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COMPETITION AND PREDATION IN THE AIRLINE INDUSTRY

GUSTAVO MATHIAS ALVES PINTO*

"Sometimes the cure is worse than the disease."

Spence (1981)¹

INTRODUCTION

RONALD COASE once said that one of the reasons he lost his interest in antitrust was the fact that, whenever prices would fall, courts would rule that behavior as predatory pricing.² However, developments in the field of predatory pricing theory in the last decades show that Coase's disillusion might have been precipitated.³ The advent of new schools of economic thought—notably the Chicago school—radically changed the conception of predatory pricing, claiming that such practice would be "so rare and irrational" that antitrust law should not bother about this type of conduct.⁴ Frank Easterbrook, one of the exponents of the Chicago school, supported the no-rule standard for predatory pricing claims, arguing that antitrust interventions in this area would probably interfere with legitimate

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¹ Michael Spence, *Competition, Entry and Antitrust Policy*, in STRATEGY, PREDATION, AND ANTITRUST ANALYSIS 82 (Steven Salop ed., 1981).

² Edmund W. Kitch, *The Fire of Truth: A Remembrance of Law and Economics at Chicago, 1932–1970*, 26 J.L. & ECON. 163, 193 (1983).

³ For an evolution of the theories on predatory pricing, see ERNEST GELLHORN ET AL., ANTITRUST LAW AND ECONOMICS IN A NUTSHELL 164–72 (5th ed. 2004) and Aaron S. Edlin, *Stopping Above-Cost Predatory Pricing*, 111 YALE L.J. 941, 953–54 (2002).

⁴ GELLHORN ET AL., *supra* note 3, at 165.

and desirable price competition, denying consumers the benefits of low prices.⁵

The Supreme Court has endorsed the essence of the Chicago school theory⁶ in *Matsushita Electric Industrial Co. v. Zenith Radio Corp.*⁷ and *Brooke Group, Ltd. v. Brown & Williamson Tobacco Corp.*,⁸ expressly stating that “predatory pricing schemes are rarely tried, and even more rarely successful.”⁹ In fact, since 1993, when the Supreme Court ruled on the *Brooke Group* case, no predatory pricing claim has prevailed before courts.¹⁰ However, even though the matter received skeptical treatment by the Supreme Court, this has not settled the academic debate on predatory pricing issues. On the contrary, the debate has become even more intense.¹¹

New theories on predatory pricing—not surprisingly classified as “post-Chicago” theories—argue that predatory pricing is not such a rare phenomenon as supported by the Chicago school.¹² Strategic analyses conducted under a game theory prism have shown that there is more rationality in this type of behavior than earlier thought.¹³ Some scholars have even proposed the possibility of above-cost predatory pricing strategies, such as in cases of incumbent monopolists with substantial advantages in com-

⁵ See generally Frank H. Easterbrook, *Predatory Strategies and Counterstrategies*, 48 U. CHI. L. REV. 263 (1981).

⁶ The Supreme Court has not discarded the adoption of cost based tests for the assessment of these claims. See Edlin, *supra* note 3, at 954.

⁷ 475 U.S. 574 (1986).

⁸ 509 U.S. 209 (1993).

⁹ *Matsushita*, 475 U.S. at 589.

¹⁰ Edlin, *supra* note 3, at 941.

¹¹ See generally Patrick Bolton et al., *Predatory Pricing: Strategic Theory and Legal Policy*, 88 GEO. L.J. 2239 (2000); Alvin K. Klevorick, *The Current State of the Law and Economics of Predatory Pricing*, 83 AM. ECON. REV. 162 (1993); Janusz A. Ordover, *Predatory Pricing*, in THE NEW PALGRAVE DICTIONARY OF ECONOMICS AND THE LAW 77 (Peter Newman ed., 1998).

¹² For a list of authors criticizing the Chicago school, see Edlin, *supra* note 3, at 955–56.

¹³ See generally David M. Kreps & Robert Wilson, *Reputation and Imperfect Information*, 27 J. ECON. THEORY 253 (1981); David M. Kreps et al., *Rational Cooperation in the Finitely Repeated Prisoners' Dilemma*, 27 J. ECON. THEORY 245 (1982); Paul Milgrom & John Roberts, *Limit Pricing and Entry Under Incomplete Information: An Equilibrium Analysis*, 50 ECONOMETRICA 443 (1982); Paul Milgrom & John Roberts, *Predation, Reputation, and Entry Deterrence*, 27 J. ECON. THEORY 280 (1982).

parison to their competitors that lower or meet prices in response to the entrance of new companies in the market.¹⁴

The airline industry has been particularly susceptible to the discussion of these post-Chicago theories.¹⁵ Courts and agencies on both sides of the Atlantic have shown an increased willingness to investigate above-cost predatory pricing claims in this industry.¹⁶ Therefore, this article aims at analyzing the merits of the application of above-cost predatory pricing theory in the airline industry. To reach the central objective of this article, it is structured as follows: Section I presents the main characteristics that support above-cost predatory pricing claims in the airline industry. Section II assesses the main academic positions, and Section III analyzes these positions with empirical data. Section IV concludes the article.

I. CHARACTERISTICS OF THE AIRLINE INDUSTRY

The airline sector was deregulated in the 1970s after decades of monopoly or oligopoly domination, together with a strong presence of the State in the industry.¹⁷ After the deregulation, new companies entered the market, but struggled initially to compete with the traditional incumbent airlines.¹⁸ This scenario changed in the 1980s, when airlines started to adopt a low

¹⁴ See generally Aaron S. Edlin & Joseph Farrell, *The American Airlines Case: A Chance to Clarify Predation Policy* (2001), in *THE ANTITRUST REVOLUTION* 502 (John E. Kwoka, Jr. & Lawrence J. White eds., 2004).

¹⁵ See generally Edlin, *supra* note 3; Edlin & Farrell, *supra* note 14; Einer Elhauge, *A Better Explanation For Why Pricing Above Cost Should Not Be Predatory - And the Implications For How to Define Costs* (Apr. 2002) (unpublished Discussion Paper No. 360, Harvard Law School), available at http://www.law.harvard.edu/programs/olin_center/papers/pdf/360.pdf. This concern with above-cost airline predation even goes back to Baumol. See William J. Baumol, *Quasi-Permanence of Price Reductions: A Policy for Prevention of Predatory Pricing*, 89 *YALE L.J.* 1, 2-3 (1979).

¹⁶ See *United States v. AMR Corp.*, 140 F. Supp. 2d 1141, 1145-69 (D. Kan. 2001); Enforcement Policy Regarding Unfair Exclusionary Conduct in the Air Transportation Industry, 63 Fed. Reg. 17,919, 17,920-22, Apr. 10, 1998; Bundeskartellamt [Federal Cartel Office] Feb. 18, 2002, B9-144/01 (German national antitrust tribunal condemning Deutsche Lufthansa AG for reducing its prices in an "unjustified" manner in routes where it was competing against Germania), available at http://www.bundeskartellamt.de/wEnglisch/download/pdf/entscheidungen/B9-144-01_e.pdf.

¹⁷ Andrew R. Goetz, *Deregulation, Competition, and Antitrust Implications in the US Airline Industry*, 10 *J. TRANSP. GEOGRAPHY* 1, 2-4 (2002).

¹⁸ Christian Ewald, *Predatory Pricing in the Airline Industry as a Challenge to Competition Law Enforcement—An Assessment of the Current Legal Practice in the U.S. and Germany*, in *COMPETITION VERSUS PREDATION IN AVIATION MARKETS—A SURVEY OF*

cost structure (low cost carriers—LCCs), with a business model based on the offer of cheaper fares, route networks centering around smaller hub airports, and elimination of reserved seating as well as many servicing costs.¹⁹ This business model proved to be very successful, and the market share of the LCCs in the American market expanded rapidly from 7.4% in 1990 to 26.9% in 2003.²⁰

In reaction to the fast growth of LCCs, the incumbent major carriers in the market adopted many strategies such as matching or undercutting the prices of the new companies or expanding capacity in the routes where the companies directly competed. However, even though this could be considered a typical market behavior of incumbents, having even been considered one of the possible defenses for price discrimination claims under the Robinson-Patman Act (matching prices),²¹ courts and governmental agencies have criticized this kind of action.²² The U.S. Department of Transportation (DOT) tried to enact new regulations that would restrict the ability of incumbent airline companies to respond to the entrance of new companies in the market.²³ In Germany, the Bundeskartellamt, the national anti-trust tribunal, condemned Deutsche Lufthansa AG for reducing its prices in an “unjustified” manner in routes where it was competing against Germania, a LCC.²⁴ Similar positions can be found in Australia (*Qantas v. Virgin Blue*) and Canada (*Air Canada v. West Jet*).²⁵ These documents suggest that incumbent airline companies have substantial advantages in comparison with new companies, and therefore, price undercutting or matching

EXPERIENCE IN NORTH AMERICA, EUROPE AND AUSTRALIA 189 (Peter Forsyth et al. eds., 2005).

¹⁹ *Id.* at 190.

²⁰ Gustavo E. Bamberger & Dennis W. Carlton, *Predation and the Entry and Exit of Low-Fare Carriers*, in *ADVANCES IN AIRLINE ECONOMICS—COMPETITION POLICY AND ANTITRUST* 7 (Darin Lee ed., 2006).

²¹ Robinson-Patman Act, 15 U.S.C. §13(b) (2000).

²² See *United States v. AMR Corp.*, 140 F. Supp. 2d 1141, 1145–69 (D. Kan. 2001); Enforcement Policy Regarding Unfair Exclusionary Conduct in the Air Transportation Industry, 63 Fed. Reg. 17,919, 17,920–22, Apr. 10, 1998; Bundeskartellamt [Federal Cartel Office] Feb. 18, 2002, B9-144/01, available at http://www.bundeskartellamt.de/wEnglisch/download/pdf/entscheidungen/B9-144-01_e.pdf.

²³ 63 Fed. Reg. at 17,920.

²⁴ Bundeskartellamt [Federal Cartel Office] Feb. 18, 2002, B9-144/01.

²⁵ COMPETITION VERSUS PREDATION IN AVIATION MARKETS—A SURVEY OF EXPERIENCE IN NORTH AMERICA, EUROPE, AND AUSTRALIA xviii (Peter Forsyth et al. eds., 2005) [hereinafter *COMPETITION VERSUS PREDATION*].

reactions would undermine the permanence of LCCs in the market. Below are some of the main advantages cited in these documents which are attributed to incumbent airlines and usually pointed out by courts, agencies, and scholars to criticize above-cost reactive discounts:

- **Hub-and-Spoke:** Most of the major carriers in the United States and Europe have adopted the hub-and-spoke system to organize their flight routes.²⁶ In this system, cities with a high density of passengers and good airport infrastructure become regional centers for flight traffic, concentrating arrivals and departures in one main base and offering flights with connections to passengers of the other routes that will pass by these centers.²⁷ Therefore, the hub system allows companies to offer more destinations and scheduling convenience to passengers, consequently increasing the used capacity in each plane. According to the U.S. Department of Justice (DOJ), this creates significant advantages in terms of income and costs to hub carriers and creates a considerable barrier to entry in the market since building a hub is “difficult, time-consuming and costly.”²⁸
- **Slots (Landing Rights):** Slots are rights allocated to an airline company to schedule a landing or departure during a specific time period.²⁹ The capacity of an airport to receive airplanes and passengers depends directly on the availability and allocation of the slots. Thus, the entrance of a new company in a new airport and, as a result, in a new route, will depend directly on how these rights are divided among the airline companies.³⁰ Because of their size and time they have been on the market, incumbent major carriers have most of these landing rights (in many cases the slots are controlled by grandfather rights for the airlines that were in

²⁶ U.S. DEP’T OF TRANSP., ENFORCEMENT POLICY REGARDING UNFAIR EXCLUSIONARY CONDUCT IN THE AIR TRANSPORTATION INDUSTRY—FINDINGS AND CONCLUSIONS ON THE ECONOMIC, POLICY, AND LEGAL ISSUES 19 (2001), *available at* <http://ostpx.web.ost.dot.gov/aviation/domestic-competition/compfindings.pdf>.

²⁷ *Id.* at 24.

²⁸ Memorandum of the United States at 11, *United States v. AMR Corp.*, 140 F. Supp. 2d 1141 (D. Kan. 2001) (No. 99-1180-JTM), *available at* <http://www.usdoj.gov/atr/cases/f4800/4859.htm>.

²⁹ Ian Jones, Ivan Viehoff & Phillipa Marks, *The Economics of Airport Slots*, 14 FISCAL STUD. 37, 38 (1993).

³⁰ U.S. DEP’T OF TRANSP., *supra* note 26, at 32; U.S. GEN. ACCOUNTING OFFICE, DOMESTIC AVIATION—BARRIERS TO ENTRY CONTINUE TO LIMIT BENEFITS OF AIRLINE DEREGULATION 3 (1997), *available at* <http://www.gao.gov/archive/1997/rc97120t.pdf>.

place when these restrictions were added.)³¹ Even though in 1985 the DOT started allowing the negotiation of these rights by incumbent companies in an effort to increase the openness of the market, new entrants still struggle to get access to these rights.³² In a recent poll realized with managers of airline companies, slots were perceived as the main and most effective barrier to entry in the airline industry.³³

- **Gates:** The leasing rules of boarding gates can also represent a barrier to entry.³⁴ These contracts allow one company to have exclusive rights to use a gate for a long period of time (usually twenty years).³⁵ Therefore, to get access to the boarding gates, new companies must sublease them from incumbent companies.³⁶ Most often these subleases are offered only for low demand periods and at considerably expensive rents.³⁷
- **Marketing:** Marketing strategies adopted by incumbent companies can also represent barriers to entry.³⁸ Among the most important strategies are frequent flyer programs, where airline customers accrue points corresponding to the distance flown on an airline. These points can be redeemed for free air travel or other goods or services. In addition, airline companies can also pay travel agents commission overrides to encourage them to book passengers for a specific company flight.³⁹
- **Brand:** Due to the aversion of some passengers to airline travel, the brand has an important role in the airline company choice.⁴⁰ Therefore, considering its reputation in the market, an incumbent company can attract more passen-

³¹ U.S. GEN. ACCOUNTING OFFICE, *supra* note 30, at 3, 10.

³² U.S. GEN. ACCOUNTING OFFICE, AIRLINE COMPETITION—BARRIERS TO ENTRY CONTINUE IN SOME DOMESTIC MARKETS 4–5 (1998), available at <http://www.gao.gov/archive/1998/rc98112t.pdf>.

³³ Mirko Schnell, *Investigating Airline Managers' Perception of Route Entry Barriers: A Questionnaire-Based Approach*, in COMPETITION VERSUS PREDATION IN AVIATION MARKETS—A SURVEY OF EXPERIENCE IN NORTH AMERICA, EUROPE AND AUSTRALIA 259 (Peter Forsyth et al. eds., 2005).

³⁴ U.S. GEN. ACCOUNTING OFFICE, *supra* note 30, at 5.

³⁵ *Id.*

³⁶ U.S. GEN. ACCOUNTING OFFICE, *supra* note 32, at 5.

³⁷ *Id.*

³⁸ U.S. GEN. ACCOUNTING OFFICE, *supra* note 30, at 6.

³⁹ Ewald, *supra* note 18, at 192.

⁴⁰ See Edlin, *supra* note 3, at 943.

gers than a new company at similar or even slightly higher prices.⁴¹

- **Asset Mobility:** Even though it is not exclusive to incumbent airlines, the mobility of its assets is a peculiar characteristic of the airline industry that facilitates strategic predatory behavior. The airplane can be considered the ultimate mobile asset, making it very easy for incumbent companies to expand offers in reaction to new entrants.

These are some of the main characteristics usually pointed out as advantages of incumbent major carriers in comparison with new companies. For some scholars, these characteristics create a substantial cost difference between companies competing in the same market, which can be used in an anticompetitive manner.⁴² Therefore, these differences would justify the limitation of the ability of incumbent airlines to react to the entrance of new companies in the market. The next section shows two main academic positions on this issue.

II. REVIEW OF THE LITERATURE

Limit pricing or strategic deterrence models are not a recent phenomenon. As Einer Elhauge points out, in 1977, Oliver Williamson had already proposed a prohibition for incumbents to expand their output for a twelve- to eighteen-month period in response to entry by new firms.⁴³ In a similar fashion, in 1978, William Baumol proposed a rule that would allow incumbents to reduce their prices in response to entry, but would require them to keep prices at that lower level even after the new firm had left the market.⁴⁴ More recently, Aaron Edlin defends restrictions to above-cost reactive price cuts⁴⁵—with special focus on the airline industry⁴⁶—while Elhauge argues against any restrictions to this kind of reactive price cutting.⁴⁷ Considering that Edlin's proposal incorporates many aspects of Williamson's and Baumol's theories, his article, in addition to Elhauge's article, will be used to synthesize the main aspects of both scholarly positions on the issue.

⁴¹ See *id.*

⁴² See *infra* Section II.

⁴³ Elhauge, *supra* note 15, at 2; Oliver E. Williamson, *Predatory Pricing: A Strategic and Welfare Analysis*, 87 YALE L.J. 284, 295–96, 333–36 (1977).

⁴⁴ Baumol, *supra* note 15, at 4–5.

⁴⁵ Edlin, *supra* note 3, at 955.

⁴⁶ Edlin & Farrell, *supra* note 14, at 521.

⁴⁷ Elhauge, *supra* note 15, at 4.

According to Edlin, incumbents can reduce their prices, either undercutting or matching their rivals' costs, without necessarily engaging in below-cost pricing (the classic definition of predatory pricing).⁴⁸ This would be particularly true in the airline industry because of the substantial benefits of incumbent companies in comparison with new entrants, as well as other factors, such as the difficulty for consumers to stockpile airline tickets.⁴⁹ In this scenario, the lack of antitrust sanctions to above-cost price cuts would deter entry in the market, once any potential entrant would anticipate the incumbent's behavior.⁵⁰

Thus, the Chicago school and the Supreme Court would be engaging in a temporal mistake, since they would be worried with the *ex post* effects of predatory pricing, where the predator would charge supra-competitive prices to recoup its losses, when in fact the effects should be measured *ex ante*, analyzing the amount of potential entries deterred by that behavior.⁵¹ Even if, despite the incumbents' behavior, new companies entered the market, any benefits derived from the price reductions would be only temporary because, after the exit of the entrant, the incumbent would return its prices to its prior level, with the advantage now of having built a tough competitor reputation, dissuading even more additional potential entries.⁵² It is worth mentioning that, according to *Brooke Group*, the mere failure to maximize profits is not enough to configure predatory pricing.⁵³ It is necessary to have below-cost pricing for a condemnation.⁵⁴

As a solution to this situation, Edlin proposes a rule that would restrict incumbents' freedom to make reactive price cuts.⁵⁵ According to the rule, monopolist incumbents with substantial advantages over new entrants—such as the airline companies that dominate a particular hub—could not make reactive price cuts or even make significant increases in product or service quality until the new company establishes itself in the market, or until its share has increased enough to make the incumbent lose its dominant position.⁵⁶ For practical purposes,

⁴⁸ Edlin, *supra* note 3, at 955.

⁴⁹ Elhauge, *supra* note 15, at 24–25.

⁵⁰ Edlin, *supra* note 3, at 945.

⁵¹ *Id.*

⁵² *Id.*

⁵³ *Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 221–24 (1986).

⁵⁴ *Id.*

⁵⁵ Edlin, *supra* note 3, at 945.

⁵⁶ *See id.*

the author suggests a twenty percent discount as a trigger for the rule, and an estimated time of twelve to eighteen months to allow entrants to establish themselves in the market.⁵⁷

The rule would have the double benefit of creating incentives to the entry of new companies in the market by restricting the incumbents' pool of reaction strategies. In addition, the rule would present the "*ex ex ante*" effect of lowering prices even before any entry in the market. Incumbents would be afraid that, if they charged higher prices and attracted new competitors, they would not be able to reduce prices in response to the eventual entry of those new competitors.

Even though this *ex ante* approach may sound at first like a silver bullet of antitrust policy, Elhauge shows that the rule does not withstand a more thorough analysis. In fact, the first unmistakable conclusion about the proposal is that, considering that equal or more efficient entrants could respond lucratively to any price policy of the incumbents, the effect of the rule would be to protect only entrants with higher costs or lower quality.⁵⁸ That is, the rule protects the less efficient entrants.

Elhauge shows that such a rule would create perverse incentives for the incumbent monopolist, as it would have interest in losing market share as quickly as possible to recover its ability to adjust prices.⁵⁹ Obviously, the most effective and fastest way to do that would be increasing its prices. Considering that there are few cases of monopolists with 100% market share, it is more likely that the rule would become unenforceable prior to the twelve- to eighteen-month period proposed by Edlin.⁶⁰ In addition, this leads to an ironic outcome, as it changes the concern of the classic conception of predatory pricing with price reductions for a restriction that only creates incentives for increases in price in order to maximize long-term profits.⁶¹

On the consumer side, the effects of such a rule would also be negative. Considering that the entrant will not be able to meet all the demand right from the beginning—if it could, the rule would not be applied at all—there will be an unattended share of the market left to the incumbent.⁶² As seen in the previous section, this scenario is more common in the airline industry,

⁵⁷ *Id.* at 946.

⁵⁸ See Elhauge, *supra* note 15, at 18–19.

⁵⁹ *Id.* at 20.

⁶⁰ *Id.* at 21.

⁶¹ *Id.* at 14–18.

⁶² *Id.* at 22.

where, even though there is asset mobility, the offer of new products and services depends on access to slots and gates, among other regulatory requisites.⁶³ Therefore, the incumbent would have an incentive to increase prices to accelerate the expiration of the rule and entrants would not grant any discounts higher than twenty percent (trigger of the rule), even if they were efficient enough to do so. As a result, the effect for consumers and society is harmful, as the incumbent will lose a considerable portion of its demand in the short run, but will have incentives to maintain or even increase its previous price policy, which could cause costly and disruptive layoffs, contractual breaches, and idle capacity.

The author also shows that the *ex ante* effects of the Edlin rule are unlikely to occur.⁶⁴ In the case of less efficient companies, it is doubtful that the rule will create incentives for their entry in the market. Sooner or later (probably sooner rather than later), the incumbent will recover its ability to change prices, and will be able to drive new companies out of the market.⁶⁵ This is even more significant in the case of sectors with high sunk costs, where it is improbable that twelve to eighteen months will be enough to allow new entrants to recover their investment.⁶⁶ In the case of companies that might become more efficient with time, the rule also would not create any significant additional incentive, if the capital markets could always determine the necessary amount of capital for the new entrant to survive until it becomes as or more efficient than the incumbent.⁶⁷ Therefore, the Edlin rule would only transfer the efficient and voluntary financing provided by the capital markets for the mandatory financing by consumers in the form of higher prices. Finally, in the case of more efficient companies, the rule would have even less use, because these companies would enter the market anyway, independent of the rule.

The *ex ex ante* effects are also implausible because, if the incumbent predicts that it will be able to drive out the entrant of the market, it will have incentives to increase prices in order to accelerate the expiration of the rule. Nevertheless, if the incumbent knows that the entrant has deep pockets, or is capital-market financed, the rational decision will be to accommodate the

⁶³ See *supra* notes 26–42 and accompanying text.

⁶⁴ Elhauge, *supra* note 15, at 51.

⁶⁵ *Id.* at 51–52.

⁶⁶ *Id.* at 52.

⁶⁷ *Id.* at 56.

entrant instead of entering a harmful and useless price war.⁶⁸ In other words, the incumbent will prefer to enter into an oligopolistic equilibrium, instead of sacrificing a present and certain cash flow for a future and doubtful one.⁶⁹ However, it is worth mentioning that the rule will create another important *ex ex ante* effect: serious doubts for companies thinking of investing in research and development to create a new product or thinking of enhancing an existing product in order to achieve a monopoly. In the airline industry case, the *ex ex ante* effects would restrict the companies' ability to offer many advantages perceived as positive by the consumer, such as frequent daily flights, available connecting flights, and a more recognizable brand name.

According to Elhauge, this relation between the above-cost predatory pricing theory and the airline industry would have its roots in the frustration of some scholars with "the failure to realize the predictions of contestable market theory in the airline industry."⁷⁰ This sector, which used to be mentioned as a good example of a contestable market due to the mobility of its assets, ended up not behaving in the expected way after the deregulation.⁷¹ Considering that the contestability of the market was one of the main underlying rationales for the reforms in the 1970s, scholars sought—and still seek—to find possible explanations for this phenomenon.⁷² In this scenario, the above-cost predatory pricing explanation was a good fit for this gap in the theory.

However, the author claims that the true reason the contestable market theory failed in the airline industry would not be due to anticompetitive behavior of incumbents, but for an erroneous assumption that the relevant markets would be the individual routes between cities, failing to incorporate the effects of the advent of the hub-and-spoke system.⁷³ In this system, passengers with different itineraries are combined in the same flight, causing the distribution of prices and costs based on the network as a whole, and not only on individual routes.⁷⁴ Thus, the price of the airline fare from hub A to spoke B would reflect not only the demand for that segment of the flight, but also the demand be-

⁶⁸ *Id.* at 57.

⁶⁹ *Id.*

⁷⁰ *Id.* at 69.

⁷¹ *Id.* at 70.

⁷² See Michael E. Levine, *Airline Competition in Deregulated Markets: Theory, Firm Strategy, and Public Policy*, 4 YALE J. REG. 393, 395, 400–01, 403–05 (1987).

⁷³ Elhauge, *supra* note 15, at 70.

⁷⁴ *Id.* at 70–71.

tween spoke B and other cities.⁷⁵ Besides that, considering that passengers in direct flights extract more value from the network than connecting passengers, it makes sense to charge different prices between these two passengers to cover the considerable expenses involved in the construction of a hub-and-spoke network, such as investment in gates, slots, fleet, maintenance, and luggage logistics, among others.⁷⁶

Due to these expenditures, the loss of one route can have a significant impact for an incumbent that administers a hub-and-spoke network because that route represents revenues not only between two cities, but also to all the other cities to which connecting flights are offered.⁷⁷ This causes a payment transfer to other passengers that can extract less value from the service, and a natural deviation from the optimal price relation and, consequently, a reduction in the total output in the network.⁷⁸ It is natural, therefore, that the incumbent monopolist reduces its prices in reaction to the entry of a new company, compensating the revenue loss in other segments of the network.⁷⁹ If the entrant is driven out of the market, the incumbent could reestablish its prior price level that maximizes output for the hub-and-spoke system.⁸⁰ This way, Elhauge supports that "the observed pattern of single route entry, reactive above-cost price cuts by hub incumbents, exit by the single route entrant, and restoration of higher prices thus can be explained by fully competitive behavior."⁸¹

This position is also supported by Peter Forsyth et al.:

[T]he strength of the position in which incumbent [full service airlines] find themselves should not be overestimated. Many incumbents are afraid of competition from LCCs. The latter have lower costs, and the ability to pitch their product such that demand for it grows very rapidly. The incumbents face a dilemma—if they do not match fares they lose market share rapidly. On the other hand, if they do match fares, they are likely to be setting fares below costs (since the LCCs' costs are lower than theirs) and they risk being found to have indulged in predatory conduct. Since it is usually very difficult for them to reduce their costs quickly, they find it difficult to choose a re-

⁷⁵ *Id.* at 71.

⁷⁶ *Id.* at 71–73.

⁷⁷ *Id.* at 73.

⁷⁸ *Id.*

⁷⁹ *Id.* at 74.

⁸⁰ *Id.*

⁸¹ *Id.*

sponse to LCC entry which is both viable in the long run and not risking charges of predation. In this situation, it is not surprising that many have set up their own LCC subsidiaries, in spite of the difficulties in making this work effectively.⁸²

Besides all the mentioned problems, it is necessary to point out that the Edlin rule has serious implementation issues. In fact, considering that the prices would be frozen, incumbents could seek to compete by increasing the quality of their products and services. The airline companies, for example, could try to attract customers by offering fancier meals. Would this be considered an increase in quality by the Edlin rule? How would this be monitored? There are also doubts regarding the beginning of the applicability of the rule. Would it be applied as of the date the airline company announced its intention to fly a new route or the date when the company effectively started flying? Depending on the answer, the twelve- to eighteen-month protection might become useless. These are only some of the practical problems that the Edlin rule poses, but does not answer.

Finally, the rule also creates serious practical problems for the courts. Regarding this aspect, the Canadian Antitrust Court illustrated the difficulty of the issue in a clear and precise way in the Tele-Direct case:

[B]ecause 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.⁸³

It is possible to observe, therefore, that besides creating negative impacts in the market, the rule also presents severe imple-

⁸² COMPETITION VERSUS PREDATION, *supra* note 25, at xiv.

⁸³ Dir. of Investigation & Research v. Tele-Direct, Inc., [1997] CT-94/3 290-91 (Can. Competition Tribunal), available at http://www.ct-ct.gc.ca/cmfiles/ct-1994-003_0204a_38LFB-472004-7743.pdf.

mentation problems. These factors alone would already be sufficient to pose serious doubts regarding the effectiveness of such rule. Nevertheless, as it will be shown in the next section, the empirical evidence from the airline industry also corroborates the futility of the rule.

III. EMPIRICAL EVIDENCE ON THE AIRLINE INDUSTRY

Encouraged by many of the arguments mentioned in the last section, scholars have conducted empirical research on the airline industry in order to evaluate the likelihood of the existence of predatory behavior in this market.⁸⁴ Considering the scope of this article, the analysis will be limited to some of the main results found, based on the impact of these findings on the above mentioned theories. These results are consistent with Elhauge's position and undermine the theory that advocates the necessity of an antitrust reaction to above-cost reactive discounts.

Based on data from the DOT, Bamberger and Carlton have shown that the market share of LCCs has increased significantly, evolving from 7.4% in 1990 to 26.9% in 2003.⁸⁵ This fast growth is inconsistent with the claim that the aggressive behavior from incumbents is an obstacle to new entrants' development in the market. Nevertheless, it must be taken into consideration that Southwest Airlines represents a significant portion of this evolution, accounting for 16.8% of the market in 2003.⁸⁶ Considering that Southwest's data is consistently classified as an outlier, it was calculated and analyzed separately from the other companies' data.⁸⁷

One of the most interesting facts from the study was the survival rates of LCCs in the market. These are important numbers because they directly affect one of the main reasons for the Edlin rule, which is the incapacity of the LCCs to survive in the market without the protection of an antitrust rule. Bamberger and Carlton demonstrate that the survival rate of these companies for origin and destination (O&D) pairs, one year after en-

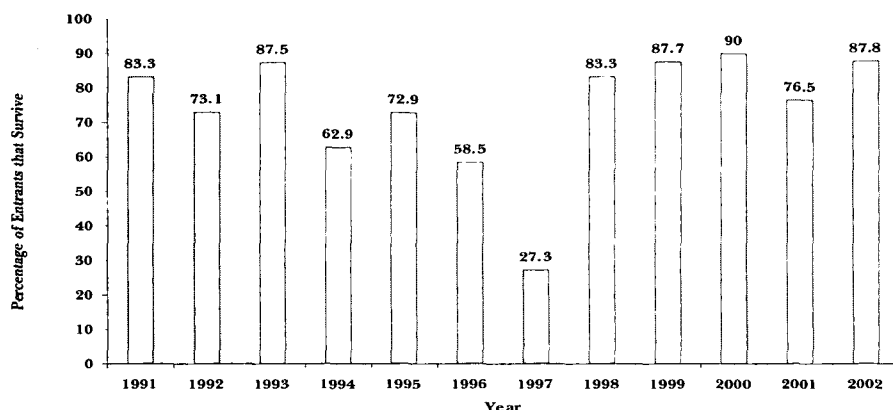
⁸⁴ See generally Bamberger & Carlton, *supra* note 20; COMPETITION VERSUS PREDATION, *supra* note 25; Andrew S. Joskow et al., *Entry, Exit, and Performance in Airline Markets*, 12 INT'L J. INDUS. ORG. 457, 457-71; Austan Goolsbee & Chad Syverson, *How Do Incumbents Respond to the Threat of Entry? Evidence From the Major Airlines 2* (Nat'l Bureau of Econ. Research, Working Paper No. 11,072, 2005).

⁸⁵ Bamberger & Carlton, *supra* note 20, at 7.

⁸⁶ *Id.*

⁸⁷ *Id.*

try, and without considering Southwest Airlines' data, is considerably high, floating between sixty percent and ninety percent in the 1991–2000 period, with the exception of 1997, when it marked twenty-seven percent:⁸⁸



The average survival rate of the LCCs in the period was 73.8%, while the average survival rate for the major carriers in the same period was 76.1%.⁸⁹ Southwest Airlines showed the highest survival rate in the period, having stayed in the market for more than one year after entry in eighty-three percent of the cases.⁹⁰ These results show that the survival rate of these companies is not as low as Edlin suggests, and that the majority of entrants are able to stay in the market for more than one year without the protection of the rule. It is worth remembering that the proposed rule would afford protection only for a twelve- to eighteen-month period.

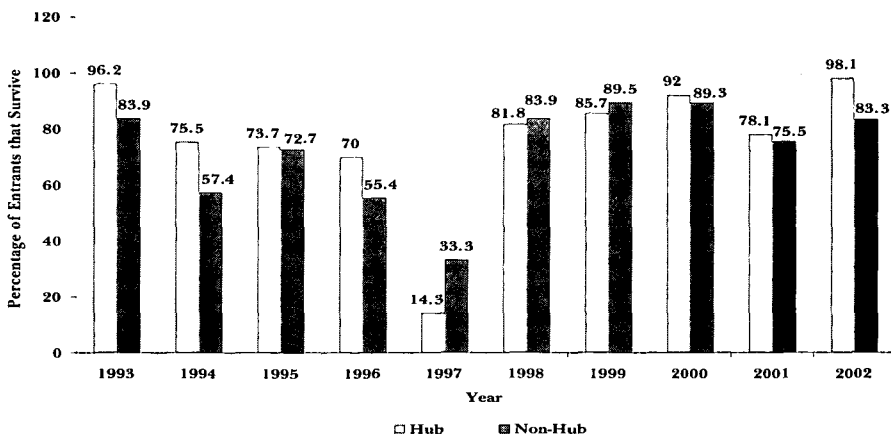
Nevertheless, as seen in the last section, the Edlin rule would only be applied in cases where the entry occurred in a market dominated by an incumbent monopolist. In the airline industry, therefore, it would only be applied in cases where entry occurred in hubs dominated by a major carrier. This way, the authors analyzed the data for O&D pairs with at least one hub dominated by a major carrier, one year after entry (once again excluding Southwest Airlines):⁹¹

⁸⁸ *Id.* at 12.

⁸⁹ *Id.*

⁹⁰ *Id.*

⁹¹ *Id.* at 15.



It is possible to observe that even in O&D pairs with one hub dominated by a major carrier, the survival rates for the LCCs are still high.⁹² Consequently, it can be inferred by the information that the practical effects of the Edlin rule are considerably doubtful, if on average, seventy-six percent of the LCCs that have entered a hub in the 1993–2002 period survived for one year, independently of antitrust protection.⁹³ Excluding the year 1997—which can be considered an outlier for statistical purposes—the average increases to eighty-three percent.⁹⁴ Thus, unless there is a drastic change in the industry which forces the vast majority of the LCCs to exit the market after one year of entry—and there is no evidence of this in the analyzed data—the Edlin rule will be “futile.” However, even though it is futile, it will not be harmless if it creates several negative incentives for market agents, as discussed in the last section.

Regarding the pricing behavior in the airline industry, Bamberger and Carlton analyzed the reactions of the major carriers to entry in their hubs. The authors concluded that

the evidence shows that the type of fare responses that concern critics of “major carriers” pricing practices are relatively rare, and also occur in response to entry and exit by major carriers. Thus, the claim that competition in the airline industry was “chilled” in the mid-1990s because major carriers systematically charged predatory prices is inconsistent with the empirical evidence.⁹⁵

⁹² *Id.*

⁹³ *Id.*

⁹⁴ *Id.*

⁹⁵ *Id.* at 22.

These findings are corroborated by research conducted by other scholars. Building on the work of Jiun-Sheng Lin et al.,⁹⁶ which analyzed incumbents' reaction in 889 entries in the airline industry during the 1991–1997 period, Kai Huschelrath shows that there is no evidence that incumbents respond more aggressively to LCCs than to other airline companies.⁹⁷ In fact, there is evidence that incumbents reserve their biggest price cuts to entrants of bigger size, with higher costs.⁹⁸ Besides that, the data shows that even if the entrant is forced to leave the market, the prices do not return to the pre-entry level.⁹⁹

Ashish Lall mentions the study of Ito and Lee, which analyzed 370 cases of LCC entry in hubs from 1991 to 2002.¹⁰⁰ Of the 370 analyzed cases, only eighty-nine of them represented unsuccessful entries.¹⁰¹ According to the study, the entrants would be more aggressive than incumbents with regard to price discounts and increases in capacity.¹⁰² In comparison with pre-entry levels, the LCCs introduced, on average, 32.7% more capacity and reduced prices by 49.5%.¹⁰³ The average answer of the incumbents was a 4% increase in capacity and a 15.1% price reduction.¹⁰⁴ In addition, 38% of the incumbents did not alter their capacity or prices after entry.¹⁰⁵ In only 8% of the cases, the incumbents added more seats than the LCCs.¹⁰⁶ Lastly, the study also shows that the characteristics of successful entries differ from those of unsuccessful entries.¹⁰⁷ The incumbents' answer apparently does not influence that.¹⁰⁸ In fact, the increase

⁹⁶ Jiun-Sheng C. Lin et al., *Determinants of Price Reactions to Entry in the U.S. Airline Industry*, 41 TRANS. J. 5, 5–22 (2002).

⁹⁷ Kai Huschelrath, *Strategic Behaviour of Incumbents—Rationality, Welfare and Antitrust Policy*, in COMPETITION VERSUS PREDATION IN AVIATION MARKETS—A SURVEY OF EXPERIENCE IN NORTH AMERICA, EUROPE AND AUSTRALIA 12 (Peter Forsyth et al. eds., 2005).

⁹⁸ *Id.*

⁹⁹ *Id.*

¹⁰⁰ Harumi Ito & Darin Lee, *Incumbent Responses to Lower Cost Entry: Evidence from the U.S. Airline Industry* 5 (Brown Univ., Dep't of Econ., Working Paper No. 22, 2003).

¹⁰¹ Ashish Lall, *Predatory Pricing: Still a Rare Occurrence?*, in COMPETITION VERSUS PREDATION IN AVIATION MARKETS—A SURVEY OF EXPERIENCE IN NORTH AMERICA, EUROPE AND AUSTRALIA 52 (Peter Forsyth et al. eds., 2005).

¹⁰² *Id.*

¹⁰³ *Id.*

¹⁰⁴ *Id.*

¹⁰⁵ *Id.*

¹⁰⁶ *Id.*

¹⁰⁷ *Id.* at 52–53.

¹⁰⁸ *Id.* at 53.

in capacity by the incumbents is slightly inferior in cases of unsuccessful entry (3.5%), as opposed to 4.5% in cases of successful entry.¹⁰⁹ The results are supported by regressions that show that the price and capacity of the incumbent does not have a significant statistical effect on the probability that a LCC will exit a hub.¹¹⁰

Finally, it is worth mentioning the interesting work of Mirko Schnell, who researched the thoughts of top executives of airline companies on perceived entry barriers in the sector.¹¹¹ The author interviewed thirty-nine managers of European airlines, questioning them about the existence, effectiveness, and influence on their decision making process regarding barriers to entry.¹¹² It is possible to observe below a table with the main findings from the research:¹¹³

¹⁰⁹ *Id.*

¹¹⁰ *Id.*

¹¹¹ Schnell, *supra* note 33, at 249.

¹¹² *Id.* at 257.

¹¹³ *Id.* at 258–59.

Difficulties	Perceived as a Difficulty	Ineffective (-1)	Neither Effective nor Ineffective (0)	Effective (+1)	Very Effective (+2)	Absolutely Effective (+3)
New route represents spoke of your competitor's hub and spoke system	16%	5%	11%	27%	35%	5%
Your company's total average costs on the new route are higher than the presumed total average costs of your competitor(s)	24%	5%	18%	16%	24%	13%
Competitors may undertake counter-actions against your company on routes other than the entered one	5%	0%	42%	32%	18%	3%
After entry of your company, competitors may reduce fares to a low unattractive level for your company	3%	3%	18%	45%	29%	3%

The data shows that, according to the airline companies, the reaction of incumbents to entry is not considered a significant entry barrier, as suggested by some scholars.¹¹⁴ The executives do consider the price discounts from incumbents as a barrier, but only three percent consider this an "absolutely effective" barrier.¹¹⁵ Taking into account that these reactions are a primary foundation for the proposals of antitrust intervention in this area, the results of the research undermine the application of strategic behavior theory in the market and question the real size of the alleged problem.¹¹⁶ In effect, executives seem to face these reactions as a typical market behavior which, although creating difficulties to the entry of new companies, does not pose an insurmountable obstacle to the entry of efficient companies.¹¹⁷ Thus, the results seem to follow Elhauge's position, to which the incumbents' reaction "can be explained by fully competitive behavior."¹¹⁸

Finally, one last point on the issue is the evolution of the profits of airline companies over the last years. As Elhauge puts it, "the non-monopoly explanation is more consistent with the empirical evidence that the airline industry has not only failed to enjoy monopoly profits, but has been unable to sustain even a competitive rate of return for any five-year period since deregulation."¹¹⁹ Accordingly, Lall also shows that "[a]irlines 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."¹²⁰ These passages are corroborated by the recent market evolution, which shows that many major carriers have suffered financial crises in the last years. This is hardly consistent with theories that exalt the magnitude of incumbents' market power, suggesting that this point deserves to be rethought.

The mentioned studies already show that there are serious problems with the underpinnings of Edlin's rule. The data poses questions to the efficacy of such a rule, which, in addition to the criticism based on the strategic rationality and the

¹¹⁴ See *supra* Section II.

¹¹⁵ Schnell, *supra* note 33, at 259.

¹¹⁶ *Id.* at 263.

¹¹⁷ *Id.*

¹¹⁸ Elhauge, *supra* note 15, at 74.

¹¹⁹ *Id.*

¹²⁰ Lall, *supra* note 101, at 49.

incentives created for market agents, create an even greater skepticism about its usefulness.

IV. CONCLUSION

This work sought to analyze the merit of above-cost predatory pricing claims in the airline sector. It showed some of the main characteristics of the sector frequently mentioned to support these claims, two divergent scholarly views, and empirical evidence supporting these views.

The review of the literature and the empirical data suggest that, even though some major carriers might be responding to LCC entry with output expansion or price reduction, this phenomenon does not have the scale that some scholars suggest, nor is it *per se* evidence of anticompetitive behavior. On the contrary, the incumbents' reaction can be explained by competitive behavior between airline companies.

Furthermore, the analysis shows that, even if a problem with above-cost reactive discounts is admitted, the Edlin rule is certainly not the best way to cope with the "problem," either because there is no evidence that the rule is really necessary or because of the negative incentives that it creates in the market.

In conclusion, the rule is nothing but a disguised proposal for complex regulation, going against the rationale of the 1970's reforms, which had the objective of deregulating the sector.

