Alternative financing of rail networks

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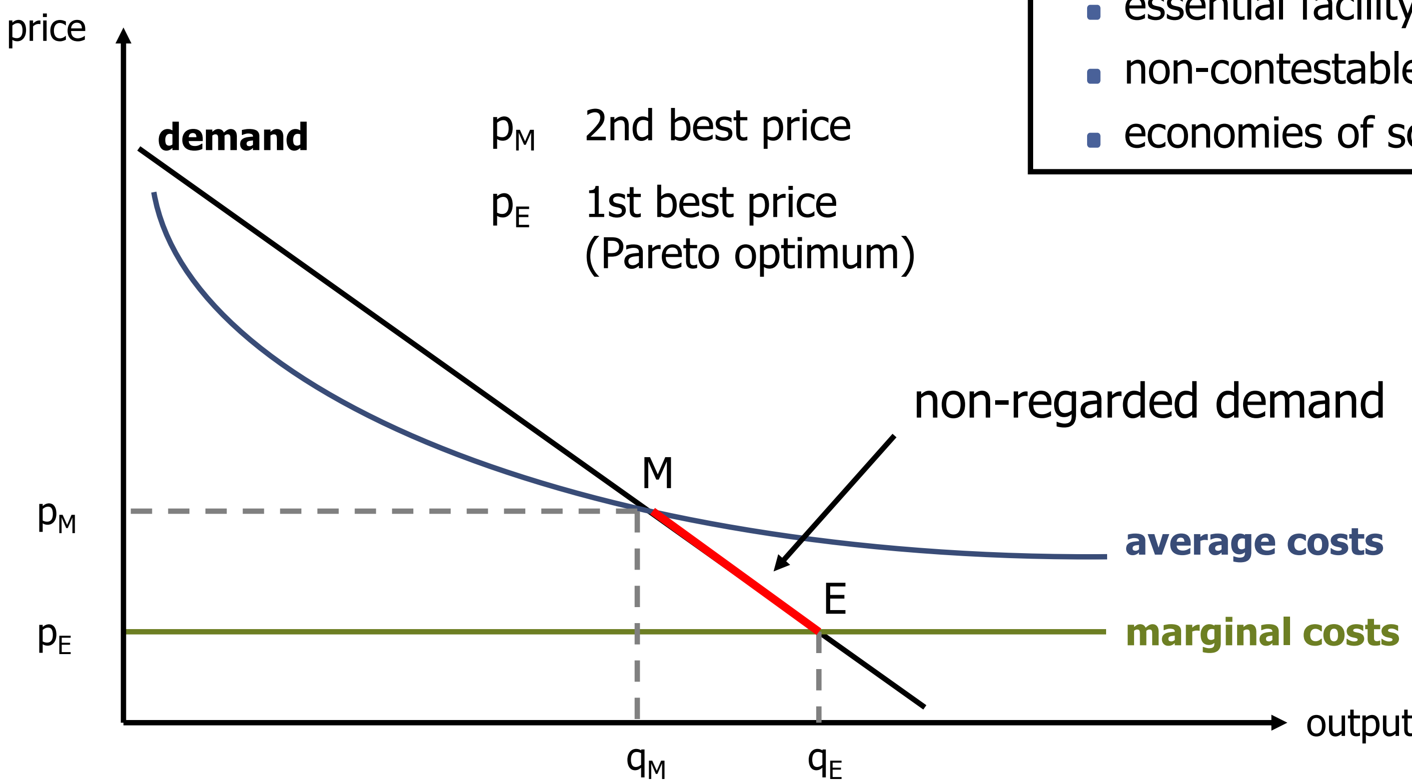
starting point
focus of this presentation

- state-owned rail infrastructure in Germany
  - operator: DB AG – separated into different companies (DB Netz, DB Station & Service)
- focus on costs of infrastructure provision, such as
  - operation and maintenance of infrastructure
  - reinvest (depreciation)
  - financing
  - administration, profit, etc.
- financing of infrastructure provision via
  - track charges
  - station charges
- contract regimes to impose efficiency

starting point

rail infrastructure – a natural monopoly



- essential facility
- non-contestable market
- economies of scale

Deutsche Bahn's charge-setting is comparable to monopolist's calculation

starting point
current design of DB infrastructure charges

infrastructure provision costs

- financing costs
- depreciation
- administration, profit
- maintenance
- operation

100 €

IM calculation

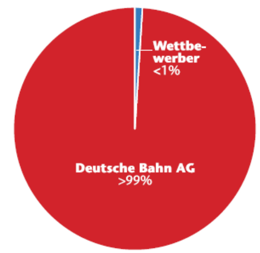
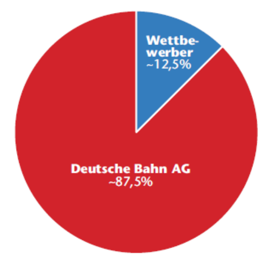
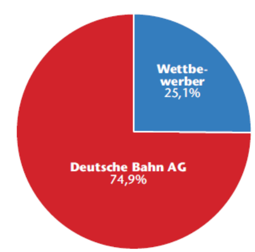
infrastructure provision costs

number of use

20 €
20 €
20 €
20 €
20 €

additional use is charged by same extent ➔ windfall profits

demand
different market segments

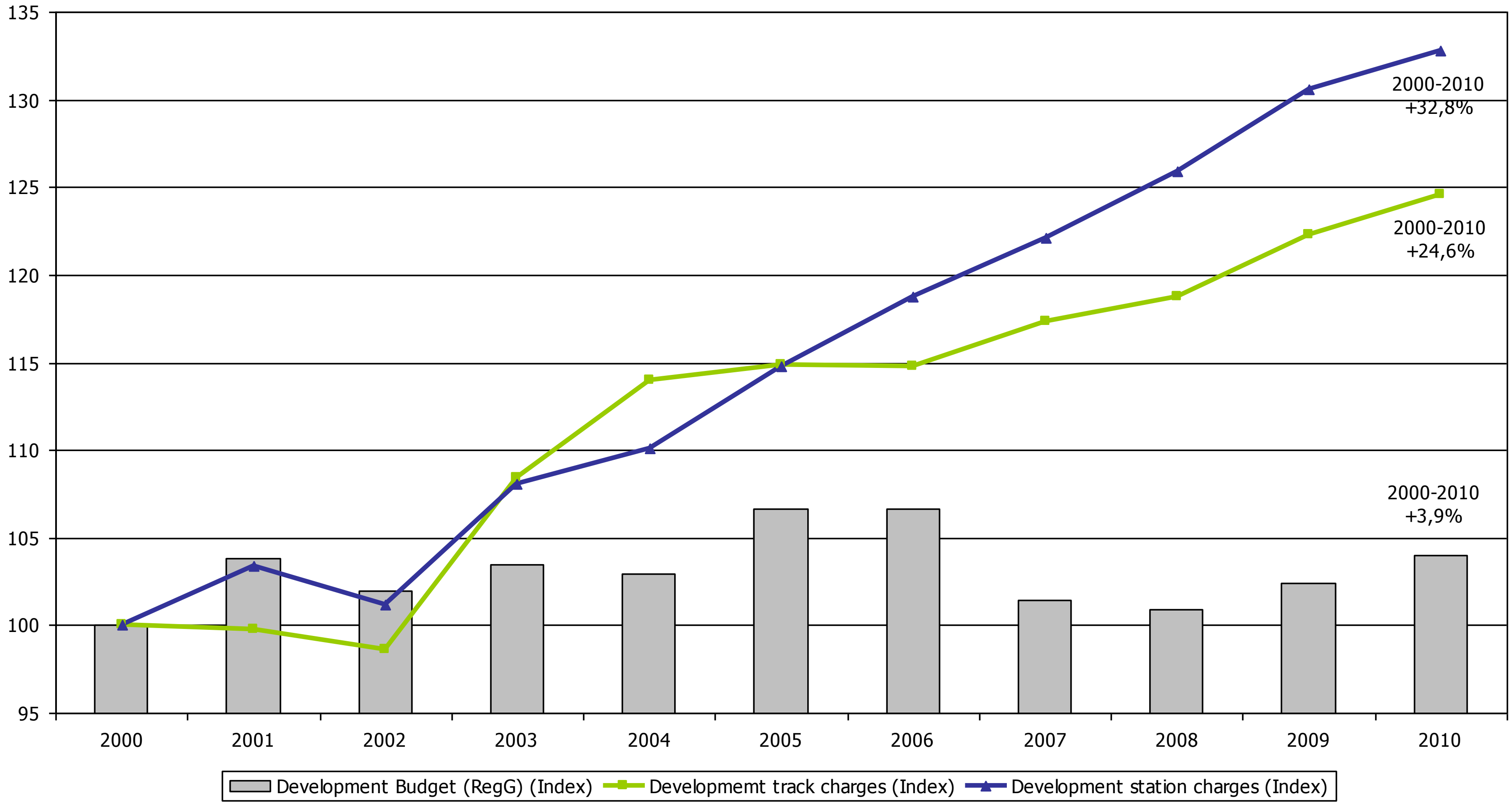
market segment	charges	price elasticity of demand	market structure
SPFV **long-distance traffic**	↗	**Very low** (integrated RU)	
SPNV **regional traffic** (subsidised by Federal States)	↑	**~ 0**	
SGV **freight traffic**	→	**reasonable** (affected by economic cycles)	

vertical integration DB
some remarks

- DB divisions yield different profits (EBIT/turnover 2010)
  - long-distance traffic RU (DB Fernverkehr) ~ **3%**
  - regional traffic RUs (DB Regio) ~ **9%**
  - freight RU
    - DB Schenker Rail ~ **1%**
    - DB Schenker Logistics ~ **2%**
  - infrastructure
    - track – DB Netz ~ **13%**
    - stations – DB Station&Service ~ **20%**
- infrastructure yield highest profits
- loss of market shares in transport segments can be easily compensated by infrastructure's monopoly
- EU law requires independent infrastructure companies

infrastructure charges
draining the budget

development of regional transport‘s infrastructure charges in relation to the budget constraint by the Federal States



natural monopoly of German rail (infrastructure) market
comprehension

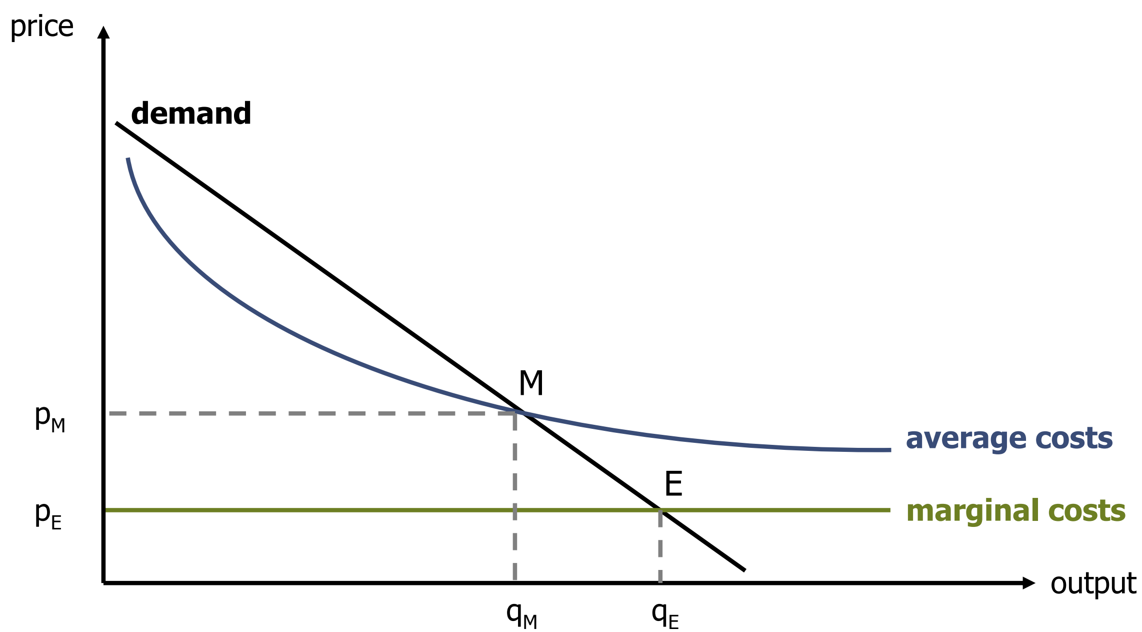
- non-constable market
  - public protection of state-owned IM (no competition of the track)

- vertically integrated company – Infrastructure and rail services
  - discriminatory potential (proved by FNA and law courts)
    - market barrier for (intramodal) competition on the track
  - indirect cross-funding between subsidiaries

- X-efficiency proved by few benchmarks (stations)
  - track access charges without any incentives to increase demand
    - worsening of rail's intermodal competitiveness
  - but: currently no evaluation of productivity by FNA
  - complains about insufficient quality of track and stations

reform
main tackles

1. how to implement **marginal cost pricing**?



2. how to induce steering mechanisms for **price** and **quality** measures effectively?

side-step
contractual agreements

- contracts on service-levels and financing-levels (LuFV)
  - incentive-based contract on provision of rail infrastructure between public body and IM
  - <u>appropriate</u> output (quality and quantity) specificaton, e.g. average age of assets
  - controlling instruments
  - output level defines amount of fundings
  - penalty and sanction system

- LuFV Bund – DB since 2009, regarding maintenance of rail infrastructure, but
  - inadequate output measures (productivity) and controlling instruments
  - sanctioning virtually impossible

reform

(1) splitting cost basis

- splitting provision costs into fix costs and variable costs

infrastructure provision costs		**fix costs**	**variable costs** (marginal costs)
financing costs	→	100%	0%
depreciation	→	100%	0%
administration, profit	→	~100%	~0%
maintenance	→	~80%	~20%
operation	→	~0%	~100%

reform
(2) splitting responsibilities

infrastructure

1. for long-distance, agglomeration, and freight traffic (main track)
   - obligated by constitution: Bund
   - operation by state-owned IM (DB Netz)

2. for regional traffic <u>only</u> (regional tracks)
   - obligation: Bund, execution: Federal States
   - reason: infrastructure is re-financend mainly by Federal States‘ subsidies
   - Federal States choose IM‘s for operation of regional tracks
     - inducing competition in monopolistic market
     - establish benchmarking for infrastructure provision costs
   - principle of subsidiarity

reform
(3) contractual agreement – main track

- **contract on service-levels and financing-levels** between Bund and state-owned IM
  - Bund compensates **fix costs** directly
    → fix costs seperated from infrastruture charges
  - incentive regulation of costs (**productivity**)
  - IM‘s profit depends on level of quality and costs

fix costs

- financing costs
- depreciation
- administration, profit
- maintenance

- **infrastructure-charging** between state-owned IM and RU
  - on basis of **marginal costs** (mainly operational costs)
  - inducing additional demand
  - problem: price differentiation between market segments

→ **minimisation of the natural monopoly‘s effects**

reform
(4) contractual agreements – regional tracks

devolution of regional rail infrastructure

Bund / DB

responsibility for regional tracks

additionally: disposition of funds

Federal States/PTA

PSC Regional Rail	PSC Regional Rail
contractual agreement with IM	

PSC plus
contractual agreement with IM
(vertical provider)

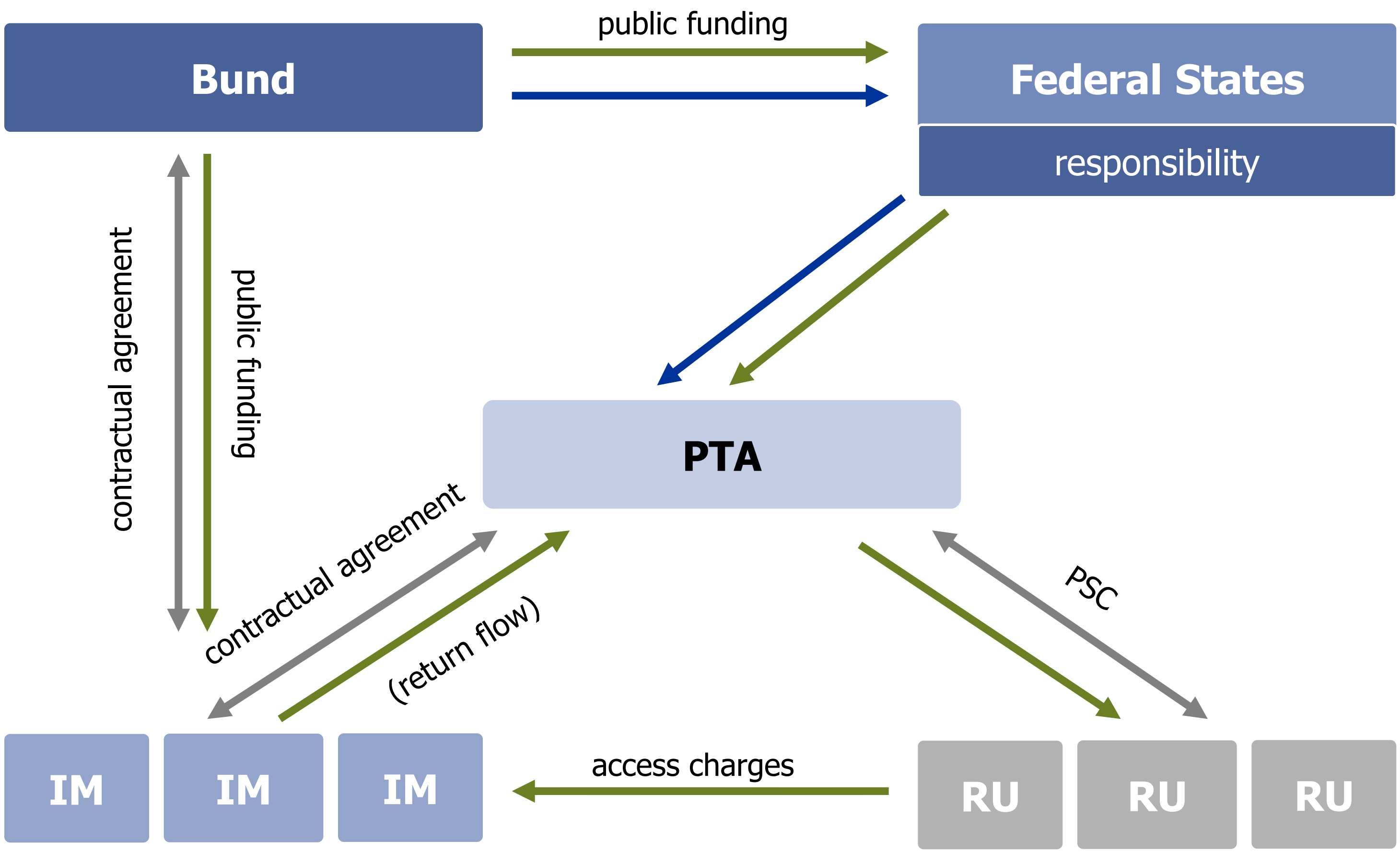
x years

operation modell

- contractual agreement as for main track – **quantity and quality**
- incentive regulation by benchmarking of similiar networks possible

reform

(5) contractual agreements – main and regional tracks (scheme)



thank you for your attention!

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