The Challenges of European Airports Policy

Prof. Dr. Hans-Martin Niemeier

FEDEA seminar on Airport Privatization
24th May 2011, Madrid
Issues

• Government structure of European Airports has changed in the last two decades

• Airline airport relationship under stress:
  ➢ “Airports are exploiting, in many cases, their natural monopoly position” (IATA, 2007)
  ➢ “Airports are in tough competition” (ADV, 2007)

• What policy should be adopted?

• What lessons are to be learnt?
Outline

• Airport Policy and Transport Policy in the EU
• Airport Privatization
• Airport Regulation
• Airport Competition
• Capacity Constraints and Slot Allocation
• Challenges and Airport Policy Reform
• Conclusions
  - Airports are part of a multimodal transport infrastructure and should be priced according to social marginal costs.

Goals
  - Cost efficiency
  - Efficient rationing
  - Optimal investment
  - Internalization of externalities
Airport Policy and Transport Policy in the EU

- **Airline deregulation in 3 packages begun in 1987 completed in 1997.**

- **Deregulation of ground handling (Oct. 1996)**
  - Decrease in prices and modest changes in market charges

- **Directives on slot allocation in 1995**
  - Administrative measures to reduce congestion

- **Directive on airport charges (2009)**
  - Independent regulator
Airport Policy and Transport Policy in the EU

• Will the goal of fair and efficient pricing be achieved given the current liberalization, privatization and competition trends?
• What policy options should be adopted?
Airport Privatization

1. How has airport privatization developed in Europe since the privatization of BAA in 1987?

2. How has public airport management changed in the last two decades?

3. How have incentives changed and what are the effects on cost and allocative efficiency?
Fully privatized airports in Europe

*Fully privatized airports*
Fully and partially privatized airports in Europe

- **Fully privatized airports**
- **Partially privatized airports with a majority share**
- **Partially privatized airports with a minority share**

*Malta International Airport has been partially privatized as well (Minority share privatization)*
Airport Privatization

1. How has privatization developed in Europe?

– Privatization has not changed the nature of the industry as it has in the UK, but it has made airports in mainland Europe more profit-oriented.

– The typical private airport in Europe is a partially privatized airport which tries to pursue a wide range of objectives such as regional development, job creation and tourism growth.
2. How has public airport management changed in the last two decades?

– The typical public airport is not a public bureau, but a commercialized entity with private management tools for cost control and marketing.

– Restrained profit making becomes an objective in public airport management.
Airport Privatization

3. How have incentives changed and what are the effects on cost and allocative efficiency?

– No, clear cut effects like in the cases of privatization with intense competition or effective regulation.
Airport Privatization

Effects of Privatization with effective competition/regulation

$P = P(Q)$
Airport Privatization

3. How have incentives changed and what are the effects on cost and allocative efficiency?

– Cost cutting especially in ground handling

– Development of non-aviation business

– Some effects towards product differentiation (Low Cost Terminals) and price differentiation (discounts for route development), but not towards peak pricing
1. How has economic regulation changed in Europe?
   - Are airports regulated by institutions which guarantee a fair process?
   - How low or high powered are the regulatory systems?

2. How have incentives changed and what are the effects on cost and allocative efficiency?
Regulation of European Airports

- Independent regulator (all with user consultation)
- User consultation without independent regulator

- Improved consultation
- Lack of independent regulator
- Regulatory capture

* User consultation at Malta International Airport

Source: Gillen & Niemier, 2006
Airport Regulation

• “Member States shall ensure that the independent supervisory authority exercises its powers impartially and transparently.” EU directive on Charges

• BUT

• “As for Frankfurt Airport, the Hesse Ministry of Economics, Transport, Urban and Regional Development (HMWVL) – which is the responsible government entity for aviation – is clearly separated and acts independently from the Hesse Ministry of Finance, which represents the state’s 30 per cent shareholder interest in Fraport.” (Stefan Schulte, 2009)
Airport Regulation

• Are airports regulated by institutions which guarantee a fair process?
  – Improved consultation, but in the vast majority of countries no independent regulator exists
  – Examples for lack of information:
    > 9.1% share of Lufthansa in FRAPORT
    > Initially regulated asset base and rate of return not published for ADP

• How low or high powered are the regulatory systems?
Type of Regulation at European Airports

- Type of price cap
- Charges set by airport
- Cost plus regulation
- No regulation

Single or dual till system

- Single till
- Dual till
- No till system

* Malta International Airport has a price cap and a dual till system in place.

Source: Gillen & Niemier, 2006
Airport Regulation

• **How high- or low- powered are the regulatory systems?**
  – Scope: Too narrow and too wide
    > In some countries regulation of charges does not include central infrastructure fees for ground handling
    > Single till still dominates though slowly changing towards a dual till system
  – Incentives: More in the direction of inefficiency than efficiency
    > Cost based regulation in majority of countries
    > Slow move to hybrid price caps
    > Slow move to use of benchmarking
Regulation and Benchmarking

• Benchmarking of specific processes improves directly the performance of the specific processes.
• Benchmarking provides additional information even if it is not used to determine the level of charges.
• Benchmarking can in principal be developed as a yardstick to regulate charges as in other industries.
  • can be used to determine the X in price cap regulation so that charges cannot be influenced by strategic behavior of airports.
  • However, data problems must be overcome as airports are heterogeneous.
Airport Regulation

2. How have incentives changed and what are the effects on cost and allocative efficiency?

- Access problems for new ground handlers hinders liberalization
- Restrained incentives to develop non aviation
- Gold plating dominates cost cutting
- No strong incentives for peak and congestion pricing
- Airport expansion becomes a political question
Airport Competition

- Are airports natural and/or locational monopolies?
- How do airports compete?
- Does market entry and exit work?
- How strong is airport competition?
- What are the implications for regulation?
Airport Competition

• Are airports natural monopolies?
• There is no clear evidence on the shape of the long run cost function.
• Average costs might decline up to a level of between 3 and 12.5 or even up to 90 million passengers.
• Hubs might experience diseconomies of scale.
Competition

- Shifting demand curve leads to an airport industry which can sustain two firms

Source: Church & Ware
Airport Competition

• **How do airports compete?**
  – Airports compete for passengers through superior distribution systems, provided by airlines

• **What are the types of airport competition?**
  – Competition for particular traffic (e.g. low cost carriers)
  – Competition between main (Schiphol versus ADP) and secondary hubs (Fraport versus Munich versus Stuttgart)
  – Competition for airline operational bases
  – Competition for concession revenues
  – Across the board competition
Airport Competition

- How intense is actual airport competition?
- Cranfield study (2002): Brussels citing Charleroi
  Charleroi citing Brussels, Amsterdam citing Brussels
- Schiphol group (!) has market power in O & D traffic
  (GAP, 2010)
- Germany: Berlin, Frankfurt, Hamburg, Munich and
  Stuttgart have market power (Malina 2010).
- De-designation of Manchester and Stansted
- Market power of ADP in O&D only restricted by TGV
- Hub competition. No studies
Entries and exits 1995 to 2005: 22 entries and 11 exits

No entries/exits occurred in:
- Belgium
- Bulgaria
- Estonia
- France
- Lithuania
- Portugal
- Slovak Republic
- The Netherlands

Source: GAP
The European airport industry – Germany

**General characteristics:**
- Most new entrants have not lived up to their expectations
- Often highly subsidized by the state → Low profitability
- Often low traffic figures
- Importance of public service obligation routes at some airports

**Therefore:**
- New entrants try to find a niche
The European airport industry –
the United Kingdom

1 entry
2 exits

- Very well developed air transport market
- Large number of airports; often with overlapping catchment areas
- Competition amongst London airports
- Competition between primary and secondary airports

New entrant in Doncaster:
- Initial opposition by Manchester against new airport
- But Doncaster has been very successful since its entry in 2004
Airport Competition

• Market power can arise
  ➢ from a locational monopoly due to planning restrictions.
  ➢ natural monopolies with sunk costs.
  ➢ Slots and restrictive bilateral air service agreements

• How strong is airport competition?
  ➢ Major city airports are unlikely to come under competition from more than one or two airports, except for a limited proportion of their product range.
  ➢ Competition might work for secondary urban fringe or regional airports as both may be sufficient in number, and similar enough in their product range.
Airport Competition

• **Competition could be more intense if**
  - Privatisation is implemented to increase competition
  - Tradable slots
  - Open skies

• **Implications for the design of regulation**
  - Not the airport industry as a whole has market power, but only some airports
  - regulation must be complementary to competition
  - rationale for regulation must be revisited on timely basis:
    - Is it necessary at all? Which airports should be designated? Which airports should be subject to the threat of regulation?
Capacity Constraints & Slot Allocation

- **Level I, II and III airports**
  - Level I – no slots
  - Level II – slot facilitated
  - Level III – slot coordinated

- **Slot definition**—includes all infrastructure access

- **Grandfather rights provision was introduced in the EC legislature as late as 1993**
  - current system is focusing on the assurance of supply, and the stability of services rather than that the development of an efficient market allocation

- **Heavy reliance in administrative rules**
  - Active secondary trading (UK versus everyone else)
Capacity Constraints & Slot Allocation

Scarcity rent

AC

P,C

Capacity

D

X

Hochschule Bremen
University of Applied Sciences
Regulation of ADP

Orly

CDG

P

PC

P

Q

Q

P_1

P_2

D

D
Airport Policy and Transport Policy in the EU

- Will the goal of fair and efficient pricing be achieved given the current liberalization, privatization and competition trends?
- What policy options should be adopted?
Challenges and Airport Policy Reform

• **Status quo scenario:**
  – slow commercialization of public airports and partial privatization,
  – no fully independent regulator with cost based regulation,
  – no slot reform
  – and mild competition between airports

• **Reform scenario**
  – faster privatization and commercialization
  – independent regulator and with incentive based regulation for monopolistic bottleneck (dual till)
  – slot reform
  – and competition from regional airports
Conclusions

• Develop a coherent policy of privatisation, competition and regulation. Define regulation prior to privatisation.

• Regulate less and reduce the scope of regulation, but more effectively with fair and democratic processes and institutions. Use a credible threat of regulation.

• Regulate and increase competitive forces:
  
  ➢ Implement simple price cap with strong incentives for cost savings, efficient pricing and investment.
  
  ➢ Benchmark productivity and efficiency of airports
  
  ➢ Foster competition by open skies, less horizontal integration and slot markets.

Thank you very much!
Airport performance

• Poor cost control particularly at partially privatised airports and vertically integrated airports

• Allocative efficiency: misdirected pricing!
  - Ample capacity: Inefficient weight based charges
  - Capacity constrained airports
    - 32 bn € for European Airports in 2025
      - No market based slot allocation, arbitrary slot limit, weight based charges discriminate

• Over investment in areas with lack of demand and underinvestment at regions with excess demand
## Airport and Monopoly power

*Australian Productivity Commission (2002)*

<table>
<thead>
<tr>
<th>Service</th>
<th>Market power</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air craft movement facilities</td>
<td>High</td>
<td>Essential facility</td>
</tr>
<tr>
<td>Passenger processing facilities</td>
<td>High</td>
<td>Essential facility.</td>
</tr>
<tr>
<td>Lounge</td>
<td>Low</td>
<td>No evidence to constrain supply of space</td>
</tr>
<tr>
<td>Vehicle access facilities</td>
<td>High</td>
<td>Incentive to shift demand to car parking</td>
</tr>
<tr>
<td>Car parking</td>
<td>Low/Mod.</td>
<td>Short term parking limited by other modes</td>
</tr>
<tr>
<td>Taxi facilities</td>
<td>Low/Mod.</td>
<td>Charges limited by competing modes</td>
</tr>
<tr>
<td>Aircraft refueling</td>
<td>Mod./High</td>
<td>High switching cost for refueling</td>
</tr>
<tr>
<td>Aircraft light maintenance</td>
<td>Mod.</td>
<td>Access to side for third parties</td>
</tr>
<tr>
<td>Aircraft maintenance</td>
<td>Heavy</td>
<td>Low switching costs</td>
</tr>
<tr>
<td>Flight catering facilities</td>
<td>Low</td>
<td>Good off airport locations available</td>
</tr>
<tr>
<td>Freight facility &amp; storage sites</td>
<td>Low</td>
<td>Good off airport locations available</td>
</tr>
<tr>
<td>Waste disposal facilities</td>
<td>Low</td>
<td>Good off airport locations available</td>
</tr>
<tr>
<td>Administrative space office</td>
<td>Low/Mod.</td>
<td>Incentive to constrain supply of space</td>
</tr>
<tr>
<td>Commercial services &amp; retail</td>
<td>Low</td>
<td>Retail rentals reflect locational rent</td>
</tr>
</tbody>
</table>
## Ground handling in EU countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Deregulation</th>
<th>Regulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>Market share of partially privatised Vienna airport from 100% to 93% in 1996 to 93 in 2002 to 89% in 2007.</td>
<td>DOT decides on tender. DOT is separated from owner</td>
</tr>
<tr>
<td>France</td>
<td>ADP offers ground handling. AF self and third party handling. Penauille Serviscair is third part provider. Market shares in 2004: AF 65%, 13% ADP, Serviscair 13%, Others 8%.</td>
<td>Regulatory conflict as DOT is part government with majority stake in ADP and a minority share in AF/KLM</td>
</tr>
<tr>
<td>Germany</td>
<td>All airports offer ground handling except Berlin. Dominant position. Major shifts in Hamburg (0% of independent handler); Düsseldorf 30%, Munich 11% for independent handler.</td>
<td>Regulatory conflict as Landesluftfahrtbehörde is part of government which has a majority share</td>
</tr>
</tbody>
</table>
## Airport Competition

<table>
<thead>
<tr>
<th>Study</th>
<th>Observed period</th>
<th>Sample of Airports</th>
<th>Output</th>
<th>Method</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doganis Thompson (1973)</td>
<td>1969-70</td>
<td>18 UK airports</td>
<td>WLU</td>
<td>Regression Analysis</td>
<td>L-shape cost curve with decreasing average costs up to three million.</td>
</tr>
<tr>
<td>Doganis (1995)</td>
<td>1993</td>
<td>25 airports thereof 12 European airports</td>
<td>WLU</td>
<td>Regression Analysis</td>
<td>L-shape cost curve with decreasing average costs up to five million</td>
</tr>
<tr>
<td>Main, Lever and Crook (2003)</td>
<td>1988 –2001</td>
<td>27 UK airports</td>
<td>WLU and passengers</td>
<td>Regression Analysis</td>
<td>Sharp decreasing costs up to 4 million passengers and 5 million WLU and weak decreasing costs up to 64 million and 80 million passengers.</td>
</tr>
<tr>
<td>Main, Lever and Crook (2003)</td>
<td>1998- 2001</td>
<td>44 airports of TRL data set</td>
<td>WLU</td>
<td>Regression Analysis</td>
<td>L-shape cost curve with decreasing average costs up to 90 million WLU</td>
</tr>
<tr>
<td>Pels (2000)</td>
<td>1997</td>
<td>35 European airports</td>
<td>Air traffic movements (ATM) and Air Passenger Movements (APM)</td>
<td>DEA</td>
<td>Average airport with 12.5 Mio. APM passengers and 150000 APM passengers operates under constant returns to scale for ATM and increasing returns for PTM.</td>
</tr>
<tr>
<td>Salazar de la Cruz (1999)</td>
<td>1993-95</td>
<td>16 Spanish airports</td>
<td>Passenger</td>
<td>DEA</td>
<td>Decreasing average costs up to 3.5 million passengers, increasing from 12.5 million</td>
</tr>
<tr>
<td>Vogel (2005)</td>
<td>1990 to 1999</td>
<td>47 European airports</td>
<td>Passenger</td>
<td>DEA</td>
<td>Increasing economies of scale of up to 4 million terminal passengers</td>
</tr>
</tbody>
</table>

Source: Kamp et.al
Capacity Constraints & Slot Allocation

Mott Mac Donald & EU Commission (2006)

• **Effects of secondary trading: Substitution**
  – of general aviation by commercial flights
  – Of charter and cargo by scheduled flight
  – Of small by larger aircraft
  – Of short by long haul flights

• **Quantitative effects:**
  – 7.2 % more passengers and 17.1 % more revenue passenger kilometers and 51.6 Mio more passengers in 2025.
  – Consumer surplus: + € 31bn at current rates in 2025
  – Producer surplus: + € 1.2 bn in 2025 (upper bound)
## Regulation of European Airports

<table>
<thead>
<tr>
<th>Country</th>
<th>Privatisation</th>
<th>Competition</th>
<th>Regulation</th>
<th>Benchmarking</th>
<th>Efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>50 % split</td>
<td>Weak, but growing</td>
<td>Independent sliding scale</td>
<td>Informal</td>
<td>Medium</td>
</tr>
<tr>
<td>Belgium</td>
<td>Majority</td>
<td>Strong</td>
<td>Dependent cost based</td>
<td>Informal</td>
<td>Medium</td>
</tr>
<tr>
<td>France</td>
<td>Minority</td>
<td>Weak</td>
<td>Dependent price cap</td>
<td>Not used</td>
<td>Medium</td>
</tr>
<tr>
<td>Italy</td>
<td>Majority/Minor</td>
<td>Weak &amp; growing</td>
<td>Dependent price cap</td>
<td>Used</td>
<td>Medium</td>
</tr>
<tr>
<td>Hungary</td>
<td>Majority</td>
<td>Weak</td>
<td>Dependent price cap</td>
<td>n/a</td>
<td>Medium to strong</td>
</tr>
<tr>
<td>Ireland</td>
<td>Public</td>
<td>Weak</td>
<td>Independent price cap</td>
<td>Used</td>
<td>Strong</td>
</tr>
<tr>
<td>Malta</td>
<td>Majority</td>
<td>Weak</td>
<td>Dependent price cap</td>
<td>n/a</td>
<td>Medium</td>
</tr>
<tr>
<td>Slovakia</td>
<td>Public</td>
<td>Strong</td>
<td>Dependent cost based</td>
<td>n/a</td>
<td>Weak</td>
</tr>
<tr>
<td>UK</td>
<td>Fully privatised</td>
<td>Strong, but weak for Heathrow</td>
<td>Independent Price cap</td>
<td>Used</td>
<td>Strong</td>
</tr>
</tbody>
</table>
Price Cap Regulation

Price per unit

2012  2017  2023

P*

costs

P*