Impacts of Airports on Airline Competition

Focus on Airport Performance and Airport-Airline Vertical Relationship

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Background

- Privatization, commercialization and deregulation of airports – incentives for airport to compete and maximize profits.
- **Increasing importance of airport concession revenue** – affects performance of different airport regulations, and leads to evolving vertical relationships.
- As competition in the airline market intensifies, airport-airline relationship becomes increasingly important
- **Objective:** to study impacts of airports on airline competition – **focus on airport performance and airline-airport vertical relations**

Key Findings:

- **Commercial revenue** are not only very important for airports' performance, but also gives incentives for airports to cooperate with airlines, especially with dominant carrier.
- Airports have **substantial market power** mainly due to the **low price elasticity of demand** for their aeronautical services; even when multiple airports in a metropolitan regions have different owners
- Although the **externality of aviation services** on commercial revenue and **competition in airline market** moderate airport's market power, it does not eliminate the need for airport regulation
- **Single till regulation** is better since it recognize existence of the positive externality of aviation services on commercial revenue.

- There are private benefits to an airport and the dominant airline to forge vertical cooperation. However, airport-airline cooperation has both positive and negative effects to society: it can harm competition in airline market while enhancing airport’s performance.
- On the other hand, airport-airline cooperation may improve network competition for connecting traffic as different airport-airline combinations compete more vigorously for a same hinterland traffic.
- Cooperation or competition among multiple airports in a congested metropolitan region is a complex issue needing further study: system efficiency vs. market power.

Outline

- Airport revenue structure, regulation and pricing
- Airport's market power
- Effects of airport – airline vertical relationship
- Summary and Conclusion

Percentage of Non-aeronautical Revenue 2006

Effects of non-aeronautical revenue

- Economies of scope in producing aeronautical and non-aeronautical services.
- Positive externality of aviation services on commercial services – reduce airport’s incentive to increase aeronautical charges
- Effects on regulation:
  - Dual till: difficulties in allocating costs, and failure to internalize externality.
  - Single till: superior in setting the right price (with congestion pricing). Under-investment an inherent problem
  - Light-handed regulation: not sufficient especially when absent airport competition

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Source of Airport Market Power

on aeronautical services:

- Lumpy capacity investment – congestion buildup over investment cycle
- Airline market structure: eg. LAX vs. Atlanta
- Types of airlines serving: eg. airports serving low cost carriers
- Share of connecting passenger
- Inter-modal competition with HSR
- Competition among airports

Effects of Airport Competition

- Airport market power: very low price elasticity for aviation services.
- Competition among airports – airport specific price elasticity (even in absence of capacity problem)

$$\varepsilon_i = \frac{\varepsilon}{S_i(1+v_i)}$$

- For most reasonable values of conduct parameters; individual airports face extremely low price elasticity; worse when collusive behavior is allowed in a region: BAA's common ownership

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Incentives for Vertical Cooperation

- Existence of dominant carrier's hub premium: conservative values 2%-20%
- Strong Incentive for an airline to increase dominance at its hub airport, rather than co-locating its hub with another carrier
- Airports under competitive region or metropolitan area have incentive to align with ONE dominant partner carrier

Table 1, Share of Enplanements of the Dominant Carrier at Concentrated Hub Airports, 1978, 1993

	1978		1993	
Airport	Share	Carrier	Share	Carrier
Atlanta	49.7	Delta	**83.5**	Delta
Charlotte	74.8	Eastern	**94.6**	USAir
Cincinnati	35.1	Delta	**89.8**	Delta
Dayton	35.3	TWA	**40.5**	USAir
Denver	32.0	United	**51.8**	United
Detroit	21.7	American	**74.8**	Northwest
Greensboro	64.5	Eastern	**44.9**	USAir
Memphis	42.2	Delta	**76.3**	Northwest
Minneapolis-St. Paul	31.7	Northwest	**80.6**	Northwest
Nashville	28.5	American	**69.8**	American
Pittsburgh	46.7	Allegheny	**88.9**	USAir
Raleigh-Durham	74.2	Eastern	**80.4**	American
St. Louis	39.4	TAW	**60.4**	TWA
Salt Lake City	39.6	Western	**71.4**	Delta
Syracuse	40.5	Allegheny	**49.5**	USAir

Source: Morrison and Winston (1995)

Forms of Vertical Relations

- **Signatory airline** of an airport: airlines share airport costs by bearing residual costs, or to provide service guarantee
- **Airport revenue bond:** airlines bear project risks in exchange for exclusive usage of key facilities.
- Airline own or long term lease contracts on key facilities (eg. terminals)
- Offer favorable terms for usage

Positive Effects

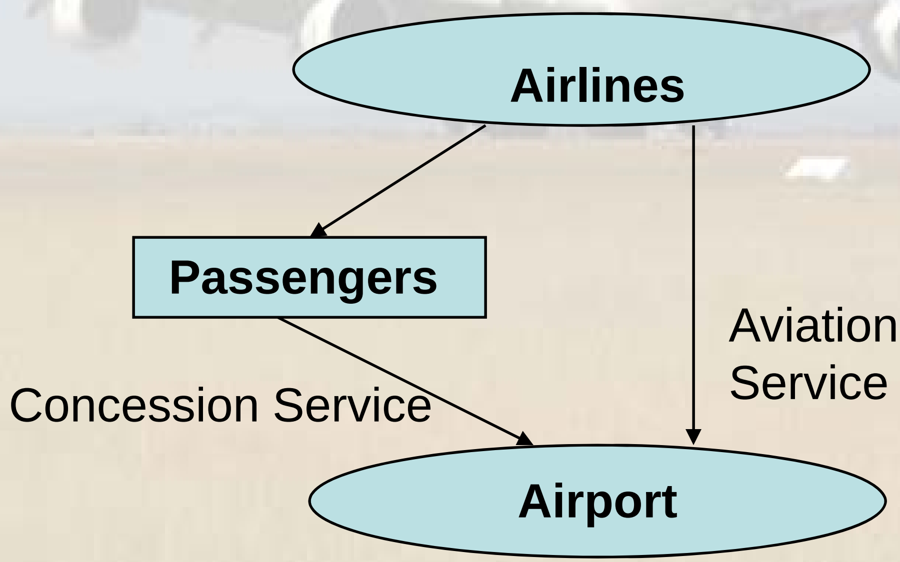
- Reduce risk and uncertainty for airports, ease of funding for capacity investments.
- Provide incentives for airlines to make sunk investments and long term commitment to the airport
- Airport-airline together competes with other airport-airline competitors for overlapping markets

Negative Effects

- Entry barriers to potential competitors (Winston and Morrison 2000, Dresner et al 2002).
- Hub premium can harm consumers; DOT (2001)
- EU decision to disallow Charleroi airport’s subsidy to Ryanair.

New forms of airline-airport relation: Revenue Sharing (RS)

- Airport share revenues with airlines (Tampa); Airlines require sharing revenue as a condition to initiate services (Ryanair)
- Demand complementarity between aviation service and concession revenue



Fu and Zhang (2008)

- **Welfare Gain** as RS allows airlines and airports to internalize the positive externality;
- Airports have strategic interests to influence airline competition – to be a king-maker.
- **May be bad for airline competition:** strengthens this dominant airline’s market power.

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- Although the **externality of aviation**

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Thank you for listening.