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

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)

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

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

5. **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

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

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?
• 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?

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?

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

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

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.

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

References
AEA (2008). Denounces Belgian Plans for Airline Passenger Tax,
URL: http://www.airtransportnews.aero/article.pl?mcateg=&id=13971

URL: www.ppiaf.org


URL: www.caa.co.uk (.pdf version)

URL: www.caa.co.uk (.pdf version)


EU COMISSION (2005a) Kommission der Europäischen Gemeinschaft „Mitteilung der Kommission über eine effiziente Gebührenerhebung für die Nutzung von Verkehrsinfrastrukturen“, Brüssel


Contacts:

University of Applied Sciences Bremen
Prof. Hans-Martin Niemeier
E-mail: hniemeier@fbn.hs-bremen.de

Berlin School of Economics
Prof. Dr. Jürgen Müller  
E-mail: jmueller@fhw-berlin.de

University of Applied Sciences Bad-Honnef  
Prof. Hansjochen Ehmer  
E-mail: H.Ehmer@dlr.de