

THE EFFECT OF REGULATED COMPETITION ON SCHEDULED AIR FARES

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In this paper we analyse the effect of regulated charter air passenger transport on the fares charged by the scheduled airline operators. The frequency and fare levels of charter operations are regulated in the United Kingdom by the Air Transport Licensing Board, a government body with the power to impose conditions on the operators in exchange for operating licences. The frequencies and fare levels of the scheduled airlines are arrived at by the International Air Transport Association (I.A.T.A.), a producers' cartel, to which the responsibility for determining the quality and quantity of scheduled operations has been delegated by the governments of the world. The governments have excluded such matters from their bilateral air transit agreements.

The object of this paper is to test the hypothesis that, where there is a substantial degree of charter or non-scheduled airline competition, the fares charged by the scheduled airline operators in Europe will be lower than where there is little or no non-scheduled competition. The paper is composed of three parts. In Part I the institutional structure of the world's airline industry is described in outline. Part II tests the paper's hypothesis by reference to seventeen London-Europe air routes. Part III reviews the findings and offers tentative conclusions.

I. THE INSTITUTIONAL FRAMEWORK

The distinction between scheduled and non-scheduled airline operations originated at a meeting in Chicago in 1944 of world governments concerned with the post-war resuscitation of the civil air transport industry. The basic principle agreed to was that "the contracting states recognise that every state has complete and exclusive sovereignty over the airspace above its territory". The contracting states, which by virtue of their signature of the Chicago Convention became founder members of the International Civil Aviation Organisation (I.C.A.O.), agreed that when exchanging traffic rights for operations in each other's airspace they should treat scheduled and non-scheduled operators differently. The scheduled operators were to be constrained to the letter of the bilateral agreements made between member states. Non-scheduled operators, on the other hand, were to be treated more liberally. For them transit and non-traffic rights were to be granted without the need to obtain prior permission. Stopovers for traffic purposes were granted also "subject to the right of any state where such embarkation or discharge takes place to impose such regulations, conditions and limitations as it may consider desirable".¹ The Convention dealt with

¹Chapter II Article 5 of the Final Act, Appendix II, of the Chicago International Civil Aviation Conference 1944.

scheduled traffic in a similar manner, and the inference of the articles seems to be that there was to be little difference in the regulation of the two types of operation. In the event, subsequent developments have resulted in far fewer constraints being imposed on the operations of non-scheduled operators.

Although the working environment for the two types of operators was created by the Chicago Convention, little attempt to define the terms was made until the 1950s. The Convention defined non-scheduled operators in a negative way, as "aircraft not engaged in scheduled air services". The ambiguity of this definition led to further elaboration of the terms, first at the I.C.A.O. Council meeting in 1952, and secondly by the Paris Convention of 1955. The 1952 Council meeting confined itself to defining scheduled services. These were to be services which pass over the territory of other sovereign states, carry passengers, mail or cargo, and operate regularly or frequently to some form of timetable. The Paris Convention modified the Chicago Convention in the treatment of non-scheduled operations: the signatories agreed to waive any requirement for prior authorisation of non-scheduled operations of the following kinds:²

- (a) flights for the purposes of meeting humanitarian or emergency needs;
- (b) occasional taxi-class passenger flights, provided that the aircraft does not have a seating capacity of more than six passengers, that the destination is chosen by the hirer or hirers and that no part of the capacity is resold to the public;
- (c) flights on which the entire space is hired by a single person (individual, firm, corporation or institution) for the carriage of that person's staff or merchandise, provided no part of it is resold.
- (d) single flights, no operator (or group of operators) being entitled under this sub-paragraph to more than one flight per month between the same two traffic centres for all aircraft available to him.

Developments since the 1950s have led to the creation of two very different classes of services. On the one hand scheduled services are narrowly constrained to the relevant bilateral agreements. Non-scheduled operators, on the other hand, have thrived in a much more liberal atmosphere. Charter flights are, in theory at least, restricted to groups formed for non-travel purposes (affinity groups) and open only to members of at least six months' standing. If the affinity group has been in existence for at least two years and has less than 20,000 members it can obtain considerable fare reductions. Inclusive tour operators can also offer substantial fare reductions, although until recently their ability to do so was constrained by the rule that the cost of the holiday could not be less than the normal return trip I.A.T.A. scheduled fare.³ The substantial growth of the non-scheduled sector has removed any of the sense that

²*The Multilateral Agreement on Commercial Rights of Non-Scheduled Air Services in Europe*. Cmnd 1099. H.M.S.O., 1956.

³This constraint has now been removed for the winter holiday trade. Thus one operator now offers a four-day holiday in Majorca for £18. Only £9.50 of this is for the return jet flight from London. The scheduled single fare to Majorca is over £30, and over £12 more than the total cost of the four-day holiday.

existed in differentiating between the two types of operations. Nowadays non-scheduled operators can provide relatively regular and systematic services on sale to anyone.

These operations are thus virtually scheduled operations without the constraints experienced in the scheduled sphere. Scheduled operations are governed by inter-governmental exchanges of property rights to operate flights between two states. Some of these exchanges follow the so-called Bermuda pattern⁴ with quite liberal capacity clauses. In others capacity is fixed and carved up by the two governments according to very strict rules.

Virtually all these bilaterals explicitly abdicate the responsibility for fare setting and leave it to the caucus of producers called the International Air Transport Association. The Association's activities⁵ result in fare levels which many writers believe are too high.⁶ The fare levels of the charter operators are almost always lower, as they operate at higher load factors than the scheduled operators.

II. TESTING THE HYPOTHESIS

Given this institutional framework, we now wish to test the hypothesis that charter competition results in the charging of lower fares by the scheduled airline operators. The size of the sample is seventeen routes, largely determined by the data sources. The routes used are five from London to Spain, three from London to Switzerland, two from London to Germany, three from London to Scandinavia, one from London to France, two from London to Italy and one from London to Austria. Fare data was derived from the *A.B.C. World Airways Guide*,⁷ and in each case the economy class single fare was used. The charter information was derived from Board of Trade statistics. All the information is reproduced in Table I.

Table II shows the charter traffic as a percentage of the total traffic on each of the routes, and the fare in U.K. old pence per kilometre. The bracketed figure in the former data is the 1968 percentage.

A fares series was constructed from the *A.B.C. World Airways Guide* for 1970, using economy fares for each route, and this was then divided by the distance to give the fare in pence per kilometre. It is of interest that on all the Spanish routes (i.e. where air charter traffic was substantial) there were also Y.E. fares, i.e. economy excursion fares. On each Spanish route except that to Madrid (where there is little charter business) there were two varieties of Y.E. fares, indicating not only that there was a reaction to non-scheduled competition but also that this competition led to multiple price differentiation. Scandinavian routes had no Y.E. fares.

⁴Named after the pioneering post-war bilateral agreement between the U.K. and the U.S.A., negotiated in Bermuda in 1946.

⁵It can be fairly said that these operations do not work in the consumers' favour. A discussion of this problem can be found in *The Price of Air Travel*, by M. H. Cooper and A. K. Maynard, Hobart Paper No. 53, Institute of Economic Affairs, 1971.

⁶See e.g. (a) *The Air Net*, by K. G. J. Pillai, New York 1969; (b) *Air Travel Within Europe*, by A. Rosenberg, Stockholm 1970.

⁷*A.B.C. World Airways Guide*, International Publishing Corporation Business Press Ltd.

TABLE I

Traffic from London 1968 and 1969

	Distance	Economy Fare	Total Traffic	Scheduled Traffic	Charter Traffic	Charter as % of Total Traffic
	km	pence/km	1968	1968	1968	1968
		old	1969	1969	1969	1969
London to Basel, Switzerland	740	7.08	104.8	45.8	59.0	56
" Hamburg, Germany	745	7.20	123.4	121.3	2.1	2
" Zurich, Switzerland	772	7.20	316.0	298.5	17.5	5
" Geneva, Switzerland	735	7.20	280.6	235.2	9.8	4
" Copenhagen, Denmark*	982	7.80	246.7	224.7	22.0	9
" Milan, Italy	940	7.32	220.2	169.9	50.3	23
" Munich, Germany	933	6.96	119.9	77.4	42.5	35
" Nice, France	1020	7.08	90.7	74.6	16.1	18
" Barcelona, Spain*	1128	5.64	133.4	78.6	54.8	41
" Vienna, Austria	1162	7.20	74.0	67.0	7.0	9
" Oslo, Norway*	1196	7.08	85.1	76.7	8.4	10
" Madrid, Spain*	1231	6.84	149.6	141.2	8.4	6
" Palma, Spain*	1329	5.40	532.3	707.0	366.3	69
" Ibiza, Spain*	1390	5.40	114.7	17.4	97.3	85
" Stockholm, Sweden*	1461	7.08	98.2	84.5	13.7	14
" Rome, Italy	1434	6.36	242.8	215.7	27.1	11
" Malaga, Spain*	1661	5.52	120.5	71.2	49.3	41

Sources:

Distances are for I.A.T.A.-Europe traffic and are taken from *Air Travel Within Europe*, by A. Rosenberg. Appendix 7, Part III, Data for May 1969. Data on traffic from the Board of Trade's *Business Monitor-Civil Aviation* series C.A.7. 1970 (in thousands). Fare data from *A.B.C. World Airways Guide*-I.P.C. Business Publications 1970. In each case the economy class single fare is used. London-Spain and London-Scandinavia routes are marked by an asterisk.

TABLE II

Route	Fare (old pence/km.)	Charter Traffic as a Percentage of Total Traffic	
		1970	1968
London to Copenhagen, Denmark	7.80	11	(9)
London to Milan, Italy	7.32	22	(23)
London to Vienna, Austria	7.20	11	(9)
London to Geneva, Switzerland	7.20	5	(4)
London to Zurich, Switzerland	7.20	8	(5)
London to Hamburg, Germany	7.20	2	(2)
London to Basel, Switzerland	7.08	63	(56)
London to Nice, France	7.08	25	(18)
London to Stockholm, Sweden	7.08	13	(14)
London to Oslo, Norway	7.08	12	(10)
London to Munich, Germany	6.96	34	(35)
London to Madrid, Spain	6.84	7	(6)
London to Rome, Italy	6.36	14	(11)
London to Barcelona, Spain	5.64	36	(41)
London to Malaga, Spain	5.52	41	(41)
London to Ibiza, Spain	5.40	82	(85)
London to Palma, Spain	5.40	76	(69)

The resultant correlation coefficient from these figures is -0.683 . This coefficient with a sample size of 17 yields a t -ratio of -3.619 , which is highly significant. Thus our hypothesis is not rejected.

If we look at the London–Spain and London–Scandinavia portion of our sample in isolation, we get a correlation coefficient of -0.849 . With a sample size of eight the t -ratio is -3.945 . Further disaggregations were carried out, but we must give a warning of their statistical weaknesses. The results of the disaggregation are shown in Part B of the Appendix.

It is fair to say that these calculations yield results which do not refute our hypothesis. There appears to be a significant inverse correlation between fare levels and charter competition. It seems reasonable to conclude that price discrimination is being practised.

It is interesting that the coefficient of correlation between fares per kilometre and the volume of traffic carried on each route proved to be only 0.359 with a t -ratio of 1.490 . Clearly, if there are economies of scale they are not reflected in the fare structure. On the other hand, the relationship between fares and route length appeared to be stronger, and with a coefficient of -0.643 was only slightly smaller than that between fares and charter competition. The t -ratio was -3.251 . When the Spanish and Scandinavian routes were again examined in isolation the coefficient dropped to -0.526 , while it will be recalled that between fares and charter competition it increased to -0.849 . It should be stressed, however, that all the routes in the sample were short hauls between 750 and 1,600 kilometres.

III. SOME CONCLUSIONS

Any defence will argue that correlation does not infer causation. Consequently, we must briefly discuss the likely rationale of the present state of affairs.

The first defence that could be made is that the lower fares to Spain represent *lower costs* associated with higher load factors. The average load factor of world civil airline operations in 1959 was 52 per cent;⁸ i.e., on average only 52 out of every 100 available aircraft seats were utilised. In essence this load factor means that if there is to be no cross-subsidisation the average passenger pays a fare equal to twice the cost of operation of the plane when full and receives in return the privilege of travelling in a half-empty plane. The relevance of the load factor to our present problem is that if it is higher on the Spanish routes (than on the Scandinavian routes) the average cost of providing seats may be lower.

To test this hypothesis it was necessary to acquire load factor data. British European Airways⁹ was most helpful, and provided the data for Table III.

TABLE III

Area	Passenger Load Factor					
	1968-69			1969-70		
	Summer	Winter	Year	Summer	Winter	Year
	%	%	%	%	%	%
U.K.-Spain	62.8	55.5	61.2	62.7	57.1	61.4
U.K.-Scandinavia	62.6	55.7	60.3	61.4	53.7	58.8
U.K.-Switzerland	71.8	60.8	67.6	61.6	59.0	60.7

The data includes the provinces-Continent services, but these are insignificant in relation to the London services and would not materially alter the figures.

Table III clearly shows that the load factors do not differ much between routes. The idea that higher load factors on the Spanish routes might enable fares to be reduced to a level lower than the Scandinavian fares does not seem to be borne out. The load factors for the U.K.-Spain and U.K.-Scandinavia routes are very similar indeed.

The second line of defence for these fare discrepancies is that the nature of the traffic carried on various routes differs and that these differences result in the need for different pricing policies. Traditionally the argument is that "peak" traffic causes a good deal of trouble, as it calls for the use of inputs which will be under-utilised in the non-peak time. The usual example is public urban transport, in which peak utilisation times are in the morning and evening rush hours; outside these times much of the rolling stock lies unutilised in sidings yet still creates financial burdens which

⁸World Air Transport Statistics 1969. International Air Transport Association, 1970.

⁹Data provided in a letter from B.E.A. dated 18 September 1970.

TABLE IV

Area	Content Type			
	Holiday		Business	
	Summer	Winter	Summer	Winter
U.K.-Spain	87	61	13	39
U.K.-Scandinavia	55	24	45	76
U.K.-Switzerland	55	34	45	66

As in Table III the data includes provinces-Continent services, but these are insignificant in relation to the London services and would not materially alter the figures.

The holiday/business content is taken from the latest available surveys.

Source: British European Airways—private letter dated 23 September 1970.

TABLE V

Scheduled Air Fares: London to Malaga, Spain.

Type of Fare	Single	Return
F-First Class Fare	£51.60	£103.20
Y-Economy Class Fare	£38.55	£77.10
YE (1)-Economy Excursion (1)	none	£54.50
YE (2)-Economy Excursion (2)	none	£65.00

have to be met. The parallel of this on the U.K.-Continental airline routes is the holiday peak traffic associated with Britons "migrating to the sun".

Table IV indicates the importance of holiday traffic to the scheduled operator on the U.K.-Spain routes. According to one defence of the scheduled air fares, the result of this peaking has been the introduction of economy class excursion fares. As a consequence air fares to Spain are of the nature shown in Table V.

Apparently YE(1) is the excursion fare in the winter and YE(2) is the excursion fare in the summer.

The rational business man whose sole concern was to reduce the peak would charge higher prices in the peak season. The scheduled operators have, in the event, introduced fares lower than the regular economy fares. Thus it is possible that the operators' concern is not the peak but the market characteristics. They are forced to take account of these characteristics and lower their fares because the non-scheduled operators would otherwise "scoop the market". The apparent nature of the characteristics is that the price elasticity of demand for air travel is more than one. The excursion fares of the scheduled operators are called by them "creative fares"—and this is their objective, not the countering of the peak problem.

The introduction of creative fares provides a pricing structure which enables the scheduled operators to take account of the favourable price elasticity of demand

and, it could be argued, a favourable cross elasticity of demand between charter and scheduled flights. The scheduled airline operators claim that the charter operators are providing a different service because their facilities provide an altogether different mode of air transport. The scheduled operators claim they provide such services as half-empty planes, so that the potential passenger can always find a seat at short notice and will rarely travel in crowded conditions. The non-scheduled operator on the other hand is alleged to provide crowded and necessarily "inferior" facilities. This case would have some merit if it were not for the fact that the scheduled operators appear to behave as if there were a positive cross elasticity of demand. The particular behaviour which is relevant here is that the scheduled operators fight hard to get the Board of Trade to regulate the activities of affinity groups. Such groups, defined by the Paris Convention of 1955, have been harassed in the U.K. during the summers of 1970 and 1971, and some flights have been cancelled because ticket holders had not been members of the relevant group for the necessary six months, or even had never been members. In essence the scheduled operators are attempting to enforce the Paris Convention and make the non-scheduled operators provide a different service. Such attempts implicitly admit that at present the services are not different enough.

The one question to ask at this stage is what effects these creative fares would have on, e.g., the Scandinavian routes, where they are at present not available. The scheduled operators claim that "these cheaper fares (the excursion fares) were introduced on the 'holiday routes' rather than the 'business routes' to avoid dilution of revenue on the latter."¹⁰ A fair comment on this statement is to ask to what extent the Spanish routes are holiday routes because of the lower fares. It could well be that a similar fare structure on the Scandinavian routes could make these routes more "holiday-intensive"—it will be noted from Table IV that the Scandinavian routes are already largely holiday passenger carriers in the summer months. Whether such opinions have been considered by the scheduled operators is an open question. They seem to believe that there is no demand for charter or non-scheduled excursion flights to Scandinavia. Thus if "the charter companies were to switch their services from Spain to Scandinavia . . . (and) if their costs did not change they would clearly be able to undercut the scheduled operators very heavily and make extremely large profits until such time as the scheduled airlines reduced their fares".¹¹ This quotation, in defence of treating Spain differently because of the nature of its traffic, leaves us with the feeling that the scheduled operators know that they are charging the passengers on Scandinavian routes high fares but do not care.¹²

Our conclusion is that the two postulated defences of the scheduled operators do not withstand close scrutiny. It appears that the logic of the arguments is suspect. Our statistical analysis provides suggestive evidence that the scheduled operators respond to charter competition by lowering fares. Such price discrimination, if and when practised, is due to the lack of other competition, and that is in large part the result of the institutional arrangements which permit world air fares to be fixed by a

¹⁰A letter from B.E.A.'s commercial relations officer dated 26 September 1970.

¹¹A letter from the tariff services manager of B.E.A. dated 15 September 1970.

¹²The logic of the scheduled operator's defence is left for the reader to fathom.

caucus of producers whose only constraint seems to be the "unfair" non-scheduled operator.¹³

It is to be noted that direct scheduled air services between Copenhagen and London and Stockholm and London are provided by only two carriers, B.E.A. and S.A.S. Direct air services from London to all the Spain destinations except Madrid are in the hands of either duopolists (London-Barcelona) or oligopolists numbering three (i.e., for London to Malaga, Ibiza and Palma the carriers are B.E.A., B.U.A. and Iberian). Scheduled services from London to Madrid are provided by B.E.A., Iberian, E.P. (Peru), U.A. (Mexico), A.R. (Argentina) and W.T. (Nigeria), the last having stop-over rights only. It is argued elsewhere¹⁴ that the result of I.A.T.A. fare regulations is that fares tend to the level of the marginal cost of the least efficient producer. Several of the operators on the London-Madrid route can be categorised as high-cost operators (per kilometre performed), and this fact may well encourage the correspondingly high fares. Most of the other European routes are oligopolies at best, with considerable scope for fares manipulation.

APPENDIX

(A) *Disaggregated Data (Rosenberg fare data)*

(a) *London-Spain*

Correlation coefficient = -0.849
t-ratio = -2.789
N = 5

(b) *London-Scandinavia*

Correlation coefficient = -0.866
t-ratio = -1.732
N = 3

Source: as for Table I.

(B) *Disaggregated Data (our own fare data)*

(a) *London-Spain*

Correlation coefficient = -0.840
t-ratio = -2.681
N = 5

(b) *London-Scandinavia*

Correlation coefficient = -0.866
t-ratio = -1.731
N = 3

As we note in the text, these findings are statistically rather suspect as the sample size is so small.

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¹³The excess capacity in 1971 seems to have driven the scheduled operators into a bid to follow the maxim "if you can't beat them, join them". B.O.A.C. and B.E.A. have set up a joint charter group in the hope of using their excess capacity at lucrative load factors.

¹⁴*The Price of Air Travel*, by M. H. Cooper and A. K. Maynard. Hobart Paper No. 53, Institute of Economic Affairs, 1971.