Financing infrastructure: a broader perspective

Prepared for PRO//Motion 1520

Andrew Meaney, Partner, Head of Transport practice, Oxera Consulting

2 October 2018
Introducing Oxera

Selected projects in the European rail sector

- **Network Rail**: Economic advice on regulation
- **Department for Transport**: Policy advice on franchising & funding
- **Operators**: Track access applications, franchise bids
- **Translink**: Commercial Strategy
- **Railteam**: Sustainability
- **Clients**: Advice on implications of market pillar of 4th Railway package
- **ACM**: Economic regulation and behavioural economics
- **Ministry of Infrastructure & Environment Ministry of Finance**: State Aid
- **Lithuanian Railways**: Recast of First Railway Package, competition issues
- **Deutsche Bahn**: State Aid, single wagon load freight, competition issues
- **Trenitalia**: Economic regulation
- **RZD**: Access charging, traffic forecasts

**Translink**

Commercial Strategy

**Railteam**

Sustainability

**Clients**

Advice on implications of market pillar of 4th Railway package

**ACM**

Economic regulation and behavioural economics

**Ministry of Infrastructure & Environment Ministry of Finance**

State Aid

**Lithuanian Railways**

Recast of First Railway Package, competition issues

**Deutsche Bahn**

State Aid, single wagon load freight, competition issues

**Trenitalia**

Economic regulation

**RZD**

Access charging, traffic forecasts

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Global market volume of the rail industry of €159bn per annum, including €54bn in rolling stock.

Total market for rail supply is set to continue its growth of recent years at 2.6% per year.

Growth in the rail market is currently constrained by the availability of funding.

Definitions

• financing is the injection of capital by an investor in the expectation of returns
  • sources: banks (debt), infrastructure funds (equity), IPO (equity), state (debt or equity)
• funding is the payment of fees and/or charges by passengers or freight customers to remunerate that capital
• funding can also come from government subvention
The opportunity

- international investors looking to invest in assets providing long-term returns
  - they find it difficult to identify rail opportunities
- of the €60bn of private finance going into infrastructure in Europe in 2017, only €4bn, or 6.4% went into rail…¹
- …but the need is substantial and growing:
  - rail competes with every other sector for scarce state capital and operating expenditure
  - yet assets are aging, while demand for rail services is increasing in many geographies

¹ Note: Data covers PPP deals in Europe during calendar year 2017. Nearly half of the deals by value were in the UK.
Source: Infradeals.
Private infrastructure financing
A typical setup

Legend:
→ Monetary flows
← Rights and obligations

Key question: how to allocate risk?
Risk allocation

- rail infrastructure can involve a number of risks to allocate between providers and investors:
  - construction
  - revenue
  - availability
  - terminal value (rolling stock, property)
- familiar principle: allocate to the party best able to manage it
  - this will reduce financing costs
Alternative funding mechanisms
What happens if a funding gap emerges?

Measures aimed at increasing revenues:
- Increasing traffic volume;
- Increasing access charges;
- Surcharge;
- Capacity booking charge;
- Traffic-linked subsidy;
- Availability payment.

Measures aimed at decreasing costs:
- Decrease the project scope;
- Increase efficiency.

Measures aimed at attracting low-cost capital:
- Subordinated debt;
- Equity injection.

Measures aimed at decreasing the cost of capital (de-risking):
- Debt default guarantee;
- Refinancing risk guarantee;
- Minimum revenue guarantee;
- Traffic volume guarantee;
- Other guarantees.
Broadening the scope
Introducing a strategic investor

Legend:
- Monetary flows
- Rights and obligations

Bank

Senior debt

Interest and principal repayment

Infrastructure management company

Equity capital

Dividends

Voting rights

Infrastructure fund/Corporation

External benefits (e.g. increased traffic volume outside the project)

Strategic investor
Examples of alternative funding mechanisms
Availability payment

Legend:
- Monetary flows
- Rights and obligations

Bank

Senior debt

Interest and principal repayment

Infrastructure management company

Obligation to maintain the availability of the infrastructure

Fixed, period payment over the lifetime of the line

Infrastructure fund/Corporation

Equity capital

Dividends

Voting rights

Strategic investor
Examples of alternative funding mechanisms

Revenue guarantee

Legend:

- Monetary flows
- Rights and obligations
- Contingent obligation

Are revenues below the guaranteed level?

Yes – strategic investor compensates the shortfall

No – no payment induced

Strategic investor

Bank

Infrastructure management company

Infrastructure fund/Corporation

Senior debt

Interest and principal repayment

Equity capital

Dividends

Voting rights

2 October 2018
Examples of alternative funding mechanisms
Traffic-linked subsidy

Legend:
- Monetary flows
- Rights and obligations

Bank
- Senior debt
- Interest and principal repayment

Infrastructure management company
- Informs about tonnage handled by the infrastructure
- Payment according to the per tonne subsidy agreed upon

Infrastructure fund/Corporation
- Equity capital
- Dividends
- Voting rights

Strategic investor
Conclusions

1. Benefits of rail infrastructure extend beyond return on investment

2. Funding gap can be bridged by internalising external benefits of the project

3. Efficient risk allocation benefits all parties involved
Luxembourg Rail Protocol: estimated impact on rolling stock financing cost in countries using the 1520 gauge

Prepared for PRO//Motion 1520

Howard Rosen, Chairman, Rail Working Group

2 October 2018
Benefits from the Luxembourg Rail Protocol (LRP)
The Luxembourg Rail Protocol (LRP)

Financing the rail industry

**Investors**
- Interest / Dividend
- Loan / Equity

**Legal owner / Lender**
- Payment
- Title

**Train operator / Lessee**
- Finance payment
- Right to use asset
- Services

**Consumers (passengers / businesses)**

Issue with bringing in private capital due to:
- uncertainty around the repossession of collateral for creditors
- limited legal infrastructure and tracking of assets
- cross border risks, no international registry
- no common system for identifying railway equipment worldwide

Solution: Luxembourg Rail Protocol

New global legal systems for the recognition and prioritisation of security interests held by creditors

**Debtors covered**
- all debtors in ratifying state

**Vehicles covered**
- all vehicles running on tracks or above, on, or under a guideway

**Financing covered**
- Conditional sales contract
- Leases
- Secured credit agreements
Features of LRP deliver both micro- and macro- benefits

<table>
<thead>
<tr>
<th>Single central global registry</th>
<th>CLEAR LEGAL FRAMEWORK AND ENFORCEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Facilitates local recording, international interests and universal numbering system</td>
<td>• Covers contracting states and all debtors therein without differentiating across the type of financing structures</td>
</tr>
<tr>
<td>• Establishes clear priority among creditors</td>
<td>• Provides for clear creditor rights on termination, default, and insolvency</td>
</tr>
<tr>
<td>• Provides for real time monitoring – creditors can check rival claims to related rail equipment</td>
<td>• Recognises and regulates the security interests of financiers and other parties</td>
</tr>
<tr>
<td>• Eliminates unnecessary restructuring of security interests as transactions change</td>
<td>• Opens the way to secured finance with recourse only to the assets</td>
</tr>
</tbody>
</table>

DIRECT MICRO-BENEFITS

INDIRECT MICRO-BENEFITS

MACRO-BENEFITS

Focus of this presentation
LRP will reduce costs and help growth in rail transport

**Macro trends**
- Population growth
- Environmental regulation
- Technological progress

**Financing process**
- Increased procurement needs
- Budget constraints lead to under-investment
- Public investment
- Lightly capitalised operators
- Access to new financial resources at lower costs:
  - Private investment
  - Inward investment
  - Asset class financing
- Increased commercial participation in financing

**Outcome**
- Economy suffering from market failure
- Increase in rail transportation, at lower unit cost
- MACRO BENEFITS
  - Reduction in carbon emissions
  - Lower unemployment
  - Increased productivity and GDP
  - Increased transport safety

**DIRECT MICRO BENEFITS**
- Reduced risks and costs

**INDIRECT MICRO BENEFITS**
- Easing of budget constraint
Country case studies
FINANCIAL BENEFITS

9 countries
€13.9bn total benefits

Refinancing 24%
Freight 51%
New deliveries 76%
Passengers 49%

Financial savings by country in billions of Euros

2 October 2018
Country case studies 1/3

### Present value of total savings

<table>
<thead>
<tr>
<th>Country</th>
<th>Freight</th>
<th>Passengers</th>
</tr>
</thead>
<tbody>
<tr>
<td>AZ</td>
<td>€186m</td>
<td>€69m</td>
</tr>
<tr>
<td>BY</td>
<td>€188m</td>
<td>€69m</td>
</tr>
<tr>
<td>EE</td>
<td>€2m</td>
<td>€2m</td>
</tr>
</tbody>
</table>

### Present value of total savings

- **AZ**: €255m, €26 per
- **BY**: €186m, €20 per
- **EE**: €4m, €3 per
Country case studies 2/3

Present value of total savings

**GE**
- €33m
- €9 per

**LT**
- €16m
- €6 per

**LV**
- €33m
- €17 per

<table>
<thead>
<tr>
<th>Passengers</th>
<th>Freight</th>
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<tbody>
<tr>
<td><strong>GE</strong></td>
<td></td>
</tr>
<tr>
<td>€21m</td>
<td>€13m</td>
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<tr>
<td><strong>LT</strong></td>
<td></td>
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<tr>
<td>€12m</td>
<td>€4m</td>
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<tr>
<td><strong>LV</strong></td>
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<tr>
<td>€26m</td>
<td>€8m</td>
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</tbody>
</table>
Country case studies 3/3

<table>
<thead>
<tr>
<th>Country</th>
<th>Present value of total savings (€)</th>
<th>Passengers</th>
<th>Freight</th>
</tr>
</thead>
<tbody>
<tr>
<td>RU</td>
<td>11,606m</td>
<td>€5,659m</td>
<td>€5,947m</td>
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<tr>
<td>KZ</td>
<td>846m</td>
<td>€363m</td>
<td>€483m</td>
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<tr>
<td>UA</td>
<td>934m</td>
<td>€413m</td>
<td>€521m</td>
</tr>
</tbody>
</table>
Conclusion

Direct micro-benefits from 9 countries assessed at €13.9bn

Many additional micro and macro benefits expected