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DTI ECONOMICS PAPER NO. 1

Bundling, Tying, and Portfolio Effects

PART 2 - CASE STUDIES

BY PROFESSOR BARRY NALEBUFF
YALE UNIVERSITY
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I
Introduction

In this volume we present thirteen case studies from the United Kingdom, Europe, and the United States. These cases provide us with the opportunity to apply the issues that are discussed in the theory volume to real world situations. For each case, we present the background, the decision reached on the case, and an analysis of the relevant economic issues. Generally we are not analysing all of the issues that were relevant to the case but focusing on those with relevance to the issues of bundling, tying, and portfolio effects. With the exception of the GE/Honeywell case and the mobile telephones case, we were not involved in any of these proceeding, and thus we do not have complete information on the cases.[1] At times we reach conclusions that are counter to the ones reached by the competition authorities. We present these conclusions not to be critical of the competition authorities but to present what we believe would have been the appropriate methodology for analysing these particular issues. That our conclusions are different from the competition authorities could be due to our reliance upon public information (as opposed to having the full set of information, including confidential information) or it may be due to the fact that we address only some of the issues in the particular case. Finally, we may differ in our conclusions because of different interpretations of the relevant economic theory.

1 Our analysis of the cases we were involved in, GE/Honeywell and mobile telephones, do not rely on confidential information.

II
Tetra Pak International

There have been a number of significant cases involving Tetra Pak over the years, including the recent Court of First Instance overturning the European Commissions decision on the Tetra Pak/Sidel proposed merger. In this chapter, we review the allegations of Tetra Pak's abuse of a dominant position in 1983. This alleged behaviour illuminates a remarkable number of issues we have discussed in this report. According to the complaint, Tetra Pak was using tying and bundling to engage in everything from metering to creating entry barriers. Thus, we are able to apply several of the theories developed in Chapter 6 of the main report to analyse Tetra Pak's incentives and the likely effects of its behaviour. We begin with a description of the company and the alleged abuses as well as the findings of the European Commission. Then we explore the incentives of the firm and the likely effect of the conduct.

1 Background

The Tetra Pak group of companies (Tetra Pak) is one of the world leaders in the field of the packaging of liquid and semi-liquid foods in cartons. It introduced its first packaging system for milk in 1952. This system included a tetrahedron shaped container, a filling machine, and the technology for coating the packaging material and sealing the material after it is filled. The Tetra Brick packaging system was introduced in 1963. The packaging technologies have been improved over the years. For example, Tetra Pak developed a method for the aseptic packaging of milk, allowing for longer shelf life without the need for refrigeration. Through a number of acquisitions, Tetra Pak has expanded into other forms of packaging, including plastic packaging. Currently Tetra Pak operates in both the field of the non-aseptic packaging of fresh products and in aseptic packaging of long-life products. Tetra Pak's consolidated turnover has steadily grown over time, from €2 billion in 1985, to €2.4 billion in 1987 and approximately €3.6 billion in 1990.

Tetra Pak has facilities across Europe and around the world. Tetra Pak's first commercial operations in Italy - the country at the heart of the alleged abuses - date back to 1955. In 1965, the first carton production unit was opened and in 1980 a machine assembly plant was started up. The consolidated turnover of the seven Italian companies within Tetra Pak stood at €204 million in 1987.

2 Case allegations and issues

Elopak Italia filed a complaint in 1983 claiming that Tetra Pak had engaged in a number of practices that were abusing its dominant position. Elopak was Tetra Pak's main competitor in the field of non-aseptic packaging of liquid foods in cartons. These abuses

broadly fell into three different areas: selling cartons at predatory prices, imposing anti-competitive conditions on the supply of machines for filling these cartons, and selling the filling equipment at predatory prices. These alleged anti-competitive practices also included alleged attempts at excluding Elopak from certain advertising media.
The Commission investigation was initiated after the filing of this complaint.

PRODUCTS

Tetra Pak's packaging systems all rely on some type of carton for holding the packaged product. Although the carton is well suited to the packaging of a wide variety of liquid and semi-liquid foods, figures from 1987 show the use of this packaging was primarily used in the dairy industry: 79% of cartons were used for packaging milk (72%) and other liquid milk products (7%), 16% for fruit juice, and other food products together accounted for only approximately 5% of cartons used. When the original complaint was filed in 1983, some 90% of cartons were used for the packaging of milk or milk products. At the time of the inquiry, 60% of milk within the Community was sold in cartons and 50% of fruit juice consumed in the Community was packaged in cartons.

MILK PACKAGING

Milk is sold in a pasteurised form (fresh milk) or after ultra-high temperature treatment under aseptic conditions (UHT milk), the latter process allows the milk to be stored for up to several months in a non-refrigerated environment. The milk-processing techniques, including the packaging process are different for these two forms of processed milk.
In particular, the UHT process has more demanding pressure and sterilisation requirements. Therefore, the packaging machines and cartons for these two processes are not interchangeable. It is unlikely to have much substitution between the two different types of machines (and cartons) even if there was a sustained price increase of one of the packaging systems. This lack of substitution is driven by several factors: the cost of the packaging was small relative to the total cost of the final products, consumers have different perceptions of the types of packaging (consumers would not expect to find fresh milk in a Tetra Brick container), and the filling lines were not able to switch between types of packaging without significant investments. All of these factors lead to the conclusion that aseptic packaging systems are in a separate relevant market than non-aseptic systems.

3 Market definition and dominance

As is often the case, there was a difference of opinion as to the correct relevant market definitions. The commission concluded that there were four separate markets:

(i) the market for machinery incorporating technology for the sterilization of cartons and the packaging in those cartons, under aseptic conditions, of UHT-treated liquid foods;

(ii) the corresponding market for aseptic packaging cartons;

(iii) the distinct (but neighbouring) market for machinery enabling fresh liquid foods to be packaged in cartons; and

(iv) the corresponding market for non-aseptic packaging cartons.

Tetra Pak argued that the relevant market was the overall liquid food packaging market, encompassing all forms of packaging.

In examining the substitutability of the products involved, the Commission came to the conclusion that while different forms of packaging as diverse as glass bottles, plastic bottles, plastic bags, metal tins, aseptic cartons and non-aseptic cartons formed part of what was commonly known as the packaging market for liquid foods, this was not the relevant market within the meaning of Article 86. These different types of packaging competed with each other only in the long term. "In the short and probably even medium term, the conditions of supply and demand were such that the elasticity of substitution for products in relation to prices was almost zero."[1] The Commission also found that the relevant geographical market was the entire European Community.

Tetra Pak's share of the aseptic packaging and filling machine markets was found to be between 90 and 95 percent. Given its high share and the existence of high barriers to entry for the packaging machines, the Commission ruled that Tetra Pak was dominant in the aseptic packaging markets. In the non-aseptic packaging, Tetra Pak had a share of around 45-50%. The Commission did not reach a conclusion as to whether this position represented one of dominance. The Commission did not consider it necessary to address this issue, given the association between the non-aseptic packaging markets and the aseptic packaging markets.[2] In particular, the Commission found that "Tetra Pak has used the association which exists between the four markets in question to commit abuses on the non-aseptic markets, abuses which it could not have committed in the absence of its dominant position on the aseptic markets."[3]

4 European Commission findings

Tetra Pak's share in the aseptic packaging market made it essentially the only supplier for firms that produced aseptically packaged liquid foods. Tetra Pak allegedly used its position in the aseptic packaging market to force its customers to accept contractual conditions that prevented any inter- or intra-brand competition. In what follows, we mention only the main contractual conditions that were judged abusive under Article 86.

SALES CONTRACTS

The first series of abuses arose out of the sales contracts used by Tetra Pak when selling the filling machines. These sales contracts prohibited customers from modifying, adding accessory equipment to or moving (and thus exporting) machines. Other features of the

1 Commission decision 92/163/EEC of 24 July 1991 relating to a proceeding pursuant to Article 86 of the EEC Treaty (IV/31043 - Tetra Pak II) at ¶ 93.

2 Tetra Pak appealed the decision to the Court of First Instance in part based on the Commission not determining whether or not Tetra Pak was dominant in the non-aseptic packaging markets. The CFI confirmed the Commission's position, thereby acknowledging that abuses could be committed in markets in which a firm was not dominant, provided there were close links to the market(s) in which that firm was dominant.

3 Commission decision 92/163/EEC of 24 July 1991 relating to a proceeding pursuant to Article 86 of the EEC Treaty (IV/31043 - Tetra Pak II) at ¶ 104.

contracts included the obligation to obtain Tetra Pak's agreement before selling used equipment; priority right of repurchase by Tetra Pak at a prearranged price; the obligation to ensure that any third party acquiring the equipment assume all of the initial buyer's obligations vis-à-vis Tetra Pak; the obligation to inform Tetra Pak of any improvements or technical modifications to equipment or to cartons and to grant Tetra Pak ownership of any resulting intellectual property right; and, finally, the right for Tetra Pak to inspect the wording to be used on cartons. All maintenance and repairs on the machines were to be carried out by Tetra Pak. Tetra Pak also secured the exclusive right to supply spare parts for the machines and adopted a sliding scale for charges made for assistance and maintenance, depending on the number of cartons used on Tetra Pak machines.

In addition, contractual conditions required that only Tetra Pak cartons be used on these Tetra Pak machines. Also there was the requirement that Tetra Pak cartons be acquired from the group's local subsidiary of Tetra Pak (i.e. no independent distributors). The warrantee of the machines was conditional on compliance with all contractual conditions (in certain contracts) or, at the very least, exclusive use of Tetra Pak cartons.

The customers of the filling machines had to provide a monthly report on carton use and had to allow Tetra Pak to inspect the machines. These inspections gave Tetra Pak the right to inspect, without notice, production sites, accounting or other documents and customers' correspondence.

Tetra Pak offered customers the choice of buying or leasing the machines. Equipment leases included the same restrictive provisions as sales contracts. Moreover, the structure of rent payments made leasing indistinguishable from buying, since the rental contract included, upon delivery, an initial payment corresponding to virtually all present and future rental charges (more than 98 per cent in some cases).

These contractual terms were justified based on three reasons: technical grounds, liability considerations with regard to public health, and that such requirements were standard in other commercial situations. Without denying the complexity involved, the Commission rejected Tetra Pak's first two arguments, saying that to the extent there were technological and liability issues, they could be solved through means that were less restrictive than the existing contractual requirements. With regard to commercial usage, the Commission disputed that such practices were common in the non-aseptic packaging markets and even if they were common in a competitive market would not justify them in the aseptic market where Tetra Pak had a dominant position.

PREDATORY PRICES

The combination of its high share, barriers to entry, and the contractual restrictions listed above resulted in Tetra Pak being able to reap the benefits of its significant market power in the aseptic packaging markets. The Commission found that the extreme profitability of aseptic packaging, which contributed more than 90 per cent of corporate profits, provided Tetra Pak the ability to make financial sacrifices in the non-aseptic markets without in any way jeopardising overall margins. A general analysis of the

profitability of the various Tetra Pak products, carried out using the group's own cost accounting, showed that in some Member States "aseptic bricks" - the best selling and most profitable cartons had been subsidising loss-making sales of "non-aseptic bricks" or even all of Tetra Pak's other products.

The Commission concluded that the sales of the non-aseptic cartons at below cost were not from exceptional circumstances, but rather that they had been the result of a deliberate policy calculated to eliminate the competition. The Commission described the existence of predatory pricing over a period of time for machines in the United Kingdom and for cartons and machines in Italy.

The Commission found that the predatory pricing practices were especially serious in Italy, claiming that but for the Commission's intervention, these practices probably would have led to the total elimination of Elopak, Tetra Pak's chief rival and leader in that country's non-aseptic packaging market. Apart from many occasions in which machines were sold at a loss, for seven years Tetra Pak had sold its Rex cartons in Italy - Rex being a competitor of Elopak's main product, the Pure-Pak carton - at prices well under its direct variable costs. The 30-35 per cent difference between the price of a Rex carton and its direct variable costs was almost exactly equal to the difference between the prices at which Tetra Pak's Rex and Elopak's Pure-Pak cartons were being sold.

REMEDIES

In its decision, the Commission ordered Tetra Pak to cease all of its abusive behaviour and to take a series of measures to open up its markets. In particular, Article 3 of the decision ordered that Tetra Pak take the following measures:

(i) amend or delete the clauses from its machine purchase/lease contracts and carton supply contracts so as to eliminate the abuses noted above;

(ii) practice neither predatory nor discriminatory pricing and refrain from granting any customer any form of discount on its products or more favourable payment terms not justified by an objective consideration. Thus, discounts on cartons were to be granted solely according to the quantity of each order, and orders for different types of cartons were not to be aggregated for that purpose;

(iii) refrain from refusing orders, at prevailing prices, even if the company placing the order was not an end-user of Tetra Pak products; and

(iv) inform any customer purchasing or leasing a machine of the specifications packaging cartons had to meet in order to be used on that machine.

Shortly before the Commission's decision, Tetra Pak sent the Commission a draft reform of its policy and contracts, meeting some of the Commission's demands. After the decision, and despite having lodged an appeal with the judicial authorities of the European Union, the group stated that it was ready to comply with the Commission's decision. It amended its contracts accordingly, and initial reports on the application of the decision (which the Commission requires for five years) have been positive. Based on the information

conveyed in the first report, Tetra Pak is believed to have ceased its discriminatory pricing practices following the Commission's decision. In addition, a €75 million fine was imposed on Tetra Pak - at that time the largest fine ever levied on a single firm.

5 Analysis of issues

Tetra Pak is a remarkable case in that the cited behaviour includes almost a full catalogue of the potential anticompetitive activities associated with bundling and tying. The cited behaviour included metering for price discrimination, elimination of complement markets, and elimination of potential entrants through bundling.

METERING OF ASEPTIC FILLING MACHINES

A firm with market power will want to price discriminate among consumers. Metering is often the route to price discrimination. To be successful in metering, a firm must find a good used by customers in proportion to the customer's value. In addition, the firm needs to make it difficult for its customers to avoid the metering product. As in the HILTI case discussed in Chapter III below, the ideal meter is a per-use fee. Tetra Pak effectively achieved this result through a combination of the various restrictive clauses in the contracts for its filling machines along with the requirement that only Tetra Pak cartons be used. Although one does not want to applaud potentially illegal behaviour, we are impressed, perhaps even taken aback, by the extent to which Tetra Pak was able to put together all of the ingredients for a successful metering strategy.

As explained in Section 6.6 of the main report, when a firm tries to price discriminate, consumers will incur costs as they try to disguise their value. It appears that Tetra Pak made it quite difficult, if not impossible, for consumers to disguise their types. Tetra Pak required that its customers use only Tetra Pak cartons on its machines, so the carton was the metering device. To discourage use of unmetered cartons, Tetra Pak (as part of the machine contract) had the right to inspect the machines. These inspections would allow Tetra Pak to monitor the type of carton being used. It also would help Tetra Pak estimate the size of the firm, to see if the number of cartons being purchased from Tetra Pak were the correct order of magnitude. By performing all of the maintenance on the machines, Tetra Pak could also estimate the amount of use of the machines to ensure that an appropriate number of cartons were purchased. Finally, by not allowing customers to resell the machines (without Tetra Pak's permissions), Tetra Pak was able to assure that even purchasers of used machines were subject to its requirements.

Given that tying the cartons to the machines is a near perfect metering device, there was likely little direct loss of social welfare from these actions.[4] If all of the customers valuations were the same and varied only according to their use of cartons then Tetra Pak would be able to extract all (or nearly all) of the consumer surplus from the users of its aseptic packaging machines. But, in reality, there were different valuations between consumers. Thus Tetra Pak needed an additional device for price discrimination.
For example, there could be differences across countries as to the level of demand for

UHT milk. Thus charging a single price for all cartons across Europe would have led to imperfect price discrimination.

To get around this problem, Tetra Pak charged different prices for cartons in different countries and required users to purchase cartons only from the local authorised dealer. Tetra Pak adopted a market compartmentalisation policy, which allowed for persistent price differences for cartons among different countries.[5] Table 1 provides the prices charged in different countries for 1981-4. Table 2 provides similar information for earlier years.

While there might not be much loss of efficiency from this pricing behaviour, it does lead to a significant transfer of surplus from consumers to Tetra Pak.

TABLE 1
AVERAGE PRICE OF CARTONS - INDEX: ITALY=100

Carton	Year	Italy	Netherlands	Germany	France	UK	Denmark	Belgium
Rex	1981	100	129	117		124	134	
	1981	100	151	136		122	146	
	1983	100	146	140		117	138	148
	1984	100	127	124		106	133	136
Non-aseptic brick	1981	100	102	122		105	128	
	1981	100	105	136		124	149	
	1983	100	97	151		116	151	
	1984	100	78	129		105	133	
Aseptic brick	1981	100	156	133		167	114	139
	1981	100	170	143		163	119	139
	1983	100	162	142		142	113	140
	1984	100	137	123		127	109	120

Source: Commission Decision 92/163/EEC Of 24 July 1991, Annex V.

4 There could be a loss of economic efficiency associated with Tetra Pak expending resources in an effort to monitor its customer's usage of cartons. For example, if Tetra Pak has to inspect the machines regularly, the costs of these inspections will be wasted resources. A second loss would be customers that switched to other, less preferred, packaging solutions in order to maintain some consumer surplus. But, as Tetra Pak was able to charge different prices to different customer types, they should have been able to minimise this loss.

5 The distribution of cartons and machines was undertaken directly by companies within the Tetra Pak group in each state member of the European Community. There were no independent distributors.

TABLE 2
PRICE OF REX CARTONS ACCORDING TO PRICE LISTS - INDEX: ITALY=100[1]

State	Year 1978	1979	1980	1981	1982	1983	1984
Italy[2]	100	100	100	100	100	100	100
Germany[3]			152	171-192	180		121
Denmark	141	140	132	168	164	150	127
United Kingdom				172	148	138	131
France[4]						150	125
Belgium						144	125
Netherlands	126	125	120	130-165	158	139	115

Notes.

1 Indices are calculated on the basis of prices converted into €. One litre Rex cartons, price per order of 200,000 units.

2 Minimum orders of 250,000 units.

3 Minimum orders of 500,000 units.

4 Minimum orders of 1,000,000 units.

Source: Commission decision 92/163/EEC of 24 July 1991, Annex V.

ENTRY BARRIERS

The biggest threat to Tetra Pak's market power would appear to be new entry[6]. Several of Tetra Pak's policies seemed designed to solve this problem.

One entry deterrence strategy was to limit the size of the market that would be available to a new entrant at any point in time. Because the purchase (or lease) terms for the machines had different expiration dates across the different consuming firms, Tetra Pak was able to make entry more difficult. At any point in time, only a fraction of the users of aseptic packaging were available to a potential new entrant, making entry less likely to be profitable than if the entrant were able to compete for the entire market. By having a clause that sets the price at which Tetra Pak can repurchase the machines from its customers, this also could make it more costly for a firm to switch to an alternative provider.[7] These practices helped Tetra Pak protect its market from entry.

Tetra Pak further discouraged entry by its control over the complementary repair and spare parts markets (see also the Kodak case in Chapter VI below for comparison). Tetra Pak had at least two possible reasons for imposing exclusivity deals on maintenance and the provision of parts. First, it allowed Tetra Pak to monitor the use of the machines to

6 Tetra Pak's concern about entry was demonstrated by its reaction to the attempted entry of an aseptic packaging system into Italy. This reaction is documented in ¶¶ 76 to 83 of Commission decision 92/163/EEC of 24 July 1991 relating to a proceeding pursuant to Article 86 of the EEC Treaty (IV/31043 - Tetra Pak II).

7 We are not aware of the exact structure of these purchase-back prices, but presumably Tetra Pak could set these to be at a low price for a given term, and then rising beyond that. Such a pricing structure would encourage the consuming firm to keep using the Tetra Pak machine until the repurchase price rises to a higher level. By staggering these trigger dates, Tetra Pak could in theory limit the fraction of the market that would be available to a new entrant at any given point in time.

ensure that all of the conditions of the contract were being adhered to. Second, it prevented the creation of an industry that could provide maintenance and parts for the filling machines. If such an industry existed, it would lower the costs of entry by allowing the entrant to take advantage of the competitive maintenance sector.

Similarly, the requirement to use only the Tetra Pak cartons on the filling machines was likely imposed for two different reasons. First, the carton was a metering device and allowed Tetra Pak to extract more surplus out of the high-value users. Second, Tetra Pak was able to keep new entrants out of the carton market by limiting the size of the market for cartons. Since entrants would have available to them only the part of the market that uses other companies' filling machines, this would be a small market.[8] To be successful, entry would have to be at both the carton level and the machine level - a harder task than just at the carton level. While any of these actions might have a limited effect on raising entry barriers, all of them together could have a significant effect in decreasing the probability of entry.

6 Predatory pricing

In its decision, the Commission claims to have demonstrated that Tetra Pak was pricing below its costs for some non-aseptic cartons. In its decision, the Commission suggests that the predatory pricing was financed by the profitability of the aseptic market, but we do not find this last argument persuasive. We believe that there could well have been predation. What we do not find persuasive is that the profitability of the adjacent market is a relevant factor in analysing whether or not there is predation. The Commission made the argument that Tetra Pak's significant profits in the aseptic packaging market allowed it to predate. We think the analysis of predation should focus on whether the firm expects the predation strategy to be profitable. This is the general stumbling block to predation. If predation is expected to be profitable, then a firm should be able to finance this predation either internally or through external capital markets.

An interesting aspect of Tetra Pak's predation is that it could be following this strategy for one of two reasons. First, Tetra Pak can be selling non-aseptic cartons below cost with an eye towards eventually monopolising this market. For this to be a rational strategy, Tetra Pak must be able to raise prices on the non-aseptic products in the future. The other reason for below-cost pricing is to raise entry barriers in the aseptic market. In other words, by making entry less profitable in an adjacent market (the non-aseptic), entry is harder into the aseptic market. Which of these two is taking place can be determined from the way that Tetra Pak is pricing the below cost products. If these low prices were only available as part of a bundle of products (i.e. if the customer buys aseptic products then it gets a lower price on the non-aseptic products), then the predation is likely part of an entry deterrence strategy. On the other hand, if the below cost prices are available to all customers, regardless of other purchases, then it is likely to be a case of old-fashioned predation. In this later case, the predation has nothing to do with Tetra Pak's market power in aseptic packaging.

8 Limiting the size of the carton market available to a new entrant only matters if there are economies of scale in producing cartons.

We do not have direct evidence, from the Commission report, of direct discounting across different products. However, we do know that roughly 60% of the users of products offered by Tetra Pak in the non-aseptic market were also active in aseptic. In terms of volumes, the percentage is higher due to the presence of some big dairies and bottlers of fruit juices. We also learn from the report that in Italy, Elopak's fall in sales were concentrated in those dairies that produced both fresh and UHT milk (which implies that they were customers of Tetra Pak in the aseptic market). Finally, one of the remedies imposed by the commission explicitly addressed the issue of discounts granted on orders of different types of cartons, by forbidding it to aggregate orders of different types of cartons to calculate quantity-based discounts. Thus, we suspect that Tetra Pak's strategy included a bundled pricing strategy that resulted in below cost sales of some machines as an entry deterrence tool.

7 European Commission remedies

The Commission's remedies appear to relieve the competitive concerns mentioned above. While we are not aware of the form of the contract that Tetra Pak now has with its customers for the filling machines, the concerns mentioned by the Commission in its decision suggest that it will ensure that offending clauses are not included in the contract. In particular, the Commission will not allow Tetra Pak to require that its customers only use its cartons on its filling machines. This will ensure that Tetra Pak is not able to meter its customers (at least not in the same manner it was using). Further, the Commission required that discounts be based solely on the purchases of the product being discounted, so there can be no prices that discount one product based on the purchases of another product. This remedy should ensure that Tetra Pak is not able to use a bundling strategy to disadvantage firms in only one industry. Finally, the Commission has required that Tetra Pak not charge "uneconomic prices" in an effort to make sure there is no predatory pricing in the future.

While we have seen cases where a particular bundling or tying activity can be given multiple interpretations, this Tetra Pak case is impressive for its ability to demonstrate so many potentially anticompetitive practices all at the same time. Tetra Pak in 1983 would appear to be the poster child for anticompetitive bundling, tying, and portfolio effects.

III
Tying and the HILTI case study

This case provides an example of a tying strategy that is a puzzle according to the Chicago School theory. As elaborated in section 3.2 of the main report, there is no economic incentive to tie when there are fixed proportions between the tied and tying good, as was the case with HILTI's cartridges and nails. As a result, we are inclined to accept HILTI's argument that the bundling was done for reasons of quality and safety.[1]

1 Background[2]

In 1986, HILTI Aktiengesellshaft (HILTI AG) was a world leader in the manufacture and distribution of fastening systems (nail guns, drilling equipment, nails, cartridges, and cartridge strips) for use in the building industry. Based in Liechtenstein, HILTI manufactured products in Germany and elsewhere in the EEC. In 1986, HILTI had worldwide turnover of almost 1.5 billion Swiss Francs.

Nail guns first became popular in 1958, when Dr. Martin HILTI perfected the first version. The nail guns at the heart of this case operate using an exploding cartridge that propels a piston to drive in the nail (or other type of fastener). The nail and cartridge are separate parts although they can be sold as a bundled product. Manufacturers sell a variety of guns for different types of fastening situations, and the strength that the particular fastener is propelled can be adjusted by means of cartridges or power regulation systems. Power actuated fastening systems (PAFS) encompasses nails, nail guns, and cartridge strips.

Standard nails cannot be used in nail guns, and the specially manufactured nails for these nail guns must be adapted to fit specific guns. To some extent the different brands of nails fit more than one brand of nail gun, so there is some interchangeability between the different nails. Modern nail guns permit the user to fire multiple nails without reloading the gun through the use of a disk or strip containing several (usually 10) cartridges. These cartridge strips generally are made to fit specific brands of nail guns and thus are not generally interchangeable.

The cartridge explodes as part of the use. This explosion is what provides the force to drive the nail into the concrete or other material. As a result, each of the ten cartridges on a strip is a one-use item. If there was ever a case of a fixed proportion product, this is it. A ten-

1 In this analysis we are focussing solely on the tying claims and are not reviewing other aspects of this case.

2 The information contained in this case is obtained from the European Commission Decision of 22 December 1987 relating to a proceeding under Article 86 of the EEC Treaty (IV/30.787 and 31.488 — Eurofix-Bauco v. HILTI) as well as the Judgment of the Court of First Instance (Second Chamber) of 12 December 1991 (HILTI AG v Commission of the European Communities).

pack cartridge requires precisely ten nails. The customer requires both a cartridge and a nail to use the gun. Neither the nail nor the cartridge is reusable.

HILTI held patents on certain features of its nail guns. HILTI had not taken any legal action against other companies on the basis of nail gun patent protection as of 1987. In addition, HILTI held patents on the cartridge strips. In the EEU, HILTI did take action against a company for the sale of cartridge strips, which allegedly violated some or all of these patents. This competitor's cartridge strip was ultimately removed from the market.[3] The cartridges themselves were not patented.

During the early 1980's, Eurofix was a small company engaged in the manufacture and distribution of nails, including a style for use in HILTI nail guns. Another small company, Bauco, specialised in the importation of nails for use in nail guns made by HILTI.

Eurofix filed a formal complaint on October 7, 1982, accusing HILTI of breaching Article 86 of the EEC Treaty.[4] Eurofix alleged that acting through its subsidiaries, HILTI was "pursuing a commercial strategy designed to exclude Eurofix from the market for nails compatible with HILTI products," and specifically that:

> "HILTI refused to supply independent dealers or distributors of HILTI products with cartridge strips without a requisite complement of nails; that in response, in order to sell its nails for HILTI nail guns, Eurofix tried to obtain supplies of cartridge strips itself; that HILTI induced its independent dealer in the Netherlands to cut off supplies of cartridge strips that Eurofix had previously obtained from this source; and that Eurofix was also refused supplies of cartridge strips following a direct request to HILTI."[5]

Bauco made a similar complaint to the Commission.

The independent nail producers (Eurofix and Bauco) thus alleged that HILTI was tying the sale of nails to the sale of cartridge strips and that this tie was resulting in significant anticompetitive effects.

The European Commission ultimately found that HILTI had violated Article 82 (then 86) of the EEC Treaty. As a result of this violation, HILTI was fined and also required to end those acts which the Commission found to cause competition problems. HILTI appealed this decision to the Registry of the Court of Justice in 1988.

2 European Commission's analysis of the case

The Commission found that there were three separate relevant markets: a market for nail guns, a market for HILTI-compatible nails, and a market for HILTI-compatible cartridges. Further the Commission found that HILTI was dominant in the market for nail guns. The Commission found that there was not a market for PAFS and the Commission further found that the PAFS products were not part of a larger fastening systems market as alleged by HILTI.

3 We have been told that there were some questions as to the validity of this patent on the cartridge strip. We return to this question and the implications for the analysis below.

4 Since the time of the filing of this case, Article 86 has become Article 82.

5 European Commission Decision, 22 December 1987, IV/30.787 and 31.488 - Eurofix-Bauco v. HILTI at 25.

The Commission reached its conclusion of dominance in the market for nail guns in part through the assessment of market share estimates for nail guns provided by HILTI for 1982. According to these calculations, the only competitors within the EEC with significant market shares were Spit and Impex. Within this market, HILTI was found to have by far the largest share of sales.[6] In addition to having dominance in nail guns, HILTI was found to be dominant in the cartridge strips market, primarily as a result of having patents.

Given the large number of HILTI nail guns in the market, many independent nail makers were interested in supplying nails for these guns. There were more independent nail makers than cartridge makers. The Commission determined that HILTI's share of the market for HILTI-compatible nails and HILTI-compatible cartridge strips were both very substantial, and in excess of its share of the market for general nails and cartridge strips respectively.

The Commission concluded that HILTI did tie the sale of nails to the sale of cartridges in that for a number of customers HILTI refused to sell cartridges unless there were sufficient nails sold for the number of cartridges. Further, the Commission found that in those cases where there was not an absolute tie, that HILTI reduced the discount on the cartridges when the customer did not also purchase HILTI nails.

3 Economic analysis

Since we were not involved in the analysis of the case and have not had access to any confidential documents in this case, we will take the Commission's analysis and suggest alternative conclusions to those reached by the Commission. Also we explore the possible reasons, assuming the Commission's analysis was correct, that HILTI may have had for tying its nails to its cartridge strips.

We begin from the assumption that HILTI had an absolute tie between its cartridge strips and the nails. The first question we address is: under what circumstances does this tie lead to anticompetitive effects? It is our understanding that HILTI justified the tie because of safety concerns of improper nails being used in the nail guns, and such improper nails could be ineffective fasteners and also cause harm to the operator. Before accepting this explanation, we first want to explore if there could be a strategic reason for this tying.

We will assume that the HILTI cartridge strip is a correctly defined antitrust market.[7] Further, we will assume that HILTI has a dominant position in this cartridge market. Finally, we will assume that HILTI has this dominant position because of its patent of the cartridge system and that this patent was lawfully obtained.[8] Given the nature of patents, this allows HILTI to price its cartridges at the monopoly level.

6 Specific share and sales information are not available in the publicly available documents for this case.

7 As in all antitrust analysis, the market definition is dependent upon a number of specific facts and we do not have access to the necessary facts. It might seem reasonable that a relevant market would be "fastener systems" and that competition is at the nail gun/cartridge/nail level as opposed to just the cartridge level. This is the type of question that often arises when a durable good is sold and there is some type of consumable that is then used with the durable good.

8 As mentioned above, there was some question about the legality of this patent. We return to this question below.

Given these assumptions, it does not appear that there can be consumer harm from the alleged tie. HILTI has no ability to gain additional profits by pricing the nails high and tying them to a low-priced cartridge or pricing the nails low and the cartridge high. Since there is a fixed number of nails that are used with each cartridge, there is no ability to meter usage through this (or any other) pricing strategy. Furthermore, we find it unlikely that HILTI will be able to deny scale economies to other nail producers by foreclosing the HILTI nail gun nail market to them. Since there are many other uses for nails besides HILTI nail guns, and nail manufacturing does not seem to us to be an industry with significant economies of scale, so we do not believe that there is the ability to drive other nail manufacturers out of the market. Therefore, on the face of it, while HILTI was tying its nails to its cartridge, we do not see any competitive harm from this behaviour.

This conclusion does raise the question of why was HILTI tying nails instead of just pricing the cartridge high and gaining its profits that way? A similar example was discussed in section 3.2 of the main report, namely tying bottled water to trips on the London Eye. HILTI could charge up to the monopoly price for the cartridge plus nails and how it splits this between the nail price and the cartridge price does not affect consumers. If the competition authorities allow a high price on a patented product but tying is not allowed, then HILTI should be happy to earn all of its profits on the cartridge and price the nails at the marginal cost of making nails.

We posed this question to an executive at HILTI. It was brought to our attention that at the time the Commission was investigating this tying behaviour, there was also an investigation into the validity of HILTI's patent on its cartridge strip. If there was a risk that this patent would be invalidated, then we have an explanation for why HILTI would not charge a high price for its cartridge strip and a low price for the nails.[9] Even with a questionable patent there still remains a mystery of why HILTI would tie its nails with its cartridge strip. While we do not know all the facts about the nail industry, we suspect that it is reasonably competitive. As shown in section 3.2 of the main report, under this assumption bundling the cartridge strip and nails is neither an effective entry deterrence device nor a way to avoid double marginalisation. The fixed proportion usage eliminates the metering motivation. We do not believe that this tie would eliminate the competitive complements market in nails (the elimination of a complementary market is discussed in the Kodak case in Chapter VI below). So, again, we are in the situation that HILTI would not be able to gain monopoly profits (since by assumption its patent is not valid), but whatever profits it can make should be invariant to how it prices.

Having rejected all other explanations, we believe that a reasonable conclusion is that HILTI had a motive other than increasing its profits when it tied nails to its cartridge strip. During the investigation, HILTI argued that the combination of safety and reputation were driving its tying of nails to cartridge strips. HILTI claimed that other companies' nails had higher failure rates than its own. We are not in a position to evaluate this claim, but if

9 There may have been some constraint on the price it could charge for the cartridge if the court required it to license the cartridge at a specified price. But until such licensing was required, there was no reason not to make all of the profits on the cartridges and not on the nails.

consumers would blame HILTI for the failure of a nail whether it was a HILTI nail or some other nail used with a HILTI nail gun, then this would provide a reason to tie nails to cartridge strips. If there is no obvious profit gain from a company tying two products then this provides support for a claim of quality being the motivation for tying.

In conclusion, HILTI is an example of tying that fits into the Chicago school model of firm behaviour. There does not seem to be any ability for HILTI to gain any profits from tying (regardless of whether its patent is valid or not). In these circumstances, we believe that the firm should be given the benefit of the doubt in terms of its quality and safety claims for the tie.

IV
GE-Honeywell merger

1 Introduction

The economic theory of bundling has moved from the classroom and academic journals to the public policy arena. Its debut was dramatic. On July 3, 2001, the European Commission blocked the proposed $42 billion merger between General Electric (GE) and Honeywell.[1] A primary reason for their objection to this combination was a concern over bundling.

This case study uses the context of the proposed GE-Honeywell merger to address the concerns raised by bundling.[2] We set out the theory as put forth by the Commission and try to reconcile this theory with both the economic theory of bundling and the facts of the case. We discuss what is meant by bundling and explain when it is a potential problem and when it is not. Based on this understanding, we propose antitrust policy recommendations to deal with the novel issues raised by bundling.

2 Background

On October 19, 2000, United Technologies Corporation (UTC) reported that it was in merger discussions with Honeywell. Three days later, a merger was announced - but the buyer was GE, not UTC.

This case generated a good deal of attention. General Electric is one of the most well-known and admired companies in the world. At $42 billion, this was a large merger even for GE. The proposed integration passed the scrutiny of the US Department of Justice. Because of the size of GE and Honeywell's European sales, the merger also had to be approved by the European Commission.[3] On July 3rd, 2001, that permission was denied.[4] The divergence of outcomes between the US and European antitrust authorities added to the publicity of this case.

1 The merger was voted on by the 20-member European Commission. Their vote confirmed the recommendation made by Competition Commissioner Mario Monti, who, in turn, was given a recommendation by the European Union Merger Task Force.

2 The author was an economic expert for GE-Honeywell in their presentation to the European Union Merger Task Force. The application of bundling theory to the GE-Honeywell merger was done together with Patrick Rey, Carl Shapiro, Shihua Lu, and Greg Vistnes. The opinions expressed in this paper are solely those of the author.

3 "The Commission has authority to review all mergers, acquisitions and takeover bids and other deals that can be defined as a 'concentration', involving companies with a combined turnover worldwide in excess of €5,0 billion and European sales of at least €250 million." Commission press release IP/01/939. See also Article 1 (2) (a) and (b) of the European Merger Control Regulation, Council Regulation 4064/89 EEC of 21 December 1989 on the Control of the Concentration between Undertakings, 1990 O.J. (L 257) 13, as amended by Council Regulation 1310/97 EC of June 30, 1997, 1998 O.J. (L 180) 1.

4 While the parties have appealed the decision to the Court of First Instance of the European Communities, a judgment is not expected until sometime in 2003, too late to resurrect the prohibited transaction

THE PLAYERS

GE's 2001 revenues exceeded $125 billion, and its businesses included everything from plastics and television (NBC) to financial services, power systems, medical imaging, and lighting.[5] In the arena of aviation, GE produces aircraft engines on its own (GEAE) and through CFMI, a 50/50 joint venture with SNECMA (a French company). This joint venture accounted for a large majority of GE's engine sales, as CFMI is the exclusive provider of engines for Boeing's most popular plane, the 737. CFMI engines also power the Airbus A320 family and the A340-200/300. GE's own engines power the Boeing 777, 767, and 747 planes. They also power the Airbus A300, A310, A330, and the not-yet launched A380 super-jumbo aircraft.[6] In almost all of these cases, CFMI and GEAE compete with Pratt & Whitney (a division of UTC), Rolls Royce, or IAE (a PW/RR joint venture).

Honeywell started out in heating and environmental controls and over time developed a leadership position in aerospace.[7] Honeywell's position in avionics was enhanced through a series of mergers, most notably the purchase of Sperry Aerospace in 1986 and a merger with Allied Signal in 1999. Allied Signal was itself a leader in aerospace, the result of Allied Corporation's purchase of Bendix in 1983 and merger with the Signal Companies in 1985. Along with avionics, Honeywell's nonavionics aerospace products include auxiliary power units (which gives power to the plane when on the ground), starter motors, environmental control systems, aircraft lighting systems, engine accessories and controls, wheels and braking equipment. In 2001, nearly half of Honeywell's $23 billion of revenue came from their aerospace division.

3 The case against the merger

To block a merger, the Merger Control Regulation requires the Commission to demonstrate that the proposed merger would lead to market dominance. According to European case law, dominance is defined as:

> a position of economic strength enjoyed by an undertaking which enables it to prevent effective competition being maintained on the relevant market by giving it the power to behave to an appreciable extent independently of its competitors, customers and ultimately of consumers[8]

In this case, the claimed route to market dominance was unusual. It was not through the merger of competitors. Nor was it through a vertical integration of customer and supplier.[9] Given the depth and breadth of GE and Honeywell product offerings, there was

5 GE's history goes back to Thomas Edison. General Electric was formed as a result of a merger between Edison General Electric Company and Thomson-Houston Electric Company in 1892.

6 The GP7000 engine, designed to power the Airbus A380, is a joint venture between GE and Pratt & Whitney.

7 Honeywell instruments helped guide Apollo astronauts Neil Armstrong and Buzz Aldrin's landing on the moon.

8 In its investigation of the merger, the US Department of Justice found two significant horizontal overlaps, in US military helicopter engines and some heavy maintenance services for Honeywell aircraft engines and auxiliary power units. Both of these overlaps were fixed with a proposed divestiture. This proposed fix led to the US Department of Justice clearing the merger on 2 May 2001 (see http://www.usdoj.gov/atr/ public/press_releases/2001/8140.htm).

9 The very few areas of competitive overlap could have been resolved by divestitures. GE's role in speculative aircraft purchases for leasing and Honeywell's starter motor business did bring up some issues of vertical integration. We discuss the speculative aircraft purchasing aspect of the merger is the case study on GECAS that follows.

a remarkable *lack* of overlap between the two companies. Instead, the focus of the merger review was on "portfolio effects" or horizontal integration issues of bringing complements together.[10]

The Commission's case against the merger emphasised three linked points.

> First, the Commission claimed that GE had a dominant position in aircraft engines for large commercial aircraft and Honeywell had a "leading" position in avionics and non-avionics areas for these aircraft.
>
> Second, they claimed that the proposed merger would allow the new firm to bundle these complementary products. The bundling strategy would lead to price discounts that would give the firm an unbeatable advantage over its rivals.
>
> The third leg of the argument was that this advantage would lead to the exit of rivals and thus ultimately to strengthening the dominance of GE.

As explained in the EU Final Decision

> Because of their lack of ability to match the bundle offer, these component suppliers will lose market shares to the benefit of the merged entity and experience an immediate damaging profit shrinkage. As a result, the merger is likely to lead to market foreclosure on the existing aircraft platforms and subsequently to the elimination of competition in these areas.[11]

The Commission was also concerned that GE's aircraft leasing arm, GE Capital Aviation Services (GECAS), might lever its purchases in a way to foreclose Honeywell's competitors.[12] We discuss these issues extensively in the next case study.

To an economist, the Commission's case was unorthodox. The concern was that under the merger prices would fall - not that prices would rise. The idea that bundle discounts could be an anticompetitive strategy was novel to this case.[13] A merger that created cost savings that resulted in lower prices would be permitted. But if the lower prices came from pricing efficiencies, this was viewed as anticompetitive. There was no discussion of whether the lower prices on the road to market dominance would or would not result in a net increase in the present discounted value of consumer surplus (i.e. increase consumer welfare). Such considerations do not appear to be within the Commission's mandate.

Even to a lawyer, the Commission's case was unorthodox. The Commission did not demonstrate that the combination *would* lead to dominance, as required by its mandate. Rather, it emphasised the *theoretical* potential for future anti-competitive behaviour.[14]

10 The Commission referred to this as a conglomerate effect. We prefer the term horizontal integration of complementors as it emphasises the specific nature of the relationship - namely that their two products are used together by a common customer. Honeywell's customers are primarily the airframe manufacturers and airlines, not the engine maker. Thus Honeywell is primarily a complementor to GE as opposed to a supplier. (See Brandenburger and Nalebuff (1996) for a more formal definition of complementors.) Starter motors (and a few related components) are the exception to this rule.

11 Commission decision of 03/07/2002 declaring a concentration to be incompatible with the common market and the EEA agreement, Case no COMP/M.220 - General Electric/Honeywell ('EC final decision'), at ¶355

12 A good summary of the Commission's case regarding GECAS is presented in Giotakos et. al. (2001). See Pflanz and Caffarra (2002) for an excellent analysis of the unorthodox arguments made regarding the role of GE's leasing company, GECAS.

13 Range effects had been considered in a number of prior EU cases, including Coca-Cola/Amalgamated Beverages and Guinness/Grand Metropolitan. These cases focused on distribution efficiencies rather than pricing strategies.

In this case study, we focus on the Commission's arguments concerning bundling. (A separate case study looks at the GECAS aspect of the decision.) Not only is this aspect of the case novel, it also has wide-ranging implications for other mergers. We present the Commission's case for why bundling might create an antitrust issue, and then discuss whether the theory and evidence justified their conclusion.

4 Why bundle

We begin with a very brief review of bundling. Just because two items are sold as a package does not in itself mean that the items are bundled. The answer depends on how else and at what prices the items can be purchased. For example, if two items are only sold together and are not available separately, this is a case of pure bundling. The most general form of bundling is mixed bundling and this was the type of bundling emphasised by the Commission. In mixed bundling, two items, say jet engines and avionics, are available both separately and as a package. *What makes this bundling is that the package is sold at a discount relative to the individual items*. If the package is simply priced at the sum of its component prices, and these components are each available on an a la carte basis, then we do not call this bundling, as there is no strategic impact of the pricing.

The potential advantages of bundling were appreciated as early as 1838 by Augustin Cournot. He considered the case where a customer needs to buy two goods that are only of value when used together. Cournot used as an example the case of copper and zinc that are combined to make brass. Here one can think of the two goods as a jet engines and avionics. Bundling will be advantageous if each of these goods is sold by a monopolist.

Cournot's insight is that two monopolists, acting independently, will set an inefficiently high price. Were they to merge or coordinate their pricing, they would lower their price and earn more money. The simple intuition is that the lower price of jet engines stimulates sales of planes and thus avionics and this effect is not considered when the two goods are sold independently.

It is not surprising that the merging firms make more money. What is unusual here is that prices *fall* so that consumers are also better off. The merger leads to the happy circumstance in which all parties are better off, what is called a Pareto improvement. Thus the antitrust authorities should encourage such mergers.[15] We return to this issue when we discuss policy implications.

14 Schmitz (2002) criticises the decision on this basis: "Although it is probably true that the new company would indeed have the potential to bundle and it cannot be ruled out that at one point in time it might engage in this behaviour, using this potential to conclude that the merger would strengthen a pre-existing dominant position within the meaning of Article 2 European Merger Control Regulation is questionable ... Describing the question of whether it is permissible to block a merger because of possible future bundling as theoretical, hardly fits the impact it has. ...[T]he tool for this investigation is and must be Article 82 EC, not the European Merger Control Regulation."

15 One of the ironies of this case is that if one took the view that GE/Honeywell each had a monopoly position then bundling would unambiguously improve welfare. The only possible source of harm would be on competitors. But to the extent that the firm does not face competitors, there is no harm done.

The Cournot example is the horizontal equivalent of "double marginalisation." Each firm causes a negative externality on the complementary products by raising its price. When the two firms combine, they internalise this effect and lower prices. The simplicity of Cournot's argument has led to general confusion about when the theory is applicable.

In some ways this result is very general. It does not depend on the specific form of the demand function nor the cost function. It does not require that the goods be perfect complements. But there are several hidden assumptions on which the result relies. Two, in particular, are of concern to us.

First, the basic Cournot model does not consider the impact of the merger on any other firms in the market. This is by design. In Cournot, the producers of copper and zinc were alone in the market. To apply this approach to the facts as interpreted by the Commission in the GE-Honeywell merger, we need to consider how the results change when the two merging firms are not alone in the market. Naturally, the results are more complicated.

There are now two reasons to cut price: market expansion and competition with rivals. Cournot looked at the price reduction as a way to increase the total market. Though the total demand for airplane engines can be expanded with a price reduction, the engines (along with avionics) are only a minority of the total airplane cost. The greater impact of a price cut is through the potential to gain market share from rivals.

Because there are rival firms, there will also be a response to a price cut. This response may offset the potential gain to the merging firms. Thus we will want to consider the equilibrium impact on the non-merging firms and on consumers to determine the overall social welfare implications.

A second reason why the Cournot framework may not apply to the GE-Honeywell merger is that the basic result depends on an unstated assumption: *that firms set a single price in the market to all customers*. This is a quite reasonable assumption for a typical consumer good, such as Microsoft Office. But it is not a reasonable assumption for the sale of large commercial products in which the two parties engage in extensive negotiation as part of the sale process. If firms can price discriminate or negotiate with each customer, then the advantage to bundling disappears.

Our focus here will be on the applicability of the Cournot model. There are others reasons to offer a bundle besides curing double marginalisation. For example, even a monopolist seller of both A and B might be able to use bundled pricing as a way to improve its ability to engage in price discrimination.[16] This incentive to bundle is more important if there is demand for the goods individually (as is the true case with copper and zinc) than when all customers buy both goods (as is typically the case with jet engines and avionics).[17] We do not emphasise this aspect of bundling, as it did not play a role in the GE-Honeywell case.

16 See, for example, Adams and Yellen (1976); McAfee, McMillan, and Whinston (1989); Bakos and Brynjolfsson (1999).

17 There is still an advantage to bundling in a world where all customers buy an A-B package and the rival sellers of A (and B) are imperfect substitutes. This advantage only exists so long as the firm cannot perfectly price discriminate.

COMPETING AGAINST BUNDLES

We first extend the original Cournot model to cover the case where the two sellers face competition in the market. The results from this approach were at the heart of the Commission's theoretical argument against the merger.

This approach is based on Nalebuff (2000). We consider the case with four firms in the market. For simplicity, we can imagine that there are two jet engine manufacturers, GE and Rolls Royce, and two avionics manufacturers, Honeywell and Hamilton Sundstrand.

ASSUMPTIONS OF THE MODEL

In an attempt to demonstrate the effect of competition and not to create a realistic model of competition between the sets of firms, we assume that each customer has some preference for one product over the other and that preference is uniformly distributed over the interval [-1,1].[18] Thus a customer with preference (0.2, -0.6) would be willing to pay an extra 0.2 to buy a GE engine but would require a discount of 0.6 to purchase Honeywell avionics instead of Hamilton Sundstrand.

The pricing externality suggests that if GE and Honeywell can get together and coordinate their pricing, they will have an advantage over Rolls and Hamilton, each acting independently. But this gain may be offset by an increase in competition. If GE/Honeywell sell their product as a bundle and take share away from Rolls and Hamilton, their expected competitive response will reduce GE/Honeywell's profits. Which effect dominates? To create a benchmark, we set the profits of each of the four firms to 0.50 in the competition prior to the merger.

Post-merger, GE and Honeywell bundle and profits are

$$\Pi_{GE/Honeywell} = 0.91, \quad \Pi_{Rolls} = 0.32, \quad \Pi_{Hamilton} = 0.32$$

The increased competition effect dominates so that bundling reduces GE/Honeywell's combined profits from 1 to 0.91. GE/Honeywell does roughly 50% better than the sum of the uncoordinated B firms. The market share moves from a 50:50 split to 63:37. But even with this gain in share, GE/Honeywell does about 10% worse than in the case where each product is sold in an uncoordinated fashion.

The explanation is that the bundle takes away enough market share from Rolls and Hamilton so that the resulting equilibrium prices are low enough to make GE/Honeywell worse off.[19] Thus, even though it leads to an advantage, there is no incentive to bundle.

Again, these numbers are for illustration and are not designed to fit the customer preferences and product differentiation that exists in the jet engine and avionics industries. Furthermore, these results, adapted from Nalebuff (2000), consider the case of pure bundling — the GE engines and Honeywell avionics were only available as a bundle.

18 The assumption of a uniform distribution over [-1, 1] is made for simplicity. It implies that all preferences between +1 and -1 are equally likely.

19 As the bundle grows in size, the gap in prices continues to grow and, consequently, so does the bundler's market share. Once the bundle has four or more items, equilibrium profits rise for the bundling firm. See Nalebuff (2000).

To apply this model to GE-Honeywell, the results need to be extended to cover the case of mixed bundling.

Rolls Royce presented to the Commission an extension of this model to include the case of mixed bundling.[20] While it is difficult to find a mathematical formula for the solution, the approximate equilibrium prices and profits can be found through simulation. The results are not identical to the pure bundling case, though they have the same flavour.

With mixed bundling, the GE/Honeywell bundle would be sold for a 19% discount below the pre-merger price, while the component prices for GE and Honeywell would each rise by 21%. Rolls and Hamilton would respond to this increased competition by lowering their component prices by 11%.

$$\Pi_{GE/Honeywell} = 0.97, \quad \Pi_{Rolls} = 0.40, \quad \Pi_{Hamilton} = 0.40$$

Even with mixed bundling, GE/Honeywell would still sacrifice profits by bundling. Their combined profits fall from 1.00 to 0.97 or 3%. Although its profits fall, GE/Honeywell would gain market share and lose less than their rivals. GE/Honeywell's market share would rise from 50% to 55.4% while Rolls and Hamilton would see their profits fall by 21%.

MODEL LIMITATIONS

This model is obviously quite stylised. These parameters are in no way reflective of existing jet engine and avionics markets. The results about whether or not the bundling is profitable can be reversed with relatively minor changes in parameter values or modelling assumptions. For example, bundling becomes more profitable the more items are added to the bundle (at least for the case of pure bundling).[21]

Using a highly stylised model, the Commission reached the conclusion that economic incentives would lead a firm to engage in mixed bundling. The result that a firm that bundles obtains an advantage over its rivals is a relatively robust conclusion. But whether or not a multi-product firm has an economic incentive to bundle is a much more delicate finding. And by the same token, so is the expected loss to the competition. Among other factors, it depends on the number of items in the bundle and the elasticity of total market demand. The results presented rely on a specific distribution of preferences, namely a uniform distribution. It is not clear if the results are robust across different distributions of customer preferences.

The results also depend on the two goods in the bundle being of symmetric importance to the consumer. Clearly the engine is more important than the avionics or even all of the potential Honeywell components combined.

An aircraft engine might have a $15 million price tag while a piece of avionics could sell in the $100,000 range. Overall the avionics components add up to less than 5% of the total aircraft cost. The basic model of bundling has the two products being symmetric in

20 The non-confidential version is presented in Choi (2002).

21 While the biggest impact from lowering price comes from gaining market share, there is also the potential to expand the total market. As recognised by Choi (2002), even if this effect is small, it can be enough to make bundling profitable.

valuation. Nalebuff and Lu (2001) extend the earlier model to allow for asymmetry in importance. In the examples considered, there appears to be little incentive to bundle and minimal impact on competitors. In fact, with pure bundling and enough asymmetry, bundling actually *increases* the profits of all the players in the market.

The Rolls Royce model only examines the two-goods, two-vendor case. Realistically, the number of avionics and nonavionics goods purchased is in the several dozens, and the number of important vendors is at least a dozen. We need to understand not just whether mixed bundling is attractive or not, but also how much more attractive it is as the bundle size increases and what impact that increased bundle has on the market.

Thus before we try to use these type of models to make predictions about the likely impact of a merger, the models need to be robust enough to capture some important elements of the real-world market.[22] If one takes the results of this model at face value, it is not clear why there should be any antitrust concern. Average prices fall in the market. Consumers are better off at the expense of firms.

One can make the argument that social welfare falls, but as Patrick Rey observed in his presentation to the Merger Task Force this is truly an artefact of the model. As total demand is inelastic, the only change in social welfare is due to a change in which customers buy which product. Since all customers start out with their ideal product (absent price considerations) in the initial symmetric equilibrium, *any* change would lead to a fall in social welfare. But this argument depends critically on the starting points being completely symmetric. If, for example, the merging firms have a superior cost or product position and, thus, a larger share, then the bundle discount can lead to increased efficiency.

The Commission's problem with bundling was not with the immediate loss to social welfare but rather with the long-run (and even short-run) impact on competition. Similar to the argument against predation, the Commission believed that rivals would exit and that GE-Honeywell would obtain and exploit a dominant position.

DYNAMICS

If one wants to consider the expected market dynamics, then there are other factors that should be taken into account. For example, is it realistic to imagine that the individual competitors would not respond in any way? One option for those firms is to invest in product improvements or cost reductions. Another option would be to offer a competing bundle.

In our basic model, were Rolls and Hamilton to offer a competing bundle that would lead to a further reduction in profits, but it would also level the playing field. Firms may prefer to be in a symmetric position relative to a rival. They may prefer a lower but level playing field if they are worried that a bundler would use its profit advantage to position itself better in R&D or gain other advantages in a repeated game.

22 But even assuming for a moment that all of these issues did not exist, work by Patrick Rey shows that even on its own terms the Rolls Royce model was fatally flawed. In order to estimate the impact of the proposed merger, one needs to have coefficients on the model. The problem is that there is only one observation to use to estimate these parameters. Rolls Royce used the existing market shares. At best that would leave the model exactly identified. However, in this case the model was still underidentified. Thus the impact of the merger would depend on the choice of some parameters for which there were no data to make an estimate.

Even if Rolls and Hamilton did not want to offer a competing bundle, their customers could drive them to this outcome. Customers would stand to gain a great deal if they could create a bundle-against-bundle competition. Customers are anything but passive in this market and would use their power to influence the nature of competition.

The Commission only considered the advantages of bundling when the competition was selling their products individually. *Whatever advantages may exist, they quickly disappear if the rival firms coordinate and offer a competing bundle*. Given the level playing field for rivals and the advantages to customers, a firm that introduces a product bundle cannot expect that rival firms will not offer competing bundles.

5 Negotiating bundles

Up to this point, we have been playing the game as defined by the Commission and the Rolls Royce model as if it was relevant to the merger case at hand. We have shown that even on its own terms, there are sufficient flaws in the application that we would not be able to rely on its conclusions.

Here, we suggest that there is a much bigger flaw with the entire modelling approach suggested by Rolls Royce. All of the results on bundling, starting with Cournot, depend critically on the assumption that there is one price to customers in the market. This is a valid assumption for almost all consumer products. However, this assumption does not apply to the aerospace industry.

Customers don't pay list prices for jet engines or avionics. Airplane customers are often large and powerful. A vendor cannot ignore a major airline that asks for a better price. Nor are vendors uninformed as to their customers' preferences. The vendors in this market spend a great deal of resources getting to know their customers. Vendors take into account previous purchases as well as technical performance differences between their products and those of competitors. Going into a competition a vendor has a good idea of where it stands and by the end of the competition, it has a very good idea.

The result of this buyer power and vendor information is that prices are negotiated, not set by the seller. Examples of transaction prices confirm the fact that different buyers pay different prices. Every deal is negotiated, and the price is customised to the specifics of the situation.

In a world where firms negotiate prices with customers and do so with perfect information, the combination of two complementor firms, such as GE and Honeywell, is completely neutral. To see why, take the case where a customer has a preference for the GE engine and the Honeywell avionics. For illustration, imagine that the advantages are equal to (0.2, 0.3). In this case, GE and Honeywell would be expected to win both competitions, whether the items are sold separately or if the firms merge and the products are sold in a bundle. Let us compare these two cases.

Before conceding defeat, both Rolls and Hamilton would be willing to price down to marginal cost. In the case where the engines and avionics are sold separately, GE would be able to negotiate a profit up to 0.2 on its engines - its profit equals its advantage in the market. Honeywell could negotiate a profit of up to 0.3 on the avionics.

If the goods were sold as a bundle, then GE/Honeywell would be able to negotiate a profit of up to 0.5 on the bundle. Thus the sales and combined profits are identical in the two cases.

Nothing is different when Rolls and Hamilton has an advantage in one (or both) of the goods. Take the case where the customer has a preference for GE/Honeywell products of (-0.2, 0.3), so that the customer actually prefers the Rolls engine to the GE engine by 0.2. With individual pricing, GE would lose out to Rolls while Honeywell would still win over Hamilton (and make a profit of 0.3).[23] If the merged GE/Honeywell firm tried to sell the two products as a bundle, it could do so, but only at a profit of 0.1. This would be worse than selling just the avionics at a profit of 0.3.

These two examples are quite general. The point they illustrate is the following: *When the customer type is known and prices are negotiated, bundling can never lead to higher profits. If the customers would have made all of their purchases from a single firm, bundling has no impact - on customers, prices, profits, or efficiency. If customers would prefer some products from Rolls and others from Honeywell (or vice versa), then the combined firm will continue to offer the individual goods at their pre-merged prices. Forcing a bundle on the consumer can only lower firm GE/Honeywell's profits. In effect, it would have to subsidise its disadvantage using profits it could have earned from products where it is strongest. This is no different from selling individual components at a loss - a strategy it can do but would choose not to, even without bundling*.

The perfect information negotiation model is designed to capture the basic nature of competition in this market. But, like all models, it presents a simplified description of the market.[24] While vendors are well informed about the customer, their information is not always accurate. Firms can still negotiate prices even with good but imperfect information as to customer preferences.

The conclusion from this negotiation model is not a narrow result. The mathematics of the more realistic cases becomes more difficult, but simulation results suggest that bundling has little effect when vendors have good but not perfect information.

As one example, imagine that the firms don't know the customer's exact preferences but which firms the customer prefers.[25] Thus instead of saying the customer is (0.2, 0.3) we would say the customer is (+, +), indicating that the person has some positive but unknown level of preference for each of the GE engine and Honeywell avionics.

23 This example assumes that preferences for engines and avionics are of similar importance. If differences in avionics are less important, then a typical consumer might have preferences (0.2, 0.03) - in this case, engines are 15 times more important than avionics. Hence, the result extends directly to cover cases where the different products are not of equal importance.

24 An important simplification is that we are considering only a static snapshot of competition. We do not take into account issues of brand loyalty, switching costs, dynamic R&D incentives, or predatory strategies that require recoupment.

25 For more specifics on this approach, see Nalebuff and Lu (2001).

Consider a customer who is known to prefer both GE and Honeywell products, a (+,+) type. In this case, bundling offers a small advantage. A firm that knows it has an advantage in all components can use a bundle to do a better job of price discrimination. Market efficiency increases. Competitors' profits fall, but their profits in this case were very low to start with.

In contrast, bundling is not profitable when the merging firm is at a disadvantage in all products (-,-). Here we also note that this is the case where rivals (Rolls and Hamilton) have the highest profits. Thus bundling has the lowest impact when rivals make the most money.

Pure bundling or tying would be counter-productive in the two cases where the merging firm (GE/Honeywell) is better in one component and worse in the other, (+,-) or (-,+). If the merging firm employs mixed bundling, then the majority of consumers do not take advantage of the bundle, and there is again a small impact of the mixed bundle.

Averaging across these four cases, the net impact of the mixed bundling strategy is reduced by 50%. This is in line with the improved information. Half of the uncertainty has been removed in the sense that each firm knows if it is ahead or behind, although not by how much.[26] Nalebuff and Lu (2001) show that with even better information, the impact of mixed bundling is even smaller.

The distribution used to generate these simulation results provides results for four types of customers ((+,+), (+,-), (-,+), and (-,-)), but that leaves wide open the question of what is the proper level of information about the customer and what is the distribution of the remaining degree of uncertainty. The tightness of the distribution is a proxy for the quality of information in any particular negotiation. The wide margin variations that we observe are indicative of high-quality information, but this is not something that has been empirically measured and calibrated to the model.

In summary, it would be possible to employ this negotiation approach to model the potential impact of bundling as a result of the GE/Honeywell merger. The model would recognise asymmetries in the products being bundled as well as the negotiation environment with imperfect information. Doing so would require an investigation as to the quality of information and the distribution of consumer preferences. Neither of these tasks was ever considered. Since the size of the effect is directly related to the degree of imperfect information, it is incumbent on the Commission to incorporate negotiation and uncertainty into their model. They have not done so. Thus we conclude that the Commission does not have a sound theoretical basis on which to conclude that bundling can lead to market dominance.

26 Another way of putting this is that each firm knows which half of the line the customer is in and thus the range of uncertainty has been reduced by half.

6 Empirical evidence of dominance and bundling

Ultimately, the Commission's case against the proposed merger rested on a claim of market dominance. The empirical starting point in this argument was that GE already had a dominant position in aircraft engines for large commercial aircraft. Recall that market dominance means that a firm can act independently of its rivals and its customers.

It almost follows from the definition that a firm without a commanding market share cannot have a dominant position in the market. The Commission presented its calculation that GE had a dominant position with a 52.5% market share of the installed base of engines on large commercial aircraft still in production:[27]

MARKET SHARES:
AIRCRAFT ENGINES INSTALLED BASE

	GE	PW/IAE	RR/IAE
Narrow Body	51	22	27
Wide Body	54	31	15
Overall	52.5	26.5	21

Planes still in production leaves out planes still in service but no longer produced. While new engines are obviously no longer sold to planes no longer being built, this perspective misses the spare parts market. With spare parts an engine can be "sold" up to ten times over its working life. Pratt & Whitney, in particular, has a large annuity coming to it from selling spare parts to planes in service that are no longer being produced. Using the planes-in-service approach, GE's market share falls to 41%.

The calculation of market shares for PW (Pratt & Whitney) and RR (Rolls Royce) include the engines of IAE, a joint venture between Pratt & Whitney and Rolls Royce. IAE's market share is split evenly between PW and RR. In contrast, all of the market share of CFMI, the 50/50 joint venture between GE and SNECMA is attributed to GE.[28] If CFMI is eliminated from consideration and we consider market share on planes in service, then GE's market share falls to 10%. If we attribute half of CFMI to GE and half to SNECMA, then GE's market share is still only 28%. Even if we use the planes in production, GE's market share counting only half of CFMI to GE is 36%.

27 The data is of 31/12/2000. The table is reproduced from European Commission decision in Case No. COMP/M.2220 - General Electric/Honeywell, paragraph 70.

28 The Directorate-General Competition justified this calculation: "Although in legal terms GE and SNECMA jointly control CFMI, the only meaningful attribution of market shares for the purposes of analysing the transaction could only be made to GE, to the extent that SNECMA is not an independent supplier of civil jet engines for large commercial aircraft. The analyses of the joint venture and of SNECMA's participation in other GE engine programmes indicated that SNECMA would act jointly with GE as a profit-maximising entity." Giotakos et. al. (2001).

In any of these calculations other than that of the Commission, GE's limited market share would practically preclude it from having a dominant market position. Which definition is correct?

There is no one correct definition of market share made in the abstract. The issue should be market share measured for what purpose. For example, if the purpose is to evaluate the firm's financial resources to continue investing in this business, then all of its revenue streams are relevant. Thus PW can use earnings from its entire installed base (not just planes in production) to finance new investment. GE only gets half of the revenue from CFMI. Thus for this purpose it would seem that the 28% number is most appropriate as it reflects GE's revenue share of today's market.

To understand future financial viability, one might also want to examine pre-orders on next-generation planes, those that have been launched but are not yet in production (such as the A380, B777x). It is common for airplanes to be ordered in advance of production. As of 2001, Rolls Royce had a 40% share of the engines on these next-generation planes, while GE and CFMI's combined share was second with 38% and PW was third with a 21% share.

If market shares are used to provide evidence of market power, it would seem that most of CFMI's share should not be included in GE's share. This is because the great majority of CFMI's sales are not in a position to exercise any market power. Recall that CFMI is the exclusive provider of engine to the Boeing 737 plane.[29] Prior to entering this exclusive relationship, Boeing realised that its customers would be in an untenable bargaining position if CFMI were the sole provider. Thus Boeing prenegotiated a deal with CFMI as part of the exclusivity contract.

For most engines, the airline purchases the engines separately from the plane. Having decided upon a 747, the airline can then put the engine order out to bid between GE, PW, and RR. But in the case of a 737 purchase, the customer negotiates with Boeing and the engine is included in the price. CFMI does not have the ability to control engine pricing on these orders. For that reason, a more appropriate measure of GE's market share used to measure market power would be its share of engines excluding its exclusive-contract sales.[30] This corrected share is about 10% or 20% depending on whether one looks at planes in service or just those in production.

If market shares are used to understand the potential for bundling then, again, it would seem that CFMI's sales should not be attributed to GE. This follows for two reasons:

First, for the engines offered to Boeing at a predetermined deal it is almost impossible to employ a bundled pricing strategy. If the customer has already bought the Boeing plane and CFMI engine, there is no gain in providing a retroactive engine discount for the purchase of Honeywell components. The company would do just as well to offer the discount directly on the Honeywell parts.

29 In addition to CFMI's exclusive sales contract for the Boeing 737, its CFM56 engines also power the Airbus A320 family and A340 long haul.

30 There are some GE exclusive sales, such as for the two new "longer range" (LR) versions of the Boeing 777. Here, again, the engine is sold at prenegotiated terms. One would want to take out all of the exclusive engine sales in calculating a firm's ability to act strategically.

The only way even to offer a bundle discount would be to promise a *future* discount on Honeywell components if the 737 plane is purchased. This would only make sense if the discount would increase the 737 plane sales. (If the sales of 737s are unchanged, then there is no increase in demand for the CFMI engine, and hence the discount might as well be applied directly to the Honeywell components.)

There are practical problems with this approach. The cost of Honeywell components is small relative to the plane and engine. Thus there is little ability for the tail to wag the dog. Second, the sale of avionics and other Honeywell components is done at a future time at a negotiated price. One party can't promise to give the other party a "better deal" in a future negotiation, as there is no baseline against which to measure what makes a better deal.[31]

Second, bundling would be further complicated by the fact that CFMI is a joint venture. Thus the decision on offering a bundle price would have to be made by both GE and its partner SNECMA. By its charter, CFMI is always led by a SNECMA representative. The joint venture nature of the relationship complicates CFMI's ability to offer a bundle, as SNECMA has no incentive to help sell Honeywell avionics.

GE's ability to act strategically so as to gain market share is practically restricted to its own engine sales, and this is roughly 20% of the market for planes in production. A 20% market share does not put a firm in a position where it can act independently of its rivals and customers.

However one measures shares, there is no disagreement regarding the extensive use of bidding competitions, the emphasis on market intelligence, and the very dynamic nature of shifting market shares. But the same facts were viewed very differently on the two sides of the Atlantic. In the US, the fact that GE had won several of the recent engine competitions was viewed as evidence of competition at work. In Europe, these recent wins were viewed as evidence of dominance.[32]

A contributing factor to GE's alleged dominance in engines was the company's unique financial strength. Excerpts from Giotakos (2001) demonstrate this perspective:

> GE Capital offers GE business enormous financial means almost instantaneously and enables GE to take more risk in product development than any of its competitors ... GE has also taken advantage of the importance of financial strength in the industry though the use of heavy discounts of the initial sale of the engine. ... [T]hanks to its financial strength and incumbency advantages as an engine supplier, GE can afford to provide significant support to airframe manufacturers under the form of platform-programme development assistance that competitors have not been historically in a position to replicate. ... Unlike any other engine manufacturer, GE can afford to pay for exclusivity and capture aftermarket, leasing and financial revenues.

31 To help make this clear, consider the following hypothetical bundling offer: if "New Air" purchases a 737 plane, GE will offer a $1 million rebate good towards the purchase of Honeywell avionics. When it comes time to negotiate the price of those avionics, Honeywell and the customer both factor in the $1 million discount when setting the price. Thus if the negotiated price would have been $4 million, the new negotiated price would be $5 million, which achieves the $4 million post-rebate price.

32 For a more detailed comparison of the US and European approaches, see Patterson and Shapiro (2001) and DOJ (2001).

Patterson and Shapiro (2001) show the dangers in the approach. They look at as these same activities as procompetitive. Taking risks leads to innovation; discounting benefits customers. In the US, entrenchment of a dominant firm is a discredited theory and is no longer grounds for challenging non-horizontal mergers (DOJ, 2001):

> Challenging a merger because it will create a more efficient firm through economies of scale and scope is at odds with the fundamental objectives of antitrust law. And there is no empirical support for the notion that size alone conveys any significant competitive advantage that is not efficiency-related.

Whether or not GE was starting from a dominant market position, the Commission was concerned that this merger would allow GE to extend its dominant position to Honeywell products. The proposed route to this dominant position was through bundling. To what extent was this theoretical concern supported by evidence?

While the theory suggests that bundling is unlikely to be an important factor, there remains the empirical question: do we see much evidence of bundling in aerospace? At first glance, the answer seems to be yes: many bids are multi-item bids. Companies such as Honeywell and its competitors often make a bid to supply a long list of components. This led several observers and even industry participants to conclude that bundling was a feature of this industry.

However, the long list of items is also broken down into prices for each individual component. And the component prices add up to the "bundle" or package price. If there is no discount then we don't consider this to be bundling.

Compare this situation to Microsoft Office. Microsoft's July 2001 list price for Office XP Professional was $547. One could also buy the components separately, but one wouldn't. Word, Excel, PowerPoint, Access each cost $339 separately and Outlook was a bargain at $109. The total adds up to $1,465. The software package comes at a 60% discount compared to the individual items.

In the cases cited by the Commission, the claimed bundle discounts were much smaller - by an order of magnitude. The claimed bundle discounts were also much smaller than those predicted by the Rolls Royce model. Even more importantly, these discounts were evidence of negotiation and not of mixed bundling.

In cases where the Commission attempted to document examples of a mixed bundle discount the analysis failed to distinguish between a *discount* and a *discount conditional on buying a package*. As a result, several of the cases cited actually demonstrated the absence of mixed bundling.

Even if a discount were offered for buying a package, this does not mean that the discount would not be applied to individual items. In general, this would be a matter of speculation. However, in some of the cases cited by the Commission, the alleged mixed bundle *failed* to induce the customer to buy the entire package. Thus it is possible to observe what prices were paid and whether or not the discount was in fact conditional on buying the

entire package. In the cited cases, the customer was not penalised for breaking apart the bundle. Whatever discounts the customer was offered for purchasing the bundle were applied on a proportionate basis to the partial bundle that was ultimately purchased.

The evidence of bundling provided by the Commission undercut its own argument. If bundling was such an anti-competitive tool, then why did it fail to get customers to purchase products for which the firm was otherwise at a disadvantage? The fact that customers were able to get any discount offered without having to purchase the bundle confirms the industry perspective that it is a mistake to offer a bundle discount as this will simply end up coming back as a discount on whatever the customer ends up buying.

If bundling is to be a matter of concern, we should see contracts that are won, not lost. And these contracts should offer a substantial discount for buying the entire package over a la carte purchases.

7 The (im)practicality of bundling engines

The theory suggests that bundling will not lead to an advantage with negotiated prices. The evidence suggests that bundle discounts are not prevalent, if they even exist. But perhaps the combination of GE and Honeywell would create a new opportunity to offer an engine and avionics/nonavionics bundle. Even if this were desirable, there are institutional features of the airplane purchase process that make this type of bundling impractical.

We have already discussed the problems of bundling CFMI engines with Honeywell's avionics (and other nonavionic) equipment. These include the joint venture with SNECMA and the pre-determined engine price for 737s. An additional factor that makes it impractical to bundle engines with other components is the timing of purchases. Typically the engine choice is made well in advance of other components, such as avionics.

To see why this is a problem, consider how bundling would have to work. Once GE has won the engine competition, there is no incentive to give retroactive discounts on engines if the customer would also buy Honeywell avionics. This would be no different than giving a discount on the Honeywell avionics directly.

In order for there to be any possibility of bundling working, it must be the case that at the time the engine selection is being made the customer is led to believe that by choosing the GE engine there will be a better price on Honeywell avionics. For example, the customer might be given a 10% off discount for their later purchase of avionics if they have a GE engine. While this story is possible in some industries, it is not applicable to avionics. The reason is that all prices are negotiated so that a discount off the list price has no bite. One person can't promise to give the other party a "better deal" in a future negotiation, as there is no baseline against which to measure what makes a better deal. Here again, we see the importance of taking into account whether prices are fixed or negotiated.

The bundling of avionics components would seem to be much more practical than bundling engines and avionics. Indeed this issue was considered only two years earlier when the commission approved the merger of Allied Signal and Honeywell. While there

was some dispute as to whether bundling exists at all, even the Commission did not argue the Allied Signal-Honeywell merger had led to widespread bundling. From the Commission's perspective this was only because the merger was too recent and thus the impact of bundling had not yet been felt.

8 Evidence that bundling would lead to exit by rivals

At the same time the Commission was arguing that the Honeywell-Allied Signal bundling effects were slow to arise, the Commission took the stance that the GE-Honeywell merger would lead to nearly immediate exit or marginalisation of rivals.[33]

Is exit (or marginalisation) really likely in this business? Here the Commission seemed to rely on the dire warnings of some competitors. Of course, these competitors are not disinterested parties. They would hope to block the merger or purchase various Honeywell "jewels" that the Commission would require to be spun off.

Nor was there evidence provided that the rival firms were in any danger of exit. To the contrary, evidence was presented that showed the long-term viability of the rival firms. For example, the stock market's reaction did not anticipate the financial vulnerability of aerospace firms. From the time of the announced merger to the time of the EU hearing, almost all of the rival firms had a gain in stock price that exceeded the S&P index. The firm that under-performed the index was GE.

One would not expect to see aerospace firms concede defeat quickly. Airframes are long-lived. The typical plane is on the market for 25 or more years. Thus a contract gained today (or ten years ago) would provide a long stream of profits down the road. Hence, even if firms were precluded from new contracts, they are not going to disappear any time soon. In fact, the next plane for which the engine choice has not been made is the Boeing Sonic Cruiser, which is not set to debut until 2007 or later (if it is built, at all).

In the aerospace industry there are several large players who have an interest in maintaining competition. Military purchases play this role. Both Rolls Royce and P&W have multi-billion dollar annual revenues from military contracts, and there is a substantial amount of spillover between civilian and military work. While it could be argued that no single airline would be eager to provide the public good of maintaining competition, Airbus and Boeing (each of which has about a 50% market share and each of which works closely with airlines when making purchase decisions for the aircraft it designs) do have this incentive.

9 CONCLUSIONS

In the Statement of Objections, the Commission presented a theory of bundling that was based on the premise that the merged firm would be able to bundle and would have a rational economic incentive to do so. The result of this bundling would be prices so low that competitors will be foreclosed.

When closer scrutiny was given to this argument, it turned out not to apply to the market for aircraft engines, avionics, and non-avionics products. The Commission subsequently abandoned its original approach.

> The various economic analyses have been subject to theoretical controversy, in particular, as far as the economic model of mixed bundling, prepared by one of the third parties, is concerned. However, the Commission does not consider the reliance on one or the other model necessary for the conclusion that packaged deals that the merged entity will be in a position to offer will foreclose competition from the engines and avionics/non-avionics markets.[34]

Instead, it based its decision on a new, dynamic, theory: Foreclosure of competitors would occur as a result of predation accomplished through the cross-subsidisation of bundled sales.[35] As explained in the EU's Competition Policy Newsletter (Giotakos, 2001)

> ...thanks to GE's strong generation of cash flows resulting from the conglomerate's leading positions on several markets, following the merger, Honeywell would have been in a position to benefit from GE's financing surface and ability to cross-subsidise its different business segments, including the ability to engage in predatory behaviour.

There may be a simple explanation as to why reliance on the Rolls Royce model was so attractive to the Commission. If, in fact, a merged firm would make *more* money by reducing prices when selling complementary products, then there is no need to estimate the cost of predation (as there is none) and there is no need to estimate recoupment (as none is required). Moreover, the merger becomes the proximate cause of the price discounting and so there is now a reason to think that this type of economically rational predation will occur post-merger even if it does not occur pre-merger.

Against this background, the Commission may have been disappointed to discover that the economic models upon which it had relied - the model advanced by Rolls Royce, and even the basic Cournot complements model - were unsuited to the task.

Although the Commission abandoned the original model, it did not replace the flawed model with another model. Rather, the Commission switched to a dynamic theory of predation. But, it did not carry out the steps required to establish the facts necessary to support that theory.

In the end, the Merger Task Force did back away from its economic theory of bundling. But it did not back down from its conclusion that bundling was a reason to block the merger. The decision in this case presents a challenge for the role of economic analysis in the design and implementation of antitrust policy.

33 If the exit or marginalisation were to occur more gradually, then one would want to take into account the benefits gained by customers during the period of lower prices. Such a calculation was never made.

34 Paragraph 352 of the Decision.

35 Predation was never seriously discussed in the Statement of Objections: there is only a *single* mention of predation in the SO, unrelated to the bundling theory, and this occurs in a footnote.

V

GECAS and the GE-Honeywell merger: is the Archimedean theory of leverage Kosher?

1 Introduction

In this case study, we return to the GE-Honeywell merger to look at a second leg of the European Commission's case against the merger. Here we examine the role of GE Capital Aviation Services (GECAS) as a speculative purchaser of new airplanes for use in its aircraft leasing business.[1]

The issues raised by GECAS are relevant to understanding portfolio effects more broadly. What is the ability of a large firm, in this case a large customer, to throw its weight around so as to distort competition in favour of its related businesses? We examine the GECAS case both in its details and its broad scope. The details illustrate the delicate nature of how to demonstrate market power and portfolio effects; the broad scope allows us to examine how a theory of leverage works in practice.

The case begins with the fact that GECAS has (with one exception) only ordered new airplanes that come with GE or CFMI[2] engines. What is in dispute is the interpretation and implication of this policy. Those challenging the merger took the view that GECAS's favouritism was costly and therefore an indication that GECAS was up to something. We will explore various motivations for favouring internal purchases so as to better understand its legitimacy. The specific concern was that upon completion of the merger, the favouritism would be extended to Honeywell components, and that this would tip the entire market towards Honeywell and thereby foreclose rivals.

What made this aspect of the case particularly controversial is the charge that GECAS might be capable of foreclosing rivals even though it had by all counts a market share of less than 10% and a share as low as 5% by some measurements. Thus a new theory

1 Barry Nalebuff assisted GE-Honeywell with analysis and responses to the Merger Task Force proceedings discussed in this case. The views expressed in this case study are solely those of the author and should not be attributed to GE, Honeywell, or any other organization. This case study follows and expands upon the arguments that are very well presented in Lexecon (2001), Pflanz and Caffarra (2002), Giotakos et. al. (2001), and Reynolds and Ordover (2002).

2 CFMI is a 50-50 GE/SNECMA joint venture.

of market power would be required. The resulting argument, an "Archimedean leverage theory," as developed by Robert Reynolds and Janusz Ordover (2002), was indeed novel, even ingenious. However, we do not find it persuasive.

We present the Reynolds and Ordover argument and then consider whether it is plausible on theoretical grounds. If the CEGAS purchase policy has any effect at all, is this effect long-lasting or would it be offset by the equilibrium reactions of other players? Is it likely that post-merger GECAS would extend its favouritism to planes equipped with Honeywell aircraft components? We explore countervailing factors which suggest the merger could lead to a market bias against Honeywell and that GECAS would find it practically impossible to limit its purchases to GE-powered planes equipped with Honeywell components wherever possible.

We then consider whether the market leverage theory is plausible on empirical grounds. *Using the same data as Ordover and Reynolds, we find that the data is entirely consistent with the view that GECAS has had no share-shifting effect on the market.* This interpretation follows directly if GECAS took most of its market share from airlines that would have otherwise ordered directly from airframers.

Given the very speculative nature of the theoretical argument applied to engines, the weak connection to Honeywell components, and the inconclusive empirical support, it is remarkable that the GECAS controversy played a significant role in blocking the merger.

2 Aircraft leasing and a history of GECAS

The airline leasing business can be thought of as three activities. The first is the sale-leaseback agreement. Here, an airline that owns a plane will sell the plane to a financial services company and immediately lease the plane back. This transaction changes the balance sheets of the two companies and also may change who gets to take the depreciation allowances.

This is a large part of GECAS's business, but was not relevant to the merger case. GECAS engages in sale-leasebacks for all planes, not just those with GE/CFMI power.[3] Second, since it is the airline and not the leasing company that orders the plane, the airline is the party that chooses all the components that go on the plane.

A second activity is the speculative purchase of used planes. Just as a car dealer may take trade-ins or even purchase used cars for resale, airplane leasing companies help make a liquid market in second-hand airplanes. And just as a car dealer often has a broader selection in its used car options, GECAS has a large number of used non-GE powered planes in its fleet. GECAS's activity in used planes was not central to the merger case, since GECAS has no say in determining the components that go on the plane.[4]

3 For ease of exposition, hereafter we refer to GE/CFMI power as GE power.

4 There was some discussion as to whether the GECAS purchase of used planes was done in a way to help an airline swap its fleet from non-GE power to GE-powered planes. This was a side issue at best.

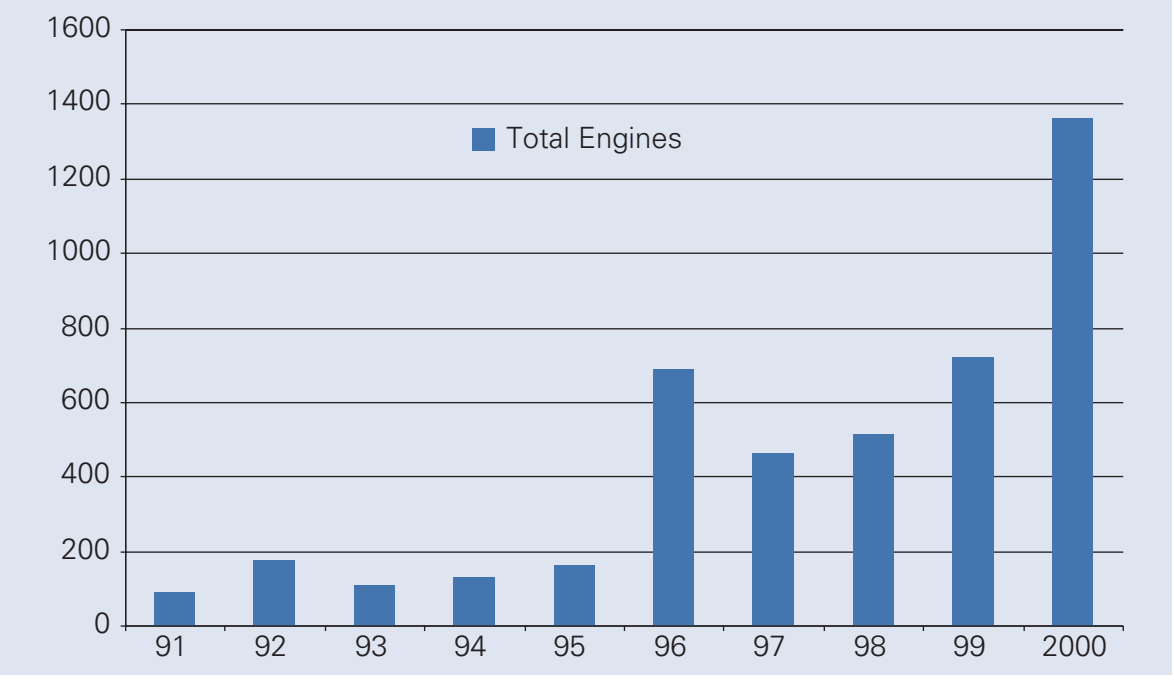
The focus of attention was on the speculative purchase of new aircraft. In this business, a leasing company buys a new plane from an airframer before it has a customer to whom it can lease it. Thus, the purchase is speculative. The leasing company will make money if it can find a customer to whom the plane can be leased at an attractive price. It will lose money if it has to take delivery of a plane that cannot be put into service or can only be leased with a heavy discount.

One reason why this business exists is because of the long lead time in ordering planes. If the airline customer could simply order a new plane from the Boeing showroom and take it home that night, then the transactions could be of the sale-leaseback variety. But as there is often a several year backlog for a new plane delivery, an airline may go to a leasing company to obtain one of the planes already in the queue.

GE is a relatively recent entrant into the speculative purchase of new aircraft for use in its leasing business.[5] Its first speculative orders were placed in 1996. Here, the GECAS purchase pattern was distinctive. It favoured the speculative purchase of planes with GE power. In its first five-years of purchases, it ordered planes with a total of 1192 engines of which 16 engines were not GE or GE's joint venture, CFMI.[6]

As can be seen in Figure 1 below, the years 1996 through 2000 were a time of solid growth for the entire leasing industry.[7]

FIGURE 1
TOTAL ENGINES (ALL SPECULATIVE ORDERS BY LEASING COMPANIES)



5 GE acquired the aircraft leasing business of Guinness Peat out of bankruptcy in 1993.

6 These 16 engines went on 8 Boeing 757 planes, for which GE engines were not an option.

7 The data source for this chart and all other figures is BACK Aviation, 2001. The orders include engines for large commercial aircraft and large regional aircraft.

The growth during this five-year period came from two sources. First, this was a period of solid earnings for the airlines. Second, there was a shift towards speculative leasing. The speculative leasing market share of planes (weighted by engines) rose from just above 10% in the first half of the 90s to around 20% in the second half of the 90s.

3 Market shares

As in most antitrust cases, the first controversy was over how to measure market share. By all accounts, GECAS has a market share of no more than 10%. Normally, this would be enough to stop the investigation of foreclosure of rivals. But in the novel theory relied upon by the Commission, even a small share of purchases could matter.

According to the European Commission, GECAS is the market leader:

> With around 10% of the total purchases of aircraft, GECAS is the largest purchaser of new aircraft, ahead of any individual airline. ... GECAS is also the market leader in terms of jet aircraft on orders and options with a total backlog of 796 jet aircraft at the end of 2000 (535 for ILFC).[8]

It would be quite unusual to count options as part of a market share. Counting planes can also be misleading. This misses the fact that a large regional jet costs only about ⅛th the price of a 747.[9] Both issues are relevant. Out of the 796 GECAS orders and options, 150 were orders for regional jets and another 300 were options on regional jets.

To better understand GE's size in this market, we look at market shares in terms of engines, not planes. There is not a one-to-one correspondence between engines and planes as some planes come with two engines, others with three, and others still with four.

In the period 1996-2000, GECAS's firm and pending orders totalled planes with 1,192 engines. This put GECAS into second place among leasing companies. The largest player was International Lease Finance Corporation or ILFC, with a total of 1,212 engines. The other leasing companies accounted for another 1,346 engines. The airlines accounted for most of the orders. Their total was 12,544 engines over this period. Thus GECAS market share counted in terms of number of engines ordered was 1,192/(12,544+3,750) = 7.3%.[10]

Even this 7.3% share number substantially overstates GECAS influence as it counts all engines as equal. Engines differ widely in cost depending on the size/thrust of the engine so that an engine for a regional aircraft is only a fraction of the cost of an engine for a large, wide-body aircraft such as an A380 or a Boeing 777. In dollar terms, GECAS has a lower market share as fully ⅓ of the GECAS total were regional jet engines. (GECAS was the only leasing player of any size in the speculative purchase of regional jets.) Correcting for this we find that GECAS's share in dollar terms is approximately 6%.[11]

8 Paragraph 122 of European Commission Decision in Case No. COMP/M.2220. ILFC stands for International Lease Finance Corporation.

9 The list price on a large regional jet is around $27 million compared to a little over $200 million for a Boeing 747.

10 Other leasing companies accounted for 15.7%, and airlines account for the remaining 77%. Note also that these numbers exclude engines for smaller regional jets (less than 70 seats). While leasing companies have not made speculative purchases of smaller regional jets, this market is relevant to the issue of whether Honeywell's rivals could be foreclosed and thereby driven out of business. Including the smaller regional jets would have expanded the airlines' share and reduced GECAS's share of total new orders.

11 Note that if market share were measured in terms of dollar value of planes a similar result would be obtained as regional jets are less expensive than narrow-body and much less expensive than wide-body jets.

GE further argued that the CFMI engines should only count as 50%. Recall that CFMI is a joint venture between GE and SNECMA. As GE only earns half of the profits on any CFMI sale, their incentive to generate an engine sale is half of what it would be on a 100% GE engine. Making this correction would bring the GECAS market share to below 5%.

As much of a stretch as it is for a firm with a 10% share to foreclose a rival, it becomes an even greater stretch for a firm with 5% or 6% market share.

Market shares are, of course, backward looking. Are these shares indicative of future market shares? Here again, GE argued that the GECAS share was inflated relative to its long-run position. The reason is that GECAS had, as of the end of 2000, placed two large orders, one in 1996 and one in 2000. These orders were designed to build up inventories and hence not indicative of annual purchases. In 1996, GECAS ordered planes with 330 engines. Having built up its inventories, the next year, in 1997, GECAS's orders totalled only 16 engines. In 1998 the total increased to 110 and to 118 in 1999. In 2000, the number jumped up to 618. This last number reflects the fact that in 2000, GECAS made large multi-year orders to enable it to undertake the speculative leasing of regional jets. Of the 618 engines ordered in 2000, 300 were building up inventories in this new regional jet leasing business. If we take the two large orders and evenly spread them out over 4 years, one backwards and two forwards, then we find GECAS market share is 5.5%, even counting regional jet engines equally with narrow-body and wide-body jet engines.[12]

We will return to discuss the market data when we look for any evidence that GECAS was able to shift the market in favour of GE/CFMI engines. Now, we turn to the Archimedean lever or tipping theory.

4 How does the leverage work?

The basis for the Reynolds and Ordover argument is that GECAS will be able to tip the market in favour of GE/Honeywell products. We find their argument fits some business decisions very nicely. In particular, their Archimedean lever explains the prevalence of Kosher certification. It is not that the Reynolds and Ordover theory is never right, but rather that it does not apply to the choice of aircraft components. Thus we first explain how the leverage theory applies to decisions such as the choice of Kosher certification and then we show how the certification decision is different from the choice of aircraft components.

Observant Jews will not eat food that has not been certified Kosher. While the population or market share of observant Jews is small, under 1%, a typical manufacturer will still go through the expense of Kosher certification (when it is possible to do so). The reason is simple. If the food is not certified, then the entire Kosher market is guaranteed to be lost. If it is certified, then the company can compete for these customers.

When a product is certified Kosher, then it is Kosher for *all* of the market and not just small number of people who care about this issue. For the other 99% of the market, no

12 The GECAS orders would be adjusted to (83, 99, 110, 193, 393) for a total of 878 out of 15,979. Adjusting for the lower price of regional jet engines, GECAS's share would be below 5%.

harm is done. The small group of Kosher consumers is able to *tip* the market. Because they care and others are indifferent, manufacturers make choices based on the preferences of less than 1% of the market.

Reynolds and Ordover suggest that GECAS's favouritism towards GE products (and Honeywell post merger) will play a similar role. For GECAS, a plane is only "Kosher" if all of the parts that could be are, indeed, supplied by GE and Honeywell. Thus, an airframer knows that it would sacrifice all of GECAS's business if it doesn't equip the plane with GE/Honeywell parts where possible. If other customers don't care, then GECAS's preferences would determine the results for all of the market and competitors will be foreclosed.

The Commission asserted that competitors would be foreclosed because the airframer's potential profits on lost airplane sales to GECAS will dwarf any discount or quality differences that Honeywell's competitors could offer. This is because the profits on a $50 million B737 plane far exceed the potential price or quality differences on a $100,000 piece of avionics.

Here some care must be taken. If the airframer is making the choice for its entire fleet, then the discount or quality difference should be multiplied by the expected sales. For a plane with sales of 1,000 units, even this small avionics part adds up to $100 million, now comparable to the sale of two B737 planes.[13] Of course, if GECAS were to order 50 planes and if all of those sales were to be incremental, then the scales would tip back the other way.

The incremental aspect is key. Unlike a sale to an airline, a sale to GECAS is a sale to a middleman who must then lease this plane to an airline. Coca Cola would lose sales to the Kosher population if their product were not certified. But if GECAS does not buy the plane, that does not mean the plane will not be sold. Had GECAS not made any speculative purchase of new aircraft, we do not believe that 1,192 fewer engines (and the planes that go with them) would have been purchased during the period 1996-2000. Most (perhaps all) of these orders would have been picked up by ILFC and other leasing companies and by airlines purchasing directly from the airframers. Thus, we need to consider the extent to which GECAS's orders simply offset end-customer demand for planes with GE/CFMI engines (and were the merger to go forward, Honeywell components).

Let us retrace the leverage argument a bit more slowly to see its limitations. This argument primarily applies to the situations in which the customer has no choice, i.e., the plane only comes one way.[14]

For the most part, this limits the problem to what is called Supplier Furnished Equipment (SFE) as opposed to Buyer Furnished Equipment (BFE). An example of SFE would be the auxiliary power unit for a plane.[15] In contrast, many avionics components such as cockpit display systems are determined by the end customer from a choice of alternatives selected by the airframer.

13 Boeing 737 sales exceed 5,000. Sales of the 747 family exceed 1350 and the relatively new 777 family has sales of 606 as of 9/02. Data source is http://active.boeing.com/commercial/orders/customquery.cfm

14 Even where the customer does have a choice, the leverage argument suggests there is still a benefit to GE. GECAS's favouritism will help ensure that GE is always one of those choices. But as that does not foreclose rivals, we continue our focus on the situations where the airframer makes an exclusive choice that determines the result for all customers in the market.

15 Even here there are exceptions. As noted by Reynolds and Ordover, on some A320 family planes, more than one APU has been certified.

There is no data that would reveal whether in its middleman role GECAS could foreclose Honeywell's competitors in the SFE markets. The best we can do is look to see what effect, if any, GECAS has had on shifting share in the engine market towards GE-powered planes. This is because prior to the merger, GECAS's favouritism only extended to engines.

In the case of engines, most large commercial aircraft come with a choice of two or three engine models. Thus an airframer does not make a choice that determines which engine will go on the plane. There are some important exceptions to this rule, in particular the case of regional jets, all of which come with only one engine choice. Reynolds and Ordover suggest that the regional jet manufacturers picked GE engines so as to be able to sell to GECAS. Later in this case, we examine the empirical evidence and do not find it credible that the leverage theory played any role in the engine choice of the regional jet manufacturers. Nor do we find convincing evidence of share-shifting in cases where customers did have a competitive choice of engines.

The Kosher certification model relies on the fact that a few customers care and the rest are indifferent as to the certification. There is no one who opposes the certification. In the present case there are three sets of players who may prefer that the product is not Kosher or GE/Honeywell-equipped. These three groups are

1. Rival engine and avionics/non-avionics supply companies
2. Airframers and airlines with a preference for non-GE/Honeywell parts
3. Other leasing companies that compete with GECAS

Just as Honeywell has an incentive for its components to be certified as SFE, competitors such as Hamilton Sundstrand have incentives to influence the airframer to make a different choice.

A food can have multiple certifications. It can be Organic, Kosher and Halal.[16] One choice need not conflict with another. Each certification expands the customer base. By contrast, the airframer must choose either Honeywell or one of its competitors for each SFE component. One choice excludes the other.

GE and Honeywell's competitors have the ability to demonstrate the price/performance superiority of their products. They also have an ability to partner with a leasing company or an airline. In either case, they could help create a customer with an anti-GE/Honeywell preference.

Airlines themselves may have preferences for one manufacturer over another. This may be due to performance differences or fleet standardisation issues. Thus an airframer that strongly favoured Honeywell parts would find its end product less attractive in the market. GECAS's orders don't help if the airlines are not ultimately attracted to the product.

Even in the speculative leasing market, there is reason to believe that GECAS's favouritism will be offset by its rivals. While it is natural to suppose that GECAS will favour products containing GE parts, how would GECAS's rivals feel about this issue?

16 Halal is an Islamic food certification.

In many industries, we observe that companies don't like buying products that end up supporting their rivals. This is an issue we have seen in many industries as a result of our work developing and implementing *Co-opetition* (Nalebuff and Brandenburger, 1996). For example, in the quick-service restaurant industry, there was a period when Pepsi owned Kentucky Fried Chicken, Taco Bell, and Pizza Hut. Around that time, Burger King switched from serving Pepsi to Coke. One of the factors influencing their decision was that buying Pepsi was supporting the parent of its rivals. Pepsi subsequently spun off their restaurant business and thereby eliminated this conflict of interest issue.

Similarly, AT&T felt the need to spin off Lucent. While Lucent was part of AT&T, many of the regional Bells were hesitant to purchase their switching equipment from someone they saw as a rival.

Our examination of the data suggests there is some early indication of other leasing companies shifting away from GE-powered planes.[17] Recall that GECAS is less than ⅓ of the speculative purchases of new aircraft by leasing firms. To the extent that the other two-thirds begin to favour non-GE equipped planes, the Reynolds and Ordover lever begins to operate in the opposite direction.

Finally, we need to make a distinction between what GECAS might have been able to accomplish with its GE-engine favouritism and what it might be able to accomplish were it to extend this favouritism to Honeywell components. For the leveraging theory to work,

1. GECAS must extend its favouritism to Honeywell products.
2. Airframers must believe that adding more Honeywell components will lead to additional GECAS sales.
3. Those additional sales to GECAS must not only be incremental for GECAS, they must be incremental to the airframer. The incremental sales to GECAS must not be offset by any reduction in sales to airlines or to other leasing companies.
4. The profit on those additional airframe sales must be enough to offset the lower cost or higher quality of competitors' components over the expected lifetime sales of the airframe.

We turn now to examine the logic and evidence for each of these steps.

5 Would GECAS extend its policy to Honeywell?

The European Commission assumes that:

> Following the proposed merger, Honeywell's [Supplier Furnished Equipment] product range will benefit from ... GECAS's instrumental leverage ability to foster the placement of GE products through the extension of its GE-only policy to Honeywell products."[18]

Is this extension inevitable - or even likely?

17 Recall that GE's participation in speculative leasing is relatively recent. Post acquisition of GPA, GECAS's first order was in 1996. Thus any competitive reaction to GE's connection to GECAS would be very recent. See section below on Competitive Reactions for Other Leasing Companies.

18 Paragraph 406 of European Commission Decision in Case No. COMP/M.2220.

The differences between Kosher certification and GECAS engine policy helps us understand why the GE-only engine policy may not extend to Honeywell's numerous SFE components. Kosher is all or nothing. There is no such thing as being 99% Kosher. But for GE, a plane with a GE engine is already a valuable sale. In fact, recall that the majority of its engine sales are done through its joint venture with SNECMA. GECAS is happy to buy planes that are desirable for its leasing business and are, in effect, only 50% powered by GE. There is no reason to think that post-merger GECAS would not want to buy a popular plane that has 50% GE power whatever the level of Honeywell components.

Would it be wise to give up the tens of millions of revenue on an engine sale and the profits on the leasing business in order to obtain the tens or hundreds of thousands revenue on some piece of Honeywell avionics or non-avionics? It strains credibility that GECAS would boycott a popular plane that came with a GE engine but did not have enough Honeywell components.

To the extent one believes that GECAS has succeeded in shifting engine shares, this very belief makes the potential cost/benefit analysis of extending the policy much less attractive. The costs are higher because GE would be putting an engine sale at risk in addition to GECAS's leasing profits. The gains are lower because of the smaller dollar amounts for avionics and non-avionics parts.

When GECAS entered the market, most planes already came with a GE/CFMI engine option, including the two most popular aircraft, the B737 and A320 families. But we know of no existing planes that have all Honeywell components wherever Honeywell offered a product. Thus GECAS would have to cease making speculative purchase of new aircraft if it adopted the same strict preference toward Honeywell components that it has displayed for GE and CFMI engines.

If post-merger GECAS were willing to buy existing planes with 40% Honeywell components in some cases and 60% in others, why wouldn't they also buy next-generation planes that also came with some Honeywell and some of its competitors' avionics and non-avionics components as supplier furnished equipment? Since airframers would expect to sell to GECAS in any case, there is no leverage.

But even if there is no leverage, why take a gamble? If the airframer expects a sale to GECAS, why forgo that sale over the choice of a small part? If the airframer is already 99% Honeywell, why not go to 100% and be safe?

There are several answers. GECAS and GE have much more to lose than the airframer. GECAS is not the end customer, so losing a sale to GECAS does not mean the plane will not be sold. If the airframer puts on inferior equipment or equipment at an inflated price, it will risk losing sales to end customers.

Secondly, the question starts with a false presumption. It is unrealistic to imagine that the airframer is considering going from 99% to 100%. Honeywell is unlikely to have the best product or the best price performance for every SFE component. Thus there is a real cost in going from Honeywell's historical market share to 100%. Given that 100% is an unobtainable goal, the question becomes: *do we expect GECAS not to buy a plane*

with GE or CFMI engines but only 47% Honeywell components and not 48%? Asking this question reveals its folly. A distinctive feature of the engine choice is that it is one choice, GE/CFMI or not. With avionics and non-avionics components, there are dozens of choices. Once the all-or-nothing aspect of the decision is lost, so is the leverage.

The most favourable but still plausible case for Reynolds and Ordover is that post merger GECAS might exhibit some preference towards planes with more Honeywell products.[19] This is wholly different than the claimed result with GE/CFMI engines. We have no Honeywell-only preference. Once GECAS is willing to buy a plane (because it has GE/CFMI power), the airframer can expect sales to GECAS based on the plane's potential for leasing profits no matter what the Honeywell share of equipment. The foreclosure theory was based on the manufacturer's fear that GECAS would "boycott" a non-GE/CFMI powered plane. When applied to the Honeywell merger, the best theory of antitrust harm has come down to: GECAS, with its 5% to 10% market share might risk buying an extra plane or two if the airframer employs a few more Honeywell components.

Even this is not clear. The logic of Reynolds and Ordover — that the aircraft is so much more expensive than the individual components — cuts both ways. It makes the airframer keen to make an incremental sale. But it also makes taking on an incremental aircraft very risky to GECAS because of the large potential losses if it cannot place the aircraft at a profitable lease (if it has taken on too many aircraft). Thus the small incremental profits that accrue to GE for an extra $100,000 piece of avionics would be dominated by the concern to make a profit on the lease. The result would be little to no effect on its speculative purchases.

In fact, GECAS could even end up buying *fewer* planes. We have to assume that the Honeywell component does not offer the best price/performance deal as otherwise the component would be chosen strictly on its merits.[20] To the extent that the component's price or performance is inferior, this will reduce airlines' demand for the plane. Even a slight reduction in demand on 95% of the market is not worth taking to get a slight increase on 5% of the market. In fact, the inferior component may even reduce GECAS's demand - as GECAS has to lease the plane and thus its demand ultimately reflects the airline customer demand.

It should also be apparent that given the much reduced scale of potential incremental GECAS purchases, it also becomes much easier for rivals to counterbalance this effect, should it arise. Inducing even one airline to express a preference for non-Honeywell components would more than offset a small incremental GECAS order.

A small preference on a small market share of a market intermediary, all of which may be counterbalanced by other players, does not provide a convincing theoretical basis for market tipping, for market foreclosure, or for blocking a merger.

19 Reynolds and Ordover (2002) recognise this point in their footnote 43: "GECAS's bias need not manifest itself in a 100% Honeywell preference, but more embedded Honeywell equipment will increase GECAS's aircraft preference in a continuous manner." But they don't show how this continuous preference could lead to an Archimedean lever and market foreclosure.

20 The GECAS purchase might break a literal tie. On the other hand, price competition will leave few ties. If the airframer is truly indifferent, this also provides an opportunity to send the order to a smaller supplier in order to preserve a competitive base of suppliers in the future.

In the empirical evidence section, we show that it is doubtful that even GECAS's near 100% preference for GE-engines has had any measurable impact on market shares. Note that this lack of a measurable impact is not on just a one-plane purchase - the sum total of GECAS's purchases have had no demonstrated effect. This makes it even less likely that a small favouritism by GECAS for planes with Honeywell components would lead to a share-shift or, even more radically, foreclose its rivals from the market.

6 Reasons why GECAS has this policy

Underlying the entire concern about the role of GECAS is its favouritism policy. The original version of the theory supplied to the Commission by economists retained by United Technologies Corp. was premised on the assertion that this policy must be costly to GECAS and therefore it must have some hidden benefit.

At first, the cost seems obvious. Any restriction on one's business means a potentially sacrificed sale opportunity. Why forgo profits if there was not some other way in which this policy would redound to GE's benefit?

That the policy has a net cost is subject to question. No attempt was made to measure missed sale opportunities. Nor was serious consideration given to direct reasons why GECAS might have such a policy in place. Thus, it is not clear on net that this policy was costly, even without considering share-shifting.

A natural reason to favour internal purchases is the avoidance of double marginalisation. This is a standard explanation for vertical integration. Avoiding double marginalisation is an efficiency gain and should not be viewed anti-competitive. In light of GECAS's small market share, it is implausible that competitors will be foreclosed or even harmed by this efficiency.[21]

Pursuing a specialised strategy provides a second motivation. At the Harvard Business School, one of Professor Michael Porter's first lessons is that a strategy is defined by what you *don't* do. A firm can't do everything. Are there any advantages to specialisation for GECAS?

One advantage is that the leasing companies will have greater product differentiation. Airlines will think of GECAS first when they desire a GE-powered plane. ILFC and other competitors will naturally shift towards Rolls Royce and Pratt & Whitney powered planes. This product differentiation will help all of the companies in this industry.

A very robust conclusion of economic theory is that there is no reason to expect that all firms in a given market would systematically choose to offer the same product selection. In fact, there is an abundant literature documenting conditions under which companies would definitely *not* want to adopt similar product mixes as leasing companies that "look the same" are likely to engage in fierce price competition leading to low profits.[22]

21 The issue of double marginalisation is subtle. If GECAS orders do not result in a share shift, then GECAS should include in the cost of an engine the full profits earned by GEAE. Double marginalisation is also less of an issue to the extent that contracts employ negotiated prices rather than fixed prices.

22 For an overview, see, Beath J. and Y. Katsoulacos, *The Economic Theory of Product Differentiation*, Cambridge University Press, 1991.

Specialisation is a matter of degree. Since GE/CFMI engines are an option on nearly all airframe options and are chosen by roughly half the time, this is a large market to go after.[23] GECAS also competes in the entire used market. It is very common to observe companies entering one or more segments of the market and then expanding as they become successful. For example, the company might initially limit itself to the U.K. or Germany and then roll out to the rest of Europe. Or it might begin selling books and then expand to records. The fact that a company does not attack one hundred percent of the market does not imply that the strategy has some hidden cost and therefore must have some hidden benefit. Looking at GECAS's growth over the period 1996—2000, it is hard to conclude that their performance was somehow hindered by having adopted a sub-optimal strategy.

A quite different explanation for the GECAS favouritism looks at behavioural factors, such as company pride. Very few Ford employees drive to work in a Lexus. Those that do find this is not the way to get promoted. Similarly, we understand a company that sends a business proposal to UPS using a FedEx carrier is unlikely to get the proposal read, never mind win the business. Coke executives are known to leave business dinners if they are taken to a restaurant that doesn't serve Coke.

Buying a plane with a competitor's engine would be difficult to explain. That should not lead us to conclude that the same policy would apply in the same way to Honeywell components. First, nearly all planes come with GE or CFMI engines as a choice. Thus, GECAS doesn't feel that it is excluded from any significant part of the market. In contrast, almost no planes come with Honeywell parts for each and every component that Honeywell makes. GECAS could not grow its leasing business unless it bought planes that were not 100% Honeywell (where possible). Similarly, a Coke executive may choose to patronise a restaurant that serves Coke, but will consider other offerings when it comes to wine or even bottled water (as Dasani and Evian have a much lower market presence).

A second observation is that aircraft engines are a flagship product for GE in a way that few other products are or could be. Because engines are expensive and the orders tend to be large, each competition matters. In contrast, Honeywell can win 42% or 63% of the multiple competitions for a given aircraft model. There are dozens of avionics and non-avionics components that go into a plane. The lack of an all-or-nothing outcome would make the Honeywell result less of a focal point.

The cost of GECAS favouritism can only be measured relative to the costs of alternative strategies. Were GECAS to put rival engines on its planes, it would have to negotiate with Rolls Royce or Pratt and Whitney over price. It is far from clear that GECAS would be able to obtain the best prices on these engines. One reason is that rivals might be concerned that their pricing information would get back to GE Aircraft Engines (GEAE). Rolls Royce and Pratt & Whitney would not want GEAE to know their lowest prices. One way to ensure that information does not get back is to not offer their lowest price to GECAS.

23 In fact, one could argue that 75% of the most relevant market is open to GECAS. The most popular narrow-body large commercial aircraft all have a CFMI engine. In this key arena for leasing companies, CFMI engines are chosen roughly 75% of the time, since they are 100% of the B737s and about 50% of the A320 family. Indeed, of the total Boeing and Airbus aircraft ordered by GECAS more than 83% (360 out of 433) have been in these two narrow-body aircraft families.

A second cost of employing rival engines is that competitors might use this purchase to create a public relations event. At Yale School of Management, we've experienced situations where Ford executives did not want to give a lecture in the GM room.[24] GECAS would naturally be worried how rivals might exploit an opportunity where GE was seen to have selected a rival's engine over a GE engine. Does that mean that GE didn't have the best engine?

To summarise, there are several reasons to suggest that GECAS's favouritism is a rational strategy on its own. We need not conclude that its hidden purpose must be to shift market share.

Nor can we conclude that this policy would have been extended to Honeywell post merger. *Even if one believes that GECAS has succeeded in shifting engine shares, this very belief makes the potential cost/benefit analysis much less attractive*. The costs are higher because GE would be putting an engine sale at risk in addition to GECAS's leasing profits. The gains are lower because of the smaller dollar amounts for avionics and non-avionics parts. Finally, since the Honeywell components decisions will not be 0% or 100%, it is much less convincing to build a lever off a shift from 47% to 48% Honeywell parts.

7 Empirical support

FACTS AS THEY APPLY TO REGIONAL JETS

In an attempt to demonstrate the Archimedean lever, the European Commission looked at the case of the engine choice in the large regional jet market. Those citing evidence of a market tipping observe two facts.

1. Three regional jet manufactures each chose a GE engine as their exclusive power source.
2. GECAS subsequently ordered 150 regional jets, 50 from each of Bombardier, Embraer, and Fairchild Dornier in 2000 (with options on another 100 jets from each).

These two facts led some people to conclude that there was some either explicit or implicit expectation that by choosing the GE engine, an order from GECAS would follow. For example, Reynolds and Ordover write:

> Given GECAS's position by the late 1990s as a purchaser of large commercial aircraft and in light of subsequent events, it would be surprising if none of the regional jet airframers anticipated such orders.

While this fact pattern is consistent with the tipping model, it leaves out a critical timing detail. As Reynolds and Ordover themselves recognise, at the time all three engine choices were made, neither GECAS nor any other leasing company had made any speculative purchases of a regional jet.[25] In fact, the Bombardier engine choice on the

24 This created a problem as the GM room (renovation paid for by GM) is the single largest lecture space at SOM. While there is Ford Courtyard, this outdoor space is not suitable for a lecture.

25 See Reynolds and Ordover points (d) and (e), page 188. The small order by Bavaria International Leasing Company was in June, 2000, after the engine choices were made.

CRJ-700 was made in 1994, well prior to GECAS having made any speculative purchase of any aircraft. (The Fairchild Dornier engine decision was made in 1998 and the Embraer engine decision was made in June 1999.)

According to GE, it was only *after* the engine decisions of Bombardier, Embraer, and Fairchild Dornier were made that GECAS received the results of two management consulting studies evaluating the leasing market for large regional jets. The reports came back positive and shortly thereafter GECAS contacted the three regional jet manufacturers to explore the purchase of their large regional jets.

It strains credibility to presume that a regional jet manufacturer would favour GE engines on the hope that GECAS would later enter a market that no one had previously entered and then purchase its regional jets.[26] Of course, if such expectations had existed, we would expect to have heard them recounted. No such evidence was presented. To the contrary, evidence was presented that GECAS did not influence the engine selection process for the large regional jets.

While the European Union and the United States have different antitrust rules and therefore reach different conclusions based on the same fact pattern, they should reach the same view of the facts. According to Deputy Assistant Attorney General William Kolasky,

> We examined each of the four transactions in which GECAS allegedly used its buying power to get GE sole source on new aircraft platforms. In each, we found that GECAS played no role in the customer's decision to sole source and that in each case GE had won the competition on the merits, by offering the best engines for the customer needs at the best price.[27]

This is in line with GE's explanation for why all three regional jet airframers chose GE power.[28] The first entrant, Bombardier, had a long-standing relationship with GE. No existing engine was suited for the large regional jet. GE took a gamble and agreed to build a larger model in the CF34 engine family, thereby allowing Bombardier to develop the market with their CRJ-700. The large regional jet market turned out to be a bigger market than anyone anticipated. Fairchild Dornier and then Embraer each looked to enter the market quickly. GE had a real engine; competitors' engines were all on the drawing board. To speed their entry, both of these airframers chose GE.

The regional jet market was the European Commission's best example of a tipping theory in action. The circumstantial evidence seems impressive until one takes a closer look.

PLANE WITH COMPETITIVE ENGINE CHOICES

Even as we have narrowed our focus to the speculative leasing part of the business, for some of our purposes this is still too broad. The issue at hand is whether GECAS could play a role in shifting the market towards Honeywell components in the event of a merger. While there are many important differences between Honeywell's components

26 To which Reynolds and Ordover might reply: that shows just how strong GECAS's power is! Thus we now have a theory where a potential entrant with zero percent market share can tip the market and thereby foreclose rivals.

27 William Kolasky, "Conglomerate Mergers and Range Effects: It's a Long Way from Chicago to Brussels," Address given before George Mason University Symposium, 11/9/01, pages 18-19. This also rejects the view that GECAS was a "launch" customer.

28 Note that GE has not won all recent engine competitions for regional jets. Embraer selected Rolls Royce over GE to supply the engine on the EMB 145 and then picked GE for the EMB 170/190.

and engines, as a first cut, it is instructive to see whether GECAS has been able to play any role in shifting engine sales towards GE power prior to the merger. In some sense, this is a necessary but not sufficient condition. If GECAS had not been able to influence the engine market, then it was even less likely that the merger would somehow influence the avionics and non-avionics components market.

The place to look for evidence of share-shifting are the cases where there is a choice of engines. For example, the 737 plane only comes with a CFMI engine.[29] In that sense, GECAS, by its choice of engine can not influence market share, as anyone who buys this plane will automatically get a CFMI engine. In other cases, such as the Boeing 757, customers do have an engine choice, but GE power is not among them. (Rolls Royce and Pratt and Whitney are the two power choices.) Here again, we do not look for evidence of GECAS's favouritism towards GE power having a share-shifting effect. Thus, in this case study, we will often focus on what will be called the "competitive engine" choice market. For the planes in this market, there is a GE power option and at least one other choice.

FIGURE 2
SIZE OF SPECULATIVE LEASING MARKET
FOR PLANES WITH COMPETITIVE ENGINE CHOICE

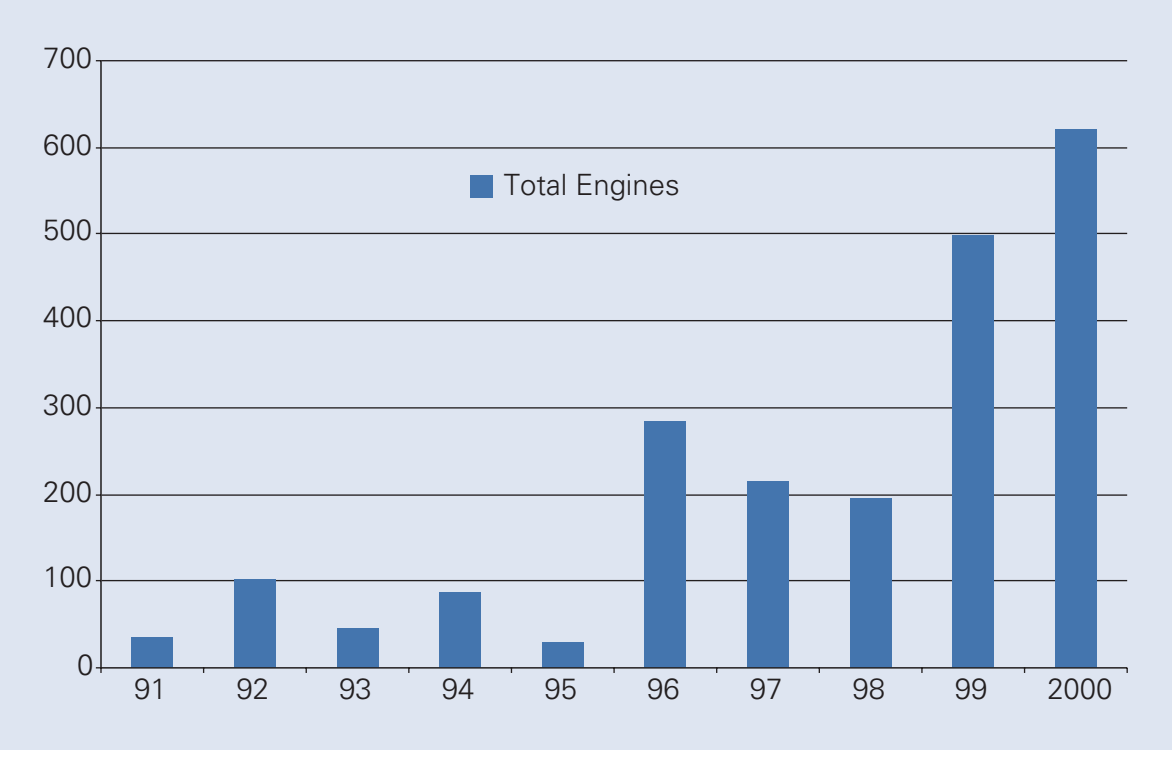


Figure 2 above shows the size of the speculative leasing market for planes with a competitive engine choice.

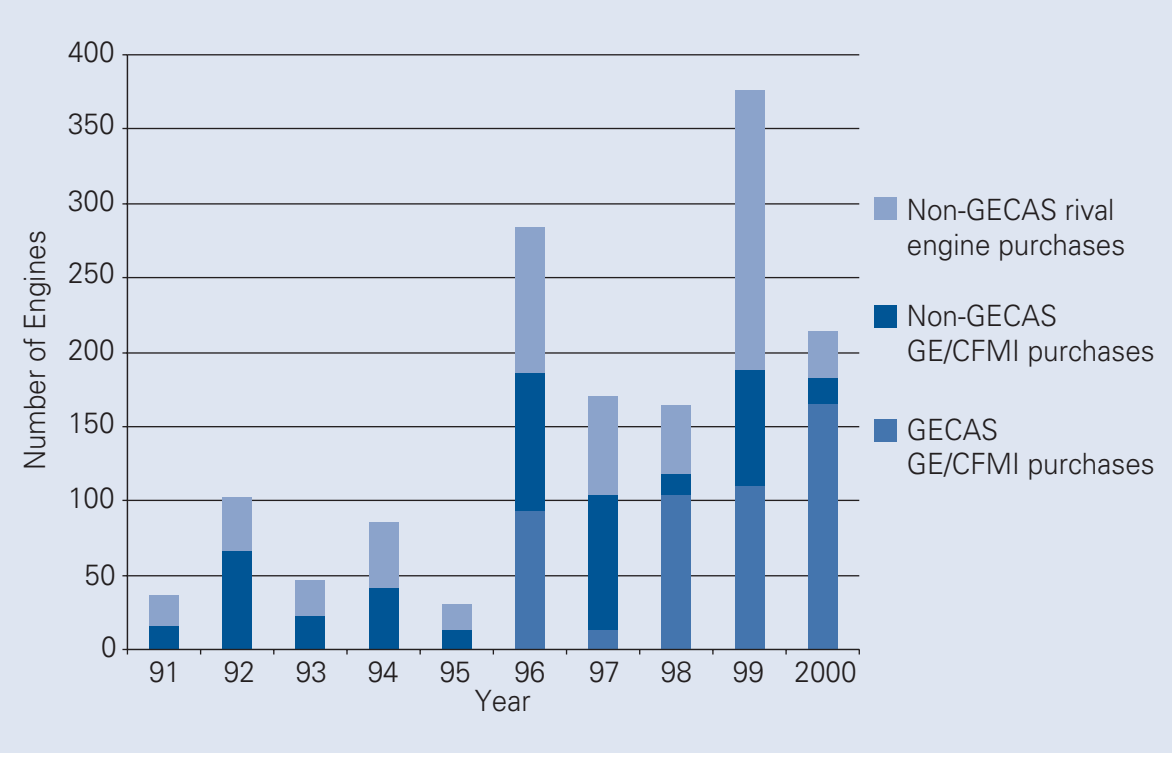
We can get a better understanding of GECAS's role in the market by looking at the engines ordered by GECAS and its rivals.

29 This decision by Boeing was made in 1993 — before GECAS began making speculative purchases.

The total orders by leasing companies are divided into three groups. The bottom segment are the GECAS purchases. The next segment are purchases of GE/CFMI engines by rival leasing companies. The top segment are purchases of rival engines by other leasing companies.

In this chart, one can observe that GECAS made large purchases in 1996 in order to build up inventories. Over the following three years, the majority of rival leasing company choices were not GE or CFMI. In particular, 1999 was a year where rivals placed a large number of orders and chose relatively few GE/CFMI engines. Note that the lower number of engines in 2000 compared to Figure 2 reflects the fact that for most purchases (other than those by GECAS) the engine has not been specified. Only a little over 200 of the more than 600 engines were determined as of the time of this date, 6 May 2001. Thus the year 2000 column suggests a bigger role for GECAS in that all of its engine choices are made at the time of order.

FIGURE 3
SPECULATIVE LEASING COMPETITIVE ENGINE CHOICE



EMPIRICAL EVIDENCE OF SHARE SHIFTING

We turn now to consider the central empirical question in this case: was GECAS able to shift share in favour of GE/CFMI engines? We ask this question both for its own sake and as a way to get insight into whether GECAS would be able to shift share towards Honeywell.

Several commentators on this issue (Kolasky 2001, Pflanz and Caffarra 2002) have emphasised the need to determine whether GECAS's orders would have an effect in

equilibrium, that is, after we take into account the reaction of other players. GECAS's favouritism could be offset by other leasing companies. Their purchases could also have displaced direct airline purchases?

Reynolds and Ordover were aware of this issue and tried to provide evidence of GECAS's ability to create an equilibrium market share shift. They base their conclusions on the following data.[30] Prior to GECAS's entry in 1996, GE/CFMI's share on planes with a competitive engine choice was just over 50% and that share fell by 5% to 45% in the 1996-2000 GECAS period during which GECAS has placed speculative orders for new aircraft.

In contrast, prior to GECAS's entry, speculative leasing companies chose just over 40% GE/CFMI engines and after GECAS's entry, that percentage rose to just over 62%. Putting these two effects together, they claim the leasing company mix was 27% out of balance in that it rose by 22% at a time when the GE/CFMI's share of airline orders was falling by 5%.

This analysis of Reynolds and Ordover is echoed almost exactly by the European Commission case decision:

> GECAS has indeed been able to significantly increase GE's position without GECAS's increased purchases of GE engines having been offset by purchases of non-GE engines by airlines and its other leasing companies. Consequently, through GECAS's bias in favour of GE engines and its influence over airlines, GE has been able to increase GE's market shares of engines.[31]
>
> A comparison of GE's market position pre-GECAS (from 1988 to 1995) with the post-GECAS situation (1996 to 2000) shows that while GE's engine sales with leasing companies, including GECAS, increased by 20 share points (or over 60%), the direct purchases of GE engines by the airlines only dropped by less than 5 share points (or less than 10%). The fact that other leasing companies and airlines simply have not compensated for GECAS's biased purchases results in a net shift of engine market shares to GE.[32]

The reader might be surprised to learn that comparing the 1991-1995 pre-GECAS period to the 1996-2000 period, *GE/CFMI's overall share of the competitive engine choice market went down - from 52.3% to 50.6%*.[33]

How is that possible? The problem is that the European Commission and Reynolds and Ordover facts do not prove that a share shift occurred. Nor are they even suggestive. A simple example will explain why. Assume as a starting point that airlines buy planes with

30 See Figures 2 and 3 of Reynolds and Ordover.

31 Paragraph 136 of European Commission Decision in Case No. COMP/M.2220

32 Paragraph 138 of European Commission Decision in Case No. COMP/M.2220.

33 The competitive engine choice market is the market for engines on all planes where the airline has a choice of two or more engines to put on a plane and where one of those choices is GE/CFMI. In the 1991-1995 period, GE/CFMI engine orders on competitive planes totalled (1,001+160) out of (1,917+300) for a market share of 52.3%. (The first number is airline purchases and the second number is leasing purchases.) In the 1996-2000 period, GE/CFMI engine orders on competitive planes totalled (2,188+778) out of (4,656+1,208) for a market share of 50.6%. Just as noted by the MTF, GE's share of the airline market fell by five share points, from 1,001/1,917 or 52.2% to 2,188/4,656 or 47%. And their share of the leasing market rose from 160/300-or 53.3% to 778/1,208 or 64.4%. Note that the rise is less than the number used by the MTF and Reynolds and Ordover as their pre-GECAS period extends back to 1988. But this difference is not material to the conclusion. The important point is that if GECAS shifted share from direct purchases to leasing, we would expect to see exactly what was found in the data with essentially overall share shift.

100 engines, 50 GE and 50 others. There is a leasing business which buys planes with 10 engines, 5 GE and 5 others. Now GECAS enters and buys planes with 5 GE engines. Because it leases these planes to an airline, that airline no longer purchases the plane directly. Thus the new result is that airlines buy planes with 95 engines, 45 GE and 50 others. Leasing companies buy planes with 15 engines, 10 GE and 5 others.

Nothing has changed in terms of GE's overall share. They had 50% share before and they have a 50% share afterwards. But their share in the airline business has gone down by 5% while their share in the leasing business has gone up substantially, from 5 out of 10 to 10 out of 15 (50% to 66.7%). Using the logic of the MTF, one would conclude that GECAS had shifted share due to their 21.7% shift (leasing went up by 16.7% while airlines went down by 5%).

The false conclusion results from the fact that leasing is small relative to airlines and therefore the two percentages cannot be added. Second, GECAS orders can substitute for airline orders, not just other leasing companies.

During the period in question, the speculative leasing business tripled in size. Half of that growth can be attributed to the emergence of GECAS. One reason why we expect to see the GE engine share of airlines go down and the GE engine share in leasing go up is that some airline customers who were looking to buy GE powered planes shifted to GECAS. *Thus the use of GE's engine share of airline purchases is not a valid baseline*.

Our numerical example above was simplified for clarity. We now develop this example more carefully using actual market numbers and allowing for substitution between leasing companies.

In the period 1991-1995, airlines ordered 1,917 engines on planes with a competitive engine choice.[34] The next five-year period, 1996-2000, airlines ordered 4,656 engines on planes with a competitive engine choice.

The speculative leasing companies, including GECAS, increased the size of their orders from 300 to 1,814, between these two periods. GECAS accounted for 488 of those 1,814.

MARKET SHARES OF AIRCRAFT ENGINES

	1991-1995	1996-2000
Airlines	86.5%	72%
Non-GECAS	13.5%	20.5%
GECAS	0%	7.5%

34 Reynolds and Ordover use 1988-1995 as the pre-GECAS period. Our dataset is the same, but it does not include the years 1988-1990. However, our results for 1991-1995 are very similar to those of Reynolds and Ordover found for 1988-1995 and thus there is no reason to suspect that this difference has any bearing on our different conclusions.

Consider the hypothesis that GECAS has had no influence on GE engines' market share. If so, then GECAS 7.5% of engines is simply going to airlines that otherwise would have ordered GE-powered planes, either directly from the airlines or from other leasing companies. Is this consistent with the data?

Take GECAS's 7.5% share and divide it up between airline purchases and other leasing companies in the same proportion as their market shares (72:20.5). The result is our right-hand column.[35]

EFFECT OF REMOVING GECAS FROM ENGINE DECISION

	With GECAS	Assuming no GECAS
Airlines	72 total engines	78 total engines
	32.5 GE engines	38.5 GE engines
	39.5 other engines	39.5 other engines
GECAS	7.5 total engines	0 total engines
	7.5 GE engines	0 GE engines
	0 other engines	0 other engines
Other Lessors	20.5 total engines	22 total engines
	8 GE engines	9.5 GE engines
	12.5 other engines	12.5 other engines

The new mix of airlines is almost 50-50 (it is 49.4 to 50.6). This is roughly the same mix as the airlines had prior to GECAS's entry in 1996. As for other leasing companies, the mix is 40:60. This, too, is almost same as prior to GECAS's entry in 1996.

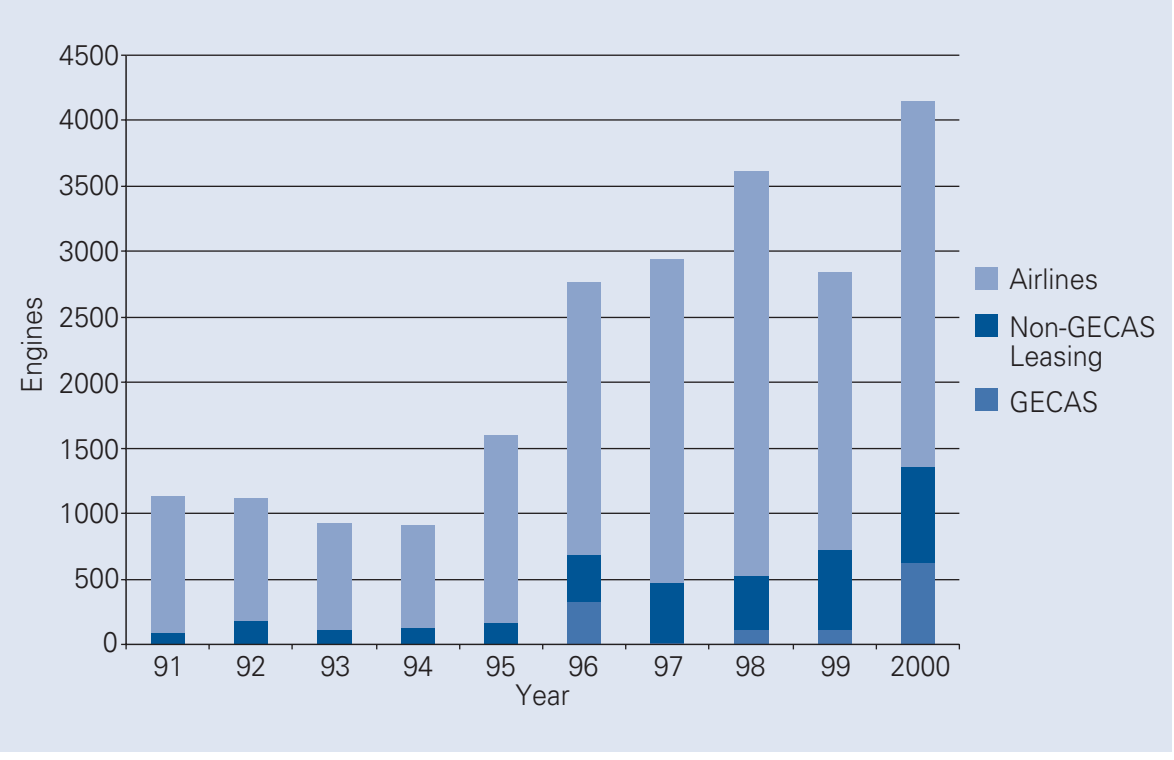
Looking at the same data from this perspective, we conclude that the data is entirely consistent with the conclusion that GECAS has had zero impact on shifting the market share of GE engines.

The key difference between the two approaches is that Reynolds and Ordover implicitly assume that none of GECAS's market share came from a reduction in airline purchases. We take the view that as leasing companies are only market intermediaries, the bulk of the GECAS share will come out of direct airline purchases. Evidence for this is the fact that the leasing business grew much faster than the total airline business.

35 Note that we use a base of 100 engines so that engines represent market share (which explains the fractional engines).

In the case of competitive engine choice, the leasing companies' market share grew from 13.5% to 28%. A similar growth was also seen in the overall leasing market. Between 1991-1996, the leasing companies had a market share of 11.7%, which grew to 23% in 1996-2000. The yearly changes can be seen in the chart below with the bottom segment representing GECAS, the middle segment other leasing companies, and the top segment airline purchases.

FIGURE 4
GECAS/RIVALS/AIRLINES TOTALS



When GECAS orders a large number of planes with GE engines, it will follow that some of the airlines will be buying fewer of those planes directly (and obtaining more of those planes from GECAS). One can not use the market share of GE engines among airlines purchases as a measure of market preference of comparison as this market share is endogenous to GECAS's size in the market.

How then would one show an equilibrium share shift? One way would be to demonstrate that the total percentage of GE power rose during the period in question. That is, the large number of GE/CFMI engines purchased by GECAS was more than the *combined* reduction in GE/CFMI purchases by the airlines and other leasing companies. The data show that did not happen. GE's overall market share in the competitive engine purchases fell slightly between the 1991-1996 period and the 1996-2000 period, from 52.3% to 50.6%.

A re-examination of the same data does not lead us to conclude that GECAS had any market share shifting influence. The fact that we reach a different conclusion than Reynolds and Ordover while using the same data does not mean that the answer simply

depends on how one looks at the problem. In order to believe that the GECAS entry into the speculative purchase of new aircraft has led to a market shift in favour of GE engines, one would have to argue that GECAS did not expand the leasing market, but rather primarily took share from leasing rivals. This assumption is not supported by the data. In contrast, the assumption that GECAS's activity primarily grew the leasing market leads to GE/CFMI engine market shares among airlines and other leasing companies that are almost identical to the market shares prior to GECAS's entry.

COMPETITIVE REACTIONS FROM OTHER LEASING COMPANIES

In response to GECAS's entry, we might expect other leasing companies to respond by shifting their speculative purchases away from GE power. This is for several reasons as described earlier in the section "Why GECAS has this Policy." One reason is product differentiation. A second is that to the extent that GECAS has made orders to supply some of the customers who desire GE power, supply and demand considerations will lead GECAS's competitors to favour supplying airline customers with preferences for Rolls Royce or Pratt and Whitney engines.

Reynolds and Ordover look for this effect by comparing the 1988-1995 period to the post GECAS 1996-2000 period. They find no large shift away from GE/CFMI engines in the aggregate data. But a closer look at year-by-year orders suggests that as GECAS had grown, there may have been a response from other leasing companies.

Consider the orders of ILFC, GECAS's largest rival and a firm with roughly ⅓ of this market. In 1996 and 1997, 150 out of the 260 competitive choice engines were GE/CFMI. For the latter three years, 1998-2000, only 26 out of the 104 engines chosen were GE/CFMI. At the time of this data set (May 6, 2001), most of the recent ILFC orders left the engine choice unspecified and so this conclusion is still speculative. Still, it is suggestive that there has been a move away from GE power.

Additional evidence was seen in the previous Figure 3, which suggested that following GECAS' initial orders in 1996, the majority of rival leasing company choices shifted away from GE or CFMI.

8 Should we be concerned?

To conclude this case study, we ask whether there should be a concern even if GECAS did have an ability to shift share.

If other manufacturers can offset this influence, there is no cause to take action. Here we make two observations. Whatever barriers to entry exist, following the purchase of the bankrupt Guinness Peat Aviation, GECAS has grown to be one of the two largest speculative leasing companies in a span of seven years. Second, Rolls Royce has a 50% interest in Pembroke, a small aircraft leasing company.

The MTF did not believe that others could enter and participate at the same level as GECAS.[36] But if the Archimedean lever is correct, even participation at a small scale can help tip back the market, especially if the purchases are focused on cases where the manufacturer is making an all-or-nothing decision. Even without buying a leasing company, a manufacturer can create an alliance with an existing company, which would give that company a preferred position. Again, if the European Commission is right that end customers have little preference for components so long as they meet quality standards, ILFC and others should require little compensation to favour non-Honeywell components.

9 Conclusions

Antitrust authorities are familiar with the complaint that a customer has sought to leverage its size so as to distort competition in favour of its related businesses. A clear example is when Toys R Us attempted to leverage its 20% market share in the retail toy business by prohibiting manufacturers from selling products to warehouse club stores that they also sold to Toys R Us.[37] Manufacturers felt pressured to accept this demand from Toys R Us, although it would be against their interest.

The case of GECAS does not fall into a traditional leverage theory. Their market share of planes or engines (measured in dollars) is in the single digits. They are not an end customer themselves - rather, they take possession of planes and attempt to lease them to an end customer. The cause for concern was that GECAS has demonstrated favouritism towards GE engines. Our analysis in this case study suggests that this policy has had no demonstrated effect on the market. Furthermore, this favouritism is unlikely to be extended to Honeywell components, at least not in an all-or-nothing form. As we would expect GECAS to continue buying planes with a mixture of Honeywell and non-Honeywell components, this suggests that the proposed merger would not create a leverage opportunity for GECAS.

The Commission's focus on the role of GECAS is puzzling. One can interpret from its actions that the European Commission objected to GECAS's policy of favouring GE engines, separate from its implications for the merger. The Commission's attempted remedies seemed to go beyond protecting Honeywell's competitors from foreclosure to also addressing competition in the engine market. A commitment not to favour Honeywell components would have prevented the Archimedean lever from getting started. But the Commission did not accept such a commitment. Its preference against behavioural remedies and for structural remedies led them to push for divestment. GE was unwilling to sell off a substantial interest in one of its core businesses (to a third party approved by the Commission).

36 We should be careful to distinguish between the *ability* to enter and the *desire* to enter. There are two interpretations to the fact that United Technologies Corporation and other component manufacturers have not copied the GE strategy of owning a leasing company. One view is that entry is too difficult or expensive. A second view is that there are no share shifting gains and hence no benefits from entering the speculative leasing business.

37 This practice was challenged on several grounds, one of which was that the manufacturers, in effect, had made an illegal horizontal agreement to boycott warehouse club stores. See http://www.ftc.gov/os/1997/ 9709/index.htm#30 and Toys "R" Us, Inc. v. FTC, No. 98-4107, 221 F.3d 928; 2000 U.S. App.

Even a year later, one is still taken aback by the aggressive position of the European Commission in this case. This is a vertical foreclosure case against an incumbent with a 5-10% market share. We have an untested theory that is intriguing but breaks down when applied to the specifics of Honeywell's business. We have a case study analysis of regional jet purchases and an interpretation of share-shifting data that were both flawed.

In spite of the Commission's efforts to develop new theories and its carrying out an extensive examination of the market, we are left with no real understanding or evidence of how conglomerate power is exercised. Or, if it exists at all.

There was a time when antitrust authorities had a "big is bad" view. GE is clearly big. While some practitioners may still have a gut instinct that large firms are able to leverage their power in and across markets, the GECAS aspect of the GE/Honeywell merger case demonstrates that this instinct leads to ungrounded decisions and ad hoc policy.[38] In short, this is a case study of how not to conduct an antitrust analysis.

We take the view that caution is called for when considering conglomerate effects. Starting with Proctor and Gamble/Clorox, history has not been kind to the decisions that block conglomerate mergers.

38 See Patterson and Shapiro (2001). They argue that the GE-Honeywell case suggests the need for a better check and balance system on the power of the European Commission to block a merger. According to a recent *New York Times* article, Commissioner Monti seemed to agree: "Mr. Monti also plans to propose naming a chief economist to oversee major merger assessments, and to use a devil's advocate system in which teams of officials in his office search for weaknesses in their colleagues' work before a decision is published." *New York Times*, October 26, 2002.

VI
Independent Service Organisations v Kodak

In 1987, a number of Independent Service Organisations (ISO) sued Kodak over its policy of refusing to sell its parts for Kodak copiers directly to ISOs. Kodak was willing to sell replacement parts to end-users who could service the copiers themselves and Kodak was also willing to service the copiers itself, but it was not willing to sell the parts to the ISOs who would then provide the maintenance on the copiers. This case made it to the US Supreme Court which ultimately found that Kodak had violated the antitrust laws. We will examine the facts of the case (as we know them) to try and determine why Kodak would refuse to sell its parts to ISOs. We conclude that the policy was a form of bundling that ultimately could lead to consumer harm in the short run as well as in the long run.

1 Background[1]

The Eastman Kodak Company, which is best know for its photography products, also manufactures, sells and provides service for high-volume photocopiers and micrographic equipment. The specific photocopiers and duplicators involved in the case were those manufactured by Kodak under the trade name "Ektaprint." As mentioned above, it was Kodak's parts policy which led to the filed lawsuit.

The court in this case defined two distinct product markets for the original equipment: high-volume photocopiers and micrographic equipment. The 'high volume photocopier' market included the Ektaprint family of copiers that range in copy speeds from 30 pages per minute (ppm) to 100 ppm. Dataquest classifies mid volume copiers as those that make 30 to 69 ppm and high volume copiers as machines with the ability to make 70 copies or more per minute. Table 1 provides information on the sales of mid-volume copiers from 1986 to 1991. Table 2 present the same information for high-volume copiers.

1 The information in this section comes from the decisions in the three courts that heard this case. Northern District of California Court, *Kodak*, (1988) WL 156332, the Ninth Circuit Court of Appeal (1990) 903 F.2d 612, and the Supreme Court (1992) 504 U.S. 451.

TABLE 1
MID VOLUME COPIERS (MARKET SHARES % BASED ON SALES)

	1986	1987	1988	1989	1990	1991
Xerox	37.68	37.93	37.24	37.61	37.79	37.80
Kodak	4.89	4.55	4.91	5.00	5.33	5.56
IBM	1.90	1.90	1.48	0.54	0.05	0.00
Canon	8.42	9.99	10.30	10.38	10.50	10.61
Konica	5.09	4.17	4.20	4.18	4.22	4.21
Ricoh	4.41	5.50	5.68	5.60	5.68	5.70
Savin	11.27	8.91	8.70	8.42	8.09	7.90
Sharp	9.50	8.09	7.82	7.83	7.79	7.80
Pitney	2.72	2.97	3.32	3.53	3.72	3.88
Other	14.12	15.99	16.34	16.90	16.83	16.54

Source: Dataquest estimates for 1986 and 1987 company-specific data and for 1986-1991 total placements.
Dataquest placement estimates are shipments less rental retirements making actual unit sales higher for most companies.
Prudential-Bache Securities estimates are used for 1988-1992 company-specific placements.

TABLE 2
HIGH-END COPIERS (MARKET SHARES % BASED ON SALES)

	1986	1987	1988	1989	1990	1991
Xerox	50.00	51.33	50.81	53.65	54.05	54.20
Kodak	21.01	27.67	27.04	34.60	35.14	35.10
IBM	20.17	11.00	10.75	0.95	0.00	0.00
Canon	5.88	5.67	5.54	5.71	5.70	5.40
Other	2.94	4.33	5.86	5.08	5.20	5.30

Source: Dataquest estimates are shipments less rental retirements. Actual unit sales are higher for most companies.
Further, rental retirements are the largest in the high-end and mid-range sectors.

These market shares tables demonstrate that there were several significant competitors in these markets. Kodak's high volume photocopier products faced competition from Xerox, IBM, and Canon, while its competitors in the mid volume market include these three as well as Minolta, Bell & Howell, and 3M. Competition in the aftermarket (that is the market for spare parts and service), though, was different than in the foremarket (the

market for the copier). Kodak's parts were not interchangeable with parts used in other manufacturers' equipment and vice versa, so once a consumer had purchased a copier, there were more limited opportunities for spare parts.

In addition to selling the equipment, Kodak sold and installed replacement parts for its equipment. The company dominated the service market for its own products until the early 1980s, providing service for at least eighty percent of the machines it manufactured. In selling the copiers and service, Kodak chose not to sell a complete system of original equipment, lifetime service, and lifetime parts for a single price. Instead, Kodak provided service after the initial warranty period either through annual service contracts, which include all necessary parts, or on a per-call basis. The particular price it charged for equipment, service, and parts was different for different customers.

Kodak had ready access to all parts necessary for repair services because it manufactured many of the parts used in its equipment and purchased the remaining necessary parts from independent original-equipment manufacturers (OEMs). Kodak held 220 United States patents covering 65 parts for its high volume photocopiers and micrographic equipment. All Kodak diagnostic software and service software were copyrighted or patented. For those parts on which it did not hold a patent, Kodak had contractual arrangements with the OEMs of these parts.[2]

Independent service operators began servicing Kodak equipment in the early 1980's. ISOs also sold parts and reconditioned Kodak equipment. In general, the ISOs provided service at a price substantially lower than Kodak.[3] Some customers found that the ISO service was of higher quality. In some cases, ISOs' customers purchased parts from Kodak and hired the ISO only for service. Others chose ISOs to supply both service and parts. In order to be able to provide this service, ISOs would keep an inventory of parts, purchased from Kodak or other sources. In addition to the OEM's, other sources of Kodak parts include: a) brokers who would buy parts from Kodak, or strip used Kodak equipment to obtain the useful parts and resell them, b) customers who would buy parts from Kodak and made them available to ISO's, and c) used equipment stripped for parts.

In 1985, Kodak stopped selling its photocopier parts for new model machines to ISOs. Kodak adopted the same policy for its micrographic parts in 1986. Kodak sought to limit ISOs access to other sources of Kodak parts through contractual agreements with its OEMs. Kodak and the OEM's agreed that the OEM's would not sell parts that fit Kodak equipment to anyone other than Kodak. Kodak also pressured Kodak equipment owners and independent parts distributors not to sell Kodak parts to ISO's. In addition, Kodak took steps to restrict the availability of used machines. Kodak intended, through these policies, to make it more difficult for ISOs to sell service for Kodak machines.

2 The Court of Appeal found evidence that Kodak controlled a monopoly share in the market for Kodak parts through: "(1) its own manufacture of Kodak parts (30%); (2) its control of original-equipment manufacturers' sale of Kodak parts to ISOs through tooling clauses (20-25%), engineering clauses and other proprietary arrangements; and (3) its discouragement of self-servicing and resale of parts by end users." Eastman Kodak Company v. Image Technical Services, Inc., et al. the United States Court of Appeals for the Ninth Circuit no. 90-1029, page 11445.

3 See, e.g., Trial Exhibit 729, Image Technical Service, Inc., et al. v. Eastman Kodak Co., C 87-1686 (January 18, 1996).

It succeeded. ISOs were unable to obtain parts from reliable sources and many were forced out of business, while others lost substantial revenue.[4] Customers were forced to switch to Kodak service even though they preferred ISOs service.

Several ISOs brought a lawsuit against Kodak in 1987 for violations of the Sherman Act. The ISOs' principal allegations were that Kodak had unlawfully tied the sale of service for Kodak machines to the sale of parts, which was in violation of Section 1 of the Sherman Act and that Kodak had monopolised or attempted to monopolise the sale of service for Kodak machines, which was in violation of Section 2 of the Sherman Act.

The District Court of the Northern District of California granted a summary judgment in favour of Kodak. As to the first claim, the court found that respondents had provided no evidence of a tying arrangement between Kodak equipment and service or parts. The court, however, did not address respondents' first claim on a tying arrangement between Kodak parts and service and between Kodak equipment and service. As to the second claim, the District Court concluded that, although Kodak had a "natural monopoly over the market for parts it sells under its name,"[5] a unilateral refusal to sell those parts to ISOs did not violate Section 2.

The Court of Appeal for the Ninth Circuit reversed this decision. The Court, disagreeing with Kodak, recognised that there are separate markets for service and parts. For service and parts to be considered two distinct products, there must be sufficient consumer demand so that it is efficient for a firm to provide service separately from parts. Evidence on the record indicates that service and parts have been sold separately in the past and still are sold separately to self-service equipment owners.[6] The Court also found sufficient evidence of a tie between parts and services. Furthermore, it was deemed that Kodak has more than sufficient power in the parts market to force unwanted purchases in the tied market (service). Finally, the Supreme Court affirmed the decision of the Court of Appeal against Kodak. We discuss both Kodak's position and the Supreme Court decision below.

Kodak's core defence focused on the existence of competition in the equipment market. The central argument was that any increase in profits from a higher price in the aftermarkets (i.e. parts and service), would be offset by lower profit in original equipment sales. Thus, a large or even monopoly share of the relevant parts and service sales would have not allowed Kodak to raise the overall price of copier services (which includes the original equipment, parts, and service) above the level that would be charged in a competitive market. In other words, equipment competition precludes the ability to exercise monopoly power in derivative aftermarkets.

With respect to the second claim on the use of monopoly power to foreclose competition to gain a competitive advantage or to destroy a competitor, the company also provided business reasons to justify its conduct. Kodak contended that it had three valid business reasons for its behaviour:

4 While often an ISO can conduct a repair without using a part that has a Kodak patent, the only way the ISO can guarantee the ability to conduct any service for a customer is if the ISO has access to all parts for the copier, including those parts under a Kodak patent.

5 See North District of California Court, Kodak, (1988) WL 156332.

6 At least some consumers would purchase service without parts, because some service does not require parts, and some consumers, those who self-service for example, would purchase parts without service.

1. To foster interbrand equipment competition by allowing Kodak to stress the quality of its service.

   In defence of its anticompetitive conduct, Kodak contended that quality control was a legitimate business reason for its conduct. Kodak declared that, by preventing customers from using ISO's, "it [could] best maintain high quality service for its sophisticated equipment" and avoid being "blamed for an equipment malfunction, even if the problem is the result of improper diagnosis, maintenance or repair by an ISO."[7]

2. To improve asset management reducing inventory costs.

   Kodak claimed that it also needed to be the sole service provider so that it could control its parts inventory costs.

3. And to prevent ISOs from free riding its capital investment in equipments, parts and service.

   Kodak claimed that its policies prevented ISO's from "exploiting the investment Kodak has made in product development, manufacturing and equipment sales in order to take away Kodak's service revenues."[8]

The Supreme Court, based on the available evidence dismissed these arguments. The first argument put forward by Kodak, that its behaviour was necessary to maintain the quality of the product, is a standard defence in tying cases. The court ruled that the evidence of ISOs providing quality service at lower prices was sufficient to refute Kodak's argument.[9] As a side consideration, the Court mentioned that if that was indeed the case, then Kodak might have been willing to take advantages of low cost services to expand its equipment base.[10] The court also raised the issue of Kodak making conflicting statements about customers' informational sophistication. On one hand, Kodak claimed the exclusive-service contracts were warranted because customers would otherwise blame Kodak equipment for breakdowns resulting from inferior ISO service. On the other hand, Kodak claimed that its customers would be able to fully evaluate the life-cycle costs of buying, using, and maintaining its copiers. Kodak failed to provide reasons why its customers should be able to perform complex lifecycle-pricing decisions and yet be unable to distinguish which breakdowns are due to bad equipment and which are due to bad service. In addition, because self-service customers were just as likely as others to blame Kodak equipment for breakdowns resulting from (their own) inferior service, Kodak's willingness to allow self-service casts doubt on its quality claim. The Supreme Court agreed then with the Court of Appeal that respondents "have presented evidence from which a reasonable trier of fact could conclude that Kodak's first reason is pretextual."[11]

7 504 U.S. 451, Section IIIB. A similar claim was made, and rejected, in the IBM antitrust case. IBM argued, in the absence of evidence, that it had to control the cards used in its machines to avoid "injury to the reputation of the machines and the good will of" IBM. See International Business Machines Corp. v. United States, 298 U.S., at 139 -140.

8 Kodak, 504 U.S. at 485

9 The Court accepted the facts ISOs presented to prove that: (1) Kodak adopted its parts policy only after an ISO won a contract with the State of California; (2) Kodak allowed its own customers to service their machines; (3) Kodak customers could distinguish breakdowns due to poor service from breakdowns due to parts; and (4) many customers preferred ISO service.

10 Kodak, in fact, argued that it would have been ruinous for the company to increase prices for the monopolised provision of parts and services since this would have lowered the number of machines purchased.

11 Court of Appeals for the Ninth Circuit no. 90-1029, page 11424.

The inventory cost explanation was judged inconsistent, since the main driving factor, the breakdown rates, seems to be unrelated to who is servicing the machines. In response to this argument, moreover, the Court argued that this argument failed to explain why Kodak had to force parts manufacturers, equipment owners, and parts brokers not to sell to the ISOs since these actions would have no effect on Kodak's inventory costs.

The free riding argument was also rejected. Kodak did not dispute that respondents invested substantially in the service market, with training of repair workers and investment in parts inventory. Instead, according to Kodak, the ISO's were free-riding because they had failed to enter the equipment and parts markets. Agreeing with the Court of Appeals, the Supreme Court acknowledged the perniciousness of this argument and concluded that "one of the evils proscribed by the antitrust laws is the creation of entry barriers to potential competitors by requiring them to enter two markets simultaneously."[12]

2 Discussion

This case presents us with two relevant economic issues associated with bundling and we discuss each in order. First, we discuss the use of tying as a metering device. Second, we discuss the use of tying to create barriers to entry. We believe that both of these effects could have motivated Kodak's behaviour.

METERING

One motivation for Kodak's parts policy could be to act as a metering device. In general (as introduced in Section 3.3.1 and fully explained in Sections 5.5 and 5.6 of the main report), a firm is able to increase its profits by charging high value consumers more than low value consumers.[13] In copiers, one way to distinguish between customers with different values is to charge a usage fee for the copier. Possible methods for this usage fee include renting the copier and charging a price for every copy made, tying paper to the machine and charging a price for the paper that includes a per-page copy fee, tying toner to the machine, and tying service to the machine. In this later scheme, to the extent the rate that a machine requires service is a direct function of the amount of use that machine gets, Kodak is able to employ a metering fee on its copiers. That is, tying service to the equipment is a way of enabling Kodak to price discriminate among customers according to the intensity of their use of copiers.

In general, consumers resist efforts of firms to price discriminate. For example, if Kodak had tried to meter the usage of its copiers by tying its own brand of copier paper to the copier, it probably would not have been successful. Since paper is interchangeable, it would be difficult to enforce the tie without constantly monitoring the type of paper that is used in the copier.[14] This consumer behaviour points out an inherent inefficiency

12 504 U.S. 451, Section IIIB.

13 The alternative pricing structure is to have a single price, and the firm is left with the choice of charging a high price and only serving the high value customers, or charging a low price and serving all of the customers, but getting less revenue from the high value customers.

14 Enforcement issues could be weakened if machines were only leased and not sold. Rental only policy would be a way to prevent the existence of a secondary market for used machines and parts. It would eliminate the availability of parts from the original manufacturers and ensure that the equipment producer would be the only company able to provide servicing to its machines. Such a rental only policy, however, may meet with market resistance. Since Kodak faced competition for the sale of copiers, if it tried to impose a rental only policy, the high-value consumers would be likely to purchase from competitor copier companies, thereby defeating Kodak's attempt to price discriminate. Moreover, rental only policies might well fall afoul of competition authorities in the presence of market power.

associated with price discrimination. High-value consumers will expend effort to appear to be low-value consumers so they can pay a lower price for the product. Thus the conclusion that price discrimination tends to be welfare enhancing when it expands output must be tempered by the observation that price discrimination may have negative welfare implications associated with high-value consumers trying to appear as low-value consumers (this point is expanded in Section 5.7 of the main report).

Given that Kodak was trying to meter its customers' use, we can consider whether there were alternative methods for Kodak to achieve a similar outcome. For example, instead of refusing to sell parts to ISOs, Kodak could just have sold these parts at very high prices. Charging a high price would have also addressed Kodak's concern that ISOs were free riding on its investments. By charging high prices for its patented parts, ISOs would pay for all of the costs incurred by Kodak in developing its equipment. Kodak could have kept the overall cost of its copiers competitive by offering inexpensive maintenance service contracts to its customers and simultaneously charging high prices for parts. Kodak could have chosen its maintenance price mix to provide services competitively with respect to ISOs. This would have allowed Kodak to engage in a margin-squeeze on the ISOs. The ISOs would be at a cost disadvantage to Kodak and Kodak could not have been accused of refusing to sell parts to the ISOs.

This strategy might have been circumvented if ISOs developed a way to fix broken parts in the equipment.[15] Furthermore, to the extent the ability to charge high prices on parts and service is restricted by the competition for the original equipment, if Kodak were to charge high prices for the provision of parts, the prices of the original copier would fall. As the price of new copiers fall, ISOs could have bought new machines to dismantle them and use the constituent parts for servicing customers' machines.

Refusal to sell parts to ISOs also can potentially be circumvented. For example, the ISOs could ask their clients to purchase the parts from Kodak and then resell these parts to the ISO. This would be a more costly procedure than the ISO purchasing directly from Kodak. In fact, ISOs did buy parts from customers of Kodak that were willing to buy parts from Kodak and resell them to the ISOs.[16] During the trial, first Kodak argued that it did not require owners to buy service in order to receive parts.[17] Kodak did admit, however, that it would sell parts only to those owners that agreed not to allow the ISOs to service the machines. The ISOs produced two statements made by third parties that Kodak suppliers had refused to sell them parts because of "arrangements with Kodak" or because the parts were "proprietary to Kodak."[18] Indeed, over time, Kodak increasingly policed its no-parts sales policy. The company began tracking parts sales to ensure that equipment owners were not purchasing more than they would reasonably need. It also required parts purchasers to provide proof of ownership of the precise equipment model for which they were ordering parts. Furthermore, for copier parts, it

15 In other words, if when an ISO replaces a broken part in a Kodak copier it can refurbish this part and resell it to a later customer, then the ISO is able to limit the demand for Kodak replacement parts.

16 See Kodak II, 504 U.S. at 458 n.2

17 Kodak I, 903 F.2d at 615.

18 Kodak, 1988 WL 156332, at *2

demanded certification that the customer had a Kodak-trained employee to effect the repairs. The company was perfectly aware of the effect of their choice not to sell parts to ISOs, as an internal document states: "Both IBM and Xerox will sell spare parts, but we do not. This makes it more difficult for a third party to service our copiers."[19]

Kodak tried to persuade the Court that tying servicing to equipments did not make any difference from the point of view of consumer welfare. The company claimed that all profits coming from the provision of service on its copiers would be competed away at the time of the original purchase of equipment.

This argument is correct if consumers are endowed with perfect foresight when the contract is signed. If it is possible to perfectly anticipate what the cost and benefits associate with the machinery bought will be, such as the incidence and rate of breakdowns and the rate of depletion of the machinery, then tying is not an issue. Such an evaluation of the life-cycle costs of durable equipment is difficult for consumers to carry out.[20] In addition, life-cycle cost evaluation needs to take into account the chance of Kodak changing its policy on the provision and pricing of its parts and service. Only if customers correctly evaluate the cost of future parts and service of the copier will competition in the market for copying machine offset the potential losses associated with tying.[21]

Even if consumers are able to evaluate the life-cycle cost of a new copier, there still can be one-time losses associated with Kodak's policy. Kodak refrained from explicitly imposing tied service to customers who had already purchased their copiers prior to 1985. While it appears that this strategy would have no effect on the existing consumers, these consumers could still be harmed if the policy leads to the elimination of alternative service providers. Over time, the number of older copiers in service declines and the amount of that business is not sufficient to keep the ISOs in business.[22] Soon, there will not be sufficient ISOs to service the machines that were sold before 1985 and 1986 even though parts for these copiers were available to the ISOs. Hence, Kodak may be able to extract profits from these customers of the older copiers as a result of its change in parts policy.

ENTRY DETERRENCE

The new Kodak policy could also have long-term negative consequences on the copier market. Kodak's policy would effectively drive ISOs out of the market for providing service to Kodak copiers (this motivation for bundling is discussed in Section 4.4.2 of the

19 Image Technical Service, Inc., et al. v. Eastman Kodak Co., C 87-1686 (January 18, 1996), Trial Exhibit 649 at 1315-1316, a Kodak internal document. Similarly "The difficulty of obtaining parts, technical information and diagnostic software has effectively kept third party service suppliers out of the advanced equipment service market," Trial Exhibit 99 at 6762 (*ibid.*), a Kodak report on micrographic service.

20 A way to make the life-cycle costing easy for consumers is for Kodak to rent its machines and charge a per-page fee for usage. Consumers, though, have not embraced such a strategy, in part because it leads to high-value consumers paying more for the copier services.

21 If prices are public and not individually negotiated, then all customers would not need the ability to evaluate these costs, just "enough" consumers. That is, as long as the marginal consumers can evaluate costs of all expected future repairs and maintenance, then all consumers are protected from exploitation.

22 Whether this would lead to consumer harm is driven by the speed at which the competitive service providers are driven out of the market relative to the length of the life of these older copiers.

main report). If the other copier companies followed suit, this would lead to the elimination of the entire ISO industry - only the copier companies would service their own brand of copier. This would affect the ability of a new firm to enter the copier market. An entrant to the copier market would have to not only incur all of the costs of designing, manufacturing, and selling copiers, but it would also have to set up an entire network of repair shops to provide service for these new copiers. Clearly this creates even higher barriers to entry than just entering the copier market (and obtaining maintenance services from ISOs). As we mentioned earlier, the Supreme Court recognised this effect when it concluded "one of the evils proscribed by the antitrust laws is the creation of entry barriers to potential competitors by requiring them to enter two markets simultaneously."[23]

Not only can the raising of entry barriers lead to the potential ability for a firm to unilaterally raise price, these barriers to entry also can help facilitate a collusive outcome. Without the threat of new entry, the existing competitors in the copier market might be able to reach a coordinated outcome, either through tacit collusion or by explicitly agreeing to a higher price. Thus, by raising entry barriers, Kodak not only would allow itself to act in an anticompetitive manner, but it also could lead to the entire industry becoming more anticompetitive.

3 Conclusion

We believe that Kodak's behaviour was motivated by its desire to better price discriminate amongst its end-users as well as the possibility that the behaviour would lead to a less competitive copier industry over the long-run. To believe that the tying would be irrelevant over the short-run, one must trust that consumers possess sufficient information to evaluate the life-cycle cost of new equipment. We are somewhat sceptical that consumers have this ability. Moreover, the dynamic consequences of the elimination of a competitive servicing market are a cause for concern. Hence we believe that Kodak's change in policy in terms of making parts available to ISOs was likely harmful to consumers in the short run and was also likely to be harmful to competition in the long run.

23 504 U.S. 451, Section IIIB.

VII
Aspen case

In this chapter we discuss a particular type of bundling - the bundling of substitute products as a means to decrease the demand for a competing product. The case arises from the complaint made by the skiing facilities operator Aspen Highlands Skiing Corp. (Highlands) in 1979. Highlands, which owns one of the four major mountain facilities for downhill skiing at Aspen, Colorado, filed a suit in the Federal District Court of Colorado against Aspen Skiing Co. (Aspen Ski), which owns the other three major ski facilities in Aspen, alleging that Aspen Ski had monopolised the market for downhill skiing services in Aspen, in violation of Section 2 of the Sherman Act. The basis for the court decision in this case was that Aspen Ski was an essential facility - a finding that has caused much consternation amongst economists in the ensuing years. This case has led to much controversy in later cases, such as the Microsoft cases in the U.S., that have made allegations about what is and is not an essential facility. We show that in terms of economic analysis, one does not have to rely upon the concept of essential facilities to show that the behaviour by Aspen Ski of bundling substitute products leads to anti-competitive effects that harmed competition.

1 Background[1]

Between 1945 and 1960, three private investors independently developed three major facilities for downhill skiing at Aspen: Aspen Mountain (Ajax), Aspen Highlands (Highlands), and Buttermilk. A fourth mountain, Snowmass, opened in 1967. From 1958, each of these independent companies offered lift tickets for the use of its own mountain. In 1962, a 6-day, all-Aspen ticket was introduced. The 6-day pass allowed skiers who visited the resort for weekly periods to be flexible about where to go skiing each day. The all-Aspen ticket program consisted of booklets containing six coupons, each redeemable for a daily lift ticket at Ajax, Highlands, or Buttermilk. The price of the bundle was discounted compared to six single-day tickets, and all of the coupons had to be used within a week. The revenues from the sale of this ticket were distributed in accordance with the number of coupons collected at each mountain.

In 1964, Aspen Ski purchased Buttermilk and offered a 2-area, 6-day or 7-day tickets in competition with the 3-area booklet. Three years later, Aspen Ski opened the fourth mountain, Snowmass. Aspen Ski offered a 6-day ticket bundle that was good only at the three Aspen Ski mountains. This offer by Aspen Ski was outsold by the all-Aspen mountains pass.

1 Most of the information for this case study is taken from the decision of the U.S. Supreme Court in Aspen Skiing Co. v Aspen Highlands Skiing Corp., 472 U.S. 585 (1985). This decision affirms the decision in Aspen Skiing Co. v Aspen Highlands Skiing Corp. of the Court Of Appeals For The Tenth Circuit. No. 84-510. The District Court decision is 738 F.2d 1509, District Court of Colorado.

In the 1971-1972 season the all-Aspen ticket changed and skiers no longer had to visit the ticket window every day to gain access to the slopes. The ticket consisted of a card worn around the skier's neck that was checked at the chair lifts. In that season, operators at Highlands monitored usage of the ticket by recording the ticket numbers of persons going onto the slopes of that mountain. There was some concern that usage of the all-Aspen ticket should be monitored by a more scientific method. After a one-season absence, the pass was reintroduced with a new method of allocating revenues based on usage. Lift operators punched the ticket when the skier first sought access to the mountain each day. Random-sample surveys were commissioned to determine how many skiers with the 4-area ticket used each mountain, and the parties allocated revenues from the ticket sales in accordance with the survey's results.

During the following 4 seasons Highlands' share of the revenues from the ticket ranged from 18.5% to 13.2%. At that time, Aspen Ski was not offering its own 3-area, multi-day ticket in competition with the all-Aspen pass. The all-Aspen pass represented 35% of the total revenue for the ski areas.

Until 1977, Aspen Ski and Highlands had independently offered passes of various length (from one day to six days) at each of their own mountains. For the 1977-1978 season, Aspen Ski imposed as a condition to continue the all-Aspen ticket that Highlands accepted a 13.2% fixed share of the tickets revenues. The figure corresponds to the lowest Highlands' share of revenues in those years, and was the result it achieved in a season of scarce snow and an unusually low number of visitors. Highlands wanted to continue to divide revenues on the basis of actual usage as estimated by the annual survey of skiers. After negotiations Highlands accepted a fixed percentage of 15% for that season. Aspen Ski reinstated its 3-area, 6-day ticket during the season, but that ticket was outsold by the all-area pass by nearly two to one.

The Supreme Court discusses the evidence on Aspen Ski management's views on the pass during the 70's. The company complained that the coupon method of monitoring usage was administratively cumbersome. Also, Aspen Ski doubted the accuracy of the survey and complained about the appearance of the college students who were conducting the survey. Aspen Ski's president also expressed the view that the existence of the 4-area ticket was draining off revenues from Aspen Ski.[2] Consequently, in 1978, Aspen Ski management recommended to the board of directors that the 4-area ticket be discontinued. The board decided to offer Highlands a 4-area ticket provided that Highlands would agree to receive a 12.5% fixed percentage of the revenue.[3]

Highlands suggested alternative ways to distribute revenues based on usage to be monitored by coupons, electronic counting, or random sample surveys. Moreover, to address Aspen Ski's concern about how the survey was run, Highlands proposed to hire disinterested ticket counters at its own expense to count or survey usage of the 4-area ticket at Highlands. Aspen Ski refused each of these methods of measuring usage and eventually Highlands rejected the offer of a fixed percentage.

2 472 U.S. at 586-587, 950, 960.

3 Later in the season a member of Aspen Ski's board of directors informed a Highlands official that he had advocated making Highlands an offer that [it] could not accept. Id., at 361.

At the same time, Aspen Ski actively engaged in an advertising campaign that strongly suggested to the public unfamiliar with Aspen that its mountains were the only ones in the area.[4] Aspen Ski also hindered Highlands' effort to market its own multi-area package to replace the joint offering. The company refused to sell Highlands any lift tickets, either at the tour operators' discount or at retail. When Highlands finally developed an alternative all-area pass, called the "Adventure Pack," which consisted of a 3-day pass at Highlands and three vouchers[5], each equal to the price of a daily lift ticket at a Ski Co, Aspen Ski refused to accept them. Later, Highlands redesigned the Adventure Pack in such a way that Aspen Ski eventually accepted it, but the Adventure Pack met considerable resistance from tour operators and consumers accustomed to the convenience and flexibility provided by the all-Aspen ticket.

Without a convenient all-Aspen ticket Highlands became a one-day ski area. Its share of the market for downhill skiing services in Aspen declined steadily after the 4-area ticket was abolished: from 20.5% in 1976-1977 to 11% in 1980-1981. The associated skiing services revenues (like ski school, ski rentals, amateur racing events, and restaurant facilities) declined sharply as well.

Aspen Ski discontinued the 3-day, 3-area pass for the 1978-1979 season, with negative consequences on the demand for Highlands. With the three-day ticket, a person could ski on the Aspen Ski mountains for three days and then have three days in which to ski on Highlands.[6] Due to strong consumer demand, Aspen Ski reinstated the 3-day ticket late in the season, but without publicity or a discount off the daily rate.[7]

2 Court decisions

The Tenth Circuit Court of appeals affirmed the decision of the District Court of Colorado based on liability under the essential facility doctrine. The Court found sufficient evidence to conclude that the defendant acted with the intent to create or maintain a monopoly. In its review of the evidence on the question of intent, the Court of Appeals noted that by refusing to cooperate with Highlands, Aspen Ski "became the only business in Aspen that could offer a multi-day multi-mountain skiing experience"[8]; that the refusal to offer a 4-mountain ticket resulted in "skiers' frustration over its unavailability"[9]; that there was no valid business reason for refusing to accept the coupons in Highlands' Adventure Pack; and that after Highlands had modified its Adventure Pack to meet Aspen Ski's objections, Aspen Ski had increased its single ticket price to $22 "thereby making it unprofitable... to market [the] Adventure Pack."[10]

4 For example, Aspen Ski had a sign changed in the Aspen Airways waiting room at Stapleton Airport in Denver. The old sign had a picture of the four mountains in Aspen touting "Four Big Mountains" whereas the new sign retained the picture but referred only to three mountains.

5 The vouchers were guaranteed by funds on deposit in an Aspen bank, and were redeemed by Aspen merchants at full value.

6 Id., at 245.

7 Id., at 622.

8 Joint appendix on appeal prepared by the parties, I App. 191, 243.

9 Quote from joint appendix on appeal prepared by the parties, II App. 525-33.

10 Aspen Ski set its single ticket price at $22 and discounted the 3-area, 6-day ticket to $114. Quote from the original record, IV R. 534-35; IX R. 1424-25.

In the Supreme Court, Aspen Ski contended that even a firm with monopoly power has no duty to engage in joint marketing with a competitor. It also contended that the Court of Appeals incorrectly relied on the essential facilities doctrine. In response, Highlands submitted that, given the evidence in the record, it was not necessary to rely on the essential facilities doctrine in order to affirm the judgment. The Supreme Court affirmed the decision of the Court of appeals based solely on the intent test. The Court specifically found it unnecessary to consider the possible relevance of the essential facilities doctrine.

The Supreme Court concluded that consumers were adversely affected by the elimination of the all-Aspen tickets. Surveys, expert testimony and other evidence supported this conclusion.[11] The actual record of competition between a 3-area ticket and the all-Aspen ticket in the years after 1967 indicated that skiers demonstrably preferred four mountains to three.[12] Highlands' marketing expert testified that many of the skiers who come to Aspen wanted to ski the four mountains, and the abolition of the 4-area pass made it more difficult to satisfy that ambition.[13] The Court ruled that there was evidence of an adverse impact on Highlands from Aspen Ski's strategy. This evidence was based on Highland's unsuccessful attempt to create similar packages to the all-Aspen package and the steady decline of Highland's share of the relevant market after the ticket was terminated. Finally, it was believed that Aspen Ski failed to provide an adequate business justification for its behaviour. Instead, the court concluded, Aspen Ski sought, even forgoing revenue, to reduce competition in the market over the long run by harming its smaller competitor.

3 Economic analysis

Seen from a traditional perspective, the conclusion that Aspen Ski, by excluding Highlands, was seeking to reduce competition would appear to be a logical contradiction. Allowing Highlands into the multi-mountain pass is a form of cooperation or even collusion. Once Highlands is part of the pass, the two companies have agreed not compete on price (at least for this significant part of the market). Thus if excluding Highlands is denying it an opportunity to collude, it is hard to see how this would be reducing competition. One significant source of competition is that even with collusive pricing, the two firms seek to gain a greater share of the skiers and thus a greater share of the joint ticket revenue. This competition for share of the bundle, while it might not be price competition, could still lead to significant benefits to consumers.

Dennis Carlton (2001) makes the argument that the court case was simply an attempt by Aspen Highlands to get a better deal from the courts than it could achieve on its own in the negotiation with Aspen.[14] We think he is correct in this assessment, although we do

11 Record Ex. No. 75, pp. 36-37.

12 472 U.S. 589-590, 592. On this point see also the view of a major wholesale tour operator who asserted that he would not even consider marketing a 3-area ticket if a 4-area ticket were available. 472 U.S. 585, 607.

13 Tr. 775.

14 See Dennis Carlton, 2001, "A General Analysis of Exclusionary Conduct and Refusal to Deal-Why Aspen and Kodak are Misguided," NBER working paper 8105.

not agree with the conclusion that he then draws. Carleton concludes that since a four-mountain pass is the efficient outcome, we can expect the parties to reach this agreement and the courts should not get involved.[15] The fact that Aspen Highland's bargaining power may not be proportional to its fraction of skiers is not a problem that the court should try to rectify.

Our view is that Aspen took actions akin to predatory pricing. Its bundled pricing of multi-day discounts, the temporary elimination of the 3-day ticket, and exclusion of Highlands was a way to reduce consumers' willingness to pay for Highlands to a level well below what they would have paid in a market with no bundled sales or discounts. This action was costly to Aspen Ski and detrimental to its customers. As we explain in more detail below, the exclusion was most likely an attempt by Aspen Ski to improve its bargaining position - to put Highlands into a position of financial distress so that it could be purchased on the cheap by Aspen Ski.[16]

It is possible that if Aspen Ski were to merge with Aspen Highlands, the four-mountain group would raise prices. Existing homeowners and hotels in Aspen might become subject to a monopoly. But we do not think that is the primary problem. Aspen must compete with other resorts such as Vail and Park City and this limits even a four-mountain group's ability to raise prices. Furthermore, if this were the concern, then allowing Aspen Highlands into the group pass would lead to just this monopoly outcome. The merger, though, would lead to the loss of competition between Highlands and Aspen Ski for share of the bundle.

The theoretical analysis of this case, that of ex-ante complements and ex-post substitutes, is presented in detail in section 4.4.4 of the main report. Here we emphasise how Aspen Ski used the variety bundle to create an artificial advantage. Consumer demand for skiing at each of the individual mountains is likely to be positively correlated (if a consumer has a high value of skiing at Ajax, that consumer is likely to also have a high value of skiing at Highlands). Consumers also value variety. This is especially true for customers who are considering the Aspen area over other resort options. These two assumptions on preferences will yield the types of demands described in the case - the all-mountain pass is significantly more popular than the pass offering only three mountains, both for skiers and for travel agents.

For simplicity, we can assume that the 4 mountains are of similar quality, so if only single-mountain passes are sold, each mountain should get approximately ¼ of the business. While the 4-mountain bundle was the most-preferred item, a 3-mountain pass would be more expected to capture more than ¾ of the market against a single mountain of equal quality. This is because in looking at the value a consumer places on a bundle containing the option to ski at multiple mountains, there is diminishing valuation to variety. The consumer

15 Carlton makes an exception for cases where the bundle is not provided by a single firm. In this case, since Aspen Ski was the result of a merger, one could extend Carlton's exception to include restricting this type of behaviour as part of the merger condition.

16 We note that other potential buyers would expect to face the same problem competing against the Aspen Ski bundle and thus would not offer competition in the purchase of Highlands. The courts might be unlikely to prevent such a purchase both due to the weakened financial state of Highlands and the recognition that Aspen is competing in a larger market against other resorts such as Vail or Park City.

values the second mountain added to the pass at less than the first, and the third at less than the second, and so on. The Aspen 3-mountain pass turned Highlands into the marginal fourth mountain rather than one of four mountains creating a bigger pie.[17]

Highlands did everything it could to create its own version of a 4-mountain pass. As we know from the previous sections, Highlands was ready to buy Aspen Ski tickets to include them in the new all-areas "Adventure Pack." Aspen Ski was willing to forgo daily ticket sales to skiers who bought the Adventure Pack. Such behaviour makes sense only if Aspen Ski believed that many of these skiers would buy tickets at Aspen Ski mountains if the Adventure Pack did not include the Aspen Ski passes. By restricting Highlands to only selling passes to its own mountain, Aspen Ski was able to limit the size of the market available to Highlands. Since consumers value additional mountain at decreasing amounts, Aspen Ski can price its 3-mountain pass at such a level that Highlands will not be able to get many customers. Since the costs associated with running a ski area are primarily fixed, losing customers would eventually drive Highlands out of business or, more likely, force Highlands to sell itself to Aspen Ski at a lower price.

For the 1981-1982 season, Aspen Ski set its single ticket price at $22 and discounted the 3-area, 6-day ticket to $114 or $19/day. Using these numbers and assuming that the individual mountains on average are valued equally by consumers, we can see the bind Highlands is facing. The increment Highlands can charge for the 4-mountain pass above the 3-mountain pass is small.[18] If there is no increment, then Highlands charges $114 for the 4-mountain, 6-day pass. Assuming consumers value each of the mountains equally, then on average each consumer will ski 4 or 5 days at Aspen Ski and 1 or 2 days at Highlands. Highlands is paying Aspen Ski $22 for each day the consumer skies at Aspen Ski, so for the day (or two) that the consumer skies at Highlands, the revenue earned will be $4 if only one day is skied there, or $13 per day for each day if two days are skied there. In either case, the revenue earned by Highlands is well below the $22 per day that Aspen Ski is earning.

We conclude from the evidence that Aspen Ski was refusing to deal with Highlands in order to gain a competitive advantage over Highlands.[19] Such a refusal to deal has harm to consumers if it leads to Highlands going out of business (or selling itself to Aspen Ski). Therefore, there should be some remedy imposed to ensure that there is fair competition. The goal of the remedy is to ensure that Aspen Ski is not able to disadvantage its rival through a bundled pricing strategy.

One such remedy would be to allow Aspen Ski to set its own price for the 3-mountain pass and then require Aspen Ski to let Highlands participate in this pass, earning the average price per day for every day that the consumer chooses to ski at Highlands. Table 1 presents the prices for the 2001/2002 ski season at Aspen Ski when the tickets are bought in advance. Table 2 presents the same information for purchases that are made at the mountain on

17 One could argue that if the customer bought the Aspen Highlands ticket first, then the three Aspen mountains would become the marginal 2nd, third, and fourth mountains, but this would be a case of the tail wagging the dog. Few people come to Aspen without expecting to ski Aspen, Buttermilk, or Snowmass.

18 We do not know exactly what this increment is, so for this example we will assume it is zero and the numbers presented are then a worse case scenario for Highlands.

19 Given the technology available today, there is no reason that there should be any extra costs with monitoring the number of days a multi-day pass holder skies at each mountain, so the concerns Aspen Ski voiced over the reliability of the survey is not relevant today.

the day that the skiing starts.[20] Using these numbers as a guide, Aspen offers a $7/day advance-purchase discount which leads to a price of $57 per day to ski at its mountains. Thus, Highlands should be allowed to offer a 4-mountain pass at the price of $57 per day. There can be card readers at the chair lifts that monitor the usage of each mountain, and the revenues can be split between Highlands and Aspen Ski according to the actual usage at each mountain. Such a solution would result in each of the mountains competing on its own merits. If a mountain wanted to offer a particular deal on a single-mountain pass, then such a pass can be offered completely independently of the multi-mountain pass.

TABLE 1
2001/2002 7-DAY ADVANCE PURCHASE PRICES

Length of Pass	Adult (Ages 18-69)
7-day	$399 ($57/day)
6-Day	$342 ($57/day)
5-day	$285 ($57/day)
4-day	$228 ($57/day)

Source: https://store.aspensnowmass.com/

TABLE 2
2001/2002 LIFT TICKET PRICES PURCHASED ON THE MOUNTAIN

Pass Length	Adult (Ages 18-69)	Child (Ages 7-12)	Youth (Ages 13-17)	Senior (Ages 65-69)
7-day	$448 ($64/day)	$273 ($39/day)	$343 ($49/day)	$413 ($59/day)
6-day	$384 ($64/day)	$234 ($39/day)	$294 ($49/day)	$354 ($59/day)
5-day	$320 ($64/day)	$195 ($39/day)	$245 ($49/day)	$295 ($59/day)
4-day	$256 ($64/day)	$156 ($39/day)	$196 ($49/day)	$236 ($59/day)

Source: https://store.aspensnowmass.com/

20 According to these prices, we note that Aspen no longer offers discounts for multi-day passes. Now that the court has forced it to include Highlands in the multi-day pass, there may be less incentive to offer a multi-day bundled ticket discount.

VIII
Guinness and Grand Metropolitan merger

On 12 May 1997, the Boards of Directors of Guinness plc (Guinness) and Grand Metropolitan plc (Grand Met) announced a planned merger of the two companies. The merged firm saw five primary benefits from the merger: (i) complementary product portfolios; (ii) greater geographic breadth; (iii) increased marketing ability; (iv) cost efficiencies; and (v) increased financial resources for future expansions. The firm believed that the merger would provide the new company with significant economies of scale and scope. This transaction was reviewed by both the European Commission and the U.S. Federal Trade Commission, and before being consummated there were a number of conditions that had to be met. In this chapter, we present the factual background and analysis that underlie these remedies. We also present an alternative analysis of the facts that imply an alternative remedy that would have been less costly to the firms yet fully protected consumers and competition from adverse effect from the merger.

1 Background

Guinness

Guinness was originally a brewer of beer but had diversified itself into a producer of spirits worldwide. Guinness began in 1759 when Arthur Guinness took over an unused brewery at the periphery of Dublin. By 1980, Guinness Stout, the flagship beer brand, was brewed in 50 countries and sold in 150 different countries. In 1985 and 1986 Guinness acquired Distillers Company Limited and Arthur Bell & Sons. With these purchases, Guinness became a holding company for United Distillers - a producer and distributor of spirits worldwide. The spirit brands controlled by Guinness included Johnnie Walker, Gordon's, Bell's, and Dewar's. In addition, Guinness owned 34% of Moët Hennessy, a leading producer of champagne and cognac.

Grand Met

The Grand Met group of companies was involved in the production and distribution of spirits, food manufacturing, and ownership of fast-food restaurants. The company originated with a hotel business called MRMA, which became Grand Metropolitan Hotels Ltd in 1962. It entered the catering industry by acquiring Express Dairy Ltd in 1969 and Berni Inns Ltd in 1970. Grand Met made further acquisitions in the entertainment and

drinks businesses including the purchase of Mecca (bookmaking business) and the brewery companies Truman, Hanbury and Buxton Ltd, and Watney Mann Ltd. The 1980s brought further growth, notably by the acquisition of wine and spirits assets of the Liggett Group Inc, Warner Holidays Ltd, a group of three hotels in Paris, InterContinental Hotels Corporation, Heublein Inc (wines and spirits), and several other United States retailing and service companies. In the second half of the 1980's Grand Met focused more on its food, drinks, and retailing businesses, especially branded goods and services, and disposed of a number of the businesses, including Intercontinental Hotels. Acquisitions in the selected areas of activity have continued with William Hill Organisation Ltd (in bookmaking) and The Pillsbury Company, a leading United States food processing company which owns the fast-food operation Burger King among other interests.

The merged company, taking the name Diageo, organized itself into four divisions: UDV, Pillsbury, Guinness and Burger King. The spirits and wines businesses are controlled under the UDV division. The revenue of the UDV division in 1996 was 10 billion ECU, which was 47% of the revenue of Diageo.

2 European Commission decision

MARKET DEFINITION

The Commission concluded that every type of spirit constituted a separate product market. The Commission further determined that branding and brand name were key competitive characteristics in these product markets. The Commission also concluded that the relevant geographic markets were national despite arguments from Guinness and Grand Met that the correct geographic market would encompass all of the EEA. Justification for this definition included that the per capita product consumption varied between the Member States, the distribution of these products was organized on a national level, and there was not complete free trade between countries of these products. Also, there are major differences in taxation and regulation of these products between the different member states.[1]

The Commission also considered whether the country in which the spirit is made is an important factor for defining relevant markets. Whiskies provide an example of this issue. Scotland requires that in order for a malt to be marketed as a Scotch Whisky, the whisky must be wholly distilled within Scotland and matured there for at least three years. The Commission decided that for the purposes of this case "the issue of segmentation of whisky by origin is only analysed further where the different possible definitions would lead to significantly different shares and overlaps (notably, Spain and Ireland)."[2]

1 This does not hold for duty-free sales, since consumers are travelling across borders.

2 European Competition Commission Decision of 15 October 1997 "Declaring a concentration to be compatible with the common market and the functioning of the EEA Agreement," Case No IV/M.938 - Guinness/Grand Metropolitan (98/602/EC).¶16

VERTICAL ISSUES

The Commission found that the distribution systems within the markets demonstrated the importance of vertical integration. Wholly owned subsidiaries were responsible for the exclusive distribution of products at a national level. In addition, to distributing their own brands, the distributing subsidiaries of Guinness and Grand Met would distribute spirits of other firms. This third-party distribution accounted for only a relatively small proportion of total distribution activity, so the distribution of other firms' products was viewed as only a source of incremental profits to the distribution of one's own products. Since this third-party distribution was not considered to be a critical asset of these firms, there could be a concern that it might be dropped if it would harm the competition. "Integration into distribution allows the supplier to maintain control over the marketing and distribution of the brands which it owns, thereby safeguarding the all-important image of those brands in the market-place."[3]

PORTFOLIO EFFECTS

The Commission found that portfolio effects were present since the holder of a portfolio of leading spirit brands may enjoy a number of advantages. In particular, the Commission felt that the position of a supplier of a broad range of spirits to its customers would be stronger than a supplier of a single spirit since it would account for a greater proportion of the customers' business. A large portfolio of products would provide greater flexibility to structure prices, promotions and discounts, as well as provide a greater potential for tying. Moreover a broader portfolio provides economies of scale and scope in sales and marketing activities and strengthens the force of a threat of refusal to supply.

The Commission established that the strength of these advantages, and their potential effect on the competitive structure of the market, depends on a number of factors, including:

- whether the holder of the portfolio has one or more leading brands in a particular market;
- the market shares of the various brands, particularly in relation to the shares of competitors;
- the relative importance of the individual markets in which the parties have significant shares and brands across the range of product markets in which the portfolio is held; and/or
- the number of markets in which the portfolio holder has a brand leader or leading brand.

The parties' competitors confirmed the existence of a portfolio effect in the market.[4] While it was true that end consumers purchase only a specific brand of spirit, not broad portfolios, the manufacturers often sell all of their products to intermediate retailers (or bar owners).[5] It is this portfolio of products that is important to the intermediaries. One reason for this might be that if there are two different mid-tier gin brands (for example),

3 *Ibid.*, ¶20.

4 The Commission asked ten firms the question "does possession of a leading brand in all or most spirit categories help sales of spirits in general?" and eight firms responded that it would help a lot.

5 Generally there are two types of outlets that purchase spirits from manufacturers. Off-trade, which are liquor stores and other types of retailers, that sell packaged goods to be consumed away from the retail establishment, and on-trade, which are pubs, restaurants and nightclubs, that sell spirits for consumption on the premises.

a spirit retailer perhaps is more likely to buy the one that is distributed by the firm that has the leading brand of some other spirit (assuming the two gin brands are comparably priced) as this purchase will minimise the number of distributors that call on that retailer. Thus, by expanding the number of leading brands it distributes, the merged company would be in a position to get additional sales of its secondary brands. The Commission found that the strength of the portfolio effect varied from market to market. The one place in which it was a significant problem at the time of the merger was Greece.

The decision states that portfolio power can also be seen as a barrier to entry. There are two ways these barriers to entry arise. First, a new entrant would need to develop a range of desirable products in order to counter the portfolio power of the merged company. Without such a portfolio, a retailer might feel threatened to a potential cut-off of supply by the firm with portfolio power if the new entrant's products are purchased. Second, the vertical integration of the major industry players limits the supply of third-party distributors to assist new entrants. If there are not many (or any) non-vertically integrated spirit firms, then there will be no distribution available to distribute the new entrant's products. Even without these barriers, there are significant costs of entry as entrants would need to promote their brands heavily, and sometimes pay a listing fee to encourage retailers and wholesalers to take the new product. Also, the importance of the on-trade distribution channel makes new entry hard. On-trade consumption often is key in shaping consumer demand for a product as customers are more likely to try a new product if they only have to buy a glass. The on-trade industry is more fragmented than the off-trade, though, and thus direct distribution to the on-trade would be extremely costly to the new entrant. Thus, barriers to entry are generally very high in the spirits industry.

EFFECTS IN SELECTED MARKETS

Ultimately, we are interested in whether the remedy obtained by the Commission was reasonable and whether there was an alternative remedy that would allow the companies to enjoy more of the efficiencies of the transaction without being able to harm competition. Therefore, we present the Commission's analysis and remedy for each of the affected countries. The Commission concluded that the merger had the potential to create or strengthen a dominant position in the following countries:

Greece

Overall, the Commission had three broad concerns in Greece. The creation of a dominant position in whisky, the creation of significant portfolio power, and the creation of barriers to entry in spirits through the use of the firms' distribution facilities. Greece's national drink, ouzo, accounted for a large portion of national spirit sales. Whisky consumption was growing, and it was the most consumed imported spirit in Greece. The merger would have brought together the high market shares in rum and gin of Guinness with the high market share in brandy of Grand Met. The merged company would have been over four times as large as the next largest competitor in Greece, becoming the largest importer and distributor. It would have supplied the leading brands in whisky, gin, rum, and brandy.

Spain

The Commission found that the merger would lead to the creation of a dominant position in the Scotch whisky market. The merged company would have been over twice as big as its nearest competitor (Allied Domecq) in Spain. The Commission pointed to the scarcity of successful new entrants into the whisky market in the ten years preceding their investigation as evidence of significant entry barriers.

Ireland

The merger would combine the distributor Gilbeys of Ireland with 50% ownership of Cantrell & Cochrane. Thus the merged firm would have interest in undertakings with a strong combined share of distribution of vodka, rum, Scotch whisky, and brandy/cognac. The Commission was concerned that the merger would reduce the number of significant independent distributors in Ireland to two, as well as strengthen the dominant positions of the parties in Scotch whisky and brandy/cognac.

Belgium/Luxembourg

The Commission found that the merger would create market dominance in Belgium/Luxembourg in gin, vodka, and whisky.

PARTIES' UNDERTAKINGS AND COMMISSION'S CONCLUSION

The parties agreed to the following undertakings to remedy potential areas of concern identified by the Commission.

- Divest Dewar's and Ainslie's brands of Scotch whisky.
- Terminate the Wyborowa agency (vodka sales) in Belgium/Luxembourg.
- Appoint an independent third-party distributor for gin in Belgium/Luxembourg for at least nine years.
- Discontinue the Bacardi rum agency agreement currently held by Guinness in Greece.
- Dispose of certain interests in Ireland in order to ensure competition in distribution.[6]

The Commission concluded that the effect of all of these divestments as well as other undertakings were sufficient to address its concerns and allowed the merger to proceed.

3 Analysis

Many of the Commission's concerns with this transaction arise from the combination of horizontal competitors. We will not examine these horizontal concerns but instead will focus on the concerns raised by an alleged increase in portfolio power and an increase in barriers to entry through the control of distribution assets. A definition of portfolio power is given in the Commission decision: "in short the market power deriving from a portfolio of brands exceeds the sum of its parts."[7] This definition is in stark contrast to the

6 The identity of these divestitures is not included in the public version of the decision because of confidentiality concerns.

7 *Ibid.*, ¶38.

Chicago School concept of there being a single monopoly rent - in such a world, there is no ability for there to be more market power than the simple summation of the market power in each individual market. There are four possible sources of portfolio power:

(i) From the retailer's standpoint, if a firm has a sufficiently wide range of products, then the retailer might decide that it can save transactions costs by dealing with just a single firm. This type of benefit is the same as the efficiency reason for bundling discussed in Section 4.3.1 of the main report.

(ii) Second, a portfolio of products would provide the firm with economies of scale and scope. There are fixed costs of distribution and storage, and if these fixed costs can be spread over more products then there are overall cost savings to the firm.

(iii) Third, a broad portfolio could increase the potential for tying and bundling. A wide range of brands provides opportunities to offer discounts on bundles of different products. Also, in theory, a firm could tie the availability of a leading brand in one market to the purchase of a secondary brand in an alternative market. Another issue might be the ability to have bundled pricing. This is discussed in Section 4.4.1 of the main report.

(iv) Finally, a possible threat to refuse supply would have its effect magnified by the range of products that are potentially going to be withdrawn.

We note here that the first two of these sources tend to be pro-competitive and the later two are likely to be illegal given the current competition laws around the world.

In the proposed merger, as it was originally structured, there was the opportunity for significant economies in the distribution of the spirit brands of the merged firm. These economies will lower the costs of bringing to the market all of the products of the firm. While this represents an advantage the merged firm's products have over its rival's products, we believe that the competition authorities should welcome such cost savings as being beneficial to consumers. We do acknowledge that there are potential side effects from these advantages that need to be evaluated before allowing the merger to go forward. These side effects can be evaluated for their impact on two different types of competitors: existing competitors and potential competitors.

For the existing competitors, if the cost advantages are so great that competitors will be driven out of the market and once driven out unlikely to re-enter the market, then there could be concerns of higher prices in the future. In the spirit industry we are not aware of any concern about competitors being driven out of the market, so we cannot evaluate this concern in the proposed merger. If this was a concern, then there needs to be a balancing of the benefits of the greater competition from the future loss. In particular, one should compare the benefits to consumers arising from the competition that leads to the exit of competitors with the harm to consumers from the future higher prices. This comparison of benefits and harms also needs to be discounted over time.[8] This type of evaluation is further explained in the discussion of the GE/Honeywell merger in Chapter IV above.

8 Such an evaluation might not have to be conducted if there is a fix that can be imposed on the merger that leads to the enjoyment of the benefits of greater competition without the future costs of higher prices.

A second potential concern from the distribution economies is that it becomes harder for a new entrant into the spirits industry to obtain distribution of its products. The economies of scale in distribution make it unlikely that a new entrant can start with an efficient distribution network on its own and if there in not an independent competitive distribution network, then the new entrant might not be able to achieve the level of sales needed to justify the risky investment of the new product. The mechanism here is the same as the discussion of bundling to create an entry barrier in Section 4.4.2 of the main report. While we do not know if this was a concern in the spirit industry in the selected countries, it does appear to be a valid concern. One solution for this concern, though, is not to force the merging firms to divest brands and hence lose the potential benefits of the combined distribution systems, but to require that the distribution of the merged firm not be exclusive. With such a requirement, any new entrant can obtain the most efficient distribution for its product (if the new entrant desires such distribution), and thus there are no anti-competitive barriers to entry that are erected in the spirits market.

In addition to the economies of scale in the distribution of spirits, there could well be other advantages arising to the merged firm from having a broader portfolio of spirits. One would have to investigate whether or not entry with a single brand of spirit would be more difficult if the merger happened than otherwise. If so, then there would have to be an effort to evaluate how the merged firm could still gain any benefits from the merger, but also be able to grant these benefits to competing firms.

Another issue in this proposed merger was the ability of the merged firm to have bundled prices. Such prices might put competitors at a disadvantage. For example, if the merged firm offered a discount that increased with the number of different brands that a particular retailer purchased, then the merged firm's products could have an advantage over its rivals. This type of bundling and its theoretical effects are discussed fully in Section 4.4.1 of the main report. As is shown in that Section, the firm must have market power in each of the bundled products and not be able to price discriminate amongst its customers for the bundled pricing to disadvantage rivals. Furthermore, such an advantage is one of lower prices to consumers which in general should be encouraged. Observing that the merged firm would potentially have an advantage is not sufficient to justify forcing the firm to sell off some of its brand. As in the distribution case, there needs to be an analysis that the advantage is likely to lead to exit of existing firms (or the inability of new firms to enter), and if firms exit they are unable to re-enter in the future.

In this case, the types of evidence we would like to have is information on the strength of the brand preferences in particular markets, so we can evaluate whether a bundled discount is likely to be sufficient to overcome any existing preference for the competitor's products. One source of this information would be the past response to bundled pricing of the various firms. If this bundled pricing did not lead to any anti-competitive effects, then we need to have a reason why the increased ability to bundle would begin to have anti-competitive effects.[9] Another piece of evidence we would like

9 In its decision, the Commission noted that there were a number of examples of bundled discounts in the past. What is not available in the public version of the decision is what effect these bundled offerings had on the shares of the various competitors in the market.

to have is whether there is a single price to all customers or if there are negotiated deals. When each customer obtains a different bundled price, then there are not the competitive advantages to bundling as in the case when there is a single market price.

If the conclusion of this analysis was that the bundled prices were likely to lead to competitive harm, then we do not believe that the appropriate remedy is to require the divestiture of brands. A simple pricing rule that requires the firm to offer the same prices regardless of the number of brands the retailer buys would eliminate any anti-competitive effect from the bundled prices. Normally the Commission has been reluctant to accept behavioural undertakings that purport to alleviate competitive concerns. This reluctance arises because of the ongoing costs of having to monitor the proposed behaviour as well as a general concern that regulating a dominant firm is usually less efficient from society's standpoint than not having a dominant firm in the first place. In this type of bundling case, though, we believe that these types of concerns as to the remedy are not justified. First, the ongoing monitoring costs should be negligible as the customers of the firm are the natural enforcers. The rule (no bundled offerings unless the constituent parts of the bundle are available to be purchased separately on the same terms) is easy to evaluate and it is in the customer's own best interest to enforce the rule. Therefore, the customers would be the *de facto* enforcement agency, not the Commission. Second, the remedy is being imposed because there are benefits to the proposed integration that can only be enjoyed because of the merger. Society is overall better off by allowing the merger and this benefit is not outweighed by the small enforcement costs of the proposed undertaking.

IX
Interbrew and Bass merger

This chapter focuses on the case of the acquisition by Interbrew SA (Interbrew) of the brewing activities of Bass PLC (Bass) for £2.3 billion. In July 2000 the proposed acquisition was referred to the UK competition authorities by the European Commission. In August 2001, after the UK Competition Commission (CC) completed its analysis and necessary undertakings were fulfilled, the merger was consummated.

1 Background[1]

THE COMPANIES

Interbrew is the Belgian brewer of Stella Artois. Formed in 1987 it is the world's second largest brewer and owns brands such as Boddingtons, Dos Equis, Jupiler, Labatt, Rolling Rock, and Stella Artois. In the UK market, Interbrew brewed and distributed Stella Artois under a licence it had with Whitbread. It then acquired the brewing business of Whitbread PLC in May 2000.[2]

Bass Brewers was founded in 1777 in Burton upon Trent. Bass holds the UK's oldest registered trademark (1876). From 1967-1995 Bass was the UK's largest brewer. It owns the Bass, Hooch, Caffrey's, Carling, Grolsch (in UK), Tennents, and Worthington brands.

The CC estimated that the merger would create the largest brewer in Great Britain, with a market share of between 33 and 38 per cent and a portfolio of leading beer brands.[3] The merger would have also brought together many of the UK's best known and best selling lagers and bitters (Stella Artois, Boddingtons, Worthington and Caffrey's). Table 1 provides information on the sales and concentration in the British beer market from 1996 through 1999. Table 2 provides similar information on the on-trade beer distribution market in the UK.

1 The information in this chapter relies upon the report issued by The Competition Commission on the Interbrew SA and Bass PLC transaction, "A report on the acquisition by Interbrew SA of the brewing interests of Bass PLC", January 2001.

2 Report, Section 1.2.

3 *Ibid.*, 1.3. The market share in wholesaling and distribution of beer was 33%.

TABLE 1
CONCENTRATION IN THE BRITISH BEER MARKET

	Competition Commission data				AC Nielsen data			
	1996	1997	1998	1999	1996	1997	1998	1999
Scottish Courage	27.8%	26.7%	25.6%	26.0%	26.3%	25.8%	25.3%	25.6%
Bass Brewers	21.9	23	22	23.4	21.1	21.2	21.4	21.8
Whitbread	13.5	13.8	14.2	14.5	13.8	14.5	14.7	15.2
Carlsberg-Tetley	15.4	14.6	13.2	11.8	13.2	12.5	12.1	11.7
Guinness	6	5.7	5.7	5.6	6	5.6	5.7	5.5
Anheuser-Busch	2.5	3	3.4	3.2	1.6	2	2.3	2.2
Wolverhampton Dudley	1.3	1.7	2.8	3.1	0.9	1.6	2.2	2.5
Greene King	-	0.6	0.6	0.9	0.8	0.7	1.2	1.1
Others	11.5	10.9	12.6	11.5	16.3	16.1	15.1	14.3
HHI	1,720	1,691	1,566	1,625	1,542	1,519	1,503	1,545
Notional merger analysis including Heineken								
Interbrew		36.8%	36.2%	37.8%	34.9%	35.6%	36.1%	37.0%
HHI		2,325	2,190	2,301	2,124	2,132	2,131	2,209
Change in HHI		634	624	676	582	613	628	664
Notional merger analysis excluding Heineken								
Interbrew		31.6%	31.5%	33.2%	30.2%	30.9%	31.5%	32.1%
Heineken		5.2	4.6	4.6	4.7	4.8	4.6	4.9
HHI		1,997	1,898	1,996	1,841	1,836	1,844	1,894
Change in HHI		306	332	371	299	317	341	349

Note: "HHI" is the Herfindahl-Hirschman Index. The HHI is a measure of the concentration in a market and is obtained by summing the squared value of the market shares of the firms in the market.

Source: Competition Commission 2001, Interbrew SA and Bass PLC.

TABLE 2
CONCENTRATION IN UK ON-TRADE BEER DISTRIBUTION

Market distributor	1996	1997	1998	1999
S&N	25.6%	25.8%	26.4%	26.4%
Tradeteam	22.1	22.2	23.3	
WBC	10.5	10.2	9.5	9.4
Carlsberg-Tetley	12	12.4	11.4	12
Wolverhampton	2.3	2.9	4.6	5.2
Greene	1.5	1.6	2.1	
Independent	6.3	6.2	5.9	
Others	18.9	18.1	15.7	
HHI	1,419	1,436	1,504	
Notional post merger analysis				
Interbrew		32.3%	32.7%	32.7%
HHI		1,869	1,857	1,944
Change in HHI		449	421	439

Source: CC based on questionnaire responses by brewers.

2 Competition commission analysis

MARKET DEFINITION

The CC defined three markets: (a) the supply of beer by brewers; (b) wholesaling and distribution; and (c) the supply of beer by retailers. The report focuses on (a) and (b) which are the two markets that would have been affected by the merger. The geographic market for beer was defined as Great Britain.[4] An additional distinction was made, at the wholesale and distribution level, between on-trade sales (pubs, hotels and clubs) and off-trade sales (retailers) given the difference on packaging and distribution requirements.[5]

At the time of the merger the consumption of beer had been declining steadily. This decline was forecast to continue in the future. Within this overall declining trend, there are some countervailing trends. For example, the consumption of lager has increased. Also, off-trade sales have grown while on-trade sales have declined.

4 *Ibid.* 2.26.The commission excluded Northern Ireland, which was considered a separate market from Great Britain and was not affected by the merger (Interbrew had negligible sales in Northern Ireland).

5 *Ibid.*, 2.27 Draught beer accounts for over 90 per cent of on-trade sales, while off-trade sales are mainly of packaged beer, distributed by the multiple retailers or by independent wholesalers and cash-and-carry operators.

BARRIERS TO ENTRY

The report concluded that entry was difficult because of scale economies in brewing and packaging. The CC determined that the substantial investments needed to build an efficient-scale brewery represented a barrier to entry. Also, the CC believed that the need to invest in advertising and promotional expenditure represented an additional barrier to entry. These expenditures on advertising and promotion are sunk costs of entry as they would not be recoverable if entry failed.

With respect to distribution, an entrant was thought to have easy access to retailers in the off-trade segment.[6] The CC concluded that access to on-trade distribution was a barrier to entry and expansion in brewing.[7] Vertical integration (by brewers into pub ownership) was not considered a major deterrent to entry because of the Beer Orders.[8] Following the passage of the Beer Orders, the extent of vertical integration by brewers fell, especially among national brewers.[9]

PRICE DISCRIMINATION

Interbrew charged different prices according to the type of customer with whom it was dealing. Interbrew offered more attractive prices to multiple retailers than it did to independent free trade or independent wholesalers. The CC thought that the price differences observed were not entirely explained by differences in costs of serving these different customers. As a result of this price discrimination, the independent free trade, who were generally charged a higher price, found it difficult to compete with the retailers that had multiple sites and generally were charged lower prices. The CC believed that the merger would enhance the ability to price discriminate.

CONCLUSIONS

The CC concluded that the merger would strengthen Interbrew's portfolio of leading brands and lead to the creation of a duopoly - between Interbrew and Scottish & Newcastle plc (S&N).[10] The CC was concerned that the duopolists may find it mutually convenient to raise operating margins and, by colluding, to raise net wholesale prices. The CC believed that collusive behaviour would have been easier once the merger was implemented.

In its conclusions, the CC stated that consumers generally had quite inelastic demand for beer. Consequently, the CC believed that retailers would be able to pass higher wholesale prices that would result from the transaction through to consumers. The CC also expected the additional revenues from the higher prices to lead to an increase in non-price competition. This non-price competition was likely to raise entry barriers. The promotion of the leading brands by the two major brewers would create stronger brands which would impede the entry of new competitors into the market.

6 *Ibid.*, 2.41.

7 *Ibid.*, 2.49 and 4.43.

8 On 10 July 1989 the Government announced a series of measures designed to remedy the public interest detriments identified by the MMC 1989 report. Appendix 3.8.

9 *Ibid.*, 2.43.

10 *Ibid.*, 1.5.

The report also discussed the likely efficiencies arising from the merger. It concluded that the merger[11] would generate a market structure where Interbrew and S&N would have the largest and most efficient distribution networks. The CC recognised that competing brewers could rely on the centralised wholesaling and distribution arrangements offered by some multiple retailers. Even with such centralised services, entrants or smaller brewers would not have access to retailers that do not offer such services or the independent free trade. Thus, for these customers, Interbrew and S&N would effectively control the route to market.

Interbrew told the CC that it expected synergy benefits and cost savings from the merger. Interbrew also assessed the size of the benefits and the costs of implementing these changes.[12] The company believed that the synergies would enable it to continue to offer competitive pricing to all channels without further erosion of already tight margins. The CC, however, believed that the sum Interbrew paid for Bass Brewers (above its own estimate of fair value) was a premium that limited "any beneficial effects that consumers would experience from those synergies even if Interbrew realised all the synergies it claims are available."[13]

REMEDIES

Eventually, an agreement between the UK authorities and Interbrew was reached. This agreement allowed Interbrew to divest the England and Wales business of Bass Brewers Limited to Coors Brewing Company.[14]

3 Analysis of issues

In its final report, the CC focused on the effect of the horizontal combination of the two firms. For these reasons, this case might appear to not be appropriate given the subject of this study. We believe that there are several possible bundling and portfolio issues that could have arisen during the investigation. Thus we will go through the possible issues that could have arisen and discuss why we believe at the end of the day these issues were not troubling.

Interbrew reported that it believed Bass Brewers' products and its own product range were complementary (in the UK, Interbrew did not own or have a license to produce any major standard lager brand, while Bass Brewers did not own any major premium lager brand). In addition to the complementarities of the UK products, there were complementarities in the international operations. Bass operated in countries where Interbrew was not established-allowing easy international expansion for the Interbrew products. Similarly, Interbrew's international reach would open up major new export opportunities for Bass

11 *Ibid.*, 1.6.

12 The exact figures are omitted from the published version of the report for confidentiality reasons.

13 *Ibid.*, 1.9

14 This divestiture was the brewing assets as well as the brands owned by Bass Brewers, which included Carling - the best selling lager and beer brand in the U.K.

Brewers. Given the decline in demand for beer[15] in the UK, the international opportunities would allow for the combined company to enjoy economies of scale.

There remain two possible areas of concern. First, the concentration in the beer distribution market could have effects in the beer market. Second, there is a question of whether the broader portfolio of beer brands would allow the merged firm to exercise market power.

As discussed in Section 4.4.2 of the main report, gaining control of a complementary market such as distribution, can lead to entry deterrence. The entry deterrence arises because of the need for new entrants to enter into two markets simultaneously. The evidence in the beer distribution market, though, was that there were still opportunities for new entrants to gain distribution of their products. Interbrew claimed that the independent wholesale sector had increased in strength significantly in the two years preceding the merger. Two of the major independent national wholesalers were bought by major drinks organisations (The Beer Seller by H P Bulmer and Matthew Clark by Canandaigua, then renamed Constellation Brands). Since neither of these distributors was allied with either of the major UK brewers, the distributors should be willing to distribute a new entrant's products (if such products warranted such distribution).

Also, both the CC and Interbrew found in logistic companies a viable means to access distribution. An example of such a company is Wincanton. S&N, Carlsberg-Tetley, regional brewers and independent wholesalers had logistics operations. Bass contracted out physical distribution to Tradeteam, a joint venture with Exel, which was managed independently by Exel. While we do not have information on cost comparisons between in house distribution and logistic operators, given that existing companies use these logistics operators, we believe that they are a viable alternative for distribution of beer.

Another question the merger raises is whether after the merger Interbrew would be able to offer bundled discounts across its multiple different brands to the detriment of competition. The bundle of different beer brands could be thought of as a variety bundle (these issues are discussed at length in Section 4.4.4.1 of the main report). In particular, after the merger, if there had been no brands sold off, Interbrew would have had a number of different types of beer it could offer to its customers. By offering a bundled price for its beers to a particular pub, Interbrew could have affected the demand for a competitor's brand of beer at that pub. The effect of this bundle would be similar to that described in Chapter VII, the case study of the Aspen case. There is an important difference, though, in that while there likely are consumers of skiing that are locked in to using the Aspen areas, it is not obvious why there would be a similar lock-in having to do with the brands of beer that are on sale at a particular pub. While the variety bundle of Interbrew beers would affect the demand for a competitor's brand at particular establishments, there does not seem to be any effect from this across a correctly defined market (say all pubs in a particular area). If Interbrew was able to get all of the

15 The decline was from 65.5 million hectolitres in 1990 to less than 59 million hectolitres in 1999.Consumption decreased particularly in the on-trade, reflecting the continued trend towards increased off-trade consumption driven in part by increased on-trade retail prices and decreasing off-trade prices (which suggest that consumers are price sensitive).

pubs in a locality to accept its bundled offer, there could be issues, but given the current market shares of brewers given in Table 1, such a concentration of sales seems unlikely. In other words, the harm from the variety bundles tends to be that they result in other firms and products being excluded from a market and we do not believe that Interbrew would have the ability to cause such exclusion given its brands in the beer market.

There are some interesting empirical questions that can be raised in this market that would assist in evaluating whether this type of transaction would ever lead to competitive harm because of bundling of multiple beer brands. For example, when a brewer or distributor starts to offer a broader range of products, do competing brewers of one (or few) brands suffer? Also, it would be interesting to try and quantify the number of significant beer brands that would be necessary to exclude competitors. But, at the end of the day we reach a not very exciting conclusion - that there are not likely to be any competitive harm from Interbrew's ability to bundle more products.

X
SMG SRH - Scottish Radio case

In this chapter, we look at bundling of advertising across several different types of media. We show that the structure of the media markets in the UK is such that anticompetitive bundling is unlikely to occur. We conduct this analysis through the examination of the recent acquisition of additional share ownership of SRH by SMG. In March 2001 SMG plc (SMG), a company with business interests in several media markets, had increased its ownership of Scottish Radio Holdings plc (SRH) from around 15% to 29.5%. This acquisition was evaluated by the UK Office of Fair Trading (OFT).[1] After investigating the transaction, the OFT decided not to refer it to the Competition Commission and the transaction was consummated.

1 Background

THE COMPANIES

SMG is a media company with interests in television, radio, press, magazines, outdoor, and cinema advertising. SMG originated from the ITV franchise, Scottish Television, which acquired Caledonian Publishing (The Herald, a daily paper in Scotland, The Sunday Herald, and the Evening Times) in 1996, Grampian Television in 1997, Pearl & Dean (cinema advertising) and Primesight (outdoor advertising) in 1999 and Ginger Media Group (including Virgin Radio and Virgin FM) in 2000. SMG also has a minority interest in the national ITV breakfast-time broadcaster, GMTV (25% share), and Heart of Midlothian plc, the Scottish Premier League football club. In the year ending 31 December 2000, SMG had turnover of £300.5 million, pre-tax profit of £59.0 million and gross assets of £631.3 million.

SRH is the principal commercial radio operator in Scotland. The origins of SRH trace back to the assignment of a third commercial radio license in the UK in 1970. A group of local businessmen created a consortium in Glasgow and obtained the license. In 1974, they created Clyde radio. SRH is now running 9 local radio stations in Scotland and 43 local newspaper titles primarily in Scotland and Ireland. In addition, SRH is active in outdoor advertising. In the year ending 30 September 2000, SRH had turnover of £71.7 million and pre-tax profit of £16.5 million. The analogue radio business profits accounted for £11.1 million, while the press sector had more than £5 million profits.

1 "Completed acquisition by SMG plc of 29.5% shareholding of Scottish Radio Holdings plc," Report under section 125(4) of the Fair Trading Act 1973 of the Director General's advice, 21 June 2001, to the Secretary of State for Trade and Industry under section 76 of the Act.

At the time of the investigation, SMG had no director on the board of SRH and was not involved in the day-to-day running of SRH's business. SMG was the largest shareholder in SRH (the next largest held 10%), which gave SMG veto power on resolutions where super majority voting was required. The OFT concluded that since SMG had the ability to influence the policies of SRH, the acquisition should be considered a qualifying merger.

The UK Broadcasting Acts of 1990 and 1996 limits cross-media ownership. These restrictions prohibit a company that controls an ITV license from also controlling radio licenses in the same coverage areas. Thus SMG would not be allowed to increase its ownership in SRH above 30% under these broadcasting acts.

2 OFT analysis

The OFT reviewed the likely effect of the transaction in three markets. First, in radio advertising, there was no overlap at the local level. SRH broadcasted solely in Scotland, and SMG broadcasted in London and nationally (Virgin Radio). After the transaction, the parties would hold approximately 14.8% of the revenue in the national radio advertising market. Second, local newspaper advertising was a separate relevant market. SRH operated 12 titles in Scotland, which were all weekly local papers, whereas SMG's titles were regional, or Glasgow area papers. Thus there was no overlap between the two companies and there was no competitive concern in this market. Finally, the market for outdoor advertising was considered national, and the incremental increase in market share due to the merger was negligible. At the regional level the parties had shares lower than 25% in the sub-markets for 6 sheet and 48 sheet sites. The parties would hold less than 30% of the market for 48 sheets (20' by 10' billboards) and 96 sheets (40' by 10' billboards). Thus it was concluded that even after the transaction the outdoor advertising market was reasonably competitive with four credible competitors. Thus, the OFT concluded that the merger did not raise competition concerns in any of the three markets. The inquiry then analysed the portfolio effects of the merger.

Possible portfolio effects were considered given that the merger put together the leading television and radio stations in central Scotland, covering Glasgow and Edinburgh, as well as SMG's three newspaper titles. The aim of the analysis was to evaluate whether the merger would have reduced competition between radio and newspaper or television advertising. OFT also evaluated the possibility that parties would have bundled advertising packages across all its media interests to the detriment of customers.

The OFT was sceptical that economies of scale or scope could arise given the "disparate production, distribution and marketing processes for television, newspaper and radio advertising."[2] For example, SMG reported to the OFT that the display media industry was characterised by specialists "selling and buying of each particular media to reflect the requirements of specialist advertising agencies."[3] There was also no evidence that customers had a preference for purchasing all their advertising requirements from one source. A SMG competitor that held businesses in radio, magazines and television, had

2 OFT report at page 3.

3 *Ibid.*, page 3.

previously attempted a central selling strategy but then reverted to separate selling arrangements. A third party, Carlton Sales Limited, sold the majority of its television advertising revenues. Some evidence also was provided by SMG that in spite of being active across several media sectors, it never chose to integrate its sales division. Finally, the ITV television licence prevented conditional selling of advertising.

Given these characteristics of the industry, the OFT concluded that it was unlikely that the merger would result in anticompetitive effects from bundling different products. The OFT also concluded that the competitiveness of each individual advertising display market, made refusal to supply an implausible strategy.

3 Analysis of issues

This case illustrates our theoretical point (described in section 7.1 of the main report) that firms can have multiple types of relationships at the same time. Advertising across different mediums is complementary for some advertisers, while it is considered substitutes for others. For example, a national advertising campaign is likely to view the different mediums to be complementary. But, local advertising in papers and on the radio, is likely view the different mediums as substitutes. Taking an industry-wide view will tend to neutralise these two effects. We think it would be a mistake to look at a zero aggregate effect and conclude the markets are independent. A better approach is to look at how each of these groups are impacted separately. For the customers who see the different mediums as substitutes, this transaction should be analysed as a horizontal merger. For the customers who see the different mediums as complements, this merger should be viewed with an eye towards potential bundling effects.

For the question of bundling effects, we examine the likelihood that there will be the ability to exercise portfolio power from the transaction. These types of effects can arise because there are economies of scale and scope that can be enjoyed by the firm or through the artificial creation of such effects through the use of bundling and/or tying. There was no evidence that there were genuine economies of scale or scope that could be enjoyed across the different types of media advertising, so we will explore the possibility of creating such economies through pricing and/or bundling of the various products.

The evidence suggested that in the past the customers had not welcomed efforts to bundle the different types of advertising. We do not know if this failure in combining the sales of the different types of advertising was because of poor performance on the part of the firm or if customers truly were not interested in bundling across the different advertising markets. We would expect there to be a number of customers that advertise in all of the different media.[4] It would seem that these customers would welcome the opportunity to place multiple adverts through a single seller. If so, this would be a case where bundling creates value, much as the way a car maker creates value by bundling together the steering wheel with tyres. The failure of the other firms to construct a bundle of products suggest that the consumer preference for a bundle, if it does exist, is not strong.

4 This commonality of customers across the different advertising media would be for both firms that are advertising and for the agencies that are creating and placing the advertisements.

A key fact to consider is that the OFT determined that there was competition in each of the individual markets. *Thus our theory of bundling suggests that there is no opportunity for bundled pricing to cause immediate competitive harm*. As explained in Section 3.2 of the main report, in these competitive conditions, there is no way to create market power through bundling. There is no Cournot effect with competitive markets, nor is there a potential to use bundling as an entry deterrent. Since all components are available at competitive prices, metering is also ruled out. Nor is there a view that a combined SMG-SRH would have a unique ability to offer a bundle. The one possible concern is the elimination of a competitive complements market, as in the ISO market with Kodak (as described in Chapter VI above), but this issue is not relevant to the SMG-SRH case.

So, as the OFT concluded, each of the media markets is individually competitive, so there is neither a horizontal effect to be concerned with nor a bundling effect to be concerned with.

XI
Foreign package holidays and insurance

The media, especially when holiday times draw near, devote remarkable attention to holiday prices and practices in the travel industry. Not infrequently we read alarming titles such as "Anger Over Package Holiday Extras"[1] or "The Tourist Trap in Your High Street".[2] These articles document anecdotal consumer outrages about pricing of holiday packages. These outrages include excessive pricing for travel insurance and other extra, add-on prices that are not clearly advertised. At the beginning of 2002, two-thirds of the travellers abroad bought their holiday insurance from travel agents. Our interest in the case arises from the wide-spread strategy of bundled pricing of holiday packages in the United Kingdom. In this chapter we review the industry and the recent investigation into this industry in the UK and show that the bundling has not lead to anticompetitive effects. Instead, the bundling of holidays and insurance appears to allow agencies and tour operators to hide the individual prices of the components of the bundle. The MMC published a report in 1997 which focused on the foreign package holiday industry. In this chapter we discuss the findings and conclusion of this report especially as they relate to the tying of insurance to foreign holiday packages.

1 Background[3]

Following complaints by independent participants in the travel industry regarding increasing vertical integration in the market and possible anti-competitive practices, the UK Monopolies and Mergers Commission (MMC) investigated the supply of travel agent services and tour operator services in relation to foreign package holidays in the UK. These were holiday packages that involve transport between the UK and a foreign destination along with accommodation. The MMC concluded that there was some limited competition between foreign package holidays and other types of holiday packages, but found that the independent holidays and domestic packages did not provide an effective constraint on prices for foreign package holidays. The MMC also concluded that while there was some substitution between face-to-face sales and other sales techniques such as telephone and direct mail, the market was limited to face-to-face travel agency services.

1 "Anger Over Package Holiday Extras," The Independent, Thursday 11 July 2002.

2 "The Tourist Trap in Your High Street", Guardian Ltd, Saturday, 26 January 2002.

3 "A Report on the supply in the UK of tour operators' services and travel agents' services in relation to foreign package holidays," United Kingdom Monopolies and Mergers Commission, December 1997.

Most foreign holidays from the UK are to destinations within continental Europe. The majority involve air travel. Holidays are packaged by tour operators and sold to the public directly (approximately 80%) or through travel agents (20%). Table 1 provides market shares for 1997 of the tour operators. Table 2 provides the same information for travel agents.

TABLE 1

Operator	Parent Company	Market Share
Thomson Tour Operations Ltd.	Thomson Travel Group (TTG)	24.6%
Airtours	Airtours	15.9%
First Choice Holidays & Flights	First Choice Holidays	10.1%
Sunworld Ltd. & Thomas Cook	Thomas Cook Group	4.2%
Inspirations East Ltd.	Inspirations plc	2.3%
Other		42.9%
Total		100.0%

TABLE 2

Agent	Parent Company	Market Share
Lunn Poly Ltd.	Thomson Travel Group (TTG)	23%
Going Places Leisure Travel	Airtours	16%
Thomas Cook	Thomas Cook Group	12%
A T Mays	Carlson	6%
Other		43%
Total		100%

The Commission found that the tour operators engaged in practices which distorted competition and that their combined market share was over 25%. It concluded that there was a complex monopoly situation in existence.[4] The Commission found that the travel agents engaged in practices which restricted competition and that they held a combined market share in excess of 25%. The Commission found, among other practices[5], that the tying of travel insurance to discounted holidays was detrimental to the public interest.[6]

2 MMC report

With respect to tying, the Commission found that the parties engaged in the following harmful practices. First, the MMC found that the tour operators were:

4 "Monopoly situations" can exist when there is at least a 25% market share by one member, according to section 7(1)*(a)* or *(b)* of the Fair Trading Act 1973.

5 The other two relevant findings were "most favoured customer" clauses specifying that the travel agent offer the same discounts on a tour operators' package holidays that it does on other operators' packages and failure to sufficiently notify customers of ownership links between tour operators and travel agents where vertical integration takes place.

6 MMC report at 47.

- pricing foreign package holidays so that the component parts of the total price, including any holiday insurance, were not transparent to the consumer;
- tying travel insurance to the purchase of foreign package holidays in certain circumstances, particularly where a discount was offered.

Furthermore, the MMC found that the travel agents were:

- marketing foreign package holidays in such a way that the prices of the individual components, including any holiday insurance, were not transparent;
- making the purchase by consumers of travel agent's own travel insurance a condition of obtaining a discount on certain foreign package holidays.

In theory, either tour operators or travel agents could have practiced tied discounts to the purchase of travel insurance. The investigation found that for tour operators, "the practice of tying discounts to the purchase of insurance occurs in only a small minority of all sales of foreign package holidays" and that it "does not constitute a practice which prevents, restricts or distorts competition."[7] However this was not the case for travel agents. Roughly 60% of all foreign package holidays sold by travel agents were discounted, and 50% of those were conditional on the purchase of insurance. According to the MMC, the practice "allows the travel agent to inflate the advertised discount on the foreign package holiday by reason of the sometimes large margins made on the sale of insurance."[8]

The travel agencies claimed that the practice benefited consumers by making it more likely that they would be covered by insurance, tailoring the insurance to the specific holiday package, and offering overall cheaper prices. In what follows we describe the sales policy (with respect to bundling holidays and insurance) of the main factors in the travel industry and our view on the Commission's investigation.

Thomson Travel Group (TTG)

TTG is the parent company to the tour operator Thomson Tour Operations, and the travel agent company Lunn Poly. Thomson Tour Operations did not offer any insurance-linked discounts. Lunn Poly, however, "made its discounts conditional on the purchase of its insurance."[9] Since 1994, over 70% of Lunn Poly's sales were packages that included discounts and insurance. TTG argued that this strategy was a pro-competitive practice as it was an important driver of price competition. In addition, TTG argued that bundling was needed to "protect its own brand image from the adverse publicity which would follow from one of its customers experiencing serious trouble overseas."[10]

Airtours

Airtours runs both the Airtours tour operating company and the travel agency Going Places Leisure Travel. An Airtours holiday requirement was that the customers take an insurance policy of equal or greater protection than those offered by Airtours

7 MMC report at 40.
8 *Ibid.* at 40.
9 *Ibid.* at 132.
10 *Ibid.* at 177.

themselves. Its tour operating company offered discounts linked to insurance, which accounted for less than 5% of its sales. Going Places frequently offered such tied deals. Discounts were always conditional on the purchase of Going Places' insurance.[11] Its view was that this bundling was not harmful to consumers as they are able to choose the source for their insurance. Those consumers that are highly price sensitive in purchasing foreign package holidays for their insurance, would seek information about insurance options. Although Airtours considered a remedy to be unnecessary, they stated that any remedy should apply to "all tour operators and travel agents who would or might otherwise engage in the practice."[12]

Thomas Cook Group (TCG)

Sunworld Ltd. and Thomas Cook Holidays (TCH) are tour-operating companies owned by TCG. TCG is also the parent company of the Thomas Cook travel agency. Sunworld and TCH have similar policies whereby holiday prices are not linked to the purchase of insurance, but adequate insurance is required. Less than 1% of their customers purchase travel insurance from the TCG operators. However, the travel agent arm of Thomas Cook did make its discounts conditional on the purchase of insurance. TCG claimed that this tie was clearly advertised. TCG believed that the discounts were not against the public interest since consumers were aware of the choices in insurance and were "able to make price comparisons."[13] Similar to the other operators, TCG felt that bundling facilitated product differentiation and enhanced competition and that consumers benefited from the tie. TCG believed that by prohibiting the tying of insurance to discounts, the result would be a decline in innovation, higher prices, and more uninsured holidaymakers. TCG recommended the alternative remedy of "the introduction of a statutory cooling-off period of seven days for all sales of travel insurance, whether linked to discounts or not...[to] give consumers time to seek alternative suppliers of insurance and to compare their merits."[14]

First Choice

Finally, First Choice tour operators had a policy requiring customers to have insurance (from either First Choice or any other source). For holidays purchased through agents, First Choice never tied its prices and discounts to insurance policies. Within the First Choice direct sales business (Eclipse), some deals were conditional on the purchase of First Choice insurance. A small portion of the holidays were sold directly to consumers. According to First Choice, most travel agents required holidaymakers to purchase the agents' insurance to receive discounts. First Choice noted that in the market for insurance that should have been competitive, the prices for travel insurance products were "remarkably similar" (only a 5p difference between insurance for 14 nights offered by Lunn Poly, A T Mays, and Thomas Cook).[15] First Choice believed that customers were

11 *Ibid.* at 185 and 186.
12 *Ibid.* at 191.
13 *Ibid.* at 194 and 195.
14 *Ibid.* at 199.
15 *Ibid.* at 201 and 202.

losing the benefit of part of the discount by buying overpriced insurance. It stated that the higher premiums were used to fund discounts and customers were discouraged by this apparent discount from shopping around for alternative products and better value. First Choice stated that in its direct sales business it had "no alternative but to tie the sale of insurance to its discounts as its own headline prices had to be comparable with those (already tied to insurance purchase) on the high street."[16] The company supported the remedy that prohibited the tying. It felt that this would increase consumer awareness of insurance sales and pricing. First Choice said that it would not favour a remedy that discouraged travellers from carrying insurance.

Independent participants in the travel industry argued that the practice of tying insurance to discounts misled consumers and that the insurance prices offered in the tying arrangement were higher than those available separately from other sources.

The MMC concluded that the practice of tying insurance distorted competition between travel agents. Lunn Poly, Going Places, Thomas Cook Group, A T Mays and other travel agents were found to have tied insurance. The MMC stated that besides misrepresenting prices, tying mislead consumers and was not in the public interest.

The MMC noted that the tying should be "distinguished from bundling various services, for example free taxi transfers from airport to hotel... Such services are sometimes referred to as being offered 'free.' [The Commission did] not regard bundling as inherently objectionable as it does not mislead the consumer. An offer of 'free' travel insurance does not mislead consumers as to the price of either the holiday or the insurance element."[17]

REMEDIES

The MMC recommended that insurance tying be prohibited. To prevent the tie just being shifted upstream to the tour operator level of the transaction once the remedy is enforced, the MMC proposed applying the ban to both travel agents and tour operators, and to all companies regardless of size. Offers of "free" insurance would continue to be permitted.

On 10 August 1998, the Minister for Competition and Consumer Affairs signed an Order under the Fair Trading Act 1973. The Order made it illegal for a travel agent or tour operator to "discriminate against any customer in the price they charge for a foreign package holiday, or to make an additional charge, if the customer does not buy insurance with the holiday." The Minister opined "consumers should not be forced to take out insurance which may not be competitively priced or does not meet their needs in order to obtain a discount on a holiday. Nor should they have to pay more for their holidays because travel agents are discouraged by tour operators from offering discounts they would otherwise be prepared to offer."[18]

16 *Ibid.*.

17 *Ibid.*, at 47.

18 DTI press release, 10 August 1998.

3 Current market conditions

Some four years have passed since the remedy was enacted. Below we describe how the major players have responded to these changes in the market.

TTG/Lunn Poly[19]

Lunn Poly now offers its foreign holiday packages with the option of purchasing non-TTG insurance. Lunn Poly offers "silver" and "gold" insurance packages, as well as an excess waiver and the chance for customers to supply their own insurance. It requires customers to carry some form of travel insurance. Lunn Poly requires travellers to provide the company and policy number of the insurance company if insurance is not purchased with the trip. In this case, the customer is also required to release Lunn Poly from any responsibilities or fault arising from inadequate insurance coverage. Lunn Poly has chosen to offer other bundled discounts with its packages, such as free car upgrade, 25% off per person, free theme park ticket upgrade, and £20 off when booking online.

Airtours/Going Places[20]

Going Places (now known as My Travel) now accepts insurance other than its own if the insurance gives comparable coverage to the holiday traveller as the insurance offered by Going Places. Examples of ways in which My Travel now offers bundled discounts includes resort transfers, pre-bookable seating, luggage allowance, free and reduced child prices, free admission to airport play areas and children's clubs at resorts, and £20 off when booking online.

First Choice[21]

First Choice lists a total price with and without insurance for its online package holidays. Like other travel companies, First Choice requires the traveller to carry insurance. Examples of ways in which First Choice offers bundled discounts includes savings on airport parking, commission-free holiday money, free welcome pack, and £40 off per couple when booking online.

TCG[22]

The Thomas Cook Group offers "Classic Travel Insurance" and "Travel Insurance" packages to customers. Travellers can also opt to purchase insurance from other providers. Examples of ways in which TCG now offers bundled discounts include free insurance, up to 50% off, and free child places.

19 http://www.lunnpoly.com/etail/.
20 http://www.going-places.co.uk/.
21 http://www.firstchoice.co.uk/.
22 http://www.thomascook.co.uk/bold/homepage.htm?CC=1

Other

The Association of British Insurers (ABI) have a published information sheet that estimates the cost of holiday travel insurance at around £25-30 per adult for up to 15 days in Europe and the Mediterranean. For the rest of the world, comparable trip insurance would be about £40-50, according to the ABI. Because of the high risks associated with ski vacations, winter sports holiday insurance is about twice as expensive as that for summer travel. Travel insurance can be purchased from a variety of sources, including the Post Office, American Express, Tesco, Boots, ASDA, and others. The results for similar packages for 2 people travelling from the UK to Europe for a 14-day holiday are shown in Table 3.

TABLE 3
PRICE COMPARISON (2 PERSON 14-DAY EUROPEAN HOLIDAY)

Company	Type	Parent Company	Basic Insurance Price	Extended Insurance Price
Lunn Poly Ltd.	Agent/Operator	TTG	£63.98	"Gold" £83.98
Thomas Cook	Agent/Operator	TCG	£59.98	"Classic" £79.98
Travelcare	Agent/Operator	Co-operative Group	£54.00	
My Travel	Agent/Operator	Airtours	£45.98	"Gold" £65.96
Direct Line	Insurance		£45.60	
First Choice	Operator	First Choice	£40.00	
Trailfinders	Insurance		£39.00	
Voyager	Insurance		£33.81	"Gold" £47.54
TPU	Insurance		£27.73	
Worldwide Travel Insurance	Insurance		£24.70	"Super" £30.40
Primary Direct	Insurance		£24.47	
CostOut	Insurance		£23.10	"Super" £24.20
Insure & Go	Insurance		£21.80	"Standard" £28.50

4 Economic analysis

Despite the remedy imposed by the MMC four years ago, travellers from the UK may still be paying more for the convenience of purchasing insurance from travel agents (see Table 3). The BBC reported that as of early 2001, holidaymakers "could be paying up to four times" the lowest price for insurance. Up to 60% of the price of the insurance went to travel agents' commission.[23]

Similarly, The Guardian[24] refers to a report by the Research Department that showed that single trip coverage for a family of four in Europe could be obtained for just over £18 via TravelPlan Direct and over £95 through travel agents' Airtours Winter Sun (the Research Department rated the coverage supplied by Airtours as inferior to Travel Plan's four star coverage). Other newspapers and travel websites report similar figures with price ratios for the same products of 589%[25] and 614%[26] between direct insurance providers and travel agencies.

BUNDLING AS A WAY TO OBSCURE PRICES

The bundling of insurance with foreign package holidays did not seem to lead to any competitive distortions in either the travel agent market or the tour operator market. Both of these markets seemed to be competitive both before the remedy was imposed as well as after. This is not a surprising conclusion since, as is shown in section 3.2 of the main report, there is no ability to create market power from bundling when the markets that are bundled are competitive. There also appears to be no way to eliminate the complementary industry that currently supplies travel insurance through this bundle, so this case is different from the Kodak case presented in chapter VI above. In most cases, consumers were able to buy holiday packages and insurance separately. The main economic rationale for the operators and agencies to sell bundles of holidays and insurance seemed to be to advertise holiday packages at very low prices, while still earning a competitive margin through inflated insurance prices.

The tour operators generally felt that the bundles were an aspect of competition in their industry. Also, consumers appear to prefer to purchase bundles as they have continued to purchase insurance from the tour operators and travel agents even though such insurance appears to be higher priced. We do not know whether the travel agents and/or tour operators informally discourage consumers from shopping around for insurance, which could explain some of the purchase activity by consumers of the higher priced insurance. There are also transaction costs for the consumer associated with obtaining

23 Http://news.bbc.co.uk/hi/english/uk/newsid_1130000/1130574.stm, "Clients Overpaying for Travel Insurance." BBC News online, 22 January 2001. Viewed 20 May 2002.

24 "Choose the Right Travel Policy", Guardian Ltd, Wednesday 15 August 2001.

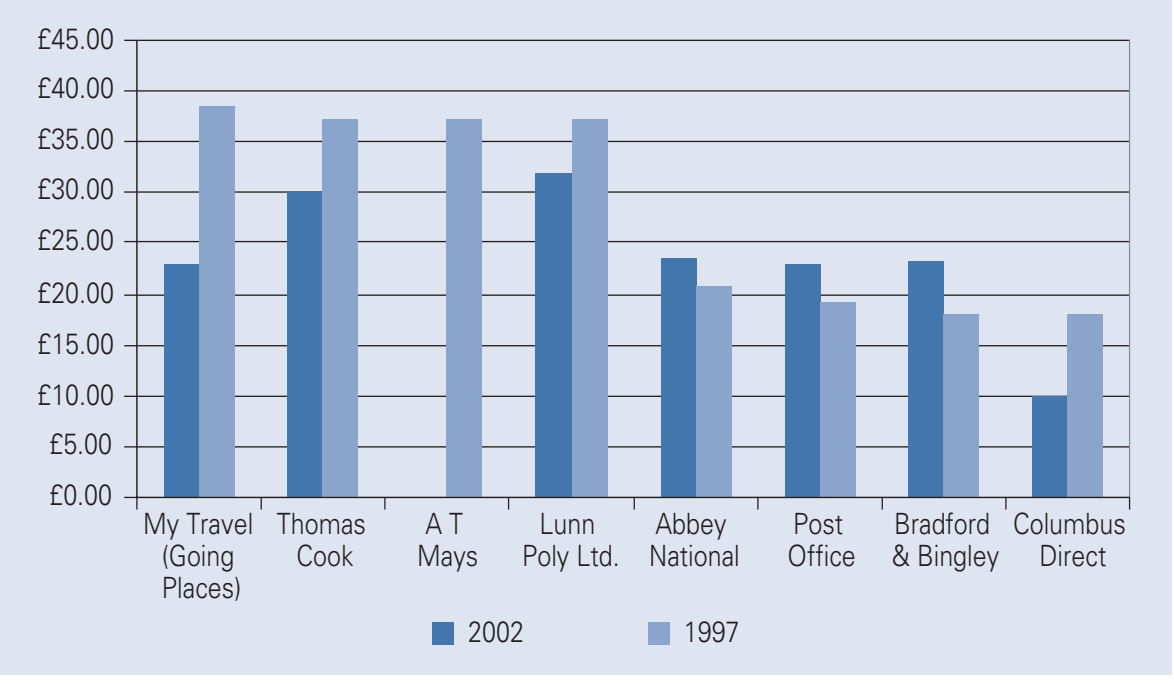
25 In 2001, insurance for a family of four to spend two weeks on holiday in Florida cost £46 from a direct insurance provider, while it cost £270 from Thomas Cook travel agents. "Family Travel, Everything on Holidays and Travel with Kids." Family Travel online: http://www.family-travel.co.uk/practicalitites.

26 In July 2000 a family of four going to Spain could get higher levels of protection from a £22 policy purchased online from CostOut than under the £135 insurance sold through Thomas Cook. Wright, Simon. "Money: Don't be Taken for a Ride on Travel Cover." Sunday Mirror, 30 July 2000.

insurance from a third-party - both the cost of making the additional purchase as well as the cost of having to prove to the tour operator that an adequate third-party insurance policy has been obtained. We do not know the relative importance of these two effects; whichever one is responsible, this does not appear to be a competition issue as there remains competition in all segments of this industry.

The particular remedy that was imposed appears to be the correct one in addressing the problems associated with the deceptive pricing. Forcing the tour operators and travel agents to not make discounts on part of the package contingent on purchasing the entire package allows consumers to value all of the components of the package separately. Figure 1 shows the costs of insurance from various sources since the remedy was imposed. It might be worthwhile to investigate why consumers appear to still be purchasing the majority of insurance from the high price source. If it turns out that this behaviour is the result of the added costs associated with buying the insurance from a different source than the travel company, then perhaps there should be an effort to try and reduce these costs. If the current behaviour is the result of some other type of activity that is distorting consumer purchasing decisions (such as heavy handed sale tactics by the travel agents), then that perhaps should be looked at to see if there is something that can be done to allow consumers to make the lower cost purchases.

FIGURE 1
PRICE COMPARISON (1 PERSON 14 DAY EUROPEAN HOLIDAY)



XII
BT telephone and internet bundling

In November 2000, British Telecom (BT) announced a new tariff package (SurfTime) for residential customers, including two new pricing schemes for off-peak internet access on an unmetered basis. One year earlier, in December 1999, BT had announced an initial SurfTime version of the SurfTime product, which was investigated by Oftel. The Director General of Telecommunications investigated this original pricing offer. The investigation examined whether the new pricing scheme would leverage BT's dominance in the markets for local and national voice calls into the internet access market. "Specifically the Surf element would be offered in a bundle together with voice calls at a marginal price below cost."[1] In this chapter, we review this case, especially in light of the results in section 4.4.1 of the main report.

1 Background

In November 2000, BT announced BT Surf Together. The product provided low voice call prices and unmetered off-peak internet access calls. BT Talk & Surf Together included the low voice rates of BT Together, plus unmetered off-peak fees for both internet access calls and local voice calls.

BT's Surf product does not provide internet access on its own, rather it allows internet access calls to be placed during off-peak times at an unmetered rate. The user must separately contract with an Internet Service Provider (ISP) to receive Internet service. Off-peak periods were Monday to Friday 6pm through 8am and all weekend. Unmetered Internet calls are those calls placed to particular numbers so the call traffic can be segregated from the switched network traffic. This allows BT to separate internet traffic from voice calls. By keeping the Internet traffic separate, BT is able to more efficiently operate its network. BT has offered the stand-alone product, SurfTime, since June 2000.[2]

Oftel investigated the initial SurfTime product, announced in December 1999. Their view was that it was "important that other industry players should be able to compete with SurfTime."[3] Oftel's supervision caused BT to alter its plans for SurfTime, to allow other telecom companies' access to wholesale services in order to compete.[4]

1 Investigation By The Director General Of Telecommunications Into The BT Surf Together And BT Talk & Surf Together Pricing Packages, 4 May 2001, ¶4.

2 *Ibid.*, ¶5.

3 Oftel letter to Internet Protocol Operators dated 23 February 2000.

4 BT revised the price of SurfTime and it reduced the original five tariffs down to three.

BACKGROUND ON INTERNET CALLS

One of the primary methods for consumers to access the Internet is through the telephone network. In the UK, prior to 1998, consumers paid both local call charges and an ISP's monthly fees in order to access the internet. The ISP provider Freeserve was launched in 1998 by the Dixon group. Freeserve was the "first company to offer a mass market, subscription-free Internet access service for the cost of a local phone call."[5] In other words, Freeserve did not charge its customers for providing the ISP part of the Internet connection. Freeserve was able to make such an offer to its customers because of the structure of Telecom regulation. In particular, for any phone call that is placed, the carrier that terminates this call is paid a per minute fee by the firm that originates the call. So, in this example, a BT customer who subscribes to Freeserve pays BT the cost of a local phone call to connect to the Internet but pays nothing to Freeserve. Since this call is terminated on the Freeserve network, BT pays Freeserve the terminating access rate. The level of the terminating access was set by the regulators at a level such that BT paid "more than two-thirds of its call revenue to Energis, the telco whose ISP division, Planet Online, [operated] Freeserve on behalf of Dixons. Given sufficient economies of scale, that income alone is enough to fund the service."[6] The SurfTime product by BT was designed in such a way that it would not have to pay such a high rate for its terminating access to ISPs. Therefore, this product was a threat to the business model upon which Freeserve was based.

In June of 2000 (at the time BT launched SurfTime), Freeserve initiated a program whereby members would subscribe to BT SurfTime for £5.99 and get £1.00 a month back from Freeserve. Now owned by the Wanadoo Group, Freeserve continues to offer a pay-as-you go free service (for the cost of local calling), as well as £10.99 unmetered night/weekend (with BT Surf), and £13.99 unmetered anytime service.[7] In addition to Freeserve, there are other providers of these services. The offers from some of these competitors include as well as the BT offerings were:

- Tiscali offered free Internet calls during non-peak hours for £11.99 per month;
- One.Tel offered a flat rate of £12.99 per month for unlimited Internet use; and
- The offers from BT and its subsidiaries shown in Table 1:[8]

2 Oftel's analysis

The EC has determined that dominance can be presumed if a firm has over 50% of the market. In the UK, "BT holds a dominant position in the market for wholesale call origination on fixed telecommunications networks."[9] Oftel also believed that BT was "dominant in the markets for local and national retail voice calls for residential customers on fixed telecommunications networks."[10]

5 Freeserve Company Information, www.freeserve.com. Viewed 30 May 2002.

6 Phil Wainewright. "Free access reaches new users." ASPnews.com 20 February 1999. www.aspnews.com/news/article/0,,4191_373921,00.html Viewed 30 May 2002.

7 Freeserve Company Information, www.freeserve.com. Viewed 30 May 2002. "Freeserve Now Pays Its Members to Surf the Web." Freeserve Press Release 01 June 2000.

8 The ISPs BT Internet and BT Connect are wholly owned subsidiaries of BT, making BT a vertically integrated supplier in internet access. BT provides call origination, termination, internet access calls, and internet service.

9 Oftel investigation, ¶9.

10 *Ibid.*, ¶9.

TABLE 1
INTERNET ACCESS AND ISP PRODUCT PRICES 21 MAY 2002

Product	Price	Description
BT SurfTime Anytime	£19.99	unlimited on-peak and off-peak surf calls
BT SurfTime Evenings & Weekends	£5.99	unlimited off-peak surf calls
BT Together	£11.50	special call rates
BT Together with unlimited local calls	£14.50	unlimited local off-peak calls, special rates for other calls
BT Together with unlimited UK calls	£18.50	unlimited UK off-peak calls, special rates for other calls
BT Together with unlimited Surf calls	£14.50	unlimited surf calls (0844 04) off-peak, special rates for other calls
BT Together with unlimited Local & Surf calls	£19.50	(see combination of local and surf above)
BT Together with unlimited UK & Surf calls	£23.50	(see combination of UK and surf above)
BT pay-as-you-go calls to ISPs	£0.00	1p per minute day, 0.6p per minute evening, and 0.5p per minute weekend
Freeserve No Ties	£0.00	customer pays phone account charges, but no fees from Freeserve
Freeserve AnyTime	£13.99	unlimited internet calls on-peak and off-peak
Freeserve HomeTime	£10.99	unlimited off-peak internet calls (£5 to BT for SurfTime and £5.99 to Freeserve)
Freeserve Unlimited Time	£10.00	service suspended 08/01. £10 in national & international calls or unlimited internet anytime.
BTopenworld Anytime	£15.99	unlimited internet calls on-peak and off-peak, no additional call access charges
BTopenworld Pay-as-you-go	£0.00	calls charged at BT's standard local call rate
BTopenworld for BT Surf packages	£6.99	unlimited off-peak internet access, standard local call rate on-peak. BT SurfTime required (min £5)
BTopenworld Broadband	£29.99	unlimited internet access via broadband connection (installation fee additional)

Sources: www.bt.com, www.freeserve.com

In the report, Oftel stated that it was concerned of the potential for anticompetitive behaviour through the horizontal leveraging of a firm's market power in one retail market into another market. "In this case, the *existence* of a bundle containing both retail voice calls and retail internet access would not, on its own, be anti-competitive, because BT also offers tariff packages which do not bundle these services together... But... the issue in this case is the price at which the Surf element is being offered in the two Packages which were investigated."[11]

11 *Ibid.*, ¶11.

A second possible source of anticompetitive behaviour under investigation was vertical leveraging. Oftel reviewed whether BT could distort competition in wholesale termination of internet calls and retail internet access. BT had "the *potential* to restrict or distort competition in retail internet access markets and wholesale call termination of internet calls through the control of the margin available to competitors between the prices for its retail unmetered tariffs and the charges for wholesale call origination."[12]

Internet Access Markets

The UK national retail market for Internet access is comprised of the provision of ISP services and Internet access calls from the consumer to the ISP. Oftel concluded that the retail market includes both of these components because in order for a consumer to use a minute of Internet access, the user needs both a minute of access calls and ISP services.

A second internet access market is that of wholesale services. Wholesale services consist of call origination (from consumer to the point of hand-over) and Internet call termination (from hand-over to the ISP). Both halves of the call are necessary for an Internet access call to exist. Therefore, the report concludes that there are separate wholesale markets for call origination and call termination.

Wholesale Call Origination Market

The report examines the wholesale call origination market. Oftel concludes that mobile network origination is not an effective demand side substitute for fixed line origination and so should not be included in this market. It was estimated that BT's share of wholesale call origination by volume was 81% for residential customers and 73% across all customers, the Director concluded that BT was dominant in the market for wholesale call origination on fixed networks in the UK.

Retail Inland Voice Call Market

In its investigation, Oftel focused on inbound calls on fixed networks. BT's share in the markets for local and national retail voice calls was 73-77%. In addition, BT's high rates of return as well as barriers to customer service switching led the Director to conclude that BT was dominant in the markets for local and national retail voice calls by residential customers on fixed networks in the UK.

Pricing Analysis

In order to assess whether the SurfTime product was being offered below cost in BT's packages, Oftel proposed to compare prices and costs and "assess whether an equally efficient competitor... could at least match BT's price for Surf."[13]

Oftel considered whether the marginal price of Surf (within the packages) was higher than long run incremental costs (LRIC) of providing this service. The marginal price for

12 *Ibid.*, ¶12.
13 *Ibid.*, ¶52.

Surf in the BT Surf Together package was £5.40 per month, and in the BT Talk & Surf Together package £5.00. The price of SurfTime Evenings and Weekends was £5.99, and SurfTime Anytime was £19.99 (see Table 2).

TABLE 2
HISTORICAL BT PRICES 4 MAY 2001

Product	"Price (per month)"
BT Surf Together	£14.99
BT Together	£11.99
difference	£3.00
value of inclusive call allowance	£2.40
Marginal price for Surf on BT Surf Together	£5.40
BT Talk & Surf Together	£19.99
BT Talk Together	£14.99
Marginal price for Surf on BT Talk & Surf Together	£5.00
BT SurfTime Evenings and Weekends	£5.99
BT SurfTime Anytime	£19.99

Source: Oftel report.

The report concluded that retail costs are sensitive to assumptions on underlying drivers of the costs and that "the information relating to retail costs... was not sufficient to support a conclusion that Surf, at the current prices, is being offered below cost in the Packages."[14]

OFTEL'S CONCLUSIONS

Oftel looked at the potential impact of BT's pricing behaviour on retail internet access and wholesale call termination markets. Surf, as an off-peak metered package, faces competition from 24/7 metered packages. The price differential between the 24/7 and off-peak packages is generally not very big (as low as £3-4 per month).[15] Even if "BT's SurfTime products were to become the primary or sole, sustainable off-peak unmetered package, competition with 24/7 unmetered packages would remain. Therefore, the Director considers it unlikely that the Packages, as currently priced, will have a material anti-competitive effect in the relevant internet access markets."[16]

14 *Ibid.*, ¶60.
15 The off-peak packages are not competitive if the consumer is likely to make many calls to an ISP during prime hours.
16 *Ibid.*, ¶61-5.

With respect to the cross subsidisation of internet provision in the bundle, the report stated that "it is not clear that, at the current prices, BT is or will price Surf below cost in the Packages. Furthermore, the Director considers it unlikely that, even if the price were below cost, a material anti-competitive effect would result on current prices, because of the availability of sustainable 24/7 packages."[17]

Therefore, Oftel decided not to pursue the investigation, finding that BT's packages of bundled products did not constitute an infringement of the Competition Act 1998.

3 Economic analysis

The basic concern that triggered the Oftel enquiry was the idea that by bundling unmetered Internet calls provision to telephony services BT could expand its market share in the former in an uncompetitive fashion. One might be concerned about BT using its profits in the market in which it has market power to finance losses in the other market. Such behaviour, on its face, is not rational. As we have shown in section 3.2 of the main report, such cross-subsidy on its own can not accomplish the creation of market power. There do not appear to be the characteristics in this industry to allow for the creation of market power. We will look closer at whether the bundling will allow BT to create entry barriers.

Often a firm with market power may try to preserve that power by reducing the competitive pressure of an existing (one-product) rival. The bundling can make a difference by making the BT bundle preferred to the other, single-product firms' products. If these advantages lead to the single-product firms exiting the industry and/or new firms being unable to enter both industries at the same time, then there can be long-run anticompetitive effects. If, on the other hand, the bundling leads to other firms creating a bundle of products, then often the outcome is stronger competition than if there is just competition of single products. We now examine the evolution of the ISP industry in the aftermath of the introduction of the SurfTime packages to try and see which outcome appears more likely.

Since early 2000, several companies have been competing with BT by offering phone service and Internet access. For example, One.Tel provides unmetered internet access[18], Telewest[19] announced its unlimited package on 14 February 2000, and NTL[20] has been effectively providing unmetered access since April 17, 2000. In addition, Tiscali, offers its customers a bundle of telephony and unmetered Internet access. This entry of firms providing bundles suggests that there is tough competition in the market.

There also has been entry by single-product firms, as AOL launched its first unmetered internet connection (with no charge the internet phone calls) which is on sale now at £15.99. This entry suggests that the bundle is not necessary to compete. That AOL has had limited success with this offering in the UK, though, suggests that the bundle is actually important.

17 *Ibid.*, ¶66.

18 "One.Tel Customers Go Surfing!" 02/03/00, http://www.onetel.co.uk/xhtml/ie/residential/ index.php?Pg=about&story=2, viewed June 2002.

19 "Forget BT's SurfTime, Telewest launches SurfUnlimited", 14/2/2000, http://news.zdnet.co.uk/ story/0,,t269-s2076985,00.html, viewed June 2002.

20 "The war is on: NTL offers free access". Tuesday 7/3/2000, http://news.zdnet.co.uk/ story/0,,t269-s2077512,00.html, viewed June 2002.

Overall, the market for ISP services and the bundle of telephony and ISP has not become dominated by BT. The "number of new dial-up access packages (unmetered or pay-as-you-go), indicates a highly competitive market in which the consumer benefits from a wide choice of prices and packages."[21] Table 3 provides information on the evolution of the ISP market over the last several years. This Table is consistent with significant competition and new entry and is not consistent with BT being able to dominate the market with its bundled offering.

This evidence suggests that indeed the Oftel Director was correct in allowing BT to launch the bundle package. Since the introduction of this bundle by BT, Freeserve has continued to be the most popular residential ISP over the last 12 months (18%) and AOL's market share has grown considerably from 8% to 17% (May 2000 - 2001). BT Internet and more recently, NTL, also enjoy significant market presence (8-12%) and there are many smaller ISPs representing 28% of the market who, at under 2% each. Thus there is no evidence that BT's bundled offering has given it an advantage over its rivals. Furthermore, it is possible that the offering of this bundled product has led to greater competition than if BT had not started offering the bundled product.

TABLE 3
ESTIMATE OF INTERNET SERVICE PROVIDER SUBSCRIBER SHARE

	May 00	Aug 00	Jan 01	Feb 01	May 01
Freeserve	29%	27%	21%	21%	18%
AOL	8%	10%	15%	13%	17%
BT Internet	5%	10%	10%	12%	12%
NTL	4%	5%	9%	8%	8%
LineOne	3%	2%	2%	3%	4%
BT Click	2%	5%	2%	3%	3%
Virgin Net	5%	3%	5%	3%	3%
Supanet	3%	3%	2%	2%	3%
Netscape	3%	3%	-	2%	3%
Tiny Online	2%	3%	2%	2%	2%
Others	34%	29%	32%	31%	28%

Source: Oftel quarterly residential survey.

21 Oftel's 2000/01 effective competition review of dial-up Internet access, 30 July 2001, ¶3.62.

XIII
Mobile telephones

In this chapter we examine the pricing strategies in the mobile telephony market. This is an industry that has a history of many different types of bundled offerings - bundling of minutes (e.g. contracts with a fee for a given number of minutes of calls), bundling of complementary services (e.g. SMS and voice), and bundling of complementary products (handsets and service contracts) to name a few. We look at a number of these bundles and evaluate whether there is likely an anticompetitive effect from this pricing behaviour. We begin by describing the structure of the mobile telephony industry in the UK. To assist in the understanding of this structure, we also provide a brief background on some of the technology involved in the industry. We also contrast the structure of the market in the UK with other countries in Europe.

1 Background

Currently there are four facilities-based mobile operators in the UK: Vodafone, O_2 (formerly known as BT Cellnet), Orange, and T-Mobile (formerly known as One to One). In addition, there is a major Mobile Virtual Network Operator, ("MVNO") - Virgin.[1] Also, there is a fifth potential operator, Hutchinson 3G, that has purchased a license and is planning on starting to offer 3G mobile services in the UK shortly. Table 1 provides information on the market shares of the four facilities-based mobile operators over the last five years. As can be seen, using share of subscribers as the measure, while Orange and T-Mobile started small, by 2001 the four operators are all similar in size.

TABLE 1
OPERATOR SHARES: MOBILE SUBSCRIBERS

	Vodafone	O_2	T-Mobile	Orange
Dec-01*	25%	25%	23%	27%
March 01	28%	26%	21%	25%
March 00	32%	27%	18%	22%
March 99	37%	30%	15%	17%
March 98	38%	34%	13%	15%
March 97	40%	38%	9%	13%

*The methodologies for calculating subscriber numbers changed between March and December 01. These changes may understate Vodafone market share in particular. See Oftel's Mobile Market Review statement in September 2001, ¶2.36

1 Virgin Mobile is a 50:50 joint venture between Virgin and T-Mobile. Virgin supplies the handsets and bills customers while it uses the T- Mobile network to provide the service.

Using revenues as an alternative measure, the four operators are not so similar in size. These shares are presented in Table 2. In particular, Orange and T-Mobile have significantly smaller shares when measured by revenue as opposed to subscribers.

TABLE 2
ESTIMATED RETAIL REVENUE BY NETWORK OPERATOR

	Vodafone	Cellnet	One2One	Orange
1997-98	44%	33%	10%	12%
1998-99	40%	34%	12%	14%
1999-00	36%	36%	13%	16%
Qrt 2 00-01	35%	29	15%	21%

Notes: last row is based on the first two quarters of 2001-02 only.
Sourcel: Oftel Market Information and Oftel Estimates.

These operators offer a wide range of calling plans to customers, including many different pre-paid plans as well as contracts with a fixed fee being paid for a certain number of minutes each month. The current customer mix between these two types of plans is 70% on pre-paid and 30% on a contract. Overall, 72% of the population in the United Kingdom owns a mobile phone. In 1996, this penetration was only 11%, so customer growth has been strong over the last six years. The contract calling plan is common in the United States, but not in many other markets. For example, in the Italian market, which is the market with highest mobile penetration in Europe, there are generally no such contracts offered by the operators. We use this alternative form of competition to evaluate the competitive effect of this form of bundled prices.

Table 3 provides information on the growth of mobile subscribers in the UK. These growth figures are shown for overall subscribers as well as broken down into pre-paid and contract subscribers. As can be seen, the growth in the pre-paid subscribers has been particularly strong in the last several years.

TABLE 3
GROWTH OF THE UK MOBILE SECTOR

	Mar-97	Mar-98	Mar-99	Mar-00	Mar-01	Dec-01
Post pay	7,109	8,556	10,439	12,164	13,745	13,650
Pre pay	-	467	4,438	15,021	29,707	31,243
Total	7,109	9,023	14,878	27,185	43,452	44,893

Source: Oftel publication available at: http://www.oftel.gov.uk/publications/mobile/ctm_2002/mobile_market.pdf .

Another feature of mobile competition in the UK is the subsidisation of handsets. In the UK, most of these handsets, are made to work with a single operator's network, i.e. they are "locked." By locking the handset, it is not possible for the handset to be used with other operators' SIM[2] cards. Recently it has become possible to purchase SIM cards separately from handsets, and by paying a fee of up to £20, the handset can be unlocked.[3] The policy of having a handset tied to a particular network was not followed in Italy, Portugal, and Finland. We use this contrasting form of competition to explore the effects of this particular bundle.

2 Analysis of pricing plans

THE RELEVANT MARKET

Oftel is currently investigating termination charges in the UK mobile industry. In previous reviews of the mobile sector, Oftel defined a single relevant market for the provision of all mobile telephony services to end-users. This definition was based on the belief that the choice consumers face is the selection of a particular mobile operator to purchase the entire bundle of mobile services. This approach focused on the possible constraints on a firm's ability to set prices and earn profits. These constraints arise primarily on the demand side and stem from the consumers' ability to switch to alternative products in response to price variations. Oftel concluded that fixed services were not part of this market because there is not sufficient substitution between fixed services and mobile services. In its current investigation, Oftel has concluded that there is a separate market for call termination on each mobile network. Oftel believes that each mobile operator has market power in the supply of mobile termination to its own network due to the lack of competitive pressures. In addition, though, Oftel seems to believe that call origination is competitive and that all of the mobile operators compete in a single market for this product.

PRICING PLANS

There is an extensive array of price offers available to consumers in the UK. In principle having such a large number of different price plans can have one of two effects. First, it may allow a firm to price discriminate among various different types of customers. Second, it may lead to each consumer getting a price and product that best suits his or her needs. If the market for call origination is competitive, then the mobile operators have no market power so they can not price discriminate. So we would presume that consumers are benefiting from having many different choices. Normally we would believe that such an array of choices (without market power) would increase consumer welfare, but it appears that this might not be the case. In particular, it seems that the price plans are difficult to compare and hence it seems unlikely that most consumers are purchasing the best plan for their particular calling patterns.

2 Mobile phone handsets contain a 'subscriber identity module' (SIM) which is used to identify which network the handset is connected to, for billing and service access purposes. The SIM card is basically a computer chip that contains the identity of the subscriber and the detail of the calling plan.

3 While it is likely that there was handset unlocking in the past, it is only recently that this option has been openly advertised, see for example T-Mobile site on pay as you go (PAYG) price plans, www.t-mobile.co.uk.

In the UK, each provider has a number of contracts available to consumers. These contracts vary in the monthly subscription fee, the number of bundled minutes provided, the amount of free text messages provided, as well as other attributes. Additional differences include standard call costs, off peak call costs, international calls cost, text messages costs, one off connection fee, and voicemail retrieval costs. For example, Vodafone offers contracts with bundles of 20, 60, 200, 400, 800, and 1100 minutes, each of these can be combined with a given number of text messages for free (none, 50 or 300).[4] Unused minutes from month one are available in month two. If they are still not used up, they are carried forward to month three. If at the end of month three the minutes originating in month one remain unused they are subsequently lost. Outstanding text messages are forfeited every month. Similarly, O_2 offers bundles of 30, 50, 100, 200 minutes, combined with internet access, and text message bundles (none or 25, 50, 100, 300). T-mobile offers bundles of off peak minutes for free, or provides cheaper calls mobile-to-mobile (both within network, or on all mobiles depending on prices) when purchasing a bundle of peak minutes. Orange offers bundles that range from 50 minutes to 10,000 and that includes call cost computation by the second and daily bundles of free minutes. In addition to these individual packages, group options are also available. For example, Orange offers packages that can include from 2 to 4 people to share 200 free minutes a month, with cheaper calls and SMS within the group.[5]

In addition to the different number of minutes in these packages, the mobile companies have different policies with respect to any unused minutes from one billing period to the next. The roll over of minutes allows consumers to smooth out idiosyncratic events that cause excessive calling in certain months. Some of the plans allow minutes to roll over and others that do not allow any roll over. In addition the terms of how long the roll-over minutes last and the amount of minutes that can be carried vary.

With all of these variations across the different plans (both within a given network as well as across the different networks), the comparison of prices is a difficult exercise. With such complexity, consumers probably focus on a subset of these features, say the cost of the bundle of minutes, and choose a plan accordingly. There are two problems with such a mechanism for selecting plans. First, the other attributes of the plan can have a significant impact on the overall cost. Second, in most cases consumers cannot correctly anticipate their use of the mobile phone, so the selection of a particular bundle of minutes often is not the optimal bundle for that consumer. In fact, given all of the variables that comprise the various mobile contracts, it is highly unlikely that a consumer can ex-ante know the average cost of calls for any particular calling plan. This inability to evaluate the prices arise because of the complex set of products that are bundled together in the various calling plans. In principle, this non-transparency of prices does not have anticompetitive consequences but it does lead to a decrease in consumer welfare.[6]

4 Monthly price plan connections are normally charged at £35. Peak rates refer to 8 am - 7 pm. Monday to Friday evening, off peak, refer to 7p.m - 8 a.m. Off-peak weekend rates refers to midnight Friday to midnight Sunday.

5 In addition to all of these contract price plans, each operator has a number of pay-as-you-go pricing plans.

6 The loss of consumer welfare is not coming from firms gaining surplus, so this is not the type of loss of consumer welfare that the competition laws generally are addressing.

While this is not a competition problem, there can be consumer benefits arising from changes in the market. The goal of this regulation should be to improve the information conveyed to customers. While it is relatively easy to construct a calculator that would determine the lowest cost plan for a given calling pattern, it is not possible to know the exact pattern of calls and hence the input to this calculator is at best a poor estimate of actual calling patterns. To be able to correctly evaluate the cost to a consumer of a particular plan, the consumer would need to know how many calls he or she would likely make in a given month, the average duration of these calls, the network of the recipient of these calls, the time of day of the calls, and likely some other attributes. Therefore, the chance that any particular consumers, even if he or she expends significant time and energy investigating all of the options, has the cheapest plan is quite unlikely.[7] The inescapable conclusion is that perhaps the mobile telephony market is one where more options to consumers does not lead to higher consumer welfare.

But, once this conclusion is reached, the solution to this problem is not obvious. If there is regulation that limits the number of plans that any operator can offer, then it becomes easier for the mobile operators in any market to coordinate their activities. Also, while it is unlikely that any particular customer has his or her optimal plan, if there are fewer plans being offered, one result could be that the distance that a consumer is from his or her optimal plan is greater under the restricted number of plan options. Thus, a limiting of the number of plans offered is unlikely to help consumers and could well result in harm. Another idea would be to require more information to be available to consumers on the pricing of services. It appears, though, that most information that is relevant is already available as to the cost of the plan to a consumer and the difficulty in evaluating alternative plans is an inability to predict ones exact usage patterns. The only potentially relevant price that is not readily available is the price charged to others when they call a particular mobile user's phone. We will return to this idea below when we discuss terminating access.

Another way to make customers more able to take advantage of price differences is through the use of multiple SIM cards in mobile phones. In Italy, Finland and Portugal, SIM cards have never been locked to mobile phones. Hence, customers can freely switch SIM cards within a handset in order to take advantage of price plans that have different time-of-day pricing. Until recently, there were two primary ways of doing this swapping: using a mobile phone which has space for only one SIM card at a time, which consumers manually change; and using a mobile phone which has space for more than one SIM card at a time, which consumers can then toggle between SIM cards without having to manually change the SIM card. With this second method it is still necessary to switch on and off the mobile phone each time the customer wants to switch SIM cards. Also, the size and weight of these dual SIM card mobile phones is greater than many handsets that are in use in the UK today.

7 In fact this has resulted in one mobile operator in the United States guaranteeing that if a consumer on an alternative carrier brings in his or her bill, that this operator will show that it has a plan that would be cheaper than the consumer's existing plan. It is likely (although not advertised by this operator) that the same could be said for its own customers.

The proportions of mobile customers using more than one SIM card in May 2001 were - 13% of mobile customers in Italy (5.8 million users), 7% (272,000 users) in Finland, and 4% (288,000 customers) in Portugal. On average, multiple SIM users were younger individuals and those without a fixed phone at home. Most of these customers switch their SIM cards manually, while phones which held more than one SIM card at a time were less widely used - 27% in Italy, 18% in Portugal, and 16% in Finland. The choice of which SIM card to use depended on whether a call was made to a fixed or a mobile phone, which mobile network they were calling, and whether they had free minutes/credit to use. On average, consumers evaluated which SIM to use for about half to three-quarters of their calls.

The proportion of mobile customers, who had previously used a different network than the one they currently use, was only slightly higher in Italy than in the UK. However, in Italy, switching networks, packages, and tariffs was significantly higher among multi than single SIM users. Therefore, we would expect that the introduction of dual-SIM card use into the UK would be an easy way to arbitrage between different network offers. In a market like the Italian one, demand for these products developed early (even when the card swapping was entirely manual and cumbersome).[8]

A final proposal to try and increase consumer surplus in the mobile sector would be for mobile operators to allow switching between its various plans by consumers. This would allow consumers to learn about their actual usage and then to adjust their calling plans to obtain the best price. Currently most mobile operators allow such costless switching if a consumer moves to a more expensive plan (i.e. a plan with a larger number of included minutes), but not necessarily if the consumer wishes to use a smaller number of minutes. The problem with this option is that the operators all subsidise the purchase of the handset, and if a customer might be switching to a less profitable plan, then the operator likely will provide less of a subsidy to the handset. The effect on the willingness to subsidise handsets will increase if there is a requirement to allow consumers to switch between different operators without incurring any switching costs. On balance, we are concerned about the lack of transparency of mobile pricing, but we are not convinced that there is a solution available to improve the situation.

3 Analysis of terminating access[9]

An issue that is currently being investigated in the UK is whether the mobile operators are setting the price of terminating a call on their networks too high. This is the price that one telecommunications carrier pays to another when a call is placed from the first network to the second. This is not a cost that is directly paid by consumers, but since it is a cost incurred by the mobile operators, the overall price level must be set at a level that allows the recovery of this cost (if the firm is to remain in business). There are technological features that make the termination of calls to mobile phones more costly

8 The article that announces the launch of GIANO starts as follows "it will not occur you anymore to see someone dismantling its mobile to change SIM", which indicates how the practice was common and "visible", http://www.ilnuovo.it/nuovo/foglia/0,1007,81710,00.html.

9 CRA is currently assisting one of the mobile operators with the investigation of terminating access charges by mobile operators in the UK.

than to fixed lines,[10] but these cost differences are not nearly as great as the price differences between terminating on a fixed line vs. on a mobile line. In fact, the prices charged for terminating access appear to be significantly higher than the incremental cost of providing the terminating service.[11]

There are two issues that could be addressed as to these termination charges. First, whether these prices are in some sense excessive and hence causing harm to consumers. Second, whether there are some distortion to competition being caused by these prices that may need addressing by the competition authority (even if the particular prices do not directly harm consumers). It is the second of these that is the focus of this section.[12]

A possible consequence of having the terminating access priced too high is the creation of apparent economies of scale (similar to the effect discussed in Chapter VII, the Aspen Ski case study and section 4.4.4 of the main report). This arises in the case of mobile calls because a call that is terminated on a carrier's own network does not result in a termination fee being paid to another carrier. This causes the mobile operators to offer cheaper call rates when a mobile consumer calls another mobile consumer on the same network as compared to calling a fixed line or a customer of another mobile network.[13] This discount for within networks calls gives an incentive to create a network of consumers (e.g. families and businesses) to subscribe to a single mobile operator. Such a network, as it grows would appear to perhaps lead to a tipping of the market, leading inexorably to a single dominant network. But we do not believe that this would be the outcome. The reason why is that there is no reason for firms to follow this particular pricing pattern, especially if on average mobile customers receive as many calls as they place. With a balanced level of calls, a mobile operator can charge its customers the same price whether a call is placed to it's own network or to a different network. The 'lost' revenue from having to pay a high termination rate to other mobile operators is made up through calls placed from that other mobile operator onto its own network. Similarly, while it may appear that high termination rates would raise a barrier to new entry, such is not the case using this exact same logic.[14] The one type of telecommunications operator that would not be able to protect itself in the face of high termination charges is a land-line operator.[15] Thus the high mobile termination charges seem to have no effect on competition but result in land-line consumers providing a subsidy to mobile customers through high mobile termination charges.

10 This is due to the fact that knowing the location of the call receiver helps to minimise the distance between the interconnection point and the receiving caller. In fixed line calls, the number being called allows the originating carrier to identify the geographical position of the receiver and hence to terminate the call at the optimal location. With mobile calls, this geographic determination can not be done as well.

11 Note that since mobile telecommunications operators incur significant fixed and sunk costs, only by charging above incremental cost is the operator able to remain in business. Therefore, observing that prices are above incremental costs is not sufficient to determine that the prices are anticompetitive (or excessive).

12 The investigation currently being conducted in the UK appears to be focussing on the first of these issues. There are many reasons why the prices being high might not cause direct consumer harm. For example, if the mobile operators price all of their services using Ramsey prices, then since likely terminating access is the service with the most inelastic demand, this is the service that will have the highest mark up (in order to meet an overall zero profitability constraint).

13 T-Mobile has started offering a pricing plan that does not contain this differential pricing depending on the network of the mobile that is called.

14 In fact, if the new entrant does offer the same price regardless of the network being called, this could be a marketing advantage that it could use to gain more subscribers. If an acquaintance complains about having to pay more for calling a subscriber on the new network, that person can be told that the new network allows subscribers to call anyone for the same rate and does not discriminate.

15 In theory there is no reason that a fixed-line operator could not achieve the same type of outcome as the mobile operators, but in reality the fixed-network operators are regulated and thus unable to set the same termination rates as the mobile operators.

Therefore, it does not appear that high termination charges will lead to a distortion of competition. One might ask, though, whether competition will drive these termination prices down. Pricing plans offered by most mobile operators have the cost of calls made and the cost of received calls bundled together in the subscription rate. Thus, there is a non-transparency of prices. Further, even though the different mobile operators have somewhat different termination rates, generally there is a single price for calling any of the other networks charged to subscribers. Mobile consumers in general care more about direct costs incurred to them rather than what others pay to call them, so it is difficult for competition for new consumers to drive the price of termination down. But, if there is no distortion in competition, there is no reason that such a driving down of prices is necessary.

4 Conclusion

As is clear from above, the issue with mobile phones is the non-transparency of prices. New technology that allows consumers to implicitly unbundle these prices could be a way to increase consumer welfare. The new generation of handsets that allow for quick and easy substitution of SIM cards will make it difficult for mobile operators to bundle cheap outbound calls with high termination fees. All a consumer needs to do is get two SIM cards, one with low outbound and high inbound rates and the other with high outbound and low inbound rates. Then, the consumer can receive calls on one SIM card and place calls on the other. We believe that improving the transparency of price plans offers and the development of technologies that will allow handsets to operate simultaneously on several networks should enhance consumer surplus.

XIV Jefferson Parish Hospital

The Jefferson Parish Hospital (JPH) is located in Louisiana, in a suburb of New Orleans. JPH signed a contract in February 1971, just before it opened its East Jefferson Hospital, between the hospital and an anaesthesiologists group, Roux and Associates. Under the contract, any anaesthesiologist designated by Roux would be given hospital privileges and be a member of the hospital's medical staff. Under the contract, the anaesthesiologists that made up Roux and Associates would only practice at JPH. Also, the hospital would allow no anaesthesiologist to practice at the hospital if he or she were not a member of Roux and Associates.

The hospital would purchase all necessary drugs and other supplies for the anaesthesiologists. The fees for anaesthesiological services were billed separately to the patients by the hospital and divided equally between Roux and the Hospital. After this contract was entered, a board-certified anaesthesiologist specialising in obstetric anaesthesiology, was denied privileges at JPH. This anaesthesiologist, Dr. Edwin G. Hyde, sued for a declaratory judgment that the contract was unlawful (by violating Section 1 of the Sherman Act) and an injunction ordering JPH to appoint him to the hospital staff. This case study examines the facts surrounding the case and whether or not the contract between JPH and Roux was the type of bundling agreement that would lead to anticompetitive effects.

1 Background

At the time of the trial, approximately 875 operations were performed each month at JPH in 13 separate operating rooms. The District Court ultimately found that there were no anticompetitive consequences from the contract and hence no violation of the Sherman Act. The Court of Appeal reversed this decision and found that the exclusive dealing contract was *per se* illegal. The Supreme Court heard the case and ruled in March 1984 that the contract was not *per se* illegal and that there was no violation of Section 1.

Given the nature of medical operations, any users of a hospital's operating room must also purchase anaesthesiological services. Further, only physicians that are given privileges at a particular hospital can work at that hospital. Thus, anaesthesiological services are consumed in fixed proportions with a hospital's operating room services.[1]

1 This is a bit of an oversimplification as depending on the type of operation, the amount of time and attention required of the anaesthesiologist can vary. We return to this point below.

Further, it seems unlikely that there is market power in the supply of anaesthesiological services as entry by new anaesthesiologists would be relatively easy (and there were no suggestions in the case materials that Roux had as members the majority of the anaesthesiologists in the New Orleans area). Thus on its face, the combination of anaesthesiological services and hospital services appears to be the type of product that would fit the Chicago School model as set out in section 3.2 of the main report. Under these conditions, tying leads to no anticompetitive consequences.

2 Case history

In July 1977, Dr. Hyde sued for a declaratory judgment, claiming that the contract between JPH and Roux was unlawful and to obtain an injunction ordering the hospital to appoint him to the hospital staff.[2] Hyde's complaint alleged violations of Sherman Act as well as state competition law.

The United States District Court for the Eastern District of Louisiana rejected these claims[3], finding that the anticompetitive consequences of the contract were minimal and were outweighed by the benefits from the contract. The District Court found that the exclusive contract resulted in higher quality services being provided at the hospital. The District Court also suggested that the principles of *per se* liability might not apply to cases involving the medical profession.

The United States Court of Appeals for the Fifth Circuit ruled only on the Sherman Act claim. The Court of Appeals rejected as clearly erroneous the District Court's finding that the exclusive contract was justified by quality considerations[4] since the exclusive contract was not necessary to achieve these ends. The Court of Appeals reversed this decision, deciding that the contract was per se illegal.[5] It held that the case involved a tying arrangement because the "users of the hospital's operating rooms (the tying product) are also compelled to purchase the hospital's chosen anaesthesia service (the tied product)."[6] The court defined the relevant geographic market for the tying product as the East Bank of Jefferson Parish and found that JPH possessed "sufficient market power in the tying market to coerce purchasers of the tied product."[7]

Finally, in 1984, the United States Supreme Court reversed the Circuit Court.[8] The Supreme Court found a wider definition of the geographic market and found that the hospital lacked sufficient market power in this market to apply a rule of *per se* illegality to the tying arrangement. It also found that the contract did not unreasonably restrain competition. The Supreme Court found that there was no increase in price nor a diminution of quality of anaesthesiological services from the exclusive contract.

2 The credentials committee and the medical staff executive committee recommended approval of Dr. Hyde's application for medical privileges, it was the hospital board who denied the issuing of these privileges because of the contract with Roux and Associates.

3 The United States District Court for the Eastern District of Louisiana, 513 F Supp 532. 1981.

4 See 686 F.2d, at 292.

5 The United States Court of Appeals for the Fifth Circuit, 686 F2d 286. 1982.

6 Id., at 289.

7 Id., at 291.

8 The United States Supreme Court, 466 U.S. 2. March 27 1984.

3 Economic analysis

In this case, as in many, the court decision revolves around the market definition - whether the geographic market for JPH is small or large and hence whether JPH has significant market power or not. Not having access to the information as well as not being directly relevant to this document, we will not examine the market definition in question. We first assume that the Supreme Court correctly defined the market and that JPH does not have significant market power in this market. With this assumption, we analyse the likely effect of the exclusive contract and also evaluate the likely motives for the parties that entered into the contract.

The two separate markets that could be affected by this contract are the hospital market and the anaesthesiology market. In terms of the hospital market, it was found that there were a number of hospitals in the area and that there was effective competition in this market. So, up until the time of the lawsuit, the contract was found to have no effect on this market. Furthermore, since anaesthesiology is a small part of the total basket of services offered by a hospital it is unlikely that the contract with Roux had an effect on the entry conditions into the hospital market.[9]

In terms of the anaesthesiology market, the Supreme Court found no evidence that there had been a diminution of the quality in this market and that there was no effect on prices in this market. Consumers were still able to choose a different anaesthesiologist if they wanted, by having surgery performed at a different hospital.[10] Furthermore, there was no evidence that anaesthesiologists were being blocked from practicing in the area, just that they could not practice at JPH.[11] If all of the hospitals in the relevant geographic market had exclusive deals with anaesthesiologists, then there could be entry barriers raised in the anaesthesiologist market. In such a situation, though, it is not clear why the hospitals would enter into the exclusive contracts because these would lead to market power in the anaesthesiology market - a complementary product to the hospital services.

Thus, we do not see any competitive harm from these exclusive contracts in the short-run. If over time all hospitals enter into exclusive deals, then there might be less competition between hospitals and/or entry barriers into the anaesthesiology market. To try and determine if either of these effects was driving the parties to enter into these contracts, we try and determine what is the motivation of the two parties.

9 This conclusion is reinforced by the fact that, in general, states control the entry of a hospital into an area, so the greatest barrier to entry for a new hospital is not whether it has access to anaesthesiology services but getting a host of other regulatory approvals from state governments.

10 Surgeons generally have privileges at multiple hospitals, so if a surgeon and/or a patient wanted a particular anaesthesiologist who was not a member of Roux & Associates, then this surgeon could perform the operation at a different hospital. There was no evidence that this type of switching behaviour was not available to patients in the Jefferson Parish area.

11 There is no information on how difficult it was for an anaesthesiologist to join Roux and thus gain access to JPH.

WHY DOES THE HOSPITAL PREFER EXCLUSIVE CONTRACTS?

JPH entered into this contract because it saw the contract as a source of competitive advantage, as a way to achieve cost savings, or both. As outlined above, under the assumption that JPH does not have market power, there does not appear to be an advantage (at least in the short run) to JPH from this contract. It was suggested by the Supreme Court that perhaps JPH saw the bills for the anaesthesiology services as a way to obtain more money from health insurance companies, but this is not really a competition issue and is a contracting issue between health insurers and JPH. In terms of cost savings, JPH could view the contract as a way to ensure a high quality of anaesthesiologists without having the costs associated with having to monitor these physicians. Roux will be responsible for acquiring anaesthesiologists and then JPH accepts these onto its medical staff. Not having to monitor the anaesthesiologists and incur the costs of granting privileges to these physicians might be a significant cost savings to JPH. A test of this as a hypothesis for a reason to enter into such a contract is if JPH has similar contracts with other groups of specialised physicians. We do not know if there were other such contracts.

Finally, we note that if one believes the leveraging theory of tying then JPH, by entering into this contract, is creating market power for the anaesthesiologists. In such a situation, the contract could lead to higher prices for a complementary good (anaesthesiology services) and thus harm the hospital. Under the contract, it is not clear how the prices for the anaesthesiological services are set, but since JPH will be billing for these services so it will be aware of the level of pricing even if it does not set these prices. This price transparency to JPH of the anaesthesiology prices should give it at least some control over the level of these prices. Thus it seems that JPH has at least in part protected itself from being harmed by having a complementor charging prices that are too high.

WHY WOULD ROUX AND ASSOCIATES PREFER THE EXCLUSIVITY?

We also need to examine why Roux would prefer these exclusive contracts. On its face, it seems that the contract would allow Roux to have some amount of market power. As was pointed out by the court, patients and surgeons would have the ability to move to a different hospital if an anaesthesiologist not belonging to Roux was the preferred physician for a particular operation. Since Roux was not allowed to practice at other hospitals under the terms of the contract with JPH, Roux would not be able to gain market power across hospitals. Thus, it appears unlikely that Roux would be able to gain significant market power from the agreement. It is possible that there are efficiencies associated with the Roux group being the only group of anaesthesiologists that will be working in the JPH operating rooms, so there can be a single set of practices and procedures. Both JPH and Roux will be willing to work together to improve techniques and practices without having to worry about any improvement being copied by other hospitals or anaesthesiologists. In other words, the contract will allow for an alignment of the hospital and the anaesthesiologists that could lead to quality and cost savings for both parties.

Thus, on balance, it appears that there were efficiency reasons behind the signing of the contract that resulted in no competitive harm from the exclusive contract. The exception to this conclusion would be if ultimately all of the hospitals in the area signed comparable contracts to the JPH/Roux contract. This might ultimately lead to a less competitive anaesthesiology market that could lead to harm to consumers. The protection that the market has against such an outcome, though, is that the hospitals should not be willing to be a party to such an outcome, so if there were danger from such an outcome we would expect the hospitals to protect itself from the harm it would incur from having a complementary service priced high. On the other hand, if there was much to be gained, we might expect to see integration of the anaesthesiologists and the hospitals, so then the hospitals can gain from any market power. We do not know how the market in the New Orleans area has evolved over time, so we can not evaluate whether this is the outcome in this market. But this case appears to support the conclusion in section 6.2 of the main report, that tying allows for a higher quality product and likely does not lead to anticompetitive effects.

XV
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