



# Measuring the Success of Rail Reforms

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2nd European Rail Transport Regulation Forum Performance and Governance in Railway Markets

23 May 2011

- EC policy of opening up rail markets to competition:
  - Some separation of infrastructure and operations required
  - Different models have evolved (separated and integrated)
  - Re-cast seeks to strengthen existing provisions
- Key issue: how much do we know about the impact of vertical separation on:
  - Costs and efficiency
  - Rail demand and quality
- **Objective of this presentation: review past studies and specify what research is needed to better inform policy**

# Vertical integration / separation: key results (costs)

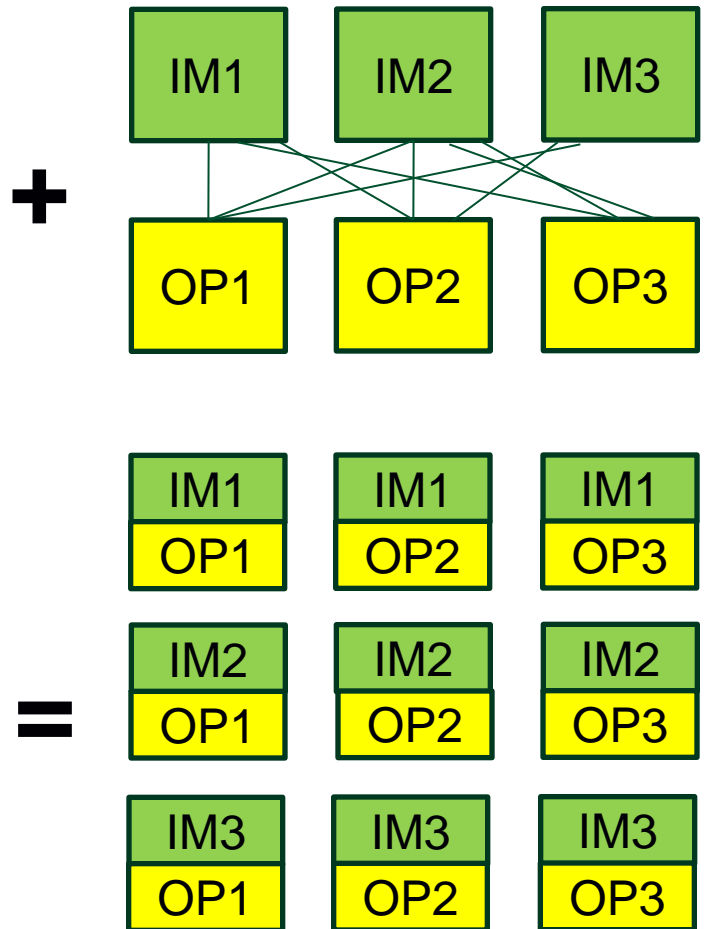


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- US studies (e.g. Bitzan, 2003) – vertical separation raises costs
- 4 European studies: Rivera-Trujillo, 2004 and Growitsch and Wetzel (2009): vertical separation raises costs
- Friebel et. al. (2010). Reforms improve efficiency but only where they are sequential and not in a package
- Cantos et. al. (2010): vertical separation with horizontal separation and new entry in freight improves efficiency
- Europe: Merkert, Smith and Nash (2011).  
Transaction costs only around 1-3% of total costs

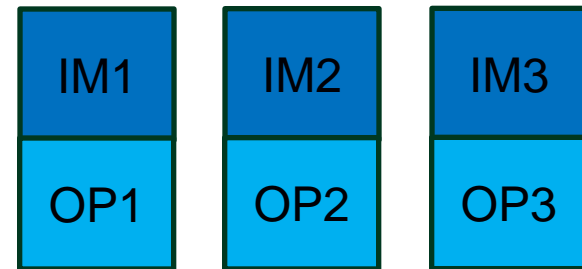


- US studies: technology differences; based on VI firms only
- European studies:
  - Inputs physical only (employees; rolling stocks; network length)
  - Or, includes all costs (not stripping out access charges)
- One European study relies on “virtual” VI firms



**Virtual “Integrated”  
Firms**

**Compare against....**



**Actual Integrated Firms**



- US studies: technology differences; based on VI firms only
- European studies:
  - Inputs physical only (employees; rolling stocks; network length)
  - Or, includes all costs (not stripping out access charges)
- One European study relies on “virtual” VI firms
- Density + load factors in Cantos et. al. (2010), not in others
- Britain not included in studies (except transaction cost study)
- Most up-to-date data is 2005 – utilising data in public domain (except transaction cost study)

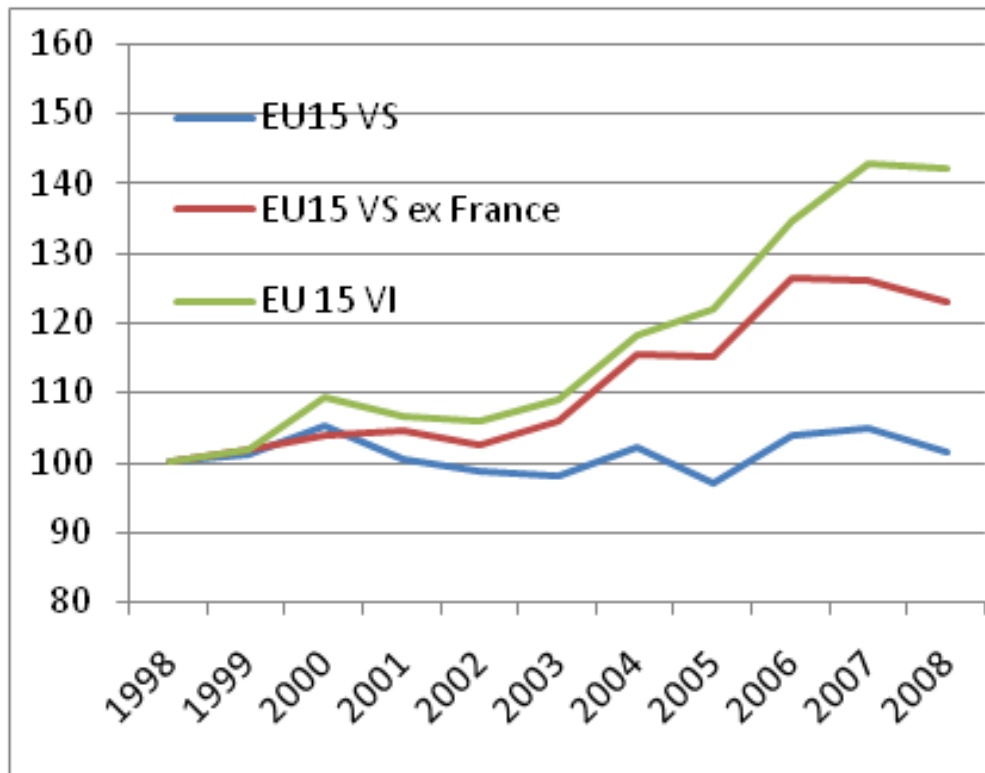
# Vertical integration / separation: key results (freight usage)



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- More competition when vertically separated but VI railways see faster freight growth (Drew and Nash, 2011)

Indices of tonne km



- However, sensitive to definitions (e.g. France)
- Fastest growing are Germany and Austria (VI) and UK (VS)
- Multitude of other factors affect growth

Source: Drew and Nash (2011)

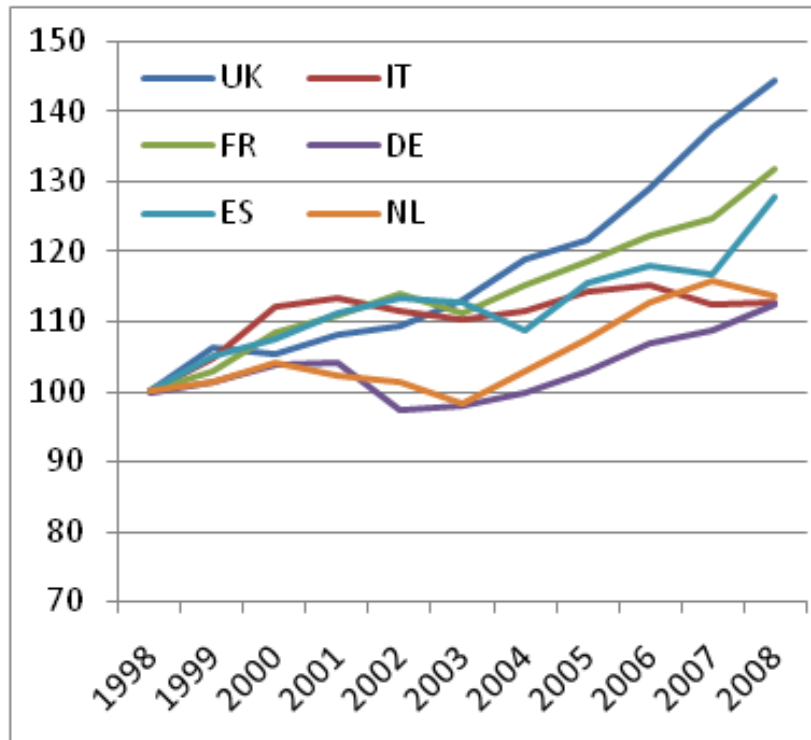
# Vertical integration / separation: key results (passenger usage)



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- Vertically separated railways have seen faster passenger growth (Drew and Nash (2011))

Indices of passenger km



- UK, France and Spain the fastest
- But is this really due to vertical separation?
- Other factors:  
government funding;  
economic regulation

Source: Drew and Nash (2011)



# Where is research needed?



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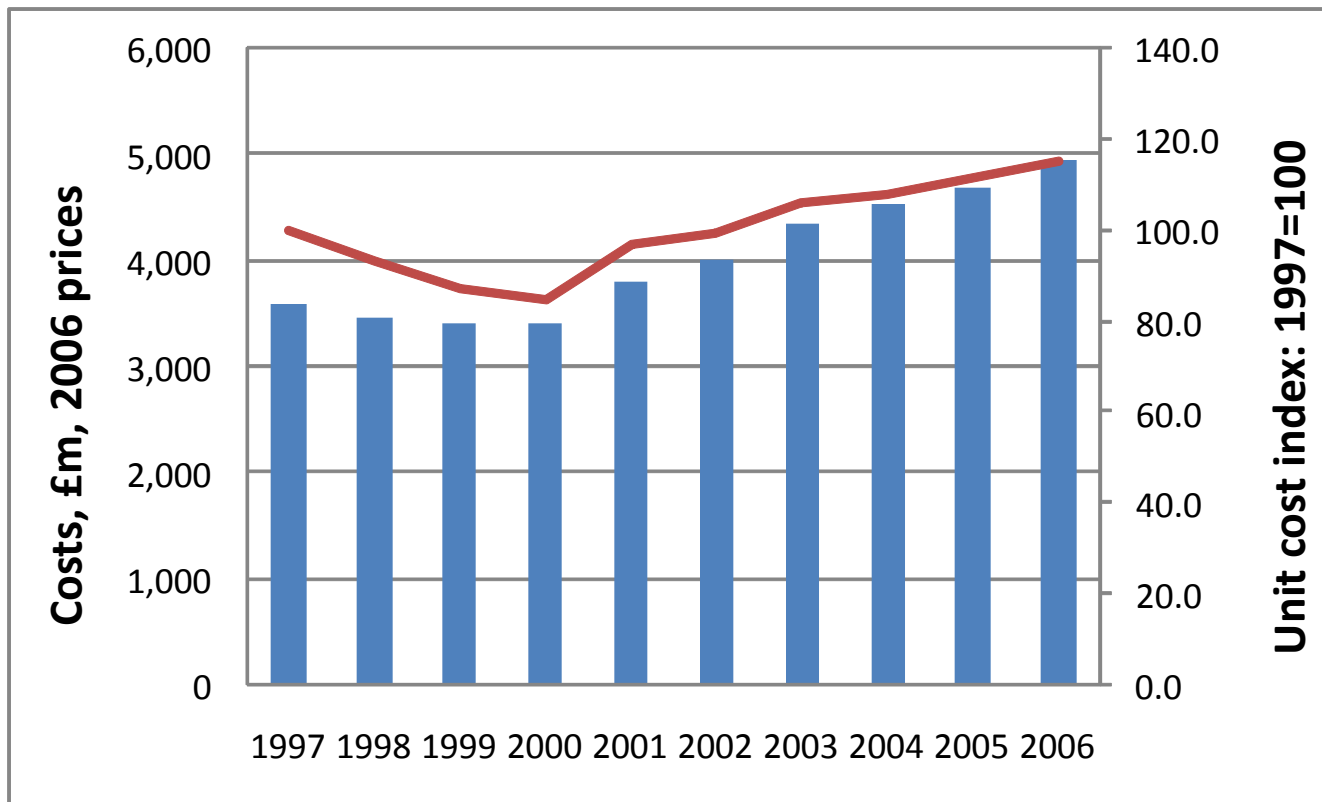
- More country-specific studies:
  - Costs and efficiency
  - Demand side

# E.g. Computing TOC and overall industry costs (Britain)



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FIGURE 1: TRAIN OPERATING COMPANY COSTS  
(EXCLUDING INFRASTRUCTURE ACCESS CHARGES)

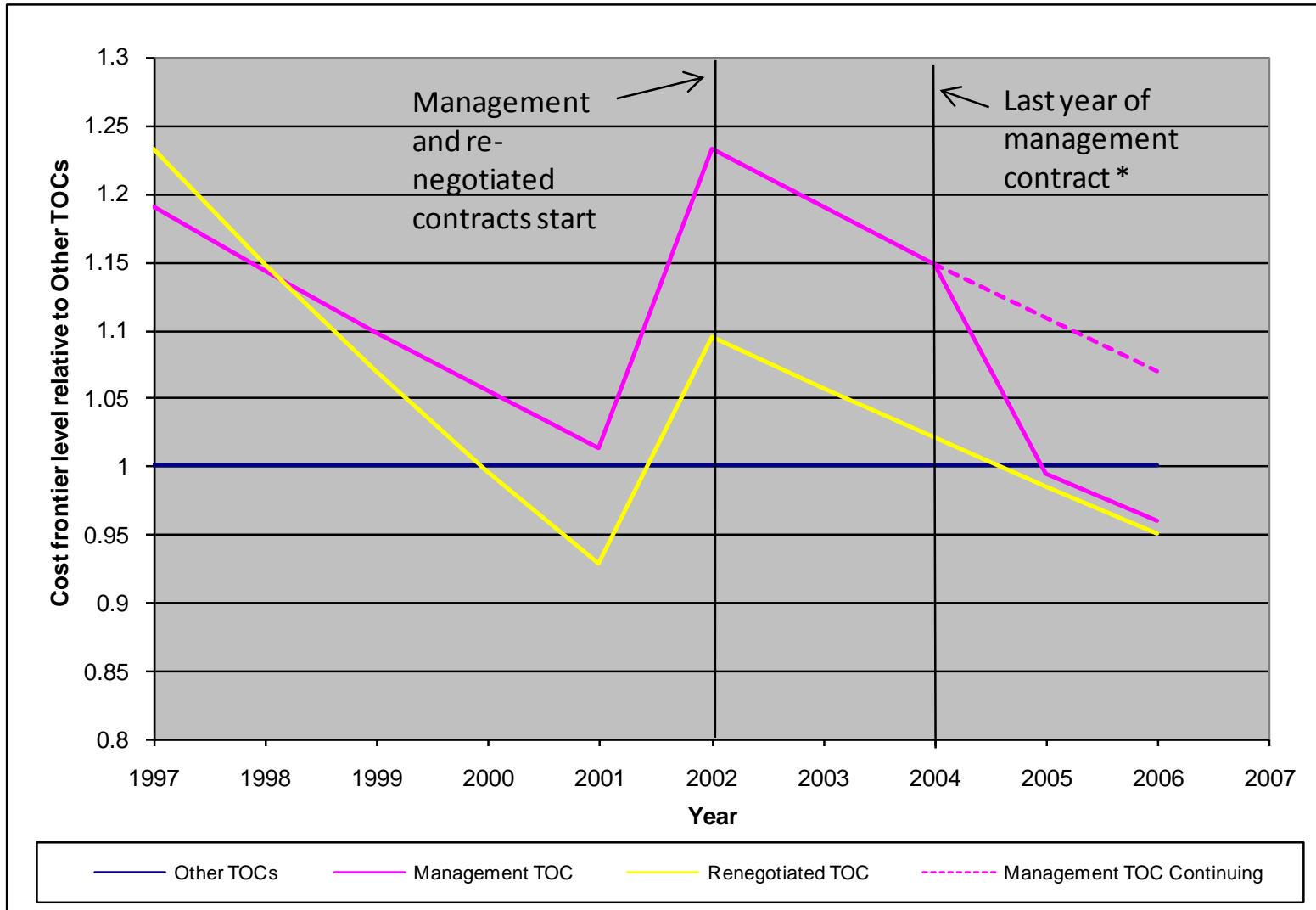


**35% unit cost growth since 2000 = £1.5bn annual cost**

# E.g. Explaining cost growth (Britain)



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# E.g. Explaining demand growth (Britain)



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**Table 10: Impact of External Variables on 1990-1998 Rail Demand Growth**

	London	Non London	South East
GDP	1.301 (1)	1.196 (1)	1.149 (1)
Car Time	1.043 (4)	1.031 (4)	1.067 (3)
Fuel Cost	1.045 (3)	1.056 (2)	1.049 (5)
Population	1.038 (5)	1.022 (6)	1.055 (4)
Car Ownership	0.975 (6)	0.951 (3)	0.972 (6)
Post 1995 Trend	1.119 (2)	1.033 (5)	1.092 (2)
<b>Total</b>	<b>1.606</b>	<b>1.307</b>	<b>1.440</b>

Note: Figures denote the proportionate change in demand in the period attributable to this variable. The overall growth is what it is estimated would have happened for the group of services concerned in the absence of specific rail management decisions, in terms of changes in services and fares. Rankings of the magnitudes of each effect are given in parentheses.

Source: Wardman (2006)



# Where is research needed?

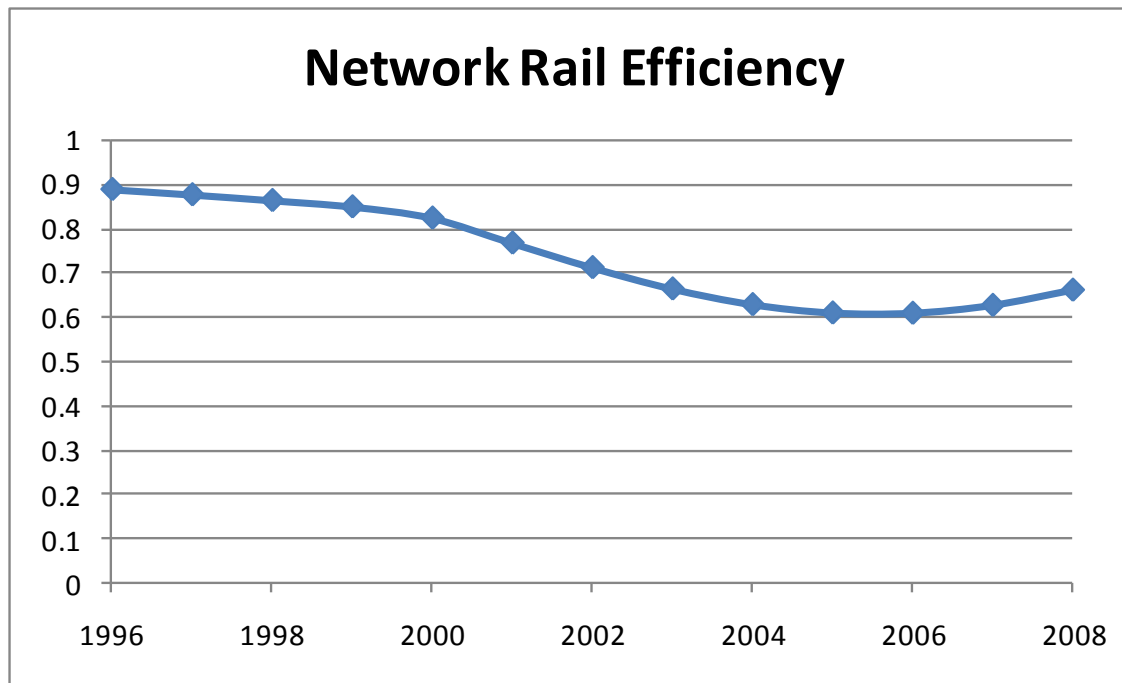
- More country-specific studies:
  - Costs and efficiency
  - Demand side
- Detailed review of past econometric studies:
  - Why do results differ? Which are better? How to improve?
- New international econometric cost modelling:
  - New, comprehensive data (infrastructure and operations together)
  - Careful specification of reform dummies (open-access; separation; funding and investment; economic regulation)

# E.g. International benchmarking of rail infrastructure costs



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- Use econometric studies to compare performance
- **Extend to operations and total industry costs.....**



Sources: ORR (2010) and Smith (2010)

# Contact details



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