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Benchmarking German Airports – first results and future research

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Benchmarking

Some first results: Agenda

- Why benchmark German Airports?
- Focus, Method & Data
- Results
- Conclusions

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Benchmarking

Why benchmark German Airports?

- ATRS and TRL cover only a few German Airports
- Small and medium sized airports are neglected
- Changing institutional structure
 - Public utility to partially privatised airports
 - Federal competition, increasing competition in certain regions
 - New strategies & organizational structures
 - Incentive versus low powered cost plus regulation

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Benchmarking

Focus, Method & Data

- Focus on technical Efficiency (TE)
 - Factor prices not known
 - Necessary condition for allocative efficiency
 - Indicates X-Inefficiency

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Benchmarking

Focus, Method & Data

- Method on technical Efficiency
 - Data Envelopment Analysis (DEA) to calculate Malmquist Total Factor Productivity (TFP) index numbers
 - Does not require financial data

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Benchmarking

Focus, Method & Data

Standard DEA-Model

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Benchmarking

Focus, Method & Data

- Data on technical Efficiency
 - 17 international airports in Germany
 - Financial data unavailable, therefore traffic and physical data
 - Time series from 1998-2002
 - Airside and Landside separately
 - Constant returns to scale (CRS) were assumed

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Benchmarking

Focus, Method & Data

- Data on technical Efficiency- landside
 - Output: no. of passengers
 - Inputs: no. of employees
terminal size (in sqm)
no. of check-in-counters
no. of gates
no. of car parking spaces

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Benchmarking

Focus, Method & Data

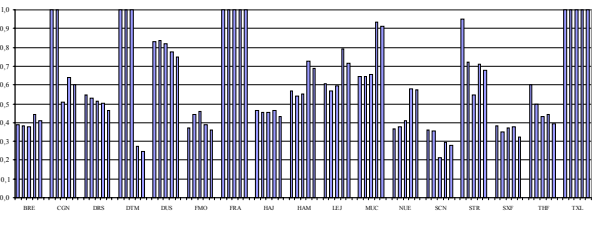
- Data on technical Efficiency- airside
 - Output: no. of aircraft movements
 - Inputs: no. of employees
airport size (in ha)
number of runways
total length of runways

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Benchmarking

Results

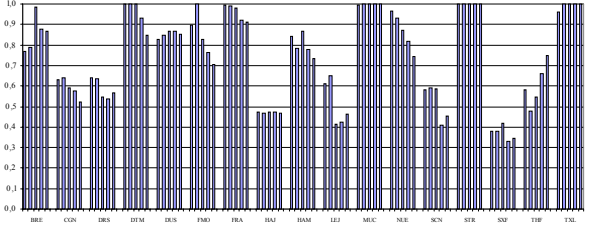
- Landside (TE)
 - Substantial differences in technical efficiency



Benchmarking

Results

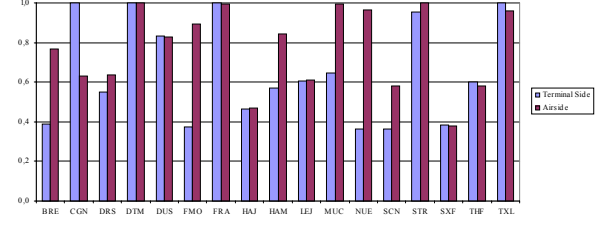
- Airside (TE)
 - Some airports could increase its efficiency

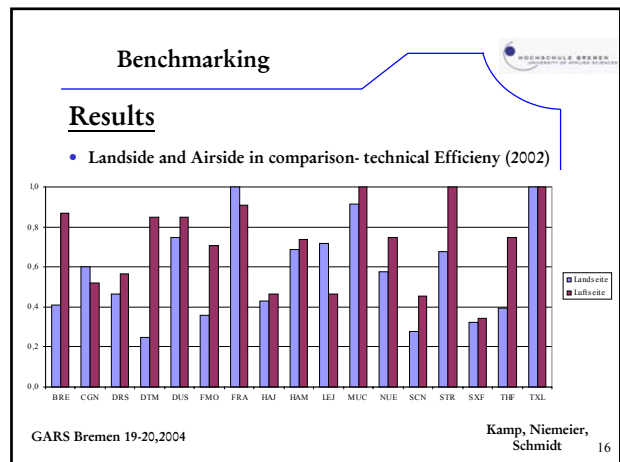
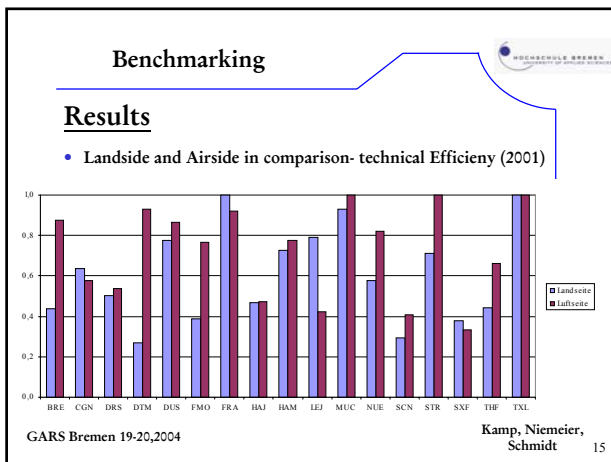
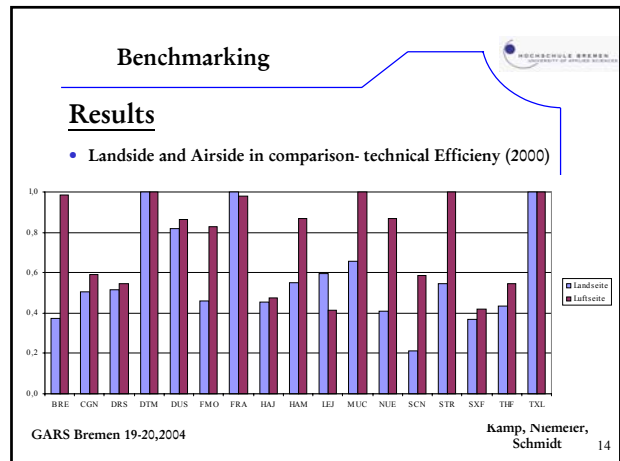
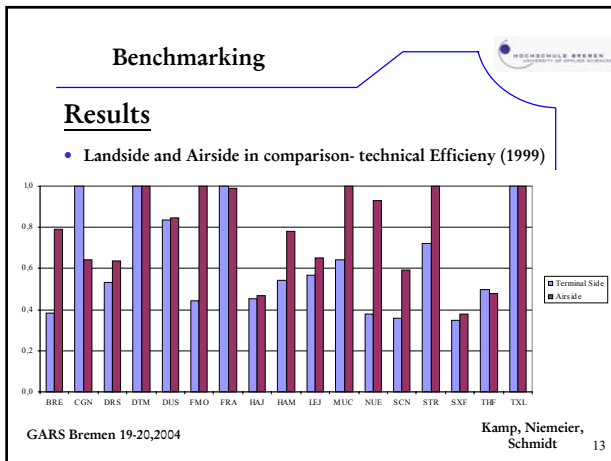


Benchmarking

Results

- Landside and Airside in comparison- technical Efficiency (1998)
 - For most airports $TE_{airside} > TE_{landside}$





Benchmarking

Conclusions

- Technical efficiency decreased especially at the terminal side
- Rely not only on DEA, but use various methods
- Further research in GAP
 - Refining the productivity measures
 - Changes in ownership
 - Nature & intensity of competition
 - Regulatory regimes
 - Different management strategies

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