

Competition between hub airports

The case of Amsterdam Airport Schiphol



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Amsterdam Aviation Economics

Question

- What is the competitive position of Amsterdam Airport Schiphol vis-a-vis competing airports in the markets served at markets served *via* (with a transfer at) Amsterdam?

Outline

- Airline network competition
- Brief description of the model
- Results: market share of Amsterdam Schiphol in hub markets

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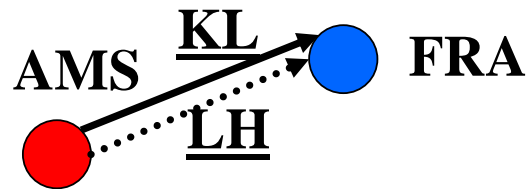
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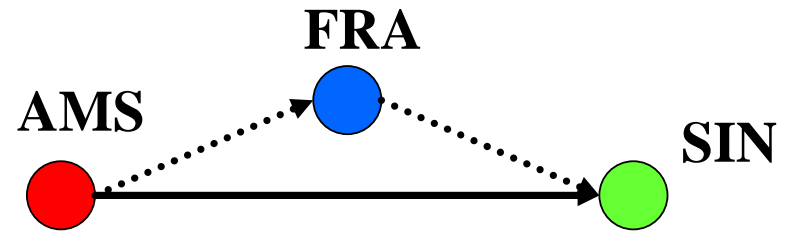
Airline network competition

- ‘Top ten lists’ not sufficient to analyse competitive position of hubs
- Hub-and-spoke networks: competition takes place in direct and indirect ways
- Connectivity approach (Burghouwt 2007; Hidenobu et al. 2008; Paleari et al. 2008; Veldhuis 2007) measure competitive position in terms of physical characteristics of network (travel time, detour, transfer time, number of transfers) .
- However: does not include passenger choice behaviour and ticket price
- In this study, we take into account passenger choice behaviour

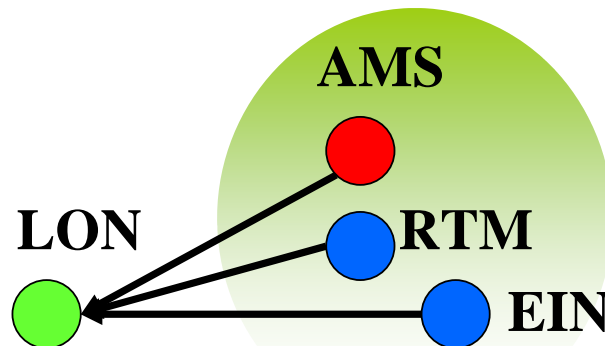
Four types of airline network competition



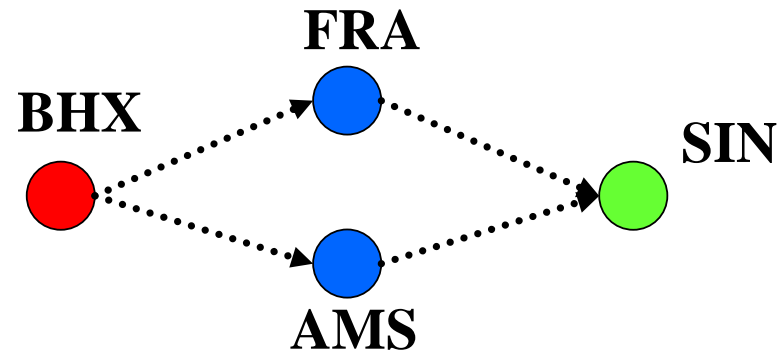
I. Direct



II. Direct/hub

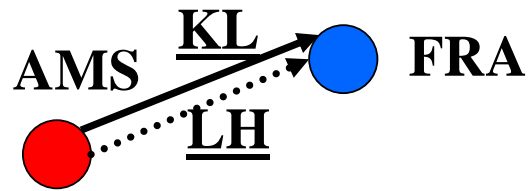


III. Hinterland

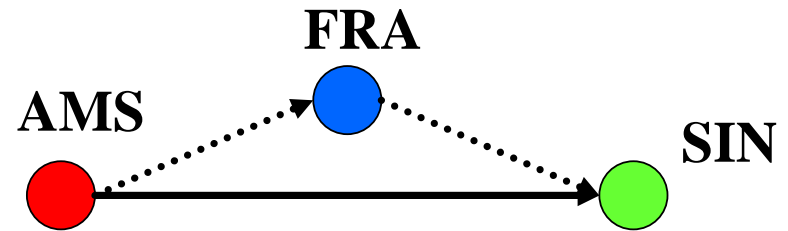


IV. Hub/hub

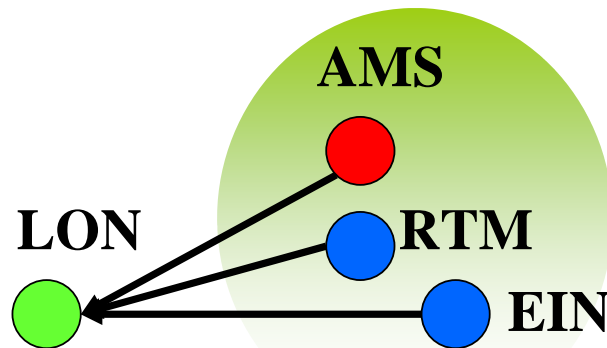
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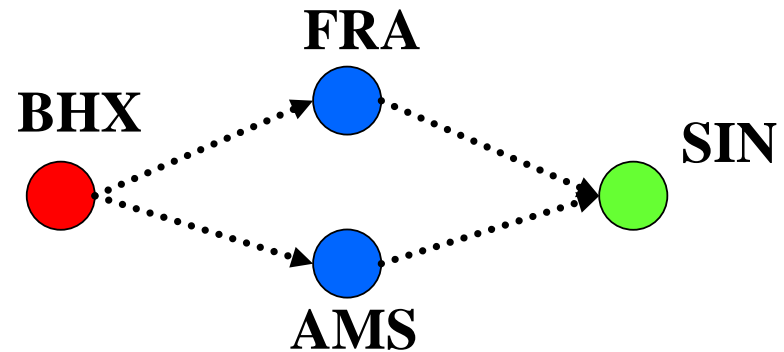
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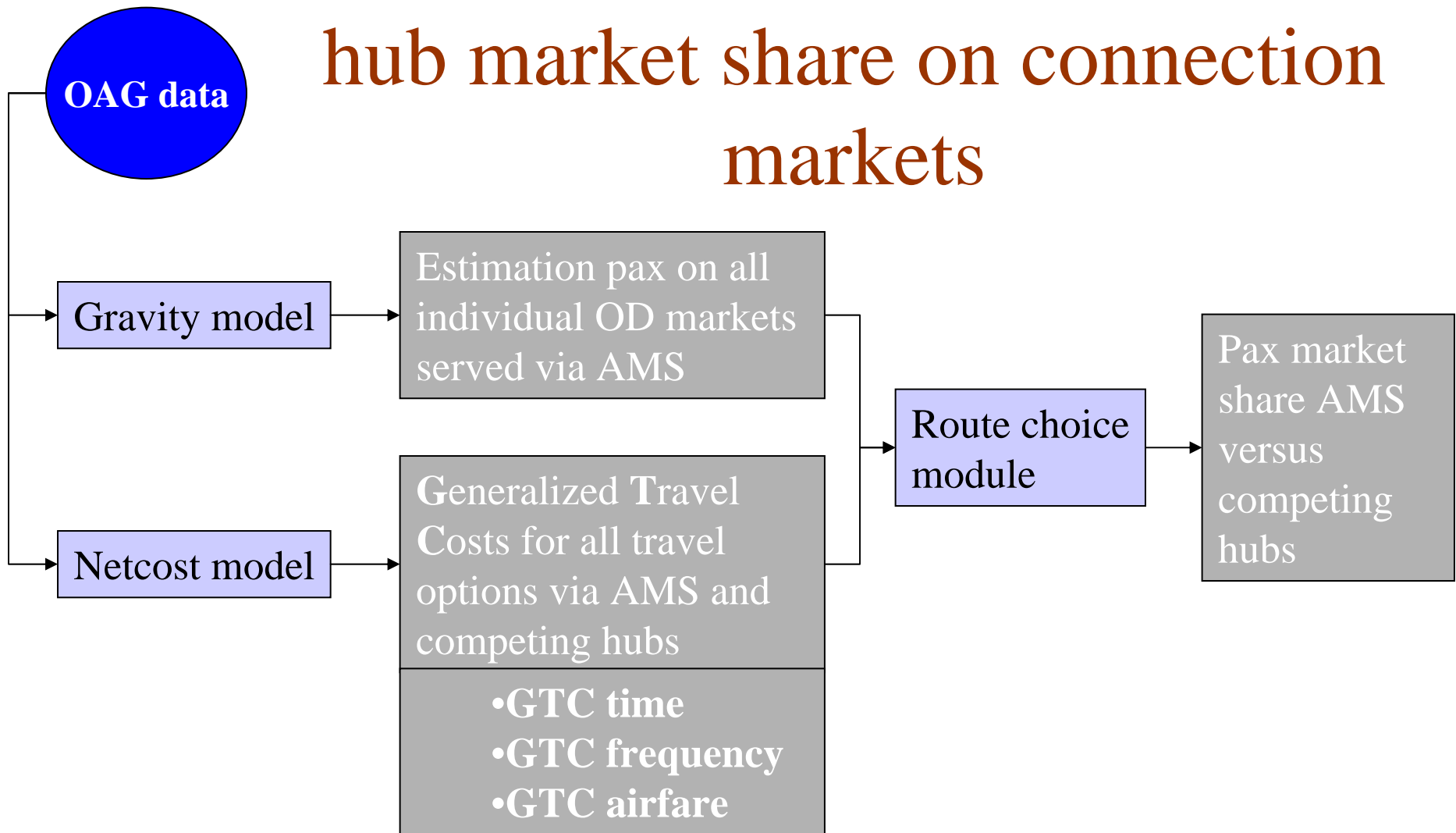
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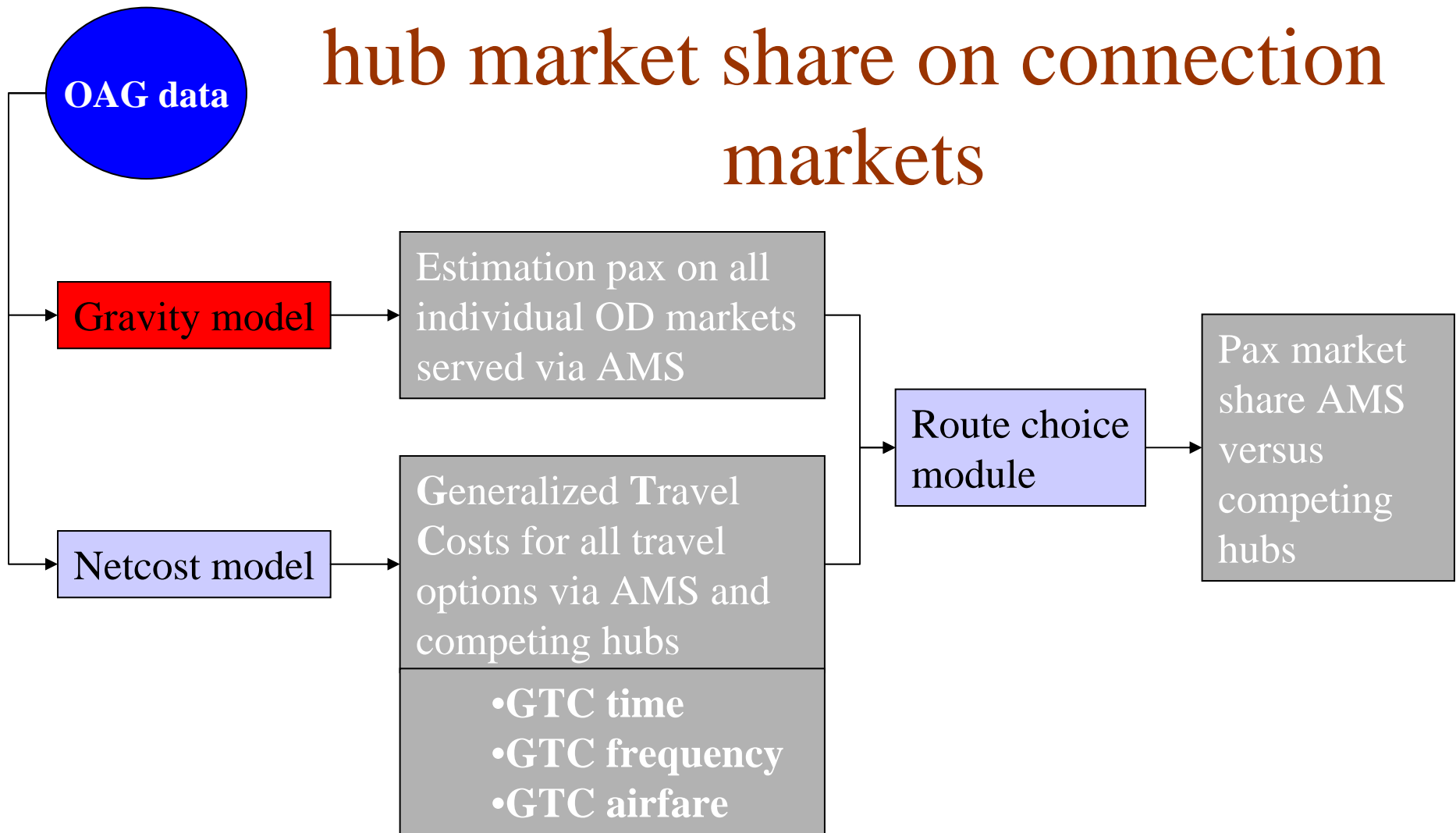
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The Netcost-model: estimation of hub market share on connection markets



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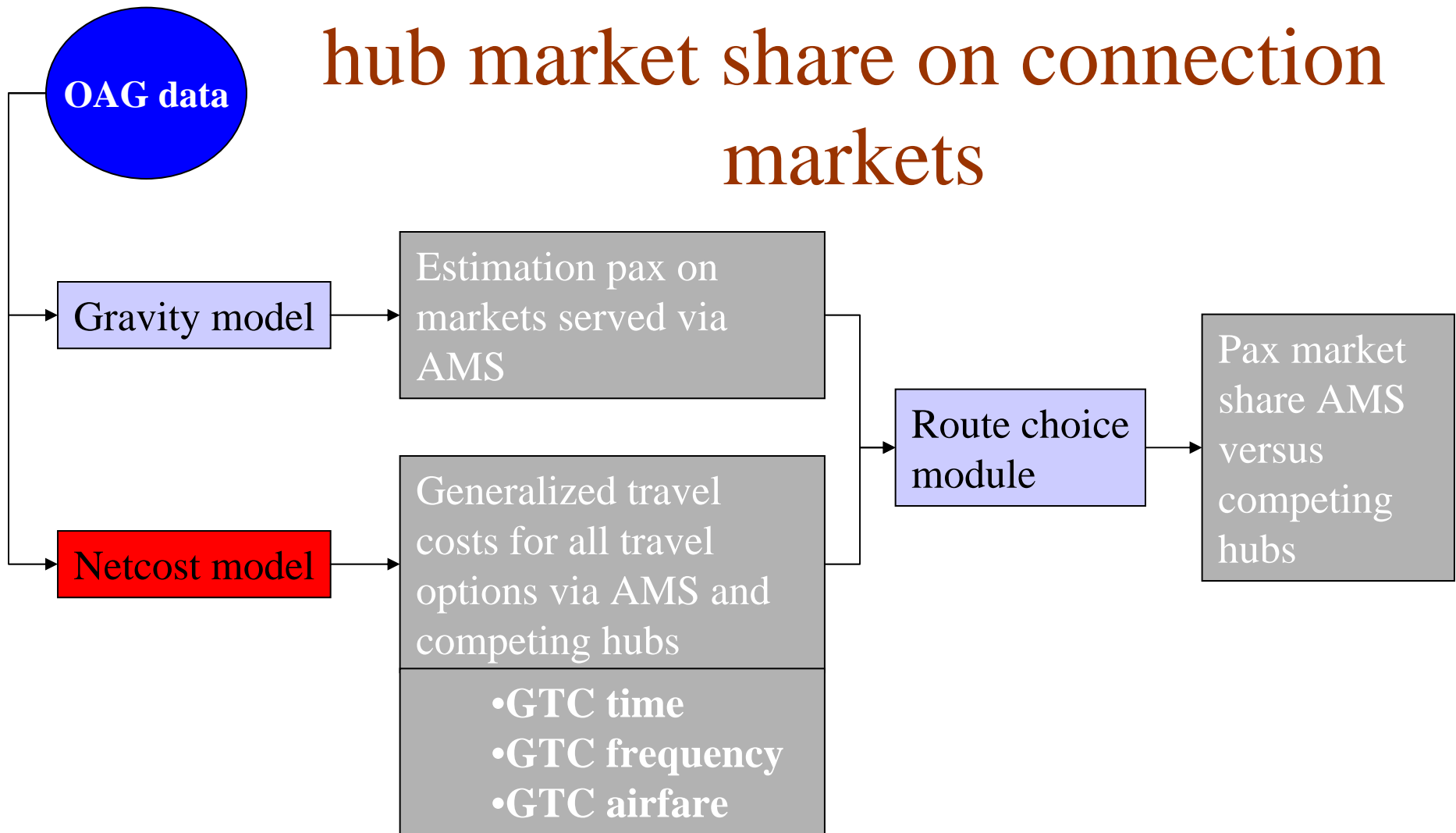


Gravity model: estimation of the potential OD markets served via Amsterdam

$$\text{Potential OD market}_{xy} = C * \frac{(\text{Capacity}_X)^\alpha * (\text{Capacity}_X)^\beta}{(\text{Distance}_{XY})^\gamma}$$



The Netcost-model: estimation of hub market share on connection markets

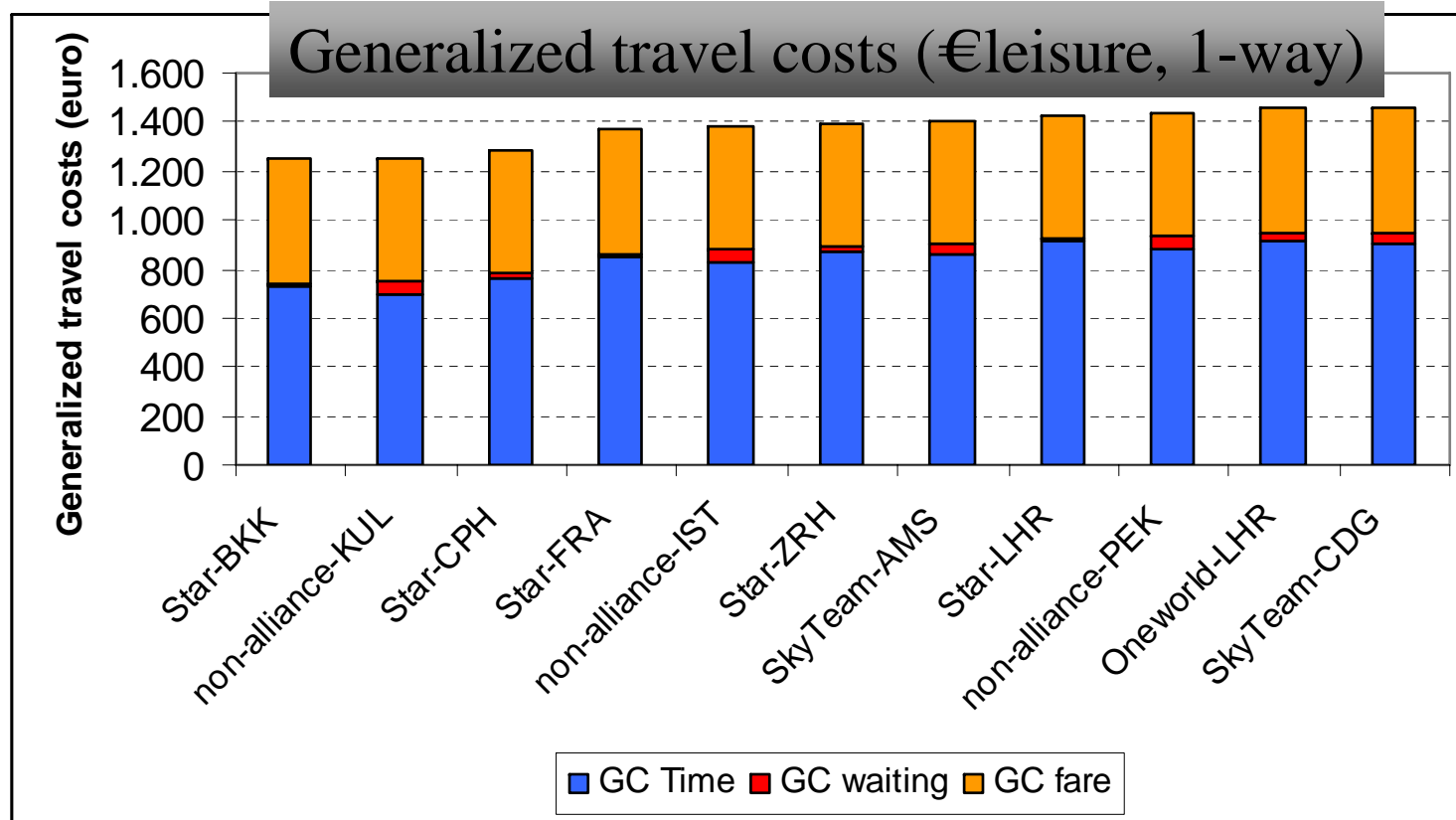


Generalized travel costs: example of Stockholm (ARN) to Singapore (SIN)

- Many travel options between ARN and SIN
- No direct flights
- Which alternative is most attractive for traveller?
- Depends on: Fare, frequency, travel time
- Can be jointly expressed in Generalized Travel Costs



Option ARN-SIN *via* Bangkok with Star alliance most attractive



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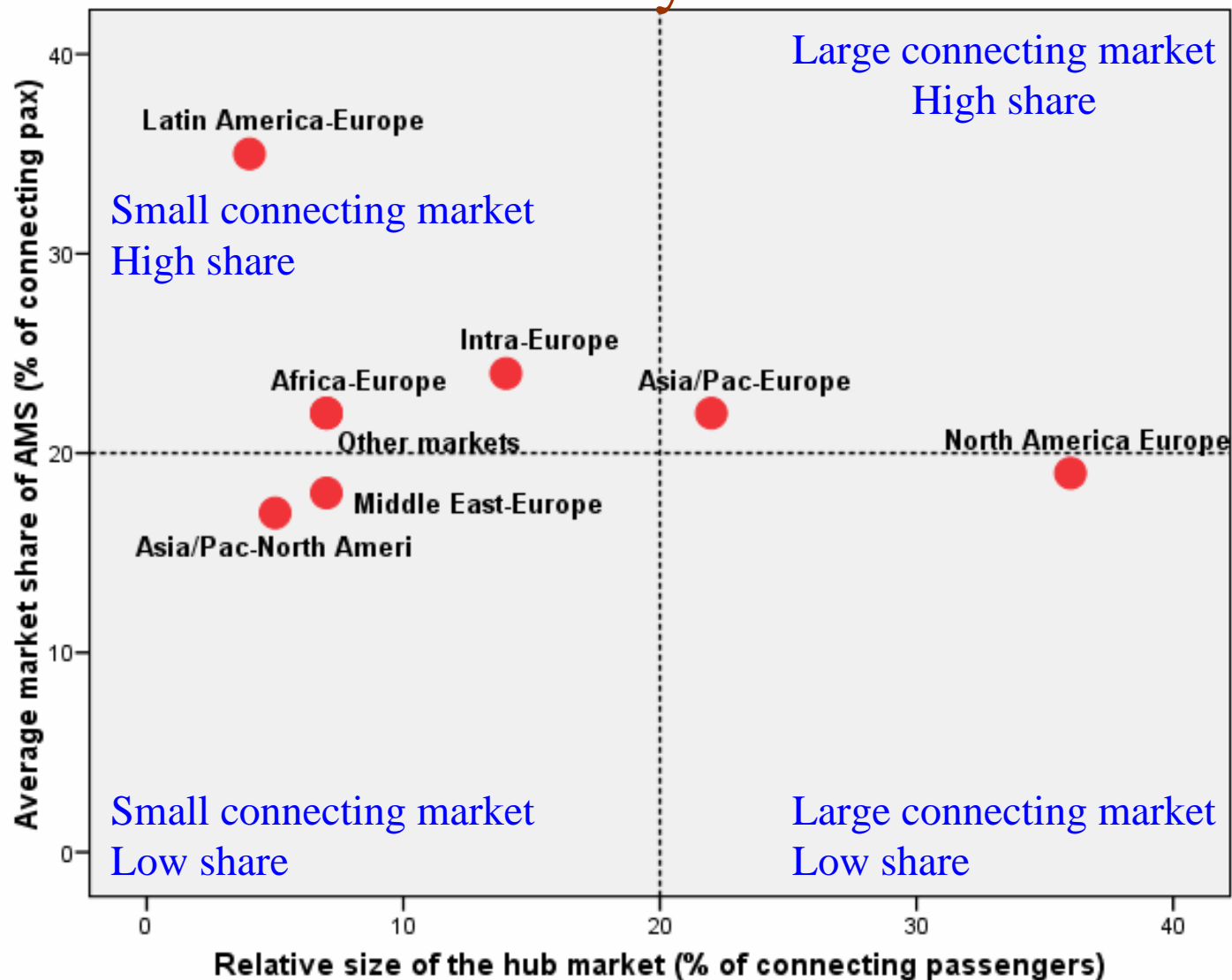
What is the competitive position of Amsterdam in hub markets?

Analysis of:

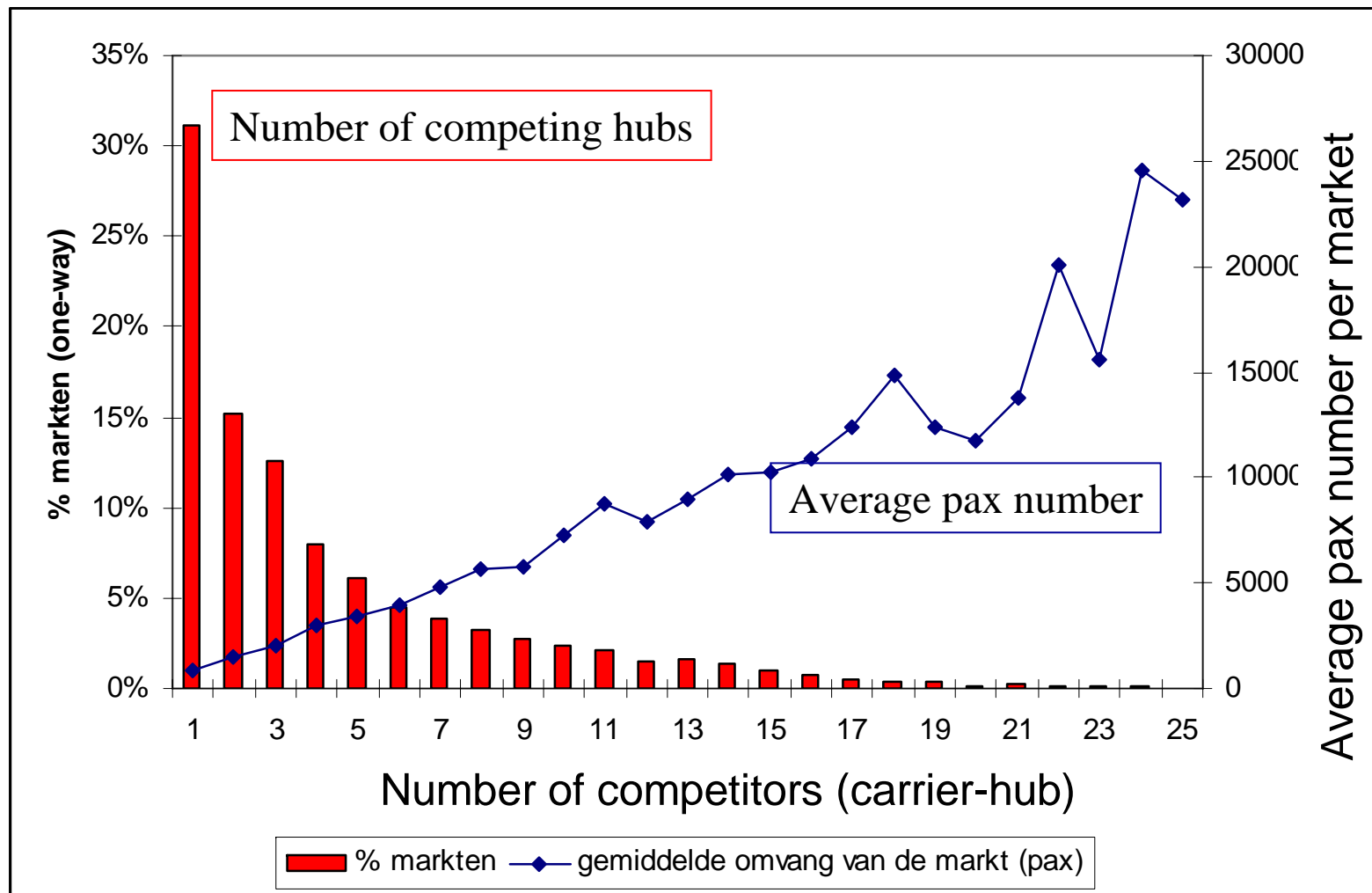
- Relative importance of geographical submarkets served via/with a transfer at Amsterdam
- Competitive position of AMS in each of these markets
- How does competitive position relate to market size?
- Most important competitors in various geographical submarkets



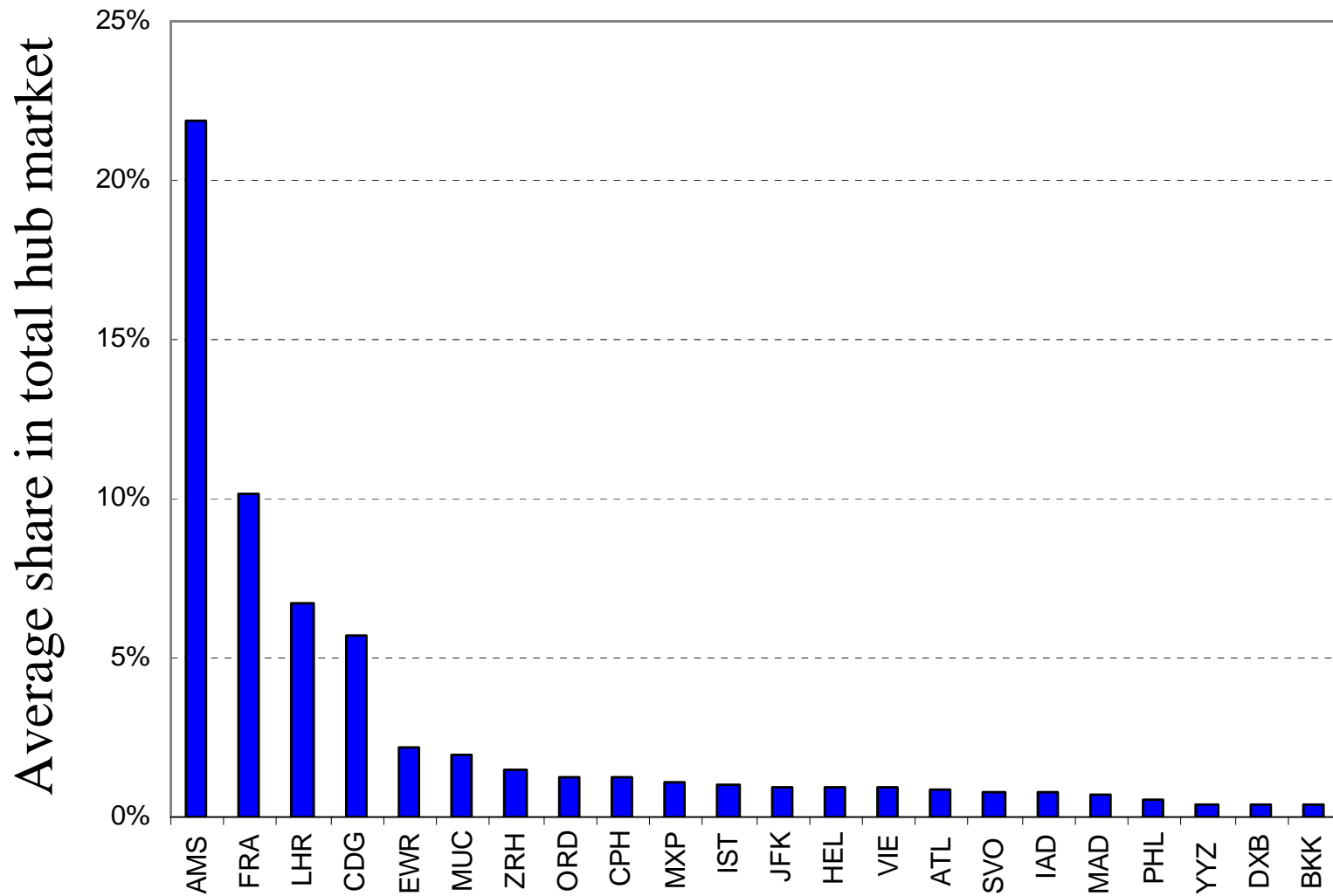
Market share Amsterdam versus size of the connecting market: AMS strong position Latin-America, but market very small



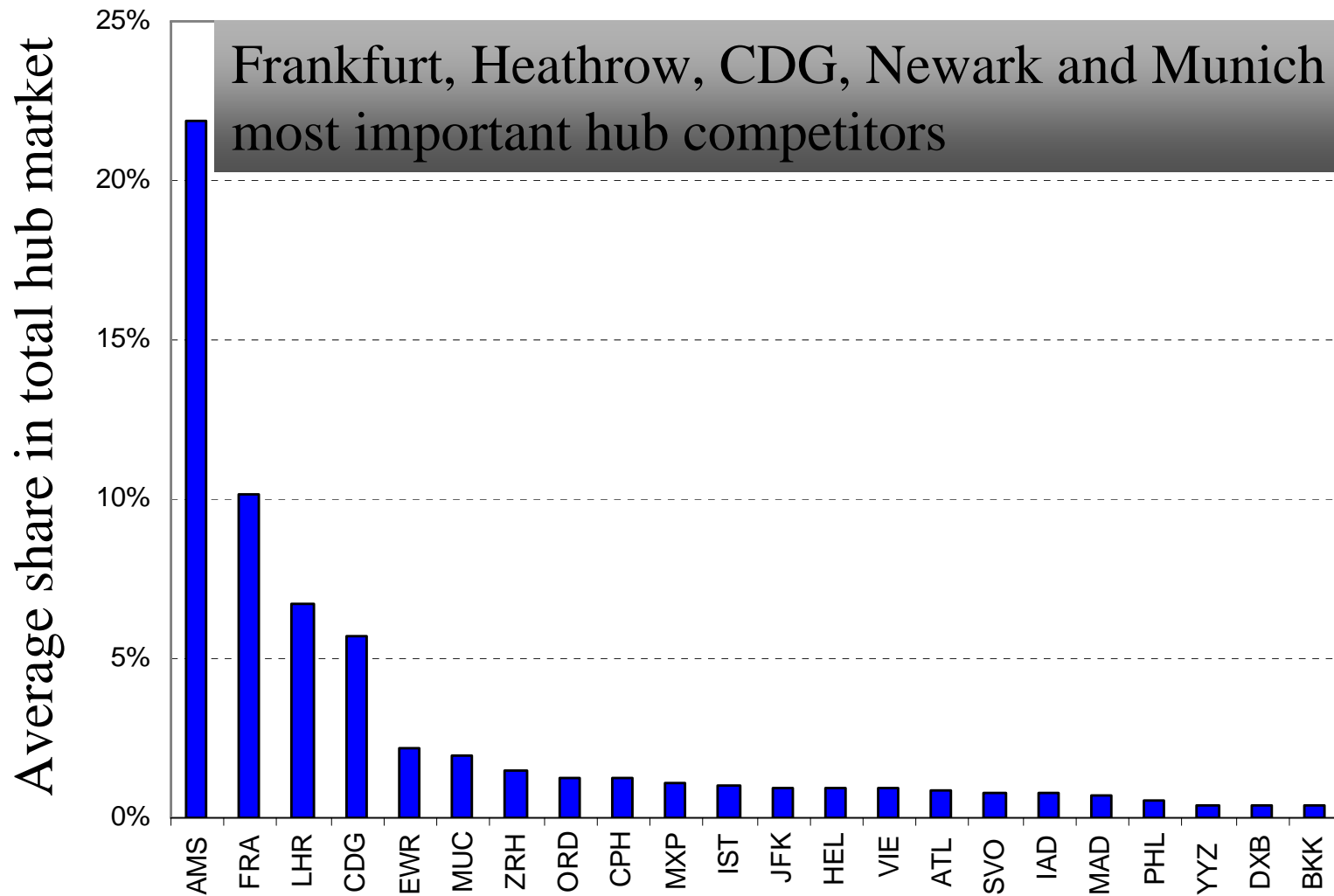
AMS has monopoly on 30% of the hub markets, but these are smallest markets



Competitors of Amsterdam on hub markets served via Amsterdam



Competitors of Amsterdam on hub markets served via Amsterdam



Most important competing hubs for hinterland hub markets via Amsterdam:

Europe to...

North America	Asia/Pacific	Europe	Middle East	Africa	Latin America
LHR	FRA	FRA	FRA	FRA	CDG
FRA	CDG	CDG	IST	LHR	MAD
CDG	LHR	LHR	LHR	ZRH	FRA
EWR	MUC	MUC	CDG	CDG	LHR
ORD, JFK	DXB, SIN, HEL	CPH	MUC, DOH, DXB, CAI	IST	EWR

Conclusions

- Traditional measures of airport competitiveness do not capture nature of airline network competition
- Netcost approach adds to existing connectivity models by introducing passenger choice behaviour
- Useful tool for analysis of competitive position for policy makers and airports, with limited data requirements
- However, further improvement of model needed
 - validation on broader database, multi-airport regions, correction of gravity model