

The Market Power of Airports, Regulatory Issues and Competition between Airports

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Overview



- Market power of airports
- Price regulation of airports
- Competition between airports
- Case study

The Market Power of Airports



→ **Why is there a need for regulation for the prices of airport services?**

→ **Potential efficiency effects of market power**

I. deadweight loss resulting from the prices which are higher than the costs

II. The lack of competitive pressures on firms.

III. keeping competitors out of their business by unnecessarily high investments

Natural monopoly characteristics



→ Are airports natural monopolies?

Indivisibility of airport investment

Economies of scale

Sunk costs

Economies of Scope

Network benefits

In the past, conventional wisdom viewed airports as examples of natural monopoly, but now?

Natural monopoly characteristics



- De Wit (2004): natural monopoly approach can be questioned when it is thought to be the case for airports
- Doganis (1992): even if airports benefit from economies of scale, this is true for small and medium sized airports.
- Niemeier (2004): since we do not know the slope of the average cost curve and the dimensions of the market for airports, it is hard to answer the question of “ ...Up to what level there will be economies of scale and scope relative to a demand for a particular airport”.

Price regulation of Airports



Rate of return regulation:

- a firm can set its prices on its own as long as the overall corporate rate of return on the shareholders capital investment does not exceed a “fair” rate of return

Problems:

- inefficient inputs in their production processes (Sherman, 1989)
- high level of charges, gold plating, lack of productive efficiency, inefficient structure of charges, misallocation of capacity and lack of quality monitoring.
- It is complex, unresponsive and expensive for airports, since whenever an airport operator wants to raise one of its fees, they must prepare a detailed regulatory application (Tretheway, 2001).

Price regulation of Airports



Price cap regulation:

- prices are allowed to increase up to a cap that represents an acceptable profit margin
- main idea: firms increase their efficiency over time and therefore their prices should rise by less than inflation.

Advantages:

- it costs less for both the regulator and the regulated firm.
- high degree of flexibility in the operations of the regulated firm.
- higher incentives for efficiency and innovation compared to the rate of return regulation.

Price regulation of Airports



Disadvantages:

- Australian Productivity Commission (2002): price caps “converge towards cost-based regulation...with associated high levels of regulatory involvement and risks of regulatory error...”
- Vickers and Yarrow (1988): price cap regulation may cause underinvestment
- Profit volatility faced by airports.

Competition between airports



Catchment area: the number of people living in the surrounding area of an airport with a specified maximum time to reach the airport with a car

How airports compete with each other?

- Airports compete for getting a higher share of particular traffic like the traffic resulting from LCCs
- Airports compete for being a hub although they may be located far away from each other.
- Airports compete for being preferred by airlines as operational bases.
- Airports can compete with each other if they have overlapping catchment areas like in the London area.



The Limits to Airport Competition

- **Oligopolistic character of airport competition**
- **Entry barriers and scale economies**
- **Excess demand and congestion**
- **Different price regulation practices**
- **Subsidies given to airports**

How can we assess the strength of airport competition?

- Airline Demand Elasticity
- Share of Airline costs
- Destination Competitiveness
- Proximity of other airports
- Responses to new airports
- Different Prices

Competition as a Substitute for Regulation



- **Competition between regional airports**
- **Competition between distant city airports**
- **Competition in multiple airport cities**
- **Competition between hubs**

Forsyth (2006a): only competition between regional airports and between city airports located in countries with a high density of population may be considered as an alternative to the price regulation of airports, but examine it case by case.

Case Study: Analyzing the Strength of Competition between Düsseldorf and Cologne/Bonn Airports



Düsseldorf International (DUS):

- The third largest airport in Germany according to passenger numbers (16,590,055 in 2006)
- Several long-haul flights to USA, Africa and Asia (180 flights in total to and from DUS) In summer 2007, DUS offered 85 weekly intercontinental flights and on average 12 daily long-haul flights
- Lufthansa is the main customer of DUS with nearly 4 million yearly passengers followed by LTU and Deutsche BA.

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→ the spokesman of DUS declared the importance of intercontinental traffic with the following words:

“With our widely varied service offerings not only in the low-fare sector but also in the business and long-haul traffic, we have been able to realize a singular position on the North West German air traffic market within our catchment area of 18 million people.”

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Cologne/Bonn Airport (CGN):

- the seventh largest airport in Germany
- 9.907.000 passengers used CGN in 2006 and it increased its passenger volume by more than 80%, by gaining a higher share of LCC traffic
- CGN is the Number 1 in Germany in terms of the number of low cost destinations served and number 3 in Europe after London Gatwick and Stansted

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- CGN offers flights to 135 destinations around the world but transfer and intercontinental flights do not constitute a significant share of this traffic
 - Cargo traffic also accounts for an important share of the total traffic at CGN with a ratio of 40%
 - The airport is the hub of UPS Express in Europe

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Some key traffic data for Cologne/Bonn(CGN)					
Year	Flights	Passengers	Air Cargo (in tons)	Air Mail (in tons)	Traffic Units
2006	151.700	9.907.700	698.300	5.600	16.732.000
2005	154.594	9.479.291	650.947	6.723	15.839.491
2004	152.659	8.406.439	613.234	10.396	14.429.809
2003	153.372	7.838.302	527.364	12.634	13.008.995
2002	138.902	5.466.180	501.080	14.319	10.409.137
2001	150.174	5.802.347	448.426	15.292	10.234.959
2000	155.681	6.385.101	427.726	18.569	10.642.282
1999	151.335	6.089.144	394.868	19.780	10.017.584
1998	143.047	5.480.003	359.988	20.619	9.077.418

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Some key traffic data for Düsseldorf International (DUS)			
	Flights	Passengers	Air Cargo (in tons)
2006	187.713	15.750.000	66.487
2005	194.065	15.930.000	61.264
2004	194.016	16.030.000	59.361
2003	193.514	15.400.000	51.441
2002	190.300	14.075.000	46.085
2001	186.159	14.030.000	48.419
2000	200.584	15.260.000	86.267
1999	200.619	15.510.000	88.058
1998	215.481	16.590.000	97.000

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Ownership Structures:

- DUS is a partially privatized airport with 50% of its shares held by a private company called Airport Partners GmbH
- CGN is 100% percent publicly owned one and 30,94% of CGN belongs to the federal government of Germany
- DUS is subject to price-cap regulation with revenue sharing while CGN is regulated according to the cost-plus basis like the other public airports in Germany

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The strength of competition between them:

- They compete directly for regional and short-haul passenger traffic
- Examples from the past that some airlines could not find available slots at DUS and thus they switched their flights to CGN
- For some of the destinations like Hamburg, both of them offer flights

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DUS's competitors:

- Frankfurt, Paris CDG, Amsterdam and Brussels airports, even though these hubs are 250 to 450 km away from DUS.
- Munich airport which is 700 km away especially for the long-haul traffic but Munich has a big advantage that it is the secondary base of Lufthansa in Germany
- Dortmund and Münster-Osnabrück airports, 50 km and 80 km away from DUS respectively, competitors of DUS especially for medium-haul traffic.

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CGN's Competitors

- For the leisure flights segment, Maastricht airport as main competitor of CGN which is only 60 to 75 minutes drive minutes away.
- For the regional traffic, other regional airports in NRW like Dortmund, Münster-Osnabrück and Paderbann-Lippstadt.
- In the long-haul traffic segment, Frankfurt airport thank to the high-speed train network which reduces the travel time between two airports just to 75 minutes
- CGN found a niche market in the long-haul traffic and they concentrated on attracting airlines which offer long-haul leisure flights

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- FRA for the cargo market. Recently, FedEx declared that CGN will be the new hub of FedEx for Central and Eastern Europe.
 - Frankfurt Hahn airport also tries to compete with CGN in the cargo market
 - Liege airport in Belgium which has been successful in being the hub location TNT recently, whose previous hub was CGN

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- They have some common catchment areas.
 - Compete directly for the medium haul traffic
 - LCCs and cargo operators are also important at CGN, while DUS serves to a more broad range of airlines like full service carriers.
 - They concentrate mainly on different air traffic segments and this reduces the strength of competition between them.

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Total and Low Cost Carrier O-D Passenger Volume at German Airports in the first halfyear 2006			
	LCC Passengers in the 1.HJ 2006 (in Mio.)	Total Passengers in the 1.HJ 2006 (in Mio.)	Share LCC
Berlin	4,3	8,7	49,3%
Cologne/Bonn	3,1	4,6	68,2%
Munich	2,1	14,5	14,7%
Stuttgart	1,7	4,8	35,8%
Düsseldorf	1,6	7,7	21,5%
Frankfurt-Hahn	1,6	1,6	99,0%
Hamburg	1,5	5,7	26,5%
Hannover	0,8	2,6	30,2%
Dortmund	0,4	1	44,5%
Frankfurt	0,4	24,9	1,6%
Nürnberg	0,3	2	17,3%
Dresden	0,2	0,8	30,4%
<i>Source: G.A.R.S - Workshop at Frontier Economics (2006)</i>			

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- no price regulation seems to be good option both for the regulators and CGN
 - CGN does not have a significant amount of market power to be considered as natural monopoly and there is no need to incur additional amount of efficiency costs resulting from the economic regulation.
 - main reasons for the low market power of CGN: the low demand elasticity of the air traffic it serves and the presence of many competing airports nearby.

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- artificially restricted runway capacity of DUS
 - Frankfurt, Paris CDG, Amsterdam and even from Munich airports for long-haul and connecting traffic.
 - Most of these hubs are already capacity constrained, grandfather rights of slots
 - In short, switching costs are too high when an airline transfers its operations to another airport.
 - Price monitoring approach can be appropriate for DUS at least for some time.

Conclusion



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- ➔ ‘Do airports still have significant market power to be called natural monopolies?’, ‘Do we need to regulate them to curb their market power’ and ‘What are the most efficient and least costly types of airport price regulation?’.

 - ➔ Competition between airports which gained more attention in the densely populated countries like the UK and Germany as a result of the development of low cost carriers and the increasing usage of secondary airports in many cities

 - ➔ Can airport competition act really as a substitute for price regulation?



Thank you for you attention...