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**Predatory Pricing: Still a rare occurrence?"**

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## 1. Introduction

The aviation industry has encountered considerable turbulence in recent years. Largely, this has been due to external factors such as the events of September 11, 2001 and the subsequent wars in Afghanistan and Iraq. Heightened security concerns and more recently, SARS have led to declining profitability. Changes in the industry landscape however, preceded these events. Generally, there has been a move toward deregulation but the industry is still governed by arcane agreements between countries, some of which continue to look for new ways to protect their dominant national carriers. Deregulation has facilitated entry and led to a proliferation of low cost carriers in many parts of the world. Indeed, legacy network carriers continue to join the fray, apparently learning little from the numerous failed attempts in both the United States and Europe. The increased competition has been accompanied by allegations of predation and other exclusionary conduct by dominant network carriers. Predation, or pricing below cost, can be used to perpetuate dominance or to obtain it. Alternatively, it may just be viewed as an illegal way to compete. Thus most statutes may list predation as an exclusionary practice, but in many instances the offence is also part of the abuse of dominance or monopolization doctrine. The increasing number of complaints in the aviation sector has in turn renewed interest in predation among scholars in law and economics. This has rejuvenated old debates and started new ones. One American legal scholar refers to predation as "the most maligned area of monopolization law" in the United States.[1]

The purpose of this paper is to provide an introduction to the debate. The overview is not comprehensive. Yet, it should provide the reader a reasonable appreciation of current controversies and cases. Section 2 discusses a number of themes in the multi-faceted debate on predation. The traditional divide in the predation debate is often characterized as "Chicago" vs. "post-Chicago". The former suggest caution because they are sceptical about both the rationality of predation and frequency with which it may occur. The latter believe that predation is pervasive and takes many forms. Others view the debate as a divide between modern economics and the law. They claim that courts have not kept up with the developments in game theory and the strategic entry deterrence literature. Their critics in turn argue that this literature has little empirical support and provides no objective standards

[1] Elhauge (2003b) at 13.

that can be applied by courts. More recently, there has been a move to redefine predation to include above-cost price cuts. Thus simple issues such as the definition of predation appear to be yet unresolved. Application of various cost tests for predation is explored through recent aviation cases in the United States and Canada.

Though the debate continues on many fronts, at least in the United States the doctrine is clear. It was enunciated in Brooke Group Ltd. *v*. Brown & Williamson Tobacco Corp. This case is discussed in section 3. Though it did not settle the question of the appropriate cost test, the U.S. Supreme Court ruled out above-cost price cuts as being predatory. Section 4 discusses the American Airlines case in the United States and section 5 is devoted to Phase I of the Air Canada case. Though limiting coverage to North America may appear restrictive at first, there are broader implications of using Canada and the United States for illustrative purposes. Both countries have a long history of antitrust which spans more than a century. Until very recently, the doctrines were generally similar as were interpretations by courts and tribunals. Canada however, has departed by incorporating aviation specific regulations in its antitrust statute. Thus the comparison between the two countries may be of interest to other nations that may be contemplating aviation specific statutes or codes of conduct. Section 6 provides concluding remarks.

## 2. The current debate

The predation debate is usually characterized as having two camps and it appears to be customary to refer to them as “Chicago” and “post-Chicago”. The Chicago approach is more cautionary and views predation as being either irrational or very unlikely. Post-Chicago scholars argue for aggressive enforcement because they view predation as being both rational and commonplace. Another way to view the scholastic divide is to equate post-Chicago with the strategic entry deterrence literature in industrial organization economics, which essentially relies on game theory to show that a wide range of exclusionary conduct including predation could occur in a variety of settings.

Legal scholars such as Bork, Posner and Easterbrook are most frequently cited as the proponents of the Chicago view.[2]

[2] Easterbrook (1992) at 119.

> The hallmark of the Chicago approach to antitrust is skepticism. Doubt that we know the optimal organization of industries and markets. Doubt that government could use that knowledge, if it existed, to improve things, ...

The Chicago view on predation is based on a simple logic that continues to be influential. Assume that the incumbent is a dominant firm and the entrant is small.[3] Size is important because the entrant has to be large enough to be able to influence the market price and to supply the increased demand due to lower prices. The dominant incumbent evicts the entrant from the market by charging a price below some reasonable measure of cost.[4] The incumbent hurts itself to hurt the entrant and loses more money than the entrant because it has a larger market share. The sacrifice from predation is immediate, but the benefit, or recoupment, comes later through future monopoly profits the incumbent expects to earn after evicting the entrant from the market. Future benefits are uncertain because there could be other entrants and the incumbent may never have the opportunity to recover those losses.[5] Recoupment is the more important consideration because the sacrifice, or the price war between the entrant and the incumbent is beneficial to consumers. Sacrifice without recoupment is not a concern and successful recoupment requires the ability to exercise monopoly power for a reasonable period of time after the entrant leaves the market.[6]

> We need a way to distinguish competition from exclusion without penalizing competition. *If* the practices are exclusionary, they will be profitable only if the aggressor can recoup. If the aggressor can not, there is no reason for antitrust concern.

Within the Chicago camp, Bork takes a particularly extreme stand and discards all tests of predation:[7]

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[3] In aviation markets entrants typically do not attempt to replicate the size or frequency of the incumbent.
[4] The comparison is between the price charged by the incumbent and its costs. The costs of the entrant are irrelevant.
[5] Since there is no difference between entry barriers and exit barriers, if entry, and subsequent exit takes place, this may be suggestive of the fact that barriers to entry are low in the industry making recoupment less likely. In order for predation to be rational, the present discounted value of the future (uncertain) stream of monopoly profits must exceed the current (certain) loss. Another argument due to McGee is often attributed to the Chicago school. This says that predation is a very expensive way of disciplining or excluding rivals and it may be cheaper instead to acquire them. Modern merger law however closes this route.
[6] Easterbrook (1984) at 26.
[7] Bork (1978) at 154.

> It seems unwise, therefore, to construct rules about a phenomenon that probably does not exist or which, should it exist in very rare cases, the courts would have very grave difficulty in distinguishing from competitive price behaviour.

Posner (1976) does not discard predation as being irrational, but subscribes to the view that it is often difficult to distinguish between predatory and efficient pricing.[8] Posner doubts the effectiveness of predation as a means of monopolization. In his view predation may delay entry or increase the scale at which entry occurs because fighting large-scale entry is unlikely to yield a net benefit to the incumbent. Posner defines predatory pricing as: "pricing at a level calculated to exclude from the market an equally or more efficient competitor".[9] He identifies pricing below short run marginal cost as being predatory – this is the well-known Areeda-Turner test for predation. In addition he also considers a price below long run marginal cost with intent to exclude as predatory. Firms need to cover costs of rent, insurance and overhead in order to stay in business and these costs would be included in long run marginal costs. Since marginal costs are difficult to calculate, the Areeda-Turner test uses average variable costs as a proxy and Posner suggests using average balance sheet costs as a proxy for long run marginal costs.[10]

The post-Chicago argument is that predation must be viewed in a dynamic rather than a static context and indeed this was the basis of Williamson's critique of the Areeda-Turner rule. In order to prevent strategic behaviour, or an aggressive response by incumbents, Williamson proposed a rule to restrict output of the incumbent at the pre-entry level for twelve to sixteen months. This would prevent the incumbent from dropping prices in response to entry. Compared to Areeda-Turner type rule, the Williamson rule provides a weaker deterrent because residual demand for the entrant is larger. However the incumbent could expand capacity and use limit pricing to deter an equally efficient entrant and this would increase consumer welfare prior to entry. If entry takes place nonetheless, entry will occur at a larger scale under an Areeda-Turner type rule than under the Williamson rule. Thus post-entry

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[8] Posner's argument assumes that the market is not contestable. If it were, the entrant could leave without incurring any losses. Thus Posner assumes that investment in specialized resources makes exit costly.

[9] Posner (1976) at 188.

[10] The use of average variable cost as a proxy has been criticized because it can be either above or below marginal costs depending on capacity utilization. Others criticize the marginal cost standard itself as being one based on a static notion of efficiency.

prices will be lower under an Areeda-Turner type rule.[11] Based on his work on contestability, Baumol proposed a rule that would freeze prices at the post-entry level. Though the incumbent is allowed to price aggressively to combat entry, the price-freeze prevents a reversal of the price cut. This rule does not prevent the entrant from pricing at the monopoly level before entry takes place.[12]

More recent proponents of the post-Chicago view use game-theoretic models that rely on imperfect information, signalling, and reputation effects to show that predation could be an equilibrium strategy.[13] Consider a one-shot extensive form game with two players. The entrant moves first and has two choices – enter or stay out. If the entrant decides to enter, the incumbent can either fight (predate) or accommodate (share the market). The entrant's payoff is highest if the incumbent accommodates entry and lowest if the incumbent fights. Staying out therefore, lies in the middle. The incumbent's payoff is highest if the entrant stays out and lowest if it fights. Accommodation, or sharing the market lies in the middle. Predation is not an equilibrium strategy in this game. In equilibrium, entry occurs and the incumbent accommodates. Selten's chain store paradox essentially repeats this game. So the incumbent faces the prospect of sequential entry by a single entrant in a finite number of markets.[14] This game is also solved using backward induction, so the last period or the last market is solved first. Since accommodation is better for the incumbent than predation, the incumbent will accommodate in the last market because there is no future entrant to deter. If entry occurs in the last-but-one market, the incumbent will accommodate because it knows that entry will occur in the last market regardless of it's actions in the last-but-one market. So the incumbent accommodates again and in this way the game unravels.[15] So enter-

[11] Scherer and Ross (1990).

[12] See Scherer and Ross (1990) or Ordover and Saloner (1989) for a discussion of these and other predatory pricing rules. Like Scherer and Ross, Spector (2001) argues for a "rule of reason" approach to predation.

[13] In a game theory context, the term dynamic is used for repeated games. The end period could be either finite or unknown (stochastic). If the end period is stochastic, players typically form beliefs about the likelihood that the game will continue to the next period. The probability beliefs affect the actions of the players.

[14] There are the usual informational assumptions: everyone knows the rules of the game, their own payoffs and those of other players and the history of the play. And everyone knows that everyone knows this … ad nauseum.

[15] A finite horizon repeated prisoner's dilemma unravels in a similar manner and cannot explain cooperation (or cartels). Cooperation is possible in an infinite horizon repeated game, or a repeated game with stochastic end period. See Spar (1994) for a more plausible treatment of cooperation. Spar's work is grounded in both, good economics and business realism. She argues that from an economic theory viewpoint, the markets for diamonds, uranium, gold and silver have similar

accommodate is a sub-game perfect Nash equilibrium, or the threat of predation is not credible.

The work of Kreps and Wilson, and Milgrom and Roberts modifies the informational assumptions underlying Selten's model to resolve the paradox and there are other models that rely on signalling and reputation effects to explain predation. Generally the incumbent can be of a certain type, for example, weak or aggressive and the entrant does know the type of incumbent it faces. Alternatively, the entrant may not know the payoffs of the incumbent. Later entrants observe the previous actions of the incumbent and could update their beliefs using Bayes rule. So for example, if the incumbent accommodates entry, entrants may infer that the incumbent is rational, but if the entrant is aggressive (fights or predates) they cannot be sure that the incumbent is rational – the incumbent could be pretending to appear irrational (bluffing) so as to deter entry. Some of these models do not have unique equilibria and outcomes depend critically on probability beliefs. In the Kreps and Wilson model for example, a weak incumbent may fight early on in the game to convince entrants that it is not weak and early entrants may stay out. Later entrants may "test the waters" and a weak incumbent will randomize or use mixed strategies against them and yet in other cases entrants may stay out even against a weak incumbent. Signalling models usually assume that the incumbent is better informed about the state of the industry and is able to manipulate and distort entrants' perceptions of reality.[16] Thus a high cost incumbent can pretend that it has low costs. Similarly in models of test market predation an informed incumbent can prevent the entrant from discovering true market conditions or demand by dropping prices in the entrant's test market.[17]

(structural) characteristics and should be "similarly amenable" to the formation of cartels. Instead, the extent of cooperation varies and is explained by internal organization, which has an impact on the ability to threaten, punish and commit.

[16] It is more probable that entrants have better information about incumbents. Incumbents have been around and so entrants can observe past behaviour quite easily. Incumbents are more likely to be publicly listed companies that routinely submit financial information to securities regulators, therefore it is easier for entrants to obtain financial information about incumbents. Starting a business involves making a business plan; it is unlikely that venture capitalists or other investors will fund an entrant who has been "bluffed" as to the true market situation.

[17] See Martin (1993) for these and other models, or the more accessible discussion in TEN Kate and Niels (2002), or Baird et. al. (1994) at 178. More recently, Bolton et. al. (2000 and 2001) provide a comprehensive discussion of the post-Chicago view.

Game theoretic models of predation have not been as influential in courts as their proponents would like, for primarily two reasons. Firstly, the models do not produce robust results. They are sensitive to the assumptions and often produce multiple equilibria. They specify very stringent conditions under which predation *could* take place. Courts cannot reasonably be expected to base decisions on perceptions and the ability of one firm to bluff another.[18] Some observers have noted that the contribution of these models is to assert the obvious: "bluffing may work when victims let themselves be fooled".[19] The post-Chicago view is clearly interventionist and given its untenable foundations, is more likely to favour false convictions.[20] Secondly, empirical support for these models is limited and at best, mixed. Proponents often cite the work of Burns (1986) and Morton (1997). Burns studied the Tobacco Trust between 1891 and 1906. During that time period American Tobacco and its affiliates acquired 43 competitors. Burns studied the impact of predation on asset values. In other words, the empirical study sought to show that American Tobacco used predation to depress the asset values of firms it subsequently acquired. Burns found support for this hypothesis and also for reputation effects, as American Tobacco was also able to acquire other competitors at discounted prices. Predatory behaviour led to savings of about 60% and reputation effects produced additional discounts of about 25%. These results were not conclusive and could also be consistent with competition:[21]

> … the estimated savings attributed to predation are also consistent merely with intensified, but lawful, price competition.

Morton examined British shipping cartels and found that entrant characteristics, weakness in particular, helped predict the probability of a price war, or that weak firms were more likely to be preyed upon. Weak firms or young firms were defined as those that lacked experience, finances, an established customer base, or had little multi-market contact with incumbents. Due to the lack of cost data, Morton's work could not provide evidence on predation. Instead, Morton found that entry by small firms was more likely to invoke an aggressive response than entry by large firms because it was cheaper to fight smaller rather than larger firms. The results lend support to the long purse or deep pockets type arguments. Morton

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[18] Arguments of a reputation for aggressiveness and bluffing (or outright misinformation) are not new. They were used about two decades ago in the U.S. Federal Trade Commission's capacity pre-emption case against DuPont. See Dobson et. al. (1994) at 165.

[19] TEN Kate and Niels (2002) at 24.

[20] Elzinga and Mills (2001) at 2494.

[21] Burns (1986) at 290.

also used "time since last war" and "time since last entry" as explanatory variables in probit regressions, but both variables were statistically insignificant – indicating that the results do not support models that rely on reputation. Both Burns and Morton relied on qualitative evidence of intent such as conversations between executives to support their respective arguments of exclusionary conduct.

Isaac and Smith (1985) used experimental techniques to study predation but did not find predatory behaviour in any of their experiments. Instead they found that:[22]

> … antitrust regulations imposed on a market that might be thought to be susceptible to predatory pricing caused the market to perform less competitively and less efficiently than in the absence of any regulations against predation.
>
> … these results graphically display the potential for efficiency losses from programs providing for output expansion limits combined with rules requiring semipermanence of price reductions.

Lott (1999) suggests that the apparent richness of game theoretic models allows them to explain almost any set of results - like running many regression lines through one observation. Lott tested, but found no evidence to support models relying on signalling, reputation effects and the long purse theory. In his view these models do not help to differentiate predatory behaviour from competitive behaviour. Instead, he found that government firms (non-profit maximizers and therefore "irrational") were more likely to meet the assumptions of game-theoretic models than private firms and further that governments themselves viewed private firms as less of a predatory threat than their government counterparts.

The issue therefore is not that courts are summarily discarding the post-Chicago view and the "new consensus" in Economics, but as Hovenkamp observes: proponents can "only produce data that are minimally consistent with the theory, but often cannot rule out alternative

[22] Isaac and Smith (1985) at 344. The two rules they refer to are the well-known Williamson and Baumol prescriptions, respectively. More recent work in this area emphasizes that outcomes are dependent on experiment design and structure. See for example Jung et. al. (1994) who do find some support for Kreps and Wilson type models and are able to generate predation in an experimental setting.

explanations".[23] Moreover, as the Canadian Competition Tribunal observed in the *Teledirect* case: they do not provide courts and antitrust tribunals with an objective judicial standard:[24]

> ... because of the absence of any criteria, the Tribunal is being asked by the Director to place itself in the shoes of a potential entrant with a view to assessing the credibility of the alleged "threat" being issued by Tele-Direct by its responses to entry. The Tribunal must determine whether the response in the initial markets in which entry occurred was so "overwhelmingly intense" that an entrant would be intimidated and future entry or expansion deterred. What may seem to be a response of "overwhelming intensity" to one person may not to another. It is inevitably a highly subjective exercise. Decisions by the Tribunal restricting competitive action on the grounds that the action is of overwhelming intensity would send a chilling message about competition that is, in our view, not consistent with the purpose of the Act. ...

More recent debate has centred on above-cost price cuts. Edlin (2002) argues that these could be harmful to consumers and should be considered predatory. The premise is based on a simple model of Bertrand price competition between an incumbent and entrant selling an identical commodity. The incumbent is a low cost monopolist while the potential entrant has higher costs. In this very restrictive framework prices equal the marginal cost of the entrant, but exceed the marginal cost of the incumbent. The incumbent makes positive profits and the entrant stays out because it is unable to recover the sunk costs of entry. Consumers are worse off because they are deprived of lower prices. Edlin (2002) views predation as an ex-ante issue and proposes a Williamson type rule that freezes the incumbent's prices for twelve to eighteen months if an entrant provides a twenty percent discount compared to prices charged by the incumbent monopolist.[25] If the incumbent does not observe the price freeze, the entrant can successfully sue for predation without the need to show either below-cost pricing or recoupment. An incumbent monopolist faced with this rule may use limit pricing to deter entry, which would benefit consumers because the monopolist will not charge monopoly prices. In other words, the entry deterring profit sacrifice occurs ex-ante or before entry. If entry takes place nonetheless, prices fall further.[26]

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[23] Hovenkamp (2001) at 271.

[24] *Director of Investigation and Research v. Tele-Direct Inc.*, CT-94/3 at 290-291. Available at: http://www.ct-tc.gc.ca/english/cases.html.

[25] In the particular case of airlines where there are potentially many prices for the same seat, Edlin proposes applying "a rough freeze" on a sales weighted average price. Edlin (2002) at 969. What constitutes a "substantial" price discount and the duration of the price freeze would depend on the circumstances of each case.

[26] Edlin (2002) at 945.

> In markets where an incumbent monopoly enjoys significant advantages over potential entrants, but another firm enters and provides buyers with a substantial discount, the monopoly should be prevented from responding with substantial price cuts or significant product enhancements until the entrant has had a reasonable period of time to recover its entry costs and become viable, or until the entrant's share grows enough so that the monopoly loses its dominance.

Edlin (2002) bases his argument on the premise that the primary goal of antitrust is to enhance consumer welfare.[27] Chicago scholars such as Bork (1978) hold a similar view and have identified promoting consumer welfare as the primary goal of competition and competition policy:[28]

> "Competition" may be read as a shorthand expression ... designating any state of affairs in which consumer welfare cannot be increased by moving to an alternative state of affairs through judicial decree.
>
> Antitrust is about the effects of business behavior on consumers.

Edlin refines his proposal with some qualifications. For example, the rule would be limited to situations where entrants don't face capacity constraints, or where entry takes place at a "substantial" capacity since the rule is meant to encourage entrants to enter with "gusto".[29] Further, Edlin seeks only to tie the hands of the most efficient monopolies, these being "incumbent monopolies with substantial proven advantages".[30] Examples of advantages include cost reduction via learning, scale and/or scope economies, making a superior quality product, demand-side network externalities, a trustworthy brand. However, "the very advantages that give a firm monopoly power" allow it to use above-cost predation to exclude

[27] The total welfare effects are ambiguous as benefits to consumers have to be weighed against losses due to inefficient pricing by the incumbent. A second goal of antitrust according to Edlin is to reduce or oppose concentration of economic power even if it entails lower costs. Edlin quotes Judge Brandeis and others to argue that one has to choose between democracy and concentration of power and wealth. See Edlin (2002) at 947, n. 24.

[28] Bork (1978) at 61 and 90.

[29] In the first instance it may seem that this rule does not protect low cost carriers since they usually enter on a small scale, often with a single aircraft operating on a single city-pair. However in his discussion of the American Airlines case, Edlin indicates that he would allow the incumbent to respond if the entrant is capacity constrained: "American's licence to respond would be limited to passengers whom Vanguard is unable to serve." Edlin does not indicate how potential demand for Vanguard's service should be measured. Edlin (2002) at 968.

[30] Edlin (2002) at 967 and 968.

or evict rivals from the market.[31] Since these advantages are not intrinsically exclusionary, Edlin proposes that reducing prices in response to entry be treated as exclusionary under the monopolization doctrine.

In Edlin's view, superior skill either in terms of product quality or low costs should not allow the monopolist "to exploit customers by raising prices unreasonably" instead the monopolist can continue to be a monopolist and charge a price above its marginal cost, so long as that price does not exceed the marginal cost of a potential rival so as to invite entry. Edlin does not find such a "limited profit-taking" monopoly unreasonable.[32] Implementation issues aside, Edlin's proposal is based on a restrictive model of price competition with homogenous goods and underlying goals of antitrust which are defined in an equally restrictive manner. Posing predation as an "ex-ante" problem is in effect an argument for regulation of prices from the outset, or one that mandates entry by less efficient firms by preventing the more efficient monopolist from responding to entry until such time that it ceases to be a dominant firm.[33]

Elhauge (2003a) provides of examples of a number European cases where above-cost price cuts were considered abusive. The AKZO Chemie BV case was not a predatory pricing case, but one of abuse of dominant position in the European organic peroxides market.[34] The alleged aggression was a response to entry by a small producer (ECS) of benzoyl-peroxide which is used as a bleaching agent in flour additives and as an initiator in the polymer or plastics industry.[35] ECS first entered AKZO's plastics market in the UK and then expanded to AZKO's continental customers, undercutting AZKO by 15-20%. AZKO responded by both overall and selective price cuts targeted at ECS customers in the flour additive market. The European Court of Justice held that prices below average variable costs, and prices above average variable, but below average total cost with intent to eliminate competitors were abusive.[36] In another abuse of dominance case in maritime transportation, the Commission

[31] Edlin (2002) at 963.
[32] Edlin (2002) at 951.
[33] Edlin (2002) also proposes freezing quality (at 986-87) if it is measurable.
[34] Phlips and Moras (1993) indicate that that this firm was part of the AKZO NV group – a Dutch multinational producer of chemicals and fibres.
[35] The core market for ECS was the flour additives market in the UK and Ireland.
[36] Elhauge (2003a) at 690. Phlips and Moras (1993) argue that this was not a case of predation for a number of reasons. They view the industry as a duopoly and argue that there was no direct link between entry by ECS and AKZO's attack. Further, the Commission and court did not discuss any

used a number of factors to find “abuse” (rather than predation). They included “reactive” and “selective” above-cost price cuts for ships with sailing dates directly competing with the entrant; price matching, and in one instance beating the entrants prices and profit sacrifice by the incumbent.[37] The European Court of First Instance affirmed the Commissions decision citing the above practices as “abusive” because they could not be characterized as “normal competition”. It also used company documents, which showed intent to eliminate competitors. The European Court of Justice affirmed the decision and held that such price cuts were illegal if the incumbent had over 90% market share and intent to eliminate entrants.

Another example of the illegality of above-cost price cuts is the (now withdrawn) U.S. Department of Transportation (USDOT) guidelines issued in 1998.[38] This was essentially a response to hub premiums and directed at the conduct of incumbent air carriers in their hub markets:[39]

> … we propose to consider that a major carrier is engaging in unfair exclusionary practices … if, in response to new entry into one or more of its local hub markets, it pursues a strategy of price cuts or capacity increases, or both, that either (1) causes it to forgo more revenue than all of the new entrant’s capacity could have diverted from it or (2) results in substantially lower operating profits – or greater operating losses – in the short run than would a reasonable alternative strategy for competing with a new entrant …

According to the USDOT, any strategy that is “so costly” can only be economically rational if it results in exit by the entrant after which, the incumbent can “readily” recoup the predatory sacrifice. Even though these guidelines have since been withdrawn, as discussed later, arguments based on rationality, or sacrificing short run profits by not pursuing more profitable alternatives – whether real or hypothetical, were advocated by American and Canadian antitrust authorities in the American Airlines and Air Canada litigations respectively.

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evidence that showed that ECS lost money by entering the plastics market and AKZO recouped losses from predation in the flour market from later gains via blocking or delaying entry in the plastics market.

[37] Compagnie Maritime Belge Transps. SA v. Commission. See Elhauge (2003a) at 691. At 692, Elhauge also cites the *Irish Sugar* case where the incumbent had a market share of about 88% and used above-cost price cuts to deter import competition.

[38] Elhauge (2003a) at 692 and Blair and Harrison (1999).

[39] See Blair and Harrison (1999) at 490.

Elhauge (2003a) argues against Edlin's proposal on both efficiency and administrative grounds. For example, entry of less efficient rivals may be temporary and they may be driven out over time or when the price-freeze restrictions expire. The restrictions may reduce incentives for efficient entry. In addition, restrictions on price may lead to inefficient changes to product quality and imposing restrictions on product enhancements may have a negative impact on innovation. Administrative problems include the inability to define the exact moment of entry and appropriately defining post-entry price and output ceilings, particularly if market conditions were to change during the proposed twelve to eighteen month period.

Most claims of predation rely on some type of dominance or market power argument, particularly those brought under the monopolization or abuse of dominant position provisions of statues. Building on the work of Levine (2002), Elhauge shows that price discrimination in aviation does not imply market power. Airlines in the U.S., at least at the network or system level, are not earning abnormal rates of return. Indeed average economic returns over the period 1978-96 were close to those in commodity industries such as steel.[40] Airlines have to incur common costs to produce output or to serve both business and leisure travellers. Thus the complex pricing structure of airlines represents an optimal revenue maximizing price discrimination schedule – it is a means of recovering common costs rather than an indicator of market power. Using a simple example of two competing airlines, Elhauge shows that uniform pricing leads to a situation where there is lower frequency, unmet business demand and all leisure travellers are not served because the uniform price exceeds their willingness to pay; in addition airlines have empty seats. Allowing for price discrimination rectifies all these problems. Thus price discrimination allows firms to recover common costs, provide more frequency and at the same time serve both customer types. Levine (2002) makes the same argument at the level of the network. Infrastructure costs that are common at the network level include items such as station costs, maintenance and reservations labour and overhead. In addition there are other indivisibilities that are required to provide valuable frequent service to locations where demand is insufficient to support stand-alone point-to-point service. Deviations from the optimal price discrimination schedule are costly in the presence of competition. If business class customers are charged higher

[40] Ghemawat (2001) Exhibit 2.1 at 20.

prices, revenues decline as they go elsewhere. If prices are lowered, revenues may be insufficient to cover the common costs of providing the service.

Entry usually occurs in one or more segments of the network carrier's market and this requires the network airline to re-optimize its pricing schedule subject to the low prices set by the entrant. The re-optimization rarely results in route abandonment because abandoning service between A and B affects service to all points that connect to B. Instead matching fares provides an "incremental" revenue opportunity, and this usually results in the provision of more capacity in order to accommodate demand at the new fare.[41] The new capacity "almost always pays" according to Levine (2002) because the common costs of serving the route are already in place; there may be economies of scale in functions such as marketing; capacity costs decline with aircraft size and there may be indivisibilities in other cost items. Thus the incumbent who matches (lower) fares of the entrant may not be better off compared to the situation prior to entry, but may be better off than they would have been had they not responded to entry. The new entrant typically discovers that the market cannot support both carriers and may exit, after which the incumbent re-optimizes, that is, reduces capacity and increases prices. There is no room for recoupment in this argument either because there is little difference in the competitive constraints before entry and after exit – there are no post-exit monopoly profits. Thus due to demand linkages and common costs, Elhauge suggests that the entire hub and spoke network should be considered as the relevant product market and that airlines may have to continue service in certain markets even if they lose money in the short term.[42] Continuing service on a route even if it does not make money may make sense if it increases demand on other routes in the network.[43] Above-cost price cuts may therefore be required in the airline industry because without them firms may not be able to cover their common costs – "This reaction is involuntary".[44]

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[41] Levine (2002) at 33 and 34. See Dana (1998) for a theoretical model of price discrimination under competition when capacity is not storable.

[42] Edlin (2002) at 943, n. 12 also acknowledges that there are considerable efficiencies in the hub and spoke system that may result in network carriers having lower costs per passenger than low cost carriers. Edlin and Farrell (2002) indicate that one of the reasons why low cost carriers cannot always out-compete major network carriers despite the fact the former usually have lower costs per available seat mile because "countervailing economics of scope and scale" resulting from hub operations are not captured in measures of cost per available seat mile.

[43] Levine (2002) states at 22: "We know the cost of operating the whole network for a day a or a year … we simply do not know the marginal cost of carrying a passenger … between any two points in the network."

[44] Elhauge (2003a) at 745.

## 3. The Brooke Standard

This U.S. Supreme Court decision was a clear victory for the Chicago school. The case related to the cigarette industry in the United States. The industry has been highly concentrated and profitable since the 1920s.[45] Methods of competing include product differentiation, brand proliferation and spending heavily on advertising. Scherer and Ross (1990) characterize this industry as a "classic example" of price leadership.[46] The Supreme Court observed that:[47]

> List prices of cigarettes increased in lockstep, twice a year, for a number of years, irrespective of the rate of inflation, changes in the costs of production, or shifts in consumer demand.

Higher list prices led to higher profits:[48]

> Indeed, despite a doubling of federal excise taxes to sixteen cents per pack in 1983, the reappearance of low priced brands, and falling consumption, the leading U.S. cigarette manufacturers raised prices sufficiently to increase their profits from $3.80 to $11.55 per thousand cigarettes sold between 1980 and 1988.

In the 1980s, there were six major producers in the industry. They were R.J. Reynolds, Philip Morris, American Brands, Lorillard, Brown & Williamson and Liggett (later known as Brooke). Brown & Williamson was the third largest firm with a market share of approximately 12% during the time frame relevant to the case. Brooke was the smallest of the six, with a market share of 2.3% in 1980 and 5.7% in 1984.[49] Thus the first peculiarity of *Brooke* was that neither of the firms involved in the case were dominant. Predatory pricing complaints usually involve dominant firms and economic models of predation assume that the incumbent, or predator is a monopolist.

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[45] According to Table 10-1 in Burnett (1999), the four-firm concentration ratio was 88.0 in 1980 and increased to 90.2 in 1988.
[46] Scherer and Ross (1990) provide a brief history of the industry at 250-251.
[47] Brooke Group Ltd. *v*. Brown & Williamson Tobacco Corp. 509 U.S. 209 (1993) (henceforth *Brooke*) at 213.
[48] Scherer and Ross (1990) at 251.
[49] See Table 10-1 in Burnett (1999) at 240.

In the early 1980s the cigarette industry was facing an unfavourable environment. Demand was declining partly due to health concerns and firms had excess capacity. Such situations are ideal for disruption of conscious parallelism in oligopolies as firms are tempted to play market share games. Brooke was on the verge of bankruptcy, but survived because of serendipity. A wholesale grocery cooperative - TOPCO, approached Brooke for the production of a private label or generic line of "black and white" cigarettes. The product essentially brought price competition to the market. Brown & Williamson was affected the most because the price sensitive segment of consumers bought its brands. Twenty percent of converts to Brooke's generics switched from Brown & Williamson.[50] Brooke's competitors responded in kind, introducing their own low-priced economy brands. At the wholesale level Brown & Williamson's generics were in direct competition with Brooke's and wholesalers were hesitant to carry more than one brand. Both producers had identical list prices at the retail level but Brown & Williamson used volume discounts to beat Brooke's prices at the wholesale level.[51] A discount or rebate war ensued at the wholesale level and Brooke alleged that at the end of the war Brown & Williamson was offering to sell its generics below cost. In addition, it filed a suit under § 2(a) of the *Clayton Act* alleging that Brown & Williamson practiced illegal price discrimination between its full-priced branded product and low-priced generics.[52] Both the rebate war and Brooke's complaint occurred before Brown & Williamson sold a single generic cigarette.

Brooke alleged that Brown & Williamson's rebates were predatory in that they reduced the net price of its generic cigarettes below average variable costs. Further, it contended that the purpose of below cost pricing was to discipline Brooke, or pressure it to raise prices of generics. This would allow Brown & Williamson to raise its prices for generic cigarettes and narrow the price gap between its branded and generic products. The lower price gap would prevent switching to generics and allow Brown & Williamson to earn "supracompetitive profits" on its branded products.

Generics were a very successful product and all six producers had entered the economy segment of the market. The share of this segment increased from 4% in 1984 to 15% in

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[50] *Brooke* at 215.
[51] Other producers such as R.J. Reynolds matched, but did not beat Brooke's prices.
[52] Sections 2(a) through 2(f) of the *Clayton Act* were amended as sections 13(a) through (f) of the *Robinson-Patman Act* 15 U.S.C.A.

1989, but volume increases were accompanied by price increases.[53] Brooke raised its list prices in mid-1985 and others followed some months later; by mid-1986 the pattern of twice yearly price increases was in place for this segment as well. Indeed, the dollar amount of the increase was the same for generics and branded cigarettes, thus narrowing the price gap between the two segments.

Price discrimination is only an offence if it there is injury to competition. Brooke was alleging "primary line injury" where the seller practicing price discrimination (Brown & Williamson) harms a direct competitor (Brooke).[54] The Court ruled that regardless of whether a complaint of predation was brought under section 2 of the *Sherman Act* or section 13(a) of the *Robinson-Patman Act*, to establish injury, the plaintiff must first show that: [55]

> … a rival's low prices … are below an appropriate measure of its rival's costs.

The difference between the two statutes arises in the second element, which is recoupment. In this regard, the Court ruled:[56]

> For example, we interpret § 2 of the Sherman Act to condemn predatory pricing when it poses "a dangerous probability of actual monopolization," … whereas the Robinson-Patman Act requires only that there be "a reasonable possibility" of substantial injury to competition before its protections are triggered, …

The Court did not deal with the issue of the appropriate cost test for predation because Brooke did not meet the second hurdle. It was unable to show that its competitor Brown & Williamson had a "reasonable prospect" of recouping its investment in predatory pricing. Citing *Matsushita* the Court observed:[57]

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[53] *Brooke* at 217.
[54] Scherer and Ross (1990) discuss the three levels of injury - primary line, secondary line and tertiary line; at 512.
[55] *Brooke* at 222.
[56] *Brooke* at 222. With respect to § 2 of the *Sherman Act*, the Court cited *Spectrum Sports* 506 U.S. 447 (1993). In *Spectrum Sports* (at 459) the Court required both, dangerous probability of monopolization <u>and</u> specific intent to monopolize. Intent alone is insufficient to establish dangerous probability of success (at 448).
[57] *Brooke* at 224. Also see *Matsushita Electric Industrial Co., Ltd., et al. v. Zenith Radio Corp. et al.,* 475 U.S. 574 (1986) (henceforth *Matsushita*) and Elzinga (1999)

> Recoupment is the ultimate objective of an unlawful predatory pricing scheme; it is a means by which a predator profits from predation. Without it … consumer welfare is enhanced …

In *Matsushita*, not only did the Court view predation as an investment, but also as an "inherently uncertain scheme" because the short run losses, or costs of predation were certain, but the benefits in terms of future monopoly profits were uncertain. Here the Court required evidence of both; the ability to attain <u>and</u> maintain monopoly power:[58]

> Moreover, it is not enough simply to achieve monopoly power, as monopoly pricing may breed quick entry by new competitors eager to share in the excess profits. The success of any predatory scheme depends on *maintaining* monopoly power for long enough both to recoup the predator's losses and to harvest some additional gain. … For this reason, there is a consensus among commentators that predatory pricing schemes are rarely tried, and even more rarely successful.

In both *Brooke* and *Matsushita* the Court was not convinced that there was a possibility of recoupment; without which there can be no predation. In *Matsushita*, it was alleged that major Japanese electronic goods producers such as Sony, Toshiba, Sharp, Sanyo and others had engaged in a conspiracy over a period of two decades. The purpose of the alleged conspiracy was to charge high prices in Japan so as to cross-subsidize predatory pricing in the U.S. market. Thus a price fixing conspiracy in the home market was the vehicle of recoupment of losses in foreign markets. The Court found that such a scheme was "incalculably" more difficult to execute than one undertaken by a monopoly predator. This was because sustaining such behaviour would require allocation of both the losses and gains from predation among conspirators; in addition, the incentive to cheat would probably unravel such an agreement.[59] Thus recoupment via conspiracy is unlikely. *Brooke* was similar to *Matsushita* because there was no monopoly predator; indeed Brown & Williamson was not a dominant firm and did not intend to drive Brooke out of the market. Instead, the alleged vehicle of recoupment was tacit rather than explicit collusion. Brown & Williamson, in tacit collusion with other manufacturers, sought to pressure Brooke to increase its price of generic cigarettes thereby allowing Brown & Williamson to continue earning "supracompetitive" profits on its branded products. Drawing comparisons with *Matsushita*,

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[58] *Matsushita* at 589.

[59] See Elzinga (1999) for further details. Table 9-1 in Elzinga (1999) uses data submitted by plaintiffs to show that it would take an infinite number of years for Japanese firms to recoup their losses.

the Court observed that recoupment through tacit rather than explicit cooperation is "the least likely" method of recouping losses from predation:[60]

> However unlikely predatory pricing by multiple firms may be when they conspire, it is even less likely when, as here, there is no express coordination. Firms that seek to recoup predatory losses through the conscious parallelism of oligopoly must rely on uncertain and ambiguous signals to achieve concerted action. The signals are subject to misinterpretation and are a blunt and imprecise means of ensuring smooth cooperation, especially in the context of changing or unprecedented market circumstances. This anticompetitive minuet is most difficult to compose and to perform, even for a disciplined oligopoly.

*Brooke* set a particularly high barrier for plaintiffs and the Court identified three elements. Firstly, to show either a "dangerous probability" or a "reasonable prospect" of recoupment.[61] Secondly, to prove that prices were below costs and lastly, that the predatory pricing scheme would likely injure competition in the relevant market. Failed recoupment is a boon to consumers because they benefit from low prices and the predator is unable to recover its investment in predation. Thus in the first instance, the pricing scheme must be "capable of producing the intended effects" on rivals. This determination requires:[62]

> … an understanding of the extent and duration of the alleged predation, the relative financial strength of the predator and its intended victim, and their respective incentives and will.

The Court declined "to resolve the conflict among the lower courts over the appropriate measure of costs", but it ruled out above-cost predation:[63]

> … and we have rejected elsewhere the notion that above-cost prices that are below general market levels or the costs of a firm's competitors inflict injury to competition cognizable under the antitrust laws.

In order to meet the third element, or injury to competition the plaintiff must show subsequent monopoly or, that prices are likely to be above competitive levels, and likely to

[60] *Brooke* at 227-228.
[61] The former applies to § 2 of the *Sherman Act* and the latter to § 13 (a) of the *Robinson-Patman Act*.
[62] *Brooke* at 225.
[63] *Brooke* at 222, n. 1 and 223.

remain there long enough, to allow the predator to recover both the dollar and time costs of predation. This requires: [64]

> An estimate of the cost of the alleged predation and a close analysis of both the scheme alleged by the plaintiff and the structure and conditions of the relevant market.

The Court acknowledged that it had set a high standard, but this was because the costs of being wrong were very high:[65]

> These prerequisites to recovery are not easy to establish, but … the costs of an erroneous finding of liability are high.

The *Brooke* standard conforms to the Chicago view of antitrust and critics such as Edlin (2002) contend that it represents a very narrow interpretation of the law and application should be limited only to oligopoly cases. Regardless, the doctrine is clear.

**4. American Airlines**

On May 13, 1999, the U.S. Department of Justice brought a complaint under the monopolization provisions of § 2 of the *Sherman Act* alleging that American Airlines (AA) engaged in predatory conduct from 1995 to 1997 and intended, by monopolizing or attempting to monopolize seven routes, to recoup the losses from below cost pricing. These routes were centered at AA's hub at Dallas-Fort Worth Airport (DFW), and linked DFW with airports in Kansas City, Wichita, Colorado Springs, Long Beach, Phoenix and Oakland. The alleged anticompetitive conduct was AA's response to attempted entry by various low cost carriers (LCCs) such as Vanguard, Western Pacific and Sunjet. AA responded to entry by reducing prices and increasing capacity. These changes were reversed when the low cost entrant either moved operations or left the market.[66] In addition, AA allegedly sought to develop a reputation for predation, which would help extend its monopoly power to forty other routes. The government further alleged that AA practiced predation without

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[64] *Brooke* at 226.
[65] *Brooke* at 226.
[66] AA sought and was granted summary judgement by the U.S. District Court of Kansas, which was upheld by the Tenth Circuit U.S. Court of Appeals, No. 01-3202, July 3, 2003 (henceforth *AMR Appeal*).

monopolizing or attempting to monopolize another five routes. Lastly, the effects of AA's conduct were allegedly "felt" on five other routes even though it did not engage in predatory behaviour or attempt to monopolize these routes. The action related primarily to the seven routes mentioned earlier, which District Judge Martens refers to as "core" routes because they were the focus of the government's case against AA: [67]

> The remaining routes are frequently treated … as afterthoughts tacked onto the underlying claims involving LCC competition on the core routes.

In assessing the allegations of the government, the District Court made some general observations on the nature of the airline business. Major carriers made large and sunk investments in setting up hub and spoke operations that provide them with a number of advantages.[68] Hubs provide significant economies of scale, scope and density leading to a lower cost per passenger therefore potential entrants to hub routes typically expect to lose money during the initial periods of operation.[69] Dominating a hub has other benefits. Providing more "frequency and scope of service" allows the dominant carrier to obtain a "disproportionate" share of traffic and revenues. Concentrated hubs allow airlines to charge higher prices; otherwise known as hub premiums.[70] Market share at hubs and yields are correlated therefore AA's price-variable cost margins were higher for flights originating at and departing from DFW compared to other flights in its system.

Low cost carriers were entering markets at many hubs and they brought lower fares because they had lower costs. AA for example, estimated Southwest's costs to be about 30% lower than its own and in 1994 AA calculated ValueJet's stage length adjusted cost per available

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[67] *United States of America vs. AMR Corporation, et al.* (henceforth *AMR*) at 92, n. 4. All page numbers cited here refer to the version of the Memorandum and Opinion (dated 24/07/2001) posted on website of the Antitrust Division of the U.S. Department of Justice: http://www.usdoj.gov/atr/cases.html. The correct citation for this case is 140 F. Supp.2d 1141 (D.Kan. 2001).

[68] The business strategy literature (Ghemawat (2001)) also considers investment in hubs as "commitment" or an investment in firm specific resources. Commitment is key to firm performance. In addition to providing scale and scope advantages hubs provide a barrier to imitation due to physical/locational uniqueness and long-term contracts for gates and slots.

[69] In *AMR* at 43, Judge Martens observed that losses accompany entry to any new route, including network expansion by incumbents. Plaintiff's expert agreed that this was also true for established carriers.

[70] *AMR* at 5 and 11. Scale advantages at hubs reduce marginal costs while product differentiation advantages allow hub carriers to charge higher prices.

seat mile (CASM) to be 4.32 cents compared to AA's 8.54 cents. Competition from LCCs reduced yields and generally AA's yields and revenues were higher on routes where it did not face any competition from LCCs. In determining its response to this serious competitive threat, AA conducted a variety of scenario planning exercises, conducted ramp counts at the gates of competitors and studied competitors' balance sheets and break-even load factors.[71] Indeed, the court suggested that both major carriers and LCCs used game theory to anticipate the response of competitors.[72]

> The airline industry is one in which … profitability … often depends heavily on the anticipated response of other airlines. Analysis that tracks economic theories known as "game theory" is used in the airline industry to predict actions by competitors and gauge competitors' reactions.
>
> American believes that LCCs engage in "game theory" analyses when determining whether to enter, expand in, or remain in, a market in competition with an incumbent.

Further, the court observed that LCCs do not follow generic strategies and select their markets carefully. For example Vanguard stayed away from Southwest routes because they would have nothing to bring to markets where prices were already low. Instead, Vanguard entered AA's routes. Others such as Access Air (based in Iowa) did not want to attract the attention of major carriers and so chose to serve large destinations which had not been turned into hubs. Access Air also ensured that its fares were above the variable costs of major carriers. Access Air observed the following rules:[73]

> … stay off of elephant paths …, don't eat the elephant's food …, and keep the elephants more worried about each other than they are about you …

The court observed that price matching was routine in the airline industry and entrants expect incumbents to respond in this way: [74]

[71] The government interpreted these activities as proof of intent of exclusionary conduct, however the court characterized them as "generally monitoring competitors".
[72] *AMR* at 73.
[73] *AMR* at 73. Access Air appears to follow the precepts of judo strategy. Yoffie and Kwak (2001) advise small entrants not to "moon the giant".
[74] *AMR* at 15.

> It is uncontroverted that new entrant airlines with low fare strategies, including Vanguard, Western Pacific, Frontier, National and Jet Blue, expect existing competitors to match those fares. Officers of these airlines do not believe matching another carrier's fare is anti-competitive conduct, so long as pricing is not below cost. Further, an airline that does not match fares is likely to loose business to its low priced rivals.

AA had a typical pattern of responding to entry, which was to reduce prices and increase capacity. As a result, the entrant either reduced or discontinued service. For example, Vanguard started three daily non-stop flights on the DFW-Kansas City route in December 1994. AA had eight daily non-stop flights on the route and Delta had six. In early 1995 AA matched fares, though it had penalties for refunds and it added six new flights in mid-1995. Eventually Delta stopped serving the route and in December 1995 Vanguard discontinued direct service but continued two one-stop (via Wichita) flights. AA then reduced its flights to ten. During this one-year period Vanguard's share of traffic on the route varied between sixteen and twenty-seven percent. AA responded to Midway's entry on the DFW-Chicago (MDW) route in a similar manner. AA responded with inventory parity in May 1994 and matched prices in September 1995. Midway stopped serving the route in 1995 and by May 1995 AA had gained, at the expense of Delta and Southwest, more than the initial share it lost to Midway.

AA responded to entry aggressively because in the mid-1990s it had observed ValuJet's success in establishing a hub operation in Atlanta. Over the two-year period 1994-96, ValuJet had forty-eight aircraft and was serving twenty-eight cities. This included the Atlanta hub, which had twenty-two spokes. AA attributed ValuJet's success to the lack of an aggressive pricing response from Delta. It estimated that Delta lost $232 million in annual revenue due to the success of ValuJet. AA concluded that giving up part of the market to an entrant was not the appropriate response to entry. Instead, it sought to match prices even at the cost of lower profits in the short-term. The government used evidence such as notes taken by AA officials at internal meetings to show predatory intent or to buttress its claim that AA was developing a reputation for predation so as to exclude or deter rivals in other markets. The government sought to demonstrate sacrifice and recoupment; or that the loss in short-term profits was considered by AA as an investment, which would pay-off when the entrant left the market. [75]

[75] *AMR* at 18.

> Ms. Block recorded a statement made by American's then-CEO, Robert Crandall to the effect that: "If you are not going to get them out then no point to diminish profit."

The court accepted neither the predatory intent nor the reputation argument. It insisted that the standard had to be an objective one. To meet the *Brooke* standard the government had to show below cost pricing and a dangerous probability of recoupment. Posner has also warned against relying on intent and statements of bravado by executives:[76]

> Especially misleading here is the inveterate tendency of sales executives to brag to their superiors about their competitive prowess, often using metaphors of coercion that are compelling evidence of predatory intent to the naïve. Any doctrine that relies upon proof of intent is going to be applied erratically at best.

Recoupment based on a reputation for predation in other markets, and more generally, strategic entry deterrence arguments were also rejected as subjective, speculative, and providing no limiting principle:[77]

> The government's theory offers no principled basis for the court to distinguish between a general reputation for aggressive but lawful conduct on the one hand, and illegal predatory conduct.

More importantly, they were at odds with *Brooke* which required objective evidence of recoupment in the relevant antitrust market, or "in market" recoupment. The government had stated in its allegations that each city-pair route was a separate market.[78] Thus complaints by "other competitors" in "other markets" were found to be too broad based and speculative because there was no way to distinguish "reputation" arguments from "vigorous competition". The court noted that the government's expert Professor Stiglitz had relied on "industry folklore" to infer that AA had a reputation for predation:[79]

> Professor Stiglitz has admitted that an airline can acquire a reputation for aggressive behaviour without engaging in predatory pricing, and that such a reputation for aggressiveness … is "by definition" not anti-competitive.

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[76] Posner (1976) at 190.
[77] *AMR* at 133.
[78] The government identified the relevant antitrust market as city-pair non-stop airline service.
[79] *AMR* at 131, n. 23.

The government used AA's four internal decision cost measures to make its case on objective grounds. Decision FAUDNC and decision FAUDNS were measures which used fully allocated costs and included between 97% and 99% of AA's costs. These measures were calculated as revenues less variable expenses, costs of aircraft ownership, fixed overhead, equity and income tax and attributed costs of city ticket offices, AA's flight academy and flight simulator costs. The other two measures were VAUDNC and VAUDNS, which were based on costs that were variable over an eighteen-month planning horizon and accounted for about 72% of the total costs in AA's decision accounting system. FAUDNC and VAUDNC include net upline and downline revenues from connecting passengers and then subtract variable costs as well as an incremental flight cost. FAUDNS and VAUDNS incorporate the impact of "spill" or that accommodating an additional passenger on an upline or downline flight may result in some other passenger being lost to competitor. The government proposed using VAUDNC-AC, which included the costs of aircraft ownership and accounted for about 79% of AA's costs, as a proxy for short-run average variable costs. The court observed that aircraft ownership costs were fixed in the airline industry and therefore were not avoidable.

FAUDNC and FAUDNS, according to the government, were proxies for long run costs and included costs that were avoidable over an eighteen-month planning horizon. The court noted that none of the government experts had identified avoidable costs either in general or with respect to the core routes. The court interpreted these measures of route level performance as long-term break-even benchmarks, which had been negative on a persistent basis for several domestic routes. Further, AA had endured periods longer than 18 months when the system wide average FUADNC was negative. In June 1994, decision FAUDNC was negative for 55% of AA's routes. VUDNAC and VUADNS were interpreted by the court as measures of average avoidable cots of a route and were used to evaluate flight and route performance. The court observed that these could also be negative for a couple of months if an airline was entering a new route.

The government's experts suggested four tests for predation. The first asks: Did AA forgo better profit opportunities elsewhere on its system when it increased capacity on the core routes? In other words, do VAUDNC, VAUDNC-AC and FAUDNC decline as a result of the capacity changes on the route in question? If they did, then this would imply that the incremental cost of redeployment was higher than the incremental revenue and this would

provide a measure of sacrifice. The second test examines the level of FAUDNC on the route in question. If the effect of the redeployment was to make this measure negative then one could conclude that average revenue or price was below long run average variable cost. The third test looks for persistence of negative FAUDNC at the route level. In particular, the government's experts looked for instances where FAUDNC was negative for more than one year. 3% of AA's domestic routes had negative FAUNDC for one year and 1.2% for eighteen months. This test essentially shows that that the route violated AA's internal measure for its planning horizon of eighteen months, suggesting perhaps that AA should not add capacity to routes if this violates their own route-level decision making parameters. The fourth test is similar to the first, but government's experts attempted to directly calculate incremental costs and revenues of capacity additions on four of seven core markets using VAUDNC-AC and revenues from "incremental" passengers.[80]

The court rejected tests one and four because they are not tests of predation but of failure to maximize short-run profits. Using such tests would prevent consumers from benefiting from price reductions and would also condemn capacity additions where average revenues exceeded average variable costs. In addition the court rejected the tests because they examined incremental capacity, which the court interpreted as representing a fraction of the relevant antitrust market. The second and third tests were rejected because they used a fully allocated cost measure - FAUDNC, which the court interpreted as being equivalent to applying an average total cost test, or, the wrong test. Fully allocated costs included costs such as city ticket offices, some station expenses, sales and advertising and flight simulator expenses. These were allocated arbitrarily over the entire fleet and could not be avoided by not operating a particular flight or route. The court noted that the government had only provided evidence on four core routes and on these routes, AA's price exceed all measures of variable cost: VAUDNC VAUDNS and the government's proposed VAUDNC-AC. Thus there was no predation, and since the claims relating to other routes were dependent on a finding of predation on the core routes, they were also dismissed.[81]

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[80] By evaluating short run costs and persistence, the government is in effect evaluating both the initial and the subsequent responses to entry. So long as the initial response covered avoidable cost at the route level, it would be allowed. However if the subsequent more aggressive response was less profitable than the initial response it may be deemed predatory. I thank Professor Donald G. McFetridge for pointing this out to me. See *AMR* at 71 for an example of AAs response to ValuJet.
[81] *AMR* at 98. The court did not consider the remaining routes because the government did not provide any expert evidence on these. This suggests that a few routes cannot be used for illustrative purposes and that evidence is required for every market. See *AMR* at 105, 106.

> American consistently priced its products above its average variable costs, the only appropriate, credible measure of cost in this action.

The court re-affirmed the Areeda-Turner rule as the appropriate test for predation:[82]

> Average variable cost, as a measure of predatory pricing, enjoys not only the weight of authority, it is also most congruent with the goal of the Sherman Act: prohibiting unfair competitive practices while simultaneously encouraging open, indeed vigorous price competition.

Two other issues deserve mention. The first relates to recoupment, which under *Brooke* requires evidence of a dangerous probability of recoupment via monopolization. The second is the role of price matching. The court essentially examined "structure" at DFW to deal with the first issue, in other words it sought to determine the extent of competition at DFW. The government of course attempted to paint a picture of dominance by AA. Both Delta and AA use DFW as a hub and in the early 1990's Delta had attempted to increase its operation at DFW but was unable to partly due to the aggressive response of AA. As a result Delta suffered operating losses over the period 1992-94 and downsized its operations at DFW. Over the period July 1993-96 Delta's share in terms of passengers boarded at DFW decreased from 28.4% to 19.2% whereas AAs share increased from 64.7 to 71.8%. In May 2000 AA's share of passengers boarded was 70.2% where as that of LCCs was 2.4%. The government noted that compared to other hubs, the share of LCCs was lower at DFW. For example, in the third quarter of 2000, LCCs had a market share of 15.8% in Denver and 16.8% in Atlanta.

The court noted however that in mid-2000 there were seven new entrant low cost carriers serving DFW and this hub had more low fare airlines than any other hub airport. They served at least thirty-one of the top fifty destinations from DFW. Further, airport officials stated that they had successfully attracted foreign carriers, which had contributed to a decline in AA's market share. In addition even though LCCs had low shares, growth in shares had been quite substantial - they had a twenty-five percent increase in passenger share over the one-year period May 1999 to May 2000. The airport facilitated entry by new carriers through advertising support programs and access to common use gates. Over the decade 1990-99

[82] *AMR* at 103.

there were a total of forty-four instances of entry at DFW – on average 4.7% of DFW routes were being entered per year. Based on such evidence the court concluded:[83]

> … there are no structural barriers to entry at DFW, which can accommodate any domestic carrier that seeks to establish or expand service. Not only do the uncontroverted facts fail to show any strategic barriers to entry by new entrant carriers, supra-competitive pricing on DFW routes is also disproven by the active presence of other strong competitors in the Dallas-Fort-Worth market.

On meeting the competition, the court indicated that the statutory defence available under the price discrimination provisions of § 13(b) the Robinson-Patman Act might be applicable in the case at hand. The court emphasized that AA had matched rather than undercut prices charged by entrants and that antitrust laws were designed to encourage this kind of activity:[84]

> Nor has the plaintiff identified any instances in which American undercut the published DFW-MCI fare of Vanguard with a published American fare during the relevant time periods. American's average fare throughout the period of Vanguard's DFW-MCI service was higher than Vanguard's average fare.

Judge Martens went so far as to quote Areeda and Hovenkamp who argue that the meeting competition defence would apply even if price matching were predatory, so long as the price matched that already being charged by the entrant and was maintained for the same or lesser duration. Further, the court viewed this defence as having particular application in the *AA* case because the alleged predator's revenue exceeded its variable costs.[85] Since price reductions stimulate demand price matching "implicitly but necessarily requires the ability to increase sales capacity."[86] The court did not agree with the government's argument that if quality differences between AA and competing low cost carriers were taken into account, then allowing AA to charge the same dollar price as competitors would be allowing it to "effectively undercut" competitors. This:[87]

> … would require courts to engage in a series of subjective price comparisons based on intangible values.

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[83] *AMR* at 122.
[84] *AMR* at 24.
[85] *AMR* at 116.
[86] *AMR* at 119.
[87] *AMR* at 119.

The government appealed to the Tenth Circuit Court of Appeals. The Appeals Court declined to rule on a definite cost measure, but noted that courts may need flexibility to examine various proxies to marginal cost and sole reliance on average variable costs may in some instances "obscure the nature of a particular predatory scheme".[88] While conceding that the average variable cost measure was a good proxy in most cases, any alternative proxy that courts may consider "must be accurate and reliable in the specific circumstances of the case at bar."[89] Tests two and three were rejected because they relied on FAUDNC, or fully allocated costs, which were not representative of either marginal or incremental costs. Test one was rejected because it treated forgone profits as costs. "Rather than determining whether the capacity itself was priced below an appropriate measure of cost" this test compared profits before and after capacity additions.[90] That is, it sought to determine if profits were lower after adding capacity. Test four compared the (directly computed) cost of incremental capacity with the incremental revenue.[91] The Court did not reject this test as being a test for short-run profit maximization; instead it found this to be the correct interpretation of Baumol's avoidable costs test. The only appropriate costs that should be included in test four were those that could have been avoided by not adding capacity.[92] However this test was also rejected because it was not implemented correctly. As AA had argued, VAUDNC-AC included variable non-proportional common costs such as the costs of airport ticket agents, arrival agents, ramp workers and security. Thus arbitrarily allocated variable costs should not be included in avoidable costs. In this way, the Appeals Court rejected all four measures of cost and affirmed the judgement of the district court. Thus while there may still not be a single cost standard in predation cases, it is clear that average variable cost or average avoidable cost, if computed correctly would be acceptable proxies for marginal cost; and avoidable costs do not include allocated or attributed costs. Opportunity cost tests, or those that include forgone profits as costs; tests for short run profit maximization or for higher profit would likely be rejected.

## 5. Air Canada

[88] *AMR Appeal* at 14.
[89] *AMR Appeal* at 14.
[90] *AMR Appeal* at 19.
[91] This is at odds with *AMR*, where the District Court rejected tests one and four emphasizing that they looked at incremental costs and revenues "*only from the added capacity*". *AMR* at 109.
[92] *AMR Appeal* at 21.

The Canadian antitrust statute, the *Competition Act* (henceforth the *Act*) has both criminal and civil provisions. Predatory pricing is mentioned explicitly as an "offence in relation to competition" under the criminal provisions of the *Act*, but a complaint may also be brought under the civil provisions as an abuse of dominant position. Under the criminal provisions, conviction may result in imprisonment of up to two years:[93]

> 50. (1) Every one engaged in a business who
>
> (*c*) engages in a policy of selling products at prices unreasonably low, having the effect or tendency of substantially lessening competition or eliminating a competitor, or designed to have that effect,
>
> is guilty of an indictable offence and liable to imprisonment for a term not exceeding two years.

Under the civil provisions, the Commissioner of Competition may seek a prohibition order from the Competition Tribunal:[94]

> 79. (1) Where, on application by the Commissioner, the Tribunal finds that
>
> (*a*) one or more persons *substantially or completely control*, throughout Canada or any area thereof, *a class or species of business*,
>
> (*b*) that person or those persons have engaged in or are engaging in a *practice of anti -competitive acts*, and
>
> (*c*) the practice has had, is having or is *likely to have the effect of preventing or lessening competition substantially* in a market,
>
> the Tribunal may make an order prohibiting all or any of those persons from engaging in that practice

§ 78 provides a non-exhaustive list of anti-competitive or exclusionary acts and describes one kind of predatory pricing as selling below acquisition cost:[95]

> 78. (1) For the purposes of section 79, "anti-competitive act", without restricting the generality of the term, includes any of the following acts:

[93] The full text of the *Competition Act* is available at: http://laws.justice.gc.ca/en/C-34/text.html
[94] Italics are added to emphasize the elements of the offence.
[95] Enforcement guidelines for these and other offences are available at: http://cb-bc.gc.ca/epic/internet/incb-bc.nsf/vwGeneratedInterE/h_ct02126e.html

> (*i*) selling articles at a price lower than the acquisition cost for the purpose of disciplining or eliminating a competitor;

The Commissioner used this provision in *Nutrasweet*, which was the first case brought before the Tribunal under the abuse of dominance provisions of the *Act*.[96] In *Nutrasweet* the Tribunal ruled that this provision did not lend itself to manufacturing situations because a manufacturer is not acquiring goods. Instead the Tribunal viewed the legislative intent as of this provision as being applicable to distribution or where goods are purchased for the purpose of resale. The Tribunal did rule however that the term "anti-competitive act" in § 78 could be interpreted broadly enough to encompass other types of predatory conduct.[97] Though the Commissioner did not present any evidence on costs, the Tribunal was of the view that the Areeda-Turner standard, or comparing price with marginal cost would be appropriate. Average variable cost would be an acceptable proxy for marginal cost if *Nutrasweet* were producing to the left of the minimum point of the average total cost curve. At the minimum point the appropriate proxy would be average total costs (since this would equal marginal cost). Further, the Tribunal observed that showing recoupment was an essential element to support a claim of predation:[98]

> Even if NSC was pricing below cost after 1988, it is highly unlikely that NSC would be able to recoup from Canadian consumers the foregone profits resulting from below-cost pricing.

In a more recent case, the Tribunal reiterated its earlier position:[99]

> The essence of an allegation of predatory pricing is that the firm foregoes short-run revenues by cutting prices, driving out rivals and thus providing itself with the opportunity to recoup more than its short-term losses through higher profits earned in the longer term in the absence of competition. A predatory pricing allegation is difficult because, at least in the short-run, consumers apparently benefit from lower prices. In addition, predation can only succeed if the predator has greater staying power than its rivals and a reasonable prospect of recouping its losses. In order to distinguish competitive pricing action

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[96] The Commissioner was then known as the Director of Investigation and Research. The Tribunal was created under the provisions of the *Competition Act R.S.C. 1985 c. C-34*, which replaced the *Combines Investigation Act*.

[97] *Director of Investigation and Research v. The Nutrasweet Company*, CT-1989/002, 74-76. Available at: http://www.ct-tc.gc.ca/english/cases.html

[98] *Nutrasweet* at 77.

[99] *Tele-Direct* at 290. The Tribunal also observed that there was little likelihood of establishing objective criteria that would allow distinguishing harmful from beneficial conduct.

> from predation, therefore, the "Areeda-Turner test" for predatory pricing was developed and has been adopted by the courts.

Until the Air Canada case, it would appear that the Canadian and U.S. laws had similar elements, which included below-cost pricing using the Areeda-Turner standard, followed by recoupment through the dominance or the exercise of market power. In late 1999/early 2000 Air Canada acquired Canadian Airlines International making the former a virtual monopoly in the domestic market. To address some anti-competitive concerns raised by the Commissioner, Air Canada undertook to surrender slots at Pearson International Airport in Toronto; to not lay-off any employees until March 2002 and to continue to serve until March 2003, small communities that had been served by both Air Canada and Canadian Airlines prior to the merger. The Government amended the abuse of dominance provisions of the *Act* in August 2000 to include aviation specific provisions so as to dissuade Air Canada from using exclusionary conduct toward potential entrants.[100] These were expected to be Canadian low cost carriers. The amendments allowed Government to make regulations that specify anti-competitive acts and conduct; and identify facilities that are essential to the provision of aviation services.[101] In addition, the amendments granted the Commissioner broad powers to issue temporary prohibition or cease and desist orders. This was because the government viewed capacity in the aviation industry as being very mobile. It could be quickly deployed to either discipline or exclude competitors.

> 104.1 (1) The Commissioner may make a temporary order prohibiting a person operating a domestic service, … from doing an act or a thing that could, in the opinion of the Commissioner, constitute an anti-competitive act … if
>
> (*b*) the Commissioner considers that in the absence of a temporary order
>
> (i) injury to competition that cannot adequately be remedied by the Tribunal is likely to occur, or
>
> (ii) a person is likely to be eliminated as a competitor, suffer a significant loss of market share, suffer a significant loss of revenue or suffer other harm that cannot be adequately remedied by the Tribunal

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[100] § 78 (2) of the *Competition Act*.

[101] *Regulations Respecting Anti-Competitive Acts of Persons Operating a Domestic Service* SOR/2000-324, available at: http://laws.justice.gc.ca/en/C-34/SOR-2000-324/74279.html. Henceforth referred to as *Regulations*.

The regulations listed a gamut of anti-competitive acts, including operating or increasing capacity on routes at fares below "avoidable cost"; using a "second-brand" low cost carrier; commissions; incentives; loyalty programs and a reputation for predation as a means of disciplining competitors; or pre-empting and/or denying competitors access to essential facilities such as landing slots. The government was anticipating entry by low cost carriers therefore the draft enforcement guidelines issued by the Competition Bureau refer to a real or quality adjusted prices. This suggests that it may be considered anti-competitive for a full service carrier to match the prices of a low cost carrier. At identical nominal prices, a full service carrier offers higher quality either in terms of on-board service or through the availability of frequent flyer programs.[102] Thus in order to compete effectively, the low cost carrier may be compelled to charge lower prices than the full service incumbent so as to compensate consumers for the lack of frills. The guidelines defined the relevant geographic market as an origin-destination city-pair and the avoidable cost test would be applied to a flight, on a daily basis for one month.[103] The avoidable cost test is a comparison of incremental costs and revenue of any capacity response by the incumbent. For illustrative purposes, the guidelines defined four categories of costs. These include costs that are avoidable outright such as fuel costs and landing and navigation charges; costs that are avoidable through redeployment such as crew and flight costs; potentially avoidable costs which include primarily labour costs associated with maintenance, ticketing, baggage handling and reservations; and unavoidable costs such as general overhead, executive salaries and building expenses.

Within two months of the amendment to the *Act*, the Commissioner exercised the sweeping powers provided to him under § 104.1 and issued a temporary order preventing Air Canada from offering its "L14EASTS" or any similar fare on five city-pair routes in Eastern Canada.[104] L14EASTS was Air Canada's response to CanJet's announced fares.[105] CanJet was a low cost carrier that commenced service in September 2000 on six routes in Eastern

[102] The February 2001 draft of the enforcement guidelines is available at: http://cb-bc.gc.ca/epic/internet/incb-bc.nsf/vwGeneratedInterE/h_ct02126e.html

[103] The Bureau proposed using average daily revenues calculated over a one-month period on an available seat mile basis.

[104] The order was issued in October 2000. The routes were Halifax-Ottawa, Halifax-Montreal, Halifax-St. John's, Toronto-Windsor and Ottawa-Windsor. A few weeks later the Commissioner extended the duration of his first prohibition order on the first three routes.

[105] CanJet complained to the Commissioner a few days after Air Canada's announcement, which eventually led to the prohibition order and an inquiry.

Canada. Ticket sales had started in end-July 2000 and even prior to commencement of service CanJet lowered its announced fares in response to competition from another low cost carrier - Royal Air. CanJet claimed that it would only have to make a few seats available at fares lower than its "announced fares" since Royal Air provided limited service and few seats at discounted prices on the two routes, which CanJet also served. Thus a price war of sorts was in progress when Air Canada started offering L14EASTS. L14EASTS matched CanJet's announced fare but was between $10 and $60 higher than the latter's discounted fare. Unlike CanJets's fare, L14EASTS came with advance purchase, maximum stay and other restrictions and penalties.

Air Canada applied to the Tribunal to have the order set aside, and in the event that it was not, to modify it to remove reference to "any similar fares".[106] The Tribunal agreed with Air Canada that the Commissioner's order prevented it from competing with entrants for the duration of the order or until the Commissioner had assessed the conduct of Air Canada under the abuse of dominance provisions of the *Act*. Without the order, the risk was that CanJet might not have survived. The Tribunal noted that one of the objectives of the *Competition Act* was to ensure that small and medium-sized enterprises had an equitable opportunity to participate in the Canadian economy.[107] The Tribunal also interpreted § 104.1 to imply that when issuing a temporary prohibition order, the Commissioner need not be certain that an anti-competitive act had taken place:

> The "could" ... can be read to suggest that the Commissioner need not be certain about whether an anti-competitive act existed ...

In March 2001, the Commissioner commenced a civil action against Air Canada under the abuse of dominant position provisions of the *Act* alleging that Air Canada had engaged in a policy of "fare matching" with low cost carriers without regard to its own profitability or to the "additional benefits associated" with its service offering and had operated and increased capacity that did not cover the avoidable costs of providing air services on eight domestic routes.[108] The Tribunal divided the inquiry in two phases. Phase I focussed on the

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[106] *Air Canada v. Commissioner of Competition*, 2000 Comp. Trib. 26; available at: http://www.ct-tc.gc.ca/english/cases/ct-2000-004/air-canada.html. The Tribunal did order deletion of reference to "any similar fares" on grounds that it was imprecise and therefore unenforceable.
[107] See § 1.1 of the *Act*.
[108] The routes were St. John's (Nfld.)-Halifax, Montreal-Halifax, Ottawa-Halifax, Toronto-Moncton, Toronto-Fredericton, Toronto-St. John (NB), Toronto-Charlottetown and Hamilton-Moncton. In the

application of the avoidable cost test in the context of the *Regulations* on two sample routes for the period April 1, 2000 to March 5, 2001. Failing the avoidable cost test however would not lead to the conclusion that Air Canada abused its dominant position. The reminder of the application, or the elements required under § 79 of the *Act* will be assessed in Phase II.[109]

The Commissioner argued that failing the avoidable cost test would imply that Air Canada committed an anti-competitive act. The Tribunal noted that in previous jurisprudence and prior to the implementation of the *Regulations* the offences listed under §78 required an:[110]

> ... "object", "design" or "intent" to engage in an exclusionary conduct that is having the effect of augmenting, entrenching or extending market power. The presence of such wording made relevant the concept of legitimate business justification ...

The *Regulations* however do not require the consideration of legitimate business justification for revenues below avoidable cost therefore such justifications could only be applied to the period before the regulations came into effect.[111] The Tribunal reserved the right to consider such justifications in the Phase II hearing. It is clear however that there are now two different standards for predation offences in Canada - one for dominant airlines and another for all other businesses.[112] In aviation cases the Tribunal's role is to evaluate the conduct of the dominant carrier in accordance with the *Regulations*.

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statement of grounds and material facts (see Notice of Application to the Competition Tribunal (henceforth *Notice*) available at: http://www.ct-tc.gc.ca/english/cases/ct-2001-002/air-canada.html) the Commissioner lists barriers to entry at [79] and [80]. These include a 'reputation for predation' barrier, which is essentially a perception rather than an objective issue. In addition the list includes lack or traffic feed, business class lounges and frequent flyer programs. This is rather curious because all competitors listed by the Commissioner are low cost carriers of one form or another – these carriers choose to provide point-to-point service and no connections (even though the Commissioner identifies WestJet as a network carrier); no frills; and to target the price sensitive leisure segment. Further, the list includes the cost of purchasing aircraft and hiring cabin crew. Air Canada's competitors are in the airline business by choice, and therefore it would make sense for them, or anyone else seeking to enter this industry, to purchase aircraft and hire cabin crew.

[109] At the time of writing only the Reasons and Findings for Phase I were available: *Commissioner of Competition v. Air Canada*, 2003 Comp. Trib. 13. Henceforth, this case is referred to as *AC* and all citations in square parentheses indicate paragraph numbers.

[110] *AC* at [54] and [55].

[111] The application covers the period April 1, 2000 to March 5, 2001. The Tribunal noted that legitimate business justifications could be considered for the period April 1, 2000 to August 23, 2000. The latter being the date the Airline Regulations came into effect.

[112] The Commissioner also states in his final arguments at [139] and [140] that while there is no price matching defence in the *Regulations* there may be one under the under the criminal (offences in relation to competition) predation provisions, or §50 of the *Act*.

In his *Notice* the Commissioner identified the relevant geographic market as all domestic city-pair markets, and all affected routes in the Halifax, Moncton and Toronto areas.[113] The areas are catchment areas, so Toronto includes Hamilton, which is WestJet's base of operations in the Toronto area.[114] The relevant product market was identified as "airline passenger service", being separate from other modes of transportation such as bus and rail.[115]

The test as stated in the *Regulations* and as agreed to by all parties was Baumol's avoidable cost test. This is a multi-product generalization of the Areeda-Turner test. The test was applied to a hypothetical unidirectional flight between two cities. Implicitly therefore, an air carrier was viewed as a multi-product firm where each unidirectional flight is a different product. Air Canada argued for the test to be applied at the route level, but the Commissioner contended that this might hide predatory conduct because a particular flight may not cover avoidable costs but the route as a whole may. The Tribunal's interpretation of the test was as follows:[116]

> As discussed by Dr. Baumol, the multiproduct enterprise will rationally continue to produce a given product as long as the revenue from the sale exceeds the product's avoidable costs. Since no enterprise will rationally set the price per unit of any of its products below their respective (average) avoidable costs in the pursuit of maximum short-term profits, deviations from rational pricing *may* be predatory.

This is not a test for predation, but a test of rationality; where rationality means making higher profits. If revenues are below avoidable costs then a firm can do better. It can increase profits by ceasing production. The test may be used to examine exclusionary behaviour. If revenues exceed avoidable costs then an equally efficient competitor cannot be excluded from the market – equally efficient meaning one with a similar cost structure. However, without additional information it would be inappropriate to conclude that revenues below avoidable cost imply exclusionary behaviour. This is particularly the case in

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[113] *Notice* at [64].
[114] It is usual for low cost carriers such as WestJet to operate from secondary airports such as Hamilton.
[115] *Notice* at [51].
[116] *AC* at [80], emphasis added.

transportation where service from A to B is not independent of service from B to A, or indeed from B to other points in the network.

The next issue before the Tribunal was the determination of avoidable costs. At a conceptual level all parties generally agreed that product specific fixed and variable costs were avoidable and common costs and sunk costs were not. The application of these principles was more controversial. The Tribunal adopted a broad interpretation of avoidable costs. One interpretation is that costs that do not have to be incurred when a flight is not operated are avoidable. The Tribunal called these costs "outright" avoidable, or avoidable through "outright shedding". In addition it noted that costs could be avoided through redeployment, passenger recapture and via disposal of assets such as aircraft in secondary markets. Resources that are released by cancelling one flight can be used to offer new services elsewhere in the network – this is redeployment. Cancelling a flight does not imply that the airline loses all passengers that would have taken that flight, some of them may use other flights on the network and therefore be recaptured.

The costs items under consideration were those listed in Air Canada's 328 Report. The report assesses flight profitability by comparing revenues with fully allocated costs. The operating cost items relate to activities and cost allocation or attribution is done using cost drivers. There was no dispute over seventeen cost items, which were classified as variable. All parties agreed that overhead costs were not avoidable. The twenty-six disputed items were grouped into the following five categories: system labour costs, station labour costs, aircraft labour costs, non-labour system and sunk costs, aircraft ownership and insurance costs. The Commissioner's cost accounting expert Mr. Vettese referred to many of these costs as "step variable" which could not be shed outright. Step variable costs, as the name suggests, change in steps as output changes and not continuously. Thus if one baggage handler can service up to 5 flights, reducing the number of flights to 4 does not allow the firm to avoid the wage cost of the baggage handler. However the Tribunal treated these costs as avoidable via redeployment or passenger recapture. The Tribunal also clarified that step variable costs could not be treated as common costs. So for example, a pilot *simultaneously* services passengers and cargo and so the pilot's remuneration is a common cost of providing passenger and cargo service. However a baggage handler performs tasks *sequentially,* handling baggage from one flight at a time. Suppose a baggage handler is paid on a daily basis and can handle five flights per day; this does not imply that the daily wage is a common

cost of servicing five flights. The fact that wages are paid on a daily basis is an administrative issue; all one has to do is calculate the wage on a per-flight basis. Since all costs that are not common can be avoided either through recapture, redeployment or disposal, the baggage handler's wage in this example would be considered avoidable. In this way, 90% of Air Canada's fully allocated operating costs for the hypothetical cancelled flight were classified as being avoidable. The Tribunal did not require the Commissioner to identify specific profitable redeployment opportunities or to provide evidence on the proportion of passengers recaptured even though it noted that the Commissioner's expert economist Dr. West "relied heavily" on recapture; indeed Dr. West assumed full recapture in his calculations.[117] The Commissioner acknowledged that in practice it would be difficult to analyze the ability of Air Canada to avoid costs through redeployment. Fortunately, the Tribunal did not want to "burden" the Commissioner with the requirement to identify specific redeployment opportunities.[118] Instead the Commissioner was only required to show that these opportunities were "generally and realistically" available. The Commissioner relied on press releases and media articles to show that Air Canada had started new services and also increased frequencies on many routes during the time period under consideration.[119] The Tribunal did not accept Air Canada's argument that it always tried to do better, so any profitable redeployment opportunities would already have been exploited.[120] Aircraft ownership costs are treated in a similar manner, that is, as being avoidable via redeployment or through other avenues such as resale or sublease. The Tribunal used Air Canada's Annual report to infer that it had adjusted its fleet during the period under consideration by taking delivery of new aircraft and parking others either for potential sale or for return to lessors.[121]

Next, the Tribunal had to determine when costs become avoidable and over what time period to apply the avoidable cost test. The Commissioner argued that "substantially all of Air Canada's costs except overhead are avoidable within three months" and that the avoidable cost test should be conducted for a three-month period on each route at issue.[122] The

[117] *AC* at [331].
[118] *Final* at [189] and *AC* at [134].
[119] *Final* at [199].
[120] Air Canada also argued (*AC* at [128]) that since the Commissioner's expert found that 42% of its flights failed to cover their avoidable costs, this implied that opportunities for recapture and profitable redeployment were generally not available.
[121] *AC* at [280]. A careful reading shows that Air Canada actually did not get rid of any aircraft during the period of predation even though thirty were taken out of service.
[122] *AC* at [168].

Commissioner referred to three successive months so in fact, the calculations were done on a monthly basis for three months – costs that were identified as being avoidable in three months were also treated as avoidable in each of the three monthly calculations. It would seem however that in fact the Commissioner was arguing all of Air Canada's fully attributed operating costs with the exception of overhead become avoidable instantaneously – the moment a flight is cancelled. The Tribunal observes:[123]

> In the Tribunal's understanding, Commissioner conducts the avoidable cost test ... regardless of when avoidabilty commences.

In the same paragraph the Tribunal quotes counsel for the Commissioner:[124]

> It didn't strike me appropriate to say a cost is not avoidable, is not avoidable, is not avoidable and all of a sudden it is.

In other words, adjustment is instantaneous in the airline industry. The fact is, that the one-month period is based on Air Canada's reporting system, or when information becomes available. The three-month period merely implies that within three to four months Air Canada should know that its revenues are below its fully allocated operating costs.[125] Air Canada argued for a one-year period and its expert economist Dr. Baumol suggested that the appropriate period is the period of the alleged predatory conduct. In addition, Air Canada argued that allowance should be made for seasonality so as not to confuse low demand with predatory conduct. The Commissioner's riposte was that seasonality is predictable.[126] The Tribunal's position was that that the *Regulations* "do not specify a time period for the anti-competitive act." Thus the dominant carrier violates the *Regulations* "any time" it operates or increases capacity at prices that do not cover avoidable costs.[127] The Tribunal did not rule on this issue suggesting that since the Regulations did not specify any time period, it was the Commissioner's obligation to indicate the time period – it therefore accepted the Commissioner's position with regard to timing.

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[123] *AC* at [174].
[124] *AC* at [174].
[125] AC at [172] indicates that the Commissioner's two economic experts Drs. West and Tretheway thought that three months should be enough where as the Commissioners accounting expert Mr. Vettese said that this may take as much as four months.
[126] The Tribunal also noted at [194] that under the *Regulations* there was no exemption for operating below avoidable costs due to random factors.
[127] *AC* at [186]

The last issue was whether beyond contribution should be given any recognition.[128] Beyond contribution reflects the network nature of the airline business. Suppose a passenger travels from A to B and then from B to C. Part of the contribution of this passenger on the B to C flight is pro-rated to the A to B flight. In some sense this recognizes the fact that the A to B flight contributed to the B to C journey, or if the initial flight was cancelled then the passenger could not have connected to the subsequent leg. Air Canada wanted beyond contribution to be counted as revenue in the implementation of the avoidable costs test. The Commissioner argued that beyond contribution should not be given any recognition as it would imply double counting and overstate revenues thereby concealing possible predatory conduct. The Tribunal ruled that beyond contribution should not be given any recognition but observed that it did not have enough evidence on recapture and revenue displacement to determine what the beyond contribution would be and that the burden was on Air Canada to provide this information. It stated that this could be considered in Phase II under the legitimate business rationale for operating a flight below avoidable cost.[129]

The test was applied to two of the eight routes identified in the Commissioner's complaint: Toronto-Moncton and Halifax-Montreal. Seventy-three flights were operated on the first route over the period April 2000 to February 2001. Forty-three of these flights had monthly revenues below avoidable costs. On the second route seventy-two of the one hundred and eleven monthly schedule flights had revenues below avoidable costs over the period August 2000 to February 2001. Thus Air Canada failed the avoidable cost test, however whether this constitutes abuse of dominant position will be determined in Phase II.

Regardless of the eventual outcome, this case is likely to remain controversial for a variety of reasons. For example, there are many alternative plausible characterizations of the airline industry. Consumers do not buy flights and air carriers do not sell them. Consumers perceive a network or a full service carrier as selling three qualities of service, or types of output – these being economy, business and first class. Once an airline decides to offer service in the form of a flight from point A to B there are very few costs it can avoid. Indeed most costs become fixed and common. Thus after this decision is made, all the airline can do

[128] In the American Airlines case beyond contribution was referred to as upline and downline net revenues.
[129] *AC* at [301]

is to maximize revenues or contribution to the costs of providing that flight. This is done through price discrimination using sophisticated yield or revenue management systems where seats within the same class of service may be sold to individual consumers at different prices. This is one way to characterize the airline industry – in other words, network carriers are multi-product firms offering a differentiated product and entry by low cost carriers affects primarily one segment, which is the low quality segment. The low cost carrier can then be thought of as a single product or specialized firm providing one low-quality class of service to price sensitive customers. Indeed this is the way low cost entry has occurred, not just in aviation but also in other industries such as steel. The (low cost) mini-mills entered the low-end market of vertically integrated steel producers in the United States and gradually moved up the quality ladder. The Commissioner's view that an airline is a multi-product firm producing unidirectional flights fails to recognize the network characteristics of the industry and the substantial scope and scale economies resulting from hub and spoke operations. As discussed earlier, it could be reasonably argued that the analysis should have been conducted either at the route level or even at the network level.[130]

The Commissioner contended that "substantially all" or 90% of Air Canada's fully attributed operating costs with the exception of overhead were avoidable, and that Air Canada was able to avoid these costs the moment a flight was cancelled. Together these two observations point toward contestability or at least suggest that exit costs are very low. If this is the case then entrants cannot be hurt by predation.

The Commissioner's version of the avoidable costs test includes costs that are avoidable, or those that can be shed outright; and increased profits from (full) recapture and profitable redeployment. This is an opportunity costs test. Failing this test implies that the firm could have done better but did not. Such behaviour is deemed "irrational" and the goal of antitrust is not to impose restrictive notions of economic rationality on business.[131] As Elhauge (2003a) observes:[132]

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[130] In the Commissioner's view "a route is a fiction; it is a mere "collection of flights" between two places". See *Notice* at [75] and *Final* at [245].
[131] For example, failure to take advantage of better alternatives could also be due to managerial incompetence.
[132] Elhauge (2003a) at 694. In his original work on the avoidable cost test, Baumol (1996) indicates (at 68 and 69) that short run profit sacrifice may be viewed as predatory if it can be made up through future monopoly profits after exit of rivals.

> ... it is vital ... to avoid using cost measures that effectively include forgone profits. Otherwise, one cannot keep predatory theories based on a failure to maximize short-run profits analytically distinct from theories based on pricing below costs.

As is discussed below, the opportunity cost test is applied incorrectly because the Commissioner's economics expert Dr. West, assumed full recapture. If recapture were minimal, cancelling a flight would lead to losses and not profits.[133] In closing arguments, counsel for Air Canada asked: [134]

> How can one simultaneously assume incremental revenues from increased service, but no revenue decline from service reduction?

In other words, it is contradictory to assume both full recapture and profitable redeployment.

McFetridge (2003) uses some simple numerical examples to show that opportunity costs could either exceed, or be less than inherently avoidable costs. In addition, opportunity costs could either exceed, be less than, or equal to fully allocated costs. What is crucial to these calculations is the extent of recapture and/or redeployment. One of McFetridge's examples is reproduced here for illustrative purposes. Suppose a flight can accommodate 50 passengers at a fare of $100 per passenger. Variable costs are $20 per passenger and flight specific fixed costs that are inherently avoidable are $2000. The fully allocated cost of the flight is $6000. In this example, revenues ($5000) are below fully allocated costs but exceed inherently avoidable costs ($3000). If the flight is cancelled and all 50 passengers are recaptured, their contribution to revenue on other flights is $5000 and their contribution to variable costs is $1000. Thus with full recapture, their contribution to profit elsewhere in the network is $4000. The opportunity cost of continuing to offer the initial flight is $7000, which includes $3000 in inherently avoidable costs and $4000 in lost profits. This amount exceeds the fully allocated cost of $6000 and cancelling the flight would increase profits by $2000. The extent of recapture does not affect the inherently avoidable cost of $3000 or the fully allocated cost of $6000, but it does affect the opportunity cost because lower recapture results in lower

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[133] The Tribunal notes in *AC* at [136] "Dr. Baumol insists that redeployment be profitable, that opportunities be available, and that only the truly avoidable portion of a cost be included in the test."
[134] *Air Canada's Phase I Closing Argument* at 8 and 9, available at: http://www.ct-tc.gc.ca/english/cases/ct-2000-004/air-canada.html.

additional profits and may be even losses. If only 37 of 50 passengers are recaptured, the additional profits decline to $2960 and so the opportunity cost is now $5960. The airline can still increase profits by $960 if it cancels the flight. If recapture declines to 20 passengers, additional profits decline to $1600 and the opportunity cost is now $4600 and the airline would lose $400 by cancelling the flight. This example shows that the extent to which opportunity costs exceed inherently avoidable costs depends on the extent of recapture and not on the fully allocated costs and there is no reason to expect fully allocated costs to equal opportunity costs as the Tribunal's decision implies. Though the Tribunal acknowledged that the extent of recapture could depend upon historical load factors and the number of flights offered by competing airlines, it nevertheless accepted calculations based on full recapture.[135]

Foreign carriers are not allowed to enter domestic Canadian routes. The collapse of Canadian Airlines and its subsequent merger with Air Canada made Air Canada a virtual monopoly in the domestic market. During the merger, some undertakings were sought from Air Canada to alleviate the anti-competitive effects of the merger, but there were others as noted by the Tribunal, such as the inability to lay off employees until March 2002; to continue to serve small communities that had been served prior to the merger, until January 2003; and the requirement that any aircraft that Air Canada wished to sell would have to be offered to Canadian carriers first.[136] Air Canada also filed for bankruptcy in April 2003. Market based tests of rationality should be applied to firms that are in the first instance, allowed to operate on market principles. Is this about antitrust? Or about the misuse of antitrust to rectify structural problems in Canadian aviation?

## 6. Conclusions

The predation doctrine is likely to remain much-maligned. In the United States, it is doubtful that post-Chicago view will find favour with courts in the near-term. Game theoretic models are generally sensitive to assumptions, may involve perceptions, and often have multiple equilibria. Empirical support for these models is also weak, but more importantly, they do not provide courts with objective criteria on which to base decisions. Until they do, the Chicago view will liable to prevail. Moreover courts are still debating more fundamental

[135] *AC* at [118], [331] and [333]. McFetridge (2003) also provides examples that include both recapture and redeployment.
[136] *AC* at [15].

issues such as the appropriate cost measure.[137] What we do know is that above cost price cuts are not predatory; courts have not ruled on what the cost measure should be, but have indicated that this may have to be determined on a case-by-case basis. The average variable cost test is generally acceptable but the avoidable cost test or a test based on incremental cost may also be acceptable if it is implemented correctly. The cost measure should not include attributed costs or count forgone profits as costs – in other words, an opportunity costs test will not do. Prices must be below the appropriate measure of cost. Failure to maximize profits does not constitute predatory sacrifice and neither does failure to take advantage of more profitable opportunities. It is essential to show a reasonable likelihood of recoupment through use of monopoly power after the entrant has left the market.

In Canada, there are two standards – statute for some and administrative law for others. Before the inclusion of aviation specific provisions, there was little difference between the Canadian and American doctrine. The aviation specific provisions are based on a set of restrictive regulations that specify an explicit cost standard – this being the avoidable cost test. It is the Tribunal's interpretation, that the moment a unidirectional Air Canada flight fails to cover avoidable costs, it will have committed an anti-competitive act. Why this happened is irrelevant. The application of the avoidable cost test will likely be the most controversial aspect of the Air Canada case because the computations accepted by the Tribunal include attributed costs and forgone profits based on the assumption of full recapture. The Commissioner and the Tribunal failed to acknowledge the network aspects of the airline business. Output is difficult to measure in transportation because it is neither tangible nor storable and consumers value a variety of service characteristics. Nonetheless, since the outcome of this case was meant to serve as a code of conduct, other plausible characterizations of output and capacity should have been given serious consideration. Which is better – precise administrative law or vague statute? To borrow again, from an American legal scholar:[138]

> We may not be able to define precisely how many hairs one needs to lose before one turns bald, but we all understand the general concept of baldness and what moves you closer or further from that state. Vague standards might be uncertain around the edges as applied to tough facts, but at least offer genuinely guiding normative principles.

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[137] Scherer and Ross (1990) also show that it is difficult to rank even the simpler tests from a consumer welfare viewpoint. Some are superior before entry and others, after.
[138] Elhauge (2003b) at 1.

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