competition”. The Commission has subsequently introduced guidelines for the assessment of horizontal mergers, which provide further helpful clarifications of the issues discussed here.

SOURCES

1. Commission press release, “Commission adopts comprehensive reform of EU merger control”, IP/02/1856, 11th December 2002.
2. Court of First Instance, Case T-342/99, paragraph 61.
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4. Commission Decision of 14th July 1999, IV/D-2/34.780 Virgin/British Airways, 2000 OJ L 30/1.
5. John Vickers, “How to reform the ED merger test?”; speech of 7th November 2002 at the European Commission/IBA Conference on EU Merger Control.
6. Professor Mario Monti, “Merger Control in the European Union: a radical Reform”, speech of 7th November 2002 at the European Commission/IBA Conference on EU Merger Control.
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SEPTEMBER 2005

Surgery or medicine?

THE USE OF BEHAVIOURAL REMEDIES IN MERGER CONTROL

Competition authorities have tended to prefer structural to behavioural remedies when addressing concerns raised by mergers. The recent Tetra Laval/Sidel judgment by the European Court of Justice and two remedies reviews – one completed by the International Competition Network and another underway by the UK Competition Commission – may suggest greater scope for behavioural remedies in the future. This bulletin examines the circumstances in which behavioural remedies may provide acceptable alternatives to structural remedies in reversing a loss of competition due to a merger, or limiting its effects on customers and rivals.

When a merger is seen to pose a threat to competition, the regulator's next question is how to respond. There may be alternatives to outright prohibition. Remedies can often be devised that reverse any loss of competition, or limit the consequences of such a loss, whilst still allowing a transaction to proceed – at least in a modified form. To identify, and manage, the regulatory risks associated with a merger, it is essential to understand the range of potential merger remedies regulators may apply and how their choice will be made.

For example, knowing whether – should competition concerns be raised – there are likely to be remedies acceptable to both the authorities and the merging parties can be critical to deal valuation and the decision to proceed. Similarly, where it is imperative to avoid a prolonged regulatory process, understanding the likely scope of acceptable remedies can inform the design of remedies packages necessary to obtain “phase I” clearance.

STRUCTURE AND BEHAVIOUR

Remedies imposed by competition authorities are commonly described as “structural” or “behavioural”. Structural remedies require divestment by the merged firm – commonly of a subsidiary or business unit engaged in an area of activity where the merger raises significant competition concerns. In effect, the remedy reverses the merger in the areas where issues arise.

Alternatively, structural remedies may involve the divestment of specific business assets – such as production facilities or brands – that actual or potential rivals may find difficult or uneconomic to develop themselves, but need if they are to provide effective competition for the merged firm. In either case, the primary objective is to create a new independent competitor or enhance the competitive capabilities of existing rivals in activities where the merger has led to a reduction in competition.

Behavioural remedies require merged firms to commit themselves to conduct business in certain ways. They may have to give undertakings not to engage in particular sales practices (e.g., forms of conditional selling or price discrimination) or to provide guarantees to provide rivals with access to certain inputs. Commitments to license a technology to rivals or to remove exclusivity provisions from customer contracts also fall into this category. Here too the objective may be to re-inject competition, by easing market access for actual and potential rivals and improving their ability to compete with the merged firm.

Alternatively, behavioural remedies may seek to address specific behavioural threats – for example, the ability and incentive for the merged firm to engage in exclusionary conduct. Vertical mergers, or mergers involving complementary products, typically involve no direct loss of competition but may give rise to concerns that the merged entity's increased scope for leverage will lead to a weakening of competition in the future.

In such cases, commitments not to engage in tying or bundling practices across an enlarged product portfolio, or to provide reasonable access terms for rivals seeking inputs from a vertically integrated firm, may offer possible solutions. In other cases, the primary concerns are that the merged entity will be able to exploit its position by increasing prices, worsening service or reducing choice. Rather than attempting to address such concerns through measures that increase competition in the market, behavioural remedies may be used specifically to limit the exploitation of increased market power by the merged entity. Commitments not to engage in price discrimination or increase prices post-merger, although not reversing a loss of competition, may serve to limit its effects.

WHAT'S IN A NAME?

The distinction between behavioural and structural remedies may, however, sometimes be misleading. Although divestment addresses issues of market structure rather more surgically, behavioural remedies can also be used to restore competition; in that sense, both can offer “structural” solutions. A more meaningful distinction between types of remedies may be based on:

- the extent to which they serve to reverse any loss of competition resulting from a merger (as opposed merely to controlling the negative effects on customers or rivals); and
- the degree to which they offer a clean break (as opposed to requiring ongoing monitoring or market intervention by the authorities).

However, competition authorities have clearly tended to prefer structural (divestment) remedies. In the case of the European Commission (EC), this preference has been made explicit in its guidelines¹. It is understandable, since structural remedies score highly on the two criteria set out above. Not only do they seek to restore competition, but will typically offer the cleanest solution – one-off divestments requiring no further regulatory involvement.

Attempts to constrain a merged firm to behave in the way it would have done, absent the loss of competition, will inevitably work imperfectly. Take, for

example, an undertaking not to increase prices. How these would have evolved without the merger can never be gauged with certainty.

Suppose that prices would actually have fallen. Then even an undertaking not to increase them would allow for prices to be higher than would otherwise have prevailed. Or suppose that a key concern arising from a merger is a loss of the dynamic benefits that competition can bring – the drive to create new products and new and better processes. The design of behavioural remedies that will require firms to be innovative is obviously challenging.

Moreover, behavioural remedies may have undesirable side-effects by distorting market outcomes, creating perverse behaviour and even restricting competition. Again, take the example of an undertaking not to raise prices. And this time, suppose that, even without a merger, prices would have risen. In this case, a freeze may damage competition by driving prices below competitive levels. The more wide-ranging the behavioural restraints required, and the longer these need to be in place, the greater the risk of these unwelcome consequences.

To these implicit costs must be added the explicit costs of regulatory monitoring and enforcement. These will either divert the competition authorities from other policy activities or require extra government expenditure. In short, behavioural remedies tend to be the authorities' second choice at best because they are seen as treating the symptom rather than the cause, and involve the extra costs of ongoing regulatory oversight.

ANOTHER LOOK AT BEHAVIOUR

Put like this, structural remedies appear to win hands down. However, divestment may also be difficult to implement and uncertain in its effects. Will it actually be effective in creating a new competitor and restoring competition? Will a newly-created rival be viable or credible? Even outright prohibition of a transaction cannot always be guaranteed to restore competition to its pre-merger levels, if the ability to recreate separate entities has been compromised.

On a more positive note, behavioural remedies can also possess the attractive features typically associated with structural remedies. If behavioural remedies can be used to re-inject competition into the market following a merger, they may not involve substituting market regulation for competition. Even if they do involve ongoing regulatory intervention, this may in practice be relatively light-handed and fall a long way short of requiring the authority to engage in market management. So the explicit and implicit costs attributed to behavioural remedies may in certain circumstances be overstated.

The recent Tetra Laval/Sidel judgment of the European Court of Justice (ECJ) provided a warning against an automatic presumption in favour of structural remedies. It gave a timely reminder that behavioural remedies can be used to prevent a loss of competition as well as being used to control the effects of a loss of competition, and that behavioural undertakings can offer effective remedies to the concerns raised by mergers.

The EC had rejected behavioural commitments offered to address its concern that the merged parties could engage in sales practices which would enable strong

market positions in two distinct product areas to be leveraged, resulting in a weakening of competition. Commitments not to engage in these types of practices were rejected largely as a matter of principle, the EC highlighting its preference for structural remedies. But the ECJ determined that the EC was wrong not to have taken these commitments into account in assessing whether the merged firm was likely to engage in conduct which would create or strengthen a dominant position. The Court stated that:

... the categorisation of a proposed commitment as behavioural or structural is immaterial... commitments which are prima facie behavioural ... may also be capable of preventing the emergence or strengthening of a dominant position.²

The Court went on to stress that, in situations where the loss of competition following from a merger is expected to arise if and only if the merged firm engages in specific forms of conduct, it is all the more important to assess the scope for behavioural remedies properly.

In the UK, there appears to be renewed interest in the potential scope for using behavioural remedies to address competition concerns arising from mergers. Soon after his appointment as Chairman in 2004, Professor Geroski announced a review of remedy policy at the Competition Commission (CC) in response to its new powers to decide upon remedies under the Enterprise Act. In an interview with the *Financial Times*, Professor Geroski stated that the CC needed to:

...build up experience with behavioural remedies and one way to do that is to reach back into the past and see what worked and what didn't work.³

The International Competition Network's Merger Remedies Review Project reported its findings to the network's 2005 annual conference. Whilst recognising the reasons for a presumption in favour of structural remedies in many jurisdictions, the report clearly identifies the potential benefits of behavioural remedies and the circumstances when such remedies may be appropriate.

The willingness of authorities to accept behavioural remedies will to a large extent be driven by the availability or otherwise of "appropriate" structural remedies. Views will differ between jurisdictions. However, examples of the circumstances in which behavioural remedies may be considered include the following.

- **Where there is uncertainty about the effect of potential divestment packages.** Such situations may arise where there is a lack of credible potential purchasers for the assets. Alternatively, there may be uncertainty over which assets need to be divested in order to reinstate an effective independent competitor in the market or materially improve the position of existing rivals.
- **Where jurisdictional issues may limit the range of divestments that can be considered.** Mergers involving multinational firms can frequently involve filings in multiple jurisdictions. Only a subset of these may cause concern – for example, the potential loss of competition may be significant only in those national markets where the parties have enjoyed historically strong positions. Where core business assets – such as brands or production facilities – are used to serve multiple geographic markets, it may not be possible to

identify country-specific divestments which meet the case. The Dräger/Air-Shields merger, discussed below, provides an example of how multi-jurisdictional issues may constrain the use of structural remedies. Apart from the legal issues, national authorities may feel uneasy about requiring divestments that have global implications – potentially undermining an entire transaction – when in other territories the merger may not raise concerns and may indeed be seen as beneficial.

- **Where the principle of proportionality points away from structural remedies.** The existence and application of this principle differs between jurisdictions, but would appear as a minimum to imply that where a number of different (but equally effective) remedies are available, those that place the least burden on the parties should be adopted. If an effective behavioural remedy exists, it may well fit the bill. Structural remedies may be unnecessarily burdensome if there are particular complications involved in divesting assets. There may, for example, be contractual obligations that could not be honoured in the event of a divestment and from which the parties might find it costly to extricate themselves. The Coloplast/SSL case involved such considerations. Alternatively, a structural approach may be disproportionate if the size and scope of divestments needed to address competition concerns have commercial implications that stretch beyond the markets in question. In these circumstances, the surgery implied by structural remedies may be too radical, amounting effectively to an unwarranted prohibition of the transaction. The FirstGroup/Scotrail case provides an example of these issues.
- **Where the merger benefits would be greater with behavioural remedies.** Under the UK regime, there is explicit recognition that in determining remedies, their impact on the merger's benefits to customers should be taken into consideration. Mergers can yield benefits (new and better products and services) as well as costs (price increases). Not all customers will gain and lose in the same way: some may enjoy substantial price reductions as a result of efficiencies achieved through the merger while other customers may face price increases as a result of a loss of competition. Ideally, an authority would wish to apply remedies that reverse any loss of competition while leaving the potential benefits from the merger intact. However, such an ideal may not be possible. Where structural remedies involve substantial modifications to a transaction, they may severely reduce merger benefits. This may well cause the authorities to look more seriously for behavioural remedies.

In addition, there are certain circumstances in which the perceived weaknesses of behavioural remedies are simply irrelevant. For example, vertical and conglomerate mergers do not lead to a direct loss of competition. Here the authorities' concerns are focused on the future behaviour of the merged entity – whether it might ultimately weaken competition by acting to exclude competitors. In such cases as Tetra Laval/Sidel, behavioural remedies that prohibit such exclusionary conduct may indeed be seen to tackle the cause rather than merely the symptoms. In other situations, an authority may conclude that a merger only results in a significant loss of competition because certain forms of conduct – such as exclusive supply or distribution arrangements – currently exist in the

market. In the absence of these arrangements the loss of competition arising from the merger may not be seen as significant because remaining competitors would be more effective rivals. Again, behavioural remedies may be more likely to be seen as offering a pro-competitive solution.

There are also circumstances where the costs of monitoring and enforcing behavioural remedies may be insignificant. If the loss of competition flowing from a merger is expected to be short-lived, such remedies may be a useful stop-gap. And if the market is already highly regulated, the marginal costs – both explicit and implicit – of monitoring behavioural remedies may be low. A number of mergers involving medical products (discussed below) provide examples of this situation.

Year	Mergers reviewed by OFT	Undertakings given	Behavioural undertakings in lieu*	Mergers referred to CC	Undertakings given**	Behavioural undertakings given
2000-01	315 ^A	6	1	14	6	0
2001-02	356 ^A	6	4	10	2	0
2002-03	414 ^B	5	0	21	4	1
2003-04	267	2	0	12	9	2
2004-05	257	4	2	18	5	2

Undertakings in UK merger cases

Source: OFT annual reports (data for FY to end March, A = data for calendar years, B = data for January 2002 to March 2003), CC annual report and accounts
*excludes mixed structural/behavioural undertakings and undertakings in defence cases.
** includes undertakings not to proceed with transaction.

As far as we are aware, the Office of Fair Trading (OFT) has only accepted behavioural undertakings in lieu of a reference on two occasions since 2002. These were in relation to the Arriva/Wales & Borders and IVAX/3M cases.

The former involved the acquisition by Arriva of the Wales & Borders rail franchise, which operated regional passenger train services. The OFT considered that Arriva, which operated a range of other transport services in the region, might have had the ability and incentive to introduce its own multi-modal ticketing arrangements and deny third-party bus operators in the region access to those arrangements, thus possibly foreclosing bus routes into rail stations. The OFT accepted undertakings by Arriva to ensure that rival bus operators would be able to participate in any public transport multi-modal ticketing scheme run by Arriva “on fair and reasonable terms that are at least no less favourable than the terms applicable to Arriva’s own bus operations”.

The second case involved the acquisition by IVAX of 3M’s distribution business for asthma products. The merger resulted in IVAX becoming the sole supplier of salbutamol breath actuated inhalers in the UK. As branded prescription medicines, the products were subject to price regulation by the Department of Health. The OFT nevertheless remained concerned that prices might rise following the merger. Undertakings in lieu of a reference to the CC were accepted. These involved commitments not to increase prices until a rival distributor had begun to supply product in the UK. In its decision the OFT

highlighted the “particular structure of the sector” as a relevant factor in choosing this remedy.

Behavioural remedies have been accepted a little more frequently by the CC.⁴

- **Coloplast/SSL:** Coloplast and SSL both provided continence care products and in particular competed in the supply of non-latex sheaths to the NHS. SSL supplied products on the basis of an agreement with a US firm, Mentor, under which it was licensed to distribute the Mentor sheath in the UK. The CC concluded that the best approach to remedying the loss of competition it had identified would be for Coloplast to renegotiate the terms of the Mentor agreement in order effectively to divest itself of the product previously supplied by SSL. However, the CC considered that a price cap, until the time that the agreement with Mentor expired, would be an acceptable alternative if the agreement could not be appropriately modified without “unreasonable economic damage” to Coloplast. In the event, the Mentor agreement could not be renegotiated and a price cap was introduced.
- **Centrica/Dynergy:** Centrica is active in retail gas supply and has upstream interests in gas fields. Centrica wished to acquire control of Dynergy’s interests in the Rough gas field – the largest gas storage facility in the UK. The CC was, amongst other issues, concerned that Centrica would be able to discriminate between customers in giving access to capacity at Rough and use to its advantage in the retail market sensitive information gained from Rough’s operation. The CC proposed a package of eleven behavioural remedies. It concluded that the adverse consequences of the merger did not justify a divestment, particularly given that partial divestment was not feasible and effective behavioural remedies were available.
- **Carlton/Granada:** The CC was concerned that their merger would allow Carlton and Granada (two ITV franchises) to increase the rates charged for television advertising. It considered several remedies, including the creation of two independent sales houses to compete in the sale of the advertising airtime of the two franchises. Ultimately a price control remedy was accepted. Advertisers were given the right to renew their contracts and continue to achieve post-merger the terms and conditions that had been agreed pre-merger. They were thus given the protection of having their pre-merger contract terms as a fall-back position in subsequent negotiations. The CC made the point that this behavioural remedy was well-suited to a situation where its competition concerns were expected to diminish over time as the penetration of multi-channel platforms, and thus the choice available to advertisers, increased. Moreover, this remedy was believed to place a lesser burden on the parties than the creation of two sales houses and was therefore deemed to be more appropriate.
- **Dräger/Air-Shields:** Dräger Medical and Air-Shields both manufacture neonatal warming therapy products, selling these worldwide. In the UK, these products were sold via two distributors that were wholly owned by the companies. All manufacture took place outside the UK. The CC determined that the UK constituted a distinct geographic market and that there would be a significant lessening of competition in the supply of three products, but that

a prohibition of the merger would not be practicable or appropriate given the worldwide nature of the transaction and the fact the manufacture took place overseas. The divestment of one or other of the UK distribution arms of the manufacturers was considered as a potential structural remedy. However, the CC believed that the need to ensure that an independent distributor had appropriate access to product on the right terms would require excessively complex arrangements. It therefore rejected this remedy. As an alternative, the CC made recommendations to the Department of Health designed to encourage market entry from overseas suppliers and improve the buying practices of NHS trusts. In order to limit any problems before these measures took full effect, the CC proposed price controls as well as commitments to maintain the range of products available.

- **FirstGroup/ScotRail:** FirstGroup operates five passenger rail franchises and is a leading supplier of bus services in the UK, operating a number of routes in Scotland. FirstGroup was selected as the preferred bidder for the ScotRail franchise for passenger rail services in Scotland. The CC was concerned that the merger would lead to a significant lessening of competition on those routes where bus and rail services overlapped, and on the wider network, given the opportunities for multi-modal ticketing. However, since only a small number of customers would be affected, the CC reached the view that divestment would be a disproportionate remedy, particularly since behavioural remedies were available. It proposed a package of these, including controls linking prices on overlap routes to those on competitive routes, requirements to maintain service standards, and measures to encourage the use of multi-modal tickets whilst limiting potential exclusionary effects.

CONCLUSION

Behavioural remedies are clearly back on the agenda. Their relevance can only be considered on a case-by-case basis: but no competition authority seriously concerned with protecting and promoting competition can rely entirely on structural remedies. A preference for such remedies survives, for good reasons, but should be no more than a preference. The use of behavioural remedies in the UK in recent years provides an indication of their potential role in merger control – a role that may be extended as the understanding and experience of such remedies grows.

In 2006, the Competition Directorate of the European Commission published a staff paper analysing the effectiveness of the various merger remedies that it had accepted over a five-year period (1996 to 2000 inclusive), of both the structural and behavioural variety. This covered 40 mergers in total, involving 96 remedies (some 44% of all merger decisions involving remedies in that period). The study provided valuable insights into concerns that merging parties may need to address in future, if they are to succeed in offering remedies that the Commission will accept.

Fewer than 60% of the mergers analysed were definitely found to be effective in reversing, on a permanent basis, the negative effects on competition resulting from the transaction. Compared

with structural remedies, the behavioural remedies appeared to have had slightly lower success rates; but since the remedies in the cases that were analysed involved access agreements rather than restrictions on commercial behaviour they were not very representative of behavioural remedies as a whole.

For a further discussion of this study and its implications, see Frontier bulletin “Try this for size: Making sense of European Merger Remedies”, August 2006.

SOURCES

1. *Commission Notice on remedies acceptable under Council Regulation (EEC) No 4064/89 and under Commission Regulation (EC) No 447/98.*
2. *ECJ, Tetra Laval vs. Commission, paragraph 86.*
3. *Competition regulator to review merger ‘remedies’, Financial Times, 12 April 2004. Professor Geroski’s review is being carried out by the new remedies division of the CC. Since this will involve a detailed analysis of past cases, it is unlikely to be completed before the end of 2005.*
4. *Frontier advised Coloplast in Coloplast/SSL, Dräger in Dräger/Air-Shields, and Granada in Carlton/Granada.*

AUGUST 2006

Bundled into touch

LESSONS FROM GE-HONEYWELL FOR NEW EUROPEAN GUIDELINES

The European Commission is considering the introduction of new guidelines for the assessment of vertical and conglomerate mergers to accompany its existing guidelines for the assessment of horizontal mergers. In December 2005, the Court of First Instance upheld the Commission's decision in 2001 to prohibit the proposed merger between GE and Honeywell, but rejected its conclusions on the likelihood of the merger leading to anti-competitive conglomerate effects. This bulletin considers the reasons for this finding, and explores the implications for the Commission's forthcoming guidelines and for future conglomerate mergers.

The majority of mergers that are subject to regulatory scrutiny involve the bringing together of actual or potential competitors whose offerings are substitutes for one another in the same product and geographical market. In contrast, a conglomerate merger involves the acquisition of products or services in different economic markets. These may be complements in use, in neighbouring or related markets in terms of common customers or technologies, or altogether unrelated. Such conglomerate mergers do not entail the direct loss of a competitor.

Nevertheless, conglomerate mergers can, in certain circumstances, give rise to competition concerns. Details of the various mechanisms by which conglomerate mergers might be harmful can be found in a recent report by Professor Jeffrey Church of University of Calgary, prepared on behalf of the European Commission (EC).¹ An example of these issues with respect to conglomerate mergers would be if the merged firm were alleged to have been provided with new opportunities to engage in business practices, such as product bundling, which have the effect of marginalising competitors and thereby creating or maintaining market power. This bulletin focuses on just such an example.

THE PROPOSED GE-HONEYWELL MERGER

General Electric Company (GE) is a leading global supplier of numerous products and services including aircraft engines, transportation and power systems, and financial services, whilst Honeywell International is active in the global supply of aeronautical products and services, electronic materials, and transportation and power systems. The decision of the EC in 2001 to prohibit the proposed merger of GE and Honeywell was considered to be highly controversial at the time, and it was appealed by both of the merging parties to the Court of First Instance (CFI).

The CFI delivered its judgments in December 2005. It upheld the Commission's decision to prohibit the merger in three respects. The CFI upheld the Commission's conclusion that the merger would create or strengthen a position of dominance as a result of horizontal overlaps between the parties in each of the markets for large regional jet engines, corporate jet engines and small marine gas turbines.

However, the CFI rejected other aspects of the Commission's reasoning. These related to:

- a vertical link between GE and Honeywell, the leading supplier of aircraft engine starters (a key component in the manufacture of jet engines) to GE's competitors;
- conglomerate effects arising from the extension to Honeywell of the financial strength of GE Capital and the commercial advantages deriving from GE's aircraft leasing subsidiary, GECAS; and
- conglomerate effects arising from the deployment of product bundling practices, particularly in relation to GE's engines for large commercial aircraft together with Honeywell's avionics products.

The CFI examined separately three categories of product bundling practice, namely:

- pure bundling, where a company ties the purchase of one product to the purchase of other products for purely commercial reasons;
- technical bundling, where a company ties the purchase of one product to the purchase of other products for technical reasons; and
- mixed bundling, where a company offers combined purchases of products at a lower price than the price of the individual components purchased separately.

We discuss below the mixed bundling of GE's jet engines with Honeywell's avionics products.

COUNT TO FIVE

Five basic conditions are commonly accepted as necessary for a conglomerate merger to have detrimental effects on competition and consumers, as a consequence of providing the merged firm with exclusionary product bundling opportunities.

1. **Market power and imperfect competition.** At least one of the merging parties will need to enjoy a considerable degree of market power. Moreover, both of the affected markets must be imperfectly competitive, by which is meant an oligopolistic market structure characterised by fixed costs and barriers to entry.
2. **Ability to use.** This will typically require that the products in question are purchased by the same customers. The two affected markets must be

related on the demand or the cost side, so that the merger would provide the firm with a new competitive tool.

3. **Incentive to use.** It is necessary to establish whether the merged firm would have the incentive to use this tool, which amounts to understanding whether this would be profitable. A distinction is made between “strategic” and “non-strategic” behaviour. “Strategic” behaviour is defined as conduct that is profitable only if its effect is to foreclose competitors; “non-strategic” behaviour as actions that maximise profits irrespective of whether the effect is to foreclose rivals.
4. **Non-reproducibility.** It must not be possible for the new competitive strategy or tool to be replicated by rival firms in an equally effective manner, for example by entering into teaming arrangements.
5. **Foreclosure of rivals.** Rivals to the merged firm would have to be foreclosed from the market as a result of the conduct in question. Here foreclosure has two necessary components: (i) the profits of rival firms must be reduced as a consequence of the new strategy or tool used by the merged firm and (ii) this reduction in profits must affect their future behaviour, for example by deterring investment in product development or capacity expansion, so that competition is lessened.

These necessary conditions were recognised by the CFI in its competitive assessment of the proposed merger.

ABILITY AND INCENTIVE

The CFI upheld the Commission’s finding that, prior to the merger, GE was in a dominant position on the market for large commercial jet aircraft engines and Honeywell was the leader on several markets for avionics products. It then began its competitive assessment by identifying which transactions and products the Commission’s mixed bundling theory was relevant to.

The CFI identified practical barriers to the ability to bundle, as the end-buyers of GE’s and Honeywell’s offerings sometimes differed and sometimes purchased the products at different stages in the design and manufacturing process. In some instances, the airframe manufacturer might choose only one engine type, but offer the airline customer a choice of avionics options, and at times the choice of engine supplier would occur early in the design of a new aircraft, whereas the choice of avionics suppliers would take place at a later stage. However, the CFI concluded that the merged firm would have the ability to engage in mixed product bundling practices on certain transactions.

The CFI then made clear that the Commission needed to establish that the merged firm would not only have the capability to engage in mixed product bundling practices but also, on the basis of convincing evidence, that it would have been likely to do so; in other words, that it would have the incentive to behave in that way. In assessing whether future conduct on the part of the merged entity giving rise to anti-competitive effects was likely, the CFI emphasised that not only the incentives but also the disincentives to behave in such a way should be taken into account. This included the likelihood that the

behaviour in question would be found to be illegal, as an abuse of a dominant position, under Article 82 of the EC Treaty.

The CFI identified that the Commission had employed three lines of reasoning in support of the contention that the merged firm would have an incentive to engage in mixed product bundling. It made clear that any one of these arguments, if well-founded, would in itself have been sufficient to support the Commission's views. However, it concluded that the Commission had failed to provide sufficiently convincing evidence.

1. PREVIOUS PRACTICE

The Commission stated that the merging parties, in particular Honeywell, had engaged in product bundling practices on the relevant markets prior to the merger. However, the CFI found that the majority of these examples related to Honeywell offering bundles of avionics and non-avionics products, rather than avionics products and aircraft engines, and hence were of limited relevance.

2. STRATEGIC OBJECTIVES AND INTERNAL DOCUMENTS

The Commission argued that the merged entity's strategic objective would be to increase its power on the markets in which it was present. Consequently, it would have an incentive to engage in "strategic" practices specifically in order to foreclose rivals, even where such practices were not a profit-maximising strategy in the absence of foreclosure.

The CFI commented that the onus was on the Commission to present convincing evidence that the merged entity would in fact engage in such conduct, sacrificing profits in the short term with a view to reaping larger profits in the future. It noted, by way of example, that internal documents showing that GE's Board of Directors had that objective on the launch of their bid to acquire Honeywell might have constituted such evidence. In the absence of evidence to this effect, the Commission's hypothesis was found to be a possible sequence of future events, but not necessarily a likely one.

3. ECONOMIC THEORIES AND MODELS

The CFI noted that the Commission, in the Statement of Objections sent to the merging parties, had used an economic model that was developed (on the basis of data specifically related to the case) by Professor Choi on behalf of Rolls-Royce, a rival jet engine supplier. The CFI also noted that while the Commission had not relied upon this, or any other, economic model in its final decision, it had not completely disassociated itself from the model in the course of the appeal proceedings.

It was therefore necessary to consider whether, in the absence of such an economic model, the Commission had established that the merged entity would have an incentive to engage in mixed bundling. The Commission argued that the economic theory of mixed bundling predicted that the merged firm would have the incentive to engage in the bundling of complementary products, such as engines and avionics products, for "non-strategic" reasons. According to the Commission, there was therefore no need for it to rely on a specific economic model in that regard.

The CFI commented that the economic theory to which the Commission referred was the subject of controversy amongst economists. Two economic models had been presented to the Commission during the administrative proceedings – one by Professor Choi on behalf of Rolls-Royce, and another by Professor Nalebuff on behalf of Honeywell – with differing conclusions regarding the incentive for the merged firm to engage in mixed bundling.

The CFI did not review the merits of the conclusions drawn from these models, but instead concluded that the fact that there was a dispute amongst economists meant that the Commission could not simply presume that the incentive to engage in mixed bundling of complementary products existed, without a detailed economic analysis of the particular circumstances. So the CFI found that the Commission’s reasoning was insufficient to establish that incentive existed.

EVIDENCE REQUIRED

The overall theme of the CFP’s assessment was that it is not enough for the Commission to put forward hypotheses about the nature of post-merger conduct. The Commission must also provide convincing evidence to support its hypotheses, of two kinds.

- **A logically-constructed economic theory.** The hypothesis of competitive harm must be well-constructed and in line with economic theory.
- **Robust evidence on the key empirical aspects identified by the theory.** The theory of competitive harm must be shown empirically to be relevant to the case at hand.

The various mainstream economic theories of product bundling are described in Professor Church’s report. In this bulletin, therefore, we focus on the types of evidence that would be required in order to establish the relevance of a particular economic theory, drawing on the CFP’s evaluation of the GE-Honeywell case, starting with previous practice and internal documents.

- **Previous practice.** It may often be difficult to find evidence of previous practice by the merging parties because any competitive harm from a conglomerate merger may arise from the deployment of a tool or strategy that was previously unavailable to the firms pre-merger.
- **Strategic objectives and internal documents.** Similarly, one would not expect sophisticated, well-advised firms typically to generate “smoking gun” documents indicating anti-competitive motivations for proposed mergers, such as board papers revealing the intention to foreclose rivals.

The alternative types of evidence that were identified by the CFI may not, therefore, exist in many conglomerate effects cases. The implication is considerable weight may need to be attached to economic analysis in the form of logically constructed theories that are supported empirically, perhaps using relevant economic models. This raises the question of how conclusive such economic analysis is ever likely to be, when measured against the standard of proof that the CFI has outlined as being necessary to achieve in conglomerate effects cases.

THE USE OF ECONOMIC MODELS

The GE-Honeywell case was unusual in that, in the administrative proceedings, various participants presented theoretical economic models of mixed bundling to support their arguments, based on rigorous mathematical treatment of the issues. These models were intended to provide insight into the incentive for the merged firm to engage in mixed bundling, and the extent to which this practice might be expected to impact on the profitability of GE's and Honeywell's rivals.

This led to a heated debate of a technical economic nature. However, the details of this debate are not recorded in either the Commission's decision or the CFI's judgments. The box opposite therefore provides a summary.

The Commission decision and the CFI judgments did not review the relative merits of these models and their conclusions. However, lessons can be learnt from the GE-Honeywell case, as to the value and the role of economic modelling in conglomerate effects cases.

- Economic theory shows that the incentive for firms to engage in mixed bundling, and the resultant profit impacts on rivals, is highly sensitive to the specific market context. Analyses based on theoretical arguments alone will therefore typically be inconclusive without empirical substantiation of their validity in each case.
- All models are simplifications of reality, and over-reliance on a mathematical model may therefore be problematic. This, of course, applies to conventional horizontal merger simulation models as well as to conglomerate merger models.
- More helpfully, the use of formal mathematical models can highlight the specific market features and factual considerations that are of greatest relevance to determining whether a conglomerate merger will be expected to lead to detrimental competitive outcomes. Without such formal modelling, in some cases the relevant issues may not surface and so the relevant factual evidence will not be identified.

For example, in the GE-Honeywell case, the economic modelling debate exposed the fact that a key empirical factor determining the incentive for the merged firm to engage in mixed bundling practices in the context of individual customer negotiations is the level of uncertainty it would face about the preferences of customers in relation to the relative merits of different suppliers' offerings. The implication is that, whilst a model is rarely an end in itself, the use of economic models may allow one to identify the key empirical debates.

A TALE OF TWO MODELS

During the Phase II proceedings in the GE-Honeywell case, Rolls-Royce presented a mixed bundling model by Professor Jay Pil Choi of Michigan State University and Frontier Economics. This model, calibrated on the basis of basic industry features, concluded that the merged firm would have the incentive to engage in the mixed bundling of complementary products such as jet engines and avionics, and that this would result in sizeable profit impacts on rivals. The incentive arose from two different mechanisms:

- **The Cournot effect.** Where a firm sells two complementary products, this gives it an incentive to lower the price of both products compared to the prices that two separate firms, each selling only one component, would charge. This is because, when the price of the first product is lowered, sales of the other product are increased, and vice versa. By selling both products as a discounted bundle, the merged firm can “internalise” this effect, by benefiting from the effective price reduction on each product through increased sales of the other product, with no danger of these additional sales leaking out to rival suppliers.
- **Price discrimination.** Mixed bundling is a means to price discriminate between those customers who have a strong preference for one of the merged firm’s two products (and will pay a higher stand-alone price), and those who are more indifferent between the firms’ products and those of its rivals (and can be wooed with a discounted bundle price).

Honeywell then presented a mixed bundling model by Professor Barry Nalebuff of Yale University. He criticised the Choi model for operating on the assumption that prices were set at the same level across all customers, and argued that a more realistic assumption was that prices were set individually. In this set-up, there was no Cournot effect as it was assumed by Professor Nalebuff that there would be no change in the overall volume of sales through price cutting, and the motivation for mixed bundling - if any - would be purely through price discrimination.

The Nalebuff model identified that a key parameter of interest was the level of uncertainty that the merged firm has about the size of its competitive (dis)advantage over rivals in negotiation with a particular customer. The base case presented was the situation of “perfect certainty” – the merged firm knew exactly how much more/less than its rival it could charge a particular customer, and the practice of mixed bundling therefore provided no further value. However, the Nalebuff model also showed that, once a small amount of uncertainty was introduced, the ability to price discriminate was no longer perfect: mixed bundling improved the ability of the merged firm to price discriminate.

In response, Choi/Frontier argued that perfect certainty was an extreme assumption, at odds with economic bargaining theory, and that the level of uncertainty that Professor Nalebuff had chosen was unrealistically small. It was shown that, when an arguably more realistic level of uncertainty was used in the Nalebuff model, similar results were obtained to those of the Choi model. The merged firm has an incentive to engage in mixed bundling, and the profit impacts on rivals are of a similar magnitude to those found in the original Choi model.

CONCLUSION

The CFI overturned the Commission's assessment of conglomerate effects in GE-Honeywell, not on the basis that such effects are theoretically unsupported or inherently far-fetched, but on the lack of convincing evidence put forward by the Commission that its theoretical concerns were not just a possible outcome, but a likely outcome. We have argued that economic models may be a necessary part of any evidence base in the future, if conglomerate effects cases are to be pursued by the authorities, as other types of relevant evidence may often be scarce. We have also suggested that the most appropriate use of economic models should be to provide guidance as to the key empirical facts to be explored in order for the merits of a case to be decided one way or the other.

The European Commission published draft guidelines on non-horizontal mergers in February 2007. The guidelines confirm the widely accepted view amongst economists that non-horizontal mergers are only likely to harm competition in specific limited circumstances. The Commission helpfully confirms the relevance of the basic conditions that are necessary for anti-competitive foreclosure to occur, and sets out a high-level framework for assessing the competitive impact of non-horizontal mergers. This is certainly useful in providing guidance on the Commission's overall approach to non-horizontal mergers, although it clearly does not obviate the need for the Commission to develop a detailed theory of harm for each non-horizontal merger it investigates, and to test the relevance of this theory against the available empirical evidence.

SOURCES

1. *The Impact of Vertical and Conglomerate Mergers on Competition*, Jeffrey Church, September 2004
2. *See, for example, OECD Roundtable on Portfolio Effects in Conglomerate Mergers, Issues Paper, Secretariat to the Committee on Competition Law and Policy, 02/10/2001.*

Frontier advised Rolls-Royce during the EC investigation into the GE/Honeywell merger and the subsequent appeal before the CFI.

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