

Economic and Legal Aspects of Predatory Pricing

Damien O' Flaherty – Senior Sophister

In the following essay, Damien O' Flaherty undertakes an examination of the issue of predatory pricing in competition economics. Having introduced the elements of both the traditional static and more dynamic analyses of predation he discusses some real-life instances of such arguments within the courtroom. He concludes by arguing that any attempts to regulate predatory actions as a welfare-improving tool may be counterproductive.

"The attempt to reduce or to eliminate predatory pricing is also likely to reduce or eliminate competitive pricing beneficial to consumers"
(Harold Demsetz, 1982)

For most of the last century there was strong debate over the issue of predatory pricing. On one side of the debate predatory pricing was seen as a pernicious business practice used by large firms to monopolise industries and hence reduce social welfare. Whereas other economists, most notably the Chicago School, considered instances of predation to be rare, because they believed it was an irrational strategy which in general proves costlier to the predator than to the prey. The aim of this paper is twofold; first to consider the evolution of the theory of predatory pricing within the framework of competition economics. Second, to examine the effects that changes in the theory of predation have had on competition law and policy in the US.

Section 1 sets out the traditional theory of predation, and examines some of the arguments put forward which indicate that predation is unlikely to occur. In section 2 the new game theoretic approaches to predation are set out, along with an analysis of what effects these new theories should have on competition policy. Section 3 considers the treatment of predatory acts by the Courts, focussing specifically on the economic rationale behind the Courts' decisions. Section 4 considers where the future direction of competition policy should lie with respect to predation. Finally, section 5 concludes with a summation of the arguments presented in the paper.

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Section 1

Predatory pricing may be defined as

“a policy of price cutting by a firm in a dominant market position designed to reduce or eliminate the competition it faces, so as to enable the firm to reap higher profits at a later stage following the diminution in competition which has occurred as a result of predation”¹.

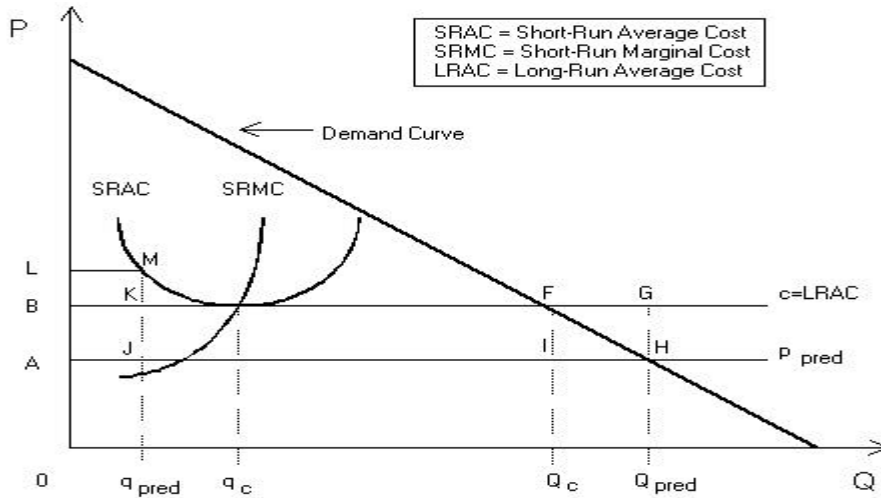
The classical theory of predatory pricing considers predation in a static setting. Consider a large firm whose aim is long run profit maximisation. This firm operates in a number of distinct markets, and in some markets it is able to keep price above cost so as to earn supernormal profits. In other markets, however, the firm faces competition from smaller firms operating in only one market, and thus cannot earn monopoly rents. Predatory pricing occurs when the large firm reduces price below marginal cost. At this point both firms are making a loss. However, because the large firm has greater resources at its disposal it is able to outlast its rivals through the loss making stage, forcing them to exit the industry. The firm no longer faces competition and can thus raise its prices to monopoly levels and earn supernormal profits.

Note that the large firm has departed from its optimal short run profit-maximising strategy, such a price cutting policy only makes sense if its aim is to alter the structure of the industry in favour of the large firm. The change in market structure results in reduced economic welfare²; thus predation is prohibited under the antitrust laws. However, even in the first loss-making stage of predation there is a reduction in economic welfare. To illustrate this point, consider the following graph³.

¹ Massey & O Hare (1996)

² A competitive market structure is replaced by a monopoly; this results in the usual deadweight loss triangles, and a reduction in economic welfare.

³ Martin (1994)



In stage 1, the predator lowers price below long run average cost in an attempt to force his rival to exit. The diagram above illustrates the welfare consequences of these actions. The area $ABFH$ is the increase in consumer surplus. Against this increase in consumer surplus must be set the losses of the two firms. The predator's losses are equal to the area $JKGH$, while the victim's losses are the area $ALMJ$. Thus total losses equal the area $ALMKGH$, and this exceeds the gain in consumer surplus by the areas $BLMK$, and FGH . Therefore, welfare is reduced if a firm engages in predation, and is then reduced still further if the firm is successful in altering the market structure. This is another reason why antitrust law prohibits predatory actions.

This strand of analysis inspired the Areeda–Turner rule⁴. In their paper, they considered predation in a standard static framework. Although they felt predation was likely to be a rare occurrence, they formulated a simple rule for the Courts to use in assessing the merits of claims of predation. Courts have used this rule worldwide in assessing predatory cases⁵. They argued that any price above marginal

⁴ Areeda & Turner (1975)

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cost should not be considered predatory since prices beyond marginal cost will not eliminate equally efficient rivals or potential entrants, who may freely restrict their output to efficient levels, and thus make profits at the monopolist's price. They then argue that pricing below average cost is anti-competitive, and should be prohibited. Pricing at this level deprives equally efficient rivals, actual or potential, of normal returns on their capital.

The classical formulation of predatory pricing was not accepted uniformly by all schools of economic thought. The Chicago School, for example, argued at great length that under conditions of full information and free entry, predatory pricing could not occur. However, it wasn't until McGee's seminal paper in 1958 that a definitive argument against predatory pricing was put forward. In his paper McGee analysed the famous Standard Oil case, and concluded that not only had Standard Oil not engaged in predatory pricing, but that it would be irrational for any firm to attempt to monopolise an industry in this way. The specific details of the case are not of relevance here, but the reasoning involved is interesting.

McGee's main arguments were that, first, predation is a very costly and risky strategy to employ. For a firm to lower price below a rival's costs it must supply a large amount of the market output. This means that the predator bears far higher costs of predation during the predatory period than does the prey. Indeed at the beginning of the predatory period there is no way of knowing how long it will take to drive out the competition. Second, unless there are high barriers to entry predatory pricing can never be profitable. When price is reduced the competition can temporarily cease operations and wait until the price returns to profitable levels. Alternatively, if the prey goes bankrupt, new entrants may enter the industry. This is highly probable if the incumbent is charging monopolistic prices. Finally, if the industry is profitable in the long term, investors and lenders will realise that the observed price-cutting is only temporary, and as a result, they will be prepared to back the prey through any period of temporary losses.

Based upon the above arguments, McGee argued that predatory pricing was an irrational strategy for any profit-maximising firm to employ, and hence instances of it would be rare and unsuccessful. Further, he argued that attempts by the

⁵ Note that this rule has been the subject of great criticism by many industrial economists. They argue that it disregards the essence of the predatory pricing problem – strategic behaviour over time. For a further discussion of this issue see Brodley & Hay (1981)

competition authorities to prevent predatory pricing would have a far more detrimental effect on social welfare than the odd instance of predatory pricing, because rules on pricing would reduce levels of competition in industry, with firms becoming wary of being sued for engaging in predatory actions.

Section 2⁶

In the 1980s a new approach emerged which used strategic game theoretic analysis of imperfect competition to reassess the theory of predatory pricing. Unlike the standard economic logic applied up to this point, the new models assessed predation in a strategic, dynamic framework. These models show that under certain plausible conditions predatory pricing can take place, and that it need bear no relation to pricing above or below marginal cost. Following Milgrom and Roberts I shall now briefly outline some of the major contributions to this field.

The first types of model consider intertemporal linkages, i.e. situations in which the outcome tomorrow depends on today's actions. Consider the learning curve hypothesis, which tells us that it is optimal to produce as much as possible today to reduce learning costs tomorrow. This means that the per unit costs of production will be lower the greater the amount produced. The result is a strategic effect; moving down the learning curve faster than one's rivals gives one a strategic advantage. Hence, firms will compete to move down the curve faster than their rivals, and in terms of pricing this can lead firms to charge a price which is lower than current marginal cost, without any predatory intent. This strategic advantage conferred by learning (and thus achieving lower costs) may result in increased exit from the industry. The result of this model is twofold. First, price may be less than marginal cost without any firm engaging in predation. Second, it may lead to an overall increase in social welfare due to enhanced productive efficiency.

The other game theoretic models to be discussed all focus on the way a firm can manipulate asymmetric information to prey on its rivals. The first of these is Bolton & Sharfstein's (1988) "*Deep Pocket*" model. Consider a market with two firms. Assume firm 1 is large and has access to internally generated resources to finance its operation. Its rival, however, must rely on borrowed funds to finance its operations.

⁶ This section draws heavily on Milgrom & Roberts (1991)

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The rival faces a moral hazard⁷ problem when trying to obtain financing. Thus borrowing at time $t+1$ depends positively on the level of resources at time t . Firm 1, therefore, can employ a strategy (e.g. price reduction) which ensures that firm 2 has low profits in period 2. Persistently low or negative profits will gradually cut off the firm's access to credit. Thus, when capital markets are imperfect, a firm can still manipulate a cost advantage to successfully predate without setting a price lower than its costs.

We now consider signalling and reputational models of predation. In the signalling model it is assumed that the incumbent firm has greater knowledge of production costs and prevailing demand conditions than do potential entrants. Thus the incumbent has the option to use low price as a signal to manipulate the entrant's perception of price or demand conditions. We assume the predator selects the price that is optimal given his conjecture of the entrant's strategic reaction. The prey acts optimally, given its conjecture on how the observed price set by the predator depends on the predator's private information. Assume that the conjectures about each other's strategies are accurate.

In equilibrium, the incumbent cannot exploit its informational advantage, because the prey sees the price it sets as an attempt to manipulate his perceptions. However, the optimal response for the incumbent is to set price on just this basis. The strategic reaction of the entrant forces the incumbent to set the lower price⁸, thus increasing the toughness of competition, although it can never manipulate its rival's perceptions. Thus, in this model predatory pricing bears no relation to costs. Predatory options only induce exit or reduce entry to the extent that they increase competition.

Finally, we shall examine the reputation model of Milgrom & Roberts (1982). In this model a firm operating in a number of markets will prey on all early entrants to these markets regardless of whether it is profitable to do so. The firm engages in

⁷ The profits of the firm can be either high or low, and their actual value is not directly observable by the lenders. Thus management can misappropriate these profits, and then claim that profits were low when in fact they were high.

⁸ Were the firm to set a high price, the entrant would still think that the incumbent was trying to manipulate its perceptions, and thus would assume that the incumbent had higher costs than he actually had and thus would be even more aggressive in competing for market share.

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predation in order to establish a reputation for toughness, which will deter future entrants as they will expect to meet with the same response. The result of this model is that predation can have a deterrent effect on entry, which will have consequences for dynamic efficiency in the market. Further, predation does not need to impose operating losses on the entrant, rather it is enough that profits are small enough to fail to justify sinking the costs of entry.

The models described above produce results at odds with traditional economic analysis, and thus have serious implications for the future direction of competition policy. First, they indicate that predatory pricing is a very rational strategy for firms to employ, and thus is likely to occur with far greater frequency than the Chicago School analysis would imply. Second, these results call for a move away from the Areeda-Turner rule and from similar pricing rules. The above models suggested that predation can occur when prices are greater than marginal costs, and similarly, prices below marginal costs may be both rational and profit-maximising without being predatory. Therefore, rather than applying a simple formulaic rule to determine predation, a detailed economic analysis of the industry will be needed to establish predation. Included in this analysis should be an examination of the information structure of the industry.

Finally Milgrom and Roberts note that the type of behaviour analysed above can be socially costly through its impact on future entry rather than on current competition. Thus if that type of behaviour could be identified it would be prohibited. However

“this would involve requiring firms to charge the right prices – those that they would charge if the market and informational conditions gave no possibility of effecting rivals’ behaviour...doing so would surely cost more than any efficiency gains one might realise from reducing the height of dead-weight-loss triangles”⁹,

and thus they conclude that

“it may be best simply to give up on attempts to control predation even if one believes that it can and does occur”¹⁰.

Section 3

⁹ Milgrom & Roberts (1991)

¹⁰ *ibid*

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*“Although the law governing predatory pricing is both intelligible and stable, the more detailed features of the Supreme Court case law have – during a prolonged period – exhibited numerous inconsistencies and, indeed, a significant degree of incoherence”.*¹¹

The purpose of this section is to consider whether changes in the theory of predation have had an impact on the major decisions of the US Supreme Court, thus explaining the inconsistencies noted above. Although cases of predation date back to the Standard Oil case of 1914, no significant theoretical debate emerged until McGee's influential paper of 1958. Thus in this section, only selected cases from this date onwards will be considered.

US antitrust law came into effect with the passing of the Sherman Act in 1890. Predatory pricing offends section two of this act, which prohibits the acquisition or maintenance of monopoly power through means other than superior efficiency, the production of a superior product or historic accident. It also prohibits the exploitation of monopoly power to the disadvantage of rivals in the primary market or in another market. Thus the use of predatory practices to acquire or maintain a monopoly position is outlawed under US law.

One of the first major decisions of the Court in the years following McGee's paper was the Utah Pie case¹². In this case a local pie company, which had a market share of 66.5% of the Salt Lake City market, became engaged in very intense price competition with three national companies. Records showed that the three companies had sold below their costs in the Salt Lake City market. However, the local company's operations remained profitable, and its sales actually increased during the period. At the end of the period, the local producer had a market share of 45.3% while the national producers had a combined share of 46.2% (29.4%, 8.3% & 8.5% respectively). Thus the market was less concentrated and probably more competitive. However, the Supreme Court ruled that competition was probably lessened by the actions of the national companies.

The Court's decision appears to have been reached without any recourse to the economic theory of the time, i.e. McGee's analysis that predation was in general an irrational strategy and therefore was unlikely to occur. The Court asserted that

¹¹ Gifford (1994)

¹² *ibid*

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predatory intent provided the basis for an inference that competition was lessened. Note that the use of this standard in determining predation would surely result in lower levels of competition throughout the economy. Firms that were genuinely more efficient than their rivals would be loath to compete on price for fear that their price-cutting would be taken as predatory in its intent. This can hardly have been the aim of the Sherman Act. Further, the Court failed to decide on a standard legal definition of predatory pricing. Whatever its reasoning, the decisions of the Court in this case resulted in great confusion in the lower courts as to both the definition of predation and as to actions that constituted predation.

Twenty years passed before the Court again addressed the question of predation in the *Matsushita* case of 1986. By this time the Areeda-Turner analysis of predation had become accepted in both legal and economic circles, and the new game theoretic theories were beginning to emerge. This case involved claims by US television manufacturers that Japanese manufacturers were selling below their costs in the US market, while charging monopoly prices in their domestic markets.

In its findings, the Court rejected these claims as being economically implausible. It argued that alleging a predatory episode of twenty years was simply implausible; the Japanese would have run up losses so large that they could never hope to recover them even if they did manage to monopolise the US market. Thus, this strategy is not rational, and hence it cannot have been predatory in its intent. The Japanese were simply engaged in intense competition.

The Court's ruling in this case has been criticised on a number of grounds. First, Zerbe & Mumford¹³ argue that the Court may have examined the wrong market to find profitability. They note that a monopolist in one market will find it profitable to sell the monopolised good in another competitive market even at prices below average variable cost if there are economies of scale in production. Thus, the Court's logic may have been flawed, and the Japanese firms may have engaged in a rational (and profitable) strategy of predation.

Second, with regard to the Court's definition of predation Gifford¹⁴ argues that the Court caused unnecessary confusion by using a two-pronged approach to its definition of predation. The Court defined predation as (i) pricing below the level necessary to sell products, or (ii) pricing below some appropriate measure of cost.

¹³ Zerbe & Mumford (1996)

¹⁴ Gifford (1994)

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Gifford argues that if taken literally, the first clause implies that a producer may be accused of predation if he reduces prices from monopolistic to competitive levels.

Alternatively, this clause can be seen as a profit maximisation test. A price reduction below the profit-maximising level is deemed to be predatory, in that its intent is to drive rivals out of the market. Gifford notes that such a profit-maximising test is pernicious.

“Such a test could deter an efficient firm from under-cutting its high cost rivals, mandating the maintenance of oligopoly prices and the continued presence of inefficient firms in the industry. A test that would produce such results is in direct conflict with the efficiency goals of the antitrust laws”.

The decisions of the Court in this case indicate that it has moved forward considerably from the Utah Pie case. In this case it clearly undertook an economic analysis of the issues involved. Further, the second clause of its predation definition clearly follows the work of Areeda & Turner in this regard. However, as noted above, the Court's use of a two-pronged approach, in addition to its failure to define the appropriate cost measurement indicate that it still had not settled on a clear and intelligible method of dealing with predation cases.

The final decision of the Court considered here involves the Brooke Group, in the context of a price war between cigarette producers. During this price war it was alleged that one of the parties had priced below its own costs. The Court rejected this claim on a number of grounds. Zerbe¹⁵ notes that the ruling of the Court added an additional requirement to predatory pricing claims. In addition to evidence of below-cost pricing, a plaintiff must show that the defendant had a reasonable possibility of recouping its investment in below-cost prices by reaping supracompetitive profits once the rival has been eliminated. In the Brooke Group case, the two parties had market share of 2% and 11.4% respectively. Thus, in the Court's view there was no way that the defendants could have recouped their investment.

The Court's opinion in this case is highly significant for both legal and economic reasons. First, the Court ruled that the standards necessary to prove predation should be the same under both the Sherman Act and the Robinson-Patman Act. Thus

¹⁵ Zerbe & Mumford (1996)

bringing the Court's views in line with those of Areeda & Turner. The influence of Areeda & Turner is further emphasised by the Court's reiteration that predation necessarily involves pricing below some level of costs. Finally, the addition of a recoupment clause in deciding whether predation has occurred, brings the Court's economic thinking very much in line with traditional predatory pricing analysis; predation is only rational if it is profit-maximising, and it can hardly be profit-maximising if one fails to recoup ones investment.

This section considered whether or not the Supreme Court's rather inconsistent approach to the issue of predation was in some way connected to the changing economic analysis of what constitutes a predatory act. The above analysis clearly shows that this is not the case. However, by the end of the period considered, one can clearly see that the Court has adopted the traditional economic approach to predation, and in particular, the Areeda-Turner standard.

However, the traditional static analysis of Areeda & Turner has been undermined by the new game theory literature. As noted earlier this approach stresses the dynamic features of predation, and calls for detailed case-by-case analysis, rather than simplistic pricing rules, to determine whether predation has occurred. Unfortunately, the Court appears to have failed to consider this analysis in any of the cases that have appeared before it. Klevorick¹⁶ confirms this; in his paper he conducted a search of all Supreme Court and Circuit Courts of Appeal cases between 1980 and 1992 that contained the term predatory pricing. 193 cases were reviewed in all, and none of them made reference to the new game theoretic literature of predation.

Section 4

The purpose of this section is to consider the future direction of competition law and economics with regard to predation. From the economic and legal analysis above, it appears that competition authorities are being faced with a difficult decision. New economic theory indicates that predatory acts are a rational strategy for a firm to employ, and that these acts can have a significant negative impact on economic welfare, both in a static, and more worryingly, in a dynamic setting. However, this theory also tells us that a cursory examination of prices and costs is not enough to determine predation. Rather, a detailed economic analysis is called for. This type of

¹⁶ Klevorick (1993)

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economic analysis is highly costly, and, given the Court's record in using economic analysis, may not even be accepted in legal cases. Thus authorities must weigh up the costs and benefits of continuing to try to prevent predation.

Certainly, welfare could be raised if predation could be successfully identified and stopped. However, predation occurs due to an imperfection¹⁷ in the relevant market. Thus improving welfare involves establishing the “*correct prices*”, and then forcing the firms to stick to them. This implies the regulation of a vast number of markets, which would surely prove costlier than giving up on attempts to control predation.

Further, even if it were possible to carry out the above regulation, one must consider the difficulties that competition authorities would face in proving allegations of predation. From the cases examined above, the Court to date has not been particularly willing to adopt economic theory when making its judgements. It took almost twenty years for the relatively simple Areeda-Turner analysis to be accepted, so one can only imagine the costs and difficulties involved in successfully alleging predation if a detailed analysis of firms and markets was needed in each and every case.

Conclusion

The aim of this paper was to consider some economic and legal aspects of predation. Section one analysed the classic formulation of predation and the main objections to this approach. Section two showed that perhaps the correct analysis of predation is in a dynamic setting, and further illustrated that there need not be a link between predation and costs. It also indicated that successful prevention of predation was likely to be fraught with difficulties, and ultimately, was likely to prove costlier than allowing predation to occur. Section three considered the way in which the Supreme Court has handled cases of predation. From the cases considered, it seems that the Supreme Court has found difficulties in applying economic analysis to the cases discussed. Although in recent years it appears to have adopted the Areeda-Turner standard, it has completely disregarded the relatively new market-organisation literature on predation. Finally, section four considered the future direction that competition policy should take with regard to predation. In brief, it appears that the analysis of Demsetz may be correct; that attempts to control predation may

¹⁷ One such imperfection might be asymmetric information

ultimately reduce consumer welfare, and lead to reduced levels of competition throughout the economy.

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