

EUSERS SUMMER SCHOOL

Performance and Governance of Services of General Interest.

Critical perspectives on Energy, Telecommunications, Transport and Water Reforms in the EU

June, 27th – July 1st 2016

Transport Networks

**Dr Torben Holvad,
European Union Agency for Railways
Milan, 29 June 2016**



Co-funded by
the European Union



Structure of presentation

- Structural issues facing the transport sector (demand and supply aspects)
- Policy / regulatory issues at the EU and national level
- Role and performance of state-owned enterprises in the industry
- Focus on:
 - Passenger transportation
 - Particular attention to railways + aviation & interurban coach

Structural issues facing the transport sector (supply and demand)

Some general statistics on transportation in Europe

- Gross Value Added: **€ 562 billion** at basic prices for the transport and storage services sector (including postal and courier activities) - about **4.9%** of total GVA in the EU-28 in 2012
- Employment: **11 million persons** - some **5.1%** of the total workforce (2013 figures)
- Household expenditure: **€ 961 billion** or roughly **12.8%** of their total consumption on transport-related items (2013 figures)
- Passenger transport (motorised means of transport): **6 465 billion passenger kilometres** or on average around **12 700 km per person per year** (2013 figures)
- Good transport: **3 481 billion tonne kilometres**, this figure includes intra-EU air and sea transport but not transport activities between the EU and the rest of the World (2013 figures)

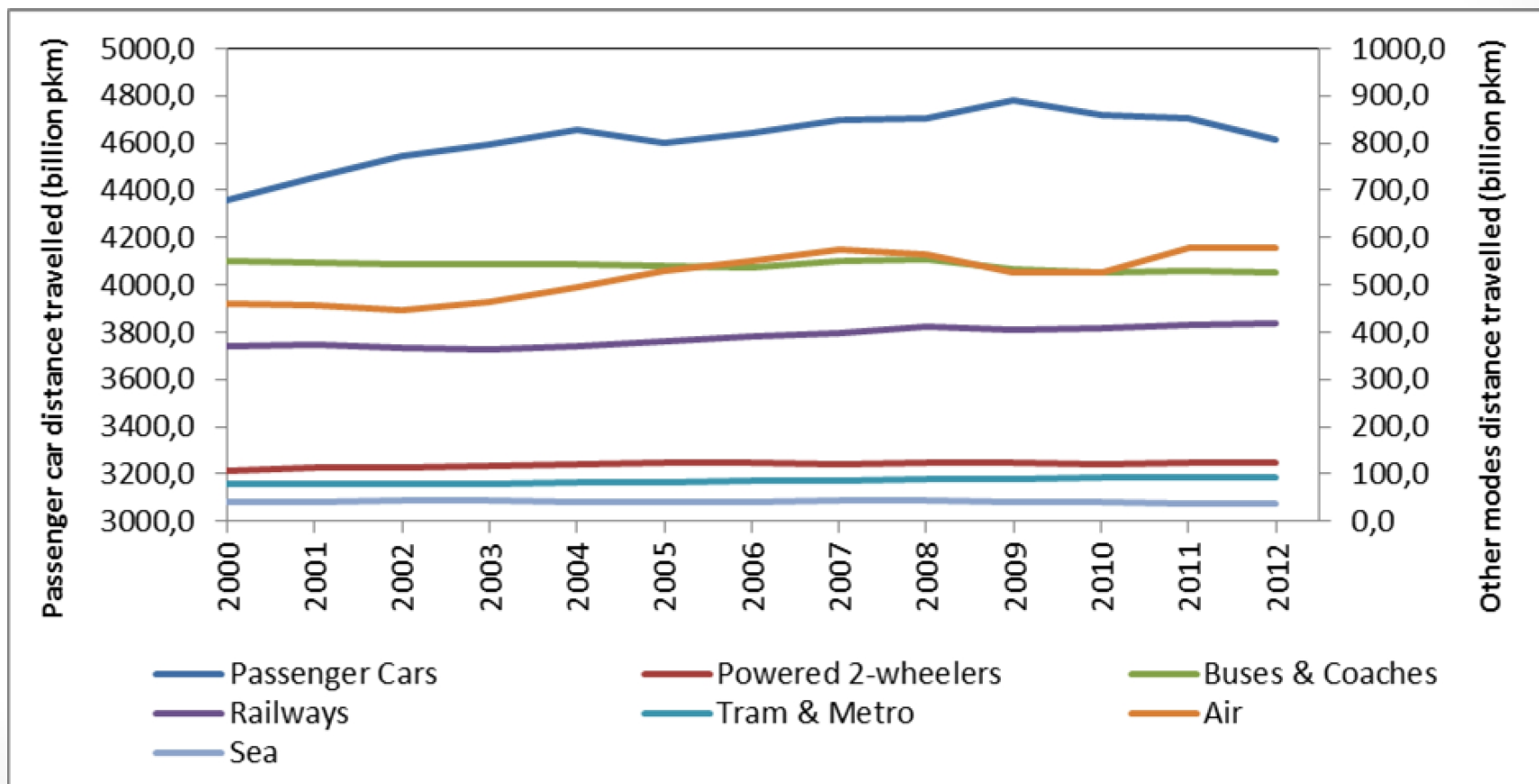
Source: EU Transport in figures, Statistical Pocketbook 2015

Passenger transport demand: mobility vs. accessibility

- Mobility: refers to the movement of people or goods. It assumes that “travel” means person- or ton-miles, “trip” means person- or freight-vehicle trip. It assumes that any increase in travel mileage or speed benefits society.
- Accessibility (or just access): refers to the ability to reach desired goods, services, activities and destinations (collectively called opportunities). Access is the ultimate goal of most transportation, except a small portion of travel in which movement is an end in itself.
- Source: VTPI (2011) Measuring Transportation: Traffic, Mobility and Accessibility, <http://www.vtpi.org/measure.pdf>

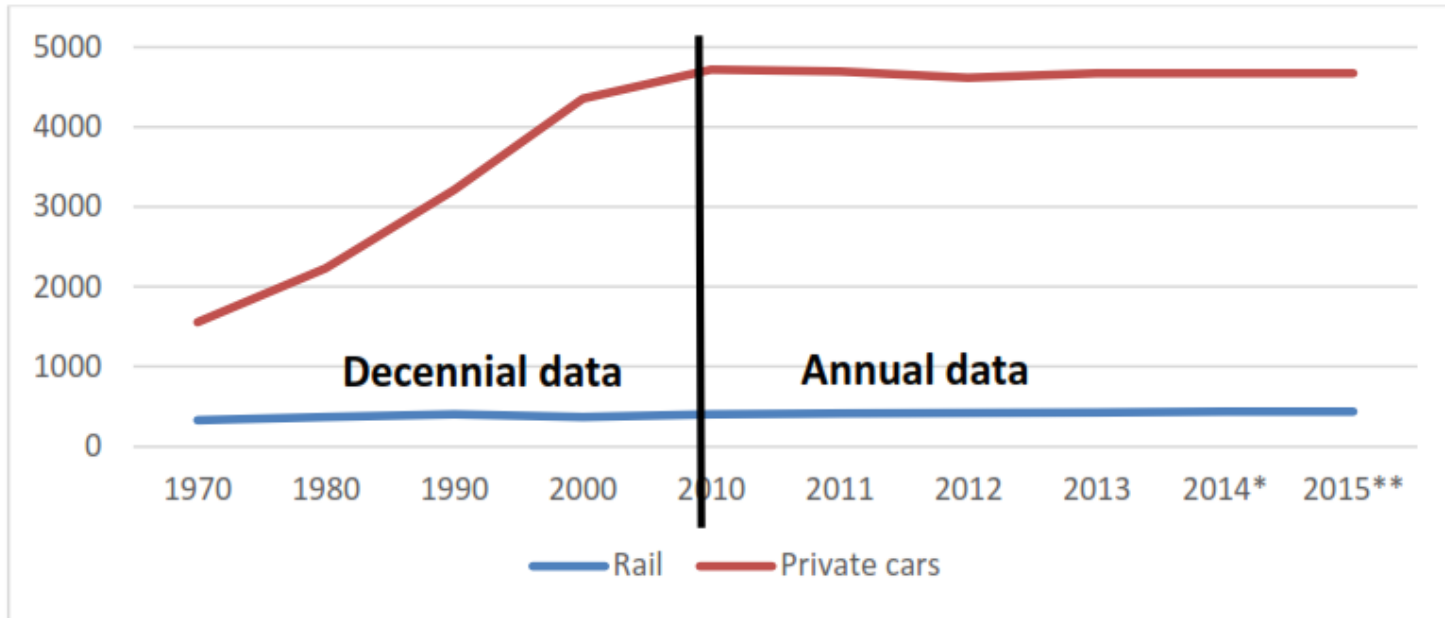
Modal split – passenger transportation (I)

- Passenger kilometres for all modes of transport in the EU-28, 2000-2012



Modal split – passenger transportation (II)

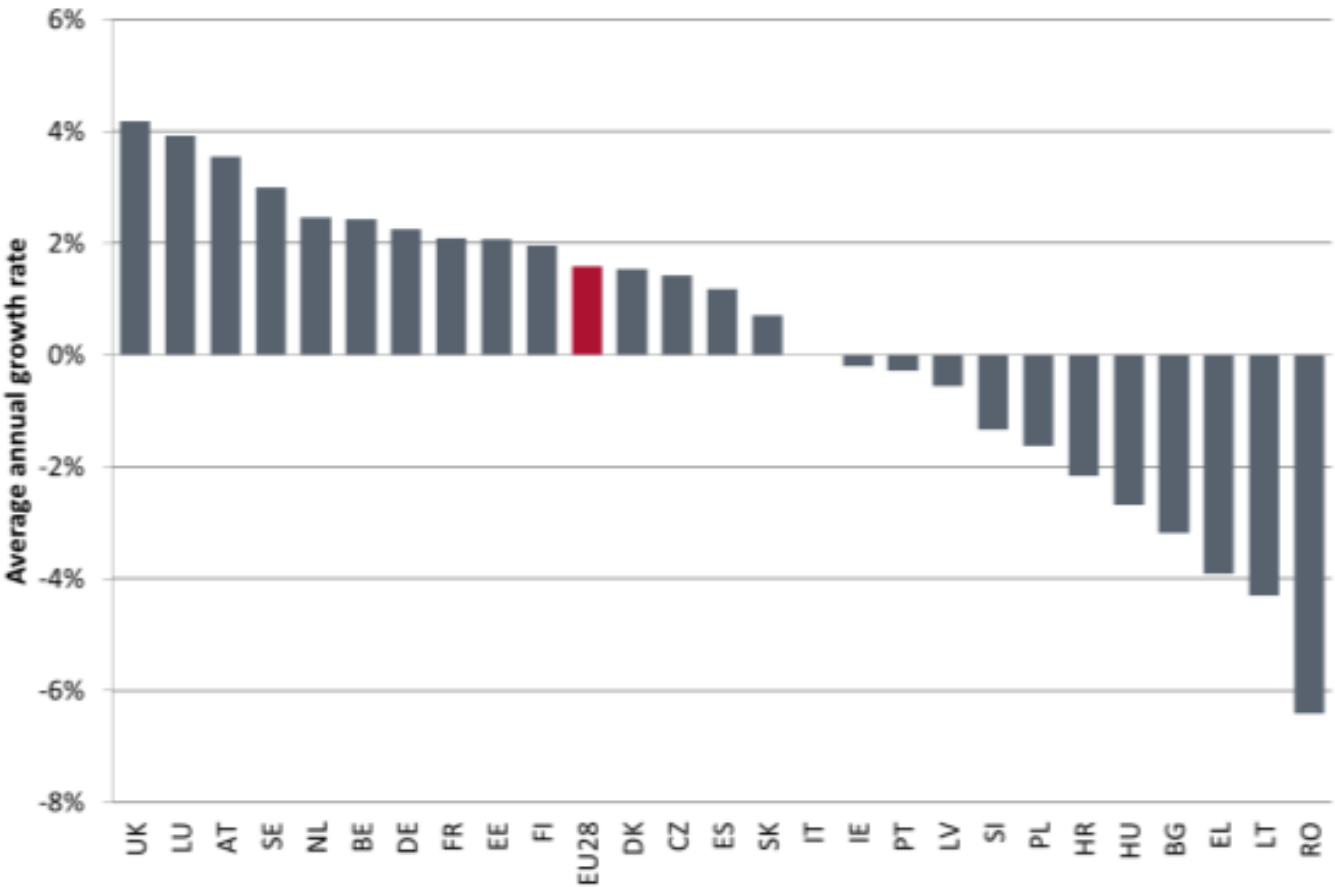
Diagram 2. Passenger kilometres 1970 - 2015 EU28 (bln passenger kilometres)



Note: Years noted * indicate estimated value for road and years noted ** indicate estimated values for both road and rail transport.

Modal split trends— passenger transportation (III)

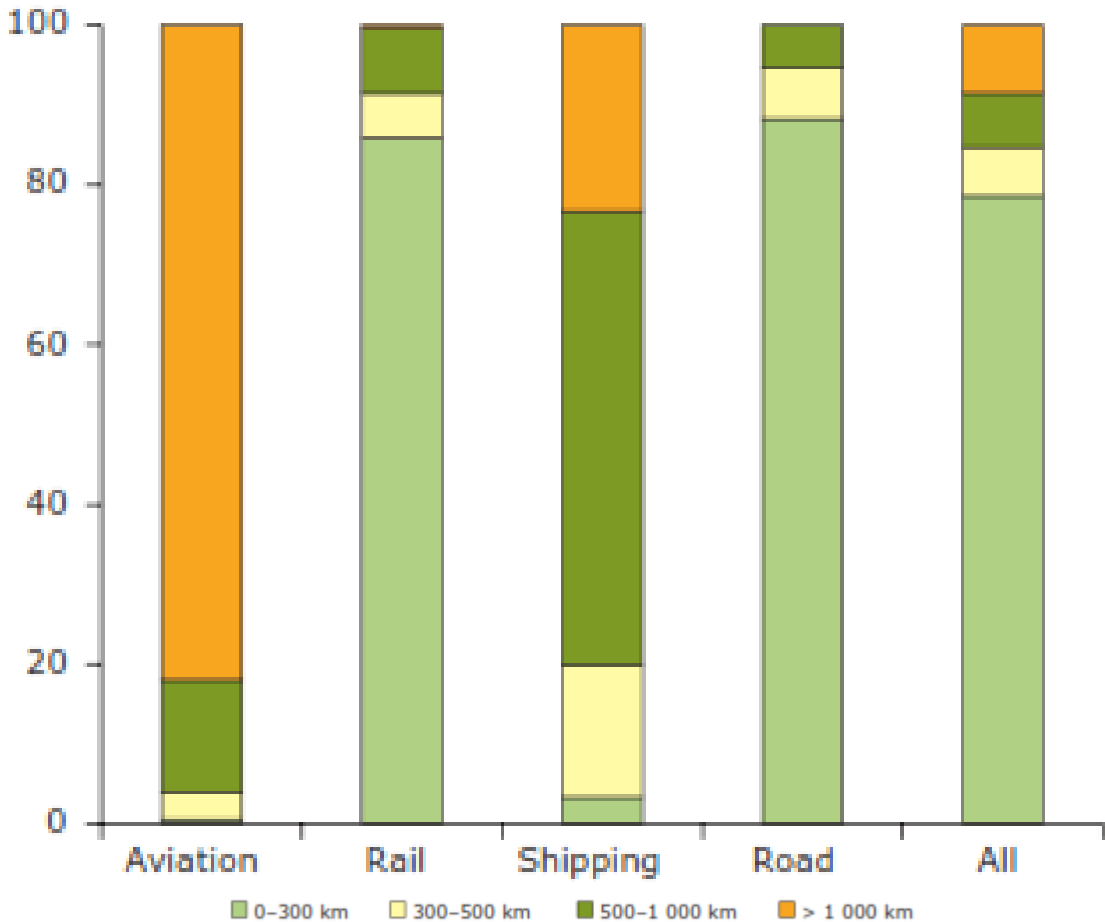
- Data on annual growth rate in rail transportation per country (2003-13)
- Source: SDG (2016) Study on the prices and quality of rail passenger



Passenger transport shares in distance bands in EU28, 2010

- Source: EEA (2014) TERM 2014: transport indicators tracking progress towards environmental targets in Europe

Passenger-kilometres (pkm) share (%)



Trip length - duration of trip length per person on a national average (%) for selected countries

- Source: JRC (2013) Analysis of National Travel Statistics, OPTIMISM WP2 Report: Harmonisation of national travel statistics in Europe.

Country	Below 1km	1 <5 km	5<10 km	10<25 km	25<50 km	50<100 km	100+ km	Average trip length (km)
Cyprus								10.4
Germany (MiD)	26.2	35.3	15.1	14.5	5.5	2	1.4	11.5
Italy (ISFORT)		42.8	21.2	24.7	7.6	2.5	1.2	12.2
Latvia	4.7	51.5	26	11.4	5.5	50km+ 1.3		8.7
Sweden	14.6	36	15.2	17.1	8.6	3.7	2.6	15.8
Switzerland	39.6	32.9	11.6	9.9	3.5	1.9	0.7	7.2

Factors influencing passenger transport demand

Demographics	Commercial Activity	Transport Options	Land Use	Demand Management	Prices
Number of people (residents, employees and visitors).	Number of jobs	Walking	Density	Road use prioritization	Fuel prices and taxes
Employment rate	Business activity	Cycling	Mix	Pricing reforms	Vehicle taxes & fees
Wealth/incomes	Freight transport	Public transit	Walkability	Parking management	Road tolls
Age/lifecycle	Tourist activity	Ridesharing	Connectivity	User information	Parking fees
Lifestyles		Automobile	Transit service proximity	Promotion campaigns	Vehicle insurance
Preferences		Taxi services	Roadway design		Public transport fares
		Telework			
		Delivery services			

- Source: VTPI (2013) Understanding Transport Demands and Elasticities How Prices and Other Factors Affect Travel Behavior

Examples of elasticities for passenger transport demand

- Fares and income elasticities are displayed
- Also possible to examine demand implications of time related aspects (e.g. journey time, frequency, comfort, interchanges etc.)
- Other factors more difficult to examine

Travel mode	Peak price	Off-peak price	Income
Vehicle travel (essential trips)	-0.16	-0.43	0.70
Vehicle travel (optional trips)	-0.43	-0.36	1.53
Bus, tram and metro travel (passenger-kilometres)	-0.19	-0.29	0.59
Rail (passenger-kilometres)	-0.37	-0.43	0.84

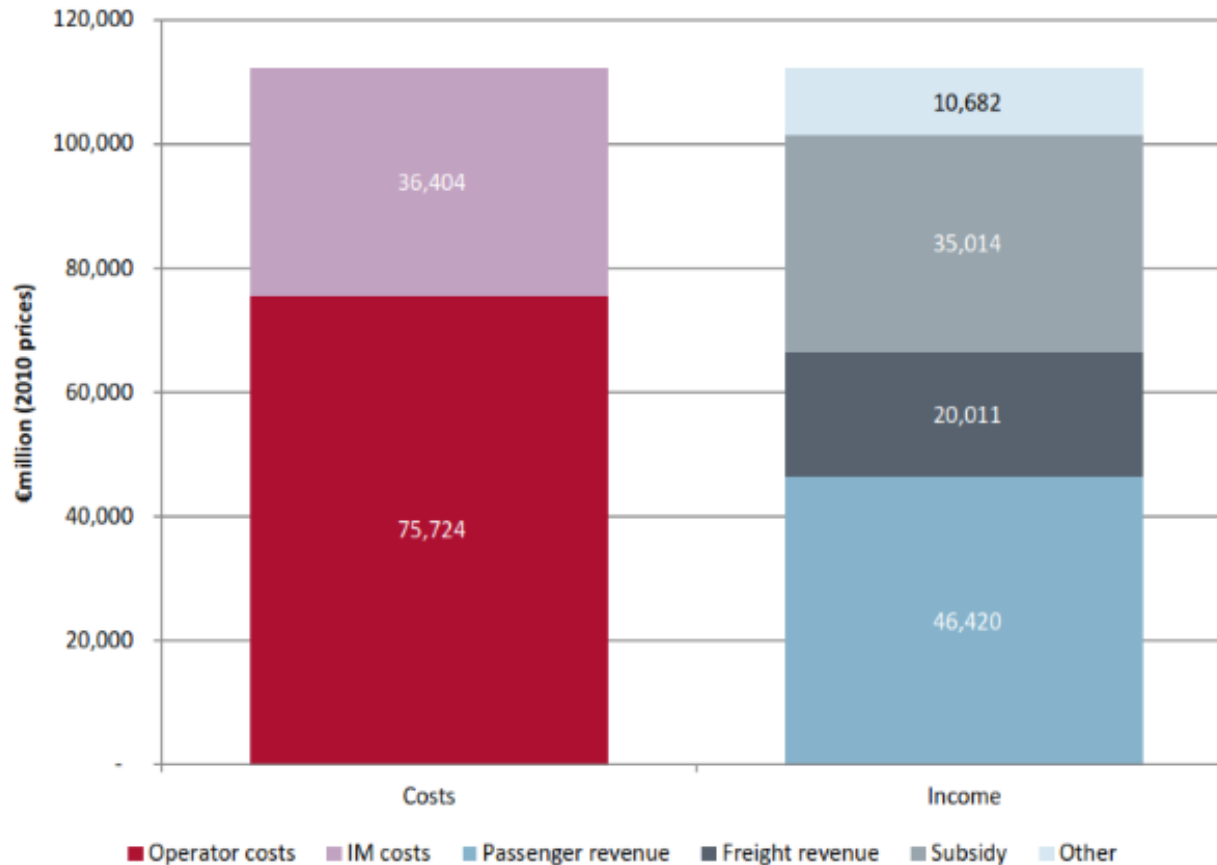
- Source: SDG (2016) Study on the prices and quality of rail passenger services

Supply of passenger transport – three levels

- Infrastructure level (e.g. railways, roads, airports),
- Service level (e.g. coach services, rail passenger services, flights etc.) and,
- Infostructure level concerning information technology (IT) and information systems (e.g. urban traffic management, air traffic control, signaling systems for rail).

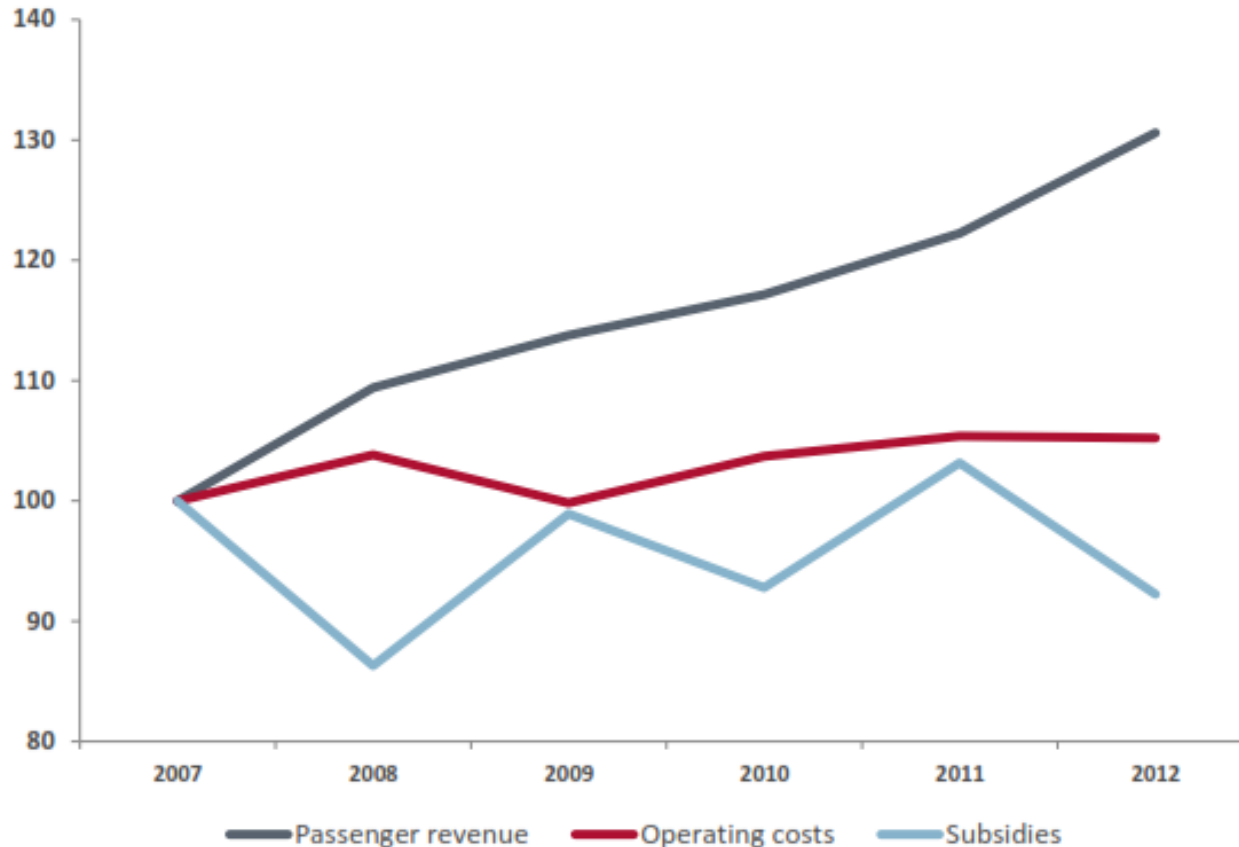
Cost structure - railways

Diagram 3. Cost and contribution of the EU rail sector (2012)



- Source: SDG (2015) Study on the cost and contribution of the railway sector

Trends for costs, revenue and subsidies – railways



- Source: SDG (2015) Study on the cost and contribution of the railway sector

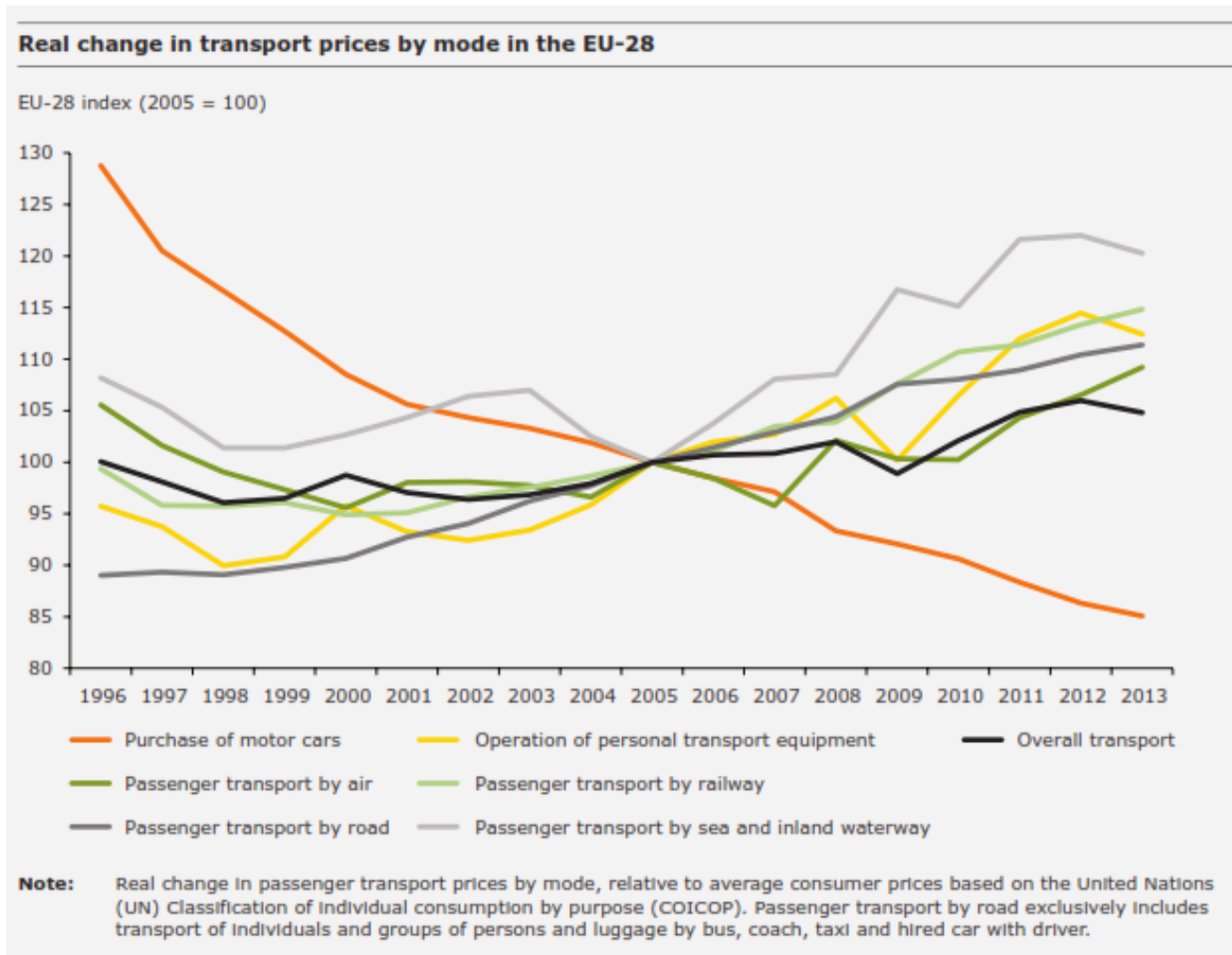
European airline sector financial performance

Table 16: European Airlines Performance

	2013	2014E	2015F
Net post-tax profit, \$billion	1.0	3.3	5.8
Per passenger, \$	1.21	3.82	6.30
% revenue	0.5%	1.6%	2.8%
RPK growth, %	3.9%	5.8%	6.8%
ASK growth, %	2.7%	5.2%	6.5%
Load factor, % ATK	66.7%	66.7%	66.6%
Breakeven load factor, % ATK	65.4%	64.7%	63.3%

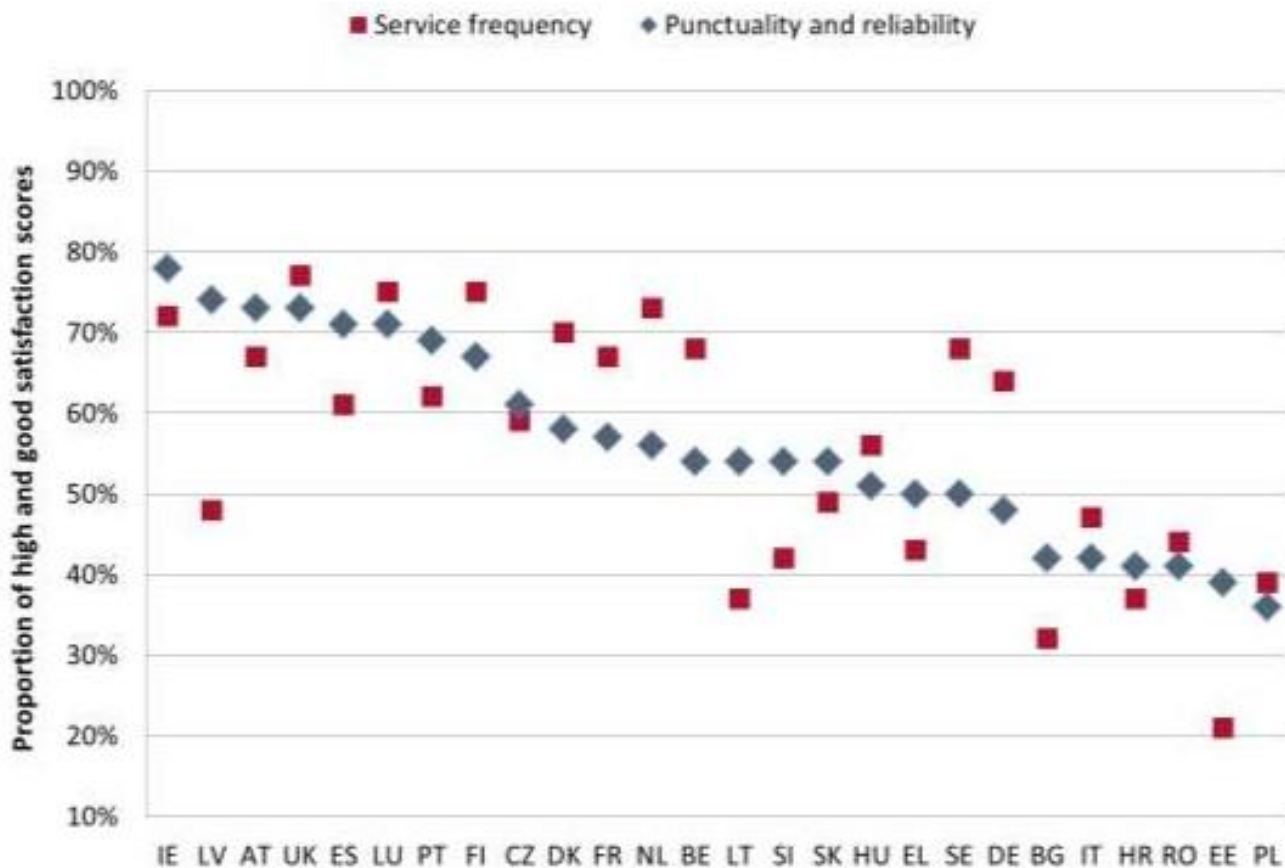
- Source: European Commission (2016) Annual Analyses of the EU Air Transport Market 2015

Passenger transport prices - trends



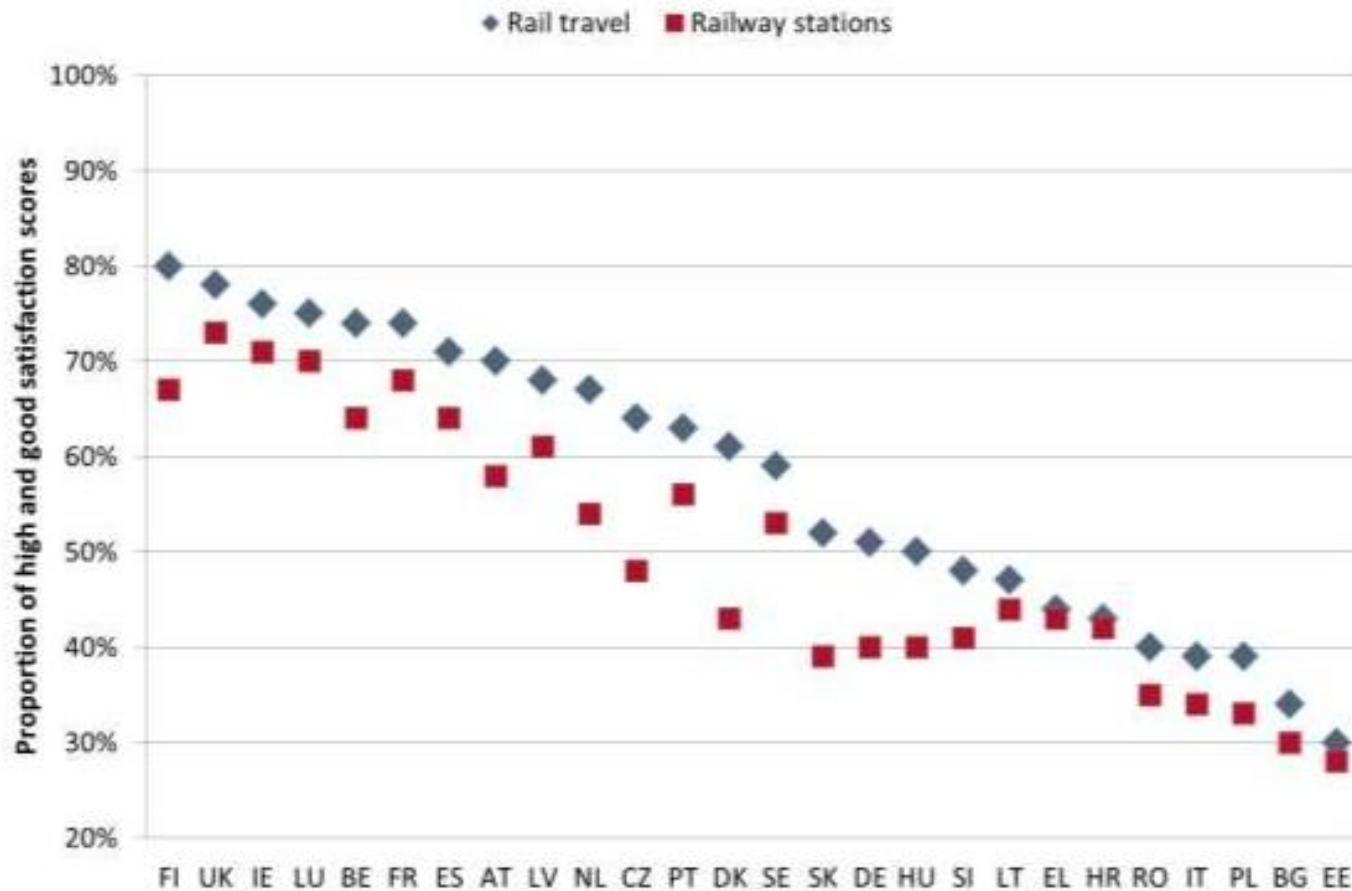
- Source: EEA (2014) TERM 2014: transport indicators tracking progress towards environmental targets in Europe

Satisfaction with service frequency, punctuality and reliability – railways



- Source: SDG (2016) Study on the prices and quality of rail passenger services

Overall satisfaction - railways

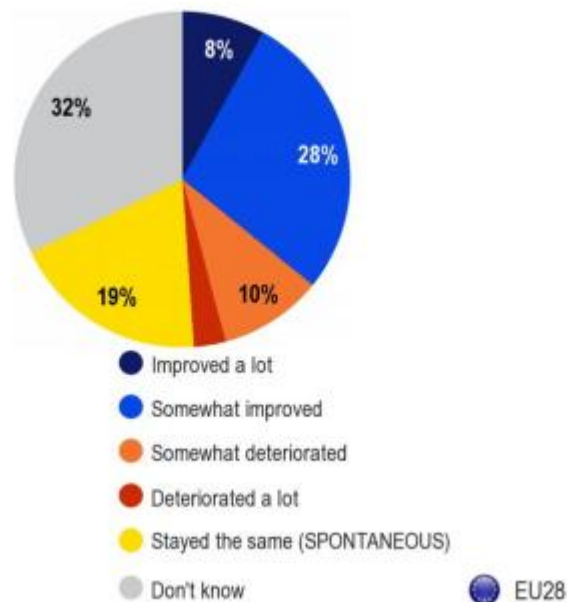


- Source: SDG (2016) Study on the prices and quality of rail passenger services

Quality changes – Air and rail compared

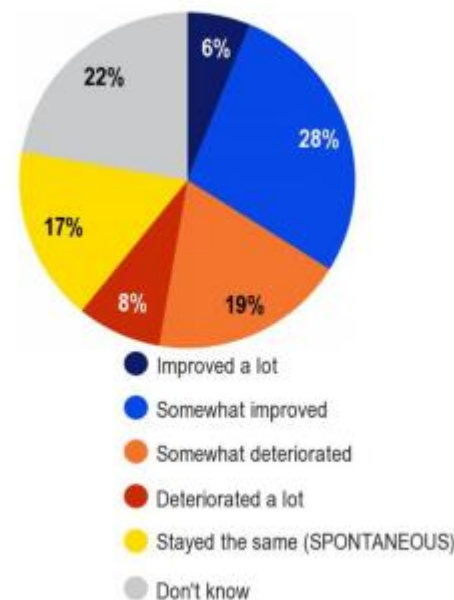
QA8.1. In your opinion, has the quality of the following means of transport (services, connections, infrastructures, etc.) improved or deteriorated in (OUR COUNTRY) in the last 5 years?

Air transport



QA8.2. In your opinion, has the quality of the following means of transport (services, connections, infrastructures, etc.) improved or deteriorated in (OUR COUNTRY) in the last 5 years?

Rail transport



Base: all respondents except MT and CY (N=26,865)

- Source: European Commission (2014) Special Eurobarometer 422a – Quality of Transport

Policy / regulatory issues at the EU and national level

Background to EU regulatory reforms

- Until the early 80s limited progress to develop European transport policy (Common Transport Policy, CTP)
- Two key starting points from 1985:
 - Court of Justice ruling in case 13/83 re. lack of action by the Council
 - European Commission's White Paper on the completion of the internal market (contained guidelines on the CTP)
- First Commission White Paper on transport from 1992:
 - Transport undertakings should be able to take full advantage of the internal market
 - CTP to address transport efficiency, social cohesion, environmental considerations
 - Main emphasis was placed on the opening of transport markets

EU transport policy objectives

- Transport White Papers:
 - 1992: On the future development of the common transport policy
 - (1996: A strategy for revitalising the Community's railways)
 - (1998: Fair payment for infrastructure use: a phased approach to a common transport infrastructure charging framework in the EU)
 - 2001: European Transport Policy for 2010: Time to decide'
 - 2011: Roadmap to a Single European Transport Area —Towards a competitive and resource efficient transport system
- Objectives:
 - Creation of a common transport market
 - Harmonisation of national legal and administrative regulations
 - Sustainable mobility
 - Integrated approach
 - Promote competitiveness of environmental friendly modes
 - Creation of integrated transport networks used by two or more modes of transport (combined transport and intermodality)
 - Creation of fair conditions of competition between modes of transport

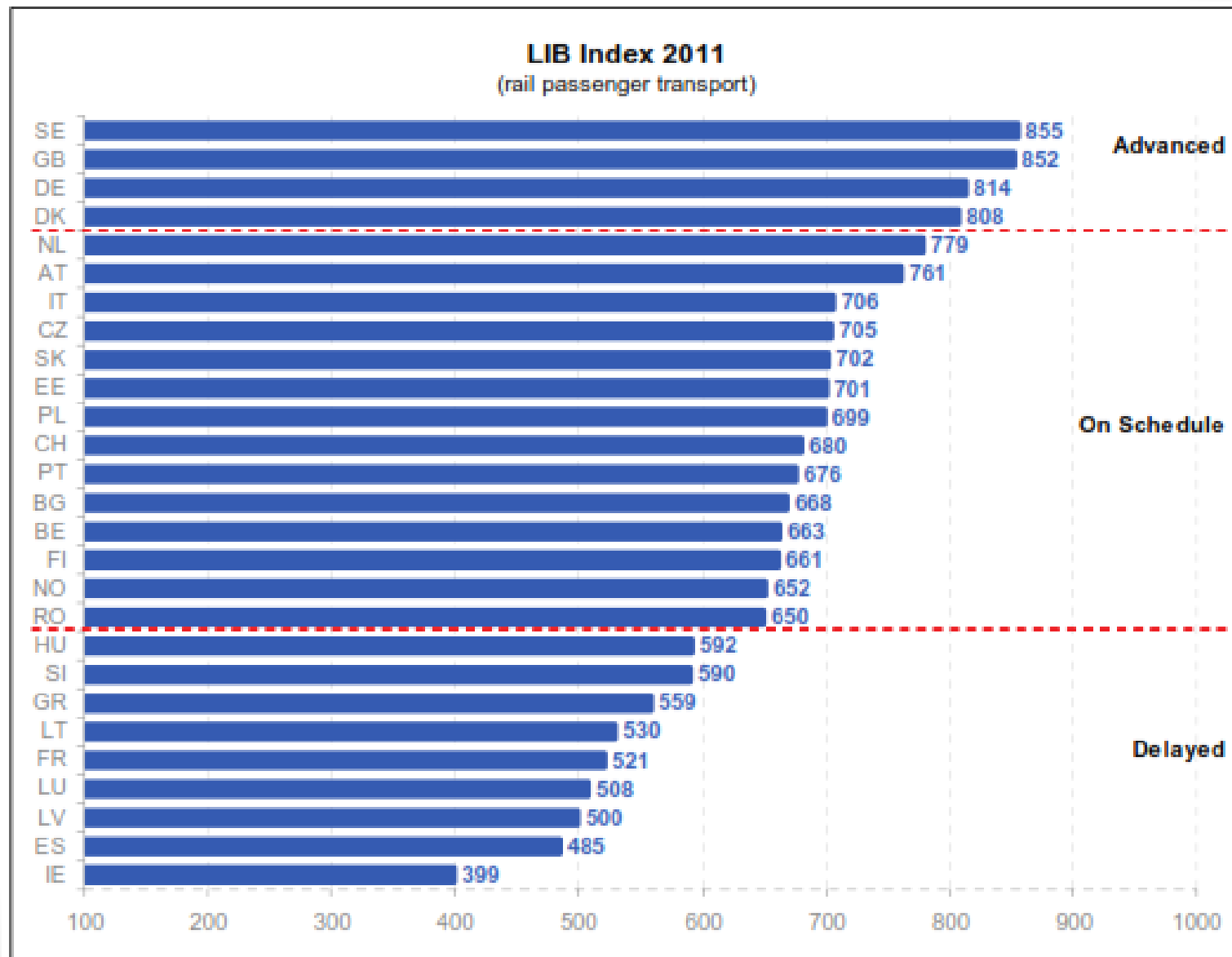
Overview of regulatory reform elements

- Liberalisation
- Ownership transformation
- Unbundling
- Independent regulation
- From unimodal to multimodal consideration
- Transport governance: from national-oriented contexts to a European dimension

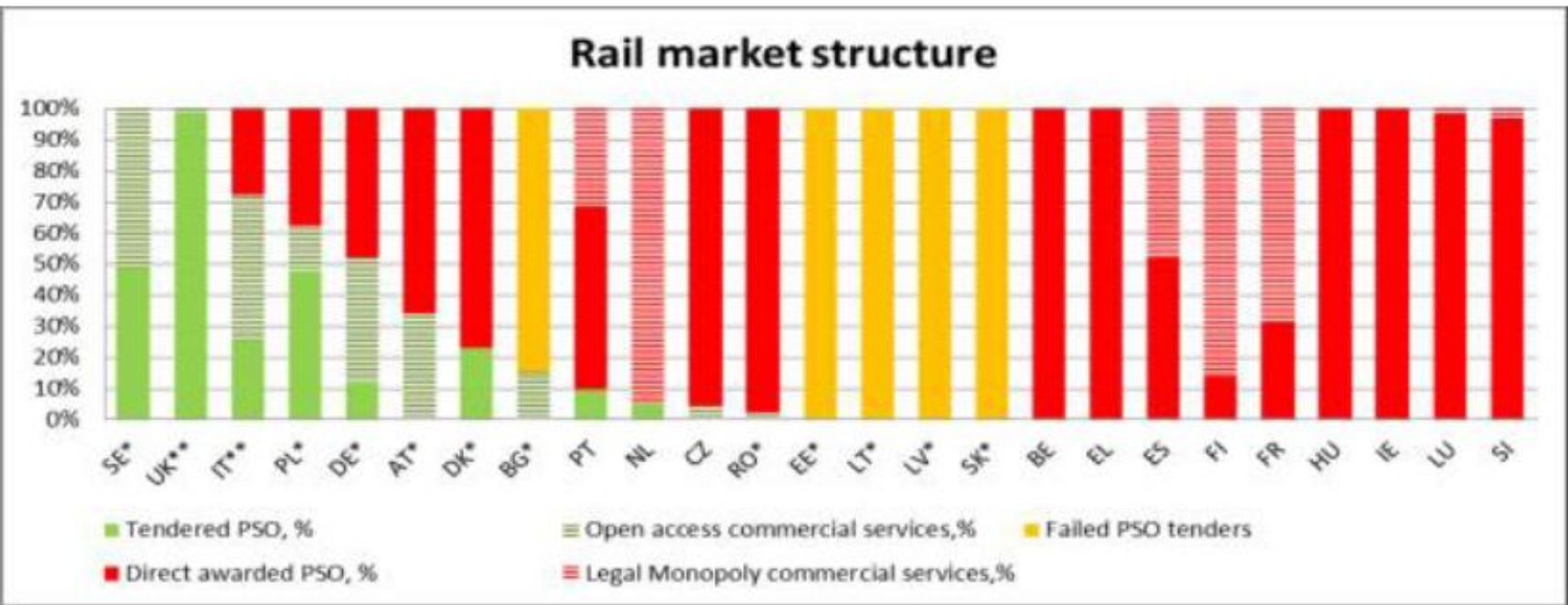
Rail: overview of reforms

- Over the past 25 years substantial legislative initiatives at European level (starting in 1991):
- Series of EU directives, regulations: 91/440, 1st, 2nd, 3rd, 4th Railway Packages
 - Commercialization of railway companies
 - Unbundling (notably provisions for some separation between railway operations and infrastructure)
 - Market opening (with regulation) with particular focus on freight though limited focus so far on passenger transport
 - Technical harmonisation
- Some EU Member States have already gone further in terms of market opening for passenger rail transport (e.g. Sweden, United Kingdom, Germany, Italy)

Rail reforms: implementation status - I



Rail reforms: implementation status - II



- Source: RMMS (2014): Fourth Report to the Council and the European Parliament on monitoring development of the rail market COM(2014)0353

Aviation: overview of reforms

- Main EU reforms period occurred over the period from 1987 to 1997
- Introduction and implementation of the three Deregulation Packages (1987, 1990 and 1992)
- The basic elements of a single market had by 1997 been established:
 - Any technically qualified EU airline could operate in any region of the European union I
 - Including services on wholly domestic routes
 - In principle, no restraints on fares and capacity
- Concerns:
 - Member States' implementation of the EU Directives
 - PSO routes
 - Airport access

Interurban road passenger transport: reform overview

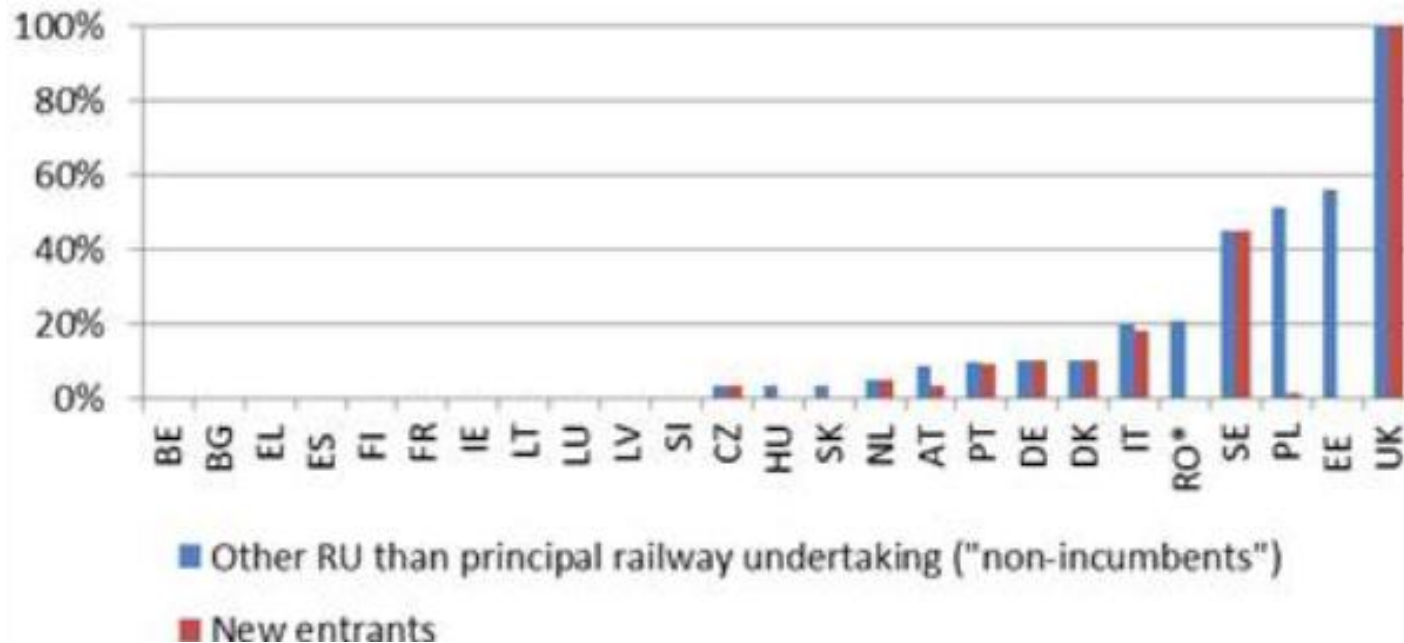
- Sector has experienced major changes over the past 2-3 decades
- Mainly driven by national initiatives rather than EU legislation
- European legislation has however enabled the liberalisation of the international coach market including the possibility for operators to undertake cabotage (albeit with restrictions)
- Substantial variation in regulatory environment between EU countries:
 - Full liberalisation in some cases for a long period (e.g. UK and Sweden)
 - Other countries are using concession tendering model (e.g Spain)
 - A number of countries have recently introduced liberalisation on long distance routes (e.g. France and Germany)

Role and performance of state-owned enterprises in the industry

Overview

- Rail:
 - SoE's still have a significant role in the rail passenger market; EU average for market share is still around 80%.
 - New entry has occurred in recent years, incl. through open access and competitive tendering
 - For competitive tendering there is evidence pointing towards cost savings (though not uniformly)
 - For open access there is limited recent evidence so far on lower fares and additional services being provided (uncertainty concerning impact on profitability for railway undertakings)
 - Some evidence on positive performance implications on SoEs from new entry or threat of entry (contestable market theory)
- Aviation:
 - Full-service carriers experience more competition on the route level and the share and number of 'monopolized' airport-pairs is decreasing
 - Evidence on positive impacts on productivity, costs and prices
 - Financial results of the EU 'flag' carriers have been weak or negative
 - Consolidation through mergers, alliances, bankruptcies
 - Probably still too many carriers in Europe compared to elsewhere

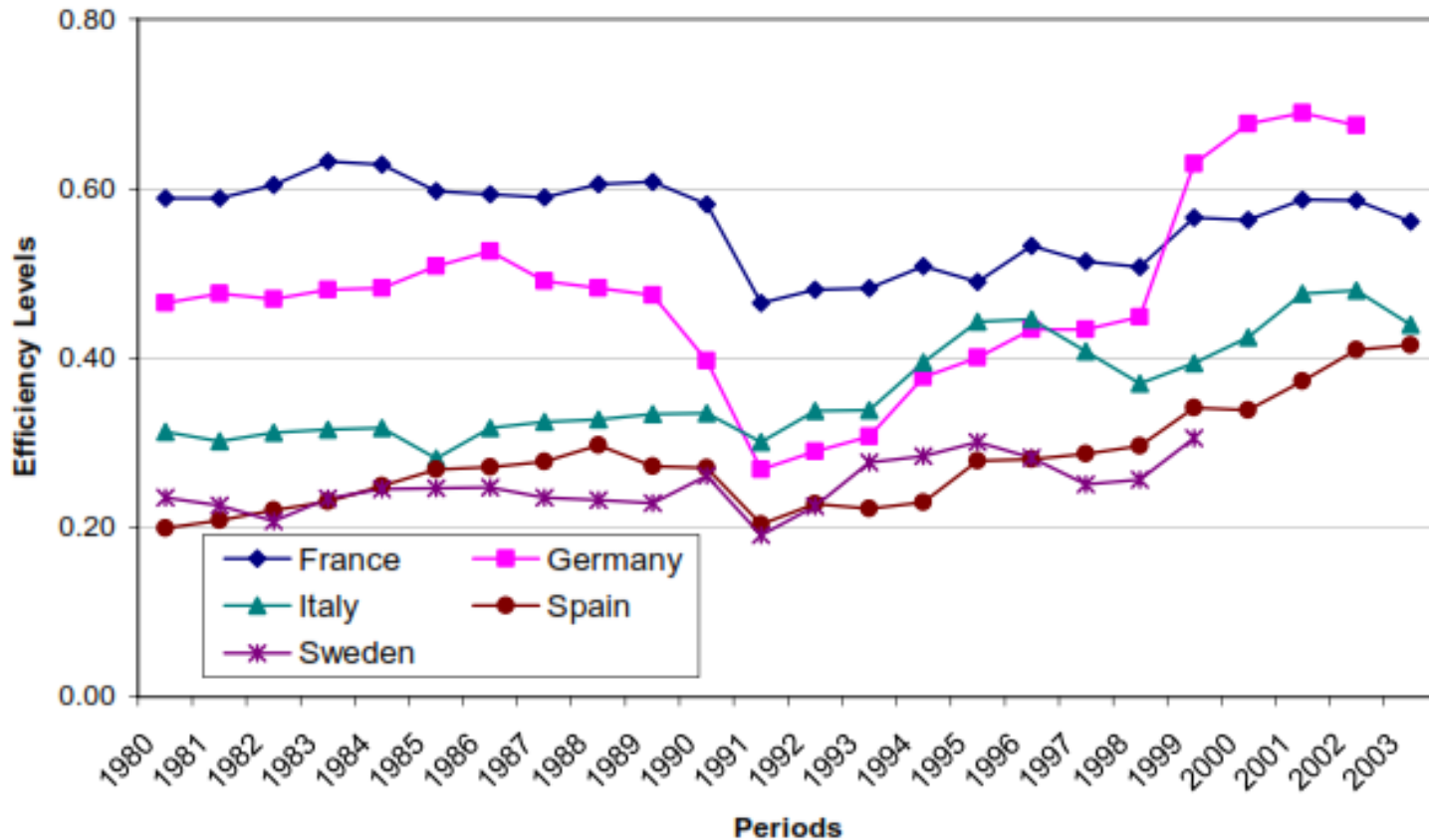
Rail: market share for non-incumbent railway undertakings



- Source: RMMS (2014): Fourth Report to the Council and the European Parliament on monitoring development of the rail market COM(2014)0353

Rail passenger transport efficiency trends

Larger Countries

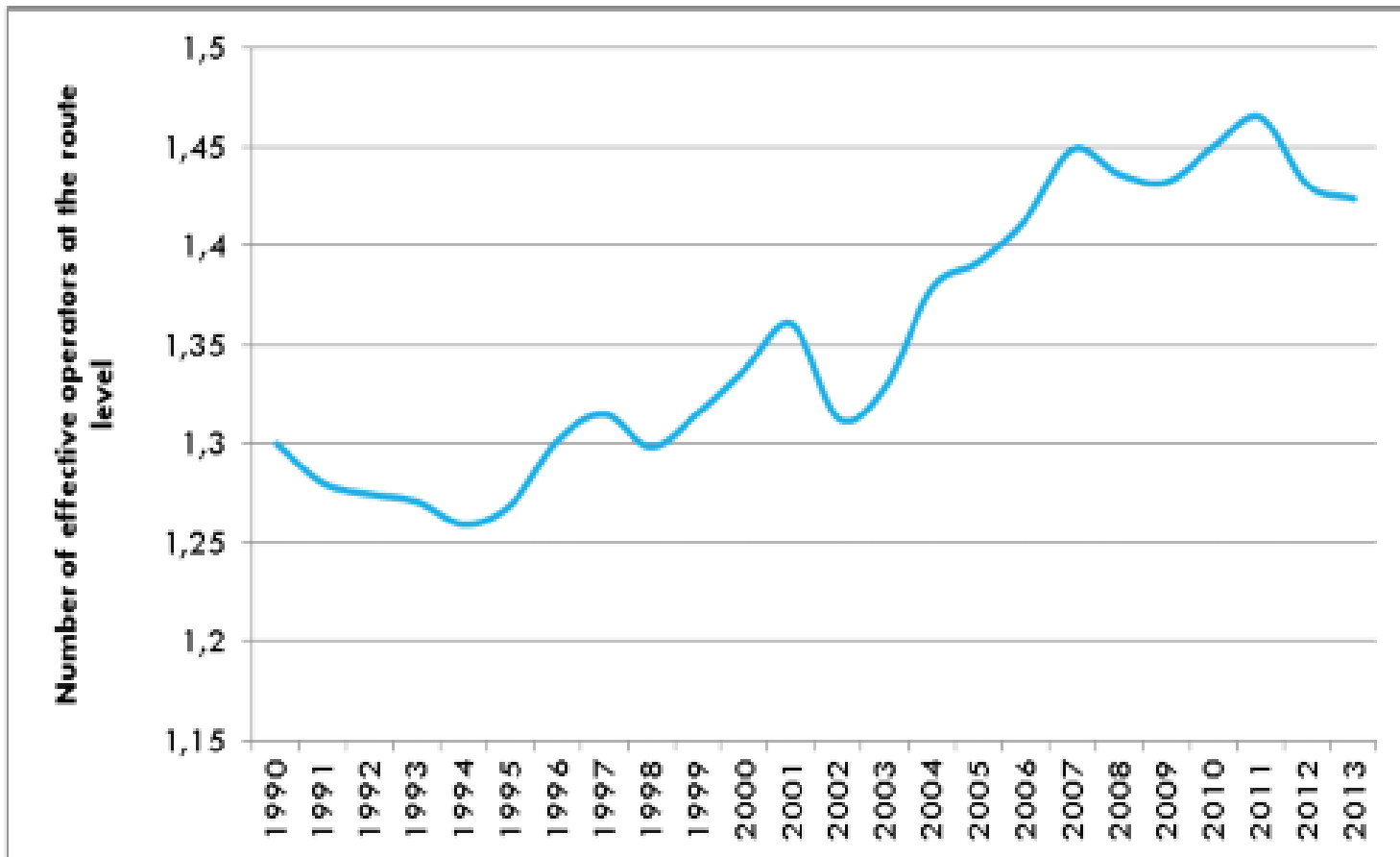


- Source: Freibel et al. (2005) Railway (de)regulation: A European efficiency comparison

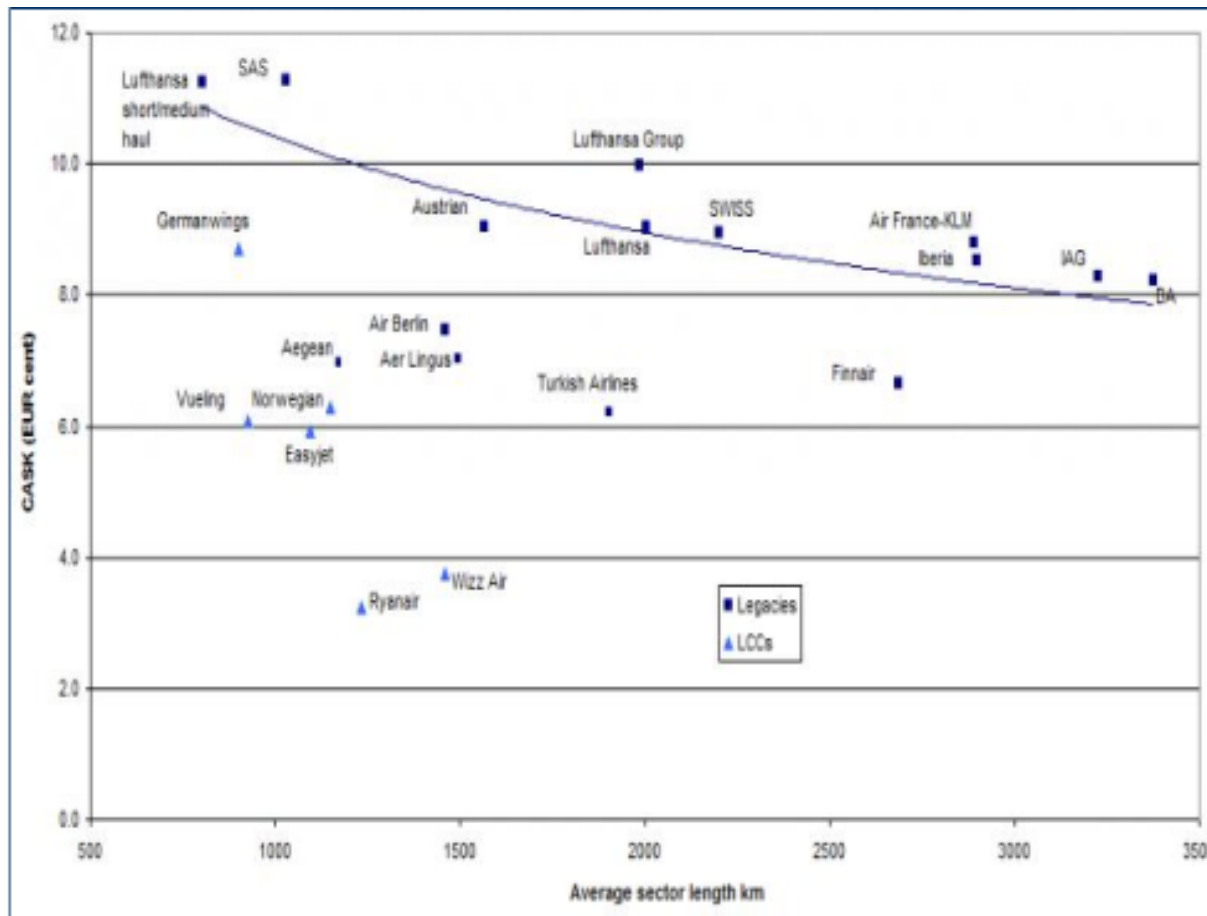
Rail efficiency – key drivers of progress

- Freibel et al. 2005
 - Reforms appeared to have positive impact on efficiency
 - Sequencing of reforms enhance efficiency (in contrast to packaging of measures)
- Asmild et al. (2009): Railway Reforms: Do They Influence Operating Efficiency?
 - Accounting separation (whereas complete separation had no additional significant contribution)
 - Independent management
 - Competitive tendering for passenger services
 - Market opening freight transport

Weighted number of effective carriers at the route level for intra-EU15+2 flights



Unit cost differentials LCC & FSC, 2012



*Financial year ends as follows: Germanwings Dec-11, Aegean Airlines, Air Berlin, Turkish Airlines, Lufthansa, Aer Lingus, IAG, Iberia, BA, Air France-KLM, Finnair, Norwegian, Vueling Dec-2012; SAS Oct-2012; easyJet Sep-2012; Wizz Air, Ryanair Mar-2012.

Source: CAPA analysis of company accounts and traffic data

- Burghouwt et al (2015) EU Air Transport Liberalisation. International Transport Forum Discussion Paper No. 2015-04.

Selected readings

Concluding remarks

- Substantial regulatory reforms of transport as a whole over the past 2-3 decades
- Significant changes in the transport sectors (reorganisation, new industry and authority stakeholders, new entrants and growing market shares for non-incumbent companies)
- On the other hand progress in terms of significantly improved performance for SoEs (especially for railways) remain a concern
- Future challenges
 - Investment
 - Infrastructure systems' coherence
 - Public services and public service obligations
 - Responsiveness of infrastructure operators to public policy objectives