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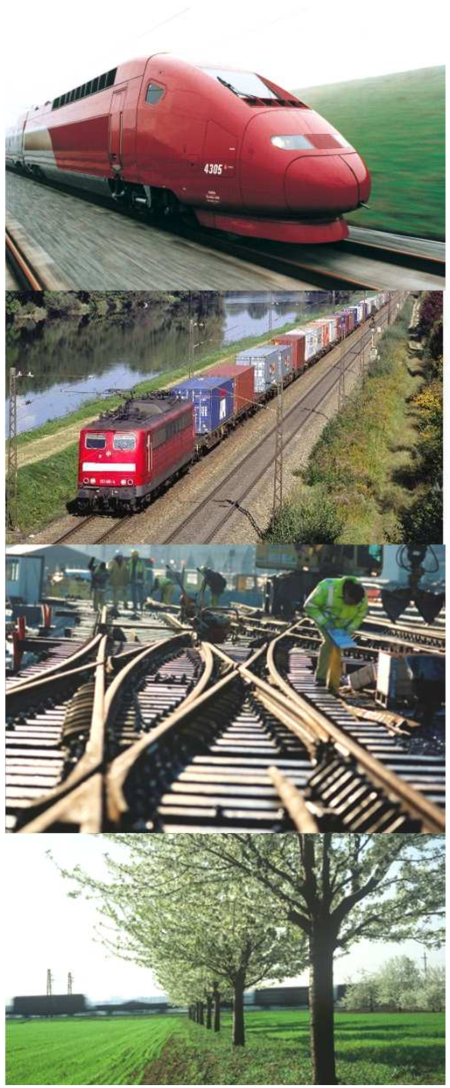
Regulation of the rail sector

An economic perspective on selected issues

23 May 2011



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Economic characterisation of the rail sector

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- A network industry facing strong external competition at the downstream level
  - An upstream component (infrastructure network) that has very high fixed costs but low marginal costs → <u>natural monopoly</u>
  - A downstream component (rail operation) that is subject to <u>strong competitive forces</u> (from other transport modes)
  - Network characteristics require "<u>efficient interfacing</u>" between the upstream and downstream layers ← investment steering, optimised use of infrastructure, technical standards, safety
  - An overall system that generates important but diffuse <u>external economic benefits</u> → <u>state funding</u> is <u>justified</u> from the viewpoint of <u>social returns</u>

The right objectives

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- Economic performance
  - Downstream competitiveness (compared to other transport modes)
  - Limited need for public funds (upstream and downstream)

  Ultimately the measure of performance is GROWTH

- How?
  - Open downstream to competition → competitive forces should with time lead to efficiency gains → ceteris paribus to higher modal share
  - Create incentives for higher efficiency of IMs…
  - …while covering the revenue gap of IMs with state funding

- Main steps?
  - Market opening – notably fair, non-discriminatory access to infrastructure
  - Well-designed rules for track access charges and for state funding
  - A strong, independent and well-staffed regulatory body

Can rail really grow? Part I

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- It has in recent (pre-crisis) years (see next charts) (freight)

- Substantial differences between EU Member States
  - Some clear success stories (e.g. DE, NL) – so the answer is yes
  - Trouble-shooting: track access charges & state funding for infrastructure a likely channel – among many other factors

Evolution of total rail freight 2003-2008
Source: Eurostat. EU27 excl. GR, BG, CY, MT, BE

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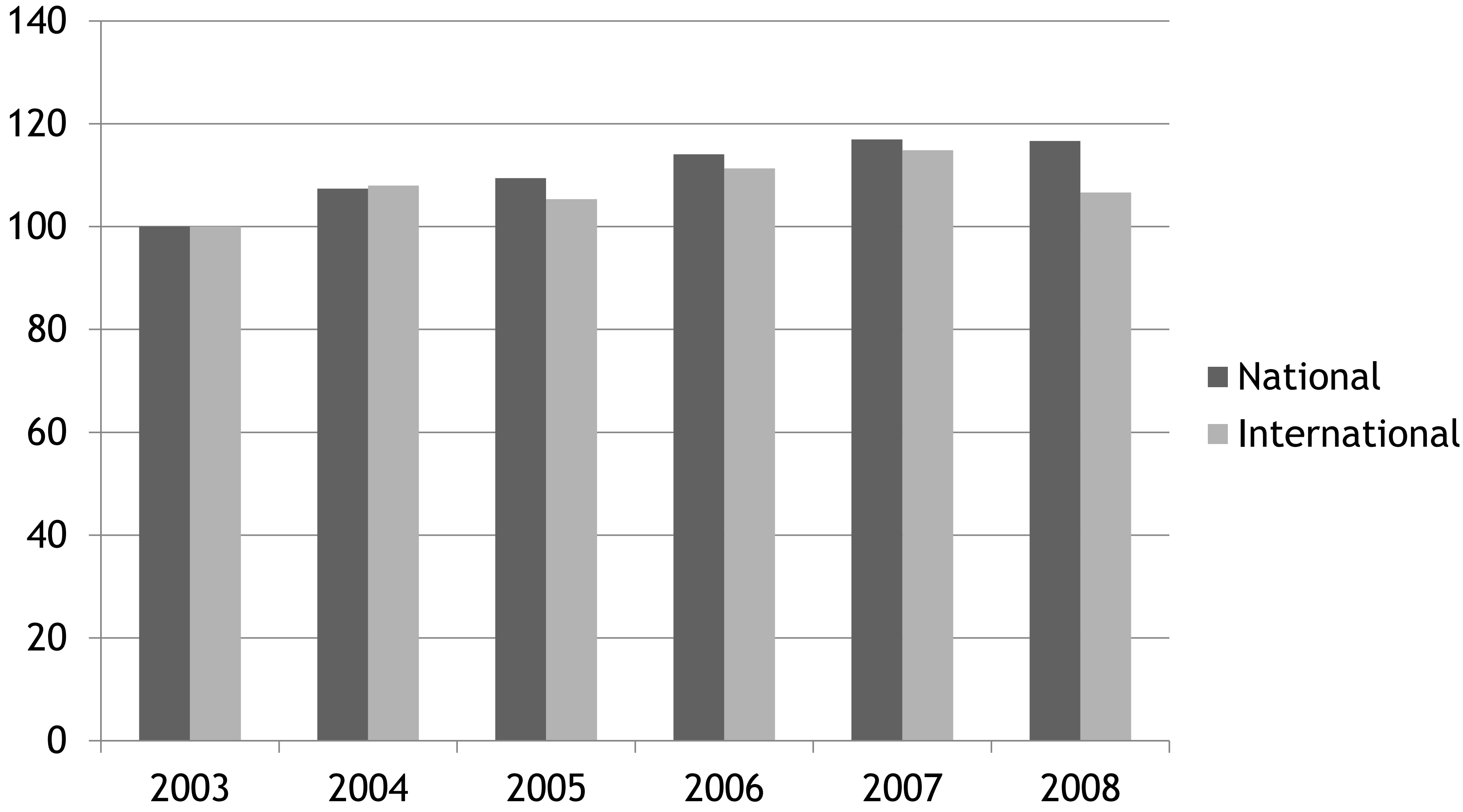

Rail freight evolution: major national differences
Source: Eurostat, national + international, 2003=100

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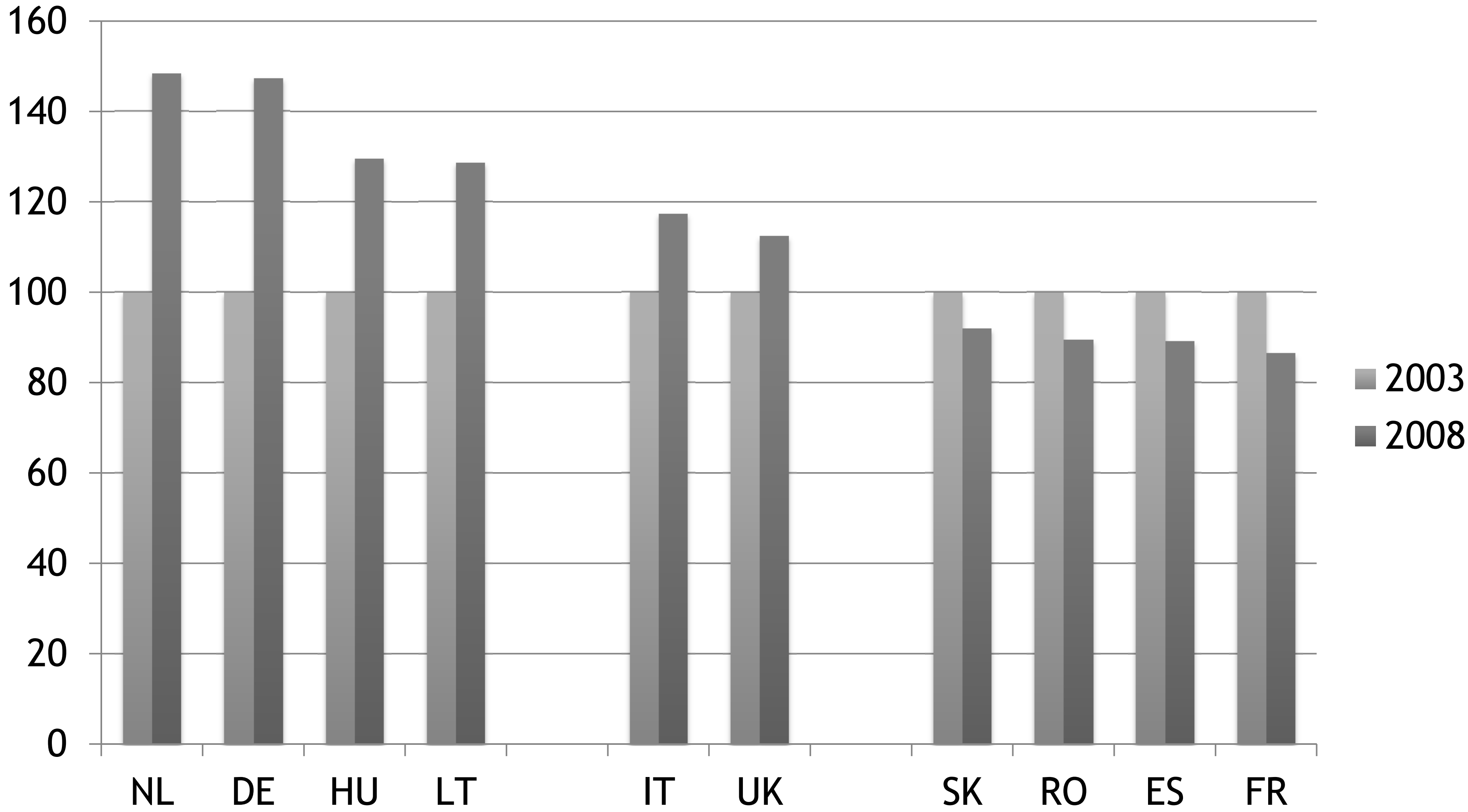

Can rail really grow? Part II

- The recent McNulty study notes that:

"there is the clear prospect of significant future growth in freight and passenger traffic, potentially doubling by 2030"

"success in reducing the unit costs of the railway is likely to be one of the principal keys to the industry's "licence to grow""

McNulty et al. (2011). "Realising the Potential of GB Rail". Summary Report, page 19.

- Productivity gains measured in the classical physical units (PKM, TKM with respect to track length, number of rolling stock, number of employees) have been very positive in the last 10-15 years

Upward shift of efficiency frontier in the New Member States: 1994-95 to 2006-07

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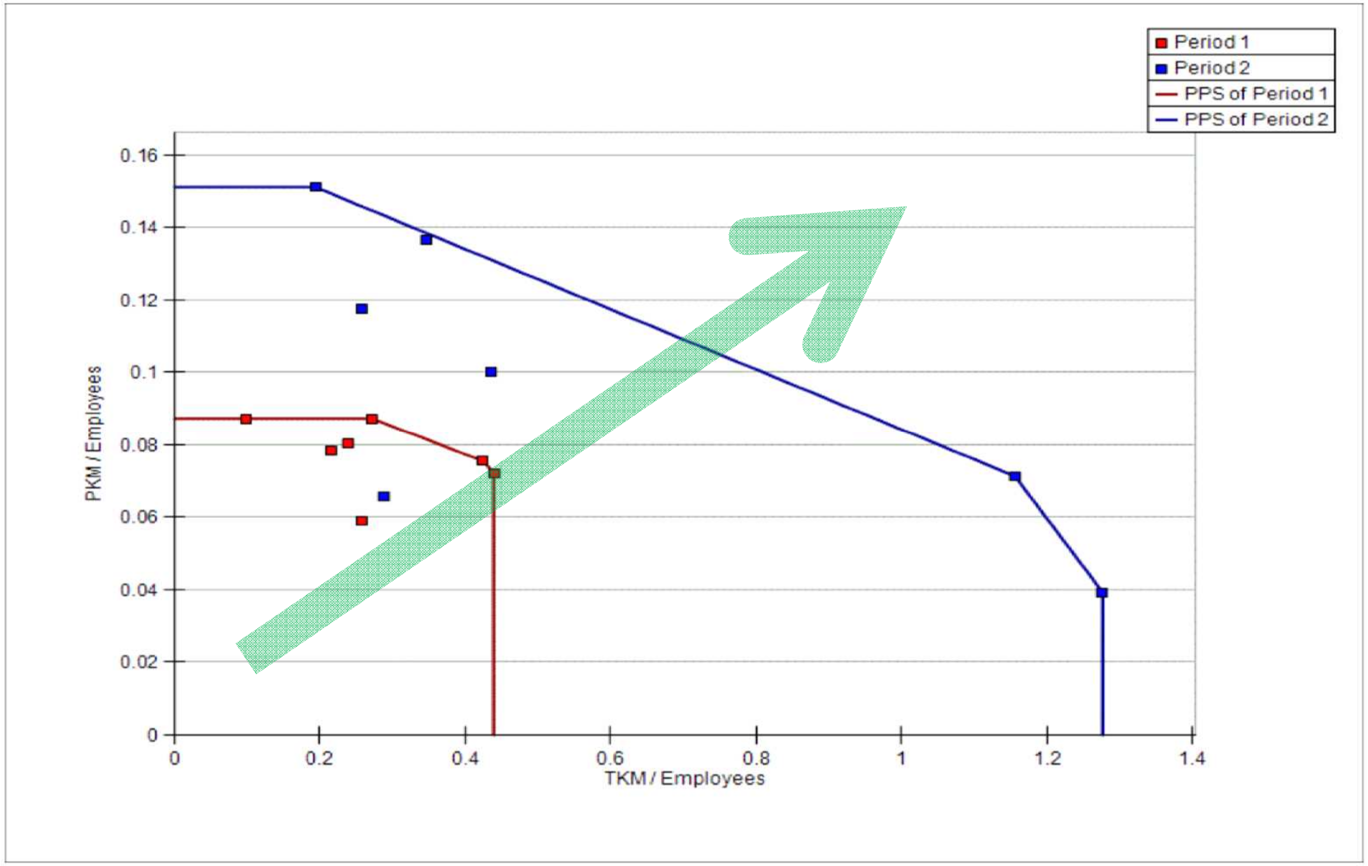
Evolution of labour productivity of the rail sectors in the NMS: 1994-95 and 2006-07



Source: CER estimate using Data Envelopment Analysis (DEA). The data is in millions of passenger-kilometres and in millions of tonne-kilometres per employee.

Regulating track access charges: a case study in the context of the Recast

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- Track access charges: the Commission's proposal and the CER position
  - The economics: theoretical grounding
  - Going for growth
  - Regulatory design: incentives, definitions, roles and constraints

Track Access Charges: theoretical elements

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- With a single price:
  - Minimum charging level = short-run marginal cost (otherwise: production below cost → state-funded predatory pricing)
  - SRMC maximises traffic volume and state funding obligation
  - States typically refuse funding of that level
  - IMs also reject that level *in anticipation of insufficient state funding*

  - A significant benchmark: long-term average cost (full cost recovery)
  - LTAC drives state funding obligation to zero
  - Consistent with lower traffic volume
  - Charge level above socially optimal level: net external benefit is positive and is not internalised

  - Optimal level: somewhere in between these two benchmarks

Price differentiation (market segmentation)

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- GAINS: For any given *average* level of the charge, price differentiation through market segmentation can:
  - Attract new traffic (market segments where the charge becomes lower)
  - Transfer a share of the surplus (profits) of operators to the infrastructure manager…
  - …thereby reducing the funding requirement from the state

- LOSSES: Perfect price discrimination: charges perfectly differentiated for each operator according to its demand function
  - drives profit margin of every operator to zero
  - maximises surplus of infrastructure manager
  - thus minimising state funding requirement
  - Strictly speaking a fully efficient solution – but usually not politically desirable (e.g. arguments on fairness / equity)

- Ramsey-Boiteux solution: segment prices somewhat lower than with perfect price discrimination thanks to state funding and price regulation

Illustration of segments and charges in case of “perfect price discrimination” with 6 segments

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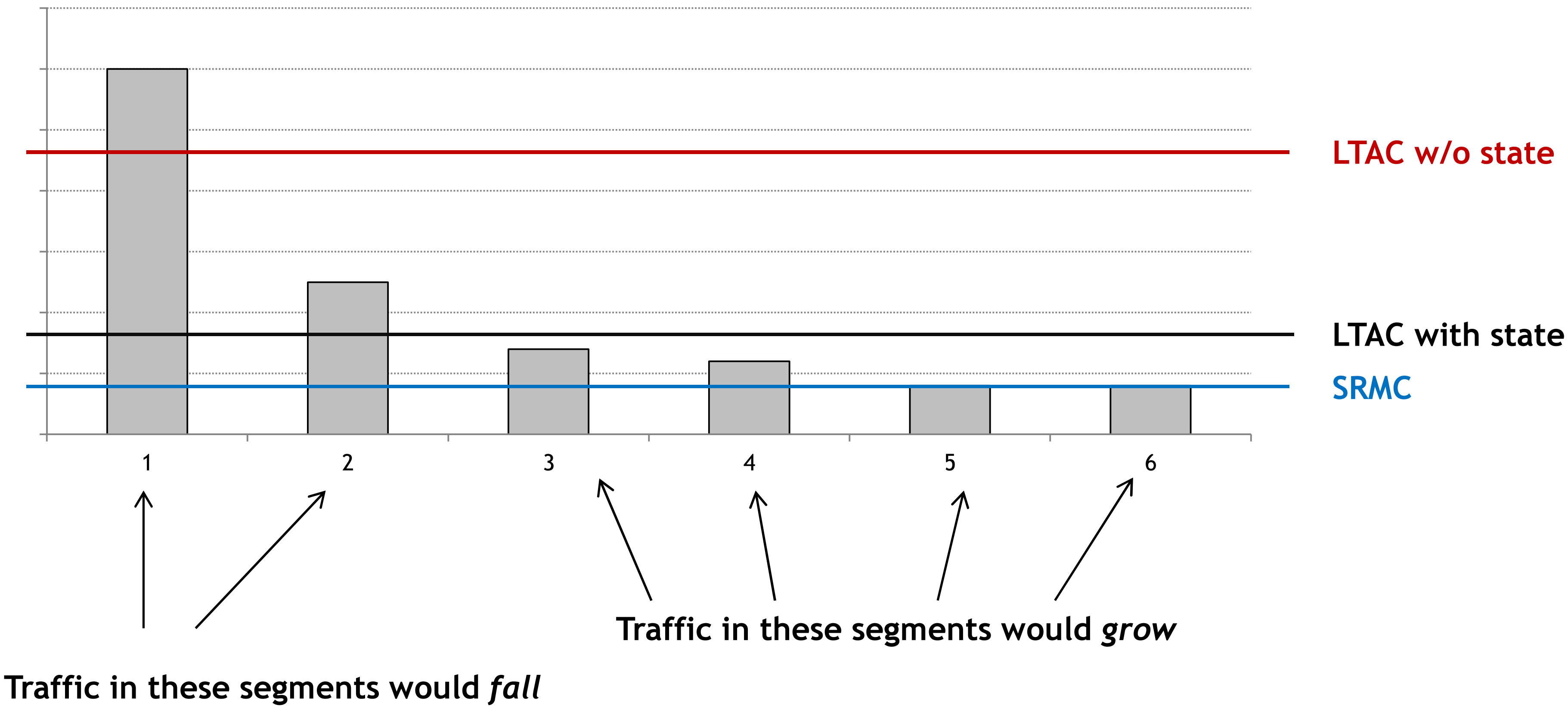

The Recast proposal: an attempt to apply a Ramsey-Boiteux solution?

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- Recast proposal, extract from Article 32(1)

"The charging system shall respect the productivity increases achieved by railway undertakings."

RU profit margins may not be substantially eroded over time

"The level of charges must not, however, exclude the use of infrastructure by market segments which can pay at least the cost that is directly incurred as a result of operating the railway service, plus a rate of return which the market can bear."

There must be at least one segment with SRMC pricing

(And implicitly: RUs require strictly positive profit margins that are high enough to prevent substantial market exit)

Two key elements: SRMC and the level that "the market can bear"

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- "Direct cost" as defined in Article 31(3) and Annex VIII(1)
  - Accounting approach: cost items that should be excluded
  - Findings from empirical analyses (accounting-based and econometric): implausible that SRMC > 35% of average cost
  - CER agrees and supports – with the exception of item c of Annex VIII(1)

- "What the market can bear"
  - Has no definition in the Recast proposal
  - CER proposes the following criterion:

Mark-ups shall be such that traffic volumes in individual segments develop no worse than traffic volumes on competing markets.

- The ultimate measure of whether the price is right is whether it supports growth in market share (modal share)

Regulatory design issues: burden of proof

- The infrastructure manager should determine the list of market segments and how high the market segments should be
- Infrastructure managers should not have to "demonstrate the ability to pay" ("burden of proof") (Annex VIII(3) of the Recast proposal)
- Some IMs reacted to the Commission proposal by suggesting a direct reversal (that RUs should demonstrate INABILITY to pay) – not exactly better (!)
- In what other industry does a seller have to prove that a buyer can pay? If the sale is made, then the proof is made → traffic volume is the ultimate test

- *However*:
  - Regulatory body monitors market developments and intervenes, ex post, if charges are too high
  - RUs may anyway appeal to the RB if they feel aggrieved (Article 56)

Thank you for your attention!

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