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The National Rail Authority
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Framework

A. The Danish Rail Sector: Liberalisation - Philosophy and characteristics

B. The original Infrastructure Charges

C. Arguments for a change

D. Today’s Infrastructure Charges. Further considerations

E. Final remarks
A. The Danish Rail Sector: Liberalisation - Philosophy and characteristics
Management instruments for the railway sector

A. Organisation

B. Investments

C. Allocation of capacity

D. Tender, Procurement / Steering by Contracts

and the subject for this workshop

E. Infrastructure Charges
Reorganising the rail sector

• Create *competition* among railway undertakings as a "main road” to better performance

• Create clear *definition of (independent) leadership and economic responsibilities* for railway undertakings and infrastructure managers

• Create *clear roles among actors in the sector at all levels*

• Develop *legislation and regulation* supporting the difference in roles
**Organisation (1): New roles and aims**

**Political level**
- Minister
- Department

**Authorities**
- Aircraft and Railway Accident investigation board
- DSB (RU)
- Train- and ferry operating companies on tendered contracts
- Network company (Banedanmark)

**Companies**
- Other railway undertakings and infrastructure managers

**Ownership**
- Contractual relation

Negotiated contracts
Organisation (2): Creation of The Rail Authority

- Banedanmark
- IFM
- Infrastructure planning
- Procurement ferry traffic
- Road Safety & Transport Agency
- Accident Investigation Board for Aircraft & Railway
- DSB RU
- Certain planning
- Ministry of Transport department
- Ministry of Transport department
- Procurement train & ferry traffic
- Most Other Rail Authority tasks ex. Infrastructure charges
- Investigations of accidents
- Approving and inspections
Organisation (3): The roles of National Rail Authority

**Authority**
- The government’s railway authority, responsible for regulation, planning, safety and transport co-ordination.

**Adviser**
- Adviser to the Ministry of Transport on matters relating to policy and strategic development of the railway sector.

**Tender body**
- Responsible for securing the provision of railway transport services by putting out to tender contracts for the operation of the services determined by the government.
Investment in capacity

• Investments as a mean to regulate the use of the infrastructure has only been used in a limited number of cases the last ten years.

• There have only been made a minor number of infrastructure improvements. They have far from solved capacity problems.

• Two investments though have lifted the effectiveness and efficiency of the Danish railway: The Great Belt Bridge and Tunnel and The Oresound Bridge and Tunnel.
Allocation of capacity

- Fulfilling Directive 2001/14/EC
- Regulated according to ministerial order on non-discriminatory basis
- Allocation period, one year
- No “grandfathers rights”
Tender, procurement and “steering” by contract

- From 1999 DSB is managed by negotiated contract: DSB is managed by its own Board, in most practical matters an economy independent from State.

- DSB is obliged to give up political decided amounts of passenger transport for the purpose of public tendering of public service transport.

- First invitation to tender was won by Arriva A/S. Begun serving 15% of public service passenger transport in 2003.

- Next invitation for tender is expected in 2007/8 and will include further c. 10% of DSB passenger transport.

- Fright train activities are totally privatised.
**Organisation (4): Companies**

* Railway undertakings with Danish Licences and Safety certificates
  - DSB
  - Railon Danmark A/S
  - ARRIVA Tog A/S
  - 8 Smaller county owned railways
  - (Partly SJ)

* Further Railway undertakings with only Danish Safety Certificates (Art 10-traffic)
  - Norddeutsche Eisenbahngesellschaft Niebüll GmbH (NEG)
  - RAG Bahn und Hafen GmbH
  - Nord-Ostsee-Bahn GmbH (NOB)
  - D&D Eisenbahngesellschaft

* Danish Infrastructure Managers
  - State owned Banedanmark is the only IM charging for use of infrastructure
  - C. 10 infrastructure managers
Map 1: Total State owned infrastructure

- Network length: c. 2300 km
- Network per 1000 km²: 64 km. (Germany: 110 km, Sweden: 25 km)
- Network investment and maintenance yearly: c. 180 mill. €/year
- Production on network: c. 60 mill. trainkm/year
B. The original Infrastructure Charges
Strategic objectives for infrastructure charging systems: Two models.

At the introduction of infrastructure charges by the Danish Railway Act from 1999 the choice stood between two charging models:

• The first model: Infrastructure charges are considered as a financing source to cover expenses for the infrastructure.
  * In principal the German approach

• The other model is the economic approach supplemented with behavioural measure.
  * In principal the Scandinavian approach

• Hitherto Denmark has placed itself at a place between the two models and is by several undertakings considered as a high charge country.
Political objective for infrastructure charges

• Financing of the fixed links (The Bridges) by users.

• For Competition reasons against road transport: Not all charges could be claimed at the bridge.

• Higher charges were therefore required at connecting lines: Especially on the “Corridor”. Trains running along the whole corridor (land, bridge and tunnel) paid approximately Banestyrelsen’s relative share of payment for the fixed links.

• One advantage was: No subsidising of transit trains.
Map 2: Bridges

- The Bridges and tunnels (fixed Links).
  * Oresound to Sweden
  * Great Belt between Zealand and Funen

- Hitherto extra “Special Project” infrastructure charge
Political objective (2) for infrastructure charges

Broken logic

- It was presupposed that passenger trains and fright trains should pay the same charges.

- Through Political negotiations fright trains acquired a discount of 50 % on secondary lines and 60 % on main lines.

Acceptance

- The discount was accepted by all parts.

- Passenger trains – all public service – was compensated by the state via their contracts.
The first Danish charging set

- Admission charge.
- Kilometre charge
- Extra Kilometre charge
- Bridge charge.

- Exception from charges: Non-timetable-trains, marshalling, test driving etc.
Map 3: Total infrastructure

- Admission charge to infrastructure for fright train undertakings
Map 4: The Corridor

- The corridor Sweden – Germany (Peberholm – Padborg)

- Hitherto extra high infrastructure charges
## Infrastructure charge rates. Level until 2003

<table>
<thead>
<tr>
<th>I. Infrastructure charge rates</th>
<th>Unit price in € exclusive VAT</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Passenger trains</td>
<td>Fright trains</td>
</tr>
<tr>
<td>Admission charge</td>
<td>€/railkm/year</td>
<td>0</td>
</tr>
<tr>
<td>Kilometre charge</td>
<td>€/trainkm</td>
<td>3,11</td>
</tr>
<tr>
<td>Main lines</td>
<td>€/trainkm</td>
<td>0,47</td>
</tr>
<tr>
<td>Remaining lines</td>
<td>€/trainkm</td>
<td>-</td>
</tr>
<tr>
<td>Extra Kilometre charge</td>
<td>€/trainkm</td>
<td>-</td>
</tr>
</tbody>
</table>

**Bridge charge**

<table>
<thead>
<tr>
<th></th>
<th>€/train</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storebælt</td>
<td>922</td>
<td>855</td>
</tr>
<tr>
<td>Øresund</td>
<td>183</td>
<td>280</td>
</tr>
</tbody>
</table>

**Enviromental grants**

| €/tonkm | 0,000 | -0,003 |
C. Arguments for a change
Experiences with the hitherto charging system

1

- Infrastructure charges has had clear behavioural influence on fright train undertakings: Fewer and bigger trains.
- Improved utilisation of the infrastructure.
- No influence on passenger transport. Because of contract compensation in the existing contract system.
- Main line infrastructure charges has made commercial passenger rail transport almost impossible.
- The charges has only had minor financial influence.
Train kilometres on States infrastructure

Traffic level on states infrastructure. Million trainkm(s) 2001 - 2003

- **Fright rain**
- **Rest passenger train**
- **S-train**
Experiences with the hitherto charging system

2

Economy

• The yield from non-contract covered trains amounts c. 13,5 mill. €. Of those are 4 mill. € recycled as environmental grants to freight trains. A modest net financial result c. 9,5 mill.

• The environmental grants to freight trains has had a positive effect for market shares. It has been heavily criticised by competitors i.e. lorry owners.

• Admission charge was introduced for freight transport as payment for reservation of slots in the timetable. The Admission charge has had no positive effect on infrastructure use and does not fit with the EU-principles
Objectives for future charging

- To make a more simple charging system.
- Incentive for a better utilisation of the infrastructure.
- Start a phasing out of the environmental grant avoiding negative consequences.
- Secure a certain profit from foreign transit freight trains, who do not offer opportunities for service in Denmark.
- Changes should be financial neutral for the state.
- Keep up with Directive 2001/14/EC.
D. Today’s Infrastructure Charges. Further considerations
The second Danish charging set

- Kilometre charge
- Extra Kilometre charge
- Bridge charge.
- Capacity charge

Exception from charges: Non-timetable-trains, marshalling, test driving etc.
Map 5: Bottlenecks

- The corridor Sweden – Germany. Sections with lack of capacity

- In future a special “capacity charge”
### New Infrastructure charge rates 2004

<table>
<thead>
<tr>
<th>2004 NEW Infrastructure charge rates</th>
<th>Unit price in € exclusive. VAT</th>
<th>2004</th>
<th>Percentage change relative to 2003</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td>2004</td>
<td>Passenger trains</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Passenger trains</td>
</tr>
<tr>
<td>Kilometre charge</td>
<td></td>
<td></td>
<td>0,24</td>
</tr>
<tr>
<td>Main lines</td>
<td>€/trainkm</td>
<td></td>
<td>0,24</td>
</tr>
<tr>
<td>Remaining lines</td>
<td>€/trainkm</td>
<td></td>
<td>0,24</td>
</tr>
<tr>
<td>Extra Kilometre charge</td>
<td>€/trainkm</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Bridge charge</td>
<td></td>
<td></td>
<td>941</td>
</tr>
<tr>
<td>Storebælt</td>
<td>€/train</td>
<td></td>
<td>941</td>
</tr>
<tr>
<td>Øresund</td>
<td>€/train</td>
<td></td>
<td>210</td>
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<tr>
<td>Capacity charge</td>
<td></td>
<td></td>
<td>41,18</td>
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<tr>
<td>Kastrup - Kalvebod</td>
<td>€/train</td>
<td></td>
<td>41,18</td>
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<tr>
<td>Hvidovre Fjern - Høje Tåstrup</td>
<td>€/train</td>
<td></td>
<td>68,63</td>
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<tr>
<td>Vojens - Vamdrup</td>
<td>€/train</td>
<td></td>
<td>109,81</td>
</tr>
<tr>
<td>Enviromental grants</td>
<td>€/tonkm</td>
<td></td>
<td>0,000</td>
</tr>
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</table>
## Cash flow for infrastructure charges

### - cf. budget 2003 mill. € (simulation)

<table>
<thead>
<tr>
<th>Mill. € excl. VAT</th>
<th>Charge:</th>
<th>Km</th>
<th>Capacity charge</th>
<th>Bridge Charge Storebælt</th>
<th>Bridge Charge Øresund</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>From:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DSB</td>
<td></td>
<td>24,8</td>
<td>-</td>
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<tr>
<td>DSB/stat 2-</td>
<td></td>
<td>35,7</td>
<td>-</td>
<td>33,6</td>
<td>5,9</td>
<td>75,2</td>
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<tr>
<td>ARRIVA</td>
<td></td>
<td>3,1</td>
<td>-</td>
<td></td>
<td></td>
<td>3,1</td>
</tr>
<tr>
<td>Fri traffic</td>
<td></td>
<td>0,2</td>
<td>-</td>
<td>1,5</td>
<td></td>
<td>1,7</td>
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<tr>
<td>Fright undertakings</td>
<td></td>
<td>4,1</td>
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<td>9,3</td>
<td>2,4</td>
<td>-4,1</td>
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<tr>
<td>Total</td>
<td></td>
<td>67,8</td>
<td>-</td>
<td>42,9</td>
<td>9,8</td>
<td>-4,1</td>
</tr>
</tbody>
</table>

### - new system traffic 2003, mill. € (simulation)

<table>
<thead>
<tr>
<th>Mill. € excl. VAT</th>
<th>Charge:</th>
<th>Km</th>
<th>Capacity charge</th>
<th>Bridge Charge Storebælt</th>
<th>Bridge Charge Øresund</th>
<th>Enviromental grants</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>From:</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>DSB</td>
<td></td>
<td>12,4</td>
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<td>ARRIVA</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1,5</td>
</tr>
<tr>
<td>Fri traffic</td>
<td></td>
<td>0,0</td>
<td>0,1</td>
<td>1,5</td>
<td></td>
<td></td>
<td>1,7</td>
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<tr>
<td>Fright undertakings</td>
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<td>1,1</td>
<td>9,3</td>
<td>2,4</td>
<td>-2,2</td>
<td>11,7</td>
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<tr>
<td>Total</td>
<td></td>
<td>14,9</td>
<td>7,6</td>
<td>42,9</td>
<td>9,8</td>
<td>-2,7</td>
<td>73,2</td>
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</table>
## Infrastructure charges: Change for Banedanmark

Fixes links (Bridges) and environmental grants

<table>
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<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>Revenue</td>
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<td>118,7</td>
<td>122,5</td>
<td>-3,8</td>
<td>81,5</td>
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<tr>
<td>Expenditure</td>
<td>117,0</td>
<td>119,9</td>
<td>120,0</td>
<td>-0,2</td>
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<tr>
<td>Gross amount</td>
<td>-0,7</td>
<td>-1,2</td>
<td>2,4</td>
<td>-3,6</td>
<td>-42,6</td>
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<tr>
<td>Appropriation</td>
<td>2,1</td>
<td>4,2</td>
<td>4,2</td>
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<td>42,6</td>
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<tr>
<td>Net amount</td>
<td>1,3</td>
<td>3,0</td>
<td>6,6</td>
<td>-3,6</td>
<td>0,0</td>
</tr>
</tbody>
</table>

Earlier Contractual i.charges compensation to public service train Undertakings to pay infrastructure manager

Now direct state appropriation to infrastructure manager: Banedanamrk
The change in charging imply

• A more simple charging system.

  The same kilometre charge gives an incentive for bigger trains and a (small) disadvantage on side sections

• Incentive for a better utilisation of the infrastructure.

There are good arguments for using marginal costs in infrastructure as charging basis. It is however very difficult to delimit and calculate. There has been no Danish attempt to do so. The lowest kilometre charge will therefore be carried on. (Swedish investigations seems to point at a lower charging according to marginal cost principles)
The change in charging imply

• Introduction of capacity charge as a new instrument. The capacity charges are fixed as a shadow price for using three certain infrastructure sections between 7 am and 7.59 pm.

• The phasing out of the environmental grant has begun. The environmental grant has been reduced according to reduction in expected yield from freight charging in form of Kilometre charges and Capacity charge

• Changes have been financial neutral for the state

• By removing the Admission charge, the Danish charging is in line with directive 2001/14/EC)
E. Final remarks
Final remarks

It is a clear Danish objective, that infrastructure charging shall form a system of behavioural incentives.

We recognise, that “special projects” and PPP-projects probably could not be political decided and financed without users paying full cost, but we are also aware that this method is not the most sensible model from an economic point of view.
Absolute final remark

Thank you