



Potential Research Topics within **GAP and GAB**

A. Productivity and Efficiency Analysis in Aviation

1. European Competition Authorities Assessment of Airline Alliances and Mergers

- Pros and cons of alliances versus mergers from the viewpoint of competition
- Overview on EU cases (methods, procedures and results)
- Literature: European Competition Authorities (2004), Holtz, et. al. (2007)

2. Benchmarking of Airports and the Efficiency of Airlines

- Do Airport-Airline-Relationship and Airlines-Alliances have an effect on the airports' performance?
- How does the efficiency of airlines affect the performance of airports?
- Literature: Gillen and Lall (1997)

3. Benchmarking of Capital Cost in the Airport Industry

- Overview on the methods to measure capital costs in general and for specific industries, in particular
- Figures of cost and activity accounting versus profit and loss accounts
- Making balance sheet data of European airports more comparable (the depreciation period of the capital differs from country to country)
- Literature: Coelli (2005), CAA, Doganis et al. (1995)

4. A Quantitative Analysis of Airport Privatization Compared to Privatization of Public Utilities

- The move towards privatization of airports in Europe. How many airports have been partially or fully privatized in the period 1980 to 2007?
- How much money was raised per year from privatization? Outlook on the future of airports' privatization.
- Literature: Niemeier (2004), Andrew and Dochia (2007)

5. Economies of Scale and Scope in the Airport Industry

- Review of the literature on scale and scope of airport industry. Comparison of methods and results.
- How can economies of scope be estimated? Methods and results
- Literature: Kamp et al., Fritsch et al. (2001)

6. Quantitative Methods considering heterogeneity at airports

- Review of various parametric and non-parametric methods considering heterogeneity of firms
- How can it be applied to airport benchmarking
- Literature: Coelli (2005), Greene (2004a), Greene (2004b)

B. Airport Competition

1. Entry and exit in aviation and other industries: Review of the empirical evidence

- What determines the rate of entry and exit in competitive industries relative to monopolistic industries?
- Assess the role of sunk costs
- Literature: Müller et al., Geroski

2. Competition between Airports: Hub competition

- Literature review on hub competition
- Case studies on Vienna, Munich, Zurich
- Literature: Forsyth (2006)

C. Airport Management

1. Company Structure. Vertical Size of Airport Firms in Europe, especially Austria, Denmark, Italy, Netherlands

- Value added chain and vertical integration versus outsourcing
- Corporate governance structure / problems of joint ownership
- Literature: Besanko et al. (2003), Fuhr

2. Ground Handling Services: Adjustment Process in Germany

- Benchmarking of GHS and effects of EU Directive on liberalizing GHS
- Company's strategies to deal with liberalized environment: Outsourcing and separate subsidiaries.
- Emerging industry structure of independent GHS
- Wage adjustment and labour union
- Literature: GAP Working paper, Templin (2006)

D. Airport Regulation

1. Price Regulation and Its Effects on Investment With Special Reference to The Airport Industry

- Price cap and underinvestment
- Regulation of airport investments under cost plus
- Case studies on regulation of airport investments (UK, Ireland, Germany)
- Literature: Niemeier (2004), Gillen and Niemeier, CAA (2001), Helm and Thompson (1991)

2. Airport Charges and Regulation in Selected European Countries (UK, Germany, France, Netherlands, Austria)

- Literature review regarding airport charges in Europe.
- Allocative efficiency of charges, reflecting congestion and environmental externalities
- Literature: Graham (2004), EU Commission (2005)

3. Reform of Airport Charges in Europe

- Overview on the attempt of the EU Commission to reform airport charges. History, topics, changes.
- Position of major stakeholders (Full service carrier, Low cost carrier, regional airlines, general aviation, airports, member states)
- Using models of political economy such as positive theory of regulation to explain behavior and outcome (who gains who losses?)
- Literature: Reynolds-Feighan, EU, Stigler, Toms

4. Airport Regulation as An Example of The Capture Theory

- The goals of the different stakeholders in regulation
- The advantage / disadvantage of a close relationship between regulator and regulated company
- Literature: Shepherd (1999), Menard & Shirley (2005)

E. Non-Aviation

1. Topics

- It would be worthwhile to see at which size an airport can attract luxury stores or at which size a reasonable variety of retail/service outlets can be achieved
- Do, modern, recently designed airports achieve higher revenue compared to older ones? Which investment is necessary? Will the returns be worth it? What is the ratio of aviation and non-aviation revenues at these airports?
- How much does airside differ from landside operation?
- How can airports create a custom non-aviation strategy (PAX dependent) to establish a unique setting taking local tradition/customs into account and avoiding a monotone environment, which could be mistaken for every airport in the world?
- Analyze the role of non-aviation for LCC and non-LCC airports as well as their non-aviation strategies

- Analysis of the parking charges at the airport. How is the mark-up to the city centre?
- Identify an Airport Classification in non-aviation activities. Which mix of retail/service fits to what type of airport?
- Revenue Generation from non-aviation
 - It would be interesting to see what percent of non-aviation revenue of total revenue is achievable for different airport classifications.
 - Where is revenue generated: landside, airside, passenger independent
- Customers
 - Which customer segment provides what share to non-aviation revenue
 - Do travelers, or which travelers, prefer MCT over a wide variety of retail/service?
 - In much is the lucrative international business traveler attracted by the supply
- Parking
 - Revenue potential
 - Outsourcing via subcontract or vertical integration
 - Optimal parking charges
- Literature: Bork (2006), Entwistle (2007), Freathy (2004), Graham (2004), Jarach (2005), Reiss (2007)

F. Airport Capacity

1. Scarce Capacity at European Airports: Are Constraints of Airports Caused by Environmental Regulations

- Analyze causes of slot constrained airports in Europe (NERA study)
- Environmental management: Charges
- Assess the effectiveness of the political process.
- Literature: NERA

2. Peak Pricing at Congested Airports – A Comparative Analysis of “London Airports and Manchester” and “Paris and Milano Airports”

- Pricing? Structure of charges? Seasonal peak pricing? Weight based at peak?, Weight or passenger based charges?, Minimum charges, Seasonal differences, Differences between domestic and international traffic
- Peak problems or excess demand?
- How severe is the peak? Proportion of day with excess demand. Congestion level at peak and off-peak. Where is the constrained? Runway, Apron, Terminal, Environment
- Average aircraft size per movement at slot constrained and unconstrained airports. Comparison of constrained versus unconstrained hubs. (Paris versus Frankfurt)
- How are slots allocated? Who sets the slot constrain? Does he balance the cost and benefits of an additional slot? Price of a slot. Which airlines get the slots? EU-carrier operating from slot constrained airports
- Owners of these airports? Public, Private, Partially privatized

- How are these airports regulated? Cost plus, Price cap Independent Regulator
- Literature: Forsyth/Niemeier (2003) and (2004), Gillen and Niemeier (2006)

3. Airport Capacity Expansion – An Analysis of supply side constraints and risks

- First and second best pricing and investment,
- Lumpiness of investment. How lumpy are different investments like terminal, starting and landing system, apron, parking lots etc?
- Analysis of airport development projects. Failure and success stories. Case studies like Montreal-Mirabel, Parchim, Munich, LC-airports.
- Literature: Niemeier (2004), McCarthy (2001), chap. 9, 10

G. Environment

1. Emission Based Airport Charges:

- European systems (Zurich, Sweden)
- German test in Munich and Frankfurt
- Assessment in terms of effectiveness and economic efficiency
- Political economy of implementation. Analysis of pressure groups
- Literature: Fleuti (2000), Dings (2003),

2. Environmental Taxes in Aviation: An Analysis of Passenger Taxes

- Which countries have adopted a passenger tax?
- What are the theoretical and empirical effects of such a tax on passenger demand and emissions? What are the welfare effects?
- What is the political economy of such taxes? How have stakeholders (in particular airlines and airports) reacted? What are the rationales given by the governments?
- Literature: Keen, M. and Strand, J, (2007), AEA (2008)

3. Environmental Charges at Major European Airports

- Application of theory of social marginal cost pricing
- Structure and level of noise surcharges
- Literature: Dings (2003)

5. Environmental Information Systems of Airports

- Which indicators are relevant for an environmental information system?
- Benchmark: What kind of environmental information systems does exist at German/European airports? What is their main purpose? What are their strengths/weaknesses?
- In which way does an environmental information system influence the development of the airport?
- Literature: Oliva (1998), Beyhoff/Ehmer/Warltzer (1993)

6. Benchmarking of the Use of Environmental Instruments at Different Airports

- A comparison of hubs, regional airports, low cost airports and the different importance of sustainable development.
- Concentrated on noise reduction measures or other measures
- Literature: Oeser/Becker (1998), Janic (2007), De Neufville/Odoni (2003)

7. Control of Efficiency of Environmental Instruments at Airports

- Cost-effectiveness-analysis of these instruments
- How do environmental issues influence the operations of airports?
- Does a pro-environmental policy of an airport influence its economical performance?
- Measurable effects of environmental instruments
- Differentiation between economic and environmental efficiency
- Literature: Ashfort/Stanton/Moore (1997), Giesecke (2006), Beyhoff/Ehmer/Warltzer (1993)

8. Design of Noise Reduction Measures at Airports and Their Implications

- Each of the following measures can be an independent topic!
- Noise surcharge, noise contingencies, movement limitations, airport cooperation, aircraft size differentiation, night ban differentiations, options of regional policy in the neighborhood of airports, mediation process.
- Literature: Beyhoff/Ehmer/Warltzer (1993), Giesecke (2006), Oeser/Becker (1998)

9. Corporate social responsibility for airport companies and / or airlines??

- What is the role of airports / airlines in a sustainable development of air transportation?
- Responsibility towards the neighbors, the local economy, the natural environment etc.
- What are the consequences of growth for the environment?
- Literature: Janic (2007), Upham et al. (2003)

10. The Airport / Airline as A Good Citizen and The Problem of Noise?

- Which effect do airlines have on the noise-pollution?
- Conflict of a population demanding more mobility and the influences of a strong traffic growth on noise pollution
- Literature: Oeser/Becker (1998), Janic (2007), Upham et al. (2003)

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