Effects of Vertical Separation in the railway sector

Vertical separation, competition and coordination

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Competition in the railway sector

Estimated situation (2015)

Open access with entry
Open access no entry
No open access
Competitive tendering
**Vertical separation:**
A problematic solution to a problem...

<table>
<thead>
<tr>
<th>Problem</th>
<th>Wish</th>
<th>Perhaps, but there are also other options</th>
<th>A requirement that is difficult to realise</th>
<th>Radical solution that could be costly in longer run due to coordination losses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inefficiency / Lack of customer orientation</td>
<td>Efficiency / More customer orientation</td>
<td>Need for more competitive pressure</td>
<td>Competitive tendering and/or open access</td>
<td>Fairness and no barriers to entry</td>
</tr>
</tbody>
</table>

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**EVES-Rail:** Economic effects of Vertical Separation in the railway sector

- **EVES-Rail report**
  - More and better data
  - More refined approach
  - Vertical separation, holding company, vertical integration
  - Traffic Density

- **Quantitative research (key findings)**
  - No evidence that vertical separation is unconditionally superior or inferior to other structural options
  - At higher traffic densities, vertical separation increases costs
  - And at a higher share of freight in total revenues, vertical separation increases costs

- **Coordination issues**
  - Competition does not appear to work better or worse under vertical separation
  - Universal vertical separation is likely to increase total costs

- **Qualitative approach (value chain analysis)**
  - Further investigation of incentive misalignment issues

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- **Pre-existing academic research**
  - No evidence that unbundling is better/worse
  - Many deficiencies
  - Data quality
  - Coding of structural options,

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**Inefficiency /
Lack of customer orientation**

**Efficiency /
More customer orientation**

**Need for more competitive pressure**

**Competitive tendering and/or open access**

**Fairness and no barriers to entry**

**Full vertical separation**

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**EVES**

- **Rail**
  - Economic effects of Vertical Separation in the railway sector

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**Qualitative approach (value chain analysis)**

- Further investigation of incentive misalignment issues
Value chain analysis

- Decomposition in elements of the value chain

Value chain analysis

- Typical layers of any transport systems
- But rail vertical separation is not that simple
- Many different regimes across Europe!
Value chain analysis

- **Japan**
  - Full vertical integration
  - Regional operators
  - Privatisation
  - Stability (no tendering)
  - High efficiency
  - High customer focus

- **Switzerland**
  - Integrated operator
  - Not tendering
  - Highest performance (in Europe)
Value chain analysis

France

- Vertical separation until 2014
- In 2015 moved to a less separated regime
- No competition (yet)

Example: SNCF (France)

Netherlands

- Vertical separation
- Tendering on branch lines
- High performance (in Europe)
- Coordination issues leading to coordination focus

Example: NS (The Netherlands)

SNCF

SNCF (DCF)

RFF

NS

ProRail

NSC
**Value chain analysis**

- **Sweden**
  - Full separation
  - Open access and tendering
  - Railway investigation finalised in December 2015

**Example:** EUROMANT (Sweden)

- Vertical separation

**Great Britain**

- McNulty (2011)
  - High level of fragmentation is important reason for inefficiencies
  - Recommends closer alignment and partnerships
  - But, deep alliance proves problematic...
**Value chain analysis**

- How far can we go?
- How far should we go?

**Incentive misalignment**

**Concept – actors – economic effects**

- **Vertical Separation**
  - Fully separated IM alongside RUs
  - Each subject to set of incentives (market or regulation)
  - Each optimises **own** economic position
    - Optimality for each actor...
    - **Is not necessarily optimality for the whole rail sector!**

- **Can lead to economic losses**
  - Due to sub-optimal choices compared better aligned (more cooperative) set-up
  - Examples:
    - Additional capacity investment needs
    - Additional operational costs
    - Lost opportunities for revenue-making
Coordination issues at various levels

Examples of coordination issues & realignment

- Investment coordination
  - Extension / decommissioning
  - Upgrading / downgrading

- Production planning coordination
  - Quality of resources and reliability
  - Small/medium scale investments

- Timetable planning coordination
  - Maintenance/renovation versus operations
  - Timetable robustness

- Production (real-time) coordination
  - Disruption handling
  - Feed-back loops

- Rail2000 (CH)
- High frequency rail (NL)
- RUS/IP (GB)
- Prioritisation (FR)
- Rolling stock and power supply (GB)
- ERTMS/ETCS
- Synergy real estate – rail

- Coordination of small scale / high impact investments (JP)
- IM/RU cooperation/misalignment (NL, FR, GB)
- Trade-offs track maintenance / total system costs

- Timetabling and path allocation (CH, GB, FR, NL)
- Track possessions and commercial consequences (FR, PL)

- Traffic control centres, colocation (GB, NL, FR)
- Passenger information (NL)
- Feed-back loops (JP, NL)
Incentive misalignments

Findings

- Vertical separation can generate substantial incentive misalignments between IM and RUs
  - Likely to be larger than transaction costs generated by vertical separation

- Misalignment issues increase in importance...
  - ...When investments are required
  - In growing railways (e.g., growing demand)
  - For technical innovation (e.g., ERTMS)
  - ...And especially at higher train densities

- Track access charges can solve some issues but not all

- Additional hybrid re-alignment arrangements have started to appear but
  - Unlikely that these will solve all issues in unbundled railways
  - Especially when this would involve money transfers between IM and RUs

- Misalignment issues urgently require more attention and analysis in order to make sound choices between structural options

Food for thought

- Over the longer run, vertical separation might prove to be a costly obstacle to system-wide optimisation and value-chain optimization due to the technical characteristics of the railway sector.

- However, vertical separation may have been the occasion for shake-ups and management reforms leading to performance improvements (including competitive tendering)

- But these could also have been realised under different institutional configurations.
Further background information

Extended research report


Academic publications


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Thank you for your attention!

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