10. PRICING

Introduction

- Pricing is a vital component in the economics of transport
- The price determine who gets and who doesn’t get a particular service, but also determines the distribution of rewards between the provider and the user
- The imperfect market structures are characterized by higher rewards for the providers

The principles of pricing

- In most cases, transport services are subsidised and/or regulated, however a basic understanding of pricing principles is needed
- In order to achieve economic efficiency, the price should equal the marginal cost
- In imperfect competition markets, it is possible to observe price discrimination, predatory pricing, price fixing and congestion pricing

Price fixing

- Firms in oligopolistic markets such as the airline sector often face a dilemma as to whether to compete with each other or to collude
- Price fixing is a situation when oligopoly firms agree on the price they are going to sell their goods or services in order to remove price competitiveness and thus increase their profits

Price discrimination

- Price discrimination refers to a situation where a company charges particular consumers a higher price than others for the same product for reasons unrelated to cost.
- The seller must possess a degree of market power, must be able to divide the market and market segments must have differing elasticities of demand.

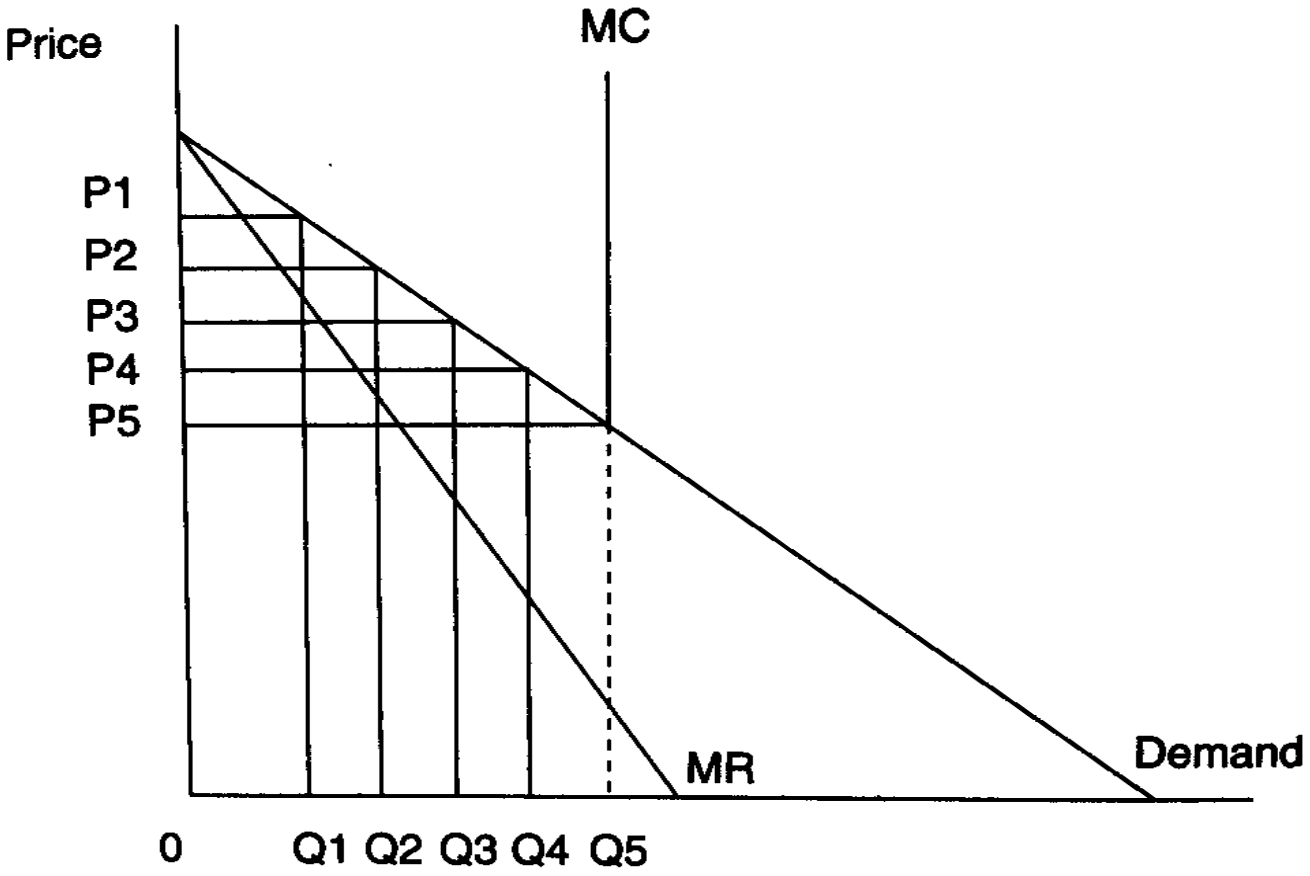
Perfect price discrimination

- To sell each unit (or ticket) seperately, charging the highest price that each consumer is prepared to pay
- If this was achievable, the seller would obtain the entire consumer surplus from the consumer
- The seller must know the exact shape of each consumer's demand and charge each consumer the maximum price they are prepared to pay

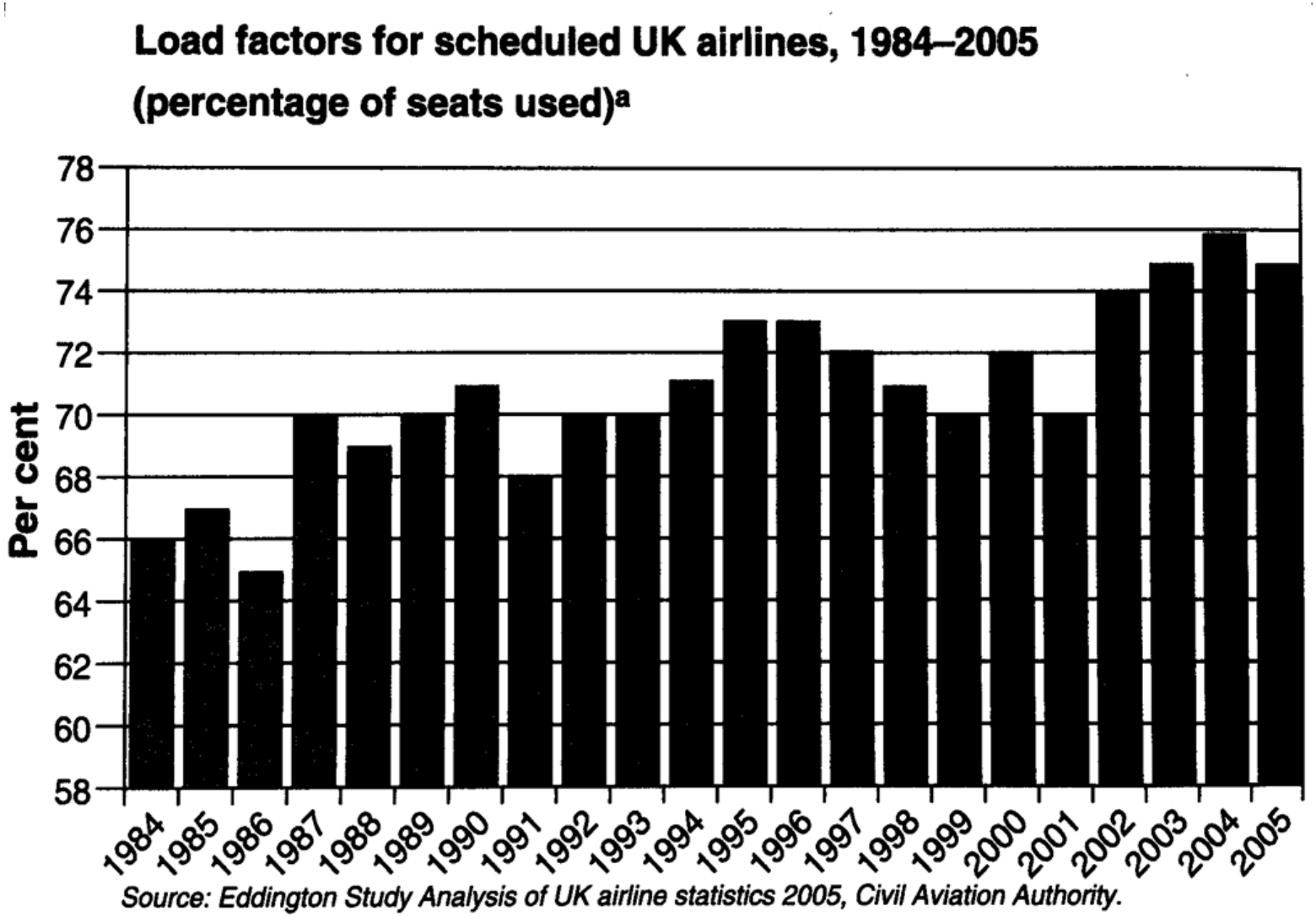
Case: Sale of airline tickets

- On a typical airline flight there are three classes, namely First, Business and Economy.
- Figure on the next slide refers to travel in a particular class and the assumption is made that the marginal cost of one extra passenger is constant up to the point where the aircraft reaches full capacity
- At this point the MC curve becomes perfectly inelastic

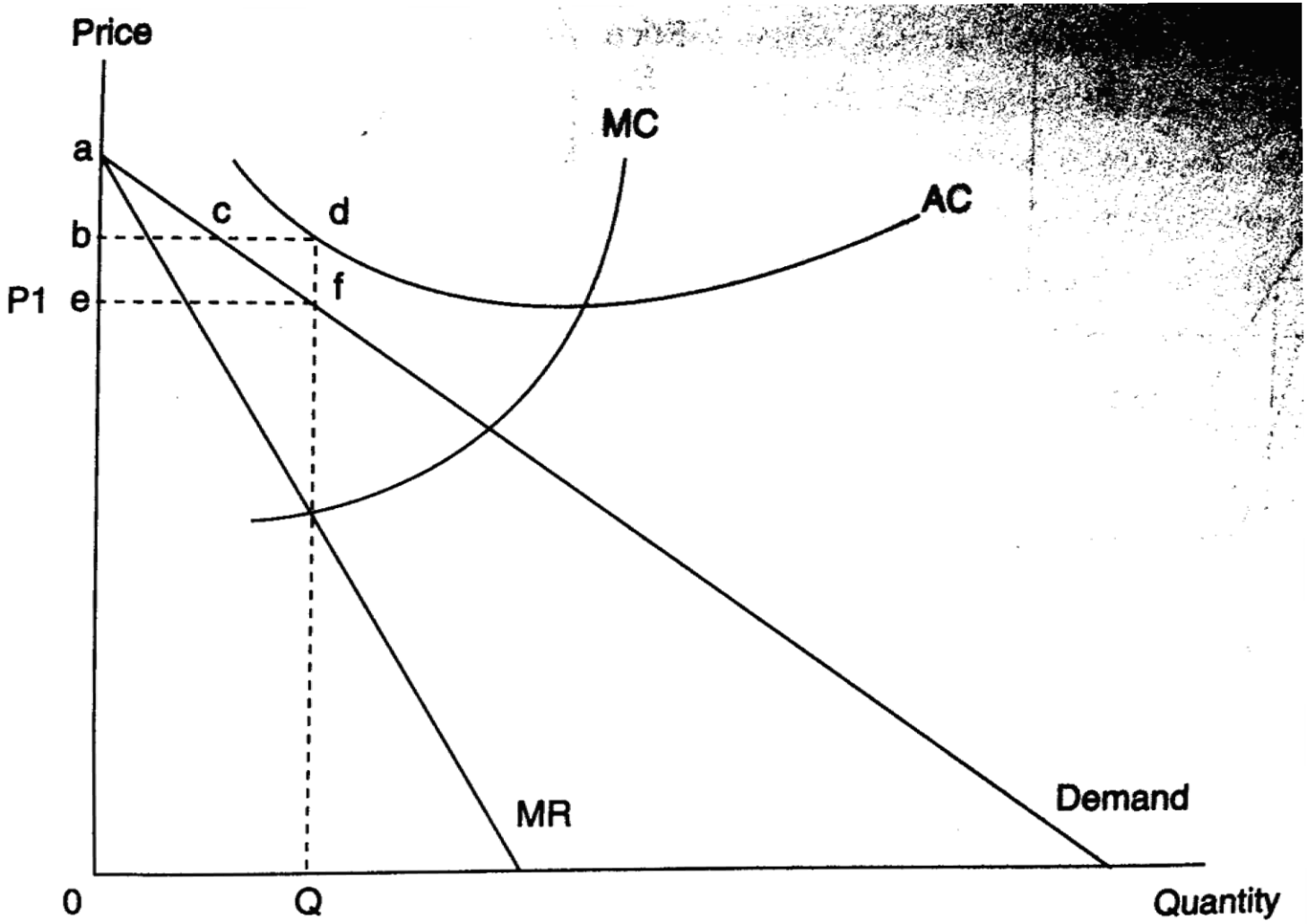
Airline price discrimination



Yield management in the aviation



Loss making operator and perfect price discrimination



Exercise (1)

You are the manager of the Airline and unable to determine whether any given passenger is a business or leisure traveller. Can you think of a self-correction mechanism that would permit you identify business and leisure?

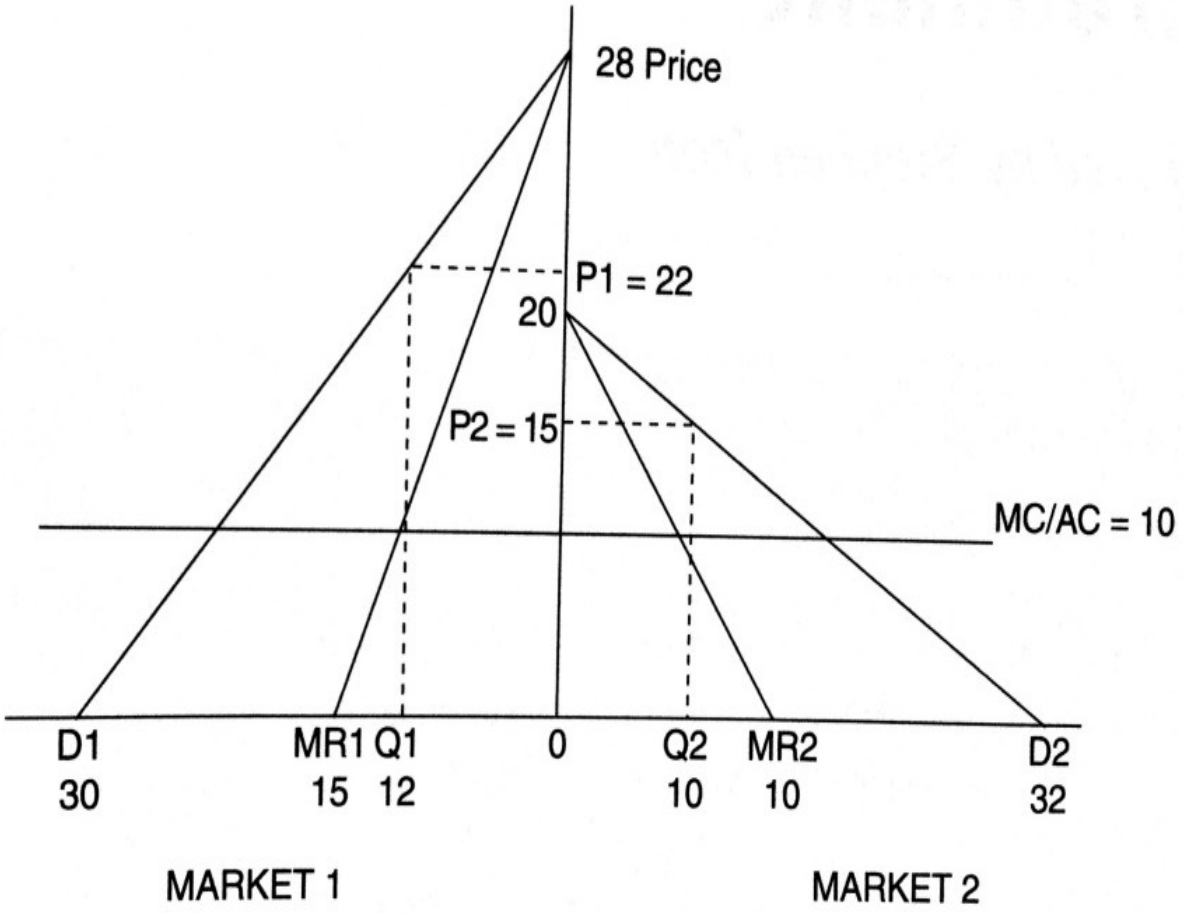
Exercise (2)

Suppose that a transport carrier is accused of price discriminating in two separate markets. The carrier replies that he can't be price discriminating, since he is charging the same price in each of the markets. Do you agree or disagree with the carrier's response?

Exercise (3)

Business travellers have more inelastic demands for air services in comparison with vacation travellers. If an airline charges business and vacations travellers the same route fare between Chicago and Los Angeles, does this necessarily imply that the airline is not price discriminating? Under what conditions would this be consistent with price discrimination?

Exercise (4)


28 Price
P1 = 22
20
P2 = 15
MC/AC = 10
D1
30
MR1
15
Q1
12
0
Q2
10
MR2
10
D2
32
MARKET 1
MARKET 2

Exercise (4)

Figure refers to a rail operator that is practising price discrimination, charging a different price to the passengers in market 1 compared to those in market 2. It is assumed that costs are constant, therefore MC = AC.

- What does Figure reveal about the type of passengers using the service and their relative elasticities?
- Calculate the abnormal profit earned by the rail operator by price discriminating.
- Based on the information presented in Figure sketch out the diagram for the rail operator if it were not to price discrimination.
- Are there any beneficiaries from price discrimination and what happens to consumer surplus when price discrimination is practised?

Predatory pricing

- Predatory pricing occurs when a firm with maket power reduces its price below cost in the short run so as to obtain abnormal profit in the long run.
- Predatory pricing is aimed at either achieving or maintaining a monopoly situation, with the price set so as to bankrupt competitors, „encourage“ them to merge or in fact collude.

Predatory pricing

- The consumer may benefit in the short run from lower prices, due lower competition such activity may not be in the public interest in the long run.
- In practise it can be very difficult to prove that such activity has taken place
- Predatory pricing is an appealing strategy in a segmented market

Predatory bidding

A similar practise to predatory pricing is a predatory bidding that relates to predatory pricing in competitive tenders. The competitive tendering occurs when firms bid for right to run service or gain a certain contract. The competitive tender is often utilized to choose the provider of subsidized rail passenger services. Why?

Do you think it is a good idea to choose the operator in such tender on the base of only one parameter – lowest price? Do you think that predatory pricing (bidding) or price fixing may be a problem here? Do you think a moral hazard is a relevant issue?

Case

Alexandersson, G., & Hultén, S. (2006). Predatory bidding in competitive tenders: A Swedish case study. *European Journal of Law and Economics*, *22*(1), 73-94.

Abstract

- Public procurement by competitive tendering is an important part of European policies to encourage competition in network industries previously dominated by public companies.
- In recent years, the appearance of very low bids has become an issue in several countries. We discuss predatory bidding from a theoretical, practical and legislative point of view.
- A case of tendering for train services in Sweden is used to illustrate the possibilities to detect an abnormally low bid. An analysis of projected costs and revenues is complemented with a method using historical data on previous tenders.

Introduction

- One of liberalization problems in rail sector → the appearance of very low bids in tenders
- Sometimes linked to later failures of winning firms to deliver the contracted train services
- May contribute to a growing concern for negative effects of competitive tendering at the national and regional level

Why do firms place very low bids in tenders?

- To push out or at least weaken competitors/new entrants
- The role of market position and cross-subsidization
- Is this a rational strategy?
- Chicago School of Economics
- The role of signalling and strategic behaviour

Legislators view on predatory bids

- EU legislation does not consider predatory pricing as such
- Instead, it focuses on price reductions as one of several practices related to abuse of dominant position

Tendering in northern Sweden

- In 2002 Connex won tender for operating train services to northern Sweden
- Connex, originating from France, is Europe biggest private passenger tranportation company (55.000 employees and 3.4 bn EUR turnover (2003))
- Tagkompaniet – small competitor (this contract 80% of its turnover) bitterly complained that Connex bid was „totally unrealistic“
- Swedish Competition Authority decided not to take action, after failing to find sufficient support to investigate any possible viaolation of the Competition Act

Comparison of the bids

Table 1 Comparison of the bids of Tågkompaniet and Connex (million SEK)

	Traffic year	02/03	03/04	04/05	05/06	06/07	07/08
Tågkompaniet	Cost forecast	346	356	365	384	396	407
	Revenue forecast	253	264	272	281	296	312
	State subsidy	105	105	105	114	109	104
Connex	Cost forecast		324	319	320	320	325
	Revenue forecast		258	263	268	274	279
	State subsidy		75	65	60	55	55

Sources: Rikstrafiken (2002c, 2002e), Tågkompaniet (2002) and own calculations.

The assesment of Connex bid

- Conservative in revenue projections
- Very ambitious in cost reductions
- Connex publicly declared that it will not cut down on staff or change the working conditions
- No allowance for expanded vehilce maintanance
- Summary: Connex bid has been „extremely low“

Subsequent development

- 2004 – Connex were criticized for running old and very run-down trains, lacking the comfort passengers expected.
- Connex appeared not to be willing or able to keep the interior of trains in good shape
- Patronage plummeted and in late 2004 the management of Connex was facing massive criticism from staff and union.
- The head of the services was replaced

Subsequent development

- Worsening conditions for travelling by train between Stockholm and Northern Sweden, causing a political debate that soon reached the national level
- The end result was a decision in Parliament to direct an extra 100 million SEK per year to imporve the quality of services
- It is pretty clear that the bid of Connex was not possible to fulfill

Discussion question

- What are lessons out of this case study?

Czech rail case

- In 2006 Czech Ministry of Transport opened two competitive tenders for rail lines Pardubice – Liberec and Plzeň – Most.
- The tenders' results caused great controversy and did not open the market to competition.
- This was because České dráhy won the tenders with a price that aroused suspicion that it was set under the level of the incumbent costs.

Airport charges

Bel, G., & Fageda, X. (2010). Privatization, regulation and airport pricing: an empirical analysis for Europe. *Journal of Regulatory Economics*, *37*(2), 142-161.

Introduction

- Both airports and major airline operators have significant market power
- What are factors that determine the level of airport charges? - Volume of traffic? Public/private ownership? Regulation?
- Bel – Fageda (2010)empirical model was formulated as:

$$PR_a = \alpha + \beta_1 Total\_Traffic_a + \beta_2 \%National\_Traffic_a + \beta_3 Number\_nearby\_airports_a + \beta_4 HHI_a + \beta_5 \%Airline\_alliance\_traffic + \beta_6 Private\_Non\text{-}Regulated_a + \beta_7 D_a^{island} + \beta_8 D_a^{system} + \varepsilon \quad (1)$$

Variables

PR is he price charged by the airports to airlines fo traffic within EU.

1. ***Total_Traffic*** is the airport‘s total volume of traffic.
2. ***%National_Traffic*** is the domestic traffic as a percentage of the airport’s total traffic.
3. **Number_nearby_airports** is the number of airports that lie fewer than 100 km away.
4. ***HHI*** is the the Hirschman-Herfindhal index of concentration at the airport in the terms of the number of flights offered by the airlines operating out of it.
5. ***%Airline_alliance_traffic*** is the percentage of traffic channelled by the airlines integrated within international alliances.
6. ***Private_Non_Regulated*** is the dummy for private and non regulated airports.
7. D^{island} is a dummy for airports with an island location.
8. D^{system} is a dummy for airports in countries that operate a price fixing system.

Questions

- What signs do you expect for the explanatory variables?
- Which estimation method would you use?
- Do you think endogeneity may be a problem here?

Results

Table 6 Elasticities evaluated at sample means

Dependent variable: PR	All sample	
Total_Traffic	0.08***	
%National_Traffic	−0.12**	-
Number_nearby_airports	−0.01	-
HHI	−0.07	-
%Traffic_airlines_alliances	0.18***	
Private_NoRegulated	0.07***	
D^{island}	0.02	-
D^{System}	−0.03	

Conclusions

- Using data for 100 large airports in Europe, we find that they charge higher prices when they move more passengers.
- Additionally, competition from other transport modes and nearby airports imposes some discipline on the pricing behavior of airports. Low-cost carriers and airlines with a high market share seem to have a stronger countervailing power.
- We also find that private airports not regulated charge higher prices than public or regulated airports.
- Finally, the regulation mechanism does not seem to influence substantially the level of airport charges.