

Rail and Competition

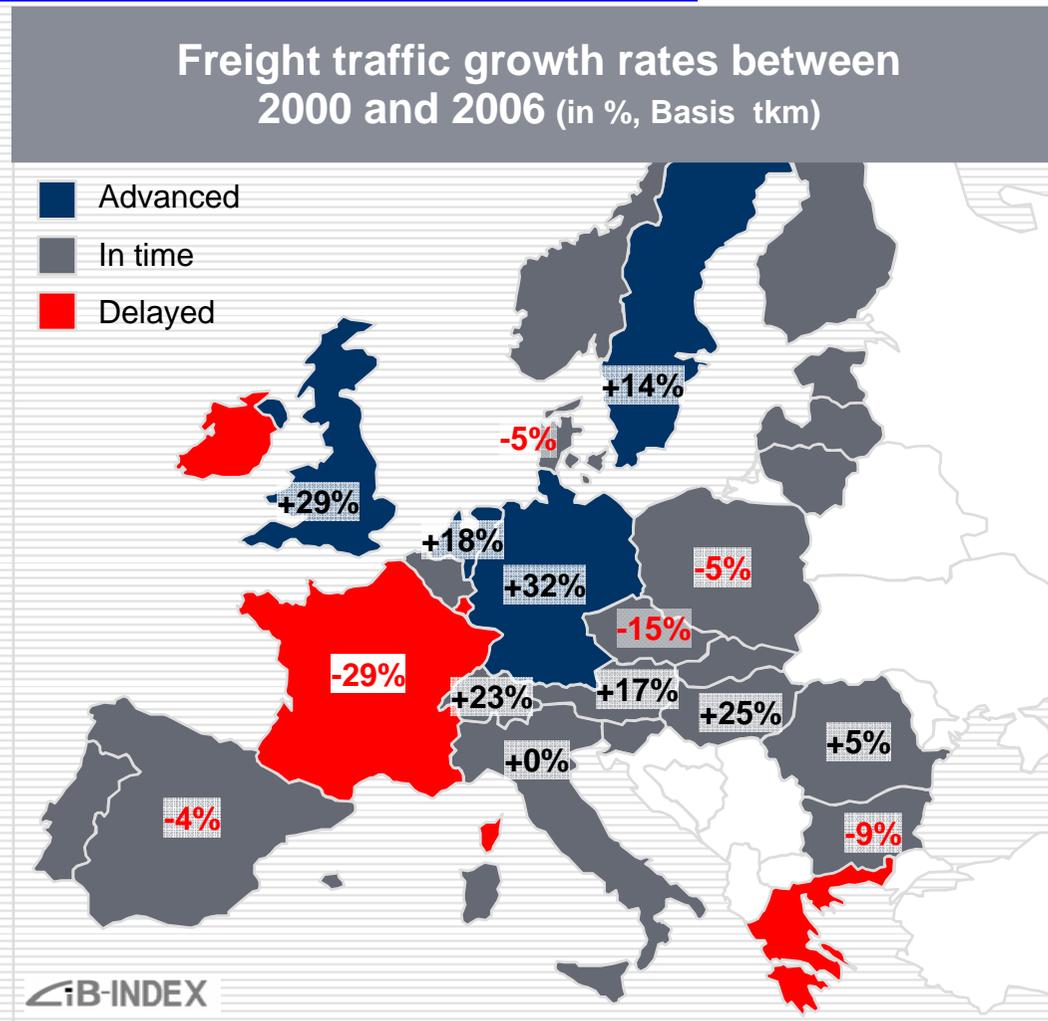
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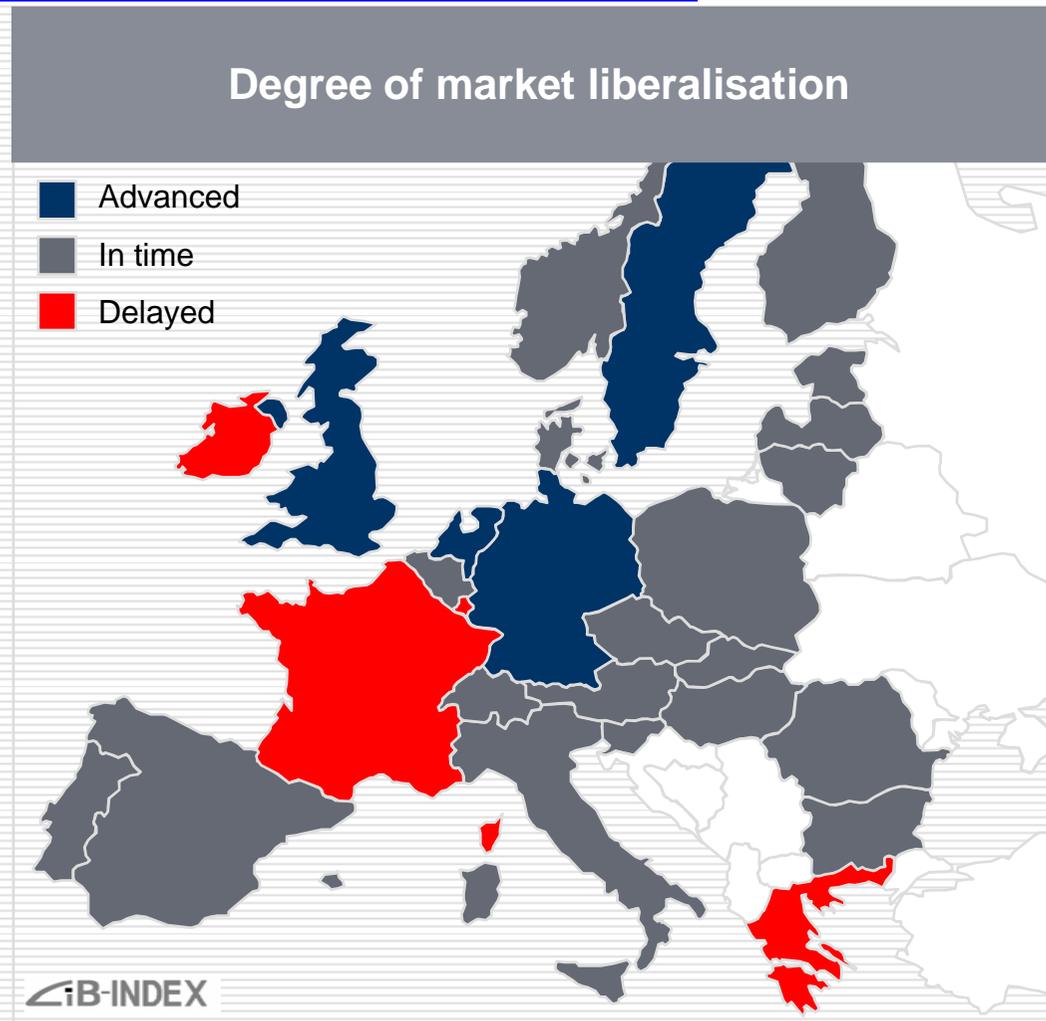
27 May 2010

EU: Heterogeneity in freight traffic



Source: ProgTrans AG „European Transport Report 2007 / 2008“, IBM-Liberalization Index Rail 2007

EU: Heterogeneity in market opening



Source: Liberalisierungsindex. IBM Consulting

What can be done in 15 Minutes?

- Three markets:
 - Freight
 - Regional/urban passenger traffic
 - Long-haul passenger, in particular, high speed
- Same regulatory framework through EU directives, but high degree of implementation heterogeneity in Europe
- Many submarkets (networks, O&Ds)
- What is crucial in what market?
 - Freight: inter-modal, and competition *in* the market
 - Regional/urban passenger: competition *for* the market
 - Long-haul passenger: intermodal traffic

Concepts of measurement

- Concentration ratios, Herfindahl
- Price cost margins

- Market shares over time
- Is there entry?
- What type of exit?

- Case studies about the effect of entry
- Structural models, simulations

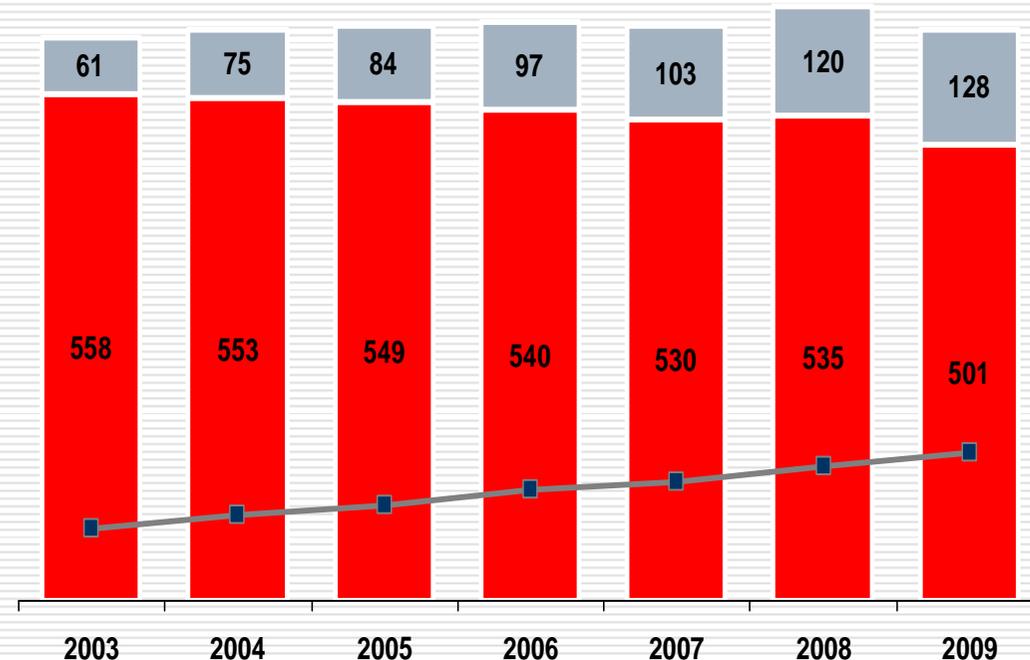
Freight

- EU 15: Modal split between 1995 and 2008 relatively stable (from 15% to 13%)
- EU 27: decrease from 22% to 18% (Poland: from 62% to 35%!)
- Profound structural changes: entry, alliances, acquisitions:
 - SNCF Fret acquired international operations of Veolia Cargo
 - DB bought PCC in Poland etc
- Market share of DB competitors in Germany increased from 7% in 2003 to 25% in 2009
- Market share of DB freight in french market around 10% in 2009

Regional/urban traffic: Germany

Action in competition
for the market:

- market share of DB's competitors increased from 10% in 2003 to 20% in 2009
- in 2009, DB won around 70% of the procured traffic volume



Source: DB competition
report 2009

Figures: Mio pass kms

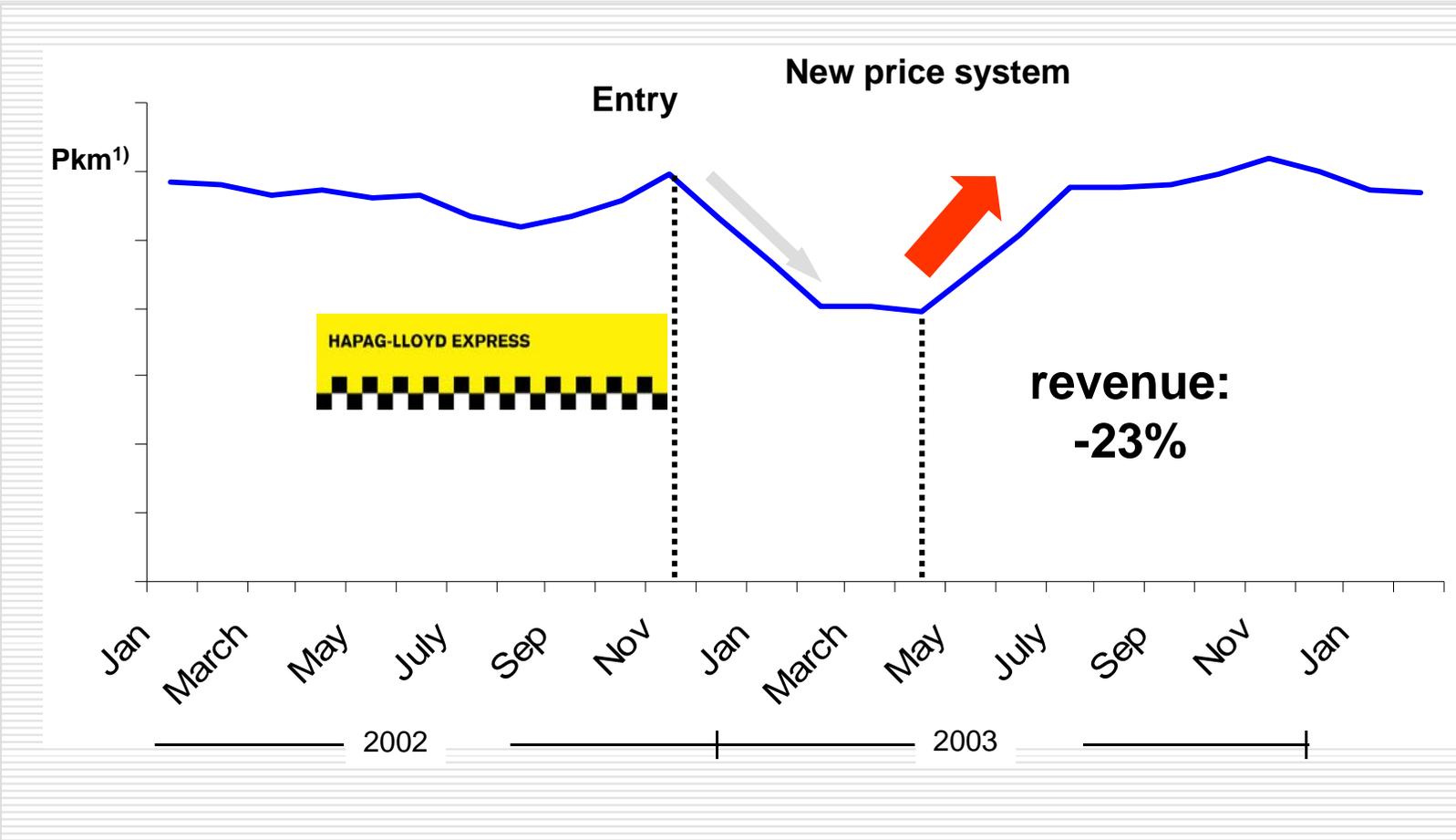
Long-haul passenger traffic

- Less action than in freight market
- No entry of Keolis in Germany?
- Takeover of Keolis by Arriva?
- Entry of DB/ÖBB in Italian market
- News from intermodal competitors:
long-distance busses to be allowed in
Germany
- Market share Bus in other countries:
1.5% in UK, 7% in Sweden, 4% in US
- Inter-modal competition

A case study on inter-modal competition (Friebel, Niffka, Review of Network Econ)

- Usefulness of experiments = entry of competitors
- Example: « low-cost » Airlines in Germany
- Cologne - Hamburg
 - Hapag-Lloyd
 - Aggressive price reaction of Lufthansa
- Market share of train « Metropolitan » fell by 30%
- Metropolitan reaction, new price system:
 - market share stabilized
 - Massive revenue losses
 - But, eventually exit of the Metropolitan

Effects of Hapag-Lloyd entry



A model a of inter- and intra-modal competition (Ivaldi and Vibes in JTEP)

- Liberalization / deregulation
 - Airlines, railways (incumbents and entrants)
 - Competition in prices and transport service levels
 - Newcomers, new strategies
 - Changes in regulatory environment
 - Changes in taxation of transport modes

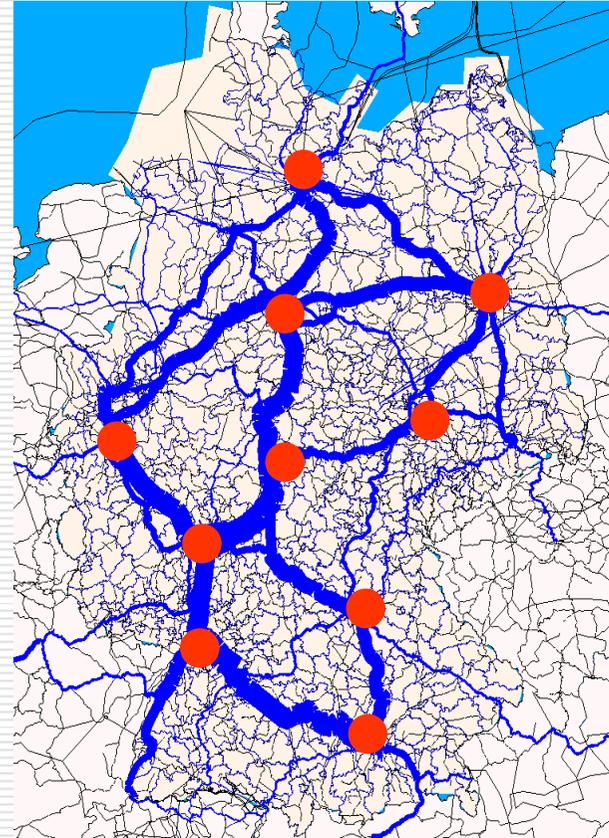
- How to Model Inter- and Intra-modal Competition?
 - Use game theory

- What market shares for railroads (if any)?
 - Which optimal strategies for railways in a highly competitive market?

Method: A simulation model

○ Cologne-Berlin

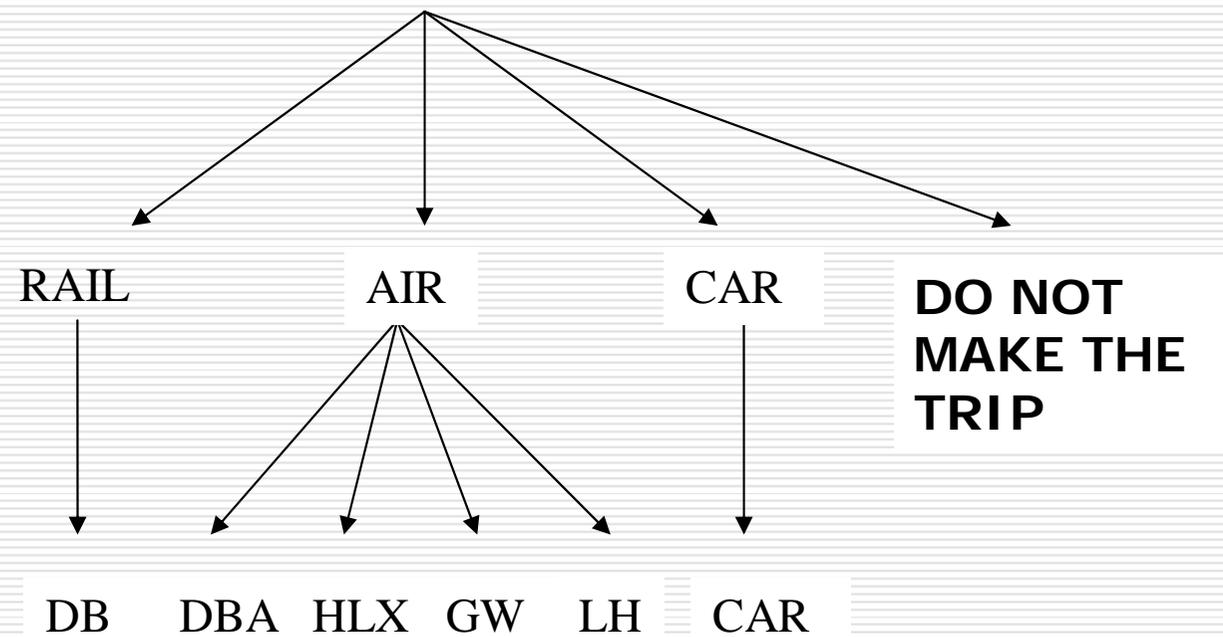
- ≈ 600 km
- Rail operators
 - DB
 - Connex
- Airlines
 - Lufthansa
 - Low-cost airlines
 - ✦ DBA, HLX, GW
- Private cars



Method: A simulation model (Cont.)

- Methodology based on aggregate data
 - Prices
 - Market shares
 - Characteristics of transport services
 - Frequency, Time,
 - 2 types of customers: business & leisure
- Equilibrium model (Bertrand-Nash)
 - Interaction between competitors
 - Demand
 - Pricing

Method: A simulation model (Cont.)



Results: prospects of operators

- Slow railroad competitor (similar as Connex entry): model predicts exit

- Low-cost airlines: model predicts good performance

- Low-cost fast train
 - The model predicts a significant market share
 - Leisure market: 20 to 30 percent
 - Business market: 7 to 13 percent
 - DB loses market shares
 - Leisure market: -15 to -25 percent
 - Business market: -7 to -13 percent

Implications

- Look closely at specificities of the sub-market
- Identify the most powerful competitive mechanism
- Freight:
 - open up further, let the market handle it,
 - in the long run, the issue may be anti-trust
- Regional passenger traffic:
 - better procurement methods, allow variety of bidders to participate,
 - increase transparency
- Long-haul passenger:
 - not much intra-modal action yet,
 - but strong inter-modal competition

Summary

- Many submarkets
- Quite some action in some of the markets
- But quite different type of action
- Looking closely at submarkets:
 - Measuring inter and intra-modal competition
 - But: loads of work and quite partial