

Benchmarking German Airports First Results and Future Research

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Outline

- **Why benchmark German Airports?**
- **Focus, Method & Data**
- **Results**
- **Conclusions**
- **An Agenda for Future Research**

Why benchmark German Airports?

- **ATRS and TRL cover only a few German Airports**
 - German Airports perform poorly
- **Small and medium sized airports are neglected**
- **Changing institutional structure**
 - Public utility to partially privatised airports
 - New strategies & organizational structures
 - Incentive versus low powered cost plus regulation

Focus, Method & Data

- Focus on Technical Efficiency (TE)
 - Factor prices not known
 - Necessary condition for Allocative Efficiency
 - Indicates X-Inefficiency

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

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
 - CRS were assumed and output maximization

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

Focus, Method & Data

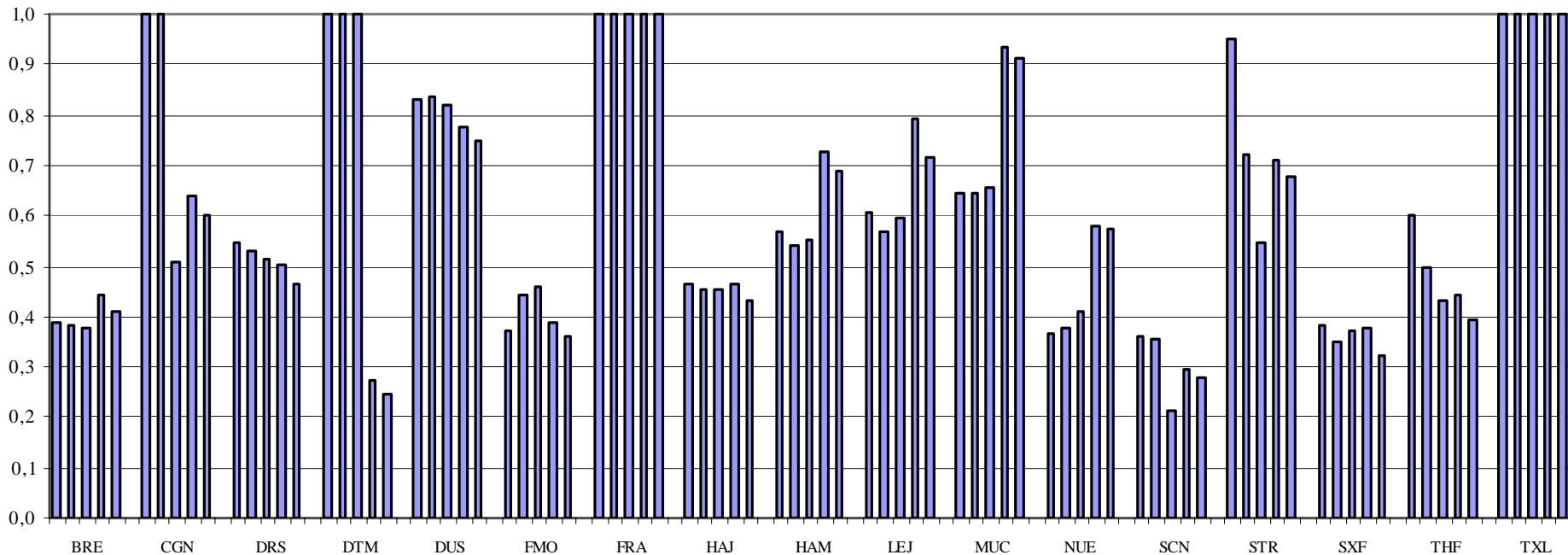
- **Data on Technical Efficiency- Airside**
 - **Output: no. of aircraft movements**
 - **Inputs: no. of employees**
 - airport size (in ha)
 - number of runways
 - total length of runways

Benchmarking

Results

- Landside (TE)

➤ Substantial differences in Technical Efficiency

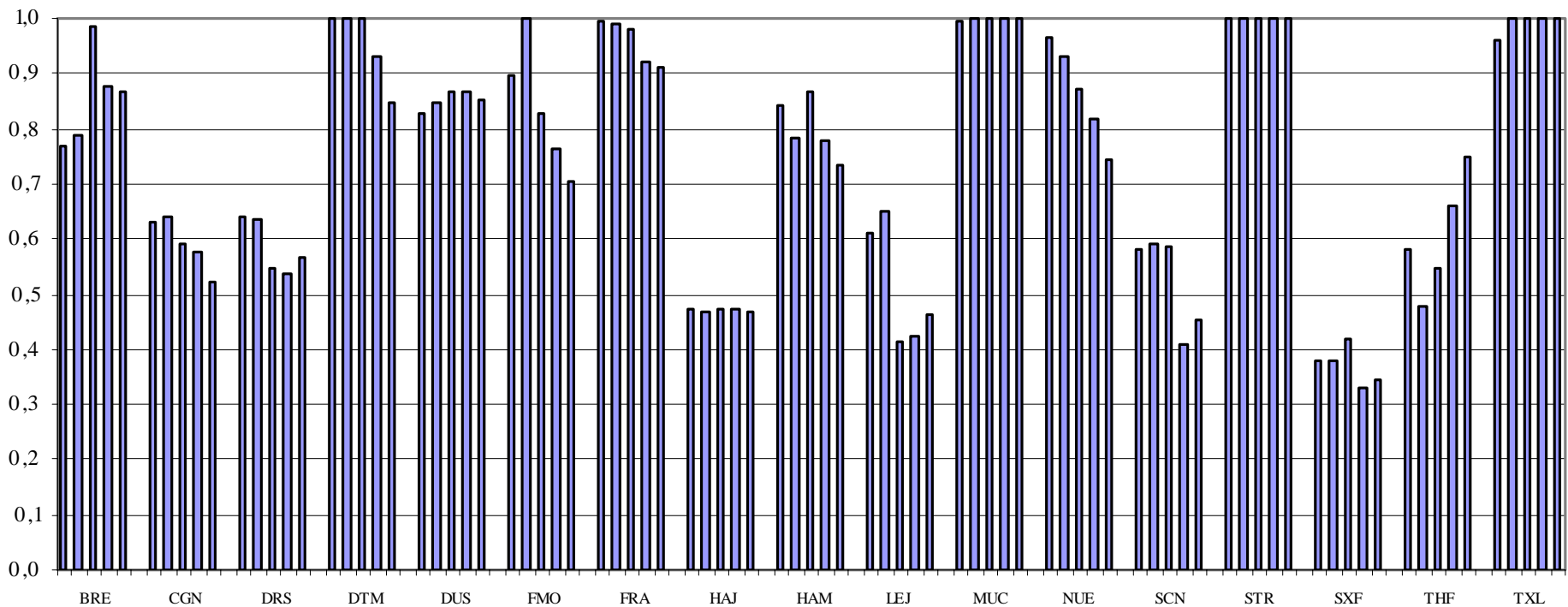


Benchmarking

Results

- **Airside (TE)**

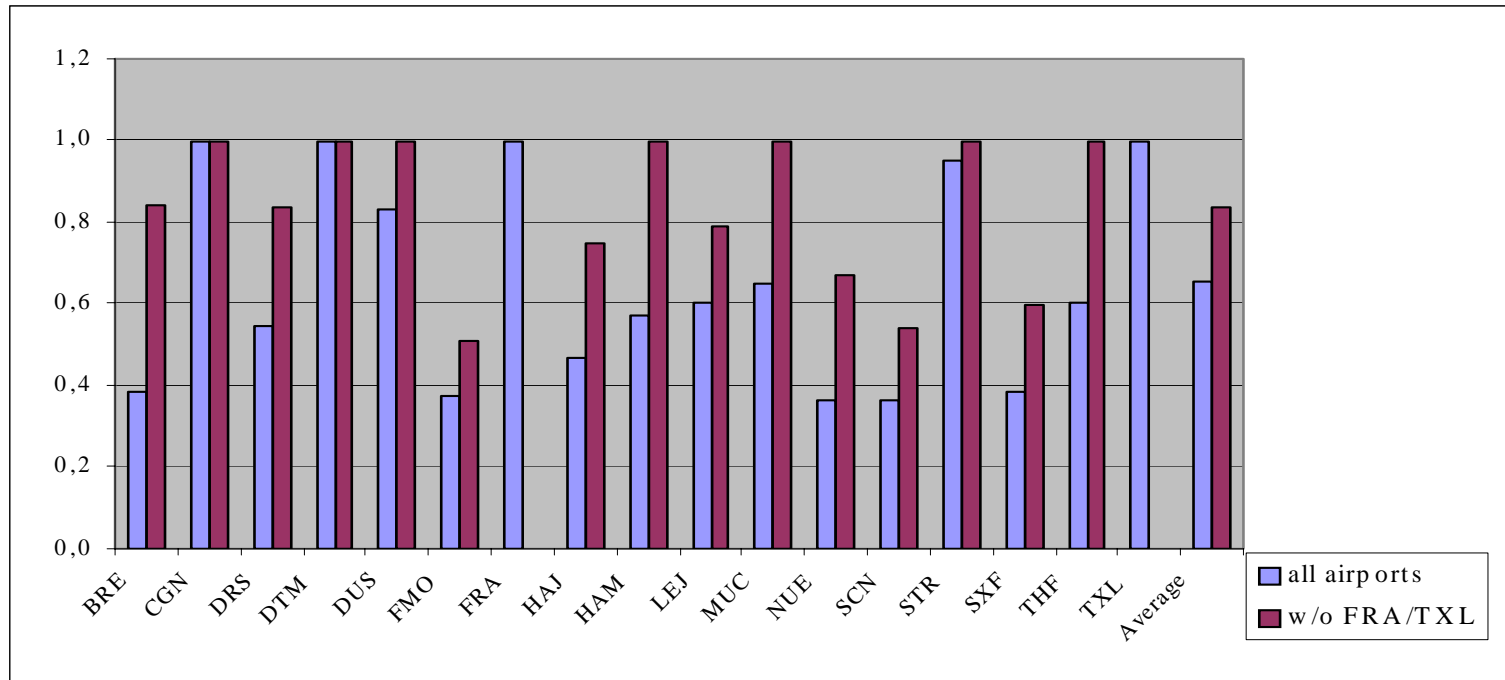
➤ **Some airports could increase its efficiency**



Benchmarking

Sensitivity Analysis

- FRA and TXL excluded (1998)



Conclusions

- **First result: Technical efficiency of German Airports decreased especially at the terminal side**
- **Rely not only on DEA, but use various methods with good data sets and deep understanding on local of airports to refine the productivity measures**
- **Preliminary results ask for further research**
➔ German Airport Performance (GAP)

An Agenda for further Research

- Further research in **GAP** and **GARS**
 - i.** Refining the productivity measures
 - ii.** Changes in ownership
 - iii.** Nature & intensity of competition
 - iv.** Regulatory regimes
 - v.** Different management strategies
 - vi.** External Factors

Benchmarking

Thank you!