## CRA COMPETITION POLICY DISCUSSION PAPERS 5

# Are anti-predation rules in the public interest?

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## Abstract

*Competition authorities enforce anti-predation rules in order to prevent firms from taking actions that are undertaken only to drive out a rival. In a typical case a large incumbent is alleged to prey on an entrant. In many industries the incumbent's pre-entry choice of products (eg the frequency of flights or the variety of brands) determines the profitability of a potential entrant. In this discussion paper we argue that in these industries - where predation has occurred often - the effectiveness of anti-predation rules is limited. Worse, when they do change the behaviour of firms this may not be in the public interest. Anti-predation rules need to be more systematically linked to welfare.*

In February of this year the German Federal Cartel Office found that Lufthansa's behaviour vis-à-vis Germania was predatory and ordered Lufthansa to price its services on the route between Frankfurt and Berlin above those of Germania.[1] On this route the frequency of Lufthansa's service has an impact on the cost per passenger of its rival, Germania. The higher is Lufthansa's frequency before entry occurs, the lower is the expected number of passengers on the entrant's airplanes and, since the cost of flying is not affected, the entrant's cost per passenger increases. We believe that whenever there is such a link between the incumbent's pre-entry behaviour and the entrant's profitability, current anti-predation rules are not systematically linked to consumer welfare. Worse, strengthening anti-predation rules may not be in the public interest.[2]

Competition authorities rely on anti-predation rules in order to prevent firms from taking actions that are undertaken only to drive out a rival. In order to distinguish predatory pricing from healthy competition, US and EU case law has developed cost standards that suggest that pricing below the relevant cost is considered predatory.

Important European cases are AKZO[3] where the European Court of Justice in essence defined average variable cost as an important benchmark and, more recently, two decisions by the European Commission on Deutsche Post.[4] In the latter decisions the Commission used an incremental cost standard (which it argued to be consistent with AKZO) and found that Deutsche Post behaved in a predatory manner and cross-subsidised its competitive services using funds from its reserved services.

The point we want to make here is not to argue about whether these decisions are "wrong" or "right", but to argue that the reasoning used in order to identify predation is flawed. Of course, this point has been made before. Simple static cost standards are subject to effective criticism for not taking into account the strategic nature of predation. In fact, it can be easily shown that, judged by standard definitions of predation, they are both under and over inclusive. This is why there are a number of proposals for a change in the application of anti-predation rules and why most competition authorities also investigate whether predation is feasible and intended. When the incumbent's choice of products (eg variety of brands, the number of departures) has an impact on the entrant's profitability, current rules will:

- often not succeed in making (the threat of) entry more effective compared to a world without anti-predation rules; and
- lead to a strategic response by the incumbent that may well be against the public interest.

The reason is simple and, in the economic literature on entry and "spatial competition", well established: by choosing its own number of products the incumbent determines the profitability of a potential entrant. Then, even if the incumbent chooses the number of products and prices an unconstrained monopolist would choose, there may not be enough "space" for profitable entry if legitimate post-entry competition is allowed (this leads to the first bullet). Moreover, if the entrant is much more efficient and would find "space" for profitable entry given monopoly product placing, incumbents will prefer crowding the product space to allowing entry. However, this may or may not be in the public interest (second bullet).

In this discussion paper we define predation and analyse its rationale; we then discuss and compare the various predation tests at hand and finally we check their performance in an environment of spatial competition.

## The rationale for predation

Predation is usually defined as the deliberate incurrence of losses in order to drive out a rival.[5] Firms

have an incentive to "invest" in predation whenever they expect a return on this investment. Depending on the operations of the predating firm, the source of the returns can be the strengthened market position once the rival has exited or the deterrence of entry into other markets in which the predator has a stake or, of course, both. Unless traditional barriers to entry are high enough to blockade future entry, both sources of returns rely on potential entrants staying out of the incumbent's terrain because they fear a predatory response that would make entry a costly exercise.

Competition authorities have been given powers to stop predatory behaviour because such behaviour limits the number of competitors in the market and it shelters incumbents from the discipline of potential competitors. Moreover, one of the most important benefits of competition, the selection of the most efficient operators, is lost, as size and financial power become more important than efficiency in a predatory battle for the market.

Thus, from the point of view of competition authorities there seem to be a number of good reasons to strengthen the enforcement of anti-predation rules.

## Anti-predation rules

In the AKZO case, the European Court of Justice held that

> "…prices below average variable costs by means of which a dominant undertaking seeks to eliminate a competitor must be regarded as abusive… [and] …prices below average total costs, that is to say, fixed costs plus variable costs, but above variable costs, must be regarded as abusive if they are intended as part of a plan for eliminating a competitor."[6]

If prices are above average variable cost, this statement leaves some room for applying the rule of reason arguments with regard to whether predation was feasible and intended. However, then the rule does not give any "hard" cost criterion other than that a price above average total cost will not be considered predatory. In practice, showing that prices are below average variable cost has therefore played an important role in EU Article 82 cases.[7,8] So for the sake of our argument we interpret the rule as follows:

**Activity Loss Rule:** A proof of predation requires pricing below average variable cost.

This is, of course, the famous Areeda-Turner rule, which was first proposed in 1975. This rule uses average variable cost as a proxy for marginal cost. Since its introduction the rule has been subject to extensive criticism. In the context of our argument it suffices to highlight the following two simple points.

- Prices above average variable cost can be perfectly consistent with predation. In order to avoid bankruptcy, firms will usually have to recover total cost in the long run. In particular in industries where average variable costs are low relative to the fixed and common costs of providing a service, the rule puts little restraint on firms' behaviour. This is relevant in many industries; think of typical network industries (eg Lufthansa) or innovative industries (eg Microsoft).
- Prices below average variable cost can be consistent with normal business behaviour. Market entry may require temporary pricing below average variable cost in order to introduce products. Whenever demand for a product stimulates demand for another product, pricing below marginal cost may be rational without any intent of ousting a rival.

To see the issue, consider again the Frankfurt-Berlin service of Lufthansa. Suppose only those costs that are directly attributable to a passenger, like booking, check-in or meal costs, are classified as variable. Then the cost floor would be so low that firms could legally choose almost any price. If, alternatively, the cost of flying and maintaining the aircraft were included in average variable cost, then almost any price cut to recover passengers after entry occurred

would be denied. Indeed, as the load factor on the incumbent's aircraft falls due to entry, average variable cost per passenger will then increase. Thus, not responding to entry at all may still leave the incumbent with (illegal) prices below average variable cost. In practice, as it turns out, the rule often provides little useful guidance.

More generally, any simple activity loss rule is theoretically flawed, as it is not systematically related to predatory behaviour. This has been acknowledged by competition authorities and triggered two responses. First, to use wider reasoning in order to supplement the activity loss rule and, second, to move away from activity losses to a more dynamic concept of profitability.

The wider reasoning usually comprises an analysis of whether predatory behaviour was feasible and intended. While each raises a number of interesting issues worth a discussion paper, we focus here on the second response, the more dynamic concept of profitability.

With explicit reference to the average variable cost standard established in AKZO, the Commission argued in a recent decision that Deutsche Post's revenue for its mail order parcel service should be related to the additional, incremental costs of providing this service. The argument is that only the additional costs of providing a particular service vary with the volume produced and are therefore to be taken into account.

> "DPAG could increase its overall result by either raising prices to cover the additional costs of providing the service or – where there is no demand for this service at a higher price – to discontinue providing the service, because revenue gained from its provision is below the additional costs incurred in providing it" (EC 2001, p 39).

In the US, the Department of Transport and the Department of Justice have picked up a number of predation cases in the airline industry. In this context their approach to identifying predation was clarified and publicly debated. The approach followed by the US Department of Justice (DoJ) in airline cases is as follows:

> "Our general approach is to identify and measure only those costs that Incumbent would have avoided had it not embarked on the pricing/capacity strategy under scrutiny. We then compare those costs to the revenue attributable to the strategy" (Fones 1997, p 13).

In contrast to the activity loss approach, which looks at the overall profitability of the relevant business activity, both approaches identify the particular behaviour that is alleged to be predatory and then determine the impact of this behaviour on profitability.[9]

This approach is in line with the approach the UK competition authorities take. They have, in their investigations, defined an incremental loss as the difference between the profitability given the potentially predatory action and the profitability had the alleged predator continued to pursue its pre-entry policy (Myers 1994, p 29, MMC 1995, p 44).

Thus, we define as one potential approach to detect predation the following rule:

**Incremental Loss Rule:** A proof of predation requires (1) feasibility, (2) intent and (3) a proof that the action leads to a lower profitability than maintaining the previous policy.

Now, suppose a small player enters the market of a large incumbent and the incumbent responds by lowering its prices in that market. For the sake of clarity you may want to think of the small entrant as a firm that operates in that local market only (eg in the airline context it serves only one city-pair) whereas the large incumbent is a multi-market firm that operates in many local markets. In this scenario, predation by the incumbent would usually be judged as feasible since local investment in predation may deter entry in all markets. Thus, even if the local losses cannot

be recouped locally, there will be an incentive to predate if the incumbent controls enough further markets where entry is deterred. Moreover, the large firm is likely to be financially stronger, not least due to the potential to cross-subsidise its local service. Finally, there would usually be a presumption of intent since the incumbent targets its response against the entrant (and does not change its policy elsewhere). Thus, the necessary conditions (1) and (2) are fulfilled.

In order to assess whether there is an incremental loss, competition authorities compare the profitability before the price reduction with the profitability thereafter. In the context of spatial competition where there is a fixed cost of providing a service, entry is likely to raise the average cost per unit of output. To provide an example, consider again a city-pair service with a given number of flights during the day. Suppose the entrant chooses a friendly entry strategy and schedules its departure times midway between the times of the incumbent. Most likely the entrant chooses a lower price than the incumbent; in particular if the incumbent charged monopoly prices before and the entrant was more efficient than the incumbent. Then the incremental loss rule has the following implication:

A. The lower the price set by the entrant, the greater the legal price cut of the incumbent under the incremental loss rule.
B. If at a given price/frequency combination of the incumbent there is a profitable entry opportunity, the incumbent will prefer to choose a higher frequency to allowing entry (or lowering the price).

The first point, A, is a direct implication of the incremental loss rule. If for a given price/frequency the entrant chooses a low price, it will attract a larger fraction of the incumbent's customers. Since the fixed costs of the incumbent remain, by definition, unchanged, the cost per passenger increases. Thus, in many occasions the incumbent will make a loss. The lower the entrant's price relative to the incumbent's price, the larger is this loss. However, this loss determines the incumbent's freedom of legal behaviour. Under the incremental loss rule it can legally take any action unless it increases his losses. Thus, it can legally choose to significantly undercut the rival. In practice this may mean that independent of how much more efficient the entrant is, there is no profitable entry opportunity, despite the monopolistic behaviour (price/frequency) before entry.

The second point, B, is at the heart of the issue discussed in this paper. If there were a profitable entry opportunity for a more efficient entrant, what would the incumbent prefer: to lower prices pre-entry, increase frequency pre-entry or accommodate entry?

***Lower the price?*** Clearly the incumbent would not choose to lower the price *ex-ante*. Doing so would increase the post-entry profitability of the incumbent for a given price set by the entrant. However, this profitability determines the legal response as the incumbent is, by the incremental loss rule, not allowed to take an action that makes the firm worse off than not responding. Thus, reducing the price *ex-ante* lowers the range of legal responses to a given price of the entrant.

***Accommodate?*** Allowing entry would significantly increase the frequency and raise the cost per passenger. This may or may not make the incumbent's operation unprofitable. Suppose it does, then the incumbent would rather deter entry through product proliferation (ie, increase its frequency) than allow entry which would lead to losses. Suppose the incumbent's operation is profitable after entry. In this case he would rather operate all services himself, instead of only operating a share.

***Proliferate?*** It follows from the arguments above that the incumbent will choose to increase its frequency in order to deter entry.

This analysis makes the welfare implications of the anti-predation rules clear: rather than encouraging entry, which, in our example, would lead to a duop-

oly, a strict enforcement of the rules would lead to product proliferation.

Given this outcome for the activity loss rule and the incremental loss rule, are there better alternatives out there? The US Department of Transportation has recently made a proposal with regard to their approach to identifying unfair exclusionary practices. They propose to initiate proceedings when a large incumbent responds to entry in a way that the resulting local revenue is lower than that of a "reasonable alternative response" (see US Department of Transportation 1998, p 17922). We interpret this approach as follows.

**Best-Response Rule:** A proof of predation requires (1) an action, (2) feasibility, (3) intent and (4) a proof that the firm's action is not a short-run best-response to the rival's action.

Unfortunately, in the DoT proposal there is little guidance on what a reasonable alternative response would be. We interpret it here as the short-run best-response, which maximises profits on the basis that the rival does not respond in turn.

The best-response rule also captures an important point made in a recent proposal advanced by Bolton, Brodley and Riordan (Bolton et al 2000 and 2001). They suggest using average avoidable cost instead of average variable cost as the standard that would lead to a presumption of predatory pricing. More importantly, they argue that a price above average avoidable but below long-run average incremental cost should be unlawful unless the business justification defence applies. This defence may include defensive and market-expanding justifications. With regard to the former they comment:

> "…we do not mean to suggest that a defensive business justification requires exact proof of the profit-maximising price in the predatory market. Instead, a defensive business justification requires only a showing that the alleged price is not less than the price (or range of prices) that a rational incumbent would be likely to charge under the assumption of continued competition – rather than rival exclusion – in the market" (Bolton et al. 2001, p 2516).

Compared to the Incremental Loss Rule the Best-Response Rule allows a smaller range of responses to a rival's action, since the response must be profit-maximising. If the best response is determined in a standard model of spatial competition, it will never be below the long-run equilibrium price unless the entrant choses a low price (which it has no incentive to do).

Thus, the best-response rule improves the outcome with regard to the first point. Given the rules the incumbent's post entry behaviour is more constrained. Hence, for a given pre-entry price/frequency combination, it is more likely that there is a profitable entry opportunity for the entrant. However, this may be of little help since the second point is still valid. Thus, while the rule is more likely to have an impact, this impact may be detrimental if it leads to product proliferation.

## Conclusions

Two conclusions can be drawn from this analysis. First, when the incumbent's choice of products (eg variety of brands, the number of departures) has an impact on the entrant's profitability, existing rules are unlikely to lead to a behaviour change of the incumbent unless it is threatened by entrants which he considers as being much more efficient. Second, if in such an environment rules are perfectly enforced, incumbents are likely to choose product proliferation rather than allow entry. Thus, the rules fail with regard to what most would see as their very aim, to encourage entry of more efficient operators.

However, as an empirical matter, we do observe the enforcement of anti-predation rules. Is this not evidence that the rules are effective and required? Surely, in a world without anti-predation rules, large

multi-market incumbents may behave like unconstrained monopolists – sheltered by the barrier to entry created by the threat of predation. The point is, however, that by improving the enforcement of the rules, the probability that entrants can be helped in with the support of the rules is reduced as incumbents are more likely to pre-empt with product proliferation.

So if incumbent operators respond to the rules by product proliferation (increasing frequency, the variety of brands etc), which offers more choice, should we not welcome it? The answer is clearly empirical. It depends on whether an incumbent picks a frequency or product variety above or below the socially optimal level. In the UK bus industry there have been more than 20 formal investigations[10] following liberalisation in the mid 1980s. Since that time the frequency has gone up by 25% but it has been argued that the increase in frequency, most of which occurred during the first years after liberalisation, reduced welfare by 20-24% (Evans 1987).

Where does this leave us? There are three options: amend, abolish or avoid the rules. No solution is perfect but all could potentially improve the outcome relative to the current situation.

How can we amend the rules? One immediate implication of our analysis is that competition authorities should more explicitly assess the costs and benefits of entry.[11] If entry, and the associated increase in frequency or product variety, is clearly beneficial, normal anti-predation rules can be applied. Our analysis suggests that the best-response rule is better than the incremental loss rule, which in turn is better than the standard average variable cost test.

If entry is not be in the public interest, the next question to ask is whether the entrant is more efficient. If it is not, normal anti-predation rules can be applied. If it is, the competition authority could ask the incumbent to make room for the entrant. This would be a radical approach. Alternatively, it could determine whether the incumbent has abused its market power and chosen product proliferation to deter entry. If so, it would require the incumbent to stop product proliferation.

The European Commission has begun using the radical approach. However, it has done so not under predation rules but as a remedy in merger cases. In Alitalia/KLM the Commission required the operators to give an undertaking to reduce the frequency on those flights where entry occurred.[12] This takes into account the entry-deterring impact of the incumbent's frequency. However, it has not been based on an evaluation of whether future entrants are more or less efficient than the incumbent.

The Bundeskartellamt has adopted a different approach: it takes for granted that the increase in frequency is beneficial and argues that new entrants require support from regulators to sustain the first two to three years of their operation.[13] Again, such a position cannot be supported by an economic argument unless it is shown that the increase in frequency is in the public interest.

Should we abolish anti-predation rules? This would solve the product proliferation problem. However, whenever predation is likely, the market outcome in the absence of regulation is surely not in the public interest relative to the social optimum. Thus, there should be anti-predation rules that take into account the costs and benefits of entry.

Can we avoid anti-predation rules? One could adopt sector specific rules in those industries where standard anti-predation rules are likely to fail. There are two alternatives. One is to restrict the post-entry behaviour of the incumbent by *per se* rules. Many

variations of *per se* rules have been proposed: (1) if the entrant exits require the incumbent not to raise prices for some time; (2) do not allow the incumbent to lower the price in response to entry; (3) force the incumbent to lower the price in all markets it operates in. The other alternative is to switch to a tendering system, ie rather than have competition in the market have competition for the market. None of these alternatives is perfect. However, for some markets, like the local bus industry, choosing a tendering system may indeed be a better alternative than relying on anti-predation rules in their current format.

We do not pretend to have a ready made answer to the problem described. However, this paper has sought to raise an important issue when arguing that regulators and legislators should consider the strategic response of the subjects affected by the rules when designing them. Indeed, the more general point of this discussion paper is that the anti-predation rules which are currently applied, are not systematically linked to welfare.

## Bibliography


Areeda, Phillip and Donald F. Turner: "Predatory Pricing and Related Practices under Section 2 of the Sherman Act", in: *Harvard Law Review*, Volume 88, pp 697-733, 1975.

Bolton, Patrick; Joseph F. Brodley and Michael H. Riordan: "Predatory Pricing: Strategic Theory and Legal Policy", in: *Georgetown Law Journal*, Volume 88, Number 8, August 2000; pp 2239-2330.

Bolton, Patrick; Joseph F. Brodley and Michael H. Riordan: "Predatory Pricing: Response to Critique and Further Elaboration", *Georgetown Law Journal*, Volume 89, pp 2495-2529, August 2001.

Department of Transportation (U.S.): "Enforcement Policy Regarding Unfair Exclusionary Conduct in the Air Transportation Industry", in: *Federal Register*, Volume 63, Number 69, 1998, pp 17919-17922.

Evans, Andrew: "A Theoretical Comparison of Competition with Other Economic Regimes for Bus Services", in: *Journal of Transport Economics and Policy*, Volume 21, Number 1, January 1987, pp 7-36.

Fones, Roger W.: "Predation in the Airline Industry", http://www.usdoj.gov/atr/public/speeches/1188.htm, 1997.

Monopolies and Mergers Commission: "The Supply of Bus Service n the North-East of England", HM Stationary Office, London, 1995.

Myers, Geoffrey: "Predatory Behaviour in UK Competition Policy", *OFT Research Paper 5*, 1994.


1 Bundeskartellamt: 9. Beschlussabteilung B 9-144/01, 18 February 2002 (upheld by Oberlandesgericht Düsseldorf on 10 April 2002).

2 The argument we are making in this discussion paper draws on research undertaken while the author was affiliated with the Science Centre Berlin (WZB). See Rainer Nitsche: "On the Effectiveness of Anti-Predation Rules" WZB Discussion Paper 2002.

3 Case C-62/86 AKZO v Commission [1991] ECR I-3359, [1993] 5 CMLR 215.

4 Case COMP/35.141 – Deutsche Post AG (predation) and IP/02/890 (state aid).

5 Some use wider definitions of predation that include any conduct that eliminates, restricts or deters competition, eg the Bundeskartellamt: 9. Beschlussabteilung B 9-144/01, 18 February 2002

6 Case C-62/86, Akzo Chemie BV v. EC Commission [1991] ECR I-335.

7 Tetra Pak II [1992] OJ L72/1.

8 Case C-333/94 P Tetra Pak International SA v Commission [1996] ECR I-5951, [1997] 4 CMLR 662

9 Note, however, important differences. In the Deutsche Post case the activity was defined very broadly as providing mail order parcel service. Moreover, the Commission did not make a great effort to explain why predation (or a softer form of crowding out) would have been rational. In the context of the airline cases in which the DoJ applied its rules, the action is more clearly identified as the change in price or capacity in response to entry.

10 This number includes merger inquiries.

11 Contrary to our simplified example in practice this is not necessarily an easy task. In the airline industry, for example, adjustments need to be made for the following: the extra benefits offered by large carriers (eg interlining); the complexities of pricing (eg fare categories, frequent flyer programs); the impact of a local action on the revenue elsewhere in the network; the effect of multi-market contact; the availability of slots; the impact of an increase in frequency and a lowering of prices on demand. But all these factors also have to be taken into account when current anti-predation rules are applied.

12 Case COMP/JV.19 – KLM/ALITALIA. The merger of KLM and Alitalia was eventually not pursued (1999).

13 Bundeskartellamt: 9. Beschlussabteilung B 9-144/01, 18 February 2002, p 23.

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