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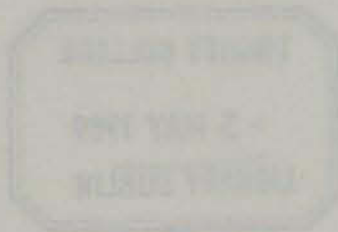
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Contestability and European Community Air Transport Policy,  
Lessons from the US

Susan T. Murphy

Thesis Submitted for M.Litt.  
Trinity College  
Dublin University

Department of Economics  
October, 1988



Responsibility and European Community Air Transport Policy  
Lesson from the US

John J. Murphy

Thesis Submitted for M.Litt.  
Trinity College  
Dublin University

Department of Economics  
October, 1988

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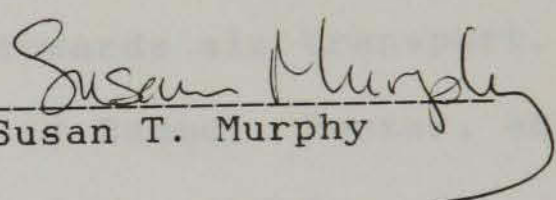
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Summary

The eventual structure, conduct, and performance of the European air transport industry will depend on the EC's transport and competition policies. In order to best design these policies, Europe can use the record of US regulatory experience to its advantage. This thesis concentrates on one aspect of that experience, the use of economic theory as the

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## Summary

The eventual structure, conduct, and performance of the European air transport industry much depends on the EEC's transport and competition policies. In order to best design these policies, Europe can use the recent US deregulatory experience to its advantage. This thesis concentrates on one aspect of that experience, the use of economic theory as the foundation for regulatory change. The American regulators relied on the theory of contestable markets (TCM) to design transport legislation deregulating the industry and to guide their decisions as the industry adapted to the new regime. Accepting that effective economic policy must be based on appropriate economic theory, this thesis examines whether the EC should adopt the TCM, and if so, how it should be reflected in the Community's policies towards air transport.

Part I details the basic elements of Baumol, Panzar, and Willig's theory and explains how it has been used to formulate air transport policy. A market is perfectly contestable if a firm can enter the market and then exist without incurring non-retrievable "sunk" costs. This trait enables the *threat* of entry to police the conduct of incumbent firms. Regulators thought the TCM was applicable to air transport since entry into and exit from city-pair markets was seen as necessitating few "sunk" costs. After the transition from a highly regulated to highly competitive industry, this thesis accepts that US air transport markets



today are "imperfectly contestable". As such, the TCM has a valuable role to play in identifying the barriers to contestability and in designing a transport policy which reduces those barriers and protects the consumer where needed.

Part II examines barriers to contestability identified in the US, as they are manifested in Europe. Changes needed to the restrictive system of comprehensive regulation include releasing European airlines to enter and exit from markets as required at market determined fares, and enforcing an effective competition policy which will safeguard the consumer where contestability fails.

Since carriers must use existing airports in order to offer commercial air services, unrestricted airport access is necessary to market contestability. This is not the situation in Europe. Several US airport authorities have experimented with economic methods of allocating scarce airport facilities, which, if adopted in Europe, would enhance market contestability. In the long term, added airport capacity is essential.

Finally, US carriers owning a computerised Central Reservation System (CRS), have used the systems to their advantage, to the detriment of their competitors. This thesis suggests necessary changes to EC legislation which would minimize this barrier to contestability in Europe.

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## Abbreviations:

### By Author:

B/P/W Baumol, Panzar, and Willig  
S/C/P Structure, Conduct, and Performance  
TCM Theory of Contestable Markets

### US Government:

ADA Airline Deregulation Act  
CAA Civil Aviation Act  
CAB Civil Aeronautics Board  
DOJ Department of Justice  
DOT Department of Transportation  
FAA Federal Aviation Administration  
FTC Federal Trade Commission  
GAO General Accounting Office

### British Government:

BAA British Airports Authority  
UK CAA United Kingdom Civil Aviation Authority

### Political Organizations:

EC European Community  
OECD Organisation for Economic Co-Operation and  
Development

### Transport Organizations:

AEA Association of European Airlines  
ECAC European Civil Aviation Conference  
ICAO International Civil Aviation Organization

### Air Carriers:

BA British Airways  
B Cal British Caledonian  
LEA London European Airways  
SAS Scandinavian Airlines System  
TAC Texas Air Corporation

### Air Transport Terminology:

AMS Agency Management System  
ASA Air Service Agreement  
ATC Air Traffic Control  
CRS Central Reservations System  
GDS Global Distribution System  
GSA General Sales Agent  
IRS Internal Reservations System  
NDS National Distribution System  
PMS Passenger Management System  
RPM Revenue Passenger Mile

## INTRODUCTION

Commercial aviation on both sides of the Atlantic is in a period of transition, adjusting from various forms of comprehensive regulation to growing degrees of competitive freedom. In the United States, the airline industry is settling into a structure determined by aggressive competition, while in Europe, the airlines are only beginning to adjust for eventually inevitable exposure to competitive pressures. As the Community debates whether or not to free the market for transatlantic services, it can benefit

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## INTRODUCTION

Commercial aviation on both sides of the Atlantic is in a period of transition, adjusting from various forms of comprehensive regulation to growing degrees of competitive freedom. In the United States, the airline industry is settling into a structure determined by aggressive competition, while in Europe, the airlines are only beginning to prepare for eventually inevitable exposure to competitive pressures. As the Community debates whether or not to free its airlines from comprehensive regulation, it can benefit from examining US air transport policy and the resulting industrial structure, conduct and performance of the American domestic airline industry.

Those European regulators wishing to maintain the regulatory status quo, cite the increasing concentration of the US airline industry as a sign of market failure. The theory of contestable markets (TCM), however, provides an alternative interpretation of industrial concentration. According to its authors, Baumol, Panzar, and Willig,<sup>1</sup> (B/P/W) concentration in a perfectly contestable market should be welcomed as evidence of an efficient industrial structure rather than as an indication of market failure. Recognizing that any given city-pair air transport market would be highly concentrated, the US policy makers used the TCM as the economic foundation for positive industrial change.

Meanwhile, the economic theory used to argue for and

against deregulation within the EC is much the same as the theory which served the US airline industry so poorly during its 40 years of regulation. Based on the US experience, the European Community must decide whether to replace this with the TCM as its theoretical basis for regulatory change in the European airline industry.

The structure of the thesis will be as follows:

Part I will be devoted to the analysis of the TCM, its role in US deregulation, and the contestability of US domestic air transport markets. Basically, a contestable market is one in which entry and exit are easy and potential competition is powerful enough to induce competitive results even though there may be few actual competitors in the market. Chapter 1 introduces the main components of the theory that are relevant to the airline industry and addresses some of its more controversial propositions. Chapter 2 concentrates on the role of the theory of contestable markets in the deregulation movement and in the design of US air transport policy. Developments which both support and question the hypothesis that airline markets are contestable are identified in Chapter 3. The degree of contestability in the deregulated industry is also questioned, emphasizing the recent consolidation among the airlines.

Part II identifies the barriers to contestability found in the US with a view to effectively using the US experience



to help design a common EEC transport policy. The most obvious barrier to potential and actual competition in Europe is the heavy regulation covering virtually all aspects of commercial aviation. Chapter 4 reviews how the Treaty of Rome has been applied to air transport and critically examines the latest air transport package adopted by the Council on 14 December 1987. Changes which would dismantle regulation as a barrier to contestability are recommended. Regulation should be designed instead to reduce the structural barriers to contestable markets. The remaining chapters address policy aimed at structural industrial characteristics which have been diagnosed as barriers to contestable air transport markets.

The importance of unobstructed airport access, enabling airlines to freely enter and exit from routes, is essential to market contestability. In Chapter 5, restrictive airport access rules which discriminate in favour of incumbent carriers and the problems they present for market contestability are identified. Regulatory changes necessary for minimizing the negative competitive effects of limited airport capacity are introduced. The major airlines in the United States have learned that control of a sophisticated computerized information system not only gives the system owner an advantage over potential competitors, but can also be used to reduce the competitiveness of potential and actual entrants. As such, computerized Central Reservation Systems (CRSs) serve as barriers to contestability. Chapter 6

examines how the US authorities have dealt with the CRS problem and recommends changes in the Community's policy which should restrict the ability of CRS-owning airlines to obstruct successful entry, after adjusting for the structural differences in the American and European systems. Chapter 7 concludes the thesis.

PART II. COMPETITIVENESS AND THE AIRLINES

CHAPTER 1: THE THEORY OF CONTESTABLE MARKETS

1.1 INTRODUCTION

The theory of contestable markets was developed to address the limitations of perfect competition theory. It provides a framework for analyzing markets where entry and exit costs are low, leading to the possibility of potential competition. This theory is particularly relevant for industries like airlines, where high fixed costs and low variable costs create a natural barrier to entry, yet the threat of new entrants can discipline existing firms.

PART I. CONTESTABILITY AND THE AIRLINES

Contestable markets theory is a generalization of perfect competition theory. It helps us to analyze contestability within the field of industrial organization. The key insight is that the threat of entry and exit can discipline firms in a way that is similar to perfect competition. This theory is particularly relevant for the airline industry, where high fixed costs and low variable costs create a natural barrier to entry, yet the threat of new entrants can discipline existing firms. In section 1.1, the theory of contestable markets is defined. Next, sections 1.2 to 1.7 cover in more detail the characteristics vital to contestable markets. While sections 1.2 and 1.3 highlight the theory's positive implications, section 1.4 addresses the more controversial aspects of contestability. Finally, since increasing the quality of competition is the main objective of an economic policy-maker in a market economy, section 1.8 focuses on the implications of contestable market theory to the industrial structure and policy-maker.

1.2 CONTESTABLE MARKETS DEFINED

Baumol defines a contestable market as one in which entry and exit costs are low relative to the scale of the market.

## CHAPTER 1: THE THEORY OF CONTESTABLE MARKETS

### 1.1 INTRODUCTION

The theory of contestable markets has been referred to as both "an uprising in the theory of industrial structure"<sup>1</sup> and conversely "a kind of fantasy whose key elements contradict reality".<sup>2</sup> Clearly, economists have not reached a consensus on its theoretical standing. However, comparing contestable market theory with the theory of perfect competition helps one to place contestability analysis within the field of industrial organization. Baumol, making the comparison, claims that the theory of contestable markets serves "as a benchmark for desirable industrial organization which is far more flexible and is applicable far more widely than the one that was available to us before".<sup>3</sup> In section 1.2, theory of contestable markets is defined. Next, sections 1.3 to 1.5 cover in more detail the characteristics vital to contestable markets. While sections 1.6 and 1.7 highlight the theory's positive theoretical accomplishments, section 1.8 addresses the more questionable aspects of contestability. Finally, since securing the benefits of competition is the main objective of an economic policy-maker in a market economy, section 1.10 focuses on the usefulness of contestable market theory to the industrial economist and policy-maker.

### 1.2 CONTESTABLE MARKETS DEFINED

Baumol defines a contestable market simply as one "into

which entry is absolutely free and exit is absolutely costless."<sup>4</sup> In a contestable market, potential entrants can sell to the incumbent firm's customers using the same production techniques at equal costs. In addition, due to the contestable market characteristic of costless exit, potential entrants can evaluate the profitability of entry using pre-entry prices. Prices must be flexible, allowing the entrant to compete by slightly undercutting the market price. The fear of retaliation does not deter entry since, if necessary, the potential entrant can use 'hit and run' tactics to reap a profit.

In contrast to the many restrictive assumptions of perfect competition, contestability requires only one: free entry and exit. Contestability does not depend on the number of participating firms, assumptions on their behavior or the nature of their product. The differences are summarized below:

<u>CHARACTERISTIC</u>	<u>PERFECT COMPETITION</u>	<u>PERFECT CONTESTABILITY</u>
Market Concentration	Low	Unrestricted
Firm Behavior	Atomistic	Competitive
Nature of Product	Homogeneous	Unrestricted
Factor Mobility	-PERFECTLY FREE ENTRY AND EXIT-	

Note that a perfectly competitive market is contestable, but a contestable market is not necessarily perfectly competitive. For example, an oligopoly may be contestable

but never perfectly competitive.

### 1.3 BARRIERS TO ENTRY AND EXIT

Most economists agree that efficient industries require freedom from entry and exit barriers. For B/P/W, unrestricted mobility of resources is the vital characteristic of perfect contestability. Firms must be free to expand and contract within the market, or enter and exit in the search of higher returns. According to the theory of contestable markets, all that concerns the industrial economist; (determination of welfare maximizing output, prices and market structure) is based simply on this condition. B/P/W build their analysis on Stigler's definition of freedom of entry. Basically, a potential entrant enjoys perfectly free entry conditions if he faces no cost discrimination in comparison to incumbent firms. Stigler defines an entry barrier as "a cost of producing which must be borne by a firm which seeks to enter an industry but is not borne by firms already in the industry".<sup>5</sup> They also define freedom of exit in terms of costs. A producer is free to exit from an industry if he can do so without losing his investment - the cost of entry. Building on the work of Harold Demsetz, the first economist to identify "sunk costs" as a barrier to entry, B/P/W make the distinction between sunk costs and high capital costs. Sunk costs are investments that cannot be retrieved upon exit. If capital is highly mobile, heavy entry investment need not constitute a barrier to exit. Note that costly exit

increases the risk of entry. Therefore, sunk costs which are directly responsible for impeding exit are, in addition, an indirect source of entry barriers.

This approach differs greatly from the widely accepted standard textbook definition of entry barriers based on the work of J.S. Bain.<sup>6</sup> Bain identified three sources behind barriers to entry: economies of scale, product differentiation, and absolute cost advantages.

### 1.3.1 Economies of Scale

When economies of scale limit the number of firms to form an oligopoly or monopoly, barriers to entry are said to exist. Due to the problems of scale economies, the industrial structure is described as a "natural" oligopoly or in the extreme, a "natural" monopoly. Even if a potential entrant could afford the investment of setting up a new business, the additional output would reduce price and prove damaging for all participating firms.

Using Stigler's definition, scale economies do not constitute barriers to entry since a potential entrant does not face comparatively higher costs due to economies of scale. While the number of firms may be restricted, one could equally blame limited market demand as a barrier to entry. Economies of scale, in this sense, only determine the size of the firm within the industry.

### 1.3.2 Product Differentiation

In the competitive marketplace, firms differentiate their products from their competitors' in order to win consumer preference and loyalty. According to Bain, such behavior blocks entry: "In general, product differentiation may lead to significant buyer preferences between established products and the new products of new entrant firms. There is a good *a priori* possibility, moreover, that most buyers will on balance prefer established and known products to new and unknown ones... Thus a general tendency of buyers to prefer established to new products may place entrants to a differentiated product industry at a disadvantage as compared to firms already established in the industry."<sup>7</sup> Bain's underlying argument that consumer preference for established over unknown products puts new producers at a disadvantage is not valid if the consumer forms rational expectations. In von Weiszacker's view, "barriers to entry ... only exist, if consumers do not form rational expectations, but are biased in favor of known quality."<sup>8</sup> If consumers attempt to maximize their own welfare, entrants with unknown (but price and quality-competitive) products are no longer at a disadvantage. In fact, by the very process of product differentiation, the new entrant can establish itself more easily if its product offers something new and attractive to consumers, thereby enhancing, rather than restricting, competition.



### 1.3.3 Absolute Cost Advantage

As shown above, Bain's first two causes of entry barriers are questionable. However, using Stigler's definition, the third source, absolute cost advantages, may be accepted as a barrier to entry. Absolute cost advantages, or rather disadvantages, result in costs that must be borne by the entrant and not the incumbent firm. However, a potential entrant may be able to work around this barrier if the costs can be made more economical and less risky, or in B/P/W's words, less "sunk".

As von Weizsacker explains,<sup>9</sup> if an industry is characterized by intertemporal economies of scope, then a firm supplying a product over several time periods has a cost advantage over firms supplying a product over different periods. However, if the factors of production are easily bought, sold or leased on the market, providing for easy entry and exit, an incumbent firm has no advantage over the entrant. It is only if the costs of entry are "sunk", that is, irretrievable, that barriers to entry and exit become a problem.

### 1.3.4 Government Regulation

One of the most powerful barriers to entry and exit, government regulation, can most practically be eradicated by politicians. Bain did not include government regulation when grouping entry barriers. Rather, he called for government to regulate industries that suffered from insufficient entry.

However, as recognized in more recent times, misguided government intervention into the economic process can impede rather than enhance entry and competition.

Government regulation can not only prevent entry, but also has the power to block exit. Bankruptcies, takeovers and mergers are all mechanisms for moving resources in search of higher returns. Only government regulation can prevent firms from using these devices. According to Bailey and Baumol, "impediments to entry and exit, not concentration or scale of operations, may be the primary source of interference with the workings of the invisible hand. Indeed, because regulators have been predisposed to intervene with both entry and exit, the new analysis (contestability) suggests that they have been among the primary causes of unsatisfactory industry performance."<sup>10</sup>

. . . . .

Von Weizsacker's treatment of entry barriers helps one to grasp an intuitive understanding of B/P/W's analysis. He defines an entry barrier as any incumbent firm's advantage over a potential entrant which causes a welfare loss. Using the same reasoning, an incumbent's advantage which has desirable welfare consequences does not qualify as an entry barrier. Baumol and Bailey agree with von Weizsacker, defining an entry barrier in general terms as "something which provides incumbent firms sufficient protection from entry so that they can obtain above normal profits or exhibit other forms of unacceptable performance."<sup>11</sup> Contestability

analysis merely endeavors to identify the phenomena that reduce consumer's and producer's surplus. Bailey and Baumol argue that sunk costs are the main source of welfare loss and that for example, fixed costs or economies of scale do not decrease economic welfare and therefore are not barriers to entry.

#### 1.4 POTENTIAL COMPETITION

Freedom of entry and exit gives power to the potential competitor to enter a market, earn a profit, and leave costlessly if its operations become unprofitable. Due to the nature of entry and exit within a contestable market, Baumol and Bailey stress that "potential rather than actual competition should serve to police markets."<sup>12</sup> This idea is not entirely new to the industrial economist. J.B. Clark, in 1901, wrote of the power of potential competition: "Let any combination of producers raise the prices beyond a certain limit, and it will encounter difficulty. The new mills that will spring into existence will break down prices; and the fear of these new mills, without their actually coming, is often enough to keep prices from rising to an extortionate height. The mill that has never been built is already a power in the market: for it will surely be built under certain conditions. The effect of this is to keep prices down."<sup>13</sup> In short, Clark believed in the contestability of markets.

## 1.5 SUSTAINABILITY

Contestable market equilibrium is reached when prices set by incumbent firms are "sustainable." These prices, given free entry and exit, will offer no price incentive for entry. There are three requirements for sustainability. First, aggregate output must satisfy market demand at the going prices. Second, the incumbent firms must be financially viable; revenues must cover costs. Third, given the prices set by incumbent firms, there can be no opportunity for profitable entry. If prices are not sustainable, potential competitors will enter the market. Therefore, the degree of sustainability represents the degree of control that free entry exercises over incumbent firms in a contestable market. Unfortunately, there may exist price-output vectors for which there exist no sustainable prices. If no vector can be found which deters potential entrants seeking profits, then prices are said to be "non-sustainable", and the industry will remain in a state of permanent instability rather than transitory equilibrium. For example, B/P/W argue that subadditivity of costs rather than economies of scale determines the natural monopoly. Costs are subadditive if the industry's output can be produced at less cost by a single firm than by any combination of smaller firms.<sup>14</sup> However, as proven by Faulhaber,<sup>15</sup> if consumers are able to purchase at a lower price from a second supplier, even though a single supplier minimizes total social economic costs, the prices are "non-

sustainable".

## 1.6 WELFARE PERFORMANCE

Perfect contestability achieves the same desirable welfare standards as perfect competition, with fewer restrictive assumptions regarding market structure and conduct. The three welfare standards that account for the popularity of the theory of perfect competition: guaranteed normal profits, price set equal to marginal cost, and maximum efficiency of production, should also attract the economist to perfect contestability.

### 1.6.1 Normal Profits

Independent of market concentration or pricing behavior, firms in a contestable market earn a normal rate of profit. Since entry and exit are perfectly free, even short term attempts at earning super-normal profits will be foiled by hit-and-run entry. Note that contestability precludes cross-subsidy and therefore predatory pricing. Since a firm in a contestable market cannot earn super-normal profits, it will have no funds with which to subsidize its unprofitable operations.

### 1.6.2 Price Equal to Marginal Costs

The second welfare standard of perfect competition, price set equal to marginal cost, is necessary for the efficient allocation of resources in the economy. It is crucial, therefore, that this criterion hold true for the

theory of contestable markets. In industries with two or more firms, B/P/W prove that perfect contestability achieves first best Pareto optimality by equating price and marginal cost.<sup>16</sup> Basically, if the incumbent sells its output at a price greater than marginal cost, then an entrant can produce profitably at an output greater than the incumbent's and selling at a lower price, but greater than or equal to marginal cost. The profits earned from the additional sales must be greater than the reduction in profits which result from the lower price on the preceding units.

B/P/W also argue that a firm selling at a price less than its marginal costs invites profitable entry. The following is an example of a financially viable firm replacing a firm which is losing money. If the incumbent firm sells its total output for a loss at a price less than marginal cost, then an entrant can replace the incumbent by selling its output at a lower price equal to marginal cost. Profits are regained by eliminating the unprofitable output. The financially viable entrant, in the absence of subsidy for the failing incumbent, is more likely to succeed in the market. "Thus, prices above or below marginal cost invite entry, and therefore price will be in equilibrium only if it equals marginal cost".<sup>17</sup> Furthermore, this result "does not require any special assumptions about strategic interactions among incumbent firms. It is attributable entirely to the discipline enforced by the pool of potential entrants, poised to exploit any opportunity to reap a profit".<sup>18</sup> Finally, if

the incumbent was able, for example, due to outside financing or large cash flow, to support temporarily a price less than marginal cost, the entrant could leave the market without cost and re-enter if it is profitable to do so.

### 1.6.3 Efficiency

Finally, long run inefficient production is not possible in a contestable market. If a firm operates inefficiently, for example by not exploiting scale economies, the potential entrant has a cost advantage. Since all firms by assumption face the same production costs, a potential entrant can replace the incumbent by taking advantage of the scale economies and offering a more competitive price. In general, there is no room for inefficiency in a contestable market since low cost-efficient entrants are free to replace high cost-inefficient incumbents.

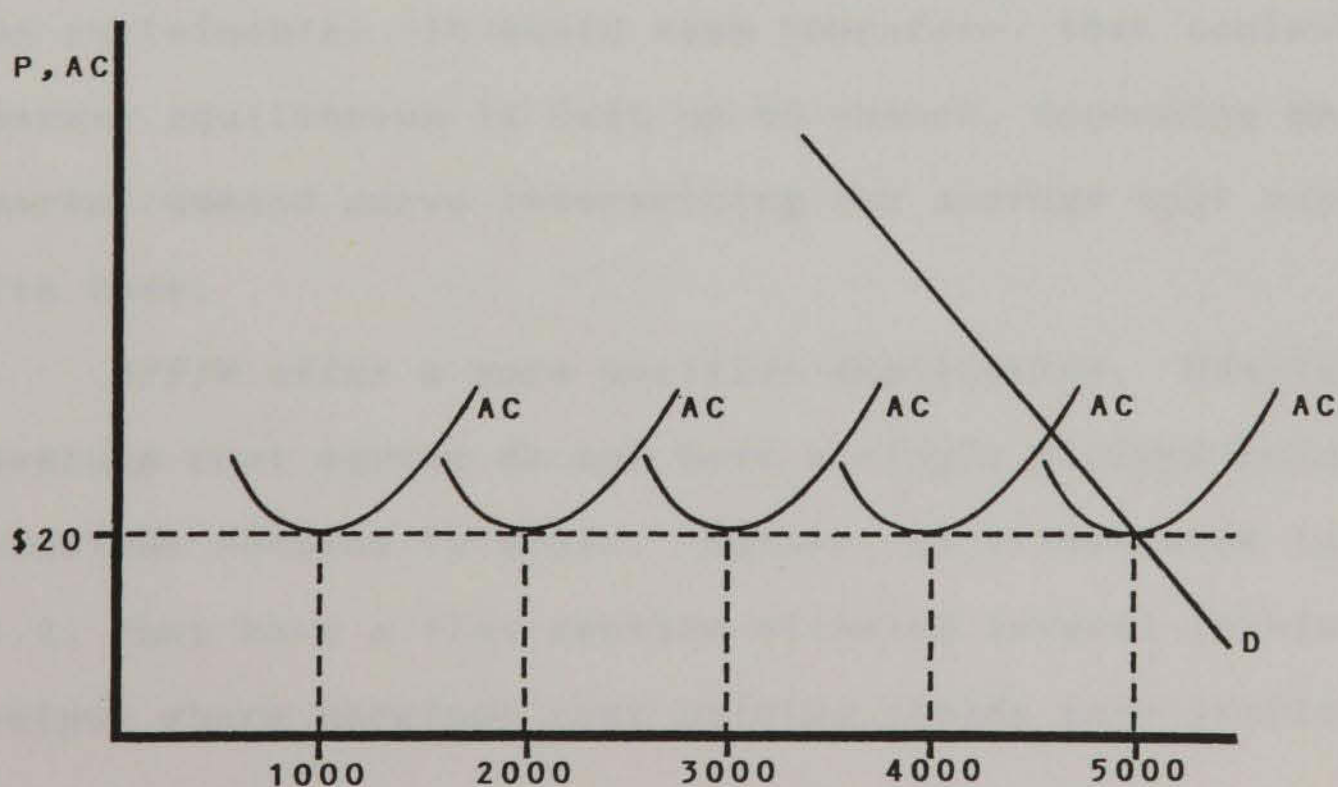
## 1.7 MARKET STRUCTURE DETERMINATION

Baumol, Panzar, and Willig integrate the process of structure determination into the theory of contestable markets. Market structure determination remains outside standard industrial economic analysis, which often assumes an industrial structure, determined by some vague exogenous forces. For example, Cournot discussed firm behavior under different levels of oligopoly, but did not consider the influence of entry in determining the number of participants. Stigler, in 1950, was one of the first to pinpoint the importance of entry to oligopoly theory. Rather than asking

how A and B treat each other, he asked why do firms A and B constitute the industry and how long will they enjoy this position?"<sup>19</sup> In response, the economic forces of a contestable market determine market structure in the contestability analysis. In fact, "the properties of perfect contestability cut through every difficulty and tell the equilibrium prices, output and industrial structure, all at once."<sup>20</sup>

Take a simple example, assuming the industry faces U-shaped average cost curves and produces a homogeneous product. For efficient production, a firm must produce at minimum average cost, where returns to scale are constant. As illustrated in Figure 1.1, let such conditions occur at \$20 per 1000 units of output. To maximize efficiency, the market demand for 5,000 units will be met by 5 firms.

FIGURE 1.1 Efficient Market Structure





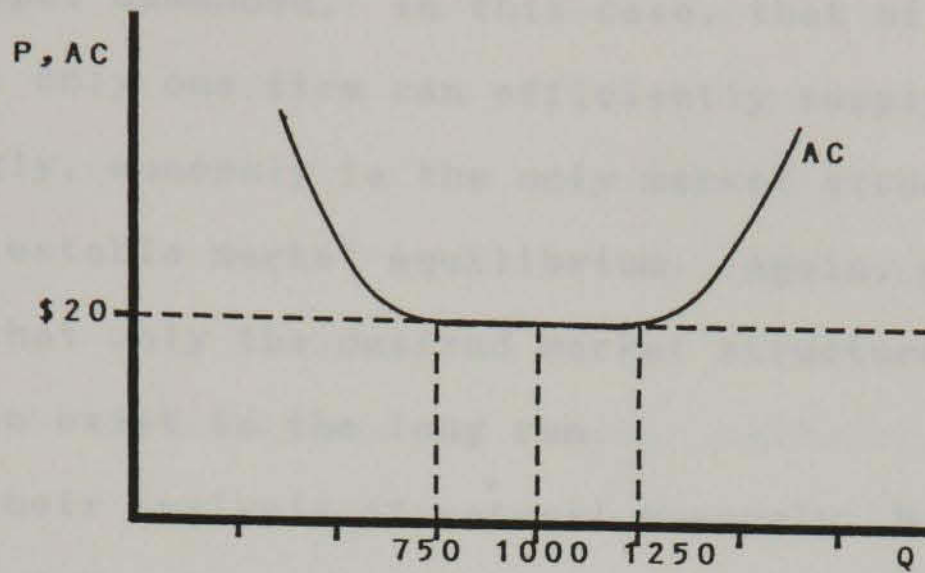
Since, as described in section 1.6.3 all firms in a contestable market must operate efficiently, "whatever industry structures minimize total costs for equilibrium output vector, must turn out to be the only structures consistent with market equilibrium output in the long run."<sup>21</sup> The threat of potential competition ensures that total industrial output is divided among firms in such a way as to minimize the industry's total production cost.

### 1.7.1 Oligopoly

Proponents of perfect competition regard market concentration as damaging to the economic welfare of an industry. Problems arise when aggregate demand cannot be divided up equally among least-cost producing firms. For example, if the industry demand curve intersects the average cost curve at 5,200 units of output in figure 1.1, at least one of the five firms, or perhaps a sixth firm, will not operate at minimum average cost and therefore prices will not be sustainable. It would seem therefore, that contestable market equilibrium is left up to chance, depending on the market demand curve intersecting the average cost curve at its base.

B/P/W offer a more positive explanation. Realistically, average cost curves do not have a single minimum point of constant returns to scale. Rather, as illustrated in Figure 1.2, they have a flat section allowing several levels of output where marginal cost pricing yields zero profits.

FIGURE 1.2 Flat-Bottomed Average Cost Curve



Reverting to the example, let aggregate demand equal 5,200 units of output. Average cost curves are no longer U shaped, but more realistically drawn with flat bottoms. Firms can now produce between 750 and 1,250 units of output efficiently. While in general, due to cost conditions, some permutations may exist where market demand cannot be met efficiently, Baumol seems confident that "industry will ultimately happen upon an equilibrium position."<sup>22</sup>

Therefore, economists, producers and consumers should have no fear of the evils of market concentration since contestable market equilibrium independently reveals prices and output consistent with optimal economic welfare.

### 1.7.2 Natural Monopoly

In some markets, a firm may face economies of scale over total output demanded. In this case, that of the natural monopoly, only one firm can efficiently supply the market. Accordingly, monopoly is the only market structure consistent with contestable market equilibrium. Again, potential entry ensures that only the desired market structure, prices and output can exist in the long run.

In their analysis of natural monopoly, B/P/W draw upon the work of Harold Demsetz. Demsetz argued that negative monopoly price effects need not occur if potential entrants, facing equal production costs and techniques, are allowed bid to serve the market, replacing the existing supplier. Demsetz stressed freedom of entry as the crucial element for obtaining desired pricing behavior. In the case of a natural monopoly, setting price equal to average cost maximized economic welfare.

A natural monopolist is not financially viable if it sets price equal to marginal cost. On the other hand, abnormal profits arise if price exceeds average cost. Since contestability requires financial viability and normal profits in the long run, B/P/W also conclude that in a perfectly contestable market, price must equal average cost. If price is greater than average cost, abnormal profits would invite entry. If price is less than average cost, financial vulnerability again would tempt entry. In their own words, "potential competition can ... force the monopolist to

produce with maximum efficiency, and to hunt down and utilize fully every opportunity for innovation. Perhaps most surprisingly of all, it can induce the monopolist to institute those (Ramsey) prices which welfare theory has shown to be requisites of pareto optimality under a profit constraint. In short, the threat of entry can force virtuous behavior upon the monopolist, for if he behaves badly his monopoly becomes vulnerable. In our analysis, it is freedom alone that is capable of accomplishing all these things."<sup>23</sup>

## 1.8 SOME DEBATABLE POINTS

Since the theory of contestable markets is relatively new, industrial economists are still actively debating its validity.<sup>24</sup> Of course, as theory and not fact, it is unlikely that it will ever be fully accepted or rejected.

### 1.8.1 Sunk Costs

Sunk costs, by definition, are costs of production that cannot be retrieved upon exit from the market. In contestability analysis, they are the sole economic source of barriers to exit and entry, resulting in decreased efficiency and welfare. Therefore, the absence of sunk costs is central to the theory of contestable markets. If no sunk costs have been incurred, a potential competitor can use 'hit-and-run' entry tactics to earn a profit, undeterred by price retaliation from incumbent firms. A market loses its contestability if sunk costs increase the risk of entry.

B/P/W claim the relevance of their theory to actual markets as its main contribution to industrial economics. However, sunk costs are a fact of life in the real world, a fact that weakens the generality of contestable market theory. B/P/W credit sunk costs as the main source of failure of contestability yet do not acknowledge the magnitude of their existence. It is difficult to find an industry which does not require some irretrievable investment for production. Certainly there are some industries which require less 'sunk' investment than others, due to their ability to sell, transfer or lease their assets. However, factor mobility to the degree necessary for market contestability may represent the exception rather than the rule.

The critic should also note that sunk costs are by definition larger in the short term than in longer time periods. Standard microeconomic texts describe how long lag times reduce sunk costs by converting them in part into variable costs. Therefore, according to Shepherd, "sunk costs as cause of entry barriers make it particularly implausible that 'hit-and-run' entry can occur."<sup>25</sup>

#### 1.8.2 Entry Based on Pre-Entry Prices

In a contestable market, the potential entrant evaluates profitability using pre-entry prices. He then decides whether or not to enter, at a price slightly undercutting the incumbent. Shepherd criticizes B/P/W for apparently adopting

a Bertrand-Nash model which makes the assumption that incumbent firms will not respond to entry by lowering their price. Realistically, however, pre-entry prices will only remain unchanged if entry is on a very small scale, trivial enough not to threaten the incumbent. If this is the case, market structure is not determined endogenously, as in a contestable market. If on the other hand, entry is on a significant scale, the incumbent naturally must take notice and retaliate by offering more competitive prices. Large scale entry will meet large scale resistance. Of course, competitively reduced prices is the desired outcome, but that is the result of actual rather than potential competition. The threat of entry becomes ineffective since any potential entrant, hoping to compete on a large scale yet uncertain of the future selling price, can no longer evaluate profitability. If retaliation is expected, and there is every reason why it should be, then the potential entrant loses his disciplinary influence over the incumbent.

B/P/W acknowledge this problem. They suggest that the potential entrant can resolve this uncertainty by entering long term contracts with its customers, thereby protecting itself from price retaliation. It seems unlikely that this would be a practical solution for the average firm. For a new producer to gain such consumer confidence before even starting production must be an exceptional case. The existing firm's long term contracts are much more likely to block the hopeful entrant's attempt at developing a consumer

base. In addition, B/P/W suggest that "sticky" or inflexible prices enhance contestability by weakening retaliatory power. In many industries, however, incumbents offer publicly to equal the potential competitor's prices before the new product has even hit the market; a practice often used successfully to discourage entry.

It is important to note that B/P/W do not assume Bertrand-Nash pricing behavior in their theory. They examine the effects such behavior would have on the contestability of a market, for example the effect "sticky prices" have on potential entry. However, "that is quite different from the naive assumption that, say, oligopolists will in fact never offer a price response to entry. On the contrary, . . . , where no sustainable prices exist, one must expect responsive prices to be the rule, and certainly not to be an exception."<sup>26</sup> Even if firms are expected to retaliate, theoretically, the absence of sunk costs assures the potential entrant that he has nothing to lose by entering the market. If retaliation is delayed, the entrepreneurial entrant will gain a profit.

### 1.8.3 The Power of Potential Competition

The contestability of a market centers on the power of potential competition "to extend the beneficent sway of the invisible hand."<sup>27</sup> In Shepherd's interpretation of the theory, external conditions, or the degree of potential competition, must dominate over internal conditions: the degree of actual competition. Many economists would disagree

with this proposition. One must question why the incumbent should fear firms outside the market rather than increased competition from actual competitors. Shepherd insists, and cites substantial evidence, that internal conditions, especially market share, are the primary force in determining market structure and behavior. For example, a high correlation between market shares and rates of return implies domination by internal conditions. In the business community, incumbent firms struggle for market shares while "entry is seen as an occasional matter, rarely crucial and often insignificant,"<sup>28</sup> since entry usually occurs on a small scale, later to compete for larger shares of the market.

The potential competitor's power to discipline firm's behavior depends on perfectly free entry and exit. Shepherd argues however, that while barriers to entry are influential, "no significant evidence exists that free entry has or will fully neutralize market dominance."<sup>29</sup> On the contrary, it is well known that dominant firms create entry barriers and retaliate against entry. Shepherd concludes that, contrary to the theory of contestable markets, competitive forces from actual competition dominate over the forces of potential competition.

By so readily rejecting the theory of contestable markets, perhaps Shepherd reaches his conclusions too willingly. B/P/W do not assume that external conditions must "dominate" over internal condition. Rather, the power of potential competition supplements the disciplinary power of



actual competition within the industry. In a contestable market, incumbents must fear competition from firms outside the industry as much as from actual competitors. It would be naive to suggest that firms do not fear increased competition from producers which have successfully proven their ability to serve the market. Contestability does not rule out competition from within an industry. Rather, the theory of contestable markets asserts that if participating firms cease to apply competitive pressure, as proposedly happens in highly concentrated industries, firms from outside will take up the challenge given the opportunity.

. . . . .

The assumptions and therefore the conclusions of the theory of contestable markets are debatable. It remains an active research area on both the analytical and empirical levels. B/P/W refer to their book on contestable market theory as a "work in progress, rather than a report on a more or less completed body of doctrine. . . . Its positive models, its normative analysis, and its policy discussions leave many obvious questions unanswered, though we believe it suggests ways in which the answers can fruitfully be pursued".<sup>30</sup> Unfortunately, the most questionable, but also most vital aspect of market contestability is the absence of sunk costs. Keeping in mind that the theory of contestable markets serves only as an ideal model, no market is realistically expected to be absolutely free of sunk costs. All the same, the theory can be practically applied to a limited number of

industries, limited by the necessity of incurring sunk costs. Still, on a more positive note, if by applying the theory of contestable markets, one can identify sunk costs as the main barrier to contestability and therefore competition in the market, then perhaps measures can be taken at eliminating the barrier.

### 1.9 CONTESTABILITY AND THE COMPETITIVE PROCESS

Baumol, Panzur and Willig, by clarifying the concept of competition, make a significant contribution to the field of industrial organization. In most popular textbook theories of industrial organization, "competition" is a vague concept. On the one hand, one has the ideal state of so-called "perfect" competition which is characterized by passive and non-competitive behavior. Alternatively, firms controlled by rational, economic men and women, in a state of "imperfect" competition participate competitively in the market. This treatment of actual competition renders economic theory irrelevant to the average economic individual. B/P/W incorporate a more realistic, positive and acceptable concept of competition into the theory of contestable markets.

#### 1.9.1 "Perfect" Competition

Competitive behavior falls under the "conduct" category of the Structure/Conduct/Performance (S/C/P) approach to industrial economics. The theory of perfect competition fits easily into the S/C/P model. Due to the size of the market and nature of the firm's production function, the structure

of a perfectly competitive industry is characterized by a large number of consumers and producers buying and selling a homogeneous product. Resources of production are perfectly mobile, allowing resource owners the freedom to seek higher returns by entering and exiting industries. Finally, buyers and sellers possess perfect knowledge of information affecting their economic decisions.

As a result of its structure, firms in a perfectly competitive industry conduct themselves in a non-competitive fashion. Rivalry is nonexistent. Firms are price-takers, with no concern for the effect of their actions on the "competition". Since all firms produce a homogeneous product, no one producer is preferred over another. Finally, as a result of the structural characteristic of perfect knowledge, all firms charge the same price for their product. Any efforts on the part of a single firm to charge a higher price would end in failure as its former customers would simply shop elsewhere at the industry price. In the true sense of the word, firms in a perfectly competitive market do not "compete", they merely survive.

There are many attractive benefits of such a cause and effect approach and of the strict assumptions of perfect competition. It is simple and therefore easily taught and understood. Also, since structure determines behavior and performance, industrial policy makers have the structural tools with which to achieve the desired industrial performance. Such benefits are gained at the cost of the

incorporation of actual, true to life competition between firms.

### 1.9.2 The Competitive Process

In contrast to the theory of perfect competition, the Austrian "competitive process" approach to industrial organization examines the competitive process of trade and exchange.<sup>31</sup> Economists are concerned about choice surrounded by uncertainty, a concept central to industrial organization. Therefore, studying a perfectly competitive market structure in equilibrium will not provide the answers. The economist should study the competitive process itself, emphasizing conduct and performance rather than industrial structure.

This approach belongs to classical economic theory, where the competitive process determines market price and results in allocative efficiency by forcing successive transaction prices towards marginal cost. This classical approach, the Austrian school maintains, is much more meaningful in understanding industrial organization than the neoclassical competitive equilibrium approach taken by the structuralists. For example, contrary to static perfect competition equilibrium theory, knowledge, realistically considered is not perfect among producers and consumers. Entrepreneurs, taking advantage of this scarce resource, seek out economic opportunities before others have the same knowledge. Rivalry exists between entrepreneurs. In contrast to perfect competition in equilibrium where

competition is evidence of monopoly power, firms actually compete. In Clark's words, "effective competition is still dependent on the power of the most competitively minded minority to set a ... pace that the others are constrained to follow... (this) is better than the impossible abstraction of 'perfect competition', largely because of its dynamic quality; and because (of) ... an increasing role for potential competition."<sup>32</sup> The economist thus brings rivalry and the competitive process back to the center of the theory of industrial organization. The Austrian or "catallactic" approach provides a theory of industrial organization with which the entrepreneur can identify. Profits are included and their presence and purpose predicted. However, while a true sense of competition is incorporated into theory, it is included at the cost of precision and definiteness. Unlike perfect competition equilibrium theory, there are no simple and direct cause and effect relationships, such as market concentration, resulting in super-normal profits. The Austrian approach specifies no pre-defined social welfare standards such as marginal cost pricing, for if price equals marginal cost, there would be no opportunity for profits and therefore no source of entrepreneurial motivation. As a result, there are no exact criteria for judging the "success" or "failure" of the system. As von Weiszacker explains, "competition as a decentralized mechanism of coordination allows much more experimentation and hence discovery of new solutions to problems than more centralized mechanisms of

coordination. ... If we understand the analytical difficulties of competition policy as an outgrowth of relatively rapid change, which itself is fostered by competition, then we obtain the appropriate attitude in dealing with these difficulties as they face the industrial organization economist."<sup>33</sup>

### 1.9.3 Contestability and Competition

When one leaves the theory of perfect competition to examine alternative theories of industrial organization, it is easy to see why it holds such a predominant place in the field. The simple, straight-forward, if less realistic model provides for practical testing of economic problems using mathematical techniques. On the other hand, the more meaningful classical Austrian approach has been neglected since verbal logic is not so easily tested. In their work on contestability analysis, B/P/W begin "the difficult transition to a theory of industrial organization that can encompass the richness and breadth of actuality while retaining a strong underpinning in theory."<sup>34</sup> The theory of industrial organization attempts to combine a meaningful and practical concept of competition together with a set of welfare criteria.

Contestable market theory clarifies the concept of competition while at the same time fits comfortably into the S/C/P approach to industrial organization. The required structure is simple; there must be no barriers to entry or exit. Conduct is aggressively competitive. Existent and

potential firms realize that sales and market share can be increased through changes in price. The efficient entrepreneur capitalizes on every opportunity to reap a profit, by eliminating a financially weak competitor or by undercutting prices of the profitable rival. In this way, the theory of contestable markets extends the power of Adam Smith's 'invisible hand'. In terms of performance criteria, price moves towards marginal cost, abnormal profits are reduced to normal levels and efficiency is maximized.

Perfect competition offers a precise theory, but with a vague concept of the competitive process. On the other hand, catallactics of the Austrian school presents a vague theory, yet encompasses a precise definition of competition. The theory of contestable markets combines the best of two worlds; a precise theory which embraces a precise concept of competition.

#### 1.10 POLICY IMPLICATIONS

Since the theory of contestable markets falls under the cause and effect, S/C/P approach to industrial organization, the economic policy maker can use it to formulate effective, albeit unconventional, industrial economic policy. Without this prescriptive power, the theory would be of little interest outside purely academic circles. However, contestable market theory has been used as a theoretical base for public policy. This accounts for the degree of attention it has received in the field.

### 1.10.1 Perfect Competition Reviewed

Viewed intuitively, government use of the theory of "perfect" competition as a guide for policy would seem quite reasonable. Since many modern industries are characterized by economies of scale, the industrial structure proposed by perfect competition is often irrelevant. Even if production and demand conditions conform to the restrictions of perfect competition, it still would not be a desirable goal for policy-makers if they hope to promote productivity and innovation in the economy.<sup>35</sup>

According to the theory of perfect competition, a non-perfectly competitive structure, particularly in concentrated markets, leads to inefficiency and monopoly profits and therefore requires regulation. The United States government has long based its strict anti-trust policies on this belief. Generally, interventionist policy is called for if prices under oligopoly are believed to be greater than perfectly competitive prices, even though costs are lower. However, even in this case, governments promoting perfect competition through deconcentration must be suspect. First of all, Reekie convincingly casts doubt on the validity of the concentration doctrine.<sup>36</sup> In addition, if oligopolists are earning super-normal profits, other firms will be attracted to the industry, forcing price towards marginal cost. While profits and industrial concentration may be associated in the short term, "where there is freedom of entry any gains which firms receive and which are viewed *ex post* as monopoly



profits are, from an *ex ante* stance, simply an inducement to creative entrepreneurship."<sup>37</sup> If monopoly profits persist in the long run, government policy should turn its attention to the existence of entry barriers.

On the other side of the same coin, governments also attempt to achieve perfectly competitive structure by subsidizing otherwise non-viable firms. According to Bailey and Baumol, such policy prescribed by the theory of perfect competition, "keeps up the appearance of competition by assuring the survival of firms as an end in itself, by completely undermining the competitive process and imposing a heavy cost upon the consuming public."<sup>38</sup> While industrial policy makers must be concerned with the health of the economy, they must also be careful not to create barriers to competition in the form of government economic policy. For example, governments often condemn product differentiation as wasteful. Considering that the entrepreneur differentiates the product in an attempt to improve sales, does not intervention limit product development and consumer satisfaction? Government intervention implies that bureaucrats know which market structure best serves the economy. Each motivated by self-interest, the bureaucrat protects his position by ensuring the survival of the agency while the entrepreneur survives by exploiting opportunities to serve better the consumer's demands.

### 1.10.2 Contestability and Regulatory Policy

Given the character of modern industry, the theory of contestable markets supplies a standard of structure and performance that is much more practical for the policy maker than the theory of perfect competition. In B/P/W's own words, "perhaps the most noteworthy implication of contestability theory is that a wide difference in appearance between a particular market and the form of perfect competition need not deprive the invisible hand of its power to protect the public interest. With abandonment of the unrealistic standard of perfect competition as the model for market behavior, many old rules of thumb which have served as guides for the antitrust agencies must be permitted to fall by the wayside."<sup>39</sup> According to Bailey, once the policy maker accepts the optimality of perfect contestability, "the theory is clear about what types of policy enhance and what types interfere with the natural contestability of markets."<sup>40</sup> Obviously, if the market is contestable, a *laissez-faire* approach is suitable. According to Baumol, "the new analysis merely reinforces the view that any proposed regulatory barrier to entry must start with a heavy presumption against its adoption".<sup>41</sup> If the market fails to show an acceptable degree of contestability, the theory prescribes public policy to improve its performance.

Since the issue of market access is central to the theory, policy is directed at opening the market to entry and at facilitating exit. Whereas perfect competition, assuming

that regulators are in the position to judge the optimal levels of entry and exit, encourages control over market access, the theory of contestable markets favors exposing the market to free entry and exit, the levels of which are determined by market forces. Elizabeth Bailey outlines the policy implications of the theory in her article "Contestability and the Design of Regulatory and Anti-trust Policy".<sup>42</sup>

Instruction No. 1

Remove "regulatory or anti-trust barriers that prevent the access of competitors or that prevent competitive pricing".<sup>43</sup>

As covered in section 1.3.4, B/P/W's analysis recognizes government regulation of factor mobility and pricing as a source of entry and exit barriers and therefore a major obstacle to contestability. Bailey suggests two rules of thumb for guiding policy to improve contestability.<sup>44</sup> First, it is essential to coordinate entry and pricing policies. If policy supports freedom of entry and exit, but controls pricing, there is the danger of "cream skimming". On the other hand, if regulation controls entry and exit, yet allows free pricing, firms may end up exploiting consumers. Deregulation therefore must tackle both entry and pricing simultaneously. Second, Bailey recommends adopting the "smallness doctrine" which removes regulatory barriers to small entrants. Successful entry on a small scale indicates to policy-makers that competition should be enhanced and regulation cut back in the industry.

Instruction No. 2

Examine "markets to ascertain whether potential competition is workable before actual share of market is taken to be a sign of monopoly power."<sup>45</sup>

If potential competition is workable, that is if the market is contestable, high market shares or high degrees of market concentration may be the result of firms producing efficiently by taking advantage of scale economies. This behavior should be welcomed by policy-makers rather than obstructed. Lack of entry under these circumstances may be judged as a sign of an industry functioning well rather than of market failure. In Baumol's view, "a history of absence of entry in an industry and a high concentration index may be signs of virtue, not of vice. This will be true when entry costs in our sense are negligible. And, then, efforts to change markets structure must be regarded as mischievous and antisocial in their effect".<sup>46</sup> Another rule of thumb suggested by Bailey is for policy makers to grant pricing freedom if the firms ability to exploit market power is checked by competition, actual or potential, from a close substitute. Regulators, when calculating the degree of competition, should include intermodal competition.

In general, if government needs to involve itself in the workings of an industry, it should direct its policy at promoting market contestability. If these barriers are regulatory, then regulations should be changed. If they are economic, they are most likely the result of the necessity of

incurring sunk costs upon entry. Therefore, economic policy should tackle the problems caused by sunk cost investment. Unfortunately, sunk costs cannot be simply legislated away. However, according to Bailey, "even markets characterized by sunk costs may be contestable if these sunk costs are readily transferable or are borne by an entity other than the firm itself".<sup>47</sup> Government policy could promote contestability by eliminating the risk of entry. Possible policies include guaranteed purchase of sunk facilities upon exit, actual public investment in sunk cost facilities or promotion of technical progress which would reduce the need for sunk investment. Bailey also maintains that government could encourage contestability by regulating access to sunk cost facilities since "incumbent firms, even those who have borne the burden of acquiring the sunk cost facility, are a problem for public policy only to the extent that they have permanent or exclusive access to that facility".<sup>48</sup> If an entrant can avail of resources provided by irretrievable investment without itself having to make such an investment, risk of entry is eliminated. "Consequently, the single most important element in the design of public policy for monopoly should be the design of arrangements which render benign the exercise of power associated with operating sunk facilities."<sup>49</sup>

If sunk costs cannot be reduced sufficiently through government policy, the problem of risk deterring entry can be tackled from a different angle. Entry will only be deterred

if the potential loss due to sunk costs is greater than the potential gain made from profitable production. If the expected profits are sufficient to cover potential costs, then entry will occur. Therefore, a degree of sunk costs may be enduring in the market. However, if potential losses are greater than hoped-for profits, the entrant runs the risk of financial disaster. The risk depends on the incumbent firm retaliating by reducing its price in order to eliminate its new competitor. Once the competition is eliminated, the incumbent can raise its prices to super-normal levels, knowing that other potential entrants will be deterred by the example of entry failure.

In this case, policy should be directed at price levels, while at the same time promoting market contestability. Since protecting entrants from price retaliation may result in inefficiency and possibly higher prices, B/P/W suggest adopting a policy of "quasipermanence of price reductions".<sup>50</sup> Price retaliation in itself, as part of the competitive process, is economically desirable. Only if incumbent firms then increase their prices to pre-entry levels does the economy suffer. Quasipermanence of price reductions permits incumbents a once-off price adjustment in response to entry. Prices are then frozen until exogenous changes, such as shifts in demand or technical progress, warrant readjustment. The end result should come close to contestable market entry and price levels.

Only if prices are "non-sustainable" (see section 1.5)

should policy directly regulate entry and price levels. Prices are sustainable if no output-price vector that would earn economic profits covering the cost of entry can be found by firms wishing to enter. Non-sustainable prices exist if profitable entry opportunities continually attract destabilizing entry, even if such entry reduces social economic welfare. However, in industries where sustainable prices can exist, the theory of contestable markets provides a strong theoretical base for formulating public policy.

## CHAPTER 2: CONTESTABILITY, AIR TRANSPORT, AND THE US AIRLINE INDUSTRY

### 2.1 INTRODUCTION

The theory of contestable markets has played a vital role in the development of the US domestic airline industry over the last decade. These years have seen the airline industry evolve from a relatively stagnant, inefficient, and highly regulated business into a dynamic, cost effective, and competitive industry. During this time, "contestability" has become a common concept among the leading academics, politicians and businesspeople involved in the transition.

Many of those speculating on the competitive nature of the airlines believed the industry had a contestable structure. B/P/W explain why airline markets, at least in principle, should serve as a examples of contestability; "consider two towns between which the demand for travel is only sufficient to support one flight a day. This is a natural monopoly market. And yet, because airline equipment (virtually 'capital on wings') is so freely mobile, entry into the market can be fully reversible. In principle, faced with a profitable opportunity in such a market, an entrant need merely fly his airplane into the airport, undercut the incumbent's price, and fly the route profitably. Then, should the incumbent respond with a sufficient price reduction, the entrepreneur need only fly his airplane away to take advantage of some other lucrative option - even if he only returns his rented aircraft or resells it in the well-



functioning secondary aircraft market. Thus, it is highly plausible that air travel provides real examples of contestable markets".<sup>1</sup> Unforeseen developments in the industry have since complicated this hypothesis. However, the theory of contestable markets provided the theoretical basis for positive change within the airline industry.

This chapter examines the role of economic theory in developing air transport policy. First, the traditional theoretical basis for air transport regulation is examined. While it is possible to use economic regulation to promote contestability, the regulation imposed upon the US airline industry actually protected incumbent airlines from the disciplinary forces of a contestable market. As economists and politicians took a closer look at the airline industry, many came to the conclusion that the regulation should be removed. While they recognized that the industry, due to certain structural characteristics, could never be portrayed by the theory of perfect competition, they believed the airlines, if left to their own devices, would 'compete' in the true sense of the word. By the late 1970's, a new developing theory of industrial structure, the theory of contestable markets, was available to guide the industry through the transition to becoming a more efficient, innovative, and most importantly, competitive industry.

## 2.2 REGULATION - HISTORY AND REASONING

Charles Lindbergh's solo flight across the Atlantic in 1927 marks the beginning of commercial aviation in the United

States of America. In 1926, 6,000 passengers travelled by air. This increased to 48,000 the year after Lindbergh's historic flight. By 1938, the year the Civil Aviation Act (CAA) was adopted, over 1 million travellers flew to their destinations.<sup>2</sup> Unfortunately, along with dramatic traffic growth, the industry was characterized by unstable economic conditions, risky investment and a tragic safety record. Regulation was demanded. From the extent of regulation imposed, it is obvious that Congress had little faith in the free-market to produce or support an efficient, safe, well-developed, competitive industry. Considering the general failure of the free-market during the Great Depression of the 1930's, and the role of government as saviour, Congress's doubt in the system and its belief that regulators could improve market performance is understandable. In general, regulation was based on three theoretical concepts perceived at the time to characterize the industry. First, air transport must be provided as a public utility. Second, the industry by nature is disposed to wasteful and destructive competition. Finally, such competition would result in a powerful oligopoly exploiting the market. This reasoning is still widely used in the 1980s to support air transport regulation in Europe.

### 2.2.1 Public Utility

The regulatory system controlling the US airline industry was founded on a theory of transport economics and

regulation developed during the 19th century railroad era. Regulators viewed the provision of transportation as a public service, necessary for the economic and social development of the country. The Senate Committee on Commerce described the CAA of 1938 as providing "the usual system of regulation" according to "the recognized and accepted principles of the regulation of public utilities, as applied to other forms of transportation".<sup>3</sup> As a public utility, air transportation would require extensive regulation and subsidization to ensure that all portions of the public would be served by a well-developed, non-discriminatory, service network.

#### 2.2.2 Destructive Competition

When designing the CAA, the regulators were told by a Senate report that "competition among air carriers is being carried to an extreme".<sup>4</sup> Since the industry is relatively easy to enter and offers a basically non-differentiated product, it was believed that competition would result in a fixed market demand being supplied by an ever increasing number of airlines. Duplication would result, wasting valuable resources. Regulators also feared that the airline industry, if left to market forces, would fall prey to excessive, cutthroat competition and finally, financial disaster. The airline industry is allegedly susceptible to destructive competition because once the airplane is scheduled to fly, the marginal cost of transporting an additional passenger is very low. At the same time, due to fluctuating demand between peak and off-peak times of day,

week, and year, aircraft usually fly with a significant number of empty seats. It is feared that the combination of very low marginal costs and excess capacity will result in continuous, and eventually disastrous, price wars.

### 2.2.3 Monopoly Power

According to proponents of airline regulation, price wars will eventually force the unregulated small airlines to withdraw from the industry, either by declaring bankruptcy or by selling out to a stronger airline. After forcing their weaker competitors out of the market, the few remaining airlines will reap their rewards of battle: monopolistic profits. In order to maximize their earnings, they will concentrate on exploiting only the dense markets, between large towns and cities, abandoning and thereby isolating small communities. Therefore, in order to preserve essential services, prevent wasteful and destructive competition and eventual monopolistic exploitation, regulation must be imposed upon the airline industry.

## 2.3 THEORETICAL WEAKNESS BEHIND REGULATION

The theoretical basis for airline regulation used 50 years ago is still strongly advocated today. Upon simple examination, these theoretical arguments are unconvincing.

### 2.3.1 Public Utility

Regulators who view air transport as a public utility believe regulation is needed to guarantee adequate service to

all. Using its fare formulae, the Civil Aeronautics Board (CAB) allowed the airlines to earn large profits on the dense routes in order to compensate for service in less financially attractive markets. On a market basis therefore, popular flights were overpriced, while service on low density routes were underpriced. However, in the absence of competitive pressures, guaranteed high fares resulted in high cost airlines. Therefore, according to Richard Pryke, "it would be surprising if gains from cross-subsidization and greater frequency on low-density routes were not more than matched by the excess costs which will develop when airlines are protected from competition".<sup>5</sup> In fact, by allowing airlines to structure their fleets and routing in response to market demands, Bailey concludes that "one of the major benefits of airline deregulation has been significantly increased frequencies of departures from smaller towns and cities".<sup>6</sup>

### 2.3.2 Destructive Competition

Once an aircraft is scheduled to fly, the cost of carrying an extra passenger is minimal. This aspect of airline economics, according to regulators, will lead to fare wars and generally destructive competition. This line of reasoning, however, assumes mismanagement by those responsible for the prosperity of the airlines. Alfred Kahn, ex-chairman of the CAB, had more faith in airline management during the process of deregulation: "All this comes down to is the destructive competition scarecrow: there seems to be a

general belief among defenders of the present regime that there is something about airplanes that drives businessmen crazy - that once the CAB removes its body from the threshold, they will rush to the market pellmell [sic], like lemmings, without regard to the size of each, how many sellers it can sustain and how many others may be entering the same time. It does not happen in other industries; there is no reason why it need happen in air transport".<sup>7</sup>

### 2.3.3 Monopoly Power

Those who favour regulation claim that, in the absence of government control, the industry will reduce to a few powerful airlines. These oligopolistic firms will more or less agree to respect each other's market shares, leaving them free from competitive pressures to exploit the flying consumer. However, at least in theory, Bailey and Panzar find that oligopoly is not necessarily incompatible with competition since "despite substantial natural monopoly attributes, most airline markets are likely to be readily *contested*. This fact ensures that, *even if* actually operated by only a single firm, their performance should approach the competitive norm, at least to a tolerable approximation".<sup>8</sup> How descriptive this theory of contestable markets is of today's deregulated airline industry will be discussed in greater detail in chapter 3.

#### 2.3.4 Economies of Scale, Economies of Scope and Contestability

When reading the literature in airline economics, the concept of scale economies can be quite confusing. The presence of scale economies depends on whether one is considering an airline market or the airline industry. In most of the airline economics literature, an airline market is defined in terms of city-pair routes.<sup>9</sup> For example, Los Angeles to New York is described as a 'dense' market between two large cities, and Nashville to Albuquerque as a 'thin' market involving less populated areas. On a market level, Morrison and Winston found that "economies of size derive from more efficient use of labor and fuel associated with larger aircraft".<sup>10</sup> For example, as shown by Bailey, Graham, and Kaplan, on a flight of 1,000 miles in 1981, the direct aircraft operating costs of flying a 121 seat DC 737-200 was 6 cents per Revenue Passenger Mile (RPM) while flying a 371 seat DC-10-10 cost only 4.6 cents per RPM.<sup>11</sup> In fact, the CAB established, prior to deregulation, that the majority of US city-pair markets are natural monopolies.<sup>12</sup> The presence of scale economies on the market level establishes contestability as a more appropriate guide to policy than the theory of perfect competition. It has also been argued, usually by opponents of deregulation, that on an industry level, large airlines have significant cost advantages over small carriers. However, large carriers usually fly long haul flights at lower costs per mile. When distance and other factors which reduce costs were taken into account in a

1975 study by the CAB, no significant economies of scale were found to exist.<sup>13</sup>

If large carriers cannot claim cost advantages due to economies of scale, it is argued that they can gain a competitive advantage based on system integration or 'economies of scope' through well-structured hub and spoke route networks. Baumol, Panzar and Willig introduce economies resulting from the scope of a firm's operations as cost savings which "may result from simultaneous production of several different outputs in a single enterprise, as contrasted with their production in isolation, each by its own specialized firm".<sup>14</sup> Morrison and Winston formally apply this concept to the airline industry in their Brookings Institute Study "The Economic Effects of Airline Deregulation".<sup>15</sup> However, during the process of deregulation, Kahn believed that advantages of system integration would be balanced by economies of specialization: "In market after market today, carriers of widely varying sizes and degrees of integration meet in head-to-head competition; there is no systematic evidence that this cannot continue indefinitely".<sup>16</sup> Of course, the greater the variety of possible competitors, the greater the possibility that potential competition will discipline the industry.



## 2.4 CONTESTABILITY AND THE REGULATED US AIRLINE INDUSTRY

The theory of contestable markets generally lends support to a laissez-faire industrial policy. Although, since few real world markets are "perfectly" contestable, there is room for government involvement to enhance the degree of contestability. Long before this possibility was recognized, the United States Congress passed the Civil Aviation Act in 1938, which later created the Civil Aeronautics Board. The Act authorized the CAB to control entry and exit on both an industry and market level, to regulate fares on inter-state routes, to award subsidies, to control mergers and agreements between carriers, to investigate questionable competitive behavior and to exempt carriers from certain provisions of the act.<sup>17</sup> Regulation was designed to cover all aspects of economic behavior. While the original regulators may have had the best of intentions, the regulations imposed by the CAB precluded any degree of natural contestability in airline markets.

### 2.4.1 Regulation of Entry and Exit

First and foremost, entry and exit must be free in contestable markets. An airline must be free to begin or terminate service between any two airports *without delay*. Contestability depends on the existence of a pool of potential competitors, ready to enter the market, once a profitable opportunity is discovered. A carrier must also be able to terminate service once it becomes uneconomical to continue flying. The complex, time consuming bureaucratic

CAB procedures for rewarding or terminating route service severely restricted entry and exit.<sup>18</sup> Under CAB regulation, carriers wishing to serve a market had to prove that the new service would be in the public interest and would not harm the incumbent airlines. If the potential entrant had not previously served the market, it had to convince the CAB that it should provide the needed service rather than the incumbents. Since it never awarded a major route to a new entrant, the CAB obviously valued proven service over innovation and entrepreneurship.<sup>19</sup>

#### 2.4.2 Regulation of Fares

Hopeful entrants, or actual competing airlines needed CAB approval before effectively reducing prices. Even if fare reductions were granted, price competition was strongly discouraged by the CAB's lengthy hearing procedures. In a contestable market, firms must be able to enter a market quickly by undercutting the incumbent's prices. An airline will only be able to undercut prices if the existing fare is too high, that is, greater than the entrant's marginal costs. Since the CAB's pricing policies were set to ensure overall industry profitability rather than to encourage marginal cost pricing, high costs and inefficiency characterized the industry. Unfortunately, regulation restricted potential entrants from challenging inefficiency and excessive fares, as would be the case in a contestable market.

#### 2.4.3 Subsidization

There is no room for subsidization in a contestable market, except perhaps for reducing sunk cost investment. (see section 1.6.1) The essential services subsidy program was designed to provide air transportation service to small, isolated communities. These services were provided "essentially by making good the revenue deficiencies of the carriers certificated for this purpose".<sup>20</sup> In addition, the formula used by the CAB deliberately set fares above costs on dense routes in order to compensate for service to high cost thin routes.<sup>21</sup> As a result of these policies, inefficient airlines used inappropriate aircraft to provided inadequate service to smaller communities.<sup>22</sup>

#### 2.4.4 Mergers

If the opportunity arises, an airline must be free, within antitrust guidelines, to merge with, or acquire another airline in order to lower overall cost and increase overall productivity. When the airlines were regulated, route expansion was severely restricted. As a result, the main incentive for consolidation was to enter a new market rather than to improve efficiency. Again, regulation distorted economic incentives.

#### 2.4.5 Antitrust Immunity

The CAB granted antitrust immunity to the incumbent airlines, allowing them to meet and allocate among themselves scarce landing slots at congested airports.<sup>23</sup> In a

contestable market, all competitors, actual and potential, must have equal access to the market.

#### 2.4.6 Supervising Competition

Potential and actual competition, rather than a regulatory body, police a contestable market. The CAB, like most regulatory agencies, was unable to maximize consumer welfare through regulation. Essentially, it lacked the knowledge of consumer demand, as only the market can supply. As Bailey writes, 7 years after the passage of the ADA: "it is now clear that regulatory bureaucrats failed to recognize all of the dimensions in the product-characteristic space, and particularly missed the free-market demand for lower price/lower quality services".<sup>24</sup> As time passed, the board identified more with the needs and demands of the airlines rather than those of the consumer. In a contestable market, survival of the firm can only be achieved by continually serving the consumer's changing demands.

### 2.5 CONTESTABILITY AND US AIR TRANSPORT POLICY

Since the industry is naturally competitive, and to a significant degree, contestable, an industrial structure evolved under the 40 years of comprehensive regulation that was quite different to that which would later form in response to consumer demands. The TCM has been purposefully used to design, enact, and enforce air transport policy in the United States, exposing the industry's markets to the competitive pressures of contestability.

### 2.5.1 The Role of Contestability Analysis in the Deregulation Movement

Effective public policy, attempting to improve economic welfare, must be based on sound, relevant economic theory. Regulation of the airline industry was founded on weak and inappropriate theory. However, the new developing theory on market contestability provided, in part, the theoretical base for successful policy: the deregulation of the US airline industry.

By the time Alfred Kahn was appointed Chairman of the CAB in 1977, the deregulation movement was well established. However, Kahn made the necessary changes within the CAB to accommodate deregulation. Unlike most bureaucrats, he acknowledged the potential benefits of free competition and advocated the eventual elimination of his own agency. Furthermore, he recognized the need for solid economic theory to support and guide the coming changes. Kahn therefore set about changing the CAB to an economic body, for he was certain that the abundance of lawyers and the absence of economists made it impossible for the agency to respond to the industry's economic crisis.<sup>25</sup>

Kahn was joined by pro-competition economist Dr. Elizabeth Bailey who was very much involved in the development of the theory of contestable markets. As both adjunct-professor at New York University and supervisor at Bell Laboratories, Bailey acted as go-between for the theory's main authors in the early stages of its development.<sup>26</sup> At this time, Baumol was working at NYU and

Panzar and Willig at Bell Laboratories. By 1977, they were concentrating on the theoretical market power of potential entry. In the summer of 1977, Bailey left her more academic posts to become a commissioner at the CAB. However, as she writes in the forward to B/P/W's Contestable Markets and the Theory of Industry Structure, "I continued to be interested in the research for this book -especially in how it might apply to industries such as the airlines that are structurally competitive".<sup>27</sup> Bailey brought the theory to the CAB. She verifies that "those of us in charge of deregulation did use contestability theory very much in our thinking".<sup>28</sup>

Even before the Airline Deregulation Act (ADA) of 1978 was passed, the CAB under Kahn strove to create a more competitive industry by liberalizing rate regulation in order to allow competitive pricing, route regulation to allow carriers to choose their markets, and finally market access in order to increase competitive pressure from both potential *and* actual competitors. In October of 1978, Congress passed the ADA. According to Bailey and Baumol, the ADA "rested upon confidence in the inherent structural competitiveness of the domestic US airline industry".<sup>29</sup> The legislators believed the industry's competitive performance would be the result of a basically contestable industry structure: "the new legislation recognized the benefits of permitting potential competitors to respond to profit opportunities by entering markets freely. Even though the number of actual

competitors in most markets might not change very much as a consequence, the Act gave airline managements complete freedom in the structuring of their route networks, relying on this freedom as an adequate check on market power".<sup>30</sup>

Regulators, in other words, were willing to accept the full consequences of their actions. It was accepted that some well-established but inefficient carriers might go under, as did Braniff, and that other new entrants such as Peoples Express, might not be strong enough to survive in the increasingly competitive markets. However, according to CAB economists Bailey, Graham, and Kaplan, "it was recognized that the success of deregulation would not be measured in terms of proliferation of carriers on routes".<sup>31</sup> Due to limited demand and economies of aircraft size, most markets are natural oligopolies or monopolies. Despite the inevitable market concentration needed to operate efficiently, regulators agreed that price regulation would not be needed. Bailey, Graham and Kaplan confirm that "even in markets with substantial natural monopoly characteristics, the framers of deregulatory policy felt that carriers would not be able to set fares substantially above costs without inviting entry".<sup>32</sup>

Where economic theory provided the foundation for regulatory reform, studies on the competitive intra-state airlines operating outside the CAB's control furnished the hard evidence of the possible overall welfare gains from competition. Without the Californian and Texan regulatory

experiences, the ability to evaluate the CAB's policies critically would have been much more difficult.<sup>33</sup> Studies comparing intra-state markets with corresponding CAB-controlled inter-state markets revealed dramatic fare and growth differences. By increasing seat density and load factors, flight frequency and labour productivity, the Texan and Californian intra-state airlines lowered overall costs enabling them to introduce innovative fare and service structures. Lower fares in turn stimulated consumer demand, proving that the only barrier to market growth is high air fares. Finally, the intra-state airlines were financially viable. This was just the kind of evidence needed by legislators in congress who were fighting for deregulation. In Kahn's opinion, the intra-state airline case histories provided "the closest thing to a 'controlled experiment' in public policy".<sup>34</sup> Still, as explained by Bailey, "many issues arose that simply had not yet been addressed in economic research. It was general principles of economic science rather than a detailed mathematical specification and analysis that provided the guide to action during the deregulatory period".<sup>35</sup>

#### 2.5.2 The Airline Deregulation Act of 1978

The passage of the Airline Deregulation Act of 1978<sup>36</sup> marked the US government's commitment to full exposure of the industry to the forces of competition. The new legislation was phased in over 7 years, ending with the closure of the



CAB in 1985.<sup>37</sup> First and foremost, the Act enabled free entry into and exit from both individual markets and the industry. Recognizing the need to coordinate entry and pricing policies, the Act also provided for fares to be determined by market forces rather than by formula. By establishing more efficient approval procedures, the Act eliminated the negative effects on market contestability caused by the drawn-out, bureaucratic process for merger approval. Finally, to prove the seriousness of its commitment to airline deregulation, Congress arranged for the eventual termination of the CAB. Once the ADA was enacted, the airlines used price to compete for passengers; they changed their route structures to take advantage of profitable opportunities; and new airlines entered the industry.

### 2.5.3 Contestability and Antitrust

Congress directed the CAB to use the legal standards used by most industries set out by the Sherman and Clayton Antitrust Acts. Continuing to use the theory of contestable markets to shape policy, the Board chose to emphasize the degree of competition rather than the degree of concentration when interpreting these laws. CAB economists Bailey, Graham and Kaplan summarize the Board's approach; "although the Board was aware that in even the least concentrated origin - destination markets, carrier's market shares were in excess of the level that the Department of Justice considered to be consistent with competition, it deemed that market shares

would not be an adequate indicator of the effectiveness of competition in the new regime. In practice, the Board focused on those structural characteristics of the markets at issue that were most likely to determine the ability of actual and potential competitors to check the exercise of monopoly power over prices. These structural characteristics included the number of actual competitors, the presence of a sufficient number of potential entrants situated to enter easily, the likelihood of new entry, traffic density, and the magnitude of entry barriers, such as those caused by the inability to gain access to an airport".<sup>38</sup> For example, despite Justice Department disapproval, the CAB approved a merger Between Texas International and National Airlines in 1979.<sup>39</sup> The Justice Department argued that competition between the two airlines was substantial and therefore the merger would harm, not benefit, the consumer. If the merger went through, the resulting market concentration level would exceed the Justice Department guidelines for merger approval. However, the CAB noted that there were potential competitors that could readily enter the markets and so did not bar the merger on grounds of concentration.<sup>40</sup> The Department of Transportation (DOT) continued this approach once it took over responsibility for merger and acquisition approval in 1985, thereby facilitating the industry's further consolidation. In 1986, for example, the DOT backed Delta's acquisition of Western Air, even though they were the industry's fifth and eighth largest airlines. The DOT

claimed that the creation of Delta as the industry's third largest airline was "unlikely to substantially lessen competition" despite its mammoth size since "no evidence of barriers that would prevent other carriers from offering competitive service" could be found.<sup>41</sup> Baumol and Willig claim that their theory of contestable markets has directly influenced official antitrust policy. For example the 1982 Merger Guidelines of the Department of Justice asserts "that mergers will go unchallenged by the Department if they affect only markets subject to potential competition that is sufficiently strong. It proposes to take concentration into account only where potential competition is inadequate".<sup>42</sup> Baumol, however, is concerned that the theory has been falsely interpreted to support a complete laissez-faire approach to regulation and antitrust.<sup>43</sup> He stresses that if a market is contestable, a few large firms can serve the market well. However, if the market is not sufficiently contestable, regulation and antitrust action may be needed. In this case, the theory of contestable markets aids the policy maker to identify barriers to contestability and to design appropriate policy.

. . . . .

Since the industry had been regulated from its infancy, airline regulators and analysts could not know with all certainty its true natural structure. However, the US airline industry was deregulated based on upon the *belief* that airline markets would be essentially contestable. At

the same time, the deregulators were not so naive as to expect the industry to achieve the optimal welfare performance standards of a perfectly contestable market. According to Kahn, it is "important to recognize that competition is rarely perfect, and typically works extremely imperfectly".<sup>44</sup> In exposing the industry to the forces of competition, the deregulators knew they could not predict the future, they could only speculate. As Kahn preached during the transition, "our uncertainty about the outcome of the competitive struggle is no reason to prevent it taking place; the only sensible prescription is to give the competitors freedom to slough off their artificial handicaps by entering and leaving markets, as they please".<sup>45</sup>

## CHAPTER 3: CONTESTABILITY OF THE DEREGULATED US AIRLINE INDUSTRY

### 3.1 INTRODUCTION

The contestability of the deregulated US domestic airline industry has been a popular subject for study. Conclusions vary between complete rejection and optimistic acceptance. It should be noted however, that the airlines are only now settling into a market-determined structure. Therefore, any past conclusions on the degree of contestability of the industry have been somewhat tentative.

In the first years after deregulation, numerous new airlines entered the industry and innovative existing airlines, mainly former intrastate and local service carriers, changed markets to take advantage of new profitable opportunities nationwide. At the time the ADA was passed in October 1978, only 36 US scheduled airlines were certificated to fly. By February of 1984, 123 airlines competed for the different US markets, but not for long.<sup>1</sup> Over-capacity and the general inability to meet the consumer's demands in an imperfectly contestable market resulted in large-scale exit either through bankruptcy or simple closure. Airline Analyst Michael Derchin states that this phase "can only be equated to a Darwinian struggle of survival of the fittest".<sup>2</sup> More recently, the industry has entered a consolidation phase. Between November 1985 and January 1987, 25 mergers and acquisitions have occurred, of which 23 were by Major<sup>3</sup> carriers. The nine remaining Major carriers held nearly 95%

of the market in early 1987.<sup>4</sup> Most US airline analysts agree that most of the advantageous opportunities have been exploited and few mergers or acquisitions are likely to take place in the future.<sup>5</sup> The domestic airline industry, therefore, seems finally to be settling into a more stable industrial structure. It is at this stage of the industry's post-deregulatory evolution that more conclusive studies on the contestability of airline markets are possible. This section identifies characteristics of today's industry that both question and support airline market contestability before concluding on the relevance of the theory of contestable markets to the industry and therefore industrial policy. Part Two will identify and examine more closely the barriers to contestability.

### 3.2 NON-CONTESTABLE CHARACTERISTICS

Congress deregulated the US airline industry conjecturing that potential competition would protect the consumer if the degree of actual competition weakened. However, some aspects of the industry's performance since deregulation have made even the most enthusiastic supporters of the contestability analysis question their beliefs. Baumol and Willig, on several occasions, cited airline markets as real world examples of contestability. Yet, "reconsideration has led us to adopt a more qualified position on this score".<sup>6</sup> Some conduct and performance characteristics that have cast doubt on the industry's contestability are covered in the following sections.

### 3.2.1 Mergers and Acquisitions

Since the airline industry as a whole is theoretically not characterized by significant economies of scale (see section 2.3.4), there should be no reason why a large nationwide air carrier should possess a competitive advantage over a small local carrier in any given market. Furthermore, in an industry with perfectly contestable markets, where simple entry and exit are perfectly free, there should be few incentives for consolidation or growth by merger or acquisition. Of course two inefficient airlines must be free to improve overall use of their resources through a mutually beneficial merger and a weak airline must be free to exit from the industry by selling out to a former competitor.<sup>7</sup> However, the "merger mania" that has characterized the industry in the last few years suggests that economies of scope do exist and that simple market entry and exit may not be viable alternatives for growth. Even though simple entry into a given city-pair market appears easy, airlines have developed route networks where the viability of any one "spoke" is related to the carriers overall system.<sup>8</sup>

According to Bailey and Williams, "the incentive to pursue stable sources of rents along with antitrust policies which are permitting realization of carrier plans, is leading to an increasingly concentrated industry".<sup>9</sup> The growth strategies taken by the surviving major carriers show that airline management in the US has adapted to competing in imperfectly contestable markets. Airlines have consolidated

in order to gain access to limited airport space or developed central reservations and yield management systems. They have also expanded by acquisition in order to sidestep high cost union labour contracts. For example, by acquiring Eastern Airlines, Texas Air Corporation (TAC) gained valuable airport gate space and established major Kansas City, Atlanta and Miami hubs, thereby extending its service network nationwide. TAC also strengthened its yield management ability and provided an essential, developed CRS system, "SODA", which was later developed into the new comprehensive "System One".<sup>10</sup> On the labour front, Northwest Airlines was able to expand its work-force at lower cost by merging with Republic than by hiring directly from the labour market into its unionized workforce. Due to barriers to simple entry and exit in these areas, it is more cost effective to grow by consolidation than by simple market entry. Both this, and the fact that growth on a nationwide scale seems necessary for survival, are clear indications that US domestic markets are not perfectly contestable.

### 3.2.2 Economic Rents

Attaining the welfare standard of price equal to marginal cost, even in highly concentrated markets, is the most desirable attribute of the theory of contestable markets. However, since the airline industry has once again become heavily concentrated, there is widespread concern the new oligopolists will be able to exploit their market power to earn economic rents. Dan Kaplan, a former economist with



the CAB who generally favored deregulation, fears that the latest wave of mergers reflects "nothing short of a grab for market power while antitrust enforcement is perceived to be lax".<sup>11</sup> In fact, an airline spokesman for Western Airlines, now merged into Delta, conceded that the airline was able to raise fares on routes where mergers and bankruptcies resulted in fewer competitors.<sup>12</sup> According to Alfred Kahn, yields across the industry have risen in the second half of 1987. While he believes "the industry is still more competitive than it was under regulation, ... there is a trend to price increases that the mergers have contributed to".<sup>13</sup>

Based on industrial data taken during the industry's transition phases, many academic studies have questioned the degree of airline market contestability due to the airline's ability to earn economic rents. For instance, Graham, Kaplan and Sibley (1982) found that, contrary to expected contestable market pricing behavior, actual entry has a significant effect on fares.<sup>14</sup> A separate study by Bailey, Graham and Kaplan (1985) shows that "markets are not perfectly contestable, so that carriers in concentrated markets are able to charge somewhat higher fares than carriers in less concentrated markets".<sup>15</sup> Call and Keeler (1984) have also shown that profits and concentration in airline markets are significantly and positively correlated.<sup>16</sup> Three ex-airline executives, Brenner, Leet and Schott, (1985) thoroughly reject the contestability of U.S. airline markets. Based on a sample of 70 city-pairs, they

conclude that "the difference in fares between the more competitive routes and the less competitive ones is so great that it cannot be concluded that the threat of competition is giving all routes the pricing benefits of actual competition".<sup>17</sup> Shepherd (1984) is perhaps the most negative critic of the contestable market analysis. Rejecting the theory as well as its application, he claims that as airline "market shares are gained and lost, the process accords well with mainstream analysis".<sup>18</sup> Richard Murphy of Simat, Helliesen & Eichner, Inc., a New York economic consulting firm for the airline industry, identified consolidation at hub airports as having a positive affect on price.<sup>19</sup> His study estimates "that the ability to dominate a hub city enables a carrier to achieve approximately a 10 percent overall improvement in its yields for local traffic at the hub city, and perhaps as much as a 15 to 25 percent yield improvement in the longer haul (over 750) local markets".<sup>20</sup> In Kahn's opinion, "the contestability of airline markets does not afford travellers sufficient protection in those circumstances".<sup>21</sup> However, hub domination does not affect yields in markets served through the hub due to trans-hub competition. (See section 3.3.9) Therefore, "although the 20 or so hub cities are becoming increasingly dominated by one or two carriers, these points account for less than one-third of the total domestic O&D traffic. ... Consequently, the overall level of US domestic fares is not expected to increase by more than 3 to 5 percent, due to the increased

hub dominance".<sup>22</sup>

While US domestic airline markets may not be perfectly contestable, this oligopolistic pricing behavior can be explained within the contestability analysis. Barriers to contestability which allow the mega-carriers to price above their marginal costs are addressed in Part II.

### 3.2.3 Highly Responsive Prices

In theory, "sticky prices" enhance the degree of market contestability. However, "the condition of contestability theory that incumbents' prices must be relatively 'sticky' is not met in aviation".<sup>23</sup> Furthermore, once the incumbent decides to match or beat the entrant's lower fare, he has a competitive advantage in relaying the new price information to potential passengers through the travel agency network. Levine explains: "The incumbent's price information is communicated to a user group that is otherwise educated about the airline and inclined to economize on search by using it, while the new entrant shoulders the much more difficult communications burden of making consumers aware of its offering and inducing trial".<sup>24</sup> The barriers to contestability which allow high cost incumbents to compete with a low cost entrant will be discussed in Part II.

It is apparent that the surviving airlines have learned the importance of a quick competitive price response, as they develop large research teams to keep a close watch on their competitors' actions. For example, in 1978 Delta airlines

employed 27 people to track the competitors' fares and adjust Delta's prices in response. By 1984, the airline had 147 employees in its tariff department monitoring 70,000 fares offered by Delta and its competitors.<sup>25</sup> In some cases, airlines have actually advertised that they will meet their competitor's fares. United Airlines have taken price competition to the extreme with their "TORQUE" or "Try Our Real Quality United Experience" promotional programme.<sup>26</sup> The TORQUE squad, operating in the airport, seek out passengers planning to fly with the competition and attempt to convert them to United's "Friendly Skies". In their sales pitch, they offer to match any promotional fare offered by a competitor. The successful promotion has converted over 7,000 passengers and added more than \$1,000,000 in revenue during the programme's first two months at Denver's Stapleton airport alone.

As discussed in section 1.8.2, the proponents of the contestability analysis suggest that entrants use contracts to protect against the damaging effects of quick price retaliation. According to Bailey and Baumol, "potential entrants can and do sometimes make binding contracts with their future customers, and if such contracts can be agreed upon quickly, the fact that entry takes a longer time becomes irrelevant. Once the contract is signed, a retaliatory price reduction by incumbents will have lost its sting."<sup>27</sup> World Airways, hoping to compete in the scheduled Los Angeles - London market, attempted to use such a strategy. The

potential entrant offered to discount its fare to major tour operators by 40%, providing that \$500,000 worth of tickets were purchased in advance, thus providing the airline some future security in the market. However, World's offer was generally not accepted due to the fear that the airline would not survive in the market.<sup>28</sup> Finding itself in a "Catch-22" situation, World Airways did not enter the market. Baumol himself has since acknowledged that contracting against the effects of price retaliation is unlikely to be a feasible alternative in the airline industry.<sup>29</sup>

#### 3.2.4 Predatory Pricing

If markets are not perfectly contestable, a carrier earning economic rents in one market may use those rents to subsidize strategically its services in another. Such predatory pricing should not occur in a contestable market. The airline industry, however, has experienced several periods of "fare wars" since the passage of the ADA. Contrary to airline economists' predictions,<sup>30</sup> the casualty rate of the post-deregulation entrants has been high. Of the 119 new entrants since deregulation, only 34 were operating in 1987.<sup>31</sup> The heavy industrial failure rate in 1984 and 1985 of the post-ADA entrants was in fact aided by the large incumbents' predatory pricing behavior. Barriers to contestability have enabled the long-established airlines to price their new competitors out of the market despite their higher operating costs. "Holdover airlines have learned to compensate for above-market costs by successfully pursuing

revenue-earning strategies that generate rents and have not - and perhaps cannot - be duplicated by smaller new-entrant firms with lower production costs".<sup>32</sup> Witnessing the incumbent pricing the low-cost entrant out of the market could understandably discourage further entry. However, leading airline analysts agree that the industry has passed through a turbulent transition period and is now settling into a more stable future. According to Michael Derchin, with the surviving airlines now "playing by the same rules of the game, the next five to ten years will be marked by much less *cutthroat* competition".<sup>33</sup>

### 3.2.5 Unequal Cost Structures

Finally, in a contestable market, the potential entrant does not face any cost discrimination in comparison to incumbent firms. However, according to Bailey and Williams, "the frequently employed assumption that all firms face the same cost factors is clearly violated in the deregulated airline industry".<sup>34</sup> In theory, if the entrant operates more efficiently than the incumbent, it should excel in the market. In practice, even though the new entrant airlines were widely recognized to be lower-cost carriers, only 29% were still operating in January 1987.<sup>35</sup> This suggests that not all aspects of airline costs were taken into account by those analysts who initially hypothesized on the contestability of airline markets. More recently, Levine<sup>36</sup> identified information costs, usually more economical for

incumbents, as a crucial area to airline survival which was previously not generally recognized.

Almost 10 years after deregulation, it is obvious that the airline industry is not perfectly contestable. However, this should come as no surprise since theoretical "perfection" cannot be expected in the real world economy. Before concluding on the actual degree of contestability in the industry's markets, more positive conduct and performance characteristics are examined.

### 3.3 CONTESTABLE CHARACTERISTICS

While it is clear that airline markets have not been *perfectly* contestable since regulation was removed, markets "are exhibiting many of the behavioral properties associated with ... contestability in the period since decontrol."<sup>37</sup> On the one side, producers have made more effective and economical use of their resources. Competitive forces have visibly improved the industry's efficiency in at least three ways. First, the airlines have restructured their service networks into hub-and-spoke systems. Second, they have cut their input costs. Third, they have reduced the use of cross-subsidies between routes. On the other side of the economy, prices on most routes appear to be approaching costs, and consumers' demands for service/price options have been more closely satisfied. Furthermore, despite fears of the contrary, people living in small communities have, for the most part, benefited from improved service. All of these

changes, in the face of increased market concentration, suggest that airline markets are, to a degree, contestable.

### 3.3.1 Hub-and-Spoke Route Networks

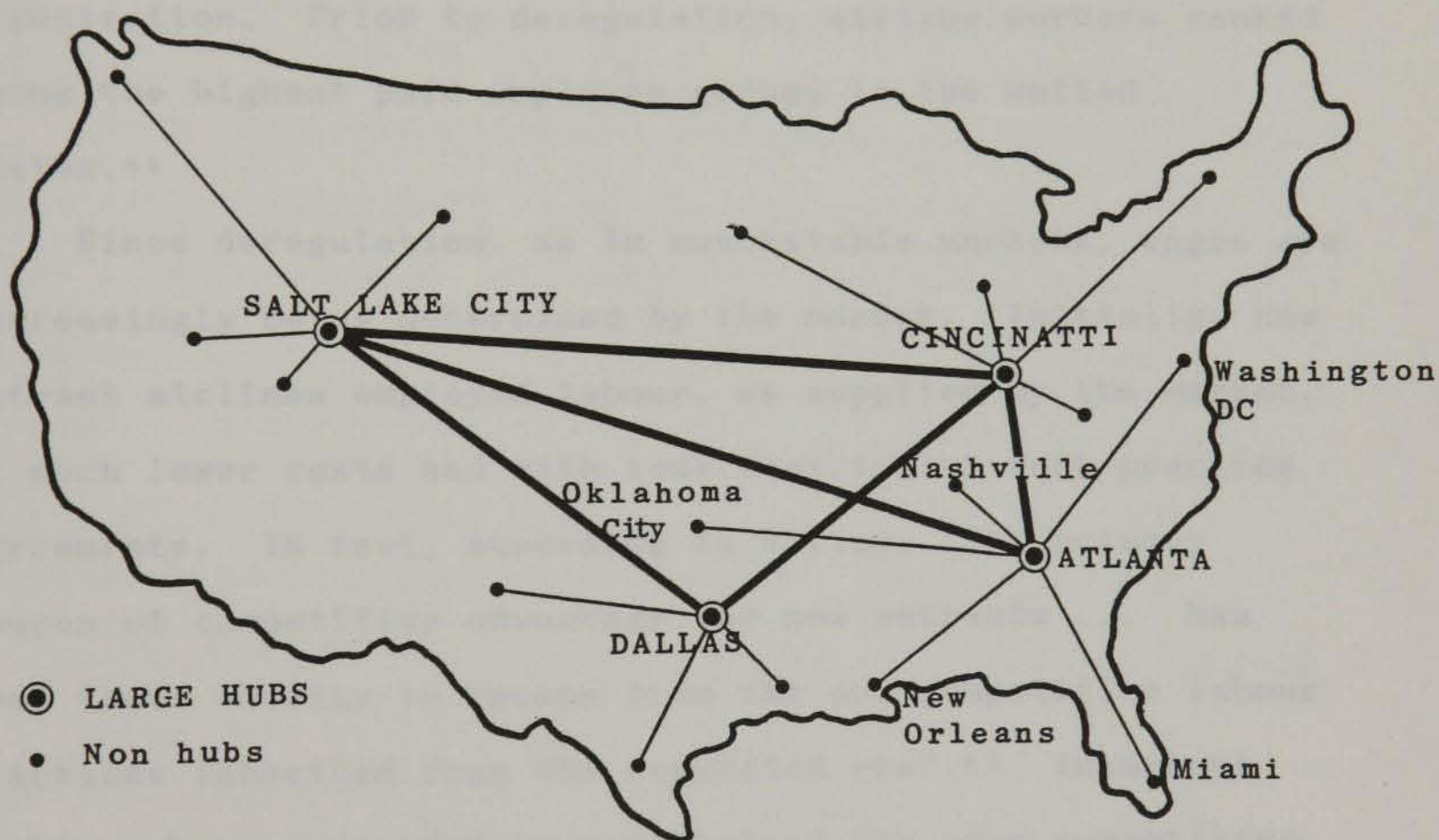
In a contestable market, the industry's structure must minimize its production costs. In the airline industry, minimizing costs requires the carriers to take advantage of economies of scale and scope. To do this, the air carriers restructured their flights into hub-and-spoke route networks. Passengers obviously prefer to fly directly to their destinations. However, by exploiting economies of scope with hub-and-spoke networks, cost savings arise when the benefits from economies of aircraft size outweigh the costs of rerouting traffic. According to Bailey, the "use of hub-and-spoke operations for air transport has been encouraged by its vehicle scale economies, despite the sensitivity of passengers to the loss of time".<sup>38</sup>

Using the bicycle-wheel analogy, an air carrier uses a large, strategically located city airport as its "hub" with less populated, more distant city airports located at the end of its "spokes". As shown in figure 3.1 below, Delta Airlines, for example, uses Atlanta as a hub and serves New Orleans, Miami, Oklahoma City, Nashville and Washington D.C. with some of its spokes.<sup>39</sup> Due to insufficient demand, Delta does not schedule any flights directly from Nashville to Miami (Nonhub - Nonhub) and perhaps only one daily flight from Salt Lake City to Miami (Hub - Nonhub). However, by feeding



its hubs with traffic from many thin markets, the airline can take advantage of its aircraft scale economies and offer more frequent connecting service at lower fares.<sup>40</sup> In this way, hub-and-spoke route systems maximize a carrier's asset use and minimize its cost of production. All US major carriers have developed hub-and-spoke systems, recognizing that efficiency in production is necessary for survival.

FIGURE 3.1 Delta Airline's Hub-and-Spoke Route Network



### 3.3.2 Reduced Labour Costs

Regulation and protection from the forces of competition enabled labour in the airline industry to earn wages above the competitive market level. Since entry was restricted, airlines had no incentive to lower costs either to expand into new markets or to protect their own market share. Also, since the CAB used the airline's average costs in its fare formula, the airlines were able to pass their high labour costs in part onto the consumer. Finally, the simple industry structure determined by the CAB facilitated union organization. Prior to deregulation, airline workers ranked among the highest paid employee groups in the United States.<sup>41</sup>

Since deregulation, as in contestable markets, wages are increasingly being determined by the market. Initially, new entrant airlines employed labour, as supplied by the market, at much lower costs and with less restrictive work practice agreements. In fact, according to Bailey, "the primary source of competitive advantage for new entrants ... has been their ability to escape from the non-competitive labour practices inherited from the regulated era".<sup>42</sup> Incumbent airlines have responded by negotiating for more competitive wage rates and more flexible work rules. For example, unions have accepted "two-tier" wage structures, whereby new employees are hired at a lower wage. In a more extreme case, Continental Airlines declared bankruptcy in order to replace its unionized workforce with non-union labour, thereby

reducing its average pay/benefit package from \$36,875 in the first quarter of 1984 to \$23,433 in the last quarter.<sup>43</sup>

While airline employees now earn lower wages, in terms of overall employment levels, Morrison and Winston found in the Brookings Institute Study that "deregulation has not had an adverse effect on industry employment".<sup>44</sup> Finally, while total industrial employment has increased by 39% between 1976 and 1986, revenue-passenger enplanements have increased by 87%. Therefore, an increase in labour productivity has been another benefit of deregulation.<sup>45</sup>

### 3.3.3 Efficient Use of Capital

Along with hiring labour, purchasing or leasing aircraft represents a large part of an airline's production costs. Prior to deregulation, the industry's capital structure was designed to service the then typical linear O&D route systems. Large, wide-bodied, labour intensive, fuel-hungry jets flew long distance routes. Once the airlines were allowed respond to consumers' demands, they supplied a different product. Using fuel and labour-efficient, medium-size jets, such as the Boeing 737, the airlines served shorter routes through their hub-and-spoke systems at a greater frequency, saving the largest aircraft for routes connecting hubs. The most noticeable change in the type of aircraft used has been on the very thin routes connecting small communities to hub airports. Instead of insufficient, costly service by medium size jets, these communities are now more frequently supplied with more appropriate turbo-prop

aircraft with an average seating capacity of 18 seats.<sup>46</sup> The consumers seem satisfied with this development since the regional airlines have enjoyed a post-deregulation average growth rate of 14% per annum.<sup>47</sup> The government is also happy with this development since it has greatly reduced its subsidy costs.<sup>48</sup>

#### 3.3.4 Reduced Cross-Subsidization

As explained in section 2.6.2, contestability precludes cross-subsidization. Since an airline should not be able to earn economic rents on one route without inviting entry, it should have no funds with which to subsidize a second route, perhaps in an effort to dominate the market. According to Bailey, "there is evidence that cross-subsidy is disappearing in the aviation industry during the post-deregulatory period".<sup>49</sup> Dr. Bailey shows that since deregulation, fares on thin routes which were previously subsidized through the CAB fare formula have increased, while fares on dense routes, previously overvalued in order to earn funds for subsidization, have in fact decreased. While passengers are unhappy about the increase in fares, according to Ogur, Curtis, and Wagner of the Federal Trade Commission, "most customers are merely being asked to pay the true cost of the service."<sup>50</sup>

#### 3.3.5 Financial Viability

Financial viability is one of the conditions of sustainability in a contestable market. (see section 2.5) As

a result of deregulation, Morrison and Winston estimate the airlines have improved their annual earnings by approximately \$2.5 billion in 1977 dollars.<sup>51</sup> Michael Derchin states that "deregulation is on the airlines' side. Deregulation fosters rapid traffic growth because, I'm convinced, the airlines will continue to improve efficiency of their operations through labour innovations, computerization, and fleet modernization. The cost savings and productivity improvements will enable the airlines to continue to offer attractive fares to the travelling public".<sup>52</sup>

### 3.3.6 Price Approaching Cost

As the industry entered its consolidation phase, fears arose that a cartel-like industry, where airlines dictate price and prevent entry, was developing. Republican Missouri Representative Gene Taylor, who regrets his vote in favor of the ADA, predicted that once it falls into the hands of about 6 carriers, we'll be paying \$1,000 to travel from St. Louis to Los Angeles"<sup>53</sup> Yet, as of March 13, 1988, with 6 carriers serving the market, the maximum 1 way fare was \$470, and the lowest "Money-Saver" fare was \$224 return.<sup>54</sup> This accords with Morrison and Winston's findings which "indicate that this industry shake-out will not cause any harm to travelers' welfare. Actual and potential competition in high-density markets should remain sufficient to maintain the level of benefits achieved under deregulation, and the increased importance of a well-developed commuter network in the more

concentrated competitive environment may actually bring greater benefits to travelers on low-density routes. The evolution of the deregulatory capital and industrial structure of US airlines is thus likely to enhance the welfare improvements already generated under deregulation".<sup>55</sup> Opponents of deregulation often cite the difference between dense and thin routes as proof of monopolistic pricing in less popular markets. However, according to Kahn, "the structure of fares has ... come much more closely to track the structure of costs - reflecting the economies of distance, market density, and of serving discretionary as compared to business scheduling needs".<sup>56</sup> That is, fares on dense long-distance routes are significantly lower than fares on thin, short-distance routes since "it costs more per passenger to provide service on small airplanes, on thin routes, with the frequency required to meet the needs of business travelers, than it costs on the dense routes, where it becomes economic to use larger planes".<sup>57</sup>

While, according to Bailey, Graham, and Kaplan, "carriers in concentrated markets have the ability to price above cost. The degree of this market power is relatively small. Even if some degree of such power should persist in the long run, it would be preferable to the cumbersome and inefficient regulatory mechanism that would be needed to prevent it."<sup>58</sup> Actual and potential competition should keep fares at an acceptable level. George James predicts that fares will continue to be based on costs since the surviving

carriers "are prepared for the entry of new carriers or old carriers with subsidiaries with much lower costs.... They will not relax once they get their costs down, which they are close to doing".<sup>59</sup>

### 3.3.7 Price/Service Choice Variations

Before the airlines were deregulated, there was a touch of elitism attached to flying. Airline managers justified the high air fares based on the high costs of producing a high quality product. They resisted deregulation on the basis that "open skies" would result in lower-quality service. More passengers would be loaded onto the aircraft, meals would be less appetizing, check-in more time consuming and routing less convenient. This argument ignored the fact that the airline's exclusive high standards could only be appreciated by those who could pay. Since deregulation, all the above predictions have materialized, *and*, the number of passengers flying domestically has increased dramatically. Consumers demanded a choice among price\service variations and the airlines, as in a contestable market, have responded to those demands. With different discount levels representing varying levels of service, prior to 1978, 33% of airline passengers flew at an average 25% off the unrestricted full fare, whereas in 1987, over 90% of passengers flew on restricted tickets at an average 62% discount off the full fare.<sup>60</sup> According to a 1986 study by Morrison and Winston, US domestic airline passengers have saved approximately \$6 billion annually through lower fares

and improved service.<sup>61</sup>

### 3.3.8 Small Community Service

Opponents of deregulation argued that the airlines would abandon service to the small communities. It is true that the major and national airlines have reduced their service on these thin routes. However, they are being replaced by commuter airlines, usually with more frequent and more convenient service.<sup>62</sup> The 10 year Essential Air Service Program provided in the ADA of 1978 ensured that those small communities served by certificated carriers would continue to receive service.<sup>63</sup> Ninety-five small communities lost service between June 1, 1978 and June 1, 1983. However, these routes were never regulated by the CAB.<sup>64</sup> They were profitable prior to deregulation, but as other, more profitable opportunities opened up, airlines moved their aircraft. Therefore, as equipment becomes available, service should be reinstated. In Morrison and Winston's opinion, in terms of consumer welfare, "it is especially noteworthy that the largest per-person gains accrue to travelers originating from nonhubs, largely as a result of service improvements".<sup>65</sup>

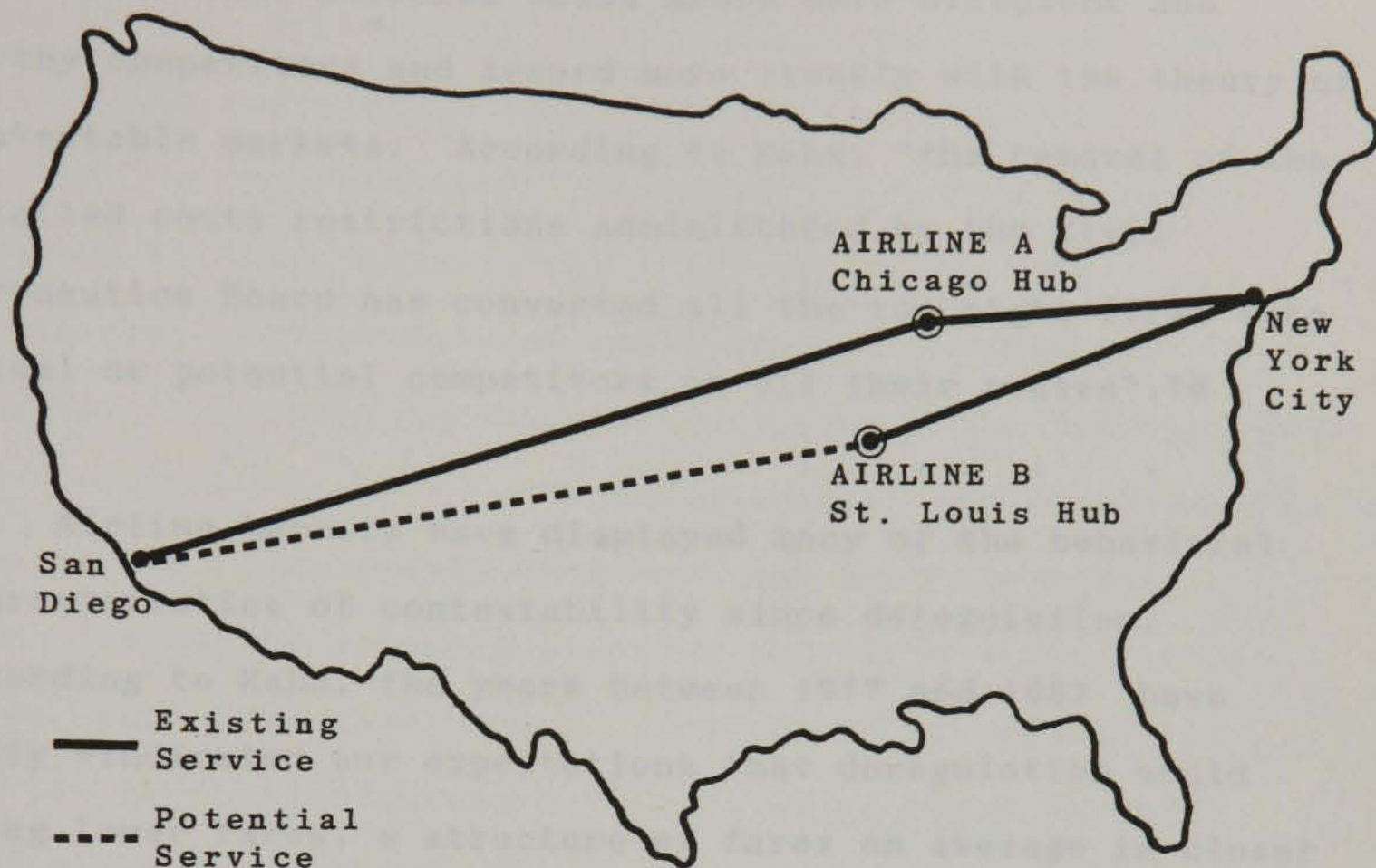
### 3.3.9 Trans-Hub Competition

With the restructuring of the industry's route systems into hub-and-spoke networks, actual and potential competition has taken a new form. "Trans-hub" competition refers to competition on a specific O&D market between airlines serving that market through different hubs. According to airline



analyst Helane Becker, despite the fact that 6 airlines will most likely control almost 90% of the market and access to the country's busiest airports, "to the extent that there are still 30 different ways for me to go from New York to Las Vegas, and none of them are non-stop, fares aren't going up."<sup>66</sup> In addition to enhancing actual competition between airlines, the hub-and-spoke system increases the power of potential competition. Figure 3.2 illustrates how airline "A" serving San Diego to New York via its Chicago hub is disciplined by a potential competitor "B" with a St. Louis hub airport also serving New York City. If airline A charges a fare greater than costs on its San Diego-New York route, airline B need only add another "spoke" to its St. Louis hub in order to compete. The ease of entry into the market puts pressure on airline A to keep fares down. As explained by Levine, spoke "entry can be arranged at virtually all airports, which is why one-stop traffic-flows over competing hubs remain the part of the deregulated system which most nearly displays the contestability that underlay predictions of how deregulated airline markets would behave".<sup>67</sup> Bailey and Williams agree, writing that "in terms of policy implications, enhanced contestability of such markets is likely to come about as much through trans-hub competition as from competition between air carriers who compete at the same hub."<sup>68</sup>

FIGURE 3.2

Trans-Hub Competition

In theory, the threat of entry from an established carrier with an extensive service network already in existence is more powerful than the threat of competition from a entrant to the industry. This is true simply because there are fewer barriers to entry and exit on the market level than on the industrial level. While the prospect of developing the necessary hub-and-spoke network may deter competition from entering the industry, conversely, according to Morrison and Winston, "an established hub-and-spoke airline can ... be a more effective entrant into new markets".<sup>66</sup> If this is the case, a few large airlines all

playing by the same rules of the game, all with well-developed route networks could prove more efficient and worthy competitors and accord more closely with the theory of contestable markets. According to Kahn, "the removal of the detailed route restrictions administered by the Civil Aeronautics Board has converted all the top eight firms into actual or potential competitors on all their routes".<sup>70</sup>

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Airline markets have displayed many of the behavioral characteristics of contestability since deregulation. According to Kahn, the years between 1977 and 1987 "have fully vindicated our expectations that deregulation would bring lower fares, a structure of fares on average in closer conformity with the structure of costs, an increased range of price/quality options, and great improvements in efficiency - made possible by the abandonment of regulatory restrictions."<sup>71</sup> Though these positive developments must be weighed against the more negative conduct and performance aspects covered in section 3.2, the welfare gains to consumers and producers have been so impressive that, Bailey, Graham and Kaplan believe "some version of contestable markets may eventually be demonstrable".<sup>72</sup>

### 3.4 "IMPERFECT CONTESTABILITY"

It must be accepted that airline markets are not perfectly contestable. However, this is no reason to reject the usefulness of B/P/W's theory for analyzing the airline industry, just as previously an imperfectly competitive

industry was no reason to reject the theory of perfect competition. Analysts who have not carefully considered the role of the contestable market theory are sometimes quick to dismiss its applicability. For example, Sawers writes in his study on airline deregulation, "the belief of some economists, protagonists of the theory of contestable markets, that entry to the airline industry was free and easy has clearly been shown to be false. Entry has never been as easy as these economists imagined, and has become more expensive as the industry expanded and airport facilities became more intensively used. The theory of contestable markets has thus been shown to be less relevant to the airline industry and to the real world than its authors once believed".<sup>73</sup> While Sawers' observations are correct, his conclusion is not. The theory of contestable markets is very relevant to the airline industry. It provides the framework necessary to identify, and perhaps correct, deviations from optimal welfare performance.

This is the approach taken by Morrison and Winston in their study "Empirical Implications and Tests of the Contestability Hypothesis".<sup>74</sup> Using the contestability analysis, they come to the conclusion that US domestic airline markets are "imperfectly contestable". At the same time, they illustrate "that contestability is not an all-or-nothing proposition. The development of ideas concerning the effect of potential competitors on welfare has been important".<sup>75</sup>

Morrison and Winston accept that "a perfect-contestability benchmark based on first-best conditions is appropriate"<sup>76</sup> However, they also hypothesize that "in all likelihood, perfect contestability is not present in the airline industry because carriers require time and must absorb sunk costs to obtain gate space and establish patronage. Establishing patronage can be particularly difficult when competing against carriers with computer-reservation systems that bias information in favor of their flights and against carriers that offer frequent-flier programs."<sup>77</sup> To test this hypothesis they conducted an econometric study on the "imperfect" contestability of airline markets.<sup>78</sup> As the dependent variable, Morrison and Winston calculated compensating variations that measured (in 1977 dollars) the difference between the traveller's optimal and deregulated welfare.<sup>79</sup> As independent variables, both actual and potential carriers in the market are included, along with variables accounting for the proportion of business travellers, slot-controlled airports and the different hub classifications. As the number of actual and potential carriers increases on the route, the difference between optimal and actual welfare should decrease, whereas higher values on the remaining regressors should increase the difference. If markets were perfectly contestable, the number of actual competitors would not influence the welfare-change measure. On the other hand, if there were no degree of contestability, the number of potential competitors would

not have an effect. Upon conclusion of the study, Morrison and Winston's "primary substantive finding is that the airline industry is not perfectly contestable but is imperfectly contestable."<sup>80</sup> That is, both actual and potential carriers on the route determine the traveller's welfare. In 1983, they estimated that three potential competitors have the same degree of competitive influence as one actual carrier.<sup>81</sup> Since 1983, the degree of potential competition may have increased. Morrison and Winston conservatively defined a potential entrant as a carrier serving at least one airport on the route. As the existing airlines extend their hub-and-spoke route networks, more potential entrants are created. In addition, these potential entrants have the competitive power of fully developed, sound airlines.

Morrison and Winston base their treatment of "imperfect" contestability on the work of J.S. Bain. In his classic text Barriers to New Competition (1956) Bain wrote "that most analyses of how business competition works and what makes it work have given little emphasis to the force of the potential or threatened competition of possible new competitors, placing a disproportionate emphasis on competition among firms already established in an industry; [and] that so far as economists have recognized the *possible* importance of [the former] they have no very good idea of how important it actually is."<sup>82</sup> By not including potential competition in competitive models, economists make a specification error and

over-estimate the firm's power resulting from market concentration. Thus, "although it is inconsistent with the hypothesis that a given market is perfectly contestable, a finding that market concentration influences efficiency does not preclude the presence of potential competition from also having an effect".<sup>83</sup>

While perfect contestability may be the appropriate benchmark for economic analysis of airline markets, it is clear that the airlines have fallen short of this optimal standard. However, it is important to recognize that this does not represent a failure of the contestability analysis. While the power of potential competition to "extend the beneficent sway of the invisible hand" is central to the theory of contestable markets,<sup>84</sup> Baumol, Panzar and Willig provide the concept of contestable markets "to explore the limits of this power."<sup>85</sup> In terms of policy, support for actual and potential competition "would not be needed if air markets were already perfectly contestable."<sup>86</sup>

. . . . .

Deregulation of the US airline industry has greatly benefited the US airlines and the travelling American consumer. However, as the industry becomes increasingly concentrated, consumers, legislators and economists are beginning to question the future success of the deregulation. Will consumers continue to enjoy low fares and improved service from an oligopoly? The future performance of the industry depends on the competitive nature of airline

markets. As an oligopoly, it is obvious that airline markets are not "perfectly competitive". An alternative theory, the Theory of Contestable Markets, "offers a coherent analysis of market structure issues, and underscores how important investigation of actual conduct and performance is in the presence of concentration attributable to scale economies."<sup>87</sup> Upon weighing the contestable versus the non-contestable conduct and performance characteristics of the industry after consolidation, it can be concluded that US domestic airline markets are "imperfectly contestable." However, in addition to using the contestability analysis to judge the nature of competition in an oligopoly, the airline analyst can use the TCM to identify the barriers to contestability at which future air transport policy can be directed.



PART II. BARRIERS TO CONTESTABILITY -  
LESSONS FOR EUROPE

The principle that effective economic policy should be formulated using appropriate economic theory is fundamental to this thesis. In the United States, the theory of contestable markets was used as an economic basis for domestic airline deregulation. As a result of this policy, according to Baumol and Willig, "we can infer that market forces through the pressure of competition, both actual and potential, have done a commendable if imperfect job in protecting consumer's interests".<sup>1</sup> Since airline markets are imperfectly contestable, the analysis calls for positive government action to promote contestability. This, in the words of Baumol and Willig, is "the area in which the viewpoint of contestability may make its main contribution - as a guide for regulation, rather than as an argument for its elimination".<sup>2</sup> European regulators, who have a distaste for the word "deregulation", should be more receptive to this approach.

In the European context, EC regulators have the

advantage of foreseeing the barriers to contestability as they have evolved in US deregulated markets when using the theory to design air transport policy. They can also evaluate the effectiveness or adequacy of US air transport policy. While European air transport policy has been based largely on political rather than economic priorities, the TCM has crossed the Atlantic to air-transport economists within the EC. Barrett, commenting on the theory, believes that the traditional economic arguments used for competitively restrictive regulation in Europe ignore "the emphasis in economics on potential ease of entry in determining efficiency in a market even where existing producers are few".<sup>3</sup> However, other European economists have not been so receptive to the theory, rejecting its usefulness on the grounds that air transport markets are not perfectly contestable. Sawers, for example, writes that "entry has never been as easy as (some) economists imagined, and has become more expensive as the industry expanded and airport facilities became more intensively used. The TCM has thus been shown to be less relevant to the airline industry and to the real world than its authors once believed".<sup>4</sup> However, it is only when industries are not perfectly contestable that governments should be called upon to intervene. Therefore, the TCM is very relevant for designing policy for imperfectly contestable markets such as those found in the airline industry.

Due to the different political and economic structures

of the US and the EC within which policy is formulated, made into law, and enforced, it is necessary to make a few assumptions before undertaking a comparative study. This study assumes that European airlines will operate after 1992 within a Common European Market, under "a system ensuring that competition shall not be distorted".<sup>5</sup> Considering that under the Treaty, discrimination on grounds of nationality is forbidden (Articles 7 & 79), Rights of Establishment within the Community are protected (Article 52 -58) and anti-competitive state aids for transport are prohibited (Article 80), it is assumed that future intra-community transport markets shall be comparable to US domestic markets, with Member States of the community on the same level as the 50 individual states of America. Whereas in Europe, some of the most resistant barriers to change are political in nature, to address the problem fully is beyond the scope of this study.<sup>6</sup> Therefore, it is assumed that, as proposed by the Treaty of Rome, the EC member states share sovereignty in areas covered by the Treaty and that the Community's air transport policy is designed to benefit the Community as a whole rather than in the national interests of the individual member states. Alternatively, one could assume that Member State representatives realize that what is in the Community's interest is also in the National interest, which is why their countries joined the EC in the first place.

Looking at intra-community air transport markets, Part II is limited to addressing those barriers to free entry and

exit as they have arisen in the United States after deregulation. First, however, economic regulation is today, as was the case a decade ago in the US, a formidable barrier to contestable European air transport markets. Chapter 4 critically examines EC air transport policy and recommends basic changes to enhance contestability. Chapter 5 explains how uneconomically determined access to limited airport resources has reduced the power of the potential entrant in deregulated US markets and suggests changes to access rules for Europe's busier airports. Finally, the central reservations systems (CRSs), the computer systems through which airlines sell their product, evaluate the market and manipulate the various fare/seat combinations offered, have been developed by the major US carriers as barriers to contestability. As markets open up in Europe, it is critical that European CRSs not be allowed restrict market entry. Chapter 6 evaluates the most recent developments of European CRSs.

## CHAPTER 4: AIRLINE REGULATION

### 4.1 INTRODUCTION

The authors and proponents of the TCM recognize ill conceived economic regulation as a prevalent barrier to contestability. This recognition led, in part, to the successful deregulation of the US domestic airline industry. Likewise, the Council of the European Communities, although rejecting US style deregulation,<sup>1</sup> has acknowledged the limitations caused by extensive regulation on intra-community air transport. Through the Treaty of Rome, the member states have the ability to break down the barriers to contestable air transport markets within Europe, starting with the highly restrictive system of airline regulation.<sup>2</sup> Indeed, if the rules of competition contained in the Treaty were applied to European markets, EC air transport policy would be quite similar to that in the US, with licensed European airlines free to enter and exit from any route within the Community without fare restrictions. Although the Treaty of Rome was signed in 1957, the European airlines operated free of its rules for competition for the next 30 years. Based on the belief that air transport markets have special economic properties (see section 2.2) Article 84 of the Treaty excluded air transport from the rules of competition until the Council, "acting unanimously, decide whether, to what extent and by what procedure appropriate provisions may be laid down for air transport."<sup>3</sup> In 1974, the European Court of Justice found that aviation was subject to the general

rules of the Treaty of Rome,<sup>4</sup> however, a common transport policy was needed to implement the rules of competition. Under strict pressure from the European Commission, the Council of the European Communities finally adopted an air transport package in Dec 14, 1987.<sup>5</sup> The December 14 package, which is intended to serve as a "first step" towards an internal air transport market by 1992, contains four pieces of legislation: two Council Regulations on competition (EEC No. 3975 / 87 and EEC No. 3976/87), a Council Directive on fares (87/601/87) and a Council Decision on passenger capacity and market access (87/602/87). In the meantime, however, it establishes an officially approved and legalized cartel, with regulation remaining an effective barrier to contestability.

#### 4.2 COUNCIL REGULATIONS ON COMPETITION

In April of 1986, the European Court of Justice confirmed in the "Nouvelles Frontieres" case that, contrary to the opinion of several member states, the Treaty of Rome competition rules applied to air transport.<sup>6</sup> However, the Commission required a special procedural regulation to implement effectively Articles 85 and 86 in the air transport sector. The December 14 package contains two Regulations to fulfil this requirement.

##### 4.2.1 Regulation No. 3975

With regard to competition, Council Regulation no. 3975 "lays down the detailed rules for the application and

enforcement of Articles 85 and 86 of the Treaty to [international] air transport services" between Community airports.<sup>7</sup> Prior to these rules, air transport had been exempt from the application of Regulation 17/62 which gives the Commission powers to investigate and impose fines.<sup>8</sup> Furthermore, "where the Commission finds that there has been an infringement of Articles 85(1) or 86 of the Treaty, it may by decision ... bring such an infringement to an end."<sup>9</sup> On the other hand, the Commission may find, through application of Article 85(3), that the "agreements, decisions and concerted practices" at issue are exempt from the provisions of Article 85(1).<sup>10</sup> The Regulation outlines the procedures for investigation into suspect behavior<sup>11</sup> and specifies the fines to be imposed if the Commission finds the competition rules to have been violated.<sup>12</sup> Finally, the European Court of Justice has unlimited jurisdiction to review the decision of the Commission.<sup>13</sup>

How will the application of the Treaty's competition rules affect the contestability of European air transport markets? Article 85(1) of the Treaty deems "any agreement between enterprises, and decisions by associations of enterprises and any concerted practices which are likely to affect trade between the Member States and which have as their object or result the prevention, restriction or distortion of competition within the Common Market" incompatible with the Common Market and therefore prohibited.<sup>14</sup> It would seem, therefore, that practices which

hinder contestability such as price fixing, which restricts the freedom of airlines to set fares equal to marginal costs; market sharing, which restrains airlines from competing for passengers; and capacity and access restrictions, which protect incumbent airlines from potential competitors, would all be prohibited under Article 85(1). However, Article 85(3) of the Treaty declares that certain agreements, decisions or concerted practices may be exempt from 85(1) if they "contribute to the improvement of the production or distribution of goods or to the promotion of technical or economic progress while reserving to users an equitable share in the profit therefrom, and which (a) neither impose on the enterprises concerned any restrictions not indispensable to the attainment of the above objectives; (b) nor enable such enterprises to eliminate competition in respect of a substantial proportion of the goods concerned".<sup>15</sup> By the Council's interpretation, as expressed in Regulation No. 3976/87, many of the practices of European airlines and governments which are commonly recognized as distorting competition are indeed exempt under 85(3).

#### 4.2.2 Regulation No. 3976

The second regulation of the package, Regulation No. 3976, specifically addresses the application of 85(3) which details the conditions for exemption from the competition rules.<sup>16</sup> Exemption is a critical issue for European airlines since much of their present operations is based on technical



and commercial cooperation. In particular, the exemptions allow for conditional capacity and revenue sharing, fare setting, airport slot allocation and scheduling, common CRS development and ownership, ground handling and catering. The conditionality depends mainly on improving service, fairness and efficiency. However, on the contrary, if these exemptions are used by the airlines to impede or distort competition, they prevail as serious threats to market contestability. For example, the new regulation allows for "sharing of revenue from scheduled air services".<sup>17</sup> Under what is known as a pooling agreement, airlines sharing a route also share the total revenue earned by the service in proportion to the capacity offered by each airline. (ie: 50% capacity = 50% revenue) The December 14 package allows for "limited pool agreements", placing a 1% limit on the transfer of revenue. Such agreements are permitted as long as the revenue transferred "is made in compensation for the loss incurred by the receiving partner in scheduling flights at less busy times of the day or during less busy periods".<sup>18</sup> However, according to Doganis, "the effect of all pooling agreements, once entered into, is to reduce the freedom of action of the airlines involved and to blunt any competitive tendencies".<sup>19</sup> Whereas Regulation No 3976/87 allows for voluntary, open consultations between airlines covering all aspects of operations,<sup>20</sup> basic textbook oligopoly analysis warns against permitting such a degree of cooperation. As these examples show, regulation, at least during the

transition to 1992, remains a barrier to contestability.

The Council explains the purpose of applying Article 85(3) of the Treaty to air transport in the preamble to Regulation 3976/87. It states that "the changes required to [the present] international regulatory system to ensure increased competition should be effected gradually so as to provide time for the air-transport sector to adapt".<sup>21</sup> It is "*for this reason*" that the Commission may "declare by way of Regulation that the provisions of Article 85(1) do not apply to certain categories of agreements..."<sup>22</sup> and thereby grant exemptions "for a limited period during which air carriers can adapt to a more competitive environment".<sup>23</sup> Granting the exemptions from Article 85(1) can be justified under the first part of Article 85(3) since accommodating the transition to an Internal Market by 1992 may be viewed as a contribution "to the improvement of the production or distribution of goods or to the promotion of technical or economic progress".<sup>24</sup> However, in order to qualify for exemption from the provisions of Article 85(1), the agreements, decisions or concerted practices must satisfy *all* of the conditions of Article 85(3). While one may argue that easing the transition to full competition promotes economic progress, the exemption allowing for the transition should not enable airlines to "eliminate competition in respect of a substantial proportion of the goods concerned".<sup>25</sup> Since the provisions of the package allow for the elimination of competitive pressure, especially from the potential

competitor, the Council has not kept within the bounds of the Treaty.

. . . . .

Whereas the two Regulations are for the most part procedural, the Council's Directive and Decision specify the new regulatory framework within which the Member States and their airlines must operate. The respective countries will still negotiate bilateral agreements, however they must respect the new objective criteria agreed upon in the package when determining fares, capacity, route access and airline designation.

#### 4.3 COUNCIL DIRECTIVE ON FARES

The Council Directive on fares for scheduled air service between Member States seeks to provide more flexible procedures for *approving* fares, thereby enabling carriers to develop markets and better meet consumer needs. It also endeavors to encourage carriers to control their costs, increase productivity and efficiency, and offer more attractive fares. However, with no mention of increasing price 'competition' in the Directive, the Council fails to recognize that only the competitive pressure of a contestable market will produce these objectives. Even though the council recognizes the beneficial welfare properties of price equal to marginal costs, the Directive allows Member States to take "into account other relevant factors" when approving fares.<sup>26</sup> Specifically, the proposed fare may be rejected if it fails to meet the "needs of the

consumer" or provide a "satisfactory return on capital" for the airline.<sup>27</sup> However, given that the forces of actual and potential competition in a deregulated, imperfectly contestable market will ensure that both the demands of consumers and producers are satisfied more closely than heavily regulated markets, the reference to "other relevant factors" is redundant. The Directive also includes "the competitive market situation" and "the need to prevent dumping" as criteria for fare approval.<sup>28</sup> However, if an airline in an imperfectly contestable market is found to exercise unfair market power on a route, then the proponents of the theory prescribe affirmative antitrust action together with positive regulation increasing fair competition.

#### 4.3.1 Approval Regimes

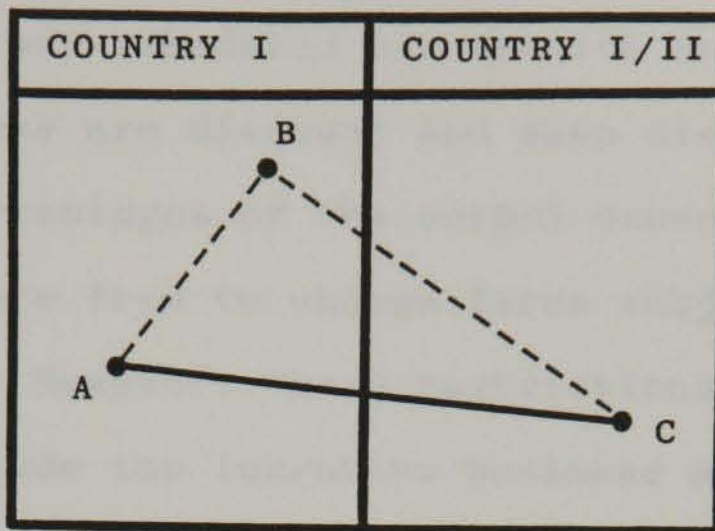
The very fact that fare changes must be approved by a government body violates the basic contestable market requirement of flexible prices. Only if the potential entrant can undercut the incumbent's fare, free of bureaucratic review, and enter *without delay*, will the incumbent behave in the desired manner. The Directive outlines in detail the restrictive procedures and conditions for fare approval. A few, in particular, contradict the prescriptions of the contestability theory. First, Article 4 (2) states that "fares shall require approval by both the States concerned."<sup>29</sup> This double approval system was identified by the European Civil Aviation Conference (ECAC)

COMPAS task force as the most restrictive possible fare approval regime.<sup>30</sup> Due to the protective relationship between most European governments and their 'national' airlines, the COMPAS task force predicted that under this regime, "only matching or higher fares would be approved"<sup>31</sup> Therefore, even if route entry was deregulated, "a State could use tariff control to discourage route access."<sup>32</sup> In other words, the double approval system of fare determination enables incumbent airlines, through their governments, to block potential entry.

#### 4.3.2 Indirect Service

Under Article 4 (4) of the new Directive, an air carrier of one member state may provide indirect service to another EC country *at the same fare as direct service already offered*, provided that the indirect service does not exceed the length of the direct city-pair service by more than 20%.<sup>33</sup> Air carriers exposed to competitive pressure will take advantage of both economies of scale and scope to serve over one-stop routes three different markets with the one aircraft, thereby minimizing per person costs by increasing load factors and by using more cost-effective aircraft.

FIGURE 4.1

Indirect Service

However, looking at Figure 4.1, the airline offering service (A-B-C) can only compete with the more convenient direct service (A-C) if it can offer a more attractive fare to compensate for the added travel time. As a result of Article 4 (4), the potential for such indirect competition is severely limited. Article 4 (5) of the Directive continues on to prevent price competition on indirect service from "Fifth-freedom" carriers by allowing only 3rd and 4th freedom air carriers to act as price leaders.<sup>34</sup> By excluding 5th freedom carriers, the Directive protects the "home" airlines serving the route from "foreign" competition. Both heavy fare and access restrictions render potential competition from 5th freedom carriers powerless. For definitions of "Freedom Rights," see Appendix I.

#### 4.3.3 Zones of Flexibility

The Council, in Article 5 of the Directive, recognizes

that flexible fares are necessary for a more competitive performance. Article 5(1) establishes two "zones of flexibility" on any scheduled air service for automatic fare approval.<sup>35</sup> These are discount and deep discount zones, expressed as percentages of the normal economy fare, within which airlines are free to charge fares subject to specified restrictions.<sup>36</sup> However, these restrictions, which by design effectively exclude the lucrative business market, limit the airlines to competing for the more flexible price-elastic leisure market. Furthermore, in accordance with Article 5(2), these discount fares must be filed with the States concerned at least 21 days before taking effect. This time lead, together with the drawn-out procedures for contesting fares detailed in Article 7,<sup>37</sup> allows the incumbent to prepare for and possibly prevent competitive entry by matching the proposed discount fare, increasing capacity (as allowed) and stepping up its advertising campaign for the market.

While more flexible pricing is necessary for increasing competition, an airline will only cut its fare if the more attractive price allows it to increase its market share. Without free entry, the zones of flexibility and other provisions for price competition are for the most part, cosmetic. The Council Decision on access and capacity severely limits the air carrier's ability in this regard, thereby minimizing the power of the potential competitor.

#### 4.4 COUNCIL DECISION ON ENTRY

McGowen and Tengove, in a study for the Institute for Fiscal Studies in London, conclude that "the most important characteristic of European Aviation markets is the degree of restriction placed on entry."<sup>38</sup> The Council addresses the issue in the preamble to the Decision, stating that "flexibility and competition in the Community air-transport system should be increased" by relaxing "the artificial constraints imposed on the capacity which air carriers may provide and on their access to the market."<sup>39</sup> However, the benefits which would be expected to materialize from the above declaration are severely restricted by provisions in the Decision, especially those which "prevent unjustifiable economic effects on air carriers."<sup>40</sup> As a result, the threat or "declaration of damage to be inflicted"<sup>41</sup> against the incumbent, which is central to the TCM, is essentially neutralized. Bailey confirms that "to the extent that entry is not opened, many of the benefits of contestable behavior may be forgone"<sup>42</sup> in the high cost, expensive air transport markets of Europe.

##### 4.4.1 Capacity Sharing

The Council Decision lays down the rules for capacity sharing and market access. Regarding capacity, Article 3 provides that Member States will no longer be able to insist on an equal share of the seats maintained in a bilateral relationship.<sup>43</sup> The ranges for capacity shares decided on for bilateral control are 55%:45% between 1 January 1988 and



30 September 1989, to be increased to 60%:40% from 1 October 1989. By allowing airlines to increase their share of the market, the Decision should provide the incentive to compete. In Article 4 of the Decision<sup>44</sup> however, "at the request of any Member State for which the application of [the 55%:45% capacity share range] has led to serious financial damage for its carrier(s), the Commission will carry out a review before 1 August 1989 and, on the basis of all relevant factors....., take a decision on whether the [60%:40% range] should be applied or not."<sup>45</sup> Furthermore, the generally more protective Council can reverse the historically more progressive Commission's decision, acting by unanimity.<sup>46</sup>

Market share, by definition, cannot be gained by one airline without a market share loss by another. If all goes well, as is the case on the Dublin - London route, price competition may lead to sufficient market growth to benefit all efficient carriers on the route, irrespective of market share. At the same time, a positive function of the competitive process is to weed out inefficient producers. According to the TCM, if an inefficient incumbent fails to respond competitively to entry, it will not only lose its share of the market, but also its own financial viability. However, the Commission and the Council have the ability through Article 4 to protect the incumbent airlines against financial failure. Unless the Commission and Council together recognize the anti-competitive effects of Article 4, it is possible that the presently curtailed *threat* of

competition will remain largely unchanged by the Decision rules.

#### 4.4.2 Multiple Designation

On market access, the most significant provisions of the Decision cover multiple designation [Article 5], links between hub and regional airports [Art 6], combination of points [Art 7] and fifth-freedom rights [Art 8]. Concerning multiple designation, the Decision opens, without restriction, access on a country-pair basis. However, in the more relevant city-pair markets, "a Member State subject to certain conditions (Art 5(2)) shall not be obliged to accept the designation of more than one carrier on any one route."<sup>47</sup> These conditions limit entry of more than one carrier from each State to the busiest routes in the Community in the first year after notification of the Decision, with less busy routes gradually opening in following years. The routes affected at the time of the Decision are listed in Appendix II. However, as explained by the OECD, "the concept of a 'thin' route may well be a fluid one; routes which now appear able to support only one carrier could possibly support two or more if there were a greater range of consumer choice".<sup>48</sup> Furthermore, the Article on multiple designation is also subject to Article 4, protecting airlines from financial hardship caused by market entry. Again, without the threat of hardship caused by competitive entry, the power of the potential competitor and therefore the degree of

contestability, is severely limited.

#### 4.4.3 New Route Entry

For competitive airline markets in Europe, airlines must have free access to new routes. Article 6 of the Decision opens conditionally intra-community routes between hub (category I) and regional (category II) airports.<sup>49</sup> For example, Ireland has a bilateral agreement with France allowing Aer Lingus to fly between Dublin and Paris, both category I airports. Under the new legislation, Aer Lingus and Air France can now also fly Dublin-Nice (I-II) without renegotiating the bilateral agreement. Significantly, aircraft which carry 70 passengers or less flying between a hub and regional airport are exempted from Articles 3 and 4 since they should not seriously threaten the incumbent airline's service.<sup>50</sup>

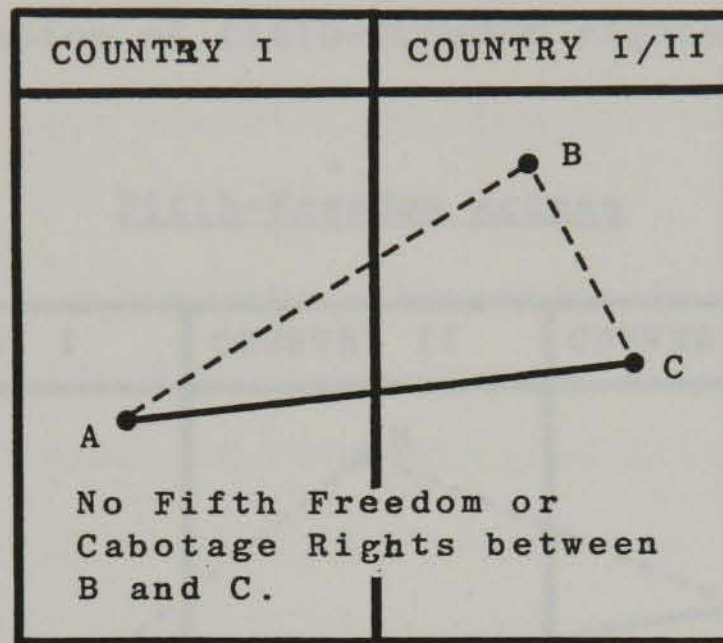
Furthermore, paragraph (2) of Article 6 exempts certain airports which handle fewer than 100,000 international passengers per annum and four airports with insufficient slot and navigational facilities necessary to service the increase in traffic. Eight additional airports are excluded "in order to prevent major disturbance of existing air traffic systems and to allow time for adaptation."<sup>51</sup> The Decision therefore restricts access to capacity limited airports to incumbent airlines, thereby protecting them from potential entry.

#### 4.4.4 Combination of Points

Article 7, permits airlines to combine scheduled air

services to two or more points in other member state(s) subject to the provisions of Articles 3, 4, and 5 and provided that no commercial traffic rights are exercised between the combined points.<sup>52</sup>

FIGURE 4.2 Combination of Points



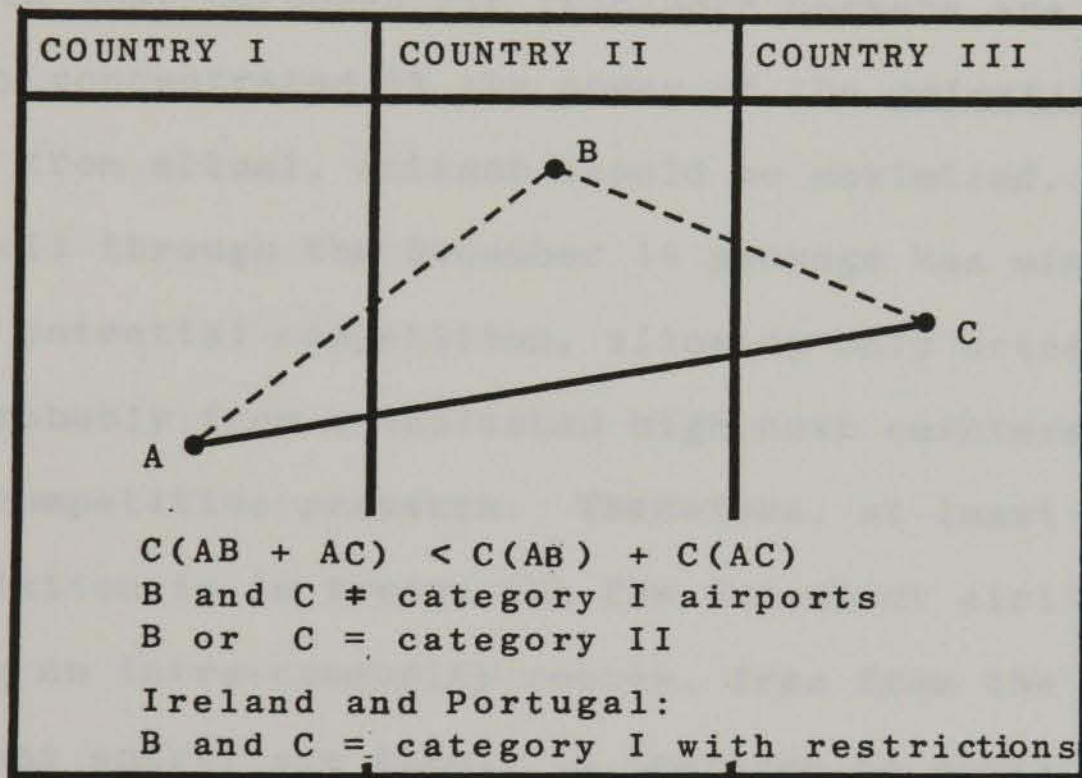
Simply put, according to the contestability analysis, if carrying passengers from A to C via B, as shown in Figure 4.2 is more cost-effective than direct service, then the airline must be free to operate the more cost-efficient schedule. However, the airline can only maximize the use of its resources if it is free to sell its seats to passengers travelling between B and C, exercising 5th freedom rights if B and C are in different countries, or Cabotage rights if B and C are in the same country.

#### 4.4.5 Fifth-Freedom Access

Eventually, in an internal market, all European airlines should have access to all intra-community markets,

irrespective of nationality. Theoretically, Irish citizens may eventually fly Lufthansa from Dublin to Paris. This is, of course, a necessary condition for perfect market contestability within the European airline industry. In what can be seen as a first step towards this theoretical goal, Article 8 of the Council Decision on fares provides for the conditional operation of fifth-freedom rights.<sup>53</sup>

FIGURE 4.3 Fifth-Freedom Access



Taking into consideration the capacity restrictions of Article 3 and the airport access restrictions of Article 6(2), fifth-freedom rights shall be granted to an airline if (a) authorized by the home-state, (b) the service is operated as an extension to service from or to its State of registration, (c) at least one of the airports is not belonging to Category I<sup>54</sup> and (d) not more than 30% of the

carrier's annual capacity on the route concerned is used to carry fifth freedom passengers. These conditions, for the most part, confine fifth-freedom entry to secondary routes and limit such entry to an "insignificant" degree, (see section 1.8.2 - 1.8.3) minimizing the threat of competition from fifth-freedom service. Under these stipulations, the incumbent national carriers may continue to operate non-competitively, while co-existing with fifth-freedom entrant air carriers.

Given that European air transport markets are likely to be highly concentrated,<sup>55</sup> the power of the *potential*, as distinct from actual, entrant should be maximized. However, the Council through the December 14 package has minimized the power of potential competition, allowing only actual market entry, probably from established high cost carriers to provide competitive pressure. Therefore, at least while the new regulation is in force, the few incumbent airlines operating on intra-community routes, free from the threat of significant entry, are likely to continue to operate as a cartel. According to McGowen and Tengove, without freedom of entry and exit in the EC, "each firm's reactions are likely to be conditioned by a knowledge of its *partner's* competitive ability, rather than by the competitive potential represented by possible lower-cost rivals that are excluded from the market".<sup>56</sup>

The December 14, 1987 air transport package does not

break down significantly the regulatory barriers to contestable European community air transport markets. Nevertheless, it is only a "first step" towards competition. While in the US deregulators argued for a quick transition to regulation free markets,<sup>57</sup> gradualism may be a more politically workable strategy in the European international forum. In the words of Elizabeth Bailey; "a significant move towards an efficient outcome is preferable to a rigidly held objective that ends up not being implemented. The implication is not that an economist should bend a little, but that he or she should know not only the proper economic direction for change but also how much a move in such a direction actually matters".<sup>58</sup> Even though many legislative barriers to contestability remain, at least in the short term, the new legislation is a step in the right direction and this in itself matters a great deal to future air transport users. As a result, some degree of competitive pressure should creep into the European airline industry.

If the industry is to make a "significant move" towards contestability however, the protective role of the respective European governments towards their airlines must change. It is only natural that the incumbent national airlines seek protection against competitive pressure. Furthermore, where the government has a vested interest in the health of the airline, it is likely to be sympathetic to demands for such protection. However, in the opinion of B/P/W, "those who have the task of protecting the interests of society must

resist such demands until the evidence for them is all but incontrovertible. We have seen again and again the sorts of benefits that unrestricted freedom of entry can bring. It is dangerous to risk those benefits on the basis of imperfect evidence indicating that, in a particular case, the market mechanism is likely to function badly".<sup>59</sup> Whereas the CAB had evidence from the intra-state air transport markets, the EC can look to the benefits gained from the liberal bilateral agreements existing between the UK and Ireland and the UK and the Netherlands.<sup>60</sup> From this evidence, and of course from the US experience, the arguments for comprehensive economic regulation seem weak. Rather than protecting the consumer from monopolistic fares, or the airlines from destructive competition, it is much more likely that the regulatory system in Europe protects the national airlines from healthy competition. This form of regulation has no place in potentially contestable markets.

#### 4.5 DISMANTLING REGULATION AS A BARRIER TO CONTESTABILITY

The TCM's clear and direct policy implications account for its widespread and relatively speedy recognition. First and foremost, for potentially contestable markets, the theory calls for the removal of "regulatory ... barriers that prevent the access of competitors or that prevent competitive pricing".<sup>61</sup> The application of this proposition would drastically change EC transport policy.



#### 4.5.1 Regulations

Insofar as the exemptions allowed for under Article 85(3) of the Treaty of Rome distort or restrict free entry and exit within Community air transport markets, the Regulations of the December 14 Package constitute a regulatory barrier to contestability. The provisions of the Treaty allow for restrictive or progressive air transport policy, depending on the Commission's and the Council's interpretation. If they were to use the TCM as their economic foundation, the package's Regulations would differ considerably. In the first instance, Article 85(3) exempts agreements, decisions or concerted practices from Article 85(1) if they "contribute to the improvement of the production or distribution of goods or to the promotion of technical or economic progress while reserving to users an equitable share of the profit therefrom".<sup>62</sup> As shown in Chapter 2, contestability maximizes efficiency of production, economic welfare, innovation, and consumer satisfaction. Like Article 85(3), the TCM requires that regulations do not "impose on the enterprises concerned any restrictions not indispensable to the attainment of the above objectives".<sup>63</sup> Finally, the TCM rejects provisions which "enable enterprises to eliminate competition in respect of a substantial proportion of the goods concerned".<sup>64</sup> Therefore, if the Council were to free the Community's air transport markets from restrictive regulation and expose them to the pressures of contestability, block exemptions from the Treaty of Rome's

Competition Rules would not be needed.

Employment of the TCM for designing EC air transport policy would alter the very basis of European regulation. Regulation No. 3975/87 accepts that "international air transport is regulated by a network of bilateral agreements between States which define the conditions under which air carriers designated by the parties to the agreements may operate routes between their territories".<sup>65</sup> Bilateral treaties, or Air Service Agreements (ASAs) are agreements which set down the conditions regarding market entry, fares, route access, and capacity between two states. According to European Commissioner Peter Sutherland, "the bans on new entrants and on price competition, which are characteristic of this system, protect inefficiency and create excess costs which are passed on to the passenger in the form of higher fares. The system prevents free trade in services across European frontiers and is thus contrary to the economic foundation upon which the European Community is based".<sup>66</sup> As long as bilateral agreements exist, markets will remain "international". Therefore, since the purpose of the EC is to break down the national barriers to economic competition and to create a common market, such agreements should be forbidden. Commenting on the December 14 package, Sutherland agrees that towards this goal "the agreement doesn't go far enough. But it has broken the wall and in the end that wall will come tumbling down".<sup>67</sup> A Common Air Transport Policy, creating a genuinely common market, should be truly

multilateral, comparable to US Federal Policy in relation to the individual states.<sup>68</sup> Such a policy would eliminate regulatory barriers to contestability as they currently exist within the EC.

A Common Air Transport Policy must focus on the conditions of market entry, tariffs, antitrust provisions, and of course the existence of non-regulatory barriers to contestability. In addition, a regulatory body must be established to enforce this policy. Since contestability depends fundamentally on free entry and exit, it shall be the first to be addressed.

#### 4.5.2 Entry

The prescription of the TCM is clear; to abolish all regulatory barriers to entry and exit. As a result, not only would a Member State airline be free to enter, without bureaucratic delays, any city-pair market including its own country, but according to Wheatcroft and Lipman, there is also a strong case for arguing "that the Treaty also grants a right to Community companies to establish their operations anywhere inside the EC and to do business freely throughout the Community. In simple terms, establishment in aviation would mean that Alitalia could, if it wanted, set up a UK company to operate a new hub at Manchester, England, and apply to the UK CAA for licences to fly services to Copenhagen or Paris or Brussels, or other places in the Community, and it would be able to do so because of its

Treaty rights".<sup>69</sup> Going to even further extremes, British Airways could successfully demand "Cabotage Rights" on the Galway-Dublin route, allowing the airline to maximize the utilization of its aircraft flying a route from Galway to London via Dublin. When granting licenses to fly intra-community or intra-state markets, the burden of proof of anti-competitive effects would lie with the objecting incumbent airlines.

Even though Wheatcroft and Lipman do not endorse the TCM or US style deregulation, they write in terms of the theory: "at the very least there should always be the threat of the new entry, the gadfly, to ensure that the established airlines are looking over their shoulders to see who is coming up behind them. ... There is a need in Europe for real low cost airline competitors who will have a large enough influence on the scheduled route system to challenge established management attitudes on how things should be done and on what the travelling public actually wants and is willing to pay for".<sup>70</sup> In this respect, contestability in Europe is enhanced by the large number of potential entrants coming from the thriving non-scheduled sector of the industry. According to the 1988 Organisation for Economic Co-Operation and Development (OECD) report, "even though incumbent carriers are not likely to disappear after deregulation, there will still be a great incentive to reduce costs in the face of new entry."<sup>71</sup>

#### 4.5.3 Fares

When designing a Common Air Transport Policy, it is important, according to B/P/W, to remember "an important caveat that should accompany a statement indicating the desirability of enhanced ease of entry. The gains from such a change can be eliminated, and even reversed into losses, unless the elimination of entry barriers is accompanied by suitable reductions in restrictions upon price setting. Freedom of pricing and freedom of entry are beneficial only if they are permitted to arrive together".<sup>72</sup> With this in mind, the Commission must formulate its policy towards fares. In a single European air transport market without regulatory barriers to entry and exit, fare levels would be determined by market forces via airline managers. The Air Transport Policy on tariffs would be free of conditions covering approval regimes or routing of service. Furthermore, by removing zones of flexibility, the Member State airlines would be free to compete for both the leisure and business traveller.

What will free entry and pricing do to the level of air fares in Europe? Looking at the recently liberalized Dublin-London route, air fares have decreased 31% on average since 1985.<sup>73</sup> According to Barrett, "freedom of entry ensures that the operators of thin routes are controlled in their ability to increase prices. This has been shown to be more effective than control by regulators. This Spring, for example, the unrestricted Dublin-Manchester fare, agreed by the British

and Irish government regulators at £204, was reduced by competition to £98 (peak) and £88 (off peak). Low fares ... allow previously uneconomic routes to develop under low-cost airlines".<sup>74</sup> As lower fares make air travel available to a progressively larger number of consumers, support for deregulation should gain momentum.

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Once entry and fare levels are determined by the market, the EC Air Transport Policy will need to be directed towards "European" rather than national airlines. As stated by European Commissioner for Competition, Peter Sutherland, "the traditional attitude of protecting flag carriers regardless of cost is no longer acceptable"<sup>75</sup> A new outlook will become increasingly necessary as the European airlines restructure, using cross-border mergers and acquisitions. For example, if the US has negotiated a liberal ASA with Britain and a conservative ASA with France, and if a British and French airline merge, where does the United States stand? According to Karl-Heinz Neumeister, Secretary General of the Association of European Airlines (AEA), "The only solution would be if the Europeans could talk as one unit" when negotiating ASAs with non-European countries.<sup>76</sup> In what has become known as the "Sorensen Plan", the Head of the Air Transport Division of the Commission's Transport Directorate, Frederik Sorensen, promotes the idea of the Commission taking over the responsibility for negotiation of intra-community air service agreements on the one hand, and between Member

States and non-EEC countries on the other.<sup>77</sup> Such a plan could, for example, enhance competition in both the trans-Atlantic markets and within Europe and the US. Effectively, all fifth freedom rights which US carriers now possess would become cabotage rights. These rights could then be used to negotiate reciprocal rights for European carriers wishing to compete for feeder traffic for their trans-Atlantic services and in markets strictly within the USA. Of course, whether or not such an aviation regime would be used to promote or restrict competition would depend on the intentions of the Commission. However, from past experience, the Commission is likely to act more progressively, and with more power, than each state acting on its own. Although the Plan faces considerable opposition from within the Community, the idea has been cautiously welcomed by the US authorities.<sup>78</sup>

As the European airlines restructure to meet the demands of a competitive market, it must be remembered that the TCM does not prescribe total economic deregulation in an imperfectly contestable market. According to Bailey, Graham, and Kaplan, "government intervention through the anti-trust laws should continue to govern airline merger and acquisition policy".<sup>79</sup> In Europe, the EC must establish a common market in air transport by removing restrictions on market entry and pricing and by adopting a competitive policy that prevents the abuse of market power.

#### 4.5.4 Antitrust

The TCM is sometimes dismissed as too extreme.<sup>80</sup> However, in 1988, Baumol and Willig have defended their theory, writing "it is simply incorrect to associate our writings on contestability with an all-pervasive laissez-faire position on the role of regulation and antitrust".<sup>81</sup> Alfred Kahn, referring specifically to the airline industry, agrees. Looking over US transport policy in the 1980's, he judges that "deregulation of fares and routes was never supposed to mean that government would stop performing its proper functions, such as ... antitrust enforcement".<sup>82</sup> In Europe, regulators are critical of consolidations which have allowed the US "mega-carriers" to exploit their competitive advantage, and hence have rejected US style deregulation. However, Sutherland argues "that is not to suggest that experiences on the other side to the Atlantic ... are irrelevant because they have introduced competition and that is what we intend to do also - albeit in a manner modulated in accordance with European circumstances and in a manner which protects against predatory practices".<sup>83</sup> Europe can learn a lesson from US enforcement of its antitrust legislation.

The Treaty of Rome competition rules were modelled on the anti-trust laws in the United States. However, their application to mergers and acquisitions has never been clearly defined. Although a Regulation on mergers and acquisitions was first proposed to the Council in 1973, no



progress was made until November 17, 1987 when the Court of Justice ruled in the Continental Can - Philip Morris case involving two multi-national tobacco companies.<sup>84</sup> In its decision, the Court ruled that mergers and acquisitions of a controlling interest constituted "agreements" and therefore were subject to Article 85 and 86 of the Treaty of Rome. The judgement reinforces the Commission's recent efforts to develop the Community's Competition Policy to encompass "Concentrations". In April of 1988 the Commission proposed a Regulation based on the following principles.<sup>85</sup> First, the legislation should apply to large scale mergers of Community wide importance. Second, approval must be given before a consolidation takes place. Third, anti-competitive 'concentrations' should be prohibited based on principles analogous to those in Article 85(3). Finally, bodies responsible for enforcement in the Member States and the Commission must cooperate in order to ensure rapid processing. The Community merger policy would override national policy since "national instruments would ... be a damaging risk to the internal market if they were used to favour 'national champions' rather than the interests of the community as a whole"<sup>86</sup>

The Commission recognizes that a Single European Market will result in the restructuring of European industry. In the preamble to the proposed regulation, it acknowledges that "such a development must be welcomed as being in line with the requirements of dynamic competition and liable to

strengthen the competitiveness of European industry"<sup>87</sup> In order to discriminate between the consolidations which enhance, and those which diminish the contestability of air transport markets, the Commission can use the proposed criteria of Article 2(2), paying close attention "in particular to the possibilities of choice of suppliers and consumers, to the market position and the economic and financial power of the undertakings concerned, to their access to suppliers or markets, to the structure of the markets affected, to international competition, to legal and factual barriers to entry, and to supply and demand trends for the relevant goods or services".<sup>88</sup> These conditions are conducive to the TCM's policy recommendations. Since free entry, exit, and pricing would not be possible without a strong antitrust policy, the Council should adopt the Commission's proposed legislation.

Of course, a large airline can take unfair advantage of its dominant position without being involved in a consolidation. However, Article 86 of the Treaty of Rome can be used in its present form to terminate, without exception, such abuse. The Article clearly defines what it considers to be a dominant position and equips the Commission with full powers to control it abuse. Likewise, the Treaty of Rome contains safeguards in Articles 92 to 94 against anti-competitive State aids.

The EC Economic and Social Committee 1985 report "EEC Air Transport Policy" recommends that " unless distortions of

competition through direct or indirect State aids are eliminated progress in opening up the European air transport market does not seem possible. There is a risk of a subsidy race unless the problem of State aids is solved simultaneously with the first liberalization steps."<sup>89</sup> British Airway's CEO Colin Marshal agrees, predicting that Member States will be tempted to "load the dice just a little" to national carriers as liberalization takes effect.<sup>90</sup> Article 92(1) rules that "except where otherwise provided for in this Treaty" such state aid which distorts competition is "incompatible with the Common Market."<sup>91</sup>

Where competition fails to provide the most essential air services, Article 92(3) which permits aid "intended to promote the economic development of regions where the standard of living is abnormally low or where there exists serious under-employment" could be used to develop an Essential Air Service program as was instigated by the US Airline Deregulation Act. According to the ACE, this move would further "transparency in the area of State aids to air transport, and also between the State and public undertakings."<sup>92</sup> The Council should adopt a Regulation under Article 94 of the EC Treaty to ensure effective application of Articles 92 and 93 to air transport.

With solid antitrust legislation in place, the industry could be freed to adopt a more competitive structure. As was the case in the US, such consolidation would be necessary to gain the financial power, marketing opportunities and route

network needed for survival. For example, the small-to-medium size European airlines could possibly merge to form a single "Pan-European Airways"<sup>93</sup> rationalizing their existing systems into a single hub-and-spoke system. In the opinion of SAS president Jan Carlzon, there will be just five or six European mega-carriers by 1995.<sup>94</sup> Which will survive will depend much on how seriously the present incumbent airlines take the proposition of a Single European Market.

#### 4.5.5 Privatization

At the beginning of this chapter, the assumption was made that EC policy was based solely on economic rather than political considerations. In reality, the relationship between the 'national' airlines and their governments constitutes a political barrier to contestability. Of the 12 member states, 2 own their airlines outright, 4 governments hold at least 80% ownership in the 'national' airline, and 4 Member States own between 20 and 50%.<sup>95</sup> At the same time, these governments are expected to adopt a common air transport policy that will dramatically change the competitive environment within which their own airlines operate. A conflict of interests is bound to exist. The answer to this barrier to change is privatization. In the words of Wheatcroft and Lipman, privatization would allow governments to exercise a more relaxed approach to regulation when they no longer have direct responsibility for the ultimate decision and results of the airlines they are

regulating".<sup>96</sup>

Besides easing the political transition to contestable markets, privatization would enhance contestability by exposing management to the pressures of competition. It can be argued from past experience, that a governmental regulatory body is not in a position to judge whether or not the national airline is operating at inefficiently high costs or earning economic rents in particular markets. On the one hand, the Department of Transport may not have sufficient financial or market data for a conclusive evaluation.<sup>97</sup> On the other hand, since the government itself has a strong financial stake in the airline, superfluous expenditure or super-normal profits may be "tolerated". Airline managers, free of the financial and bureaucratic restrictions of government ownership, should be more sensitive to the pressures of contestability.

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Regulation exists as a barrier to contestability within the EC. It is also easily recognizable and under the domain of decisive political intervention. Since it is erected by politicians, it can also be dismantled or changed through the political process. Another barrier to contestability which lies closely under the jurisdiction of Member State governments is restrictive airport access procedures. Most airports are governed by state airport authorities. The decision, therefore, of who has access and under what conditions, ultimately lies with the government. Therefore,

once convinced of the importance of economically efficient and unbiased rules of access to the contestability of markets, the Member States of the EC can take steps to eliminate the difficulties of airport access as a barrier to contestable European air transport markets.

## CHAPTER 5: AIRPORT ACCESS

## 5.1 INTRODUCTION

According to Bailey, "the new contestability analysis makes clear that the ability to move aircraft rapidly into and out of markets is the competitive *quid pro quo* for open pricing. If new entry is severely restricted at critical hub airports, then pricing freedom will lead inevitably to high prices that reflect the scarcity of the resource".<sup>1</sup> Ideally, in a contestable city-pair market, potential entrants should have equal opportunities for access to, and usage of airport facilities and airspace as incumbent airlines. If access rules to airports and airways discriminate against potential entrants then the market cannot be perfectly contestable. However, an insufficient supply of airport facilities to meet the growing demand has caused problems for contestability in many markets. Before going any further, one must make the distinction between limited capacity and restricted access. While limited capacity may result in scarcity rents for the airport or slot owners, it does not directly threaten contestability. However, restrictive access rules which effectively act as barriers to entry, enable incumbent airlines to gain power over potential entrants in the air transport city-pair market.<sup>2</sup> According to Levine, "Only rents earned from market power ... can be attributed to problems with contestability in the airline industry."<sup>3</sup> Levine concludes therefore, that resolving the access problem "successfully is a necessary condition for contestability to

produce an equilibrium resembling that of competition".<sup>4</sup> Commenting in 1987 on the airport/airways predicament and contestability, Elizabeth Bailey admits that "the main flaw in our thinking (and I now see it) was that we did not realize that the Federal supply of Infrastructure to the Airline Industry (airports, controllers, Air Traffic computer support) would be so unresponsive to the demand for added capacity stimulated by deregulation".<sup>5</sup> The U.S. transport authorities have not dealt well with the problem. Airport congestion has negatively affected service, provoking a consumer backlash against the airline industry. However, according to Kahn, "there is no sense blaming the airlines; they are trying to give the public what it wants - flights into or out of the most popular airports at peak hours. The problem is that they are getting the wrong price signals. The cure is to set the prices at levels that equate demand and supply."<sup>6</sup> Recent positive developments should improve the situation. Meanwhile, the EC Member States must take note of these developments and prepare for the inevitable infrastructure capacity shortage which will arise in deregulated European air transport markets.

## 5.2 LESSONS FROM THE USA

### 5.2.1 Problems for Contestability

In the late 1960's, commercial jet aviation was becoming increasingly popular, yet investment to expand the air transport infrastructure needed to accommodate this growth



was not forthcoming.<sup>7</sup> As a result, airport congestion developed in the United States. The problem of airport congestion is purely economic. At current airport charges, there are not enough slots to accommodate all those airlines which wish to land or take-off at their chosen times. Simply put, slots, at their current supply, are underpriced. A "slot" is a reservation for landing or take-off given in accordance with air traffic capacity as regulated by the Federal Aviation Administration (FAA). For safety reasons in 1968, the FAA imposed a quota on takeoffs and landings at four of the busiest airports: Chicago's O'Hare, New York City's Kennedy and La Guardia, and Washington D.C.'s National. Incumbent airlines serving the four airports were given "grandfather rights". These rights granted the incumbents first claim on slots which they were already using, with the provision that unused or vacated slots be reallocated by the FAA. In order to schedule air traffic movements (ATMs) at these slot restricted airports, the CAB authorized carriers to form Scheduling Committees and to divide up slots amongst themselves, working on a rule of unanimity. The CAB also automatically granted the participating carriers the necessary antitrust exemption.<sup>8</sup> After deregulation however, weighing the gains obtained from the antitrust immunity, such as reduced congestion, against the possible losses resulting from anti-competitive behavior, the ADA of 1978 removed the block exemption. The ADA made antitrust immunity discretionary rather than automatic.<sup>9</sup>

Today, carriers wanting agreements may apply to the DOT for specific exemptions from the antitrust laws, however, the department has been hesitant to grant immunity.<sup>10</sup> Rather, since April of 1986, slots at these airports have been allocated by the market with airlines free to sell and buy slots as needed. This system is likely to spread to other airports, since according to a 1988 Federal Trade Commission (FTC) report, at peak-demand times, "demand for airport services exceeds the supply of these services at 22 airports".<sup>11</sup> A Bill requiring 41 airports to have slots limited by the FAA is under consideration by Congress.<sup>12</sup> Generally, at non-restricted airports, slots are given on a first-come first-served basis. However, as traffic increases, airport authorities across the US are now experimenting with alternative means of allocating slots which are more conducive to competition.

Access to American airport terminal and ground facilities is determined by the airport operator which answers to local government. In order to finance the construction of airports, authorities negotiated long term leases with the airlines, and in some cases direct airline terminal ownership was encouraged.<sup>13</sup> These conditions gave the airlines full control of airport facilities and therefore the ability to set the terms of entry for both potential and actual competitors. Laurence Phillips, chief economist with the US Department of Transportation, addresses the problem of the resulting anti-competitive strategies. Of course, all

competitive behavior is strategic, however "where one firm takes actions to disadvantage a competitor, strategic behavior usually seeks to reduce the demand for a rival's product or service or to raise a competitor's costs".<sup>14</sup> For example, the incumbent controlling airline may reduce demand for its rival by restricting new entrants to undesirable slot times which do not facilitate its connecting flights. Or, it could raise costs by including restrictive ground handling clauses in the entrant's lease. A blatant example of anti-competitive strategic behavior occurred when Laker Airways, attempting to start a New York - London service, searched for gate and terminal space at Kennedy Airport in 1977 and 1978. The International Terminal, owned by the New York Port Authority, was full, and slots were not yet on the market. Laker went to other airlines with excess space to rent, but as potential competitors, they would not supply.<sup>15</sup> Airport authorities have also been guilty of directly restricting contestability. At California's Orange County John Wayne Airport for example, the airport authority has imposed rules subjecting entrants to stricter noise and curfew standards than incumbents as a means of operating within environmental and capacity constraints.<sup>16</sup>

### 5.2.2 Positive Developments

According to Bailey, Graham and Kaplan, "the concern of public policy in a deregulated environment is with the manner in which airport access and slots are allocated among the

airlines".<sup>17</sup> The OECD adds, that under such a policy, "capacity restrictions should be instituted with an eye toward allowing the price mechanism to determine the best outcome, while always remaining sensitive to the danger of mergers in highly concentrated markets with significant airport access constraints."<sup>18</sup>

Two market-based solutions have been introduced to solve the congestion problem. The first is targeted at capacity limitations, while the second is aimed at the more crucial access problem. First, the airport authority can initiate peak-period pricing. By charging higher landing and take-off charges for the more popular slots, commercial airlines and general aviation users who do not value the slot at the peak prices are encouraged to reschedule their flights to less congested periods of the day. While this solves the congestion problem, peak-period pricing is not conducive to contestability if potential entrants do not have an equal opportunity to pay for the slots. Even if enough slots are freed for new entry, peak-period pricing may disadvantage new entrants. Rental payments for slots are sunk costs. Once they are paid to the airport authority, they cannot be retrieved and therefore raise the risk of entry. In addition, small airlines, especially airlines operating with small aircraft, may not be in a position to incur the higher peak demand charges. Reacting to Massachusetts airport authority's "restructuring" of landing fees at Boston's Logan Airport, Regional Airline Association president Duane Ekedahl

stresses that the new peak-period pricing system will not only harm the small regional airlines, but also the small communities which they serve. He states that "the key to New England air service is timely connections at Logan, which is a federally funded airport and cannot be allowed to discriminate in this way against the regional airlines".<sup>19</sup>

A second option leaves the allocation of slots to the market place. In 1979, a Polinomics Research Laboratories study looked to an alternative, less anti-competitive approach to allocating scarce airport slots.<sup>20</sup> The authors, Grether, Isaac and Plott rejected cooperative unanimity scheduling agreements for allocation of the scarce resource. Rather, they recommended an auction mechanism to ensure slots would go to those airlines (and therefore passengers) which valued them the most. Under a slot auction system the airport and FAA authorities can determine the number of slots available, depending on structural, safety, and environmental restrictions. The airlines can then resell slots, preferably by auction through the airport authority, acting as a broker, to prevent anti-competitive strategic behavior. The airline which places the highest value on a particular slot will buy the rights over its use. Furthermore, since the investment into a slot purchase is retrievable, risk of entry is reduced. Airport slots are valuable assets which do not deteriorate with use, and since the long-term demand for slots is expected to remain strong, the resale market should remain healthy. Therefore, a potential entrant into the

market, backed by its bank manager, should be able to raise the necessary investment capital to compete for the more desirable slots. Bailey and Williams write that "deregulation was premised on the ability of local governments, which operate airports, to maintain competitive entry at their facilities, and on the ability of U.S. antitrust laws to prevent full control of an airport by an air carrier."<sup>21</sup> While airport authorities have been slow to respond to the need for reform, changes are being adopted which should improve market contestability. For example, airport authorities are now negotiating short-term leases with airlines for airport terminal facilities which include "use-or-lose" clauses, allowing the authority to buy back unused space. This prevents the leases from being used anti-competitively. Regarding slot allocation, airlines have been allowed to resell slots since April 1986. From FAA data, it does not appear that airlines are holding onto slots specifically to prevent entry. Since restrictions were removed in 1986, the slot market at the four slot -restricted airports has been functioning well, with more than 1,000 slots sold since April 1986.<sup>22</sup> Even if slot owners were able to extract some degree of market power, the market option is preferable to regulatory access rules which discriminate against potential entrants and essentially eliminate the threat of entry. Finally, pressure is mounting for airport and ATC privatization, allowing them to operate solely as economic entities, responding to the needs of the air

transport industry.<sup>23</sup>

### 5.2.3 Legal Foundation for Change

The proponents of change are equipped with the legal framework necessary to accommodate the transition to contestability enhancing access rules. In general, new entrants can call upon the antitrust doctrine of equal access to essential services. For example, it can be argued that airports should not receive public aid from the FAA unless economically determined access rules are adopted. In the meantime, where slots are not on the market, the antitrust authorities should take into account the feasibility of potential entrant access when reviewing merger applications. According to Edward Beauvais, Chairman and CEO of America West, the problem with consolidation "is that when you buy an airline you buy up all the available space at key airports. With Delta buying Western and American buying AirCal, they bought up all the space at Los Angeles International and there's no space for competitive carriers to grow and develop. That should not be allowed to happen. We've got laws that protect the interests of the free enterprise system and those laws should be enforced."<sup>24</sup> The DOT has used these laws to encourage market entry to slot-restricted airports. In the case of the Texas Air (owner of New York Air) acquisition of Eastern Airlines, both companies operated a New York - Washington D.C. shuttle service, using slot-restricted La Guardia and National airports. The DOT feared that a merger would result in one company controlling the

majority of available slots, thereby excluding potential competitors from entering the market. Although carriers are free to buy and sell slots at these airports, the DOT believed a larger number of well distributed slots would be necessary for competitive entry than would be available on the market. On this basis they opposed the merger. As a compromise solution, Texas Air offered to sell slots to Pan American Airways to start a competing shuttle service on the route. However, the DOT were not satisfied that the number of slots offered would be adequate. Texas Air offered more slots for sale to Pan American and the merger was approved on October 1, 1986.<sup>25</sup> Bailey and Williams emphasize that such oversight by airport and antitrust authorities "needs to be continual to ensure that the competitive process places reasonable effective bounds on the ability of any single carrier to sustain rent-extracting positions that are too far above competitive levels."<sup>26</sup> Finally, once slot ownership has been determined, the DOT is authorized under the Federal Aviation Act of 1958 Section 411 to decide if an airline is engaging in "unfair or deceptive practices or unfair methods of competition..." and to remedy the situation, thus controlling possible predatory or exclusionary behavior.<sup>27</sup>

### 5.3 LESSONS FOR EUROPE

As regulatory barriers to contestability are removed, pressure on European airports and airways will increase. According to the OECD, "the question of access to scarce



airport facilities, particularly gates and slots, ... is likely to become crucial as liberalisation proceeds in Europe".<sup>28</sup> This can clearly be seen from the growth in the Dublin - London market due to the liberal bilateral agreement between Ireland and the UK. The Irish Government, in its 1985 Transport Policy Green Paper, reported that "traffic at the three (Irish International) airports has been sluggish over the past decade".<sup>29</sup> Furthermore, air transport had been losing market share to the ferries on cross-channel and continental routes.<sup>30</sup> Liberalisation of the route, adopted on May 23, 1986, dramatically reversed this trend. As Table 5.1 shows, liberalisation has stimulated the demand for Dublin airport's services.

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TABLE 5.1 DUBLIN - LONDON MARKET GROWTH

Year	Total Passengers	% Change
1980	968,621	
1981	929,621	-4.2%
1982	890,667	-4.2%
1983	879,286	-1.2%
1984	929,164	5.4%
1985	983,368	5.8%
1986	1,194,501	21.5%
1987	1,591,760	33.3%
1988*	2,000,000	25.6%

\* Estimate

Source: Aer Rianta - Irish Airport Authority.

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Irish airports do not have a capacity problem and therefore access restrictions should not impede contestability.

However, airports and air traffic control systems in Europe

are already under heavy pressure, especially at and over the large hub airports such as London, Paris, Frankfurt and Rome.<sup>31</sup> European infrastructure will have to expand to accommodate the forthcoming increase in air traffic.<sup>32</sup> However, whereas flights can be produced quickly, runways, terminals and ATC systems take time to construct and develop. And, as in the US, airport authorities must work within environmental and political constraints which restrict expansion. Therefore, it is essential that the Community's existing air traffic infrastructure be allocated in such a way as to enhance competition between airlines, both actual and potential. EC air transport policy must address member-state airport access if it wishes to encourage contestable intra-Community air transport markets.

### 5.3.1 Access Restrictions

Congestion at each European airport depends on its placement in the European and trans-continental hub and spoke networks of the world's airlines. Even though routes are currently loosely scheduled on such a system, airlines are expected to rationalize and expand their networks once free to do so. Some airports will gain and others will lose traffic. As existing hubs become over congested, new hubs will be developed. Two examples of diverse airport positions are Heathrow in London, the busiest airport in Europe, and a peripheral community airport: Dublin. A Study of access determination at these two airports, as addressed by the EC December 14 air transport package, exemplifies the current

European position.

The British Government issued an "Airport Policy" White Paper devoted to the future of British airports, in particular those controlled by the British Airport Authority (BAA).<sup>33</sup> The BAA has adopted two rules with the intention of relieving congestion at Heathrow. First, airlines not operating scheduled international passenger services at Heathrow before April 1977, are not permitted to start services. Second, "whole plane charter" operations are also banned with some *ad hoc* exceptions allowed since 1983. These restrictions are incorporated in Britain's bilateral agreements. Where rights are extended to new entrants to serve London, they are granted on conditions excluding Heathrow airport. Landing and take-off slots are allocated by a Airport Scheduling Committee, made up of incumbent airline representatives. The Government recognizes "that the present system, if continued without change, will increasingly limit competition between airlines, to the ultimate detriment of air travellers".<sup>34</sup> Nevertheless, while the White Paper accepts, in principle, the auction system as the appropriate solution for slot allocation, the Government is reluctant let the market determine access and allocation since "such is the potential demand at Heathrow and Gatwick that such a system could not be expected to work without raising the general price of slots at those airports well above the airport's long run marginal costs".<sup>35</sup> However, scarcity rents earned by slot sales should not impede

contestability. The British Government also fears that the small regional airlines would not be able to compete in the market against the financially stronger, large airlines for airport slots. Nevertheless, retrievable investment in slot ownership represents less of a risk to the small carrier than sunk payments for slot rentals. The report sets out four principles for guiding future policy.<sup>36</sup> First, airport access rules should not discriminate on the basis of nationality.<sup>37</sup> This is, of course, a necessary condition for intra-community contestable markets. Second, "the detailed job of deciding who should operate and when has to be left to the airlines, working through Airport Scheduling Committees."<sup>38</sup> As already explained, this provision could seriously limit contestability. Third, regulation, through the air transport licensing system and scheduling committees, of airport access will continue in order to "ensure that the volume of the potential demand for landing rights at any particular airport is broadly in line with its capacity".<sup>39</sup> That is, regulation is needed to restrict demand to conform to the infrastructure supply. The market should do this much more efficiently. Fourth, "there should, if possible, be a larger role than now for the market in the working of the system".<sup>40</sup> One suggestion contained in the report, which attempts to minimize the contradiction between the second and fourth principles, is to initiate a system of slot trading, where "those airlines allocated slots by the Scheduling Committees in the normal way would be able to sell these to

other airlines who wished to gain access and who had the required licenses or permits for the airports concerned".<sup>41</sup> However, if new entrants are excluded from the trading market, contestability is minimized.<sup>42</sup>

At Dublin airport, with sufficient capacity to accommodate demand, no structural barriers to new entry exist. Dublin airport is owned by the Irish Government and managed by Aer Rianta, the state airport authority. Landing and take-off reservations are allocated on a first-come, first-served basis and charged a flat rate, independent of time of day or season.<sup>43</sup> Although, as traffic continues to increase, Aer Rianta may have to reconsider this policy and initiate peak-period pricing. Whereas Aer Rianta benefits economically from both a wide network of routes and a large number of airlines serving those routes, the airport authority, with the Department of Tourism and Transport does not base its decision on new entrants solely on financial grounds. Even though not restricted by capacity, the airport does not accept new entrants without question. Aer Rianta imposes criteria for entry based on its "wider responsibility to air transport".<sup>44</sup> When reviewing an application, the airport queries whether the new entrant will provide healthy competition and future growth in the market. If the state authorities believe, for example that the route will not, by dividing up the market, sustain the extra capacity provided by the service, the new entrant will be refused airport access. It must be asked, however, why the airport authority

is in a better position than the potential entrant to judge the probability of success. Such "public utility" criteria, if responsible for deterring entry, would represent a barrier to contestability.

On a Community level, the December 14 package contains provisions on airport access which directly restrict market contestability. Article 9 of the Council Decision<sup>45</sup> states that "a Member State shall not be obliged to authorize a scheduled air service in cases where: (a) the airport concerned in that State has insufficient facilities to accommodate the service; (b) navigational aides are insufficient to accommodate the service." As with the exclusionary Heathrow practice, this stipulation essentially eliminates the threat of potential entry to markets serving these airports. Furthermore, Council Regulation 3976/87 exempts slot allocation and scheduling agreements at airports from the prohibitions of Article 85(1) of the Treaty against anti-competitive practices.<sup>46</sup> Article 2 of the Regulation exempts slot allocation at airports and airport scheduling, "on condition that the air carriers concerned shall be entitled to participate in such arrangements, that the national and multilateral procedures for such arrangements are transparent and that they take into account any constraints and distribution rules defined by national or international authorities and any rights which air carriers may have historically required". These conditions do not protect the right of the potential entrant as required in a

contestable market. First, even if the Council considers potential entrant airlines as a "concerned" air carrier, it is doubtful that they would have equal influence in the decision process as incumbents. While scheduling and slot allocation agreements are to be transparent, the market will allocate without misguided, bureaucratic, political judgement, and therefore, at a lower cost. The fact that such agreements must take into account *any* national access rules, shows that the Commission does not recognize exclusionary criteria as anti-competitive. Finally, the clause protecting the rights of incumbent airlines to the *status quo* blatantly contradicts the contestability theory. According to Paul Appleby, Strategic Development Manager of Ryanair, "essentially, what this does is leave existing slot allocation arrangements intact, insofar as they provide that incumbent carriers have preference in obtaining slots. This means that new carriers will probably continue to be precluded from establishing a marketable presence at congested airports, notwithstanding their being licensed for service at such airports."<sup>47</sup>

### 5.3.2 Recommended Changes

Supporters of pro-competitive airport access rules "believe it should clearly be the duty of airport operators to make airport access available on fair and reasonable terms that give all carriers an equal opportunity to compete".<sup>48</sup> Since this "duty" is necessary for market contestability in

Europe, it should be written into the European Community's laws.

The first step towards such an end must be to educate the Commission on the importance of non-prejudicial airport access. For it is apparent from a 1987 address by Commissioner Sutherland that this has not yet been accepted. Supporting the appropriateness of "grandfather rights", he states that "I am aware that this system of grandfather rights has been criticized and that the critics argue that this priority should not be absolute but should be no more than a rebuttable presumption. However while I recognize that new entrants may sometimes feel frustrated by the difficulty of acquiring favoured slots it may be that the existing slot allocation system while imperfect is like democracy the best system we have or can devise."<sup>49</sup> By so easily dismissing the problem, it is evident that Sutherland does not recognize the seriousness of the issue. Rather, by accepting that charges should be set by regulators rather than by the market,<sup>50</sup> the Commission is dealing only with the capacity limitations and not the access issue.

Restrictive regulations which discriminate against potential entrants, must be prohibited. Rather, a slot auction method should be introduced, where the airport operator invites bids, allocating slots to the highest bidder. To avoid anti-competitive strategic behavior, slots should be sold through an airport authority, rather than directly between airlines. According to Starkie and



Thompson, "to permit this might encourage predatory-type practices where airlines refuse to sell to specific competitors." In the case of the London airports, "a brokerage operation arranged and perhaps managed by BAA or the Civil Aviation Authority would be an important requirement."<sup>51</sup> Commenting on this option, Sutherland believes that "the trading of slots ... tends to favour the large established carriers who can outbid the smaller carriers in the sale of slots".<sup>52</sup> However, Starkie and Thompson, studying access to BAA airports, "do not see limited financial resources constituting a barrier to entry because saleable rights to access would represent a fixed but not a sunk cost."<sup>53</sup> The IFS study concludes that entrants would only "be at a disadvantage (albeit small) ... if existing users were given their slots. The entrant, unlike the incumbent, would have to service the capital used for the slot purchase."<sup>54</sup> At least at a slot auction, the potential entrant has a fighting chance to compete. To improve this chance, the airport authority may want to consider reserving a certain proportion of slots for auction among regional (spoke only) airlines and new entrants. This would be in the airport's own financial interests, as the more diverse are its clients, the less likely it will be affected by shifts in demand from one airline or market to another.

Regarding ground and passenger handling, Article 2(2) of Council Regulation (EEC) 3976/87 exempts agreements between airlines which provide for "technical and operational ground

handling at airports, such as aircraft push back, refueling, clearing and security" and "handling of passengers, mail, freight and baggage at airports".<sup>55</sup> Such immunity could result in anti-competitive action aimed at potential entrants. Therefore, the Article should also make such operational agreements purely voluntary, ensuring the option for the entrant to provide its own ground and passenger handling services. With regard to Dublin airport, Aer Rianta has set specific provisions governing ground and passenger handling services.<sup>56</sup> First, the national airline Aer Lingus, which is contracted by Aer Rianta to provide overall ground and passenger handling, must accept all requested contracts. Second, any airline has the right to operate its own ground handling. This option has been taken up by new entrants Ryanair, and Club Air. However, a third provision effectively eliminates competition between airlines for handling contracts. An incumbent airline, other than Aer Lingus, which wishes to provide handling services for an entrant must first become the General Sales Agent or "GSA" for that airline.<sup>57</sup> For example Club Air first had to convince Virgin Atlantic to employ Club as its GSA before winning the contract to handle its airport services. According to Club Air's Station Manager Carol Fitzpatrick, this provision effectively grants Aer Lingus a monopoly on serving the profitable market for handling services.<sup>58</sup> Here a monopoly with such entry barriers exists, there is always the danger that Aer Lingus could use its position to

disadvantage the competing airlines. Whereas Joseph O'Connell, Aer Rianta's General Manager of Marketing and Finance, has argued that Aer Lingus has a history of providing high quality ground handling, in part because it serves its own passengers, this incentive structure may change as competition increases. For example, in highly competitive markets, overly-keen employees of one airline, but baggage handling for a competitor, may be more careless, or operate more slowly than when serving their own airline.

Finally, the Commission should look closely for barriers to airport access when reviewing airline consolidations. Its recent handling of the BA-BCAL merger was encouraging in this respect.<sup>59</sup> The Commission first began investigating the merger in 1987. It was concerned that the proposed merger would substantially reduce competition within the common market due to the enlarged British Airway's future control of airport slots at Gatwick and Heathrow airports. In the end, under pressure from the Commission, the compromises "given by BA, which are additional to those already given by the UK Mergers and Monopolies Commission, should create stronger opportunities for new competitors to emerge, by improving substantially the prospects for other carriers to be licensed on a number of former B.Cal. European routes, by limiting the merged airline's share of slots at Gatwick airport and by ensuring that the merger does not lead to constraints on slots at Heathrow airport."<sup>60</sup>

### 5.3.3 Legal Foundation for Change

As in the United States, the Commission is equipped with the legal foundations to implement the changes necessary for contestability. Restrictive airport access rules are contrary to the Treaty of Rome's Article 85 (1). According to the contestability analysis, they have erroneously been given exemption under Article 85(3). Furthermore, since most European airports are state owned or controlled, Article 90 (1) of the Treaty, which states that "Member States shall, in respect of public enterprises and enterprises to which they grant special or exclusive rights, neither enact nor maintain in force any measure contrary to the rules contained in this Treaty" should encompass all aspects of airport utilization.<sup>61</sup> Moreover, Article 90 (2) ensures that "any enterprise charged with the management of services of general economic interest or having the character of a fiscal monopoly shall be subject to the rules contained in this Treaty, in particular to those governing competition".<sup>62</sup> This should apply to the management of airport services. Finally, Article 90 (3) ensures "the application of the provisions of this Article and shall, where necessary, issue appropriate directives or decisions to Member States".<sup>63</sup> Therefore, the Commission is equipped with the necessary authority to enact legislation combatting restrictive airport access rules which constitute barriers to contestability. In the meantime, according to Commissioner Sutherland, "the Treaty does provide some protection for new entrants against

an unreasonable refusal of a slot. Article 86 of the Treaty, which prohibits abusive behavior by dominant undertakings can be used to control problems of discrimination, if there are any, in allocation of slots so that specific complaints by airlines which feel they have been badly treated or victimized could be dealt with on an *ad hoc* basis by the Commission."<sup>64</sup>

With respect to airport ground and passenger handling, Council Regulation 17/62 gave the Commission wide powers of investigation of and enforcement over anti-competitive practices. Prior to the December 14 package, the Commission did not possess these powers over the operation of commercial air transport. However, prior to the package, Regulation 17/62 was found to apply to ancillary transport activities such as CRS, handling and catering services. These powers were put to use in 1985 during the Olympic Ground Handling case<sup>65</sup> and should be used to investigate restrictive contracts such as those instituted by Aer Rianta.

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Certainly, even with market-determined slot access, limited airport capacity restricts market contestability. If the supply of airport facilities exceeded demand for all intra-European markets, potential entrants would not have to consider airport access costs when calculating entry viability. Therefore, in order to maximize contestability in the long term, the Community must ensure that sufficient infrastructure is provided for growing air transport demands.

## CHAPTER 6: CRS OWNERSHIP

### 6.1 INTRODUCTION

Although individual systems differ, a Central Reservations System (CRS) is basically a large computer, with a central database, accompanying software, and a system of terminals and printers located mainly in travel agencies. The title "Central Reservation System" is misleading, giving the impression of a simple system by which the airlines handle their reservations. In fact, CRSs are complex computer systems with many diverse functions such as car rental reservations, ticketing, load factor maximization, market analysis, office management and accounting. Airlines first automated their own in-house reservations systems in the 1960's and 1970's to facilitate more efficiently the growing demand for their product.<sup>1</sup> It then became evident that the CRSs could be used to market their product, and the product of other airlines willing to pay for the service, via the travel agent. Today, these CRSs, now sophisticated information and management instruments, are recognized as a primary force in determining the level of competitive pressure and therefore contestability in air transport markets.

Even though much attention has been focused on the negative aspects of CRSs, the airline industry and its passengers have greatly benefited from their development. For, without CRSs, the industry's competitive growth would not have been possible. Indeed, according to American

Airline's R. Fahy, "without SABRE and other CRS systems it is unlikely that airline deregulation in the United States would have been successful."<sup>2</sup> Today, Sabre, the largest of the U.S. CRSs owned by American Airlines, stores over 32 million different fares in its central databank and handles anywhere from 200,000 to 1,000,000 worldwide fare changes per day.<sup>3</sup> Conventional printed fare and schedule guides simply cannot keep up-to-date with the constant changes of fares, conditions, discounts and routings available in a competitive industry. CRSs are therefore necessary for successful competition.

However, if free to do so, airlines which own computerized CRSs will use them to reduce the power of potential and actual competitors, thereby impeding contestability. The negative consequences of carrier owned CRSs for airline competition only became evident in the U.S. after deregulation. However, the anti-competitive effects of CRS exploitation can be adequately controlled through regulation. Again, Europe has the opportunity to learn from the U.S. experience. First by anticipating the anti-competitive effects of unregulated, airline owned CRSs in a deregulated airline industry, and second by studying the effectiveness of American attempts to break down this barrier to contestability through regulation.

To understand the demand for CRSs, and how they have been developed to reduce the competitive threat, one must appreciate the relationship between the product, the CRS, and

its consumers: the airlines, and the travel agent. CRSs are predominantly airline owned. In addition to using them for their own internal information management these "host" or parent airlines sell the CRS services to other airlines, some of which are direct competitors. Since CRSs benefit from both economies of scale, costing little extra to process vast amounts of data, and economies of scope, accommodating many airlines economically on the one system, the CRS industry is highly concentrated. It is essential for every airline wishing to compete on a regional, national, or international scale, to participate on every prominent CRS, irrespective of ownership. For the parent-airline, the CRS is a means of controlling the dissemination of information to the travel agent on its own flights, and more critically, on its competitor's flights. Furthermore, CRSs have become indispensable to airline managers responsible for maximizing yields by coordinating seat availability, fares and conditions on each flight serving overlapping markets. For the host-airline, the yield manager not only has information derived from its own airline services, but also that of its competitors. Although such internal information must eventually be made available to all participating airlines, (see section 6.2.3) only the host-airline has access to real time information, allowing it to secure effectively a competitive advantage through superior yield management. Travel agents also purchase CRS services. However, because every competing airline must appear on each CRS, travel



agents require only one CRS in their agencies. Furthermore, since most carriers are accessible through each CRS, agents generally regard competing CRSs as acceptable substitutes. Therefore, CRS vendors must compete vigorously for a travel agency's subscription. This competition keeps subscription prices down and has encouraged the development of sophisticated Agency Management Systems (AMS) internal to the CRS, which enable the agency manager to run his or her agency more efficiently.

It is no coincidence that the most successful CRSs, in terms of agency presence, are owned by the largest airlines. According to the 1985 U.S. Department of Justice report on the airline CRS industry, "there is a mutually reinforcing effect between the CRS share and scheduled airline transportation share: the greater the air share, the more attractive the CRS, and the greater the CRS share (especially with bias), the easier to gain or hold air share."<sup>4</sup> Therefore, it is possible that a carrier wishing to compete effectively in a specific air transport market must own a large CRS presence in the areas served by the route. Whereas the airlines which have developed and who own CRSs argue that they are only benefiting from their own innovative and entrepreneurial investment, and therefore deserve any competitive advantage gained from ownership, the fact that ownership of a CRS, by its nature, enables the host-airline to limit the competitiveness of a rival airline comprises a threat to competition in the airline industry. As such,

airline-owned CRSs also have the potential to restrict contestability. This has been the experience in the United States, and unless preventive action is taken, will be the experience in Europe once airlines are free to compete.

## 6.2 LESSONS FROM THE US

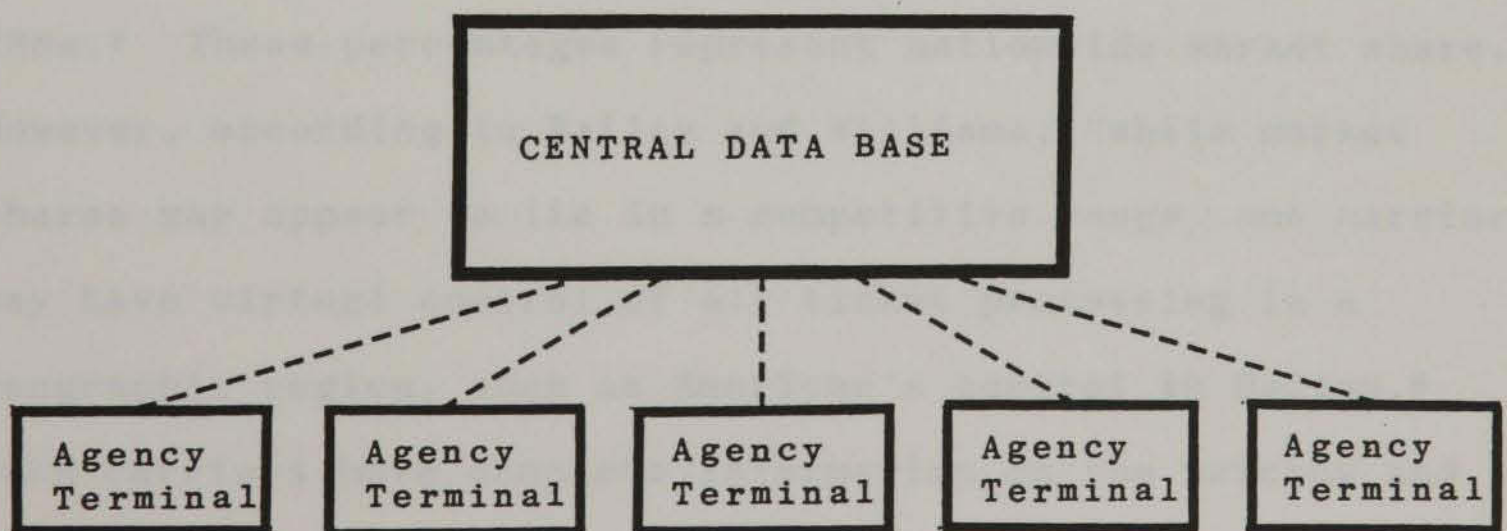
Operating in a more dynamic industry, US airline's have been the first to develop their CRSs as a competitive instrument. US policy makers have already been faced with the challenge of controlling their use. Therefore, Europe has the opportunity to take advantage of their experience.

### 6.2.1 American CRSs

U.S. airlines have developed "single access" CRSs. As shown in Figure 6.1, a single access system consists of a central data base to which travel agents have direct access.

FIGURE 6.1

Singe Access CRS



Upon the request of a client, the travel agent acquires information on a particular city-pair market using his or her CRS terminal. The requested information appears on the CRS screen, one "page" at a time, according to the system's display program or algorithm. At the request of his or her client, the travel agent creates a Passenger Name Record in the central database which includes all the information needed for a successful airline reservation such as airline identity, flight number, fare, conditions, and travel agency. As of November 1987, ninety-five percent of US travel agencies were linked to a CRS.<sup>5</sup>

Five airline-owned CRSs dominate the American travel industry. They are American Airline's "Sabre" with 33% of the market, United Airline's "Apollo" with 26%, Texas Air Corporation's "SystemOne" with 17%, TWA and Northwest own "Pars" with 15%, and Delta has "Delta Star" with 9% of the travel agency market.<sup>6</sup> Approximately ninety percent of air tickets issued in the U.S. come from one of these five major CRSs.<sup>7</sup> These percentages represent nationwide market share. However, according to Bailey and Williams, "while market shares may appear to lie in a competitive range, one carrier may have virtual control of all ticket processing in a geographic region, such as American's control in Dallas.<sup>8</sup> Such carriers have complete information on the pricing and load factors of their rivals, and this information can yield significant economic rents while reinforcing economies of scale."<sup>9</sup> It is the airline's ability, gained through CRS

ownership, to earn economic rents which contradicts contestability.

#### 6.2.2 CRS as a Barrier to Contestable US Domestic Air Transport Markets

The airline's revenues earned from additional ticket sales due to the ownership of a CRS are referred to as "incremental revenues". According to the 1986 General Accountant's Office study, "these revenue gains by the CRS owners represent less traffic and less revenues for their competitors. If these revenues are substantial, they could weaken the ability of rival airlines to compete effectively.<sup>10</sup> Incremental revenues have three sources. First, parent airlines earn incremental revenues by designing computer programs which are biased in favour of their own flight services and against those of the competition. Keeping in mind that seventy-five to eighty percent of all CRS bookings in the USA are made from the first "page" of information on the travel agent's screen and up to fifty percent are made from the first line of information displayed,<sup>11</sup> this display bias is an extremely powerful competitive instrument. CRS-owning airlines were quick to realize the competitive power of strategically designed computer programs. For example, in 1981, New York Air entered the La Guardia (NYC) - Detroit market, competing against American Airlines. American responded by modifying Sabre's display logic so that New York Air's flights would appear further down in the display sequence.<sup>12</sup> This kind of

overt display bias has been eliminated by the 1984 CRS Rules (see section 6.2.3). However, the incentive to find a way to bypass these rules is strong. A study carried out by William Duffy and the Aviation Consultancy firm SH&E, found that "Sabre and Apollo will be directly responsible for \$835.0 million and \$987.8 million, respectfully, in incremental American and United airline profits over the 1976 - 1990 period".<sup>13</sup> Taking into account the effectiveness of the 1984 CRS Rules, the SH&E study estimates American and United will earn \$97.7 million and \$116.1 million between 1988 and 1990 alone.<sup>14</sup>

An indirect source of incremental revenues are excessive booking fees charged by the parent airline to participating carriers. Prior to the 1984 Rules, CRSs were allowed charge discriminatory prices to participating airlines for their services. Host airlines used booking fees as a competitive tool in air transport markets. For example, United Airlines adopted the general policy of charging higher prices to carriers that were direct airline competitors.<sup>15</sup> Again, the 1984 Rules eliminated such obvious anti-competitive behavior. Today host airlines must charge non-discriminatory booking fees. However, according to the GAO study, if booking fees are substantially above costs, "they could have significant anti-competitive effects when paid by one airline to a competing airline. They could raise the costs of the CRS-using airline to the point that it could not compete effectively in some markets with the CRS-owning airline".<sup>16</sup>

Excessive booking fees, by enabling parent airlines to earn incremental revenues at the cost of competing airlines, threaten contestability. Finally, host-airlines profit through strategic anti-competitive behavior made possible by CRS ownership. A CRS owner has superior access to vital market information. It "can then use this information to distort market signals to its rivals, leading them to make incorrect decisions. When a CRS owner sees travel agents making bookings on a rival airline's flights, it can intervene through targeted secret incentive programs in an attempt to switch business. By responding selectively, it can temporarily distort signals the market sends to competitors, in order to persuade the rival to abandon fares, schedules, or even routes where, absent these secret interventions, its offerings would be preferred by customers."<sup>17</sup> Such control over marketing information enables the CRS-owner to discourage specifically potential entry into its markets. Upon notification of the proposed new competing service, the CRS owner can use its system to promote the route in question without actually changing its service. For example, by selectively discounting seats and increasing travel agents' commissions on the proposed competing flights, the incumbent CRS-owning airline can effectively inhibit low cost entry without actually reducing its own costs. Such behavior could not continue in a perfectly contestable market.

### 6.2.3 US Policy on CRS

U.S. policy-makers have attempted to limit the CRS threat to contestability through legislation. Legislators cannot hope to erase this barrier completely. As Wheatcroft and Lipman explain, "there are real barriers to the achievement of regulatory solutions in this area. The pace of change is frenetic, computer programs are enormously complex and the possibilities for high tech manipulation virtually unlimited."<sup>18</sup> In March 1984, the CAB Rules<sup>19</sup> were adopted in an attempt to control anti-competitive use of CRSs by their parent airlines. The rules only apply to airline-owned CRSs since independent CRSs do not have the incentive of earning incremental revenues to act anti-competitively. The 1984 Rules contain five major elements.<sup>20</sup> First, the legislation strives to eliminate display bias. Algorithms, therefore, may not include carrier preference. Furthermore, in the name of fairness, each CRS must expand the number of hubs allowed to each airline over which connecting schedules are constructed. Second, CRSs must charge non-discriminatory prices to subscribing carriers. If a carrier does not wish to subscribe, but the vendor wants to include its flight information in the databank, the CRS may bias the non-paying carrier's information display. Third, the legislation contains rules to stimulate CRS competition. Contracts with travel agents may not be for longer than 5 years. Neither may they contain any exclusive-use clauses or tie-ins between the use of the system and the sale of the vendor's air

transportation. Vendors may not stipulate use on its system as a condition for receiving commission. Also, charges to travel agents cannot be made conditional on the identity of its airline bookings. Fourth, the CRS Rules regulate the use of sales data. Data must be made accessible to all participating carriers, except foreign carriers since they are not liable to the Rules. Finally, the Rules cover the international CRS relationship with foreign flag carriers. If foreign CRSs bias against a US CRS parent airline, then the rules do not apply to that nation's flag carriers participating in the CRS.

Since the 1984 Rules were adopted, the U.S. government has been closely watching the developments of CRS activity. Both the Department of Justice in 1985 and the General Accounting Office in 1986, questioned the success of the 1984 Rules in reducing CRS barriers to airline competition. Regarding display bias, the 1984 Rules have eliminated overt bias in favour of the parent airline. However, "CRS ownership provides substantial opportunities both to develop and to employ algorithms that, while not explicitly carrier-specific, have the practical effect of favoring the flights of the airline vendor"<sup>21</sup> Although the possibility remains that parent airlines are employing more subtle forms of bias to gain a competitive advantage, both studies conclude that the existing 1984 Rules encompass the newer, more subtle biases, and therefore only strict enforcement rather than new legislation is needed.



In compliance with the 1984 Rules on non-discriminatory booking fees, CRS vendor airlines, such as American and United introduced uniform booking fees for all subscribers. While some air carriers fees were reduced, many were increased by as much as 264% and 500% for Apollo and Sabre, respectively.<sup>22</sup> Although seriously suspected,<sup>23</sup> neither report could, due to insufficient data, conclusively state that the vendor airlines were abusing market power by charging excessive fees.

Although the 1984 Rules attempted to limit the anti-competitive exploitation of superior marketing knowledge by regulating access to CRS data, the vendor-airlines have managed to maintain, to a degree, their advantage. Subscribing carriers have complained, for example, that real-time access to CRS data enables parent airlines to respond more promptly to changes in market conditions.<sup>24</sup> Furthermore, subscribers complain that the data provided in its "raw" form, requires extensive time consuming and costly processing before it can be understood. However, the DOJ dismisses these protests, rejecting the idea that such disadvantages restrict the subscriber airline's ability to compete effectively. The DOJ report concludes that "superior access to data may constitute an additional host advantage of CRS, yet fall short of constituting an essential service needed to compete. Conceivably enough of these small advantages could exist to present competitive problems, but it does not appear further regulation of marketing data is

called for at this time. Moreover, the costs of trying to regulate the price, content and timing of the generation of such marketing data are likely to be very significant."<sup>25</sup>

As an alternative to direct regulation of CRS behavior, the DOJ advocates regulation which would attract new entry into the CRS industry and enhance competition between the individual CRSs. "We hoped that increased competition in the CRS industry would eventually remove the need for any government regulation".<sup>26</sup> However, as the GAO recognize in their subsequent report, new entry into the CRS industry "would lead to increased competition among CRS owners for agent subscribers but would do little to alter the captive relationship between CRS owners and the other airlines. Each airline that relies on travel agents for a significant volume of ticket sales must be willing to pay the booking fees charged by any CRS owner that has signed up a non-trivial portion of the travel agents. Airlines that refuse to pay risk forfeiting substantial revenues."<sup>27</sup>

General mandatory divestiture represents another alternative to comprehensive regulation. Levine argues that "a good case could be made for the proposition that the method of resolving the [CRS] issue with the least potential for damage through misplaced government intervention is simply to require divestiture of the CRSs by the airlines and accept whatever level of contestability is exhibited by the divested market, reassured by the knowledge that whatever distortions still exist will not taint the operation of the

far larger airline market."<sup>28</sup> Currently, CRS owners pay only marginal costs for their CRS services, while it is suspected that non-owners pay excessive fees. Divestiture would eliminate this practice which distorts competition. Indeed, although the independent CRSs would still be able to charge inflated booking fees, divestiture would end the host-airline's ability to earn incremental revenues.

Although divestiture would certainly remove the CRS barrier to contestability, it would do so at heavy costs to the airline industry. The systems by which airlines manage their own internal operations, or Internal Reservations Systems (IRS), and the communications systems through which they market their product are integrated for efficiency, taking advantage of economies of scope. Computer programmers working for the one company develop and test new software for both functions. The system's communication network encompasses both internal and external data. Disentangling these functions would result in separate systems, neither one attaining its highest possible efficiency. This in itself contradicts the contestability theory. According to the DOJ, "it is clear that the costs of the various divestiture alternatives are very high, and the possibility of service disruption is great".<sup>29</sup>

CRSs remain as barriers to contestability in U.S. air transport markets. However, legislation has been effective in reducing the threat to market contestability which CRSs represent. Even so, according to the GAO study, "substantial

unanswered questions remain about the effectiveness of the CRS rules in controlling market power." The report recommends further study to decide "whether action is needed by the DOT or the Congress to better assure adequate competition in the CRS market and ultimately in the airline industry as a whole."<sup>30</sup> Whereas the controversy over the competitive power of CRS continues in the United States, it is only beginning to unfold in Europe.

### 6.3 LESSONS FOR EUROPE

European policy makers must recognize the importance of the CRS to airline competition. Recent reports by organizations such as the EC, ICAO, ECAC and the AEA suggest that Europe is indeed preparing for the effects of airline owned CRSs in a competitive industry.<sup>31</sup> As airline competition intensifies, airlines will look to the CRS as a competitive tool and travel agents will demand more comprehensive, efficient CRS services in order to keep track of the varied offerings which competition brings to the consumer. The first lesson to be learned from the US is to anticipate the resulting changes in these relationships before they actually occur.

#### 6.3.1 European CRSs and Contestability

European CRSs are in a period of transition, evolving from restrictive multi- or single-access systems with limited capabilities to more sophisticated US-style single-access systems adjusted to Europe's special needs. The stimulus for

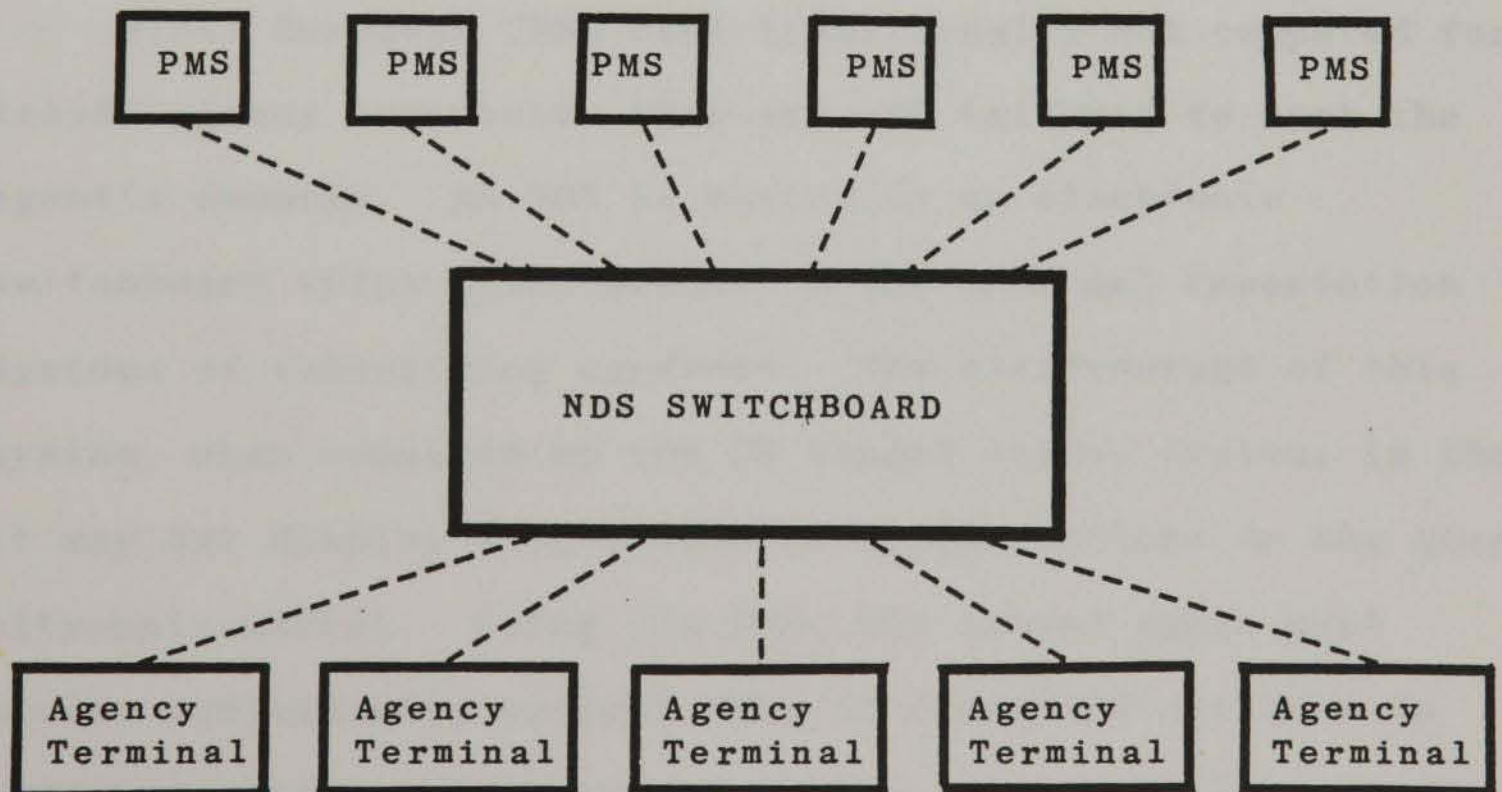
developing these more advanced CRSs comes from the threat of CRS market entry by the sophisticated American systems. European carriers do not want US systems in Europe for fear that they will lose control over their own distribution. Therefore, the improvements of European carrier-owned CRSs is a defensive move rather than a positive, purposeful embracement of airline competition.

#### 6.3.1.1 European National CRSs

Over the years, each of Europe's flag carriers has developed its own CRS. Of the EC member states, four airlines have developed multi-access systems, while the other eight are essentially single-access.<sup>32</sup> The basic components of the multi-access CRS are shown in Figure 6.2

FIGURE 6.2

Multi Access CRS



As part of the multi-access system, each flag carrier stores its flight information in its Passenger Management System (PMS). These are internal systems only, comprised of a databank and accompanying software. For example, Aer Lingus, has developed its PMS "ASTRAL" and British Airways has created "BABS". If a non-national, small airline enters the market, it usually opts to buy space in the parent flag-carrier's PMS rather than develop its own. Each of these PMSs, while heavily biased toward the national parent airline, accommodates many non-flag or foreign carriers in its databank. European travel agents communicate with the individual carriers using a National Distribution System (NDS) in their agencies, which acts as a switchboard for all subscribing carriers' PMSs. Each NDS holds a monopoly in its own country. In Ireland, travel agents use "TIMAS" and in Britain they use "TRAVICOM".

Since European CRSs have traditionally not competed for travel agency contracts, they are not tailored to meet the agent's demands. An NDS is basically an electronic switchboard which gives access to the internal reservation systems of subscribing carriers. The disadvantage of this system, when compared to the US single access system, is that it may not display a full list of flight options on any given city-pair market. Using its NDS, the travel agent must access individually several PMSs of competing airlines in order to find the best travel option for his or her client, especially if the journey involves connecting flights. Even

though, the multi-access system, known as "dial-a-bias", is biased in favour of its parent airline, this blatant bias may be less harmful to competition than the less obvious forms of bias found in the US systems.<sup>33</sup> Travel agents using these CRSs recognize that the systems were developed as a service of the national airline. The Irish travel agent using TIMAS, for example, knows that ASTRAL will favour Aer Lingus. While this system clearly gives the host airline an effective marketing advantage, at least the advantage is easily recognizable by the travel agent wishing to find the best option and can be considered when choosing a flight.

While the European single-access CRSs have the same basic design as shown in Figure 6.1, where the PMS and NDS are both components of the one system. Unlike the US systems, they are blatantly biased towards their parent airline. In comparison to a multi-access CRS, the travel agent subscribing to such a system has access to only the one biased central core rather than a choice among several, albeit biased, PMSs.

In the 1980's, as national airlines began to realize the competitive importance of their distribution systems, European airlines actually granted permission to compete have been frustrated by the European CRS infrastructure. For example, when Ryanair first entered the Dublin -London market, it sought access to the Aer Lingus PMS, ASTRAL.<sup>34</sup> Having been refused access, Ryanair subscribed to the British Airways PMS, BABS and the Irish NDS, TIMAS. However, neither

ASTRAL nor BABS treat Luton as a London airport.<sup>35</sup> If an Irish travel agent using TIMAS, for example, accesses BABS for information on the Dublin - London route, flights by competing airlines serving Heathrow and Gatwick appear, although Ryanair's, and competitor's Virgin Atlantic's flights serving Luton do not. As another example,<sup>36</sup> on the London -Cork route, an agent accessing ASTRAL through TIMAS receives information on Aer Lingus and British Airways, and, as designed by Aer Lingus, not on DanAir, even though DanAir serves Cork - Gatwick and is displayed by ASTRAL on the Dublin - London market. In the words of Ryanair's commercial director Derek O'Brien, "by nuances such as that, computer reservation systems are very easily targeted for or against another airline."<sup>37</sup>

#### 6.3.1.2 Galileo vs. Amadeus

Foreseeing that the European CRSs would not survive competition from the American systems, the AEA commissioned the \$500,000 Global Distribution System (GDS) Feasibility Study<sup>38</sup> to determine if a neutral European based system could be developed jointly by its 21 member airlines. The objectives of the GDS venture were admirable and highly conducive to contestability. Optimally, the GDS should be independent from the commercial operations of the host airlines, profitable, efficient, neutral; treating all carriers impartially and not responsible for directly or significantly altering carriers' market shares, consistent



with legal and regulatory policy, flexible and competitive, secure, supportive of owner's interests worldwide and finally global in scope.<sup>39</sup> However, like the American NIBS (Neutral Industry Booking System) project, a similar unsuccessful attempt at developing a commonly owned and operated neutral CRS, the GDS project failed. According to the DOJ, the joint venture aspect of this type of project "means that carriers with diverse interests and financial capabilities, as well as widely varying size, must collectively agree on numerous aspects of a risky and costly investment."<sup>40</sup> In Europe, after failing to reach an agreement, the AEA airlines split into three groups, forming either of Europe's two new CRSs, Galileo and Amadeus, or remaining unaligned. The groupings as of March 15, 1988 are summarized in Table 6.1.

TABLE 6.1  
European CRS Groupings

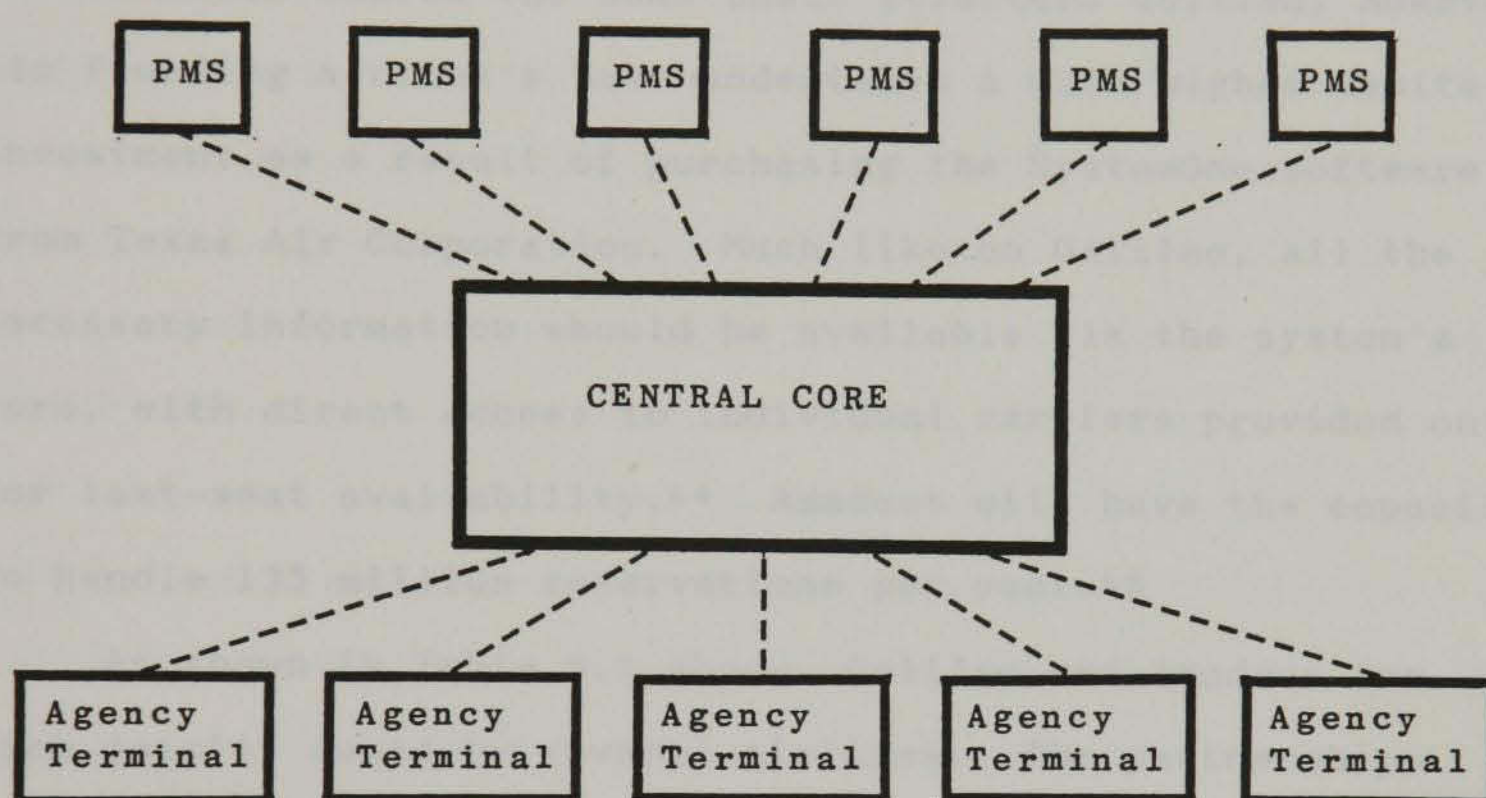
Amadeus:	Galileo:	Unaligned:
Four founding members:	Four founding members:	Malev
Air France	British Airways	Turkish Airl
Iberia	KLM	Luxair
Lufthansa	Swissair	UTA
SAS	Covia*	Air Malta
Joined by:	Joined by:	
Air Inter,	Aer Lingus	
Finnair	Alitalia	
Linjeflyg	Austrian	
JAT	BCal	
Adria Airways	TAP-Air Portugal	
Icelandair	Sabena	
	Olympic Airways	

\*Covia is a subsidiary company of United Airlines which operates U.S. CRS Apollo. Amadeus licensed Texas Air Corporation's "SystemOne" technology, with no equity interests.

Source: The ITA Magazine, March/April 1988, 12. Information Dated 15.4.88

Both Galileo and Amadeus have developed their systems using the basic principles arising from the GDS study. As shown in Figure 6.3, Galileo is a hybrid system, maintaining part of the established multi-access CRS, yet developing a central core characteristic of a single-access system.

FIGURE 6.3

New European CRSs

Participating airlines will continue to store their flight information in their own or chosen PMSs. However, these PMSs will be connected to Galileo's central core system. In the long term, Galileo plans to be capable of "hosting" airlines directly in its central core.<sup>41</sup> Furthermore, the system will maintain the existing NDSs which eventually will lose their "national" identities and take on the "Galileo" name. Travel agents using Galileo will be able to request flight information by route for a complete selection of services.

The message will go to the Galileo core, which extracts the relevant information from the various PMSs of airlines serving the route, and displays the information back on the travel agent's screen. By 1990, Galileo expects to process 75 million reservations per year.<sup>42</sup> The central core will also provide information on auxiliary travel services such as hotels, car rental, and tour operators.<sup>43</sup>

Amadeus shares the same basic structure Galileo, however its founding airline's have undertaken a much higher capital investment as a result of purchasing the SystemOne software from Texas Air Corporation. Much like on Galileo, all the necessary information should be available via the system's core, with direct access to individual carriers provided only for last-seat availability.<sup>44</sup> Amadeus will have the capacity to handle 135 million reservations per year.<sup>45</sup>

As shown in Table 6.1 above, Galileo and Amadeus are each jointly owned by several airlines. The partnerships should act to reduce incremental revenues earned by the system owners, at least on air transport markets in which the compete. It is unlikely that any owning airline would allow a display algorithm prejudiced against its own flight services and in favour of a partner. Likewise, as CRS owners, each airline can assure it is paying only the marginal costs of its CRS requirements. Finally, essential marketing data will be accessible on an equal basis for all co-owners. Once regulatory barriers to competition are removed, CRSs should not pose a threat to potential

competition on new routes by the established European airlines which have invested in Galileo and Amadeus. In this respect, the two new European systems represent a positive step toward market contestability.

However, these positive developments may be exploited by the existing national and other well established airlines at the expense of other potential entrants. Although both Galileo and Amadeus claim that fair and equal treatment will be provided for all participants, it is possible that the parent flag-carriers will use the new CRSs to preserve their dominant position in relation to participating smaller, independent European airlines. Although Galileo spokeswoman Carol Lehrman assures the travel trade that "Non-partners' services will be shown just as clearly as partners' services" on the CRS screen,<sup>46</sup> the incentive and ability to do otherwise certainly exists. Likewise, if non-owners represent a competitive threat, the danger can be weakened by raising the competitors' costs through excessive booking fees. Finally, by including its flight information in the CRS database, the non-owner airline exposes itself to strategic anti-competitive action from its CRS-owning rivals. Clearly, for any airline wishing to compete within Europe, there is a strong incentive to invest in shares.<sup>47</sup> However, neither Amadeus or Galileo are openly inviting new investors.<sup>48</sup> Both Amadeus and Galileo will be capable of producing a "second screen" offering the travel agent a choice between a neutral display that lists flights by

objective criteria like route and time of day and another biased towards a particular carrier. Therefore, if the agent is getting a special commission from a participating airline, he or she can use the second screen to maximize the agency's profits. The Amadeus user terminals will be passive, capable of receiving, but not manipulating, information.<sup>49</sup> In the case of Galileo, the travel agent's terminals will be "intelligent".<sup>50</sup> Using an IBM-Personal Computer as the agency terminal, the travel agent will be able to program the bias on its own individual computer thereby improving profits by scheduling the highest earning potential flights first on the screen.<sup>51</sup> The negative implications of optional biased displays for air transport contestability are obvious. Airlines use monetary incentive programmes to compete for travel agency loyalty. If the rewards are high enough, the airline may persuade the travel agent to act in the best interest of the agency rather than his or her client.<sup>52</sup> Biased displays enable the travel agent to easily view the flights that will maximize the agency's profits. Whereas any carrier may offer financial incentives to agents to book its flight, only parent-carriers can judge how such programmes affect the competitor's business on any given route. Therefore, CRS ownership allows the parent-airline to monitor the competitive effectiveness of its incentive programs. In the words of Levine, "if a travel agency makes all its bookings on an airline's system, rewards can be constructed based on actual performance, and 'cheating' (whereby the

agent books seats on a competitor's flight) by the agent is difficult indeed. An absence of cheating presents competitors with fewer opportunities to contest markets".<sup>53</sup>

Parent carriers will be able to use both Galileo and Amadeus to limit the threat from potential competitors, especially from those airlines not holding shares in the CRS companies. While regulators may be tempted to accept the threat from the existing partner flag-carriers as sufficient for competitive markets, pressure from outside the established national carriers is essential to contestability within Europe. As has been apparent from the competitive experience of Ryanair, the established cartel will not compete unless forced to by an "outside" carrier. As long as barriers to contestability remain, only such actual rather than potential competition will increase efficiency and reduce fares. Therefore, regulation is needed to minimize the barriers to contestable air transport markets within Europe. Regarding CRSs, this will be a challenging task, since in the words of Richard Botwood, director-general of the UK Air Transport Users Committee, "whatever the legislators do, the programmers will always be one step ahead".<sup>54</sup>

### 6.3.2 The TCM and EC CRS Policy

The European Commission must recognize that, while more advanced CRSs are necessary for competitive growth in air transport, fair access to and treatment by a CRS is just as

essential to market contestability as the absence of restrictive regulation and airport access. Recent events within the European Community suggest that this is indeed the case. The CRS issue was first singled out by Council Regulation 17/62, which specified that auxiliary air transport services such as CRSs would be subject to the Competition Rules of the Treaty of Rome. More recently, the European Commission, in accordance with the December 14th package, has drafted legislation to control the effects of CRS ownership on competition in air transport markets.

#### 6.3.2.1 Policy Review

In the summer of 1987, Ryanair's low cost sister airline, London European Airways (LEA) entered the London - Brussels market. Since almost 80 per cent of airline seats in Belgium are booked through Sabena Airlines' CRS, "SAPHIRE", it was essential that LEA should participate on the system.<sup>55</sup> However, Sabena refused access to LEA onto its CRS "on grounds that London European's policy of low fares would present a danger to its passenger traffic from Belgium".<sup>56</sup> This blatant exploitation of CRS-ownership not only precludes contestability, but also violates the Treaty of Rome's prohibition of abusing a dominant position.<sup>57</sup> After receiving a complaint from LEA, the Commission threatened to use its powers under Regulation 17/62 to force LEA's access to SAPHIRE. Sabena relented.<sup>58</sup> However, as the new systems develop, more comprehensive regulation will be

needed.

The Community's December 14 Air Transport Package directly addresses the CRS issue. Recognizing that Europe must update its CRS infrastructure for successful long term deregulation, Council Regulation (EEC) 3976/87 applies Article 85(3) to "the common purchase, development and operation of computer reservation systems",<sup>59</sup> exempting such activities from Article 85(1) of the Treaty's Competition Rules. Further to Council Regulation 3976/87, the Commission has adopted Commission Regulation 2672/88 of 26 July 1988 which details the conditions of exemption.<sup>60</sup> In its Preamble, the Regulation acknowledges that "few individual undertakings could on their own make the investment and achieve the economies of scale required to compete with the more advanced existing systems".<sup>61</sup> Therefore, cooperative development should be encouraged and "a block exemption should therefore be granted for such cooperation".<sup>62</sup> However, in order for the full benefits of a modern, comprehensive CRS to be realized, and the anti-competitive effects minimized, "the block exemption should be subject to conditions".<sup>63</sup> These conditions will apply to joint CRS agreements made between Member States such as those with Galileo and Amadeus. The Commission is separately preparing a more comprehensive CRS Code of Conduct which will encompass non-European systems.<sup>64</sup> The Commission Regulation does not exclude the application of Article 86 of the Treaty of Rome.<sup>65</sup>



First and foremost, in a contestable air transport market, air carriers must have equal opportunities to participate in any given CRS necessary for successful competition. Article 3 of Regulation 2672/88<sup>66</sup> sets down the terms of access to European CRSs, which more than likely will eventually be comprised of Galileo and Amadeus. First, "the system vendor shall, within the available capacity, offer any carrier the opportunity to become a participating carrier". There should be no conditions attached to entry which do not relate to participation in the CRS. Second, distribution facilities "shall be offered to all participating carriers without discrimination". Third, Article 3 stipulates the right of a participating carrier to terminate its contract with the CRS vendor upon giving notice of six months or less to take effect after the first year.

Once a carrier has been granted permission to join a given CRS, it must then be concerned over the display of its flight information. Article 4<sup>67</sup> regulated the CRS information display in an attempt to control the system-vendor's ability to exploit its controlling position at the cost of competing airlines. The Article guarantees the right of all participating carriers to have their flight information displayed on the CRS screen in a neutral and non-discriminatory fashion. Display algorithms shall not be based on carrier identity. Endeavoring to control practices aimed at producing more subtle forms of bias, such as including fictitious flights, Article 4(2)<sup>68</sup> maintains that

reciprocity. Articles 3 to 6 shall not apply to CRS vendors with respect to certain participating carriers if the parent carriers are not receiving equivalent treatment on systems owned by those participating carriers. For example, if the Delta Airline system "Delta-Star" was found to disfavour Aer Lingus, then Galileo could in turn act against Delta Airlines.

The Commission Regulation encourages competition within the European CRS industry in Articles 8 through 10. Competition between systems is important to CRS development. If the national carrier's CRS owns a monopoly, then that carrier will have very little incentive to develop features for the system which are important to the consumer and to travel agents, such as the ability to find the lowest fare on the parent-carrier's flights. To enable travel agencies to switch from one system to another, Article 87<sup>3</sup> provides that subscribers shall not be tied to contracts of more than 1 year. Furthermore, contracts shall not include "exclusive-use" clauses, preventing an agency from employing the services of a competing CRS. In order to restrain a parent carrier from exploiting its air transport market presence to capture a travel agent's subscription, Article 97<sup>4</sup> prevents a parent carrier from linking "commissions or other incentives to subscribers for the sale of tickets on its air transport services to the utilization" of its CRS. Therefore, British Airways, for example, could not offer agents using Galileo greater commissions for booking its flights than those using

"the system vendor shall not intentionally or negligently display inaccurate or misleading information". Finally, to encourage compliance and facilitate enforcement, Article 4(3)<sup>69</sup> provides that the "methodologies used for the ranking and presentation of information displayed on the CRS shall be made available to interested parties on request".

If free to do so, parent airlines may reduce a participating carrier's competitiveness in a particular air transport market by carelessly handling the competing airline's flight information when loading it into the CRS database. Another tactic is to delay loading the participating carrier's flight information into the CRS system, effectively blocking its ability to sell its product. Article 5,<sup>70</sup> recognizing such practices as anti-competitive, specifies that "the system vendor shall not discriminate between participating carriers in the care and timeliness of information loading".

Furthermore, in order to prevent a parent carrier from charging excessive booking fees aimed at increasing its competitor's operating costs, Article 6<sup>71</sup> requires that "any fee charged by the system vendor shall be non-discriminatory and reasonably related to the cost of the service provided and shall in particular be the same for the same level of service".

In all fairness, parent carriers should expect equal treatment on each other's systems. Like the American 1984 CRS Rules, Article 7<sup>72</sup> lays down the provisions for

Amadeus.

Geographical domination by any given CRS can enable its parent airline(s) to earn incremental revenues on the flights serving the area. If for no other reason, agents tend, by what is known as the "halo" effect, to favour the airline which owns the system on their desk.<sup>75</sup> Optimally, therefore, neither Galileo or Amadeus should possess a monopoly in any given country. Theoretically, if all carriers are listed on both systems, then European travel agents, irrespective of nationality, should regard the two CRSs as close substitutes, even though one of the systems is partly owned by the national carrier. While CRS competition is difficult to regulate, Article 107<sup>6</sup> specifically forbids any system-vendor from entering into any agreement or engaging in "a concerted practice with other system vendors with the object or effect of partitioning the market". Finally, pursuant to Article 7 of Regulation (EEC) No 3976/87, Article 117<sup>7</sup> lays down the conditions by which the Commission may withdraw the exemptions granted by Regulation (EEC) 2672/88. Exemptions from Article 85(1) may be withdrawn in cases where the agreement "has certain effects which are incompatible with the conditions laid down by Article 85(3) or which are prohibited by Article 86 of the Treaty".<sup>78</sup> Significantly, the Commission specifically identifies as anti-competitive any agreement which "has the effect of restricting competition in the air transport or travel-related markets."<sup>79</sup>

#### 6.3.2.2 Policy Recommendations

It is apparent that the Commission carefully studied the US experience with CRS regulation when designing Regulation 2672/88. However, in a few areas, the Commission could have taken stronger action toward reducing the CRS barrier to contestability.

Starting with the provisions for CRS access, Article 3 restricts the vendor-airline from excluding competing carriers from its CRS, providing the vendor has "available capacity" in its system.<sup>80</sup> Unlike airports, there are no physical barriers to expanding CRS capacity.<sup>81</sup> Rather, in the US, system-vendors have sought additional subscribers to expand their systems in order to take advantage of both economies of scale and scope. Even if CRS capacity became a scarce resource, the Regulation does not provide for the allocation of that resource among competing subscribing carriers. Without legislation protecting the rights of potential competitors to equal opportunity for participation, restrictive access rules on limited CRS capacity, just as with airport access, could be used by parent carriers as a barrier to contestability. Furthermore, Article 3 guarantees that the system vendor shall not discriminate among participating carriers, but only with respect to the CRS's distribution facilities. Unlike the US 1984 CRS Rules, the Regulation does not encompass the access to the CRS's flight data. Without such regulation, the CRS parent-carrier possesses a competitive advantage in any given air transport

markets over its competitors. Such commercially sensitive information should be available to all participating carriers on equal terms with the parent-airline.

Like the CAB in 1984, the European Commission has chosen to control display bias by laying down general parameters within which the CRS-vendors must remain when designing their display algorithms. While the US CRS-owners argue that this loose regulatory approach, by allowing each CRS to diversify, has encouraged service competition between the five American systems,<sup>82</sup> such freedom to develop their own display algorithms has also enabled parent-airlines to manipulate data to their own benefit and at the cost of their participating competitors.<sup>83</sup> In contrast, ECAC<sup>84</sup> has proposed to specify the method by which information is ordered and displayed on the travel agent's screen. For example, the ECAC code for ordering of information includes a proposal which would specifically end the discrimination against Ryanair's service to London. The Code of Conduct stipulates that "no discrimination on the basis of different airports serving the same city or area should be exercised in constructing and selecting city-pairs".<sup>85</sup> Commenting on the two future European systems, Derek O'Brien of Ryanair feels "the concept of having a totally unbiased system won't be easily achieved. Someone always has to be listed first. For smaller carriers like us, it depends on how the bias will be built in."<sup>86</sup> The Commission should watch closely for the development of subtle display biases on Europe's new systems

which distort competition in air transport markets and reassess the advantages and disadvantages of each regulatory approach at a future date.

While the intention expressed in Article 6 to control the level of booking fees must be welcomed, the Commission may not be in a position to judge whether or not the fees charged are "reasonably related to the cost of the service provided".<sup>87</sup> For example, neither the DOJ nor the GAO investigations could make a conclusive judgement on the level of booking fees charged by the American CRSs. A possible solution would be to ensure that booking fees were truly non-discriminatory between all participating airlines, including the parent-carriers. Therefore, if fees were excessive, the parent carriers' operating costs would rise along with those of non-owning airlines. This would provide an incentive to keep fees down. For the regulator, judging if fees are equal among all carriers using the system may be more feasible than judging if the fees charged are equal to the costs of providing a complicated CRS service. The parent-carriers would have to adjust their accounting systems to facilitate enforcement. However, by their corporate nature, the new European CRS partnerships should facilitate a policy of isolating and disclosing charges as each partner will want to ensure it is charged equitable fees.

While Articles 8 to 10 are designed to encourage CRS competition, in the near future Amadeus and Galileo are unlikely to compete for either airline participation or

travel agency subscriptions. The first priority of these CRSs is to establish control over their respective markets.<sup>88</sup> As long as the European carriers' route structures are based around their national home markets, both the airlines serving the home markets and the agents in those countries will want to use the national carrier's system. Since both Amadeus and Galileo will incorporate the already established NDSs currently located in Europe's travel agencies, it is doubly unlikely that the agent will switch systems. Thus, Irish travel agencies already linked up to Aer Lingus's system through TIMAS will more than likely become Galileo agents rather than subscribing to Amadeus. Any airline then wishing to serve the Irish market would then need to subscribe to Galileo. Speaking for Ryanair, Derek O'Brien states that "Amadeus is not a feasible solution" when Aer Lingus and its network have chosen Galileo. Rather, "the choice is illusory rather than real."<sup>89</sup> In the long term, as the major world systems interlink their databanks and national airlines expand to compete in more diverse international markets,<sup>90</sup> the identity of the CRS will become less relevant and CRS competition should increase.

Whereas Commission Regulation 2672 details the conditions for exemption from the Treaty of Rome's Article 85(1) as permitted by Article 85(3), the Commission must also be concerned with possible violation of Article 86 of the Treaty. Article 86 prohibits an airline from abusing its dominant position. Ownership of a CRS places the parent



airline in such a position. This in itself does not necessarily threaten contestability. However, if the parent airline abuses its dominant position by exploiting its control over the CRS to limit the competitiveness of actual or potential rivals, then it is in violation of Article 86. Unlike Article 85(1), the Treaty provides for no exemptions from Article 86.

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If the parent airlines of Galileo and Amadeus so choose, the European CRSs may become a prime force in determining the future competitive structure of intra-Community air transport markets. The Commission must watch closely for developments which restrict market contestability, protecting the rights of non-CRS owners to compete impartially with CRS-owning airlines.

## CHAPTER 7: CONCLUSION

As the EC air transport regulators lose confidence in the effectiveness and justification of their policies based on the theory of perfect competition, they should begin to examine the alternative approach to government intervention as prescribed by the theory of contestable markets. It is especially important that they adopt an effective competition policy as air transport deregulation slowly spreads through Europe. The European Community has the opportunity of learning from the US experience and adopting an economic approach to designing policy which will encourage the positive and dynamic development of the air transport sector.

First, the Community regulators must accept the TCM as appropriate to commercial air transport. Even though actual market entry significantly effects the level of air fares, Baumol and Willig conclude that "since the size of that effect is so much smaller than would be predicted by most theories of oligopoly that focus on the role of active competitors, it can be concluded that the forces of potential competition still play an important role, despite the structural conditions that impede their workings".<sup>1</sup> Commenting on the US experience, Bailey writes that "the nature and extent of deregulation match remarkably well with the policy prescription of the theory".<sup>2</sup> While air transport markets are not perfectly contestable, the TCM has a valuable role to play in the design of a Common Air Transport Policy.

Second, the regulators must use the theory to identify

the barriers to contestable air transport markets and to design policy necessary to minimize their negative effects. The policy prescriptions of TCM fall into three categories which include directly regulating price, enforcing antitrust laws, and reducing the structural barriers to contestability.

As described in section 1.10.2, where contestability is not "perfect," B/P/W suggest a policy of enforcing the "quasipermanence of price reductions." Facing barriers to costless entry and exit, potential entrant airlines will not enter the market for fear of price retaliation from incumbent carriers. Thus, according to B/P/W, "contestability of the market requires some policy measures designed to inhibit retaliatory measures by incumbents."<sup>3</sup> Whereas European regulators have traditionally reacted to imperfectly competitive markets by comprehensively controlling air fare levels, the "quasipermanence" policy selectively targets discriminatory responses to an innovation. The TCM would not support a policy which prevents incumbent airlines from competing with lower fares since according to Bailey and Baumol, "the entire purpose of the competitive process from the viewpoint of the general welfare is that it forces firms to offer low prices and to provide service and products of high quality."<sup>4</sup> However, if the entrant is forced out of the market, the incumbent airline would not be permitted to raise its fares back towards pre-entry levels. For example, those passengers who have gained from lower air fares and increased flight frequency resulting from Ryanair's entry into the

cross channel markets should not lose those benefits if Ryanair is forced to leave those markets.

However, due to the nature of commercial air transport, problems of implementing a quasipermanence policy exist which may eliminate it as a feasible regulatory option. As explained by Levine, "if an airline has to keep in existence for some significant period of time a fare it has introduced as a response to new entry, how many seats per flight must it sell at this fare? Must it displace flow traffic moving on the same plane in some other, unrelated, city-pair market willing to pay a higher (or lower) fare in order to offer some percentage of output at the required fare?"<sup>5</sup>

Furthermore, due to the complexities of airline pricing which make it difficult to judge if fares are justified by marginal costs, regulators risk the economic misallocation of resources which would result from disruptive intervention. Interfering with the price mechanism may cause more harm than good.

Whereas, the Treaty of Rome competition rules strictly prohibit the abuse of a dominant position, non-cost-based indicators may be more useful for assessing market power exploitation. For example, Aer Lingus has reduced some of its fares by as much as 50% on routes served by the new entrant, Ryanair. This must be welcomed. However, if the airline can afford such low fares on its cross channel routes, its fares which have not reduced on other comparative European routes must be challenged. Either Aer Lingus has

reduced its costs sufficiently to compete with Ryanair, and is charging supra-competitive fares in its less competitive markets, or the airline has not reduced its costs and is subsidizing its cross channel services with economic rents earned from other sections of its route network. Either way, the European Commission must suspect an abuse of market power gained from barriers to contestability and should investigate accordingly.

For the long term benefit of the travelling public, however, the Commission should concentrate on reducing the barriers to contestability as prescribed in Part II of this thesis.<sup>6</sup> First, the presently restrictive air transport regulation must be replaced with a common air transport policy which enhances contestability while protecting the welfare of the consumer where contestability fails. Second, potential entrants must be assured, through non-discriminatory airport access rules, an equal opportunity to compete, while in the longer term sufficient airport capacity must be provided to fully accommodate the growing demands of a competitive industry. Finally, rules must be adopted which minimize the anti-competitive effects of CRS ownership. While continuing to evaluate the effectiveness of its policies in reducing the barriers to market contestability, the Commission can accept the resulting level of imperfect competition as superior to the restrictive system of regulation which it has replaced.

Under such a policy, the future conduct and performance

of the European airline industry would change dramatically, although the identity of the carriers serving the Community's markets would likely remain the same. As the incumbent flag carriers reduce their costs in response to low-cost new entrants, there will be less opportunity for new market entry. Commenting on the US experience, Kahn states that this "probably represents the greatest single success of deregulation. The aggressive entry by low-cost carriers accomplished its social purpose, and in so doing drastically reduced the need as well as the likelihood of its continuation".<sup>7</sup> If actual and potential competition force the incumbent European carriers to pass their lower costs onto the consumer by reducing fares, then the overall welfare of the Community will improve.

This process has already begun as restrictive air transport regulation is slowly dismantled. For example, SAS and Aer Lingus have served the Dublin - Copenhagen market since 1966 with a marginally profitable direct service.<sup>8</sup> Using its new fifth freedom rights granted by the December 14th Package, Aer Lingus started a Dublin -Manchester - Copenhagen indirect service in April 1988 offering greater frequency than SAS. SAS responded in June by rerouting its flight via Glasgow, exercising fifth freedom rights between Dublin and Glasgow. The indirect service allowed SAS to match Aer Lingus's frequency. However, Ryanair, which had started service from Dublin to Glasgow, does not have the extensive route network needed to match the services offered

by SAS and Aer Lingus and has been forced in September to end its Dublin -Glasgow service. The new low-cost entrant, Ryanair, is now becoming the victim of larger airlines taking advantage of economies of scope. However, the failure of post-liberalization entrants to the industry is not a sign, per se, that markets will not be contestable. After the transition to competitive markets, a more powerful threat of entry will come from the established airlines. However, initially low-cost entry is absolutely necessary to change the European flag carriers into competitive companies. Having never operated in competitive markets, the transition will not come willingly.

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The European Commission, taking responsibility for the economic health of the Community, must equip itself with economists educated on the intricacies of air transport markets and on the implications of intervention. A lesson in the theory of contestable markets would be the first step towards a competition policy that places the overall economic welfare of the Community over political gains and losses.

## Appendix I: Freedoms of the Air

- First Freedom      The right to fly over another country without landing.
- Second Freedom    The right to make a landing for technical reasons (e.g. refueling) in another country without picking up/setting down revenue traffic.
- Third Freedom     The right to carry revenue traffic from your own country (A) to the country (B) of your treaty partner.
- Fourth Freedom    The right to carry traffic from country B back to your own country A.
- Fifth Freedom     The right of an airline from country A to carry revenue traffic between country B and other countries such as C or D. (This freedom cannot be used unless countries C or D also agree.)

### Supplementary Rights

- Cabotage Rights    The right of an airline of country A to carry revenue between two points in country B. For example, Air France for many years had cabotage rights between various points within Morocco.

Cabotage rights are very rarely granted. Nevertheless, several Asian carriers currently flying to the United States via Hawaii are pressing the US government for cabotage rights between Hawaii and Los Angeles and San Francisco.

Source: Rigas Doganis, Flying Off Course, The Economics of International Airlines, (London: George Allan and Unwin, 1985), PAGE?



**Appendix II: Routes Effected by Article 5(2) of Council  
Decision (87/602/87)**

Article 5(2) of the Council Decision stipulates that a Member State shall accept multiple designation on a city-pair basis by another member state in the first year after notification if the route carries more than 250,000 passengers, in the second year if it carries more than 200,000 passengers or more than 1,200 return flights, and in the third year after notification if the route carries more than 180,000 or more than 1,000 return flights. (OJ No L 374/22)

Below are the number of passengers carried per annum, including on-line passengers, on EEC routes at the time of the Decision:

<u>ROUTE</u>	<u>PASSENGERS</u>
FIRST YEAR	
London Paris	2,405,200
Amsterdam London	1,276,000
Frankfurt London	1,126,100
Dublin London	928,800
Brussels London	704,300
Frankfurt Paris	620,300
Milan Paris	527,400
London Rome	515,300
Amsterdam Paris	494,400
Athens London	486,300
Paris Rome	466,200
Athens Rome	457,900
Madrid Paris	456,000
Copenhagen London	443,500
Dusseldorf London	441,800
London Milan	427,900
London Madrid	403,400
Amsterdam Frankfurt	341,800
London Munich	321,200
Frankfurt Rome	311,400
Frankfurt Milan	302,400
Dusseldorf Paris	286,900
London Hamburg	284,100
Copenhagen Frankfurt	259,400
Brussels Paris	250,100
Amsterdam Athens	250,000
SECOND YEAR	
Athens Paris	246,700
London Nice	244,400
Amsterdam Copenhagen	241,000
Brussels Frankfurt	239,200
Lisbon London	231,000

Amsterdam Milan	224,400
Amsterdam Rome	220,300
Paris Munich	209,600
Lisbon Madrid	206,000
Frankfurt Madrid	203,000
Lisbon Paris	200,600

## THIRD YEAR

Athens Frankfurt	197,400
Barcelona Paris	193,800
Brussels Milan	190,000

Source: Secretariat de M. Sorensen, European Commission, Brussels, Photocopy of list sent to Author, 14 September 1988.

ENDNOTES:INTRODUCTION

1. William J. Baumol, John Panzar, and Robert Willig, Contestable Markets and the Theory of Industry Structure. (New York: Harcourt Brace Javanovich, 1982).

CHAPTER ONE

1. William J. Baumol, "Contestable Markets: An Uprising in the Theory of Industry Structure." American Economic Review 72 (March 1982): 1.

2. William G. Shepherd, "Contestability vs. Competition," American Economic Review 74 (Sept 1984): 576.

3. Baumol, "Contestable Markets: An Uprising in the Theory of Industry Structure", op. cit., 2.

4. Ibid., 3.

5. G.J. Stigler, The Organisation of Industry (Irwin, 1968), 67; quoted in W.D. Reekie, Industry Prices and Markets (Oxford: Phillip Allan, 1979), 86.

6. J.S. Bain, Barriers to New Competition (Harvard University Press), 1956.

7. Malcom C. Sawyer, The Economics of Industries and Firms, 2nd Ed. (Kent: Croom Helm Ltd, 1985), 116.

8. C.C. von Weizsacker, Barriers to Entry - A Theoretical Treatment, (Berlin Heidelberg: Springer-Verlag, 1980), 119.

9. Ibid., 49.

10. Elizabeth Bailey and William Baumol, "Deregulation and the Theory of Contestable Markets," Yale Journal on Regulation, 1 (1984): 111.

11. Ibid., 49.

12. Ibid., 129.

13. J.B. Clark, The Control of Trusts (1901); quoted in Reekie op. cit., 65.

14. Baumol, Panzar and Willig, Contestable Markets and the Theory of Industrial Structure, op. cit., xiv.

15. Ibid., xiv - xv.

16. Ibid., 27.
17. Bailey and Baumol "Deregulation and the Theory of Contestable Markets," op. cit., 117.
18. Baumol, Panzar and Willig, Contestable Markets and the Theory of Industrial Structure, op. cit., 28.
19. G.J. Stigler, "Capitalism and Monopolistic Competition - a Discussion", American Economic Review, 1950; quoted in Reekie, Industry, Prices and Markets, op. cit., 83.
20. Baumol, "Contestable Markets: An Uprising in the Theory of Industrial Structure" op. cit., 7.
21. Ibid.
22. Ibid., 11.
23. Baumol, Panzar and Willig, Contestable Markets and the Theory of Industrial Structure, op. cit., 222.
24. Gavin C. Reid, Theories of Industrial Organization (Oxford: Blackwell Ltd 1987) 169.
25. Shepherd, "'Contestability vs. Competition" op. cit., 577.
26. Baumol, Panzar and Willig, Contestable Markets and the Theory of Industrial Structure op. cit., 12.
27. Ibid., 13.
28. Shepherd, "'Contestability' vs. Competition" op. cit., 580.
29. Ibid.
30. Baumol, Panzar and Willig, Contestable Markets and the Theory of Industrial Structure op. cit., 483.
31. Reekie, Industry Prices and Markets, op. cit., 66.
32. J.M. Clark, "Competition as a Dynamic Process" (1961); Quoted in W.D. Reekie, Industry Prices and Markets op. cit., 68.
33. von Weizsacher, Barriers to Entry op. cit., 214.
34. Baumol, Panzar and Willig, Contestable Markets and the Theory of Industrial Structure op. cit., xiii.

35. W.D. Reekie, Industry Prices and Markets op. cit., 66: "A state of equilibrium with no increased productivity and no product innovations (even if price everywhere equalled marginal cost and monopoly profits did not exist, even for brief periods) is not a state of the world which would appeal to many individuals, workers or consumers".

36. For a full review of empirical studies see Reekie, op. cit., chapter 4.

37. Ibid., 68.

38. Bailey and Baumol, "Deregulation and the Theory of Contestable Markets" op. cit., 121.

39. Baumol, Panzar and Willig, Contestable Markets and the Theory of Industrial Structure op. cit., 477.

40. Elizabeth Bailey, "Contestability and the Design of Regulatory and Antitrust Policy" American Economic Review 71 (May 1981): 179.

41. Baumol, "Contestable Markets: An Uprising in the Theory of Industry Structure" op. cit., 14.

42. Bailey, "Contestability and the Design of Regulatory and Antitrust Policy" American Economic Review, op. cit.

43. Ibid., 181.

44. Ibid.

45. Ibid.

46. Baumol "Contestable Markets: An Uprising in the Theory of Industry Structure" op. cit., 14.

47. Bailey, "Contestability and the Design of Regulatory and Antitrust Policy" American Economic Review, op. cit., 178.

48. Ibid., 179.

49. Ibid.

50. Baumol, Panzar and Willig, Contestable Markets and the Theory of Industrial Structure, op. cit., 361.

CHAPTER TWO

1. William Baumol, Panzar, and Willig, Contestable Markets and the Theory of Industrial Structure, op. cit., 7.
2. Thomas McCraw, Prophets of Regulation (Cambridge: Harvard University Press, Belknap Press, 1984), 259.
3. Ibid., 262.
4. Ibid.
5. Richard Pryke, Competition Among International Airlines (London: Gower Publishing Company, 1987), 99.
6. Elizabeth Bailey, "Price and Productivity Change Following Deregulation: the US Experience," The Economic Journal 96 (March 1986): 9.
7. Alfred Kahn, "Applications of Economics to an Imperfect World," American Economic Review 69 (May 1979): 7.
8. Bailey, "The Contestability of Airline Markets During the Transition to Deregulation," Law and Contemporary Problems 44 (May 1981): 129.
9. Shepherd, "'Contestability' vs. Competition," op. cit., 584 Shepherd challenges this definition.
10. Steven Morrison and Clifford Winston, The Economic Effects of Airline Deregulation (Washington, D.C.: The Brookings Institute, 1986), 7.
11. Elizabeth Bailey, David Graham and Daniel Kaplan, Deregulating the Airlines (Cambridge: MIT Press, 1985), 51.
12. David Graham and Daniel Kaplan, "Competition and the Airlines: an Evaluation of Deregulation," (Washington, D.C.: CAB Staff Report) quoted in Bailey and Baumol, "Deregulation and the Theory of Contestable Markets," op. cit., 128.
13. CAB Staff Report, "Regulatory Reform: Report of the CAB Special Staff," (Washington, D.C.: Civil Aeronautics Board, 1975), 102-107.
14. Baumol, Panzar, and Willig, Contestable Markets and the Theory of Industrial Structure, op. cit., 71.
15. Morrison and Winston, The Economic Effects of Airline Deregulation, op. cit., 6-7.

16. Kahn, "Applications of Economics to an Imperfect World," op. cit., 6.
17. Bailey, Graham, and Kaplan, Deregulating the Airlines, op. cit., 11.
18. Ibid., 13.
19. Ibid.
20. Kahn, "Applications of Economics to an Imperfect World," op. cit., 4.
21. Bailey, "Price and Productivity Change Following Deregulation: the US Experience," op. cit., 3.
22. Ibid., 9.
23. Bailey, "Contestability and the Design of Regulatory and Antitrust Policy," op. cit., 181.
24. Bailey, "Price and Productivity Change Following Deregulation: the US Experience," op. cit., 15.
25. McCraw, Prophets of Regulation, op. cit., 273.
26. Baumol, Panzar, and Willig, Contestable Markets and the Theory of Industry Structure, op. cit., xvi.
27. Ibid., xxi.
28. Elizabeth Bailey, Dean, Graduate School of Industrial Administration, Carnegie Mellon University, Pittsburgh, Penn., letter to Author, 16 September 1987.
29. Bailey and Baumol, "Deregulation and the Theory of Contestable Markets," op. cit., 127.
30. Ibid., 128.
31. Bailey, Graham, and Kaplan, Deregulating the Airlines, op. cit., 4.
32. Ibid.
33. For a summary of the role of the intra-state experience, see Bailey, Graham and Kaplan, Deregulating the Airlines, op. cit., 27-32 and McCraw, Prophets of Regulation, op. cit., 268.
34. McCraw, Prophets of Regulation, op. cit., 268.
35. Bailey, Graham and Kaplan, Deregulating the Airlines, op. cit., 4.

36. Airline Deregulation Act of 1978, Public Law Number 95-504, Stat. 1705.

37. For details and schedule of enactment of the ADA, see Bailey, Graham, and Kaplan, Deregulating the Airlines, op. cit., 34-35.

38. Bailey, Graham, and Kaplan, Deregulating the Airlines, op. cit., 175.

39. Ibid., 176. Also, for details on merger policy, see OECD, Committee on Competition Law and Policy Report on Competition Policy and Passenger Air Transport, CLP(88)3(1st Revision)(March 1988), 46-49.

40. Ibid. Although approved, Texas International and National Airlines never merged.

41. The Los Angeles Times, Part IV, p. 1, 24 October 1986.

42. William Baumol and Robert Willig, "Contestability: Developments Since the Book," received from Baumol before publication in February 1988, 22.

43. William Baumol interviewed by Author, New York University, 14 January 1988.

44. Kahn quoted in McCraw, Prophets of Regulation, op. cit., 278.

45. Kahn, "Applications of Economics to an Imperfect World," op. cit., 6.

### CHAPTER THREE

1. George James, Airline Consolidation, (Washington, D.C.: Airline Economics Inc., 1987), 15.

2. Michael Derchin, "The Restructuring of the Air Transport Industry," (New York: First Boston Equity Research, 9 March 1987), 3.

3. An airline qualifies as a Major if it has annual revenues of \$1 billion or more.

4. James, Airline Consolidation, op. cit., 15.

5. Martha A. Curtis, Associate Editor, "A TWIST Roundtable Discussion," The Wall Street Transcript xcv, (12 January 1987).



6. Baumol and Willig, "Developments Since the Book," op. cit., 24.
7. For a review of airline mergers and US competition policy, see OECD, Report on Competition Policy and Passenger Air Transport, op. cit., 46-49.
8. Ibid., 53.
9. Elizabeth Bailey and Jeffrey Williams, "Sources of Economic Rent in the Deregulated Airline Industry," Working Paper No. 28-86-87, (Pittsburgh: Carnegie Mellon University, 1987), 3.
10. James, Airline Consolidation, op. cit., 5.
11. Kahn, quoted in Travel Agent Magazine, 9 March 1987, 62.
12. The Los Angeles Times, Part 1, p. 16, 15 October 1986.
13. Kahn, quoted in The Sunday Times, (London) 22 November 1987, 87.
14. Graham, Kaplan, and Sibley, "Efficiency and Competition in the Airline Industry," CAB Staff Report, (1982), cited by Bailey and Baumol, "Deregulation and the Theory of Contestable Markets," op. cit., 130.
15. Bailey, Graham, and Kaplan, Deregulating the Airlines, op. cit., 153.
16. Call and Keeler, "Airline Deregulation, Fares, and Market Behavior: Some Empirical Evidence," Analytical Studies in Transport Economics (1984) cited by Baumol and Willig, "Contestability: Developments Since the Book," op. cit., 25.
17. Melvin Brenner, James Leet, and Elihu Schott, Airline Regulation (Westport Connecticut: ENO Foundation, 1985), 49.
18. Shepherd, "'Contestability' vs. Competition," op. cit., 584.
19. Richard J. Murphy, "Hubbing and Airline Pricing", New York City: Simat, Helliesen and Eichner, Inc., 2 February 1987 photocopy.
20. Ibid., 4.
21. Alfred Kahn, "Deregulatory Schizophrenia," California Law Review 75 (May 1987): 1062.

22. Murphy, "Hubbing and Airline Pricing," op. cit., 11.
23. Bailey and Baumol, "Deregulation and the Theory of Contestable Markets," op. cit., 129.
24. Michael Levine, "Airline Competition in Deregulated Markets: Theory, Firm Strategy, and Public Policy," Yale Journal on Regulation 4:393 (1987): 451.
25. Bailey and Williams, "Sources of Economic Rent in the Deregulated Airline Industry," op. cit., 15-16.
26. "Aggressive Marketing or Dirty Tricks?," Frequent Flyer Magazine, Martin Deutsch, Ed., November 1987, 44.
27. Bailey and Baumol, "Deregulation and the Theory of Contestable Market," op. cit., 121.
28. Paul Albrecht, President/General Manager, Globus Gateway, Los Angeles, and James Murphy, President, Brendan Tours, Los Angeles, both by correspondence with Author, March, 1988.
29. William Baumol, interviewed by Author, New York University, 14 January 1988.
30. Meyer and Oster, Deregulation and the New Airline Entrepreneurs, (Cambridge, MA: MIT Press, 1984), 137. Meyer and Oster predicted that "not only are new entrants likely to grow and expand, but as established carriers lower their costs in response to new entrant pressures, they will likely keep their fares down even in markets without new entrants so as not to attract new entrant attention."
31. James, Airline Consolidation, op. cit., 22.
32. Levine, "Airline Competition in Deregulated Markets," op. cit., 408.
33. Derchin, "The Restructuring of the Air Transport Industry," op. cit., 4.
34. Bailey and Williams, "Sources of Economic Rent in the Deregulated Airline Industry," op. cit., 24.
35. James, Airline Consolidation, op. cit., 22.
36. Levine, "Airline Competition in a Deregulated Market," op. cit.
37. Bailey, "Price and Productivity Change Following Deregulation: the US Experience," op. cit., 15.

38. Ibid., 9.

39. Although not shown, for simplicity, in figure 3.1, Delta Airlines serves 150 cities in its domestic H&S network which includes four large hubs: Atlanta, Dallas\Ft. Worth, Cincinnati, and Salt Lake City, two secondary hubs: Los Angeles and Boston, with plans to develop Orlando, Florida. Additional cities are served through feeder agreements with four local commuter airlines. Source: Delta Airlines, Dublin, 15 September 1988.

40. Jonathan Ogur, Curtis Wagner, and Michael Vita, "The Deregulated Airline Industry: A Review of the Evidence," Economic Issues, (Bureau of Economics, Federal Trade Commission, January 1988) 14: The authors have drawn up a table showing the percentage change in flight frequencies between different category airports between 1977 and 1984. Overall flight frequency has increased by 14.3%. Large - Non hubs flights have increased by 14.7%, while Non hubs - Non hubs flights have decreased by 6.9%.

41. McCraw, Prophets of Regulation, op. cit., 270.

42. Bailey and Williams, "Sources of Economic Rent in the Deregulated Airline Industry," op. cit., 20.

43. Ibid.

44. Morrison and Winston, The Economic Effects of Airline Deregulation, op. cit., 46.

45. Alfred Kahn, "Airline Deregulation - a Mixed Bag," Transportation Law Journal Draft 12/16/87, forthcoming (March 1988): 16.

46. Transport Research Circular, No 299 (Washington, D.C.,: Transportation Research Board, National Research Council, February 1986),: 7.

47. Ibid., 7.

48. Meyer and Oster, Deregulation and the new Airline Entrepreneurs, op. cit., see Chapter 10 "Small Community Service and the Role of Federal Subsidy," for a full discussion.

49. Bailey, "Price and Productivity Change Following Deregulation: the US Experience," op. cit., 5.

50. Ogur, Wagner, and Vita, "The Deregulated Airline Industry: A Review of the Evidence," op. cit., 88.

51. Morrison and Winston, The Economic Effects of Airline Deregulation, op. cit., vii. Furthermore, although "the industry's financial performance during the early 1980's was poor, largely because of a fuel price increase and a recession, .. it would have been worse had regulation still been in effect."; idem 2.
52. Derchin, "The Restructuring of the Air Transport Industry," op. cit., 5.
53. Rep. Gene Taylor, quoted in The Los Angeles Times, Part I, 2 November 1986, 20.
54. Source: Irish Travel Agency using TIMAS. The six carriers quoted were Delta, TWA, Northwest, United, Southwest, and Braniff.
55. Morrison and Winston, The Economic Effects of Airline Deregulation, op. cit., 73.
56. Kahn, "Airline Deregulation -- A Mixed Bag," op. cit., 11.
57. Ibid., 11.
58. Bailey, Graham, and Kaplan, Deregulating the Airlines, op. cit., 171.
59. George James, "Aviation: Today, Tomorrow, and in 1990," Transportation Research Circular, Number 299, (Transportation Research Board, National Research Council February 1986): 25.
60. James, Airline Consolidation, op. cit., 13.
61. Morrison and Winston, The Economic Effects of Airline Deregulation, op. cit., vii.
62. Meyer and Oster, Deregulation and the New Airline Entrepreneurs, op. cit., 185-199.
63. Bailey, Graham, and Kaplan, Deregulating the Airlines, op. cit., 36.
64. Morrison and Winston, The Economic Effects of Airline Deregulation, op. cit., 47.
65. Ibid.
66. "A TWST Roundtable Discussion," The Wall Street Transcript, January 1987, 84:237.
67. Levine, "Airline Competition in Deregulated Markets," op. cit., 469.

68. Bailey and Williams, "Sources of Economic Rent in the Deregulated Airline Industry," op. cit., 14.

69. Morrison and Winston, The Economic Effects of Airline Deregulation, op. cit., 10.

70. Kahn, "Deregulatory Schizophrenia," op. cit., 1063-1064.

71. Alfred Kahn, "Suprises of Airline Deregulation," Speech for delivery at Annual Meeting, American Economic Association, Chicago, Illinois, December 28, 1987. p. 11.

72. Bailey, Graham, and Kaplan, Deregulating the Airlines, op. cit., 171-172.

73. David Sawers, Competition in the Air, What Europe Can Learn from the USA, (London: The Institute of Economic Affairs, 1987), 40.

74. Steven Morrison and Clifford Winston, "Empirical Implications and the Test of the Contestability Hypothesis," Journal of Law and Economics, 30 (April 1987).

75. Ibid., 65.

76. Ibid., 57.

77. Ibid., 59.

78. Ibid., 59-63.

79. Ibid., 65. for details on the construction of the CVs or welfare-change measure.

80. Ibid., 59.

81. Ibid., 61.

82. J.S. Bain, Barriers to New Competition Bain (1956) p. 1 quoted in Baumol, Panzar, and Willig, Contestable Markets and the Theory of Industrial Structure, op. cit., 13.

83. Morrison and Winston, "Empirical Implications and the Test of the Contestability Hypothesis," op. cit., 56.

84. Baumol, Panzar, and Willig, Contestable Markets and the Theory of Industry Structure, op. cit., 13.

85. Ibid.

86. Morrison and Winston, "Empirical Implications and the Test of the Contestability Hypothesis," op. cit., 63.

87. Bailey and Baumol, "Deregulation and the Theory of Contestable Markets," *op. cit.*, 137.

#### INTRODUCTION TO PART II

1. Baumol and Willig, "Developments Since the Book," *op. cit.*, 27.

2. *Ibid.*

3. Sean Barrett, Sky High (London: Adam Smith Institute, 1986), 60.

4. Sawers, Competition in the Air, *op. cit.*, 40.

5. Treaty of Rome, Article 3(f).

6. For studies on the political barriers to airline deregulation, see Martha Derthick and Paul Quirck, The Politics of Deregulation (Washington, D.C.: The Brookings Institution, 1985).

#### CHAPTER FOUR

1. EEC Air Transport Policy, European Community Economics and Social Committee, Report of the Section for Transport (Brussels: ESC-85-010-EN October 1985), 31.

2. Rigas Doganis, Flying Off Course, The Economics of International Airlines (London: George Allan and Unwin, 1985), 23 - 24. See Chapter Two, "The Regulation of International Air Transport" for full explanation of the system of Bilateral Air Service Agreements, Inter-Airline Agreements, and IATA Tariff Agreements.

3. Treaty of Rome, Article 84 (2). For a detailed history of the EEC approach to air transport, see Francis McGowen and Chris Tengove, European Aviation, A Common Market?, (London: The Institute for Fiscal Studies, 1986), Chapter 5 "The Evolution of European Aviation Policy", 80-94.

4. European Court of Justice Judgement (case 167/73): 4 April 1974.

5. December 14 Air Transport Package, Official Journal No L 347 /1987.

6. European Court of Justice (Joined cases 209 to 213/84) 30 April 1986.

7. Council Regulation (EEC) No. 3975/87, Article 1(1), OJ No L 374/2.

8. Council Regulation 141/1962 excluded air transport from the application of Council Regulation 17/62.

9. Council Regulation 3975/87, Article 4(1), OJ No L 374/2.

10. Council Regulation 3975/87, Article 5, OJ No L 374/3.

11. Ibid., Article 9(1), OJ No L 374/4.

12. Ibid., Articles 12-13, OJ No L 374/5-6.

13. Ibid., Article 7, OJ No. L 374/3 regarding Article 85(3) and Article 14, OJ No. L 374/6 regarding penalty.

14. Treaty of Rome, Article 85(1).

15. Treaty of Rome, Article 85(3).

16. Council Regulation (EEC) No. 3976, Preamble, OJ No L 374/9 "whereas Article 85(1) of the Treaty may be declared inapplicable to certain categories of agreements, decisions and concerted practices which fulfil the conditions contained in Article 85(3)".

17. Ibid., Article 2(2), OJ No L 374/10.

18. Ibid.

19. Doganis, Flying Off Course, op. cit., 32.

20. Council Regulation (EEC) No 3976/87, Article 2(2), OJ No L 374/10.

21. Ibid, Preamble, OJ No L 374/9.

22. Ibid.

23. Ibid.

24. Treaty Of Rome, Article 85(3).

25. Treaty of Rome, 85(3)(b).

26. Council Directive (87/601/87), Article 3, OJ No L 374/13.

27. Ibid.

28. Ibid.

29. Ibid., Article 4(2), OJ No L 374/14.
30. European Civil Aviation Conference (ECAC) Ad Hoc Group on Intra-European Air Transport Policy, Eurpol/5-WP/2 14/4/1981 (presented by the COMPAS Task Force) photocopy.
31. Ibid., 19.
32. Ibid., 20.
33. Council Directive (87/601/87), Article 4(4), OJ No L 374/14.
34. Ibid., Article 4(5), OJ No L 374/14. For definitions of the five "freedoms", see Appendix I.
35. Ibid., Article 5(1), OJ No L 374/14.
36. Ibid., Discount Zone: 90% to 65% of reference fare, Deep Discount Zone: 65% to 45% of reference fare.
37. Ibid., Articles 5(2) and 7, OJ No L 374/14-15.
38. McGowen and Tengove, European Aviation: A Common Market?, op. cit., 95.
39. Council Decision (87/602/87), Preamble, OJ No L 374/ 19.
40. Ibid.
41. Oxford English Dictionary, Vol XI, p. 352.
42. Bailey, "Price and Productivity Change Following Deregulation: the US Experience," op. cit., 16.
43. Council Decision (87/602/87), Article 3, OJ No L 374/21.
44. Ibid.
45. Ibid., Article 4(1), information in [ ] placed by Author.
46. Ibid., Article 4 (2).
47. Ibid., Article 5(1). For example, France would have to accept both Aer Lingus and Ryanair into France, but could refuse more than one Irish airline from Dublin into Paris unless of course the Ireland/France bilateral agreement permitted two Irish carriers on that route.



48. OECD, Report on Competition Policy and Passenger Air Transport, op. cit., 69. For example, since the Dublin-London market was deregulated, there has been a 117% growth in traffic between 1985 and 1988. Before 1985, Aer Lingus cross-channel operations were only marginally profitable, whereas by 1988 they were profitable. Source: Sean Barrett, "Deregulating European Aviation - A Case Study," Forthcoming. Photocopy.

49. Council Decision (87/602/87), Article 6(1), OJ No L 374/22, Airports classified in Annex II, OJ No L 374/25.

50. Ibid., Article 6(3), OJ No L374/22.

51. Ibid., Article 6(2).

52. Ibid., Article 7.

53. Ibid., Article 8, OJ No L 374/22-23.

54. Article 8(2) conditionally exempts Ireland and Portugal from Article 8(1)(c). For example, Ryanair may fly Dublin-Luton-Paris as a result of the special Category I - Category I dispensation.

55. For predictions on likely concentrations, see Trevor French, "The Euro-Shuffle," Airline Business, February 1988, 14-17.

56. McGowen and Tengove, European Aviation: A Common Market?, op. cit., 123.

57. Kahn, "Applications of Economics to an Imperfect World," op. cit., 7.

58. Elizabeth Bailey, "Economic Models and Policy Reality: Lessons from Airport Access," Prices, Competition and Equilibrium, ed. M.H. Peston and R.W. Quadt (Oxford: Philip Allan, 1986), 286.

59. Baumol, Panzar, and Willig, Contestable Markets and the Theory of Industry Structure, op. cit., 473.

60. For details on benefits gained from the Ireland - UK Bilateral, see Sean Barrett, "Deregulation -The Dublin-London Air Route Experience," Paper presented to the Irish Economics Association, Annual Conference, Carrickmacross, May 1988 (photocopy) and for the UK -Netherlands Bilateral, see OECD, Report on Competition Policy and Passenger Air Transport, op. cit., 57-60.

61. Bailey, "Contestability and the Design of Regulatory and Antitrust Policy," op. cit., 181.

62. Treaty of Rome, Article 85(3).
63. Ibid.
64. Ibid.
65. Council Regulation (EEC) 3975/87, Preamble, OJ No L 374/1.
66. Peter Sutherland, "Competition in European Air Transport," Address given to the International Association of Airport Authorities, Dublin, June 1987. Photpcopy, 2.
67. Sutherland quoted by Ian Williams, "Sutherland's Law," Airport Magazine, April 1988, 26.
68. If the EEC was not attempting to create a common market, B/P/W would still call for the barriers to trade to be broken down between Member States; insisting that the "removal of impediments to international trade are also important to the promotion of contestability. We have seen on recent years how entry of foreign competitors can enhance the contestability of an oligopoly market with small numbers of incumbents". (Baumol, Panzar, and Willig, op. cit., 481) By opening markets to foreign competition, the number of potential competitors rises and therefore so does the degree of contestability.
69. Geoffrey Lipman and Stephen Wheatcroft, Air Transport in a Competitive European Market, (London: The Economist Intelligence Unit, Special Report no 1060, 1986), 178. See Treaty of Rome, Articles 52 -58, on the Rights of Establishment.
70. Lipman and Wheatcroft , op. cit., 129.
71. OECD, Report on Competition Policy and Passenger Air Transport, op. cit., 62.
72. Baumol, Panzar, and Willig, op. cit., 481.
73. Sean Barrett, "Deregulating European Aviation - A Case Study," Forthcoming. Photocopy, 8.
74. Barrett, "Deregulation - the Dublin -London Air Route Experience," op. cit., 10.
75. Sutherland, quoted by Ian Williams, "Sutherland's Law," Airport Magazine, April 1988, 26.
76. Karl-Heinz Nuemeister, quoted by Jacqueline Gallacher, "Hungry Europe Seeks Better US Feed," Airline Business, August 87, 28.

77. "The Sorensen Plan, Is It Realistic?" The Avmark Aviation Economist, July 1988, 2-4.
78. Trevor French, "The Euro-Shuffle," Airline Business, February 1988, 15.
79. Bailey, Graham, and Kaplan, Deregulating the Airlines, op. cit., 193.
80. Shepherd, "'Contestability' vs. Competition," op. cit.
81. Baumol and Willig, "Developments Since the Book," op. cit., 10.
82. Alfred Kahn quoted by John Cassidy, "Mega-Trouble in the Air," The Sunday Times, (London), 22 November 1987, 87.
83. Sutherland, "Competition in European Air Transport," op. cit., 3.
84. British-American Tobacco Company Ltd. and R.J. Reynolds Industries, Inc. V. Commission of European Communities, European Court of Justice, (Joined Cases 142 and 156/84), OJ NO C 178, 6.7.1984 / OJ NO C 195, 24.7.1984.
85. European Commission, "Amended Proposal for a Council Regulation(EEC)," COM(88) 97 final, 25 April 1988.
86. Ibid., 3.
87. Ibid., 1.
88. Ibid., 6.
89. EEC Air Transport Policy, (1985), op. cit., 42.
90. Colin Marshal quoted by Air Transport World, July 1988, 7-8.
91. Treaty of Rome, Article 92(1).
92. EEC Air Transport Policy, op. cit., 58.
93. Trevor French, "The Euro-Shuffle," op. cit., 14.
94. Ibid.

95. OECD, Report on Competition Policy and Passenger Air Transport, op. cit., 13. For a break down, see Trevor French, "The Euro-Shuffle," Airline Business, February 1988, 14. Ireland: Aer Lingus 100%, Portugal: TAP-Portugal 100%, Belgium: Sabena 80%, France: Air France 80%, Greece: Olympic 80%, Spain: Iberia 80%, Denmark: SAS 20 - 50%, Germany: Lufthansa 20 -50%, Italy: Alitalia 20 -50%, Netherlands: KLM 39%, UK: private, Luxembourg: private.

96. Lipman and Wheatcroft, "Air Transport in a Competitive European Market," op. cit., 16.

97. For example the Irish Department of Tourism and Transport does not collect data on what proportion of passengers travel at each fare. Source: The Department of Tourism and Transport, September 1988.

## CHAPTER FIVE

1. Elizabeth E. Bailey, "Economic Models and Policy Reality: Lessons From Airport Access," op. cit., 300.

2. Due to an economic relationship known as the "S-curve," unrestricted airport access is especially essential to contestable air transport markets. As explained by Bailey, Graham, and Kaplan, before price competition was permitted in the US, carriers competed on the basis of flight frequency. (Bailey, Graham and Kaplan, op. cit., 166.) The S-curve refers to the tendency of average load factors to rise as the carriers share of total departures in the market increases. This phenomenon is explained by the business person's preference for an airline which allows him or her to have a flexible business schedule. Also, the passenger's information costs are kept to a minimum by using the predominant carrier. In a deregulated market, entrants can compete by offering lower fares, however, according to Pan American Vice-President, Marketing, Robert Mann Jr., "critical mass" is essential for successful entry. (Robert Mann, Vice-President, Marketing, Pan American Airlines, interviewed by Author, June 1987.) Therefore, not only is initial unrestricted airport access essential, but the entrant must have access to the minimum number of slots necessary for viable entry.

3. Levine, "Airline Competition in Deregulated Markets," op. cit., 465.

4. Ibid., 416.

5. Bailey, Letter to Author, 16 September 1987, op. cit.

6. Alfred Kahn, letter to The New York Times, "Air Travel Needs Peak-Hour Premium Rates," September 22, 1987.
7. US Airport capacity increased by only 1% between 1970 and 1987. "Fuller Funding on the Horizon," Airport International Magazine, December 1987 / January 1988, 12-13.
8. Bailey, Graham, and Kaplan, Deregulating the Airlines, op. cit., 182.
9. CAB Report to Congress, "Implimentation of the Provisions of the Airline Deregulation Act," (Washington, D.C.: GPO) 31 January 1984, 62.
10. OECD, Report on Competition Policy and Passenger Air Transport, op. cit., 46.
11. Ogur, Wagner, and Vita, "The Deregulation of the Airline Industry," op. cit., 35.
12. Ibid., 43.
13. Bailey, Graham, and Kaplan, Deregulating the Airlines, op. cit., 192-193.
14. Laurence T. Phillips, "Structural Changes in the Airline Industry: Carrier Concentration at Large Hub Airports and its Implications for Competitive Behavior," Transportation Journal, 25 (Winter 1985): 26.
15. Bailey, Graham, and Kaplan, Deregulating the Airlines, op. cit., 223.
16. Ibid., 191.
17. Ibid., 190-191.
18. OECD, Deregulation and Competition Policy, The US Experience with Deregulation in the Air Transport Sector, "Committee of Experts on Restrictive Business Practices, DAFPE/RAP/WP2/87.7, Paris, 21 May 1987, 24.
19. Duane Ekedahl quoted in Travel Weekly Magazine, 31 March 1988, 3.
20. Grether, D.C., R.M. Isaac, C.R. Plott, Alternative Methods of Allocating Airport Slots: Performance and Evaluation, (Pasadena, Calif.: Polinomics Research Laboratories Inc., Aug 1979) cited from Bailey, Graham, and Kaplan, Deregulating the Airlines, op. cit., 182.
21. Bailey and Williams, "Sources of Economic Rent in the Deregulated Airline Industry," op. cit., 11.

22. Ogur, Wagner, and Vita, op. cit., 46.
23. Kahn, "Airline Deregulation - A Mixed Bag," op. cit., 20. Privatization may be a preferred option as the pertinent government agencies fail "to respond with minimum economic intelligence to (over congestion), which clearly reflects a situation in which demand outruns supply."
24. Edward Beauvais, quoted in Air Transport World, January 1987, 34-35.
25. OECD, Report on Competition Policy and Passenger Air Transport," op. cit., 48.
26. Bailey and Williams, "Sources of Economic Rent in the Deregulated Airline Industry," op. cit., 26.
27. Phillips, "Structural Changes in the Airline Industry," op. cit., 28.
28. OECD, Report on Competition Policy and Passenger Air Transport," op. cit., 5.
29. Department of Communications, Transport Policy, A Green Paper, (Dublin: Government Stationery Office, November 1985), 81.
30. Ibid., 84.
31. Seamus Martin, "Waiting for the Skies to Fall," The Irish Times, 12 July 1988, 7.
32. Colm Boland, "Computer Predicts Air Traffic Chaos, But Cannot Prevent It," The Irish Times, 3 August 1988, p. 4. European airspace is controlled through co-operation of the individual national authorities, each guarding sovereignty over their own airspace. When Eurocontrol was first established in 1960, it was envisaged as a pan-European body. However, Britain and France rejected supranational "executive control". According to Eurocontrol databank service head, Mr. Dieben, "the teeth have been taken out of the organization." However, recent increases in air traffic and congestion are forcing the member-state Transport Ministers to reconsider developing Eurocontrol towards a fully integrated, centralized system resulting in a more efficient flow of traffic through European skies.
33. Airports Policy White Paper, Cmnd. 9542 (June 1985).
34. Ibid., 51.

35. Ibid. Starkie and Thompson criticize the BAA's success at LRMC pricing; "BAA's stated policy of charging on the basis of long-run marginal costs does not appear to have been applied consistently or thoroughly". David Starkie and David Thompson, Privatising London's Airports, (London: Institute for Fiscal studies, 1985), 26.

36. Airports Policy White Paper, op. cit., 51.

37. Ibid.

38. Ibid.

39. Ibid.

40. Ibid.

41. Ibid., 58.

42. If the British Government sincerely wishes to increase competition in the air transport industry, perhaps it should take a closer look at the actual scarcity of airport slots at Heathrow. From the figures below, although Heathrow airport has been officially full since 1977, incumbent airlines have increased their own traffic substantially, carrying an extra 8,586,610 terminal passengers ( 32.5% increase) since 1982 on an extra 6,113

Annual Terminal Passengers and Passenger Aircraft ATMs through Heathrow International Airport:

Year Ending January:	Terminal Passengers**	Passenger Aircraft ATM***
1982	26,405,390*	19,001
1983	26,319,000	19,645
1984	26,866,000	20,923
1985	29,340,000	21,652
1986	29,197,000	22,879
1987	31,401,000	22,939
1988	34,992,000	25,114

Source: CAA "UK Airports - Monthly Statements of Movements, Passengers and Cargo", February 1983 - 1988.

\* calculated from 1983 monthly reports

\*\*"A terminal passenger is a passenger joining or leaving an aircraft at the reporting airport. ... A passenger who changes from one aircraft to another carrying the same flight number is treated as an interline passenger." Jan 1988 Report, 46.

\*\*\* A Passenger Air Traffic Movements (ATM) "are landings or take-offs of aircraft engaged on the transport of passengers" January 1988 Report, 45.

43. Although this system is not economically efficient, it does not threaten contestability as long as sufficient capacity for new entrants exists. For example, at Dublin Airport, the landing or take-off charge is calculated by aircraft weight:

Cessna -minimum charge: £17.51,

Boeing 737: 53 tons @ £5.59 = £296.00,

Boeing 747: 324 tons @ £5.59 = £1,811.00.

Since accommodating a Cessna costs approximately the same as a Boeing 747 (incurring less runway damage, but more air space time), these charges subsidize small aircraft. If a capacity problem evolved, this could not be allowed to continue. Joseph O'Connell, General Manager, Marketing and Finance, Aer Rianta, interviewed by Author, July 28, 1988.

44. Joseph O'Connell, General Manager, Marketing and Finance, Aer Rianta, interviewed by Author, 28 July 1988.

45. Council Decision (87/602/87), OJ No L 374/23.

46. Council Regulation (EEC) 3976/87 OJ No L 374/10.

47. Paul Appleby, Ryanair, letter to Author, 11 August 1988.

48. Bailey, Graham, and Kaplan, Deregulating the Airlines, op. cit., 193.

49. Sutherland, "Competition in European Air Transport," op. cit., 5.

50. Ibid., 4-5. According to Sutherland, "the Commission is presently examining the possibility of establishing guidelines for the setting of airport charges".

51. Starkie and Thompson, Privatising London's Airports, op. cit., 57.

52. Sutherland, "Competition in European Air Transport," op. cit., 5.

53. Starkie and Thompson, Privatising London's Airports, op. cit., 57.

54. Ibid.

55. Council Regulation (EEC) No 3976/87, Article 2(2), OJ No L 374/10.

56. Joseph O'Connell, interviewed by Author, op. cit.

57. Aer Rianta, 13 September, 1988.



58. Carol Fitzpatrick, Station Manager, Ireland, Club Air, Interviewed by Author, 13 September 1988.

59. "European Commission Announces Major New Undertakings by British Airways on its Merger with British Caledonian Aimed at Safeguarding Airline Competition," IP(88) 131 Brussels, 9 March 1988, 1.

60. Ibid.

61. Treaty of Rome, Article 90(1).

62. Treaty of Rome, Article 90(2).

63. Treaty of Rome, Article 90(3).

64. Sutherland, "Competition in European Air Transport," op. cit., 6.

65. OECD, Report on Competition Policy and Passenger Air Transport, op. cit., 50.

## CHAPTER SIX

1. Levine, "Airline Competition in Deregulated Markets," op. cit., 459.

2. Richard J. Fahy, "Regulation of Computerized Reservation Systems in the United States and Europe," Air Law, XI, no. 6 (1986), 232.

3. John Bailey, "CRS: The Battle for Europe," Flight International, (27 February 1988), 33.

4. The Department of Justice, Report of the Department of Justice to Congress on the Airline CRS Industry, (Washington, D.C.: GPO, 1985), 10.

5. "Airline Reservations Systems, Sabre Rattling," The Economist, 7 November 1987, 74.

6. J. Gallacher, "Ticketing Europe," Airline Business, January 1988, 27.

7. "Airline Reservation Systems, Sabre Rattling," The Economist, 7 November 1987, 74.

8. Bailey and Williams, "Sources of Economic Rent in the Deregulated Airline Industry," op. cit., 16: By 1985, American Airlines' "Sabre" issued 88% of ticket sales in the Dallas / Ft. Worth Market.

9. Ibid., 2.

10. General Accounting Office, Airline Competition: Impact of Computerized Reservation Systems Washington, D.C.: GPO, 1986), 11.
11. J. Bailey, "CRS: The Battle for Europe," op. cit., 33.
12. Department of Justice, op. cit., 12.
13. William Duffy, Analysis of American's and United's Statements Regarding the Profitability of Sabre and Apollo (New York: Simat, Helliesen & Eichner, Inc., May 1985), 3.
14. Ibid., S-5., Figures calculated from Table 4.
15. Department of Justice, op. cit., 12.
16. General Accounting Office, op. cit., 11.
17. Levine, "Airline Competition in Deregulated Markets," op. cit., 462.
18. Lipman and Wheatcroft, "Air Transport in a Competitive European Market," op. cit., 158-159.
19. CAB Rules (49 Fed. Reg. 41171) U.S. Civil Aeronautics Board, Economic Regulation, Docket 41686, 1 March 1984.
20. Fahy, op. cit., 235.
21. Department of Justice, op. cit., 33.
22. General Accounting Office, op. cit., 3.
23. William Duffy, Analysis, op. cit.
24. Department of Justice, op. cit., 41.
25. Ibid., 42-43.
26. Ibid., 55.
27. General Accounting Office., op. cit., 13.
28. Levine, "Airline Competition in Deregulated Markets," op. cit., 489.
29. Department of Justice, op. cit., 75.
30. General Accounting Office, op. cit., 13.

31. EEC: Economic and Social Committee, TRA/160 CES 738/88jc, 6 July 1988 / ICAO: Chris Lyles, "ICAO Looks Into Possible Abuses in CRS Services," ICAO Bulletin, January 1987, 25 -30. / ECAC: Draft Principles for ECAC Code of Conduct," TARPOL/9 -Report, Appendix 3, 9 -14. / AEA: "Global Distribution System Feasibility Study," March 1987.

32. Dick Brennan, General Manager, TIMAS, interviewed by Author, 7 September 1988. The identities of the European CRSs prior to Galileo and Amadeus are summarized below.

COUNTRY	AIRLINE	PMS	NDS
IRELAND*	AER LINGUS	ASTRAL	TIMAS
UNITED KINGDOM*	BRITISH AIRLWAYS	BABS	TRAVICOM
ITALY*	ALITALIA	ARCO	SIGMA
DENMARK*	SAS	RES AID	SMART
GREECE	OLYMPIC	HERMES	HERMES
BELGIUM	SABENA	SAPPHIRE	SAPPHIRE
FRANCE**	AIR FRANCE	ALPHA III	ESTEREL
GERMANY**	LUFTHANSA	RES - SYSTEM	START
SPAIN	IBERIA	SAVIA	RESIBER III
PORTUGAL	TAP	TAP-MATIC	TAP-MATIC
LUXEMBOURG	LUXAIR	GABRIEL	GABRIEL
NETHERLANDS	KLM	CORDA	CORDA

\* Multi-access systems

\*\* Multi-access capability, but only used as a single access.

Sources: Timas, Galileo, Alitalia, SAS, Lufthansa, Iberia, Luxair.

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33. Dick Brennan, General Manager of TIMAS, Interviewed by Author, 27 August 1987.

34. Derek O'Brien, Commercial Director, Ryanair, interviewed by Author, August 1987.

35. Aer Lingus, Dublin.

36. Ibid.

37. O'Brien quoted by Susan Carey, "Duelling Computers -Amadeus and Galileo Book Lots of Promises for Airline Industry," Wall Street Journal (Europe), 8 August 1988, 1.

38. Association of European Airlines, Global Distribution System Feasibility Study, March 1987.

39. Ibid., 1.1-1.2.

40. Department of Justice, op. cit., 30.
41. Brennan, op. cit., 7 September 1988.
42. ITA Magazine, March/April 1983, 13.
43. Ibid.
44. Jacqueline Gallacher, "Ticketing Europe," Airline Business, January 1988, 23.
45. ITA Magazine, March/April 1983, 13.
46. Carol Lehrman, "Unravelling Galileo," Irish Travel Trade News, December 87, 30.
47. Besides the need to protect itself from anti-competitive behavior, there is a strong profit incentive for an entrant to invest, since CRSs are highly lucrative in their own right. The AEA GDS study, for example, projected annual pre-tax profits for a single European system of \$179 million by 1994. AEA, Global Distribution Feasibility Study, op. cit., 1.16.
48. Brennan, op. cit., September 7 1988.
49. ITA Magazine, March/April 1983, 13.
50. Ibid.
51. Brennan, op. cit., 27 August 1987.
52. Of course, it can be argued that what is best for the client is best for the agency, that the agency will lose its clients if it does not meet their demands. However, the client does not possess the knowledge to judge if the option presented is the best option available. The costs of consulting with several competing agencies (each also working to maximize its commissions) may be too high.
53. Levine, "Airline Competition in Deregulated Markets," op. cit., 462. () added by Author.
54. J. Bailey, "CRS: The Battle for Europe," op. cit., 33.
55. EEC Community Report, July/Aug 1987, 14.
56. Ibid.
57. Treaty of Rome, Article 86.
58. Community Report, op. cit., 14.

59. Council Regulation (EEC) 3976/87, Article 2(2), OJ No L 374/10.
60. Commission Regulation (EEC) No 2672/88 OJ No L 239 (30.8.88).
61. Ibid., OJ No L 239/13.
62. Ibid.
63. Ibid.
64. European Communities Economic and Social Committee, TRA/160 CES 738/88jc pp 1-2.
65. Commission Regulation (EEC) 2672/88, Preamble (9) OJ No L 239/14.
66. Ibid., Article 3.
67. Ibid., Article 4.
68. Ibid., Article 4(2).
69. Ibid., Article 4(3), OJ No L 293/15.
70. Ibid., Article 5.
71. Ibid., Article 6.
72. Ibid., Article 7.
73. Ibid., Article 8.
74. Ibid., Article 9.
75. General Accounting Office, op. cit., 10.
76. Commission Regulation (EEC) 2672/88, Article 10, OJ No L 293/15.
77. Ibid., Article 11.
78. Ibid.
79. Ibid.
80. Ibid., Article 3, OJ No L 293/14.
81. Brennan, op. cit., 7 September 1988.
82. Jacqueline Gallacher, "Hungry Europe Seeks Better US Feed," Airline Business, August 1988, 24.

83. Ibid. for examples.
84. ECAC, "Draft Principles," op. cit., 11-12.
85. Ibid., 11.
86. Derek O'Brien quoted by Susan Carey, Wall Street Journal, 8 August 1988, 1.
87. Commission Regulation (EEC) 2672/88, Article 6, OJ No L 239/15.
88. Brian Garland, Manager Alitalia, Ireland, Interviewed by Author, 8 September 1988.
89. Derek O'Brien quoted by Susan Carey, Wall Street Journal, 8 August 1988, 8.
90. "Going Global," Airline Business, November 1987, 8-9.

#### CHAPTER SEVEN

1. Baumol and Willig, Developments Since the Book. op. cit., 26.
2. Bailey, "Price and Productivity Change Following Deregulation: the US Experience," op. cit., 1.
3. Baumol, Panzar and Willig, Contestable Markets and the Theory of Industrial Structure, op. cit., 361.
4. Bailey and Baumol, "Deregulation and the Theory of Contestable Markets," op. cit., 121.
5. Levine, "Airline Competition in Deregulated Markets," op. cit., 492.
6. One possible barrier to contestability not covered in Part II is the existence of "Frequent Flyer" programs. These are incentive programs whereby airlines reward passengers for loyalty with free travel. While they are of high value to the passenger, as long as there are empty seats on the plane, the actual transport cost to the airline is minimal.  
According to Levine, "the Frequent Flyer program was invented to impede contestability." (Levine, op. cit., 452.) Offering participation in a Frequent Flyer program enhances an airlines advantages gained from economies of scope since passengers can accumulate more mileage on carriers with large hub and spoke networks and use their rewards to fly to a larger choice of destinations. Furthermore, incumbent airlines can target rewards against new entrant airlines

making it difficult for an entrant to compete with price matching incumbents. Finally, the programs can be used to capture lucrative business traffic. However, the airlines are now finding the programs expensive to administer and since almost all US carriers offer a Frequent Flyer program, the competitive advantages have been diminished.

European carriers are wary of initiating Frequent Flyer programs within Europe. The general opinion of the European flag carriers is summed up by Luxair: "having followed the commercial impact of the frequent flyer programs in the USA and the financial risk many airlines are now facing by being forced to carry soon some thousands of businessmen free of charge, we decided not to copy the US carriers with their mileage bonus." (Aby Thurmes, Manager, Luxair Letter to Author, 30 August 1988 Correspondence with 9 of the flag carriers supported this opinion.) Therefore, while the European Commission should be aware of their potential danger, it would seem that regulation will be unnecessary.

7. Kahn, "Deregulatory Schizophrenia," op. cit., 1063.

8. Hans Asaa, District Manager, Ireland, SAS, interviewed by Author 18 September 1988.

BIBLIOGRAPHY:

## BOOKS AND JOURNALS

- Bailey, Elizabeth. "Contestability and the Design of Regulatory and Antitrust Policy." American Economic Review 71 (May 1981): 178-183.
- Bailey, Elizabeth. "The Contestability of Airline Markets During the Transition to Deregulation" Law and Contemporary Problems 44 (May 1981): 125-145.
- Bailey, Elizabeth, "Economic Models and Policy Reality: Lessons From Airport Access." Prices, Competition and Equilibrium, edited by M.H. Peston and R.W. Quadt. Oxford: Philip Allan Publishing Ltd., 1986.
- Bailey, Elizabeth. "Price and Productivity Change Following Deregulation: the US Experience." The Economic Journal 96 (March 1986): 1-17.
- Bailey, Elizabeth. "Economic Models and Policy Reality: Lessons from Airport Access." In Prices Competition and Equilibrium. edited by M.H. Preston and R.W. Quadt. Oxford: Philip Allan, 1986.
- Bailey, Elizabeth and William Baumol. "Deregulation and the Theory of Contestable Markets." Yale Journal on Regulation 1 (1984): 111-132.
- Bailey, Elizabeth, David Graham and Daniel Kaplan. Deregulating the Airlines. Cambridge, MA: MIT Press, 1985.
- Bailey, Elizabeth and Jeffry Williams. "Sources of Economic Rent in the Deregulated Airline Industry". Working Paper No. 28-86-87. Graduate School of Industrial Administration, Carnegie-Mellon University, Pittsburgh, Penn. 1987.
- Bain, J.S. Barriers to New Competition. Cambridge, MA: Harvard University Press, 1956.
- Barrett, Sean. Sky High, by Adam Smith Institute. England: Gower Publishing Co, 1986.
- Barrett, Sean D. "Deregulation - The Dublin-London Air Route Experience." Paper presented to the Irish Economics Association, Annual Conference, Carrickmacross, Ireland, May 1988 Photocopy.
- Baumol, William J. "Contestable Markets: An Uprising in the Theory of Industry Structure." American Economic Review 72 (March 1982): 1-15.



- Baumol, William, John Panzar, and Robert Willig. Contestable Markets and the Theory of Industrial Structure. New York: Harcourt Brace Jovanovich, 1982.
- Baumol, William and Robert Willig. "Contestability: Developments Since the Book." Received from Baumol, January 1988, prior to publication.
- Brenner, Melvin, James Leet, and Elihu Schott, Airline Regulation. Westport, Conn: ENO Foundation for Transportation, 1985.
- Derthick, Martha and Paul Quirck. The Politics of Deregulation Washington, D.C.: The Brookings Institution, 1985.
- Doganis, Rigas. Flying Off Course, The Economics of International Airlines. London: George Allan and Unwin, 1985.
- Fahy, R.J. "The Applicability of the Antitrust Laws to a Deregulated Airline Industry." Air Law 10 (1985): 152-160.
- Fahy, R.J. "Regulation of Computerized Reservation Systems in the United States and Europe." Air Law XI, (1986): 232 - 241.
- James, George W., ed. Airline Economics. Lexington, MA: D.C. Heath and Company, 1982.
- Kahn, Alfred. "Applications of Economics to an Imperfect World." American Economic Review 69 (May 1979): 1-13.
- Kahn, Alfred. "Deregulatory Schizophrenia." California Law Review 75 (May 1987): 1059-1068.
- Kahn, Alfred. "Suprises of Airline Deregulation." Speech for delivery at the Annual Meeting, American Economic Association. Chicago, Illinois, December 28, 1987, given to Author in January 1988 prior to publication.
- Kahn, Alfred. "Airline Deregulation - A Mixed Bag." Forthcoming, Transportation Law Journal Draft dated 16 March 1988.
- Levin, Harvey J. "Resistance to Spectrum Deregulation: A Role for Experiments in A Priori Assessment." from Deregulation: Appraisal Before the Fact, edited by Gies and Sichel. Michigan: University of Michigan, 1982.
- Levine, Michael. "Airline Competition in Deregulated Markets:

- Theory, Firm Strategy and Public Policy." Yale Journal on Regulation 4:393 (1987): 393-494.
- Lipman, Geoffrey and Stephen Wheatcroft. "Air Transport in a Competitive European Market." The Economist Intelligence Unit Special Report No. 1060 London, 1986.
- McCraw, Thomas K. Prophets of Regulation. Cambridge, MA: Belknap Press of Harvard University Press, 1984.
- McGowen, Francis and Chris Tengove. European Aviation, A Common Market London: The Institute for Fiscal Studies, 1986.
- Meyer, John and Clinton Oster Jr. Deregulation and the New Airline Entrepreneurs. Cambridge, MA: MIT Press, 1984.
- Morrison, Steven and Clifford Winston. The Economic Effects of Airline Deregulation. Washington, D.C.: The Brookings Institute, 1986.
- Morrison, Steven and Clifford Winston. "Empirical Implications and Tests of the Contestability Hypothesis." Journal of Law and Economics 30 (April 1987): 53-66.
- Phillips, Laurence T., "Structural Changes in the Airline Industry: Carrier Concentration at Large Hub Airports and its Implications for Competitive Behavior." Transportation Journal 25 (Winter 1985): 18-28.
- Pryke, Richard. Competition Among International Airlines. London: Gower Publishing Company, 1987.
- Reekie, W. D. Industry, Prices and Markets. Oxford: Phillip Allan Publishers, 1979.
- Reid, Gavin C. Theories of Industrial Organization. Oxford: Blackwell Ltd., 1987.
- Saunders, D. "The Antitrust Implications of Computer Reservations Systems." Journal of Law and Commerce 51 (1985): 157-196.
- Sawers, David. Competition in the Air, What Europe Can Learn from the USA. London: Institute for Economic Affairs. 1987.
- Sawyer, Malcom C. The Economics of Industries and Firms. 2nd ed. Kent: Croom Helm Ltd, 1985.
- Shepherd, William G. "'Contestability' vs. Competition." American Economic Review 74 (September 1984): 572-587.

Starkie, David and David Thompson. Privatising London Airports. London: Institute for Fiscal Studies, 1985.

van Bakelen, F.A. "Airlines' Computerized Reservation Systems: A Benefit or a Burden?" Seminar on Aviation Law. Rotterdam State University of Groningen and the University of Rotterdam: Aerovision Consultancy Publishing, 10 October 1986.

von Weizsacker, C.C. Barriers to Entry - A Theoretical Treatment. Berlin Heidelberg: Springer-Verlag, 1980.

#### US GOVERNMENT

Airline Deregulation Act of 1978. Public Law No. 95-504. Statute 1705.

The CAB Rules. (49 Federal Regulation 41171) US Civil Aeronautics Board, Economic Regulation Docket 41686. 1 March 1984.

Civil Aeronautics Board, Report to Congress. Implementation of the Provisions of the Airline Deregulation Act of 1978. Washington, D.C.: GPO, 1984.

Civil Aeronautics Board. Regulatory Reform: Report of the CAB Special Staff. Washington, D.C.:GPO, 1975.

Department of Justice. Report of the Department of Justice to Congress on the Airline CRS Industry. Washington D.C.: GPO, 1985.

General Accounting Office, Report to Congressional Requesters. Airline Competition: Impact of Computerized Reservation Systems. GAO/RCED-86-74 Washington D.C.: GPO, 1986.

Ogur, Jonathan, C. Wagner and M. Vita. "The Deregulated Airline Industry: A Review of the Evidence." Economic Issues (Washington, D.C.: Federal Trade Commission) 14 January 1988.

Transportation Research Circular No. 299. Washington, D.C.: Transportation Research Board, National Research Council, February 1986.

#### EUROPEAN COMMUNITY

##### COURT OF JUSTICE:

Commission of the European Communities v French Republic, European Court of Justice (Case No 167/73) 4 April 1974. Reports of Cases Before the Court, 359-381.

British-American Tobacco Company Ltd. and R.J. Reynolds Industries, Inc. V. Commission of European Communities, European Court of Justice, (Joined Cases 142 and 156/84), OJ NO C 178, 6.7.1984 / OJ NO C 195, 24.7.1984.

"Nouvelles Frontieres":

Ministere public v Lucas Asjes and Others, Andrew Gray and Others, Jaques Maillot and Others, and Leo Ludwig and Others, European Court of Justice (Joined Cases 209 to 213/84), Reports of Cases Before the Court, 1425-1473.

REGULATION:

The Treaty of Rome

December 14 Air Transport Package: 31.12.87 OJ No 374/1-25:  
 Council Regulation (EEC) No 3975/87, OJ No L 374/1-8.  
 Council Regulation (EEC) No 3976/87, OJ No L 374/9-11.  
 Council Directive (87/601/87), OJ No L 374/12-18.  
 Council Decision (87/602/87), OJ No L 374/19-25.

Commission Regulation (EEC) NO 2672/88 OJ No L239/13-16.

Council Regulation (EEC) NO 17 OJ, English Special Edition 1959-1962, p. 87-93.

Council Regulation (EEC) NO 141, OJ No 2751/62 p. 291-292/

Commission of the European Communities. "Amended Proposal for a COUNCIL REGULATION (EEC) on the control of concentrations between undertakings." COM(88) 97 final, Brussels (25 April 1988).

MEMBER STATES:

Department of Communication. Transport Policy, A Green Paper, Dublin: Government Stationery Office, November 1985.

Secretary of State for Transport. Airports Policy White Paper, Cmnd 9542. London: HMSO, June 1985.

Civil Aviation Authority (CAA). "UK Airports - Monthly Statements of Movements, Passengers and Cargo." February 1983-1988.

OPINIONS:

Community Economic and Social Committee. EEC Air Transport Policy. Report of the Section for Transport. Brussels ESC-85-010-EN, October 1985.

Community Economic and Social Committee, "Additional Opinion of the Economic and Social Committee on the Draft Commission Regulation (EEC) on the Application of Article 85(3) to Certain Categories of Agreements Between Undertakings Relating to Computer Reservation Systems for Air Transport Services," TRA/160 CES 738/88jc, 6 July 1988.

Sutherland, Peter D., "Competition in European Air Transport." Address by Peter Sutherland, Member of the Commission of the European Communities in Charge of Competition and Relations with the European Parliament. International Association of Airport Authorities, Dublin. 4 June 1987.

"Change in Air Rules Now Urgent," Community Report July / August 1987 Vol 7, no. 5

"European Commission Announces Major New Undertakings by British Airways on its Merger with British Caledonian Aimed at Safeguarding Airline Competition," IP(88) 131 Brussels, 9 March 1988, 1.

#### NON-EEC REPORTS:

European Civil Aviation Conference (ECAC), Ad Hoc Group on Intra-European Air Transport Policy, Eurpol/5-WP/2 14/4/1981 (Presented by the COMPAS Task Force) photocopy.

European Civil Aviation Conference (ECAC), Draft Principles for ECAC Code of Conduct, Tarpol/9-Report, Appendix 3, 9-14.

International Civil Aviation Organisation (ICAO), ICAO Looks Into Possible Abuses in CRS Services, ICAO Bulletin, January 1987, 25-30.

Organisation for Economic Co-Operation and Development (OECD). Deregulation and Competition Policy, The US Experience with Deregulation in the Air Transport Sector DAFFE/RAP/WP2/87.7 Paris, 21 May 1987.

Organisation for Economic Co-Operation and Development (OECD). Report on Competition Policy and Passenger Air Transport. CLP(88)3(1st Revision) March 1988.

#### FROM THE INDUSTRY

Association of European Airlines. Global Distribution System Feasibility Study. Brussels: AEA, March 1987.

- Curtis, Martha A. Ed. "A TWIST Roundtable Discussion." The Wall Street Transcript January 1987.
- Derchin, Michael. "The Restructuring of the Air Transport Industry." First Boston Equity Research March 9, 1987: First Boston Corporation 1987, Park Ave Plaza, New York.
- Duffy, William. Analysis of American's and United's Statements Regarding the Profitability of Sabre and Apollo. New York: Simat, Helliesen and Eichner, Inc., May 1985.
- James, George. Airline Consolidation. Washington D.C.: Airline Economics, Inc., 1987.
- Murphy, Richard J. "Hubbing and Airline Pricing." New York: Simat, Helliesen and Eichner, Inc. 1987. Photocopied.

#### NEWSPAPERS AND MAGAZINES

- Bailey, John "CRS: The Battle for Europe" Flight International, 27 February 1988 32-35.
- Boland, Colm. "Computer Predicts Air Traffic Chaos, But Cannot Prevent It." The Irish Times, 3 August 1988, 4.
- Carey, Susan. "Duelling Computers - Amadeus and Galileo Book Lots of Promises for Airline Industry." The Wall Street Journal (Europe), 8 August 1988, 4.
- Cassidy, John. "Mega-Trouble in the Air." The Sunday Times (London), 22 November 1987, 7.
- Deutsch, Martin. "Aggressive Marketing or Dirty Tricks?" Frequent Flyer Magazine. November 1987, 44.
- Henderson, Danna. "'Undramatic' Year Awaits Airline Industry." Air Transport World, January 1987, 34
- Hurdle, John. "N.Y., Boston Seek to Cut Air Traffic by Hiking Commuter Fees." Travel Weekly Magazine, 31 March 1988, 3.
- French, Trevor. "The Euro-Shuffle." Airline Business, February 1988, 14 - 17
- Gallacher, Jacqueline. "Hungry Europe Seeks Better US Feed." Airline Business, August 1987, 24-29.
- Gallacher, Jacqueline. "Ticketing Europe." Airline Business, January 1988, 22-27.

Kahn, Alfred. "Air Travel Needs Peak-Hour Premium Rates." The New York Times, 22 September 1987.

Lefer, Henry. "'Today's TWA' Flying into the Black." Air Transport World, 24 July 1987: 42-48.

Lehrman, Carol. "Unravelling Galileo." Irish Travel Trade News, December 1987, 29-34.

Martin, Seamus. "Waiting for the Skies to Fall." The Irish Times, 12 July 1988, 7.

Williams, Ian. "Sutherland's Law." Airport Magazine, April 1986, 25-26.

NO AUTHOR:

Airline Business. "Going Global." November 1987, 8-9.

Air Transport World. "News Briefs." July 1988, 7-8.

Airport International Magazine. "Fuller Funding on the Horizon." December 1987/January 1988, 12-13.

ITA Magazine. March/April 1988, 13.

The Avmark Aviation Economist. "The Sorensen Plan, Is It Realistic?" July 1988, 2-4.

The Economist. "Airline Reservation Systems, Sabre Rattling." 7 November 1987, 74.

The Los Angeles Times. 1986: 15, 24 October, 2 November.

