
Luxembourg Rail Protocol: estimated impact on rolling stock financing cost in Europe

Prepared for



Objectives

- 1 Develop a solid evidence base with 20 countries across Europe
- 2 Develop a robust assessment of economic benefits, based on the evidence
- 3 Help RWG, UNIDROIT and their members to consider the country and market impact of the Protocol
- 4 Help governments consider the effect of the Protocol before its adoption
- 5 Complement the legal analysis supporting implementation / adoption of the Protocol

Summary

**Direct
micro-benefits
from 20 countries
assessed at
€19.4bn**



**Many additional
micro and macro
benefits
expected in
addition**

Context

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

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

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

4 Luxembourg Rail Protocol improves availability of funds

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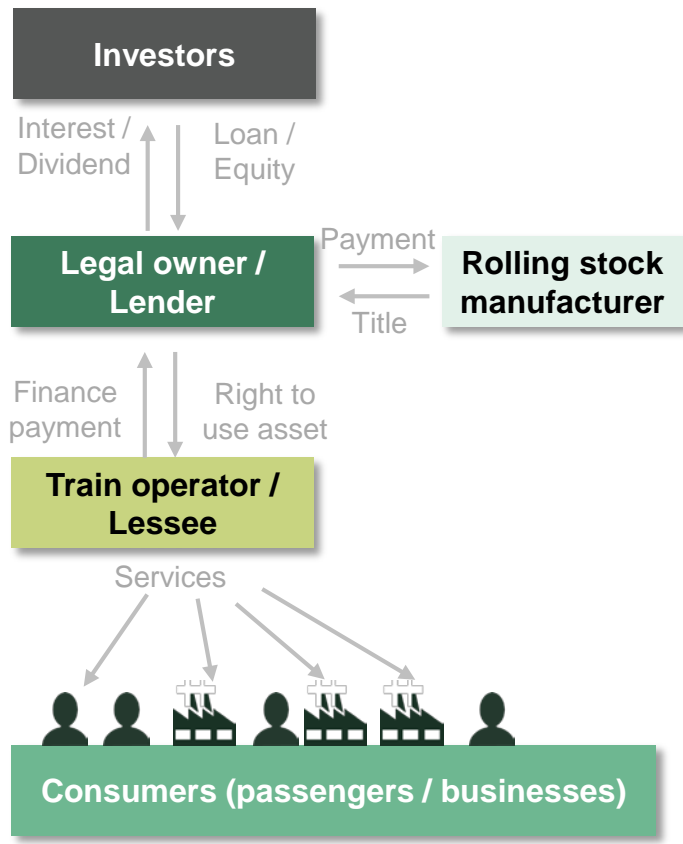
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Benefits from the Luxembourg Rail Protocol (LRP)

The Luxembourg Rail Protocol (LRP)

Financing the rail industry



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



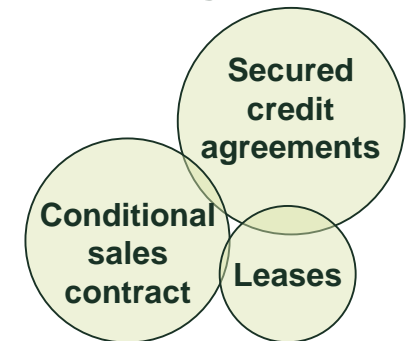
all debtors in ratifying state

Vehicles covered



all vehicles running on tracks or above, on, or under a guideway

Financing covered



Features of LRP deliver both micro- and macro- benefits

Single central global registry

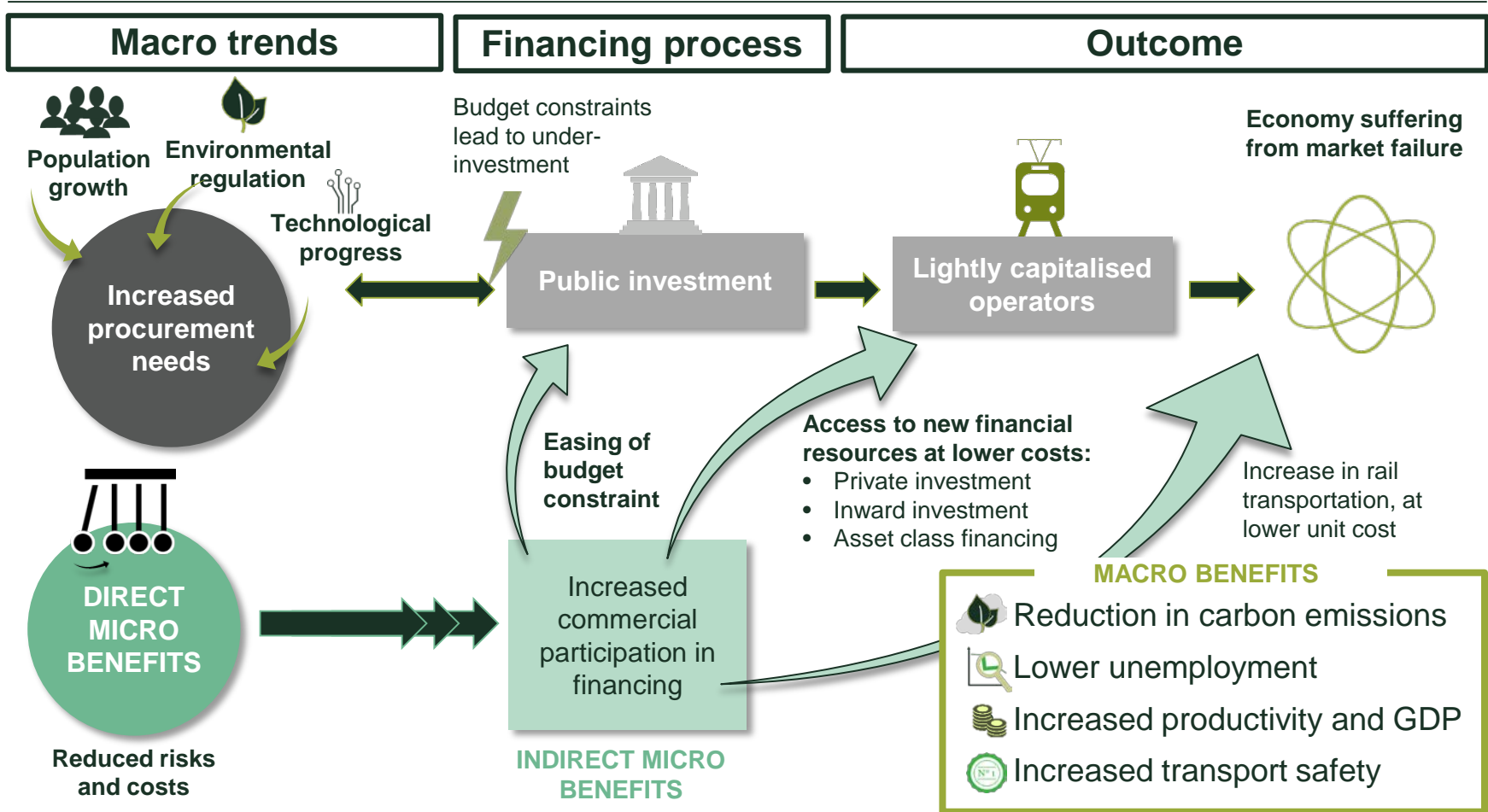
- **Facilitates** local **recording**, international interests and universal numbering system
- Establishes **clear priority** among **creditors**
- Provides for **real time monitoring** – creditors can check rival claims to related rail equipment
- **Eliminates unnecessary restructuring** of security interests as transactions change

Clear legal framework and enforcement

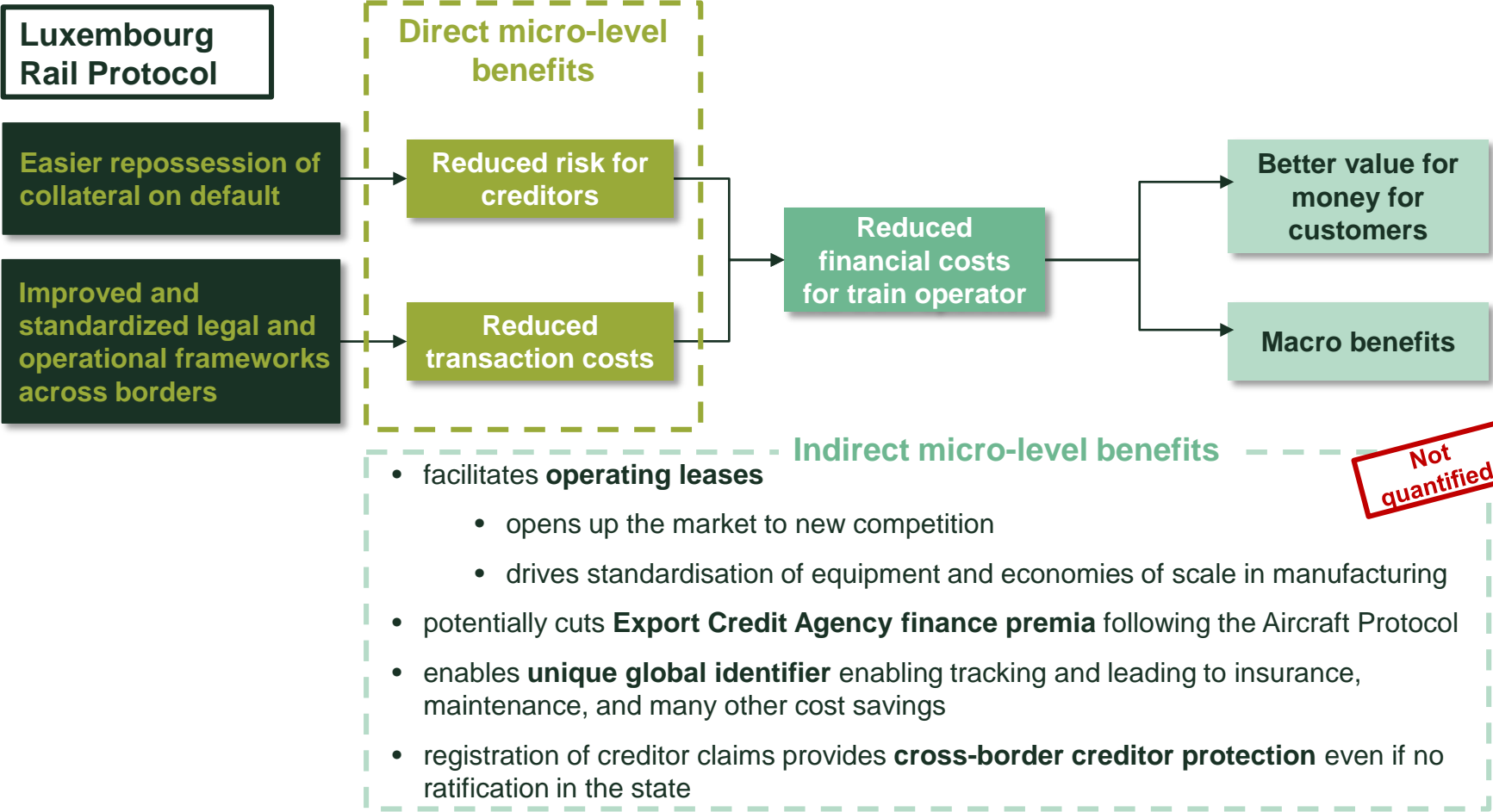
- **Covers contracting states and all debtors therein** without differentiating across the type of financing structures
- Provides for **clear creditor rights** on termination, default, and insolvency
- Recognises and regulates the **security interests** of financiers and other parties
- Opens the way to **secured finance** with recourse only to the **assets**



LRP will reduce costs and help growth in rail transport

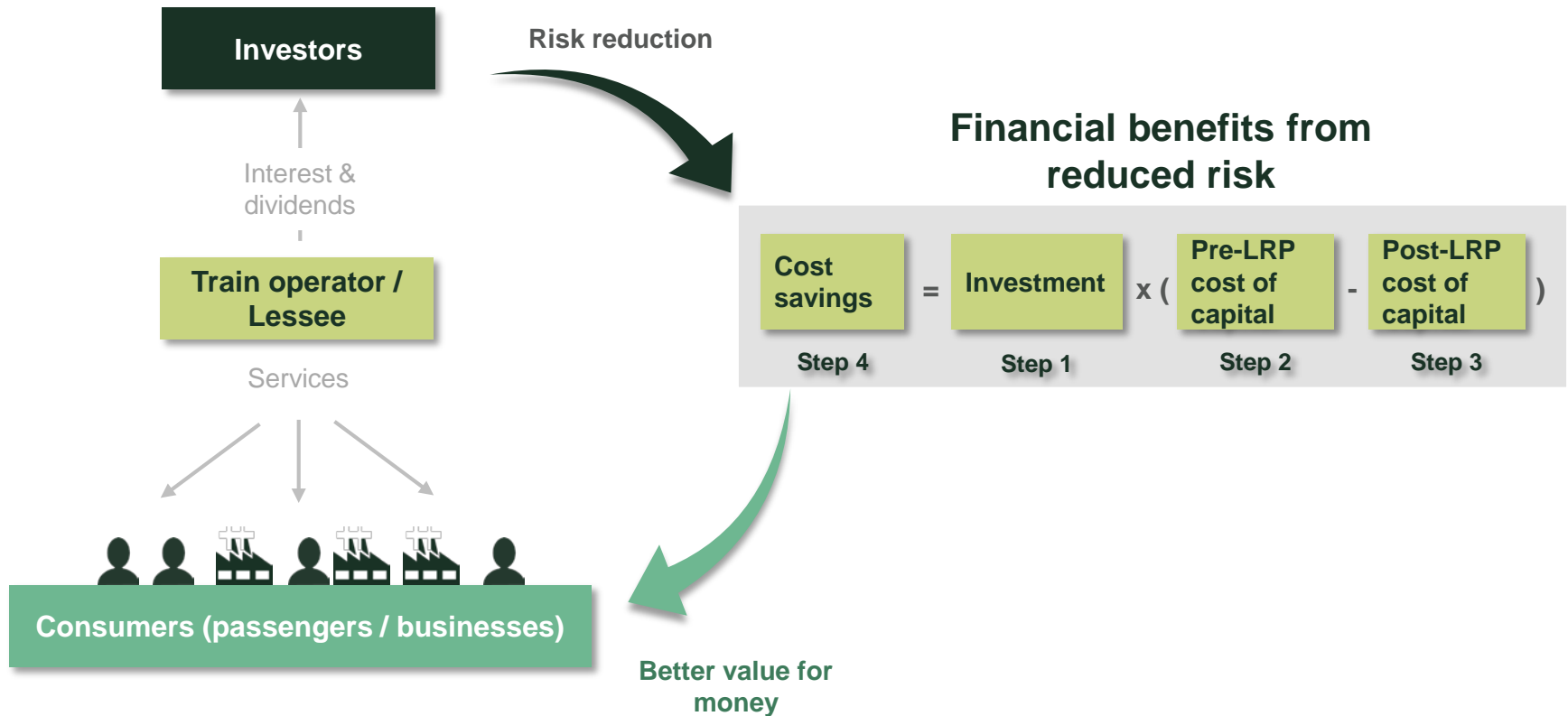


This study focuses on the direct micro-level benefits



Assessing direct financing cost reductions: methodology

Methodological approach





Step 1: Investment to finance

Key assumptions

- **Investment:** assume that both the financing of new rolling stock and the refinancing of the current fleet are affected by the ratification of the LRP. Refinancing occurs when the age of a RS unit reaches 10 years or 20 years.
- **Source of financing:** assume that (i) only private financing benefits from the LRP; (ii) the share of public financing will decrease by half by 2023 due to the catalyst effect of the LRP and then remain constant from 2023 onwards.
- **Periods:** forecast from 2018 to 2047 – terminal value calculated at 2047.

2018-2022: forecasts of new deliveries are assumed to offset retirements based on assumed asset life of 30 years.

2023-2032: model a catch-up period of higher deliveries for countries where average age of fleet exceeds 20 years, i.e. where the LRP will unlock new finance and deliveries to replace aging fleet.

Investment	Data (sources)			
Financing using LRP	2018-2022	2023-2032	2033-2047	2048 onwards
	Average annual market value of deliveries by type of RS by country <small>(SCI Verkehr data)</small>	Theoretical CAGR over a 10-year-period to account for catch-up when average fleet age > 20 years <small>(assumption)</small>	Steady state with annual market value growing with inflation in the EU (2%) <small>(assumption)</small>	Growing into perpetuity using inflation as growth rate, and discounted at the pre-LRP WACC <small>(assumption)</small>

Catch-up through reducing average age of fleet

Rational and methodology

Assets older than 40 years assumed to be gradually retired



Average fleet age therefore gradually reduces to 20 years

Countries with younger fleets

Countries with older fleets

Luxembourg Rail Protocol

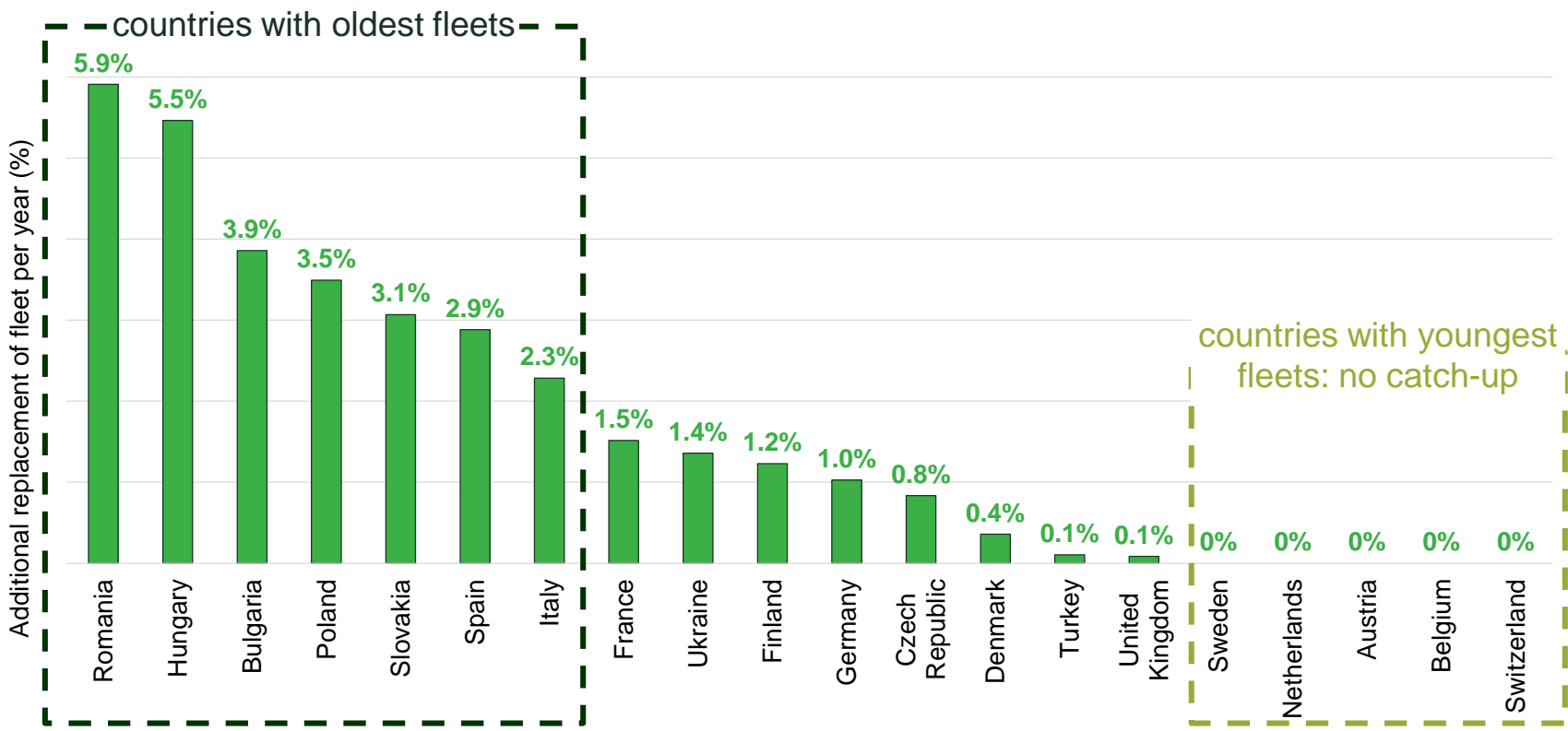
Increase in access to private financing for all operators

Higher rate of investment in new fleet over a catch-up period of 10 years until the average fleet age is 20 years

Catch-up through reducing average age of fleet

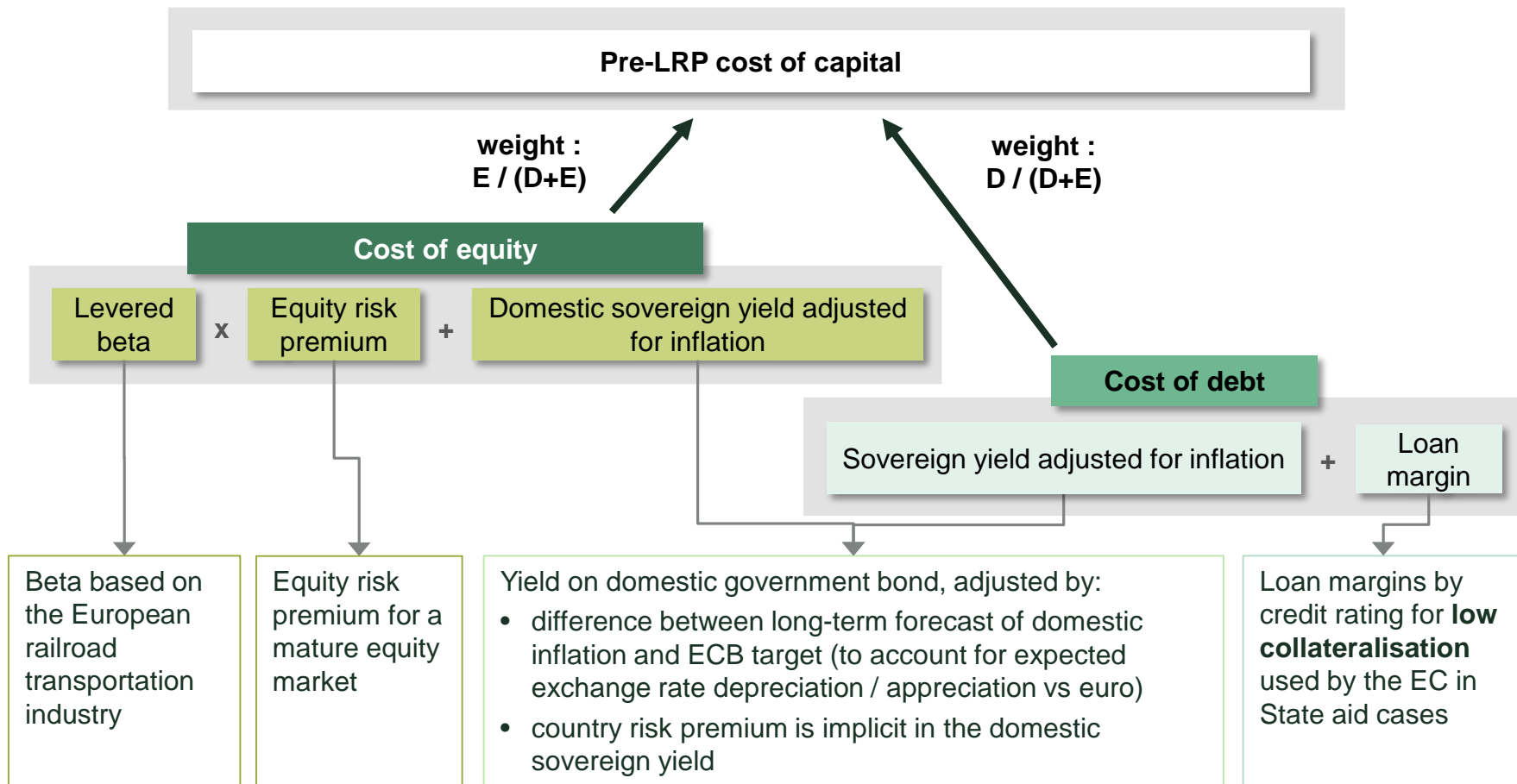
Catch-up effect

Average fleet age assumed to be reduced to 20 years (i.e. based on 40 years asset life) over 10 years, which drives additional fleet replacement





Step 2: pre-LRP cost of capital

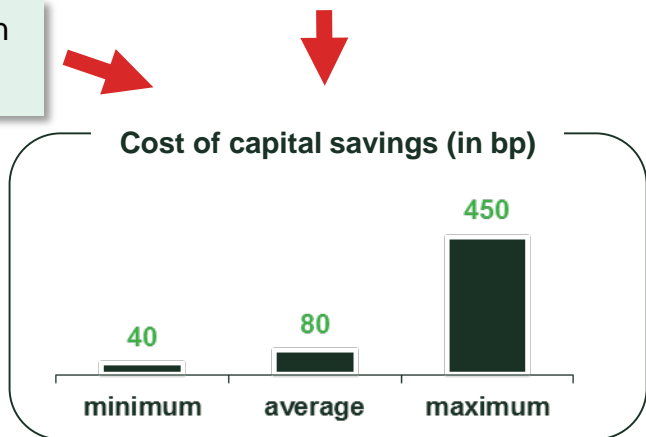
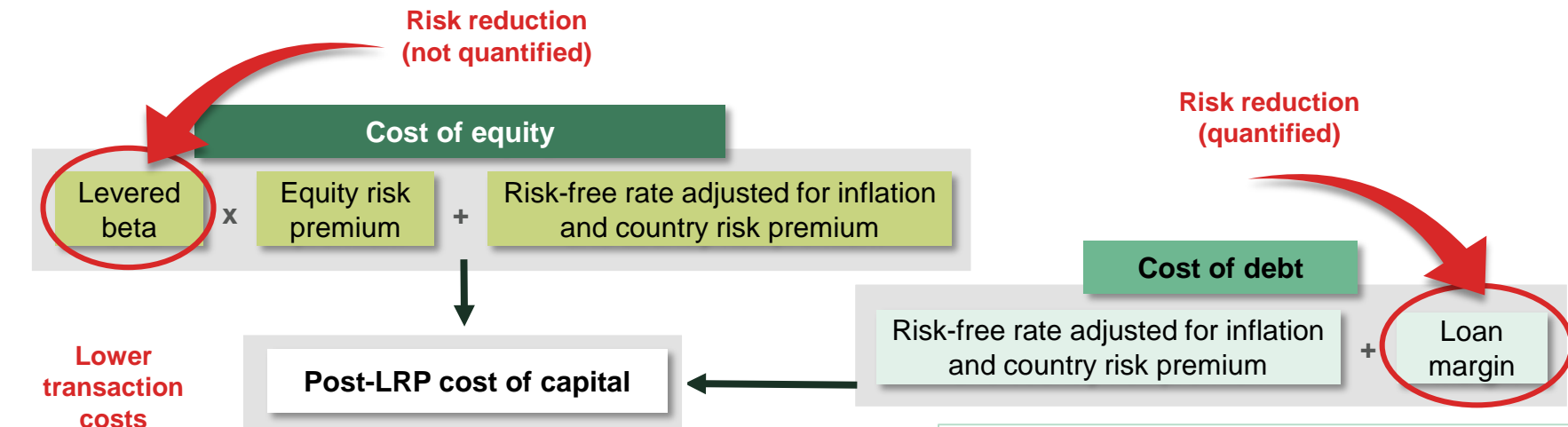




Step 3: post-LRP cost of capital

Risk reduction (not quantified)

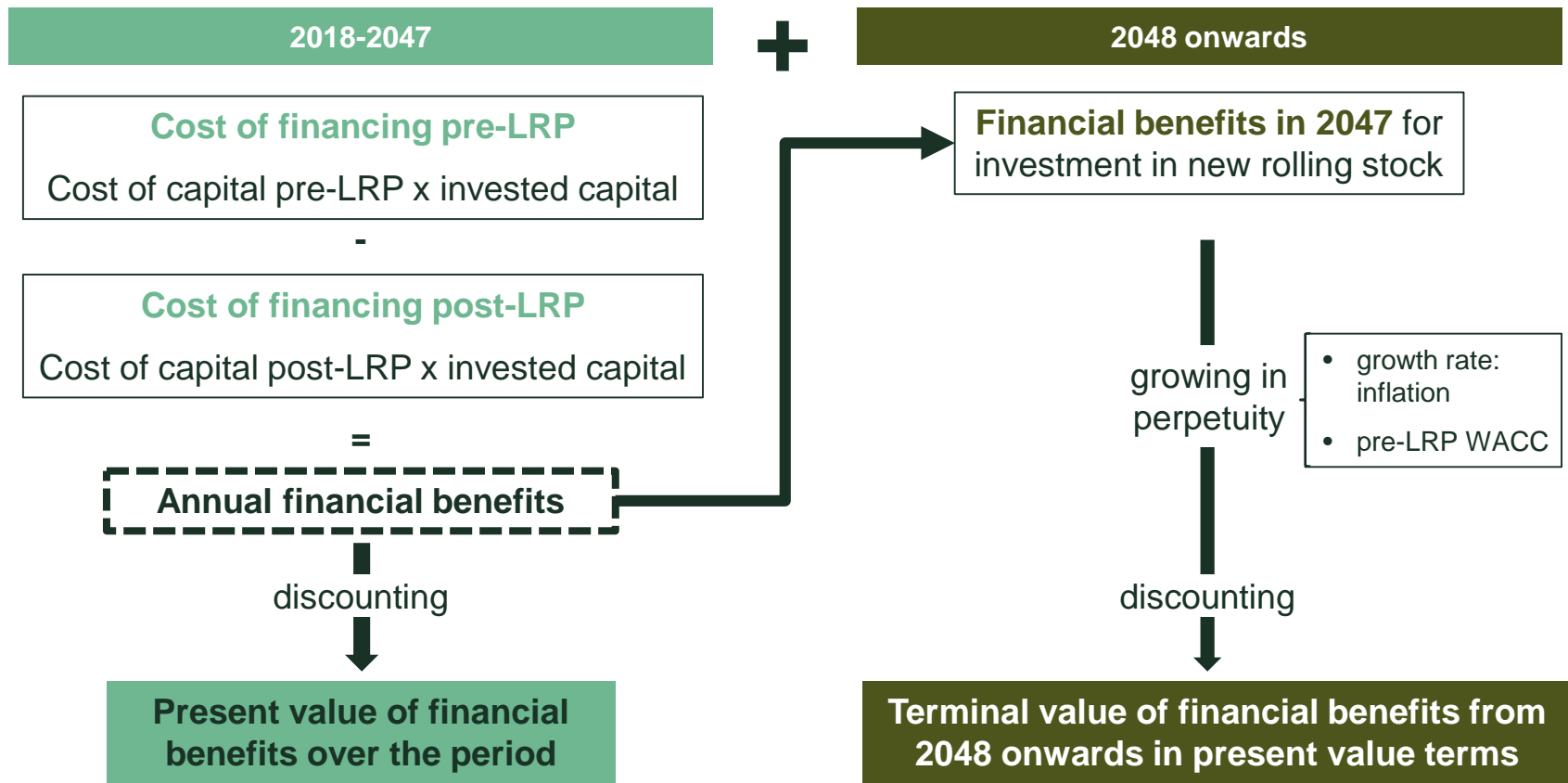
Risk reduction (quantified)



Margin reductions for higher collateralisation	
OECD country risk classification for export credits	Reduction in margin from low to high collateralisation (in bp)
High-income OECD country	40
Grade 3	145
Grade 4	300
Grade 7	600



Step 4: Financial benefits



Country case studies

FINANCIAL BENEFITS

20 countries

€19.4bn total benefits

Refinancing

16%



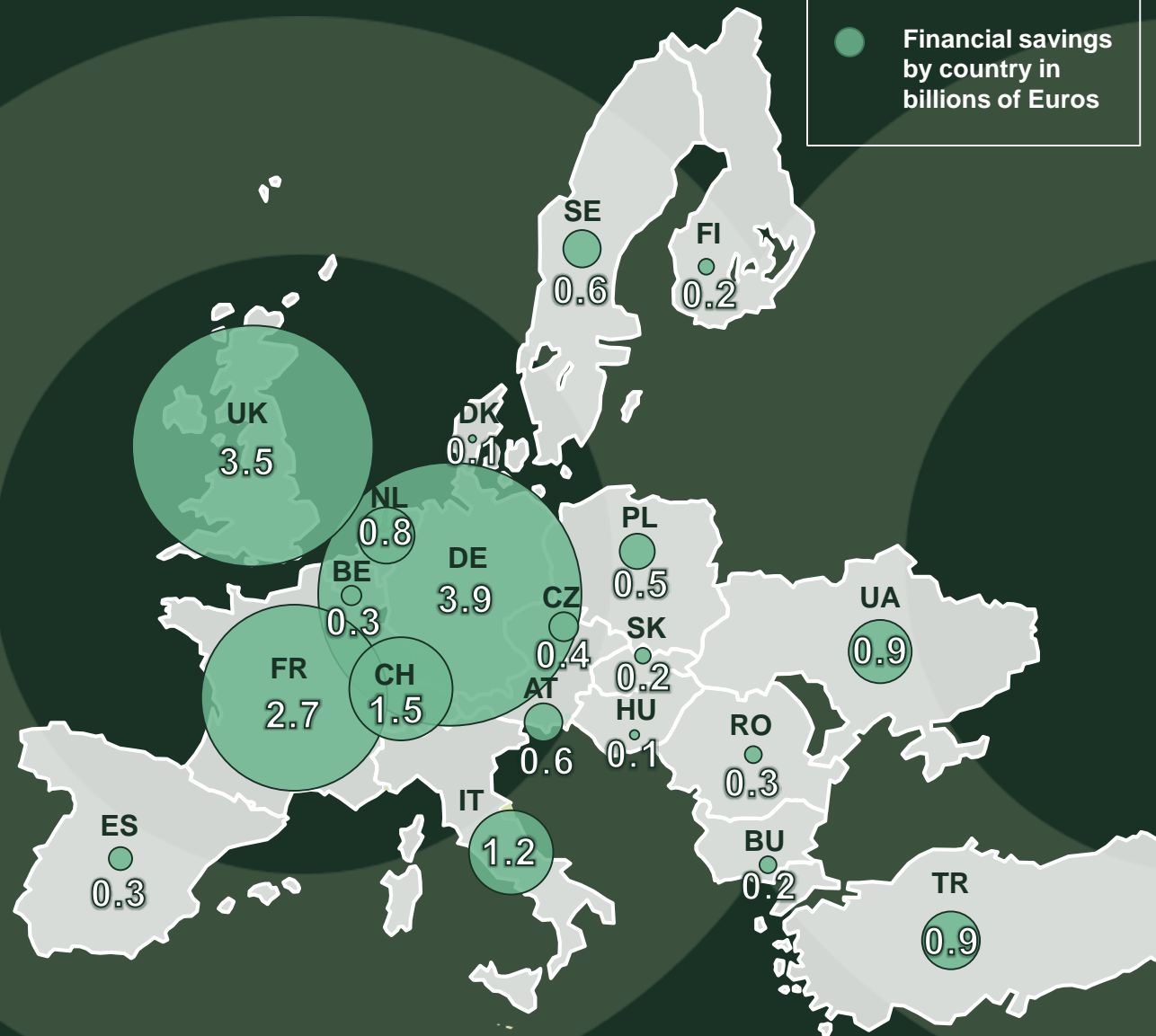
New deliveries
84%

Freight

12%



Passengers
88%





Country case studies 1/5

Present value of total savings

€3,546m
€54 per 



 Passengers	 Freight
Present value of total savings	
€3,501m	€45m

Present value of total savings

€336m
€7 per 



 Passengers	 Freight
Present value of total savings	
€313m	€22m

Present value of total savings

€2,738m
€41 per 



 Passengers	 Freight
Present value of total savings	
€2,526m	€213m

Present value of total savings

€1,243m
€21 per 



 Passengers	 Freight
Present value of total savings	
€1,191m	€52m

Country case studies 2/5

Present value of total savings

€289m

€25 per 



 Passengers	 Freight
Present value of total savings	
€283m	€6m

Present value of total savings

€3,866m

€47 per 



 Passengers	 Freight
Present value of total savings	
€3,272m	€595m

Present value of total savings

€833m

€49 per 



 Passengers	 Freight
Present value of total savings	
€812m	€21m

Present value of total savings

€1,518 m

€181 per 



 Passengers	 Freight
Present value of total savings	
€1,324m	€194m

Country case studies 3/5

Present value of total savings

€429m

€41 per 



 Passengers	 Freight
Present value of total savings	
€347m	€82m

Present value of total savings

€231 m

€43 per 



 Passengers	 Freight
Present value of total savings	
€207m	€24m

Present value of total savings

€561m

€64 per 



 Passengers	 Freight
Present value of total savings	
€463m	€98m

Present value of total savings

€135 m

€14 per 



 Passengers	 Freight
Present value of total savings	
€128m	€7m

Country case studies 4/5

Present value of total savings

€517m

€14 per 



 Passengers	 Freight
Present value of total savings	
€437m	€80m

Present value of total savings

€113m

€20 per 



 Passengers	 Freight
Present value of total savings	
€111m	€2m

Present value of total savings

€553m

€56 per 



 Passengers	 Freight
Present value of total savings	
€517m	€37m

Present value of total savings

€230m

€42 per 



 Passengers	 Freight
Present value of total savings	
€188m	€42m

Country case studies 5/5

Present value of total savings

€934m

€21 per 



 Passengers	 Freight
Present value of total savings	
€413m	€521m

Present value of total savings

€853m

€11 per 





 Passengers	 Freight
Present value of total savings	
€571m	€283m

Present value of total savings

€251m

€13 per 



 Passengers	 Freight
Present value of total savings	
€223m	€28m

Present value of total savings

€247m

€35 per 



 Passengers	 Freight
Present value of total savings	
€223m	€23m

Peter Hope, CFA
+44 (0) 20 7776 6621
peter.hope@oxera.com



Howard Rosen
+41 (0) 41 760 28 88
howard.rosen@railworkinggroup.org
www.railworkinggroup.org



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