

WHAT CAN WE LEARN FROM BENCHMARKING STUDIES OF AIRPORTS AND WHERE DO WE WANT TO GO FROM HERE?



Research Project GAP:

Vanessa Kamp
Hans-Martin Niemeier
University of Applied Sciences Bremen

Jürgen Müller
Berlin School of Economics (FHW)

Outline



- I. Introduction
- II. German Airports in Published Studies
- III. Results
- IV. Some Shortcomings and Points for Future Research
- V. Conclusions and Outlook for GAP

I Introduction



- Motivation for Airport Benchmarking
 - Capacity Utilization and Financial Performance
 - For Commercialization and Privatization Activities
 - Identification of Gaps to Best Practice Airports

I Introduction



→ National Benchmarking Studies:

- Australia: Hooper and Hensher (1997)
- Brazil: Fernandes and Pacheco (2002)
- Japan Yoshida (2003)
- Portugal: Barros and Sampaio (2004)
- Spain: Martin and Román (1997), Murillo-Melchor (1999)
- UK: Parker (1999)
- USA: Gillen and Lall (1997, 1999), Bazarghan and Vasigh (2003), Sarkis (2000)

I Introduction



→ International Benchmarking Studies:

- Adler and Berechmann (2000, 2001)
- Doganis et al (1995)
- Graham and Holvad (2000)
- Pels et al (2001, 2003)
- Vogel (2005)
- Air Transport Research Society (ATRS)
- Transport Research Laboratory (TRL)

II German Airports in Published Studies



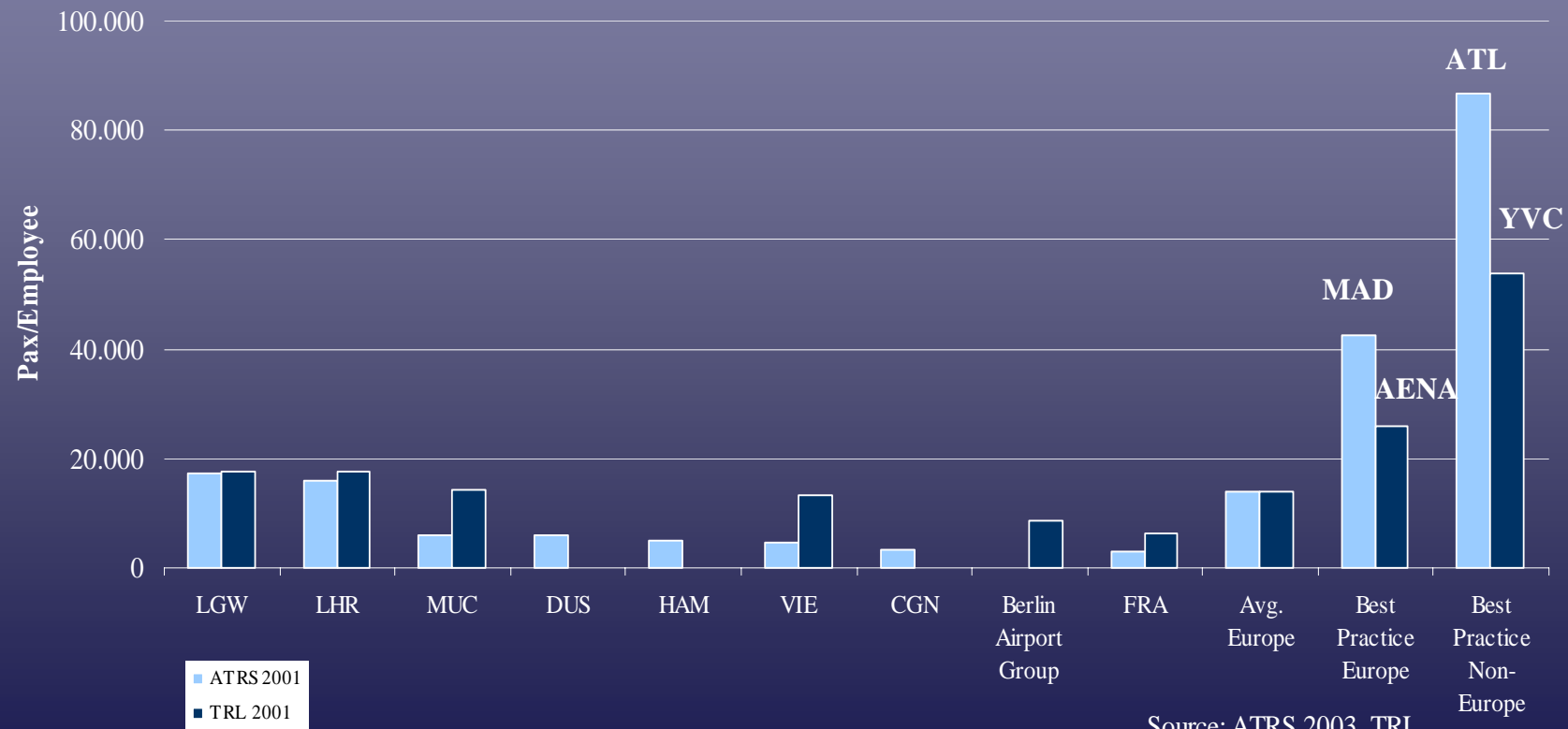
→ Selected Studies:

	Doganis et al (1995)	Pels et al (2003)	ATRS	TRL
Airports	25 European Airports	34 European Airports	Airports and Airport Authorities Worldwide	Airports and Airport Authorities Worldwide
Financial Year	1993	1995 – 1997	2000, 2001, 2003	1997-2002
German Airports	FRA, DUS	SXF, FRA, HAM, HAJ, MUC, NUE	CGN, DUS, FRA, HAM, MUC, TXL (2005), Berlin Airport Group (2005), Fraport (2005)	FRA, MUC, Berlin Airport Group, Fraport (2002)
Methodology	Data Adjustment, Productivity Measurement, Regression Analysis	DEA and SFA	Partial Productivity, Overall Productivity, Residual Productivity	Data Adjustment, Partial Productivity, Multiattribute Assessment

III Results – Labour Productivity I



→ Differences between ATRS and TRL Data

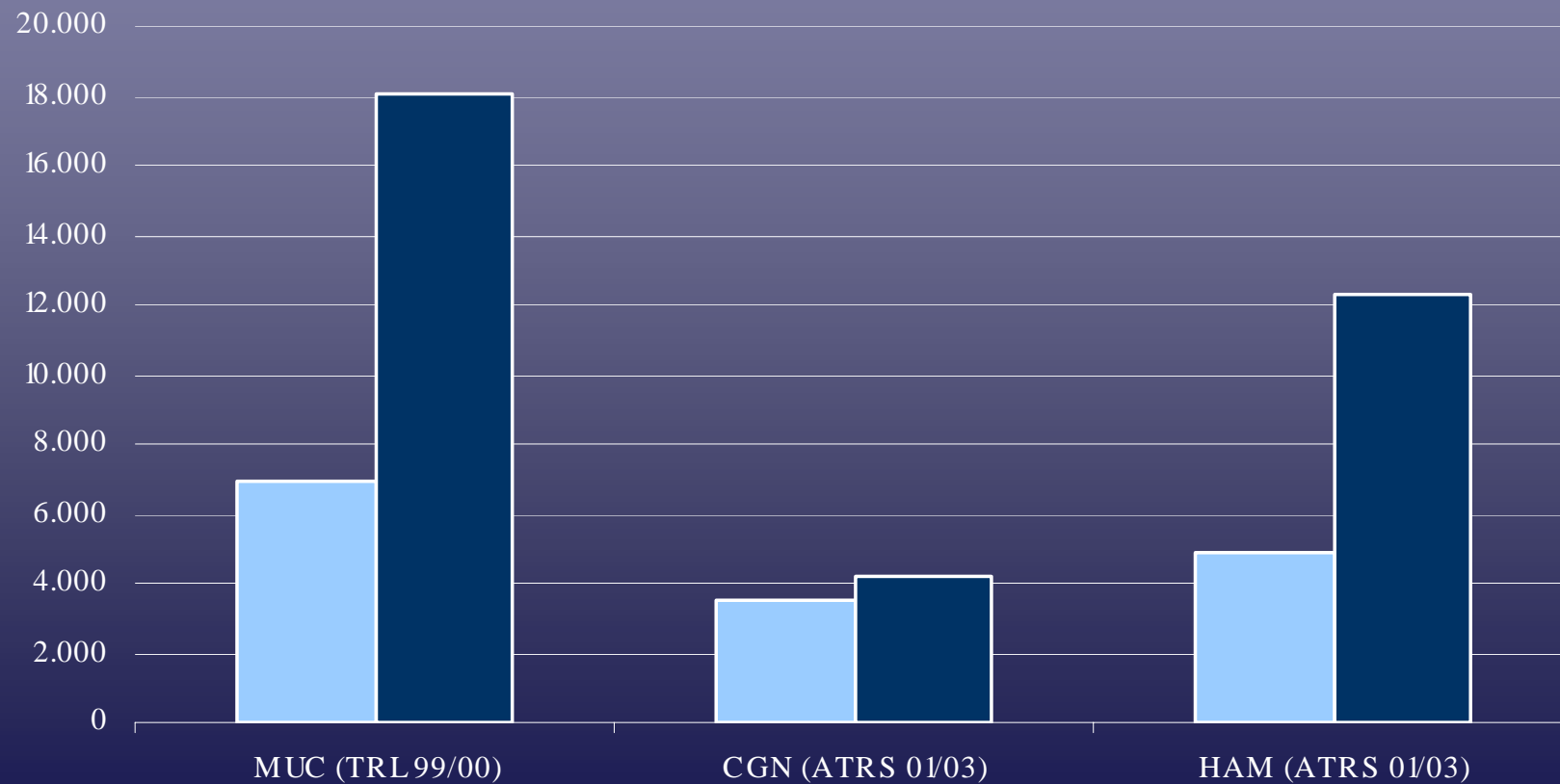


Source: ATRS 2003, TRL

III Results – Labour Productivity II



→ Productivity Changes



III Results – Labour Productivity III

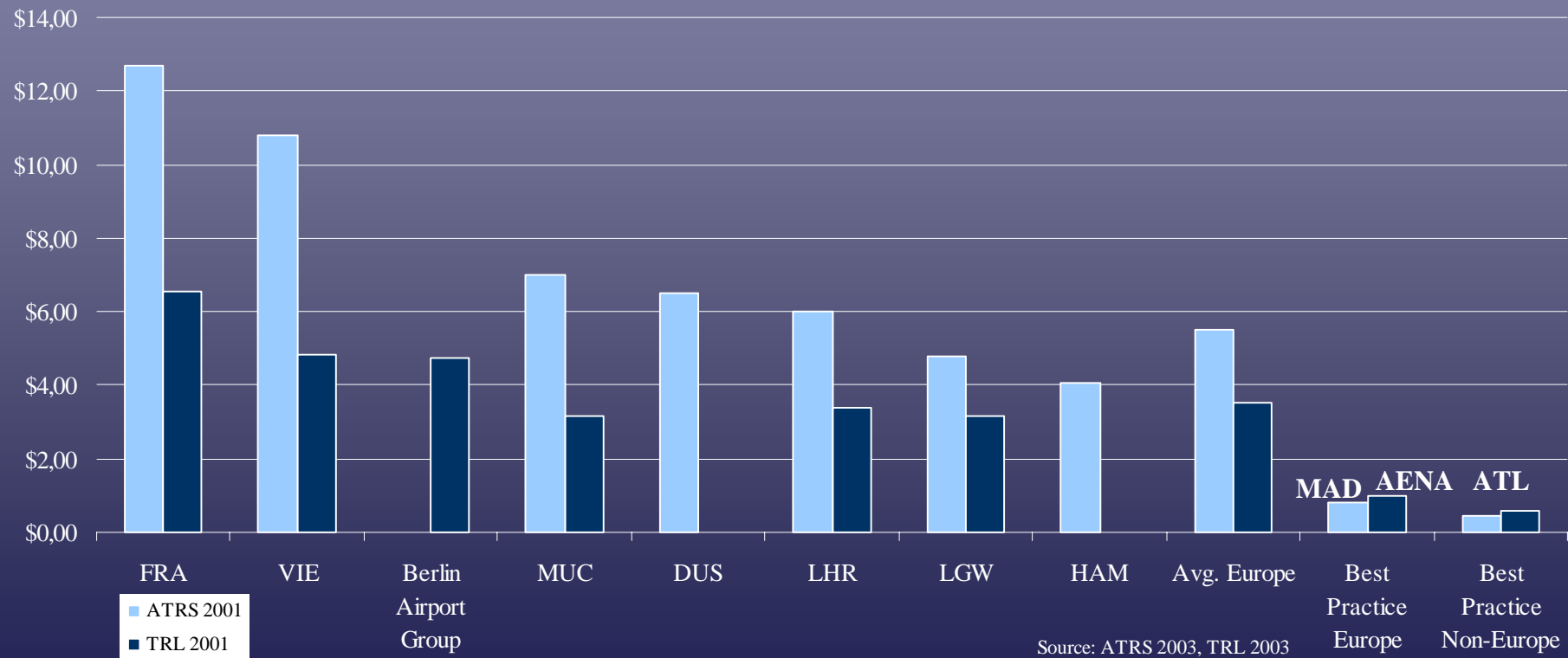
→ Ranking Differences between ATRS and TRL Data

	ATRS 2000	TRL 2000	
ARN	26.352	26.241	ARN
OSL	22.955	23.531	AMS
ZRH	22.249	22.627	ZRH
AMS	20.270	22.447	OSL
LGW	17.814	19.066	LHR
LHR	17.002	18.092	LGW
GVA	16.008	18.032	MUC
CPH	12.617	17.979	GVA
MAN	7.067	14.632	VIE
MUC	5.714	13.174	CPH
VIE	4.879	10.692	MAN
FRA	3.459	8.050	FRA

III Results – Cost Performance I



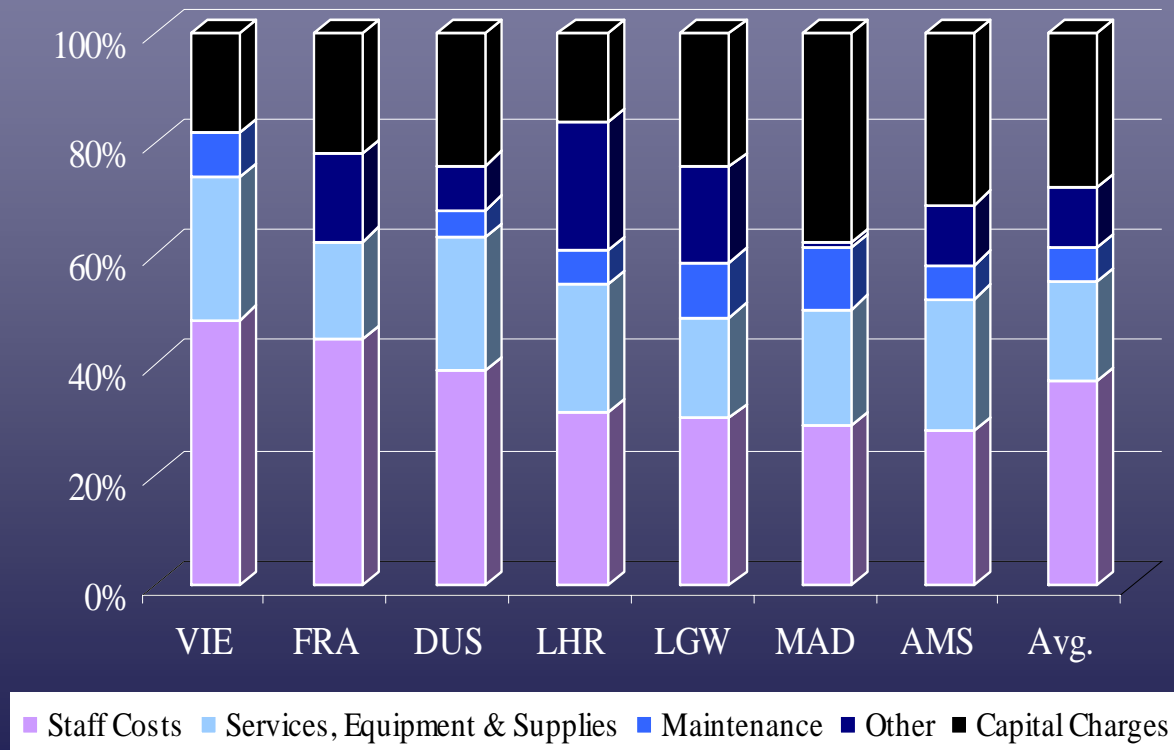
→ Labour Costs per Passenger



III Results – Cost Performance II



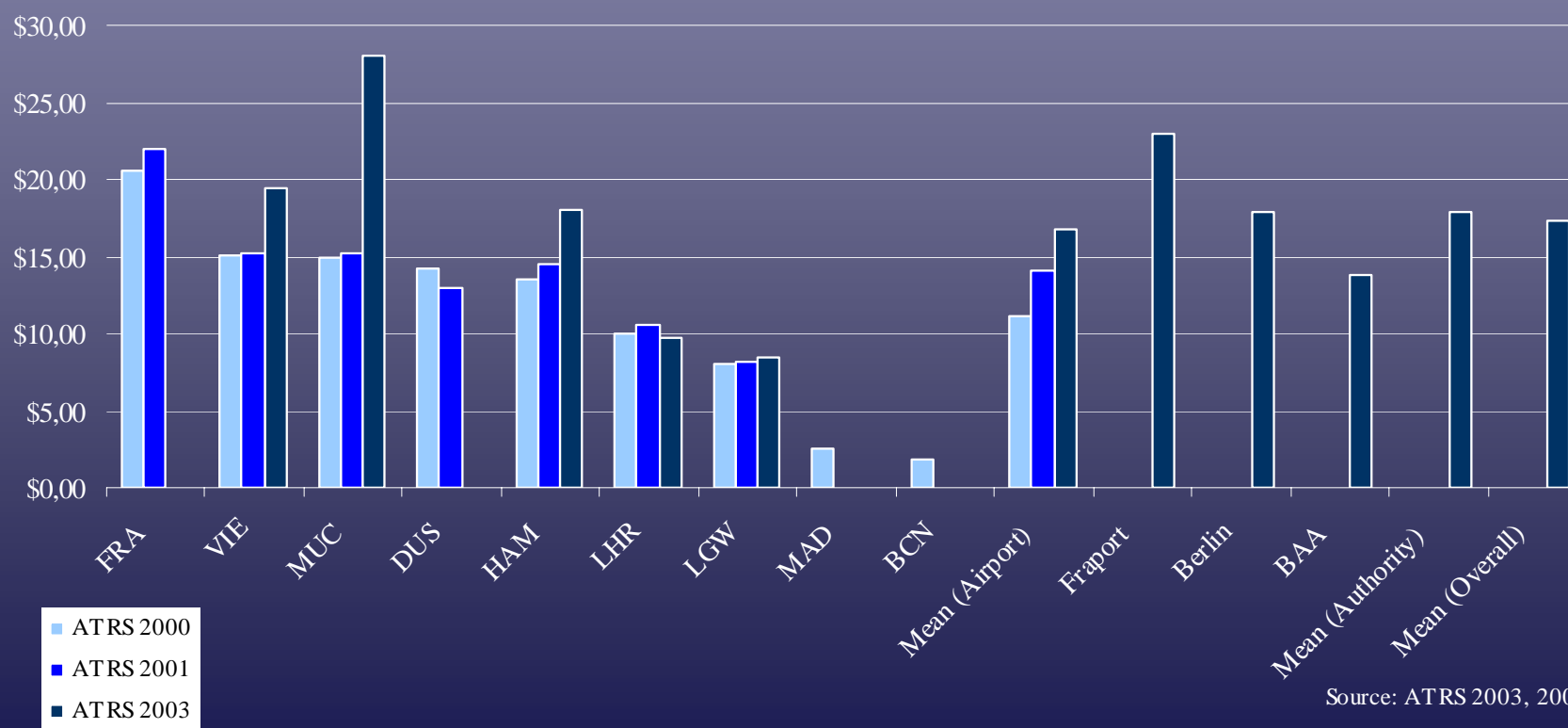
→ Cost Structure



III Results – Cost Performance IV



→ Variable Costs per Passenger

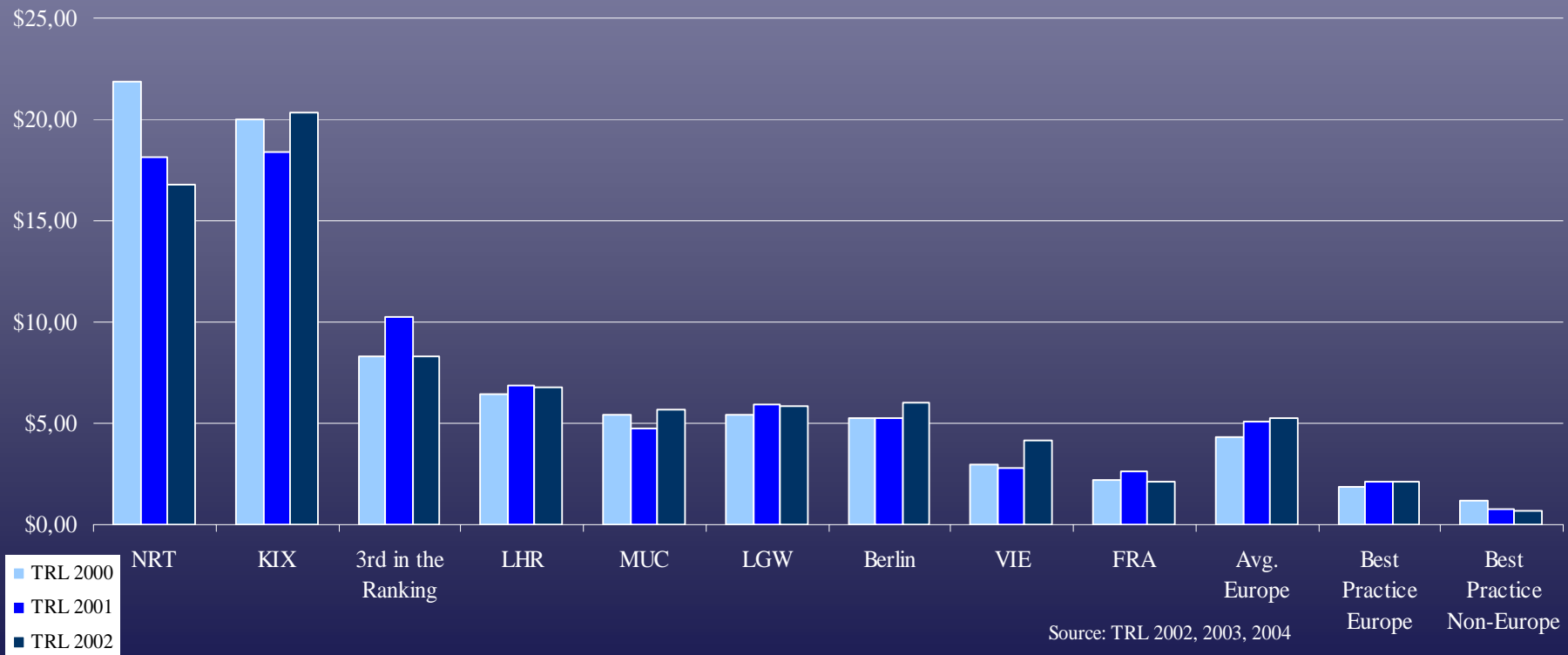


Source: ATRS 2003, 2005

III Results – Cost Performance VI



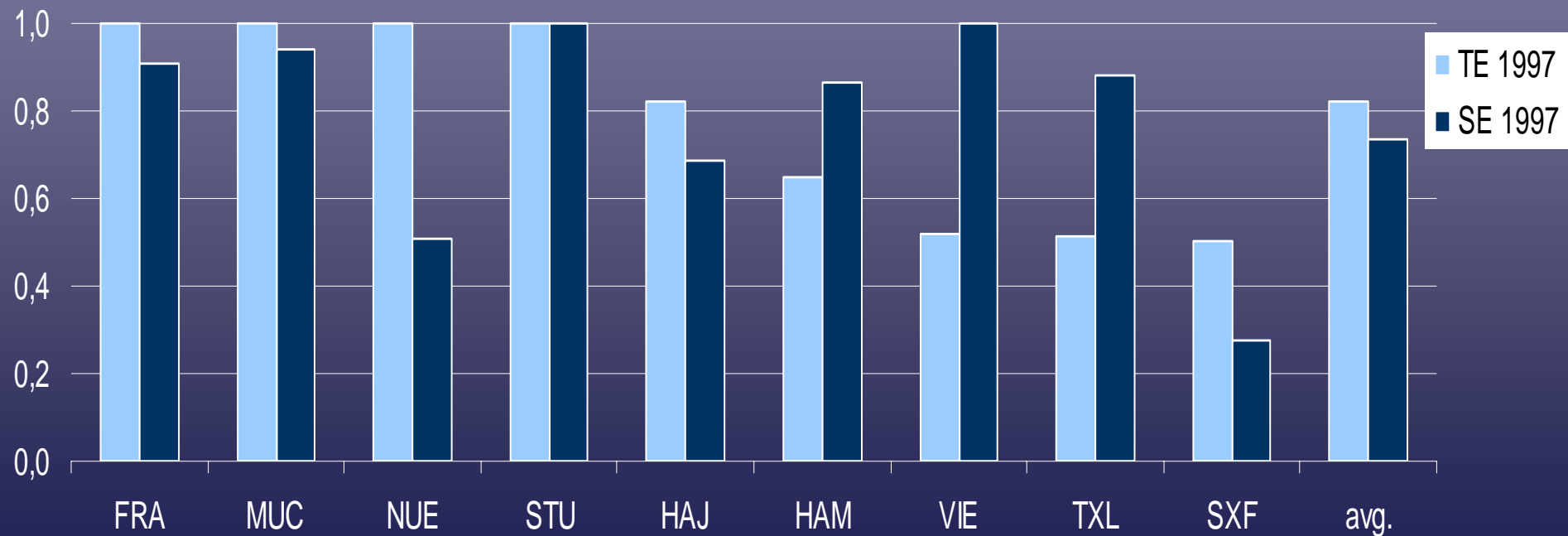
→ Operating Costs per Passenger



III Results – Relative Efficiency I



→ Airside

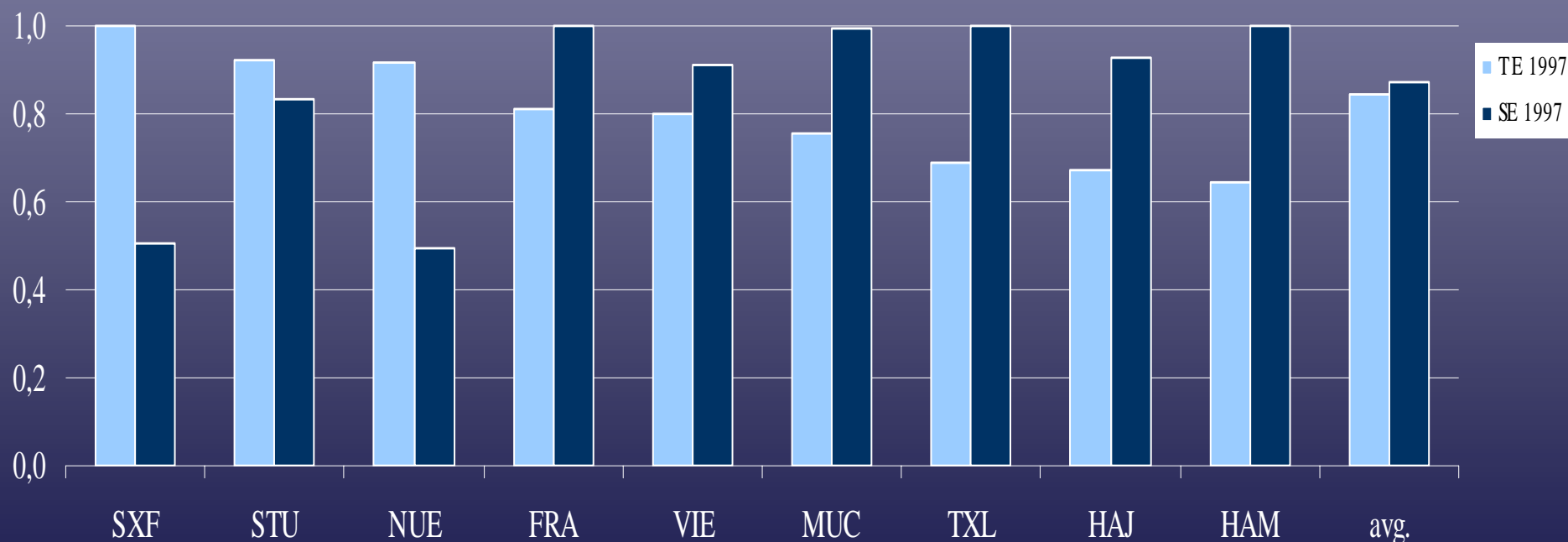


Source: Pels et al 2003

III Results – Relative Efficiency II



→ Terminal Side

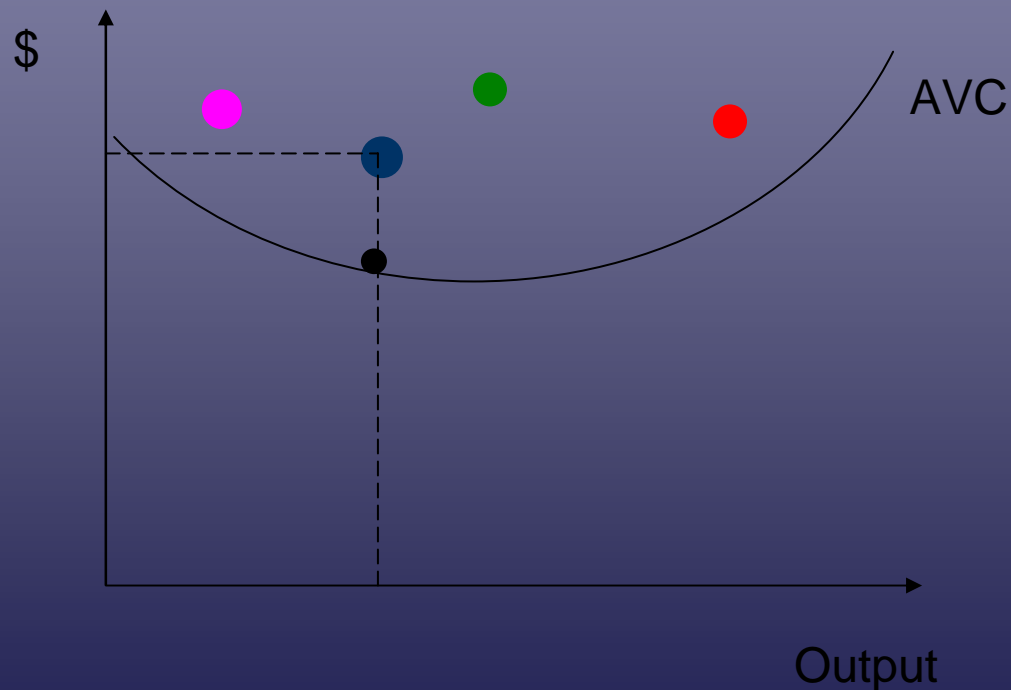


Source: Pels et al 2003

IV Some Shortcomings and Points for Future Research



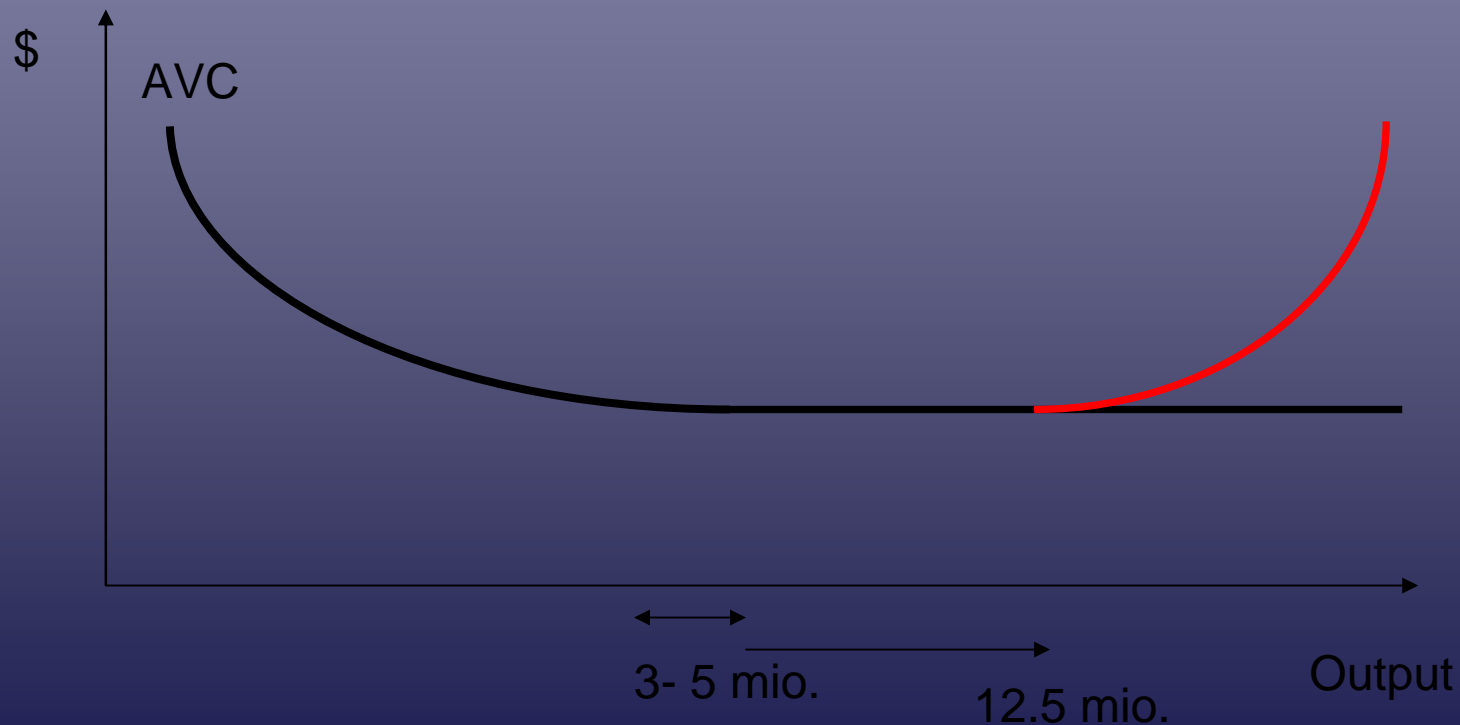
- X-Inefficiencies or Decreasing Costs ?



IV Some Shortcomings and Points for Future Research



- Long run average cost function ?



IV Some Shortcomings and Points for Future Research



- Sources of Economies of Scale
 - Indivisibilities: Runway
 - Cube square and physical properties: Terminal and Carparking
 - Specialization: BAA = FRAPORT = Vienna = Cologne = Bremen = Lübeck ?
 - Inventories: Non-aviation?

IV Some Shortcomings and Points for Future Research



- Sources of Economies of Scale
 - Purchasing and Advertising: Cooperation of small airports, costs of branding?
 - Research and development: Environmental Management?
 - Economies of Scope: Cost complementarities between freight, passengers and non-aviation

IV Some Shortcomings and Points for Future Research



→ Sources of Economies of Scale

→ Diseconomies of Scale:

→ Labor costs and firm size:

→ Bureaucracy and incentives

→ Random factors: Price of land

V Conclusions and Outlook for GAP I



- Below Average Performance of German Airports in a European Comparison
- Substantial Differences between Financial Performance and Technical Efficiency at German Airports
- No substantial differences between raw and adjusted data for German Airports

V Conclusions and Outlook for GAP II



Possible Reasons for the low Performance:

- Low degree of outsourcing
- Diseconomies of scale for larger airports
- Better analysis on Economies of Scope
- Better analysis on product differentiation and airport strategies
- Better analysis on vertical integration

V Conclusions and Outlook for GAP III



What follows from that for GAP?

- Use of adjusted and unadjusted data
- Use of different econometric methodologies
- Benchmark of German airports with a restricted sample of international airports
- Causal Analysis and Interpretation of the results



Thank You !