



**TECHNISCHE
UNIVERSITÄT
DRESDEN**

**Long-Distance Passenger Rail
Services in Europe: Market Access
Models and Implications for Germany**

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Chair of Energy Economics and Public Sector Management

Outline

1. Introduction

2. Sector background

3. Models of market access

4. Case study: Germany

5. Conclusion

With Directive 2007/58/EC, market access for long-distance services is back on the agenda, but the domestic design matters as well

Introduction

- **Possibilities to establish “competitive pressure” for long-distance rail services are limited**
 - Potential scope economies, network effects, and transaction costs reducing the potential for competition
 - Closely connected to infrastructure ownership
 - Closely connected to infrastructure investment and operation (from static to dynamic market access design)
- **European legislation a key driver of change in the railway sector**
 - Directive 2007/58/EC:
 - Open access for international passenger rail services
 - Possibility of passenger carriage within countries along international routes
 - Protection of routes served with public service contracts or with exclusiveness obtained through a competitive procedure
- **Domestic market design for long-distance passenger rail services**
 - UK: tendered franchises with some additional open access services (Griffiths, 2009, Nash and Smith, 2007, Yvrande-Billon and Ménard, 2005)
 - Netherlands: network concession to monopolistic incumbent (Van de Velde et al., 2009)
 - Germany, Austria, Italy: dominant vertically integrated incumbent with formal open access for newcomers
 - Sweden:
 - Announced change from monopolistic incumbent to more open access (Alexandersson and Hultén, 2009)
 - Potentially first country with open access as primary market entrance possibility and vertical disintegration
- **Definition of three basic models for market access in the following**

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2. Sector background

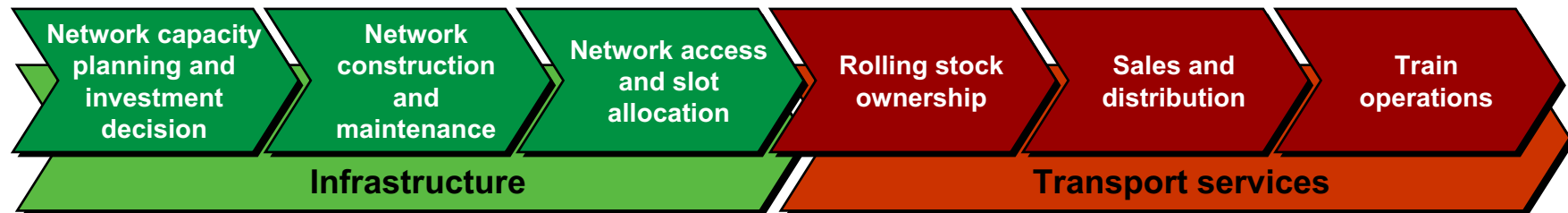
3. Models of market access

4. Case study: Germany

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There are strong interdependencies between market access and other value chain related issues such as vertical integration

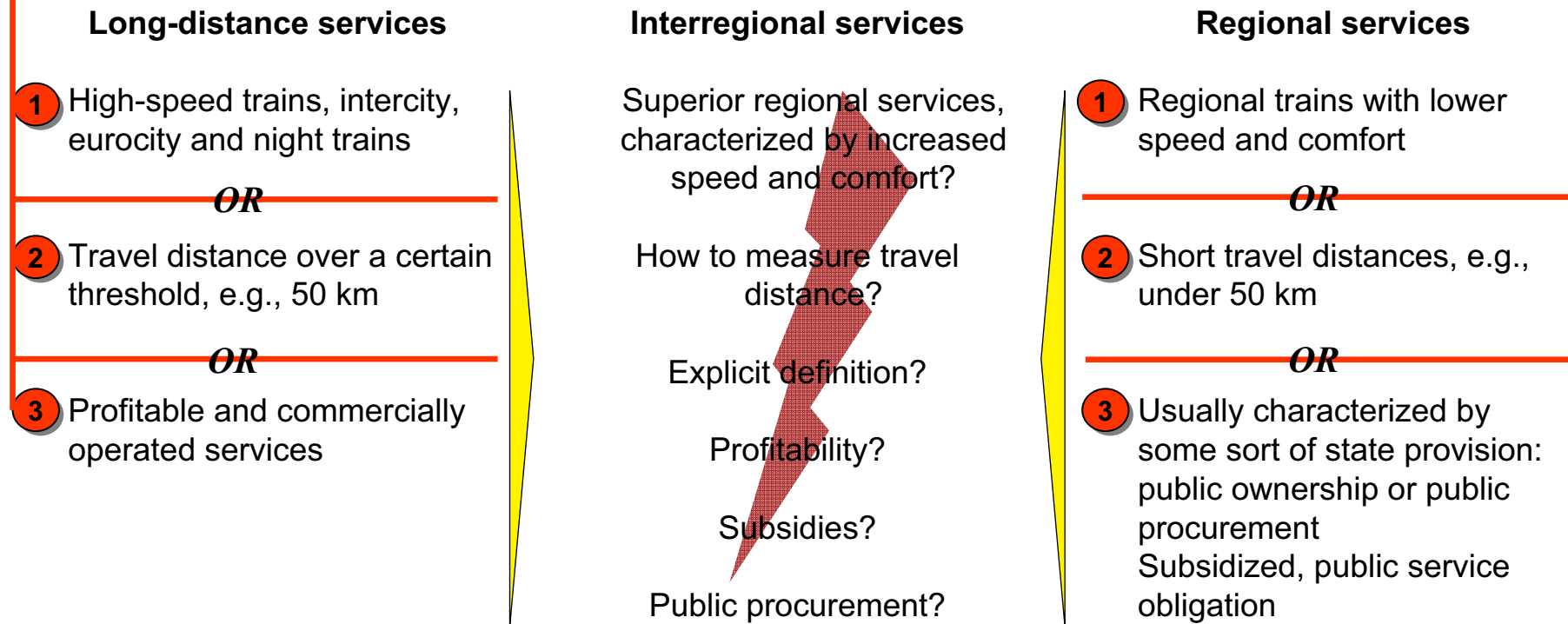
Value chain of the rail transport sector



- Infrastructure a non-contestable natural monopoly
- Outsourcing of parts of network construction and maintenance to a competitive market possible
- Network access and slot allocation: integration with network manager or as separate agency
- Application for network slots in case of open access
- Possible state involvements to reduce market entry barriers:
 - Rolling stock ownership
 - Scheduling and sales: Internet platform, ticket vending machines, etc.
- Train operations:
 - 50% of total costs predetermined by track and station access costs, energy costs, and marketing and sales costs (Monopolkommission, 2009, pp. 49 and 94, and Preston, 2008)
 - Quality and service related to rolling stock and tracks

The differentiation of long-distance and regional services and the handling of non-profitable interregional services are crucial points in market access design

Differentiation possibilities between different types of passenger services



- no generally accepted distinction criteria between long-distance and regional services
- may not be useful to differentiate

Major differentiation criteria in today's European long-distance railway organization are concessions and open access

Characterization of **long-distance** passenger rail transport markets

	France	Netherlands	Great Britain	Sweden	Germany	Austria	Italy
Degree of infrastructure - transport services separation	Partial separation	Full separation	Full separation	Full separation	Holding integration	Holding integration	Holding integration
Network ownership	Public	Public	Public	Public	Public	Public	Public
Concessions	No	Two concessions granted to NS and HSA	Competitively tendered franchises	Concessions on routes where SJ refuses to operate commercially	No	No	No
Open access	No	No	Yes, if not primarily abstractive	Only for night trains	Yes	Yes	Yes
Degree of market opening	None	None	Access for all through competitive tendering	Commercial day services reserved by law to SJ	Access for all operators given	Access for all operators given	Access for international groupings given
Market dominance and operator ownership	100% SNCF (state-owned)	NS (state-owned) and /KLM joint-venture HSA (90% state-owned) together 100%	Oligopoly of private train operating companies	SJ (state-owned) dominating, some smaller railway undertakings present	99% DB – Fernverkehr (state-owned), market entry by locomore and Keolis announced	100% ÖBB Personenverkehr (state-owned), market entry by Westbahn and Fair train announced	100% Trenitalia (state-owned), market entry by NTV and DB/ÖBB announced

change to more open access announced

Own illustration according to Alexandersson (2009), Alexandersson and Hultén (2009), Alexandersson et al. (2009), company websites, Holvald (2009), and Monopolkommission (2009, p. 56)

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We define three basic models of market access: “Tendered Concessions”, “Network Concession for a Monopolistic Operator” and “Open Market”

Models of market access: fundamentals

- Definition of three basic models for market access and design in European long-distance passenger rail transport
 - ① “Tendered Concessions” model
 - ② “Network Concession for a Monopolistic Operator” model
 - ③ “Open Market” model
- The models are designed to structure the discussion
- European countries pursue their own approaches aligned to regional circumstances, but country examples for models are obvious

Tendered concessions represent competition for the market, the network concession for a monopolistic operator...

Models of market access: description (1/2)

	1 Tendered concessions	2 Network concession for a monopolistic operator	3 Open market
<i>Competition idea</i>	<ul style="list-style-type: none"> • Competition for the market for sub-networks in terms of competitive tendering • Price competition with potential other criteria such as quality, etc. 	<ul style="list-style-type: none"> • One concession for the network • Intramodal competition restricted in the likely case of direct awards to state-owned companies 	<ul style="list-style-type: none"> • Open access as primary market entrance possibility • (Threat of) Competition in the market for the incumbent
<i>Entrepreneurship</i>	<ul style="list-style-type: none"> • Depending on the type of contract • Level of supply generally determined by authority • Less room for operator creativity 	<ul style="list-style-type: none"> • Creative product offerings possible, but only from the incumbent – new entries with new ideas and business models not possible 	<ul style="list-style-type: none"> • Operators, not the state, define the service offering • New business models and innovation supported
<i>Financial organization</i>	<ul style="list-style-type: none"> • Concession fees for profitable lines • Subsidies for non-profitable lines • Limited profits (Kain, 2007) • Additional tendering costs 	<ul style="list-style-type: none"> • Both subsidies and concession fees possible • Performance-based contract 	<ul style="list-style-type: none"> • No subsidies for long-distance services • But: regulation via track access charges possible • High risks and chances for newcomers
<i>Differentiation of long-distance and regional services</i>	<ul style="list-style-type: none"> • Differentiation not necessary • Integrated concessions for long-distance and regional services possible (with timetable integration) 	<ul style="list-style-type: none"> • Differentiation necessary if concession only for long-distance services • No differentiation if concession for all services 	<ul style="list-style-type: none"> • Open access only for long-distance services • Regional services usually as public service obligation • Differentiation necessary

Source: own illustration

...aims at utilizing strong network effects, whereas the open market is mostly featured by open access

Models of market access: description (2/2)

	1 Tendered concessions	2 Network concession for a monopolistic operator	3 Open market
<i>Network characteristics</i>	<ul style="list-style-type: none"> • Star-like (radial) networks • Good separability into regions necessary 	<ul style="list-style-type: none"> • High level of network effects • Smaller countries with highly synchronized timetables 	<ul style="list-style-type: none"> • Many interconnection points • Importance of international connections
<i>Relation between infrastructure and train operator</i>	<ul style="list-style-type: none"> • Infrastructure quantity and quality provided by network manager • Little impact by train operator • Diseconomies of scope for vertical disintegration (Growitsch and Wetzel, 2009) 	<ul style="list-style-type: none"> • Some integration between network planning and train operator feasible 	<ul style="list-style-type: none"> • High discrimination potential in case of vertical integration: track capacity, track access, track charges, ticketing system (Alexandersson and Hultén, 2009)
<i>Critical issues</i>	<ul style="list-style-type: none"> • Sufficient number of bidders necessary • High degree of political influence possible • Disadvantages when network effects are high • Additional transaction costs in case of rolling stock leasing (Merkert, 2009) 	<ul style="list-style-type: none"> • International performance comparison necessary (Coelli and Perelman, 2000) • Potential conflicts with Directive 2007/58/EC 	<ul style="list-style-type: none"> • Potential service cutbacks in rural and remote areas • Strategic behavior to receive subsidies for non-profitable lines • Possible increase in ticket prices in case of private operators with market power • Special competition aspects -> see next slide
<i>Design options</i>	<ul style="list-style-type: none"> • Open access for additional routes • Operator change solely through top management change 	<ul style="list-style-type: none"> • More concessions for specific lines, e.g., high-speed 	<ul style="list-style-type: none"> • Definition of tendered segment between long-distance and regional services possible

Source: own illustration

Network effects and other competition aspects can play a key role in the open market model

Special competition aspects in the open market model

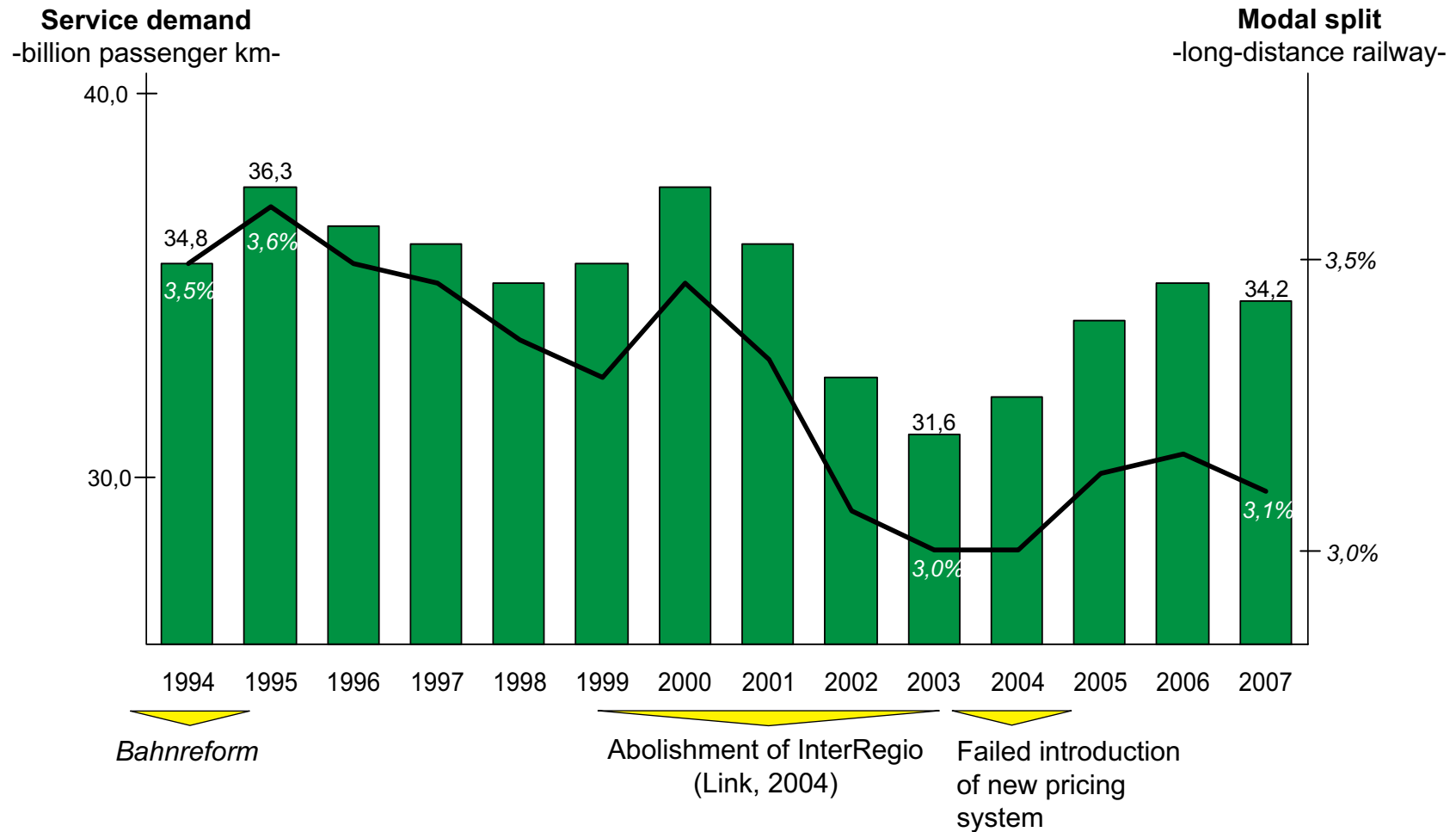
- **Destruction of network effects such as interconnection possibilities, cost advantages, etc.**
 - Cherry-picking newcomers
 - Termination of single services
 - Revenue abstraction
 - Possible network congestion
- **Feasibility of on-track competition questionable**
 - Network of train operations may not be contestable
 - Scarcity of network capacities
- **Strategic behavior as market entry barrier**
 - Rolling stock investments to threaten newcomers
 - Reservation of network capacity
- **Intermodal competition**
 - Motorized individual transport: partially different target groups, rail with “captured customers”
 - Airlines: relevance from 300 km on, less point-to-point connections compared to rail
 - Express coaches: option in particular for low-income, young, and elderly (Walter et al., 2009)

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Long-distance rail services in Germany lost market share since the beginning of the *Bahnreform*

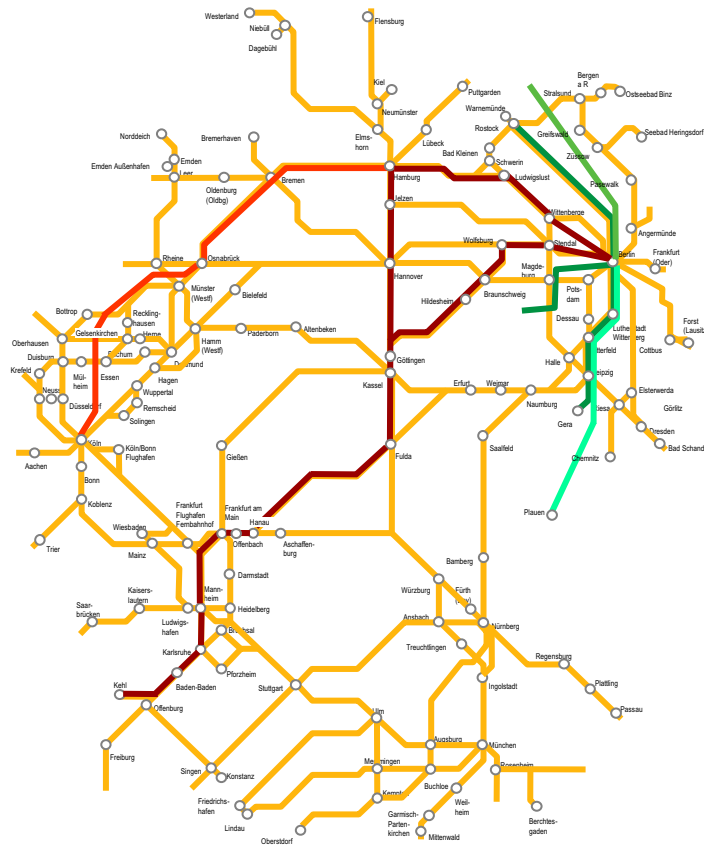
Development of service demand and modal split in Germany



Source: own illustration according to DIW (2008)

Market newcomers so far have been restricted on some peripheral lines in East Germany and 1% market share

Long-distance rail network in Germany



Market players

— Deutsche Bahn

- > 99% market share (Holzhey et al., 2009, p. 99)
- Some lines, particularly in East and South Germany only served by single services

“Show-case” entries

— Veolia
 — Arriva
 — SJ

- Only single services in East Germany

Announced market entries in Oct. 2009

— locomore (from Aug. 2010)

- Cologne-Hamburg 3 services/day

— Keolis (from 2010/2011)

- Strasbourg-Frankfurt-Hamburg
- Strasbourg-Frankfurt-Berlin-Hamburg

Since Germany's rail reform is unfinished, further steps are presented

Future design options for Germany

- Vertical disintegration of DB (full separation of the infrastructure)
- Privatization of transport operating divisions of DB
- Introduction of competitive tendering for interregional lines (Holzhey et al., 2009, p. 113)
- Intermodal competition
 - Liberalization of domestic express coach services (see the recent coalition agreement)
 - Internalization of external costs

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There is no unique model to favor – different design options have very different impacts

Conclusion

- 1 Three models with different advantages and disadvantages
- 2 Empirical experience with the “Tendered Concessions” model in Great Britain has progressed most
- 3 The current open access model in Austria, Germany, Italy is not a role model to create competition; open access experience still in its infancy
- 4 Open access appears to be the preferred regulation for international services ↔ contradictory with domestic regulations?

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