

## The Airtours Case: Collective Dominance and Implicit Collusion In European Merger Analysis

David Harbord

David Harbord is Director of Market Analysis Ltd. This article is based on work done in collaboration with Ken Binmore, Tony Curzon Price, Angel Hernando and George von Graevenitz at the Centre for Economic Learning and Social Evolution at University College London.

### Introduction

On 22 September the European Commission prohibited the merger of Airtours plc and First Choice Holidays plc, two UK companies active principally in the package holiday business. Both companies are vertically integrated with interests in charter airline operations and travel agencies. Airtours is active in tour operating, travel agencies, charter airlines, hotels and cruise ships with operations in 17 countries across Europe and North America. First Choice engages in tour operating, travel agencies, charter airlines, seat broking and car rental broking, mainly in the UK and Ireland.

The Commission found that in “*the UK market for short haul foreign package holidays*,” the acquisition would create a ‘*collective dominant position*’ held jointly by Airtours/First Choice and two other large vertically integrated operators, Thomson and Thomas Cook. It noted that the market structure was already highly concentrated, with four vertically integrated companies having some 80% of the short-haul package tour market between them. The takeover would then have created a market structure in which the remaining three vertically integrated companies would collectively have a dominant position, with First Choice disappearing both as a competitor in its own right, and as a supplier of charter airline seats and travel agency distribution to the non-integrated operators.

The purpose of this article is not to argue that the Commission was *necessarily* mistaken in prohibiting this merger. Rather we wish to suggest that the economic analysis of the merger carried out by the Commission was so deeply flawed that the decision can only be viewed as unsafe. On the basis of practically no evidence at all the Commission expressed views on a number of key economic issues, all of

which deserved serious analysis. However no such analysis was forthcoming.

### Market Definition

The Commission decided that the relevant antitrust market is the “*UK market for short haul foreign package holidays*,” thus eliminating, in one fell swoop, potential competition from domestic holidays, non-package foreign holidays, and long haul package holidays. This was despite the fact that the UK’s Monopolies and Mergers Commission, in a recent and much more detailed analysis of the same industry, defined the relevant market as ‘*the UK market for foreign package holidays to all destinations*.’<sup>1</sup>

Why the Commission should adopt a narrower market definition than the MMC is unclear, however it illustrates the baneful effect that market definition can have on merger cases, and other types of competition policy investigations. Market definition is typically viewed as a preliminary step in undertaking a competitive analysis of the market or industry, and it is frequently arrived at on the basis of a combination of introspection and extremely limited amounts of empirical information. This would not matter greatly if the questionable status of the analysis which led to the provisional market definitions was recognised as such throughout the investigation, and no avenues of inquiry closed off as a result. However this is not what usually happens.

What usually happens is that once it is decided that oranges and bananas say, are not in the same antitrust market, proponents of a merger of two banana companies will find it nearly impossible to bring forward evidence that competition from

orange producers places a significant competitive constraint on banana prices. No matter how arbitrarily the original market is defined, and no matter how flimsy the evidence used, once established, provisional market definitions take on a life of their own. The burden of proof is then placed on the parties to prove that the market definition should be something other than the one originally adopted.

Market definition *in theory* however, differs markedly from market definition *in practice*. Most competition authorities, including the Commission, have set out in considerable detail the types of economic analysis which need to be undertaken to establish a relevant antitrust market.<sup>2</sup> This typically requires testing whether ‘a hypothetical monopolist of the product(s) in question could impose a small but significant increase in price, without inducing sufficient demand substitution by consumers, or entry by other supply-side substitutes, to make the price increase unprofitable’.<sup>3</sup> Implementing this test requires a careful analysis of relevant market data, correctly interpreted and understood. But when was the last time you actually witnessed a competition authority carry out this test?

## The Analysis of ‘Collective Dominance’

The Commission argued that the merger of Airtours and First Choice would create a position of ‘collective dominance’ in the industry, by reducing the number of significant competitors from four to three. ‘Collective dominance’ is not a term which economic undergraduates are taught in their industrial economics courses, and what it means in European competition law seems to vary from case to case.<sup>4</sup> Perhaps the closest thing to a definition

2 Commission Notice on the definition of the relevant market for the purposes of Community competition law (OJ C 372 on 9/12/1997).

3 See US Department of Justice and Federal Trade Commission (1992) for the clearest statement of this, and Harbord and von Graevenitz (1999) for a recent analysis and critique.

4 Indeed, according to Whish (1993) the Commission adopts a different approach to defining collective dominance in merger cases, than it does in cases which come under Article 86.

comes from Gencor/Lonrho, Case IV/M.620:

*“... similar negative effects which arise from a dominant position held by one firm arise from a dominant position held by an oligopoly. Such a situation can occur where a mere adaptation by members of the oligopoly to market conditions causes anticompetitive parallel behaviour whereby the oligopoly becomes dominant. Active collusion would therefore not be required for the members of the oligopoly to become dominant and to behave to an appreciable extent independently of their remaining competitors, their customers and ultimately their consumers.”*

We shall not attempt to translate this passage into more familiar economic terminology, since it is not clear that it is amenable to it. The Commission appear, however, to be referring to two distinct possibilities: either collective dominance refers to implicit (i.e. ‘nonactive’) collusion between a relatively small number of oligopolists, or it refers to what economists usually describe as static noncooperative oligopoly equilibrium behaviour. The distinction has to do with the ability of the oligopolists to condition present market behaviour upon past market behaviour.

Under an implicit collusive agreement oligopolists co-ordinate their prices or outputs via the use of so-called ‘punishment strategies’. That is, deviations or defections from the collusive agreement today are ‘punished’ by reversion to static noncooperative behaviour, or something worse, at a later date.

Under appropriate conditions extremely collusive outcomes can be sustained by this (implicit) threat to revert to a punishment strategy should any firm ‘defect’ from the agreement. This certainly sounds like one possible interpretation of the statement that ‘*a mere adaptation by members of the oligopoly to market conditions causes anticompetitive parallel behaviour whereby the oligopoly becomes dominant.*’

Under static noncooperative oligopoly equilibrium behaviour on the other hand, an oligopolist’s strategy does not depend upon any firm’s past actions. It will depend upon the current action taken by every other firm however. That is, each oligopolist will choose the price or quantity (or quality) which maximises its own payoff given its expectations concerning the choices which will be made by the other oligopolists. This does not mean that oligopolists behave competitively. In the standard oligopoly

model of Cournot, for example, equilibrium prices will frequently be nearer to monopoly levels than to competitive levels, even though there is no implicit collusive agreement between the oligopolists. This sounds like another possible interpretation of the statement that *‘a mere adaptation by members of the oligopoly to market conditions causes anticompetitive parallel behaviour.’*

If ‘collective dominance’ can mean either of these things, which does the Commission have in mind in the current case? Some clues may be sought in the following passage from the Commission Decision.

*“Crucially, the merger would lead to a collective dominant position on the part of the remaining three large integrated operators in that it would increase their incentive to restrict capacity and facilitate sustained strategies to do so, by strengthening their interdependency as regards capacity decisions which are crucial to the market outcome.”*

The Commission’s view was that anticompetitive conduct in the package holiday ‘market’ occurs at the level of firms’ capacity decisions, which are fixed some time before the holidays are actually sold on to customers. The Commission appears to be arguing that the proposed merger would have increased the operators’ incentives to co-ordinate their capacity decisions via the use of ‘sustained strategies’ resulting from a ‘strengthening’ of their ‘interdependency’. This sounds more like implicit collusion than static oligopoly equilibrium behaviour, however we cannot be sure of this. Since both types of behaviour remain possibilities, we will consider each of them in turn.

### Dynamic Models of Collusion

In static models of competition economic analysis focuses on one-period equilibrium behaviour by price-setting or quantity-setting firms. When firms interact repeatedly over time however, more interesting possibilities arise. In particular, in dynamic settings firms can use information drawn from previous periods to condition their behaviour in subsequent periods. Price and quantity strategies can then be used to ‘signal’ information to other firms, or to co-ordinate strategies over time, and to ‘punish’ deviations from co-ordinated behaviour.

Dynamic collusion, or strategy co-ordination, over time has been an important research topic in the last few decades. Early work focused on dynamic games with *perfect information* and no uncertainty.<sup>5</sup> In these models collusion is sustained by reversion to a less profitable noncooperative equilibrium (e.g. the Cournot equilibrium) if ‘cheating’ on the collusive agreement occurs. The Folk Theorem of repeated game theory implies that any degree of collusion can be sustained as a dynamic equilibrium, including the monopoly outcome, so long as firms don’t discount future payoffs too heavily.

Abreu (1986)(1988) has analysed the maximal sustainable degree of collusion in this setting, and showed that it is higher the more severe the available punishment for defection. Abreu’s work also provided important insights into the factors that hinder or facilitate collusion. For instance, more frequent interaction, or market repetition, tends to facilitate collusion because it allows for swifter, and hence more effective, punishments in these models.

The models of dynamic collusion with perfect information all assume that each firm’s strategies are known to all other firms, and indeed that these strategies, as well as demand and cost conditions, are ‘common knowledge’. Hence any deviation from collusive behaviour can be immediately met by reversion to the punishment strategy. As a consequence, if collusion is sustainable at all in these models, it is perfectly sustainable - no deviations from co-ordinated behaviour will ever occur because punishment is certain to follow. Because of their unrealistic informational assumptions, these models are unable to address the issue of the types of information which facilitate, or help to sustain, collusion.

In Green and Porter (1984) however, collusion is modelled as a dynamic game in which firms cannot observe each others strategies, and in which the level of demand in any period is uncertain. In this environment, collusive equilibrium over time involves periods of collusion followed by reversion

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5 In a game with perfect information each player knows the strategies played by all other players and these are common knowledge. Carlton and Perloff (1994) and Tirole (1988) contain accessible accounts of the theory. See Rees (1993) and Philips (1995) for applications to recent European cases.

to “price wars” when it has become sufficiently ‘probable’ that deviations from co-ordinated behaviour are occurring. This is because in the absence of perfect information concerning strategies and demand, an unexpectedly low price can be the result either of unexpectedly low demand, or cheating by one or more firms. Sustaining collusion then involves periodic reversion to punishment phases when low prices are observed even if, as occurs in equilibrium, no firm has actually cheated. If such reversions do not occur then every firm will have a powerful incentive to engage in secret price cuts or capacity augmentation. Punishments must follow low prices frequently enough to deter such behaviour.<sup>6</sup>

Economic analysis based on repeated game theory has thus succeeded in clarifying the conditions under which successful collusion is likely to occur, and in identifying those factors which facilitate or hinder the implementation of sustainable collusive agreements. In particular, three key factors have been identified:

**Product homogeneity:** Differentiated products compete less fiercely with one another, reducing the gains from collusion, and quality increases can be used to ‘cheat’ on collusive agreements. With homogeneous products on the other hand, it is easier to agree on price or quantity, and to identify defections from the collusive agreement.<sup>7</sup>

**Frequency of interaction:** More frequent market interaction reduces the time required to respond to deviations from the collusive agreement, making punishments more effective and collusion therefore easier to sustain.

**Not ‘too much’ uncertainty:** A high degree of uncertainty concerning relevant market variables such as demand makes detecting cheating more difficult, and hence reduces the efficacy of punishment strategies.

These insights can be used to inform policy decisions by regulatory and competition authorities on these issues. How do they apply to the UK package holiday industry?

6 Porter (1983) discusses an empirical test of the theory.

7 Virtually all US price fixing cases have concerned homogeneous products industries. See Hay and Kelly (1974), Fraas and Greer (1977) or Carlton and Perloff (1994).

## Capacity Collusion in the Package Holidays Market?

One interpretation of the Commission’s analysis is, as we have seen, that package holiday companies implicitly collude to keep capacity levels low so when package holidays are sold to customers, prices will be high, and substantial profits made. What does the economic analysis have to tell us about the conditions under which this might be realistic?

Capacity decisions in this industry involve reservation of airline capacity, hotel bookings etc., and are made, as the Commission notes, up to a year in advance of sales to customers. The selling of package holidays to customers usually takes place through travel agents. In the UK travel agents use a computer reservation system which is shared and which allows each operator to directly observe the quoted prices on all of its competitors packages.<sup>8</sup> Hence at the time sales occur there is a high degree of price transparency in the market, and relatively intense competition to sell whatever capacity has been booked. Prices falling quite dramatically near the departure date in order to sell off excess capacity is a common feature of the market.<sup>9</sup>

The Commission’s claim appears to be that collusion in the industry concerns an implicit agreement over capacity levels between the major operators. Once capacity levels are fixed, transparent price competition to sell off existing capacity determines sales volumes for each operator, and consequently their profits. But what does such an implicit agreement consist of, and how is it enforced?

## Homogeneous products?

The first point to note is that package holidays are not homogeneous products in the sense required for collusion to be easy to sustain. They differ in a number of key dimensions, including destination and quality. An implicit capacity-level agreement would need to specify, for each holiday destination

8 Discounts are not necessarily observable however.

9 Taylor (1998) provides some evidence for intense price competition when packages are sold to customers.

and for each 'type' or 'quality' of holiday, the number of airline seats and hotel reservations etc. that each operator should have on average, in any given period. That is, it should 'tell' operators what their approximate share of any particular holiday 'sub-market' is intended to be. One possible collusive agreement might be to allocate distinct geographic submarkets to each operator. This does not appear to occur in practice, although different operators do specialise in particular destinations (e.g. Thomsons in Turkey). So it must be the case that operators agree, at least roughly, on market shares for the popular destinations, since most are served by a number of companies.

Note that an 'implicit agreement' of this nature is already quite a complex object. It does not simply concern an aggregate quantity of output such as, for instance, ordinary baked beans or table salt. Rather it must specify the quantity of each type or quality of holiday which operators should have to each of the hundreds or possibly thousands of destinations. As holiday preferences change, and new destinations are added whilst others fall out of favour, the agreement would need to be updated to accommodate each such eventuality.<sup>10</sup>

Further, the implicit collusive agreement would need to specify which changes in quality, quantity and price were allowed by the agreement and which should be viewed as 'defections'. It beggars belief that a collusive agreement of such complexity could be sustained in the face of so many opportunities to cheat in so many dimensions. Hence the industry would appear to fail the first criterion for sustainable collusion.

## Frequency of interaction?

What about enforcement? Since collusion is a 'Prisoners' Dilemma' in which 'cheating' is a dominant strategy for every firm, the incentive for cheating can only be overcome by invoking a punishment for defection from the implicit agreement. The punishment in this case must be that in the period following a 'defection', other operators will

increase their capacities, thus reducing the profits of the 'defector,' as well as their own. But these 'punishments' can only occur in the next round of capacity decisions, long after the violation of the collusive agreement has occurred. Since cheating involves an immediate one period gain in profits, followed by a future loss, the longer the time which elapses between the 'crime' and 'punishment,' the less effective is the punishment in maintaining adherence to the collusive agreement. Hence the second criterion for sustainable collusion would not appear to met either.

## Not 'too much' uncertainty?

Operators in the package holiday industry cannot directly observe their competitors' capacity decisions. All they can observe are the types of holidays which are being offered by their rivals, and ultimately their prices, but not their quantity. In addition, actual demand conditions are unknown to all of the firms at the time capacity decisions are made, and the firms only observe changes in the demand for their own 'packages', but not changes in total industry demand.

This means that package holiday operators cannot directly observe compliance with the collusive agreement, and when price competition takes place they face a complex inference problem. A fall in the prices of particular packages could either be a result of changing, but at least partially unobserved, demand conditions, or of cheating by some of the other firms. If firms cannot reliably distinguish between these two possibilities, how do they know when they are meant to implement their punishment strategies?

Further, demand for different types of package holidays to different destinations will tend to vary according to local market conditions. For instance, a terrorist threat which effects demand for one holiday destination will mean that some operators will need to be permitted to switch some of their capacity to other destinations. But how will the firms decide the circumstances under which this can occur, and when just the right amount of capacity has been switched?

<sup>10</sup> As Briones (1995), for instance, points out, 'a high rate of product innovation introduces a high degree of unpredictability in the market and jeopardises the stability of parallel behaviour....'

As Green and Porter's (1984) analysis emphasises, the greater the degree of uncertainty surrounding market demand, the harder it will be to sustain a collusive agreement, because punishment phases will be triggered more frequently by random and partially unobservable demand fluctuations. More frequent punishment phases mean that maintaining the collusive agreement is of less value to each operator, making the benefits from defection relatively more attractive. Hence the third criterion for sustainable collusive agreements is also violated.

We may conclude that implicit collusion amongst UK package holiday operators would be unlikely to succeed, were it ever attempted. A collusive capacity-level agreement would be too complex, and hence too difficult to implement and monitor. Punishments follow with too great a time lag, and market uncertainty would make it nearly impossible to fit 'punishments' to 'crimes'. It is difficult to think of another industry in which collusion between even a small number of operators appears less likely to be successful.

## Static Oligopoly Behaviour?

If market behaviour in the UK package holiday industry cannot credibly be described as collusive, can it at least be characterised as anticompetitive oligopoly behaviour of some form? As every student of industrial economics knows, there are many oligopoly models to choose from. In this case however, one model seems to fit the industry particularly well, and there is even some empirical evidence to support it.

Kreps and Scheinkman (1983) and Davidson and Denekere (1986) have studied oligopoly models in which firms first choose capacity levels, and then engage in Bertrand price competition for customers. This clearly matches very closely the structure of competition in the UK package holiday industry. In Kreps and Scheinkman's model, capacity choice followed by price competition leads to 'Cournot' outcomes which, as we have observed, are not particularly competitive. However Davidson and Denekere showed that this outcome was sensitive to the 'rationing rule' chosen (i.e. the order in which customers are served by lower priced firms). When the natural 'first-come- first-

served' rationing rule is adopted, something much nearer to the competitive outcome results.<sup>11</sup>

A significant feature of the Davidson and Denekere (1986) analysis is that firms employ 'mixed', or randomised, strategies at the price competition stage. In practice this phenomenon would appear in the form of price dispersion, i.e. similar packages sold at different prices by different companies. Remarkably, Taylor's (1998) study of pricing in the UK package tour industry reveals just the right type of price dispersion, and makes the same interpretation in terms of mixed strategies.

It is rare in economics for an oligopoly model to fit so well the conditions of any particular industry, and even rarer for empirical evidence to support this 'fit'. Taylor's evidence can be interpreted as telling us that the Davidson-Denekere model more closely approximates the industry than does the Kreps-Scheinkman model.<sup>12</sup> This in turn tells us that even with just a few firms, industry prices may not be far from competitive levels. If this is true, then there may have been little danger that the merger of Airtours and First Choice would have had serious negative effects on market prices or efficiency.

## Conclusions

The upshot of this discussion is that the Commission could hardly have chosen a less likely industry against which to level a charge of collusive conduct, implicit or otherwise. Given this the only choice left is to attempt to characterise market behaviour within a static oligopoly equilibrium framework. But in this case the model which fits the industry best does not lead to the conclusion that noncooperative oligopoly behaviour is necessarily particularly harmful either to competition or economic welfare.

How, then, did the Commission arrive at their con-

11 Indeed, in Davidson and Denekere's analysis, the Cournot equilibrium places a lower bound on the degree of competitiveness in the market, i.e. it is the least competitive outcome possible.

12 There is also evidence which suggests asymmetries in firm sizes in this industry, as predicted by the Davidson and Denekere (1986) model.

clusions? No evidence in favour of collusion appears to have been advanced, nor was evidence on market prices or operators' profits brought forward to support a charge of anticompetitive conduct. The only answer remaining is that this seems to be a case of merger analysis by introspection.

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Tel: +44 (0)1865 883176 Fax: +44 (0)1865 731250  
manalysis@aol.com www.market-analysis.co.uk