Anti-competitive Behaviour in the Airline Industry:
The case of Predatory Pricing[1]

Deregulation of formerly strong regulated markets often leads to dramatically changes of market structure because increasing competitive pressure emerges for incumbent firms. Such changes of industry structure seem to take place in our days in the European airline industry. However, questions arise if competition will be sustainable during the conversion of the market from government-restricted regional monopolies to an integrated competitive market.

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Introduction

One possible threat for market development in the airline industry could be anti-competitive behaviour by large dominating incumbent carriers. Such action might arise in multiple ways – one of the most important of those is predatory pricing.

This paper analyses the possible emergence of predatory pricing in the airline industry. Starting with a short overview of market development and changes of market structure, the question whether there is a motivation to predate will be answered. Afterwards, conditions for rationality and success of predatory practices will be shown in a theoretical part. In two following parts, general regulatory responses on predation and detection difficulties will be considered. Finally, the Lufthansa/ Germania case will be presented to show how Germany's competition authority intervened in practice.

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Market Development

It is easy to see that competition on European air transport markets sharply increased since deregulatory reforms were implemented by the European Union (EU). The new competitive pressure emerged mainly because of market entries by so called low cost carriers (LCC). Such airlines produce unbundled air travel products at significant lower costs than incumbent carriers do. On the other hand, established (in most cases national "flag") airlines continue to offer bundled products of services and flights. Consequently, they are called full service carriers (FSC). Low cost carriers offer their products at lower fares than FSC. This increases competitive pressure on FSC and leads to a lower price level on the market. From an economic point of view, such lower fares lead to improvements of welfare as consumers' surplus increases. Moreover, low cost carriers grow faster than the market. As a result, full service carriers loose market share and revenues to the low cost competitors. The development is illustrated in the chart. It shows the development of market shares from 1996 to 2020 for Europe in percentage of transported passengers.

Obviously, FSC will try to slow down or even stop these changes in market structure. Established carriers have therefore a clear incentive to apply aggressive strategies in order to hinder competitors from taking their market shares and revenues. This incentive might also exist for anti-competitive behaviour and the most relevant case of predatory pricing.

Predatory Pricing

In a very general definition, predatory pricing is a temporary price reduction which aims at pushing one or several competitors out of a market. When the predator sets prices low enough, her victim will make financial losses and finally leave the market. On the other hand, the predator herself will also loose revenues in the short run. If so, what is then her motivation to apply such a strategy?

Reasons can be found in a long run perspective. After the victim has left the market, the former predator will have a dominant position at least for a certain period of time. She might use this position to re-increase prices in order to reap losses and yield higher profits than in a competitive equilibrium. A second possible motivation is the aim of building up reputation as a firm which is ready to apply aggressive strategies. Such reputation might hinder possible competitors from entry in other

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(sub-) markets. Potential entrants will take the credible threat of predatory pricing into account when deciding whether to enter the market or not. Such a strategy is especially rational for dominant firms in network industries (like in aviation) because a single price war in one sub-market can already set a credible signal that deters entry in markets all over the network.
However, for predatory pricing to work, several necessary conditions have to be fulfilled. In general, predation is rational if, and only if, markets are not fully contestable.
The two most important conditions that lead to imperfections of contestability are "deep pockets" and the existence of entry barriers. Following the deep pockets argument, the predator needs more financial power than victim for she has to stand the financial losses caused by the price war for a longer time than her victim. Secondly, barriers to market entry are necessary to avoid that new competitors or the former victim enters the market when the predator starts to re-rise prices after the victim's exit. If there are no entry barriers, the predator will not be able to reap losses and yield higher profits. In such cases, predation will be irrational.
At least in some parts of air transport markets both conditions are fulfilled. Even in the actual down cycle crisis, large major carriers have more financial resources (deeper pockets) that small new entrants. Entry barriers at least exist on congested airports in form of occupied slots. Air transport markets do not seem to be perfectly contestable in the actual stage of their development. However, detection of predatory pricing is not easy to perform because of other characteristics of the aviation markets which will be seen in the over next part.
Economically, predatory behaviour causes welfare problems because efficient competitors might be driven out of the market leading to a too high price-level in the long run. Such results would of course create losses of welfare. For this reason, predatory behaviour is prohibited by competition law in most countries.[2]

Regulation

This part describes the two main streams of regulatory reactions on predation. On the one hand, ex post regulation takes place when predation is already observable in the market. The so-called rule of reason is one regime of this type. Under a rule of reason regulation, single cases are analysed in their respective market conditions. Such mechanisms are applied by the EU and the German competition authority *Bundeskartellamt*.
Under ex ante regulations, on the other hand, global benchmarks for predatory behaviour are set before it even occurs in the market. This means that cases corresponding to the authority's definition of predatory behaviour can be detected quite easily. However, arbitrary benchmarks are often grouped together with guidelines, like the Canadian competition guidelines for the airline industry.
Both types of regulation can lead to sanctions like fines or the prohibition of certain price or quantity strategies. Another possible regulatory intervention is the implication of a so-called log in rule. Following this rule, incumbents must not raise their prices for a certain period of time after their competitor has left the market. In consequence, a predator will not be able to reap her losses and predatory strategies will be less rational for her. Of course, the rule has a major drawback: the adjustment of the time period. Once the period defined is too short, predation cannot be avoided; a period that is too long will in contrast hinder competition and protect inefficient competitors.
For regulatory interventions to be credible, the main condition is that the regulator must be able to clearly differentiate between predatory prices and competitive strategies.

Detection of Predatory Pricing

Predatory pricing can be detected with multiple instruments. The most common of those are price-cost tests. There is a wide range of literature on those tests, discussing different concepts and their rationality in general.
The main assumption of such tests is that predatory pricing strategies lead to short-run losses for the predator during the price war. Areeda/Turner developed the first test in 1975 stating that a price lower than marginal cost is predatory. For practical application of the test, they proposed to use short-run variable costs as a measure for marginal cost. Later on, Baumol modified the test (in 1986) and defined that predatory prices were all prices below avoidable cost, a measure which, in his setting, is composed of variable non-sunk product-specific cost.
However, the general application problem of such tests is matching real cost figures from accounting data with theoretical measures of cost. As Tirole concluded in 1988, price-cost tests are not a sufficient benchmark for the detection of predatory pricing.
For the case of aviation, this problem also exists. As most costs are general costs, they do not depend on production level in the short run. Therefore, marginal costs are very small, if passenger charges are excluded from analysis[3]. For a FSC these are composed of the cost of in-flight catering, newspapers, etc., in the case of a LCC they are on a nearly neglectable level.
Following these considerations, price-cost tests in the airline industry can only be performed in an arbitrary way.

An Example: Lufthansa/Germania Case

The Lufthansa/Germania case continues to be the only example of an intervention by Germany's competition authority *Bundeskartellamt* in the aviation market in a case of predatory pricing. The authority analysed the case on the Frankfurt-Berlin route in 2001/2002. On November 12, 2001 Germania, a small low cost airline started service from Frankfurt to Berlin and announced a one-way fare of € 99,- (ticket without strong restrictions). Before

[2] e.g. by Section 2 of the Sherman Act (US), Art. 82 of the Treaty of Rome (EU) and by § 19 of the Law Against Restraints to Competition (Germany)

[3] this is a rational assumption because all airlines charge passenger-fees direct to their customers

New Low-cost entrants forced incumbents like Lufthansa to introduce lower fares
Photo: Hubert Croes

the entry, the German full service carrier Lufthansa served the route as monopolist, with the lowest round-trip economy fare ranging at €485,-. After Germania's entry, Lufthansa introduced a new one way €100,- fare with similar restrictions as Germania's.
On this stage of the analysis, the question arises why Lufthansa's fare should be on a predatory level as there is no absolute undercutting in price. The authority, however, argued that Lufthansa's product had a higher value for passengers. While Lufthansa offers a bundled product of multiple services plus flight, Germania only produces an unbundled single flight product. *Bundeskartellamt's* argument therefore is that an equal price for a product with higher value is an undercutting fare. For a second argument, the authority analysed the market environment of the case and found that Lufthansa had introduced the lower fare only on one single national route, which might be a hint on a predatory strategy. Finally, *Bundeskartellamt* used a cost argument, calculating that Lufthansa did not cover average global cost with the price offered – a point that is not covered by any price-cost test.
On February 18, 2002 the antitrust office decided that Lufthansa had to charge prices at least €35,- higher than Germania (with an upper price range of €134,-) for the route. The measure of €35,- is calculated as the sum of the single parts of Lufthansa's bundled product, valued at market prices: a newspaper for €1,-, a €2,- soft drink, 500 frequent flyer miles valued at €12,-and finally €25,- for the higher frequency of flights (Lufthansa flies 14 times a day, Germania operates only 4 flights). Afterwards, the sum was rounded downwards by rule of thumb. The resulting value difference of €35,- is of course a very arbitrary measure. Moreover, the decision is quite disputable from a theoretical point of view as calculation with average general cost is contrary to theoretical evidence. It is clear that one might discuss about sense and credibility of such a decision.

Conclusions

As we have seen, surveillance of air transport markets seems to be necessary because incentives to anti-competitive behaviour clearly exist. The general aim of competition policy in the market has to be the protection of competition in order to secure a sustainable development of a competitive market.
The main problem of policies against predatory behaviour is that clear detection of such strategies is often impossible; therefore non-arbitrary decisions of competition authorities are difficult to find. As a consequence, structuring of appropriate regulatory systems is a difficult task.
In the light of such theoretical conclusions, the decision of Germany's *Bundeskartellamt* in the Germania/Lufthansa case is quite disputable. However, one rational explanation for the competition authority's intervention is signalling: Perhaps, the authority wanted to set a signal to market participants in order to show that it is controlling the market and willing to intervene if necessary. From such a point of view, the decision might have had a disciplinarian effect on the market.

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