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Part 1

COMMISSION STAFF WORKING DOCUMENT

IMPACT ASSESSMENT

Accompanying the documents

Proposal for a Regulation of the European Parliament and of the Council amending Regulation (EC) No 1370/2007 concerning the opening of the market for domestic passenger transport services by rail

Proposal for a Directive of the European Parliament and of the Council amending Directive 2012/34/EU of the European Parliament and of the Council of 21 November 2012 establishing a single European railway area, as regards the opening of the market for domestic passenger transport services by rail and the governance of the railway infrastructure

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Disclaimer: This impact assessment commits only the Commission's services involved in its preparation and does not prejudge the final form of any decision to be taken by the Commission

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Glossary

List of abbreviations

Annexes:

Annex 1 – The 4th Package – The 'Big' Picture

Annex 2 – Consultation analysis

Annex 3 – Problem definition – facts and figures

Annex 4 – Analysis of the national rail markets, statistics and methodology

Annex 5 – Option analysis (screening of options)

Annex 6 – Literature review

Annex 7 – Analysis of social impacts

Annex 8 – Analysis of the scope of PSC thresholds volume and transitory periods

Annex 9 – Methodological annex

Annex 10 – Summary document of the conference "The Last Mile towards the 4th Railway Package"

1. INTRODUCTION

In its White Paper on transport policy adopted on 28 March 2011 (hereinafter the 2011 White Paper), the Commission announced its vision to establish a Single European Railway Area and clarified that this objective implies creating an internal railway market where European railway undertakings can provide services without unnecessary technical and administrative barriers. [1]

Additionally, the European Council conclusions of January 2012 highlighted the importance of unleashing the growth-creating potential of a fully integrated Single Market, including measures with regard to network industries.[2] Furthermore, the Commission Communication on Action for Stability, Growth and Jobs adopted on 30 May 2012 stresses the importance of further reducing the regulatory burden and barriers to entry in the rail sector, making country-specific recommendations to that aim.[3] In the same manner, on 6th June 2012 the Commission adopted the Communication on strengthening the governance of the Single Market, which also stressed the importance of the transport sector.[4] Finally, the Single Market Act II adopted by the Commission on 3 October 2012 called for the development of fully integrated networks in the Single Market and indicated in this context the importance of the opening of domestic rail passenger services to operators from another Member State.

The EU railway market has seen important regulatory changes in the recent decade. They were gradually introduced by three legislative "railway packages" (with some accompanying acts) intended to open up national markets and make railways more competitive and interoperable at the EU level, while maintaining a high level of safety. The most recent development is the adoption of the Directive 2012/34 ("recast of the 1st Railway Package"[5]), which, in addition to legislative simplification and consolidation, reinforces existing provisions on competition issues, regulatory oversight and financial architecture of the railway sector[6].

Despite the considerable development of the 'EU acquis' establishing an internal market for rail transport services, the modal share of rail in intra-EU transport has remained modest. Therefore the Commission proposes a 4th Railway Package (cf. Annex I for further details) in order to realise the Single European railway Area by removing the remaining obstacles of technical, regulatory and economic nature and fostering thereby the performance and competitiveness of the railway sector. As announced by the 2011 White Paper, these issues will be addressed by different initiatives:

– **Removing remaining administrative and technical barriers**, in particular by establishing a common approach to safety and interoperability rules to increase economies of scale for railway undertakings active across the EU, decreasing administrative costs and accelerating administrative procedures, as well as to avoiding disguised discrimination;

– **Opening the domestic rail passenger market**, granting open access rights where appropriate while also addressing the public service contracts (PSCs)[7] award process, in order to complete the process of rail passenger market opening; accompanying measures

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1 White Paper Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system (COM/2011/0144 final)

2 http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/127599.pdf

3 COM (2012) 299 final

4 COM(2012) 259 final

5 OJ L 2012 343 pp.32-77;

6 Available at: http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/12/520&format=HTML&aged=0&language=EN&guiLanguage=en

7 List of acronymes with explanations is provided at the end of the main report.

will facilitate Member States' retaining integrated timetabling and ticketing systems where this benefits the passenger;

– **Optimising the governance of infrastructure management**, in particular by ensuring that the infrastructure manager performs a consistent set of functions that optimises the use of infrastructure**.**

This impact assessment focuses on the second point.

2. PROCEDURAL ISSUES AND CONSULTATION OF INTERESTED PARTIES

2.1. Organisation and Planning

This IA is prepared by DG MOVE to support the initiative on the domestic rail passenger market opening and further contribute to the completion of the Single European Railway Area (Agenda Planning 2012/MOVE/017 and 2012/MOVE/032). The Commission proposal in this regard will include amendments to the following legislative acts:

– Directive of the European Parliament and of the Council establishing a Single European railway area (the recast of the 1st Railway Package);

– Regulation 1370/2007/EC (Public Service Obligations)[8];

An Impact Assessment Steering Group was created in December 2011 and has been actively consulted during preparation of the Impact Assessment. This Steering Group has counted on the membership of DG CLIMA, COMP, ECFIN, EMPL, ENER, ENV, ENTR, LS, MARKT, REGIO, SANCO and SG. In May 2012, it was further broadened to include EEAS, TRADE and ELARG. The group met on 12 October (2011), 19 December (2011), 20 April, 10 May, 8 June, 29 June, 14 September and 4 October.

2.2. Consultation and Expertise

Expertise

In order to support the Commission in the impact assessment process, an external consultant was tasked to prepare an impact assessment support study[9]. The study started in December 2011 and the final report is to be delivered in September. A preparatory study[10] also took place in 2010.

Process of consultation

To ensure that the views of the full range of stakeholders impacted by the eventual measures was gathered, a broad mix of targeted consultation methods was used. Tailored questionnaires prepared by the consultant in cooperation with the Commission were sent to each group of main stakeholders - railway undertakings, infrastructure managers, public transport ministries, safety authorities, ministries, representative bodies, workers' organisations etc. The views of passengers were collected through a Eurobarometer[11] survey. Local (passenger transport) authorities were consulted with the help of the Committee of the Regions from 14 May till 18 June. 11 regions, mostly in France and Spain (but also in Austria, Poland, and Netherlands) responded to the consultation. The

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8 OJ L 315, 03.12.2007, p. 1 – 13.

9 Steer Davies Gleave (2012): "Study on further action at European level regarding market opening for domestic passenger transport and ensuring non-discriminatory access to rail infrastructure and services"(further referenced as "IA support study")

10 EVERIS (2010)"Study on Regulatory Options on Further Market Opening in Rail Passenger Transport", http://ec.europa.eu/transport/modes/rail/studies/doc/2010_09_09_study_on_regulatory_options_on_further_market_opening_in_rail_passenger_transport.pdf;

11 Available at http://ec.europa.eu/public_opinion/archives/ebs/ebs_388_en.pdf -cf. Annex 2 for more details

full consultation of social partners has also been conducted in line with the Impact Assessment Guidelines.

A strategy of targeted consultations complemented by a Eurobarometer survey was preferred to an open consultation for two main reasons:

1) A targeted consultation assured that an adequate coverage of the wide range of different interest of the sector will be achieved.
2) The questions needed to be customised depending on stakeholder group consulted, furthermore not all stakeholders (in particular passengers) could have been expected to have knowledge of the subject-matter, given the technical nature of certain questions.
3) Representativeness of responses of passengers would have not been ensured without a structured sampling of responses, and in particular the Eurobarometer offered the possibility to interview a carefully structured sample of 25.000 respondents in their own language.

Moreover, a stakeholder hearing took place on the 29th May (with some 85 participants) and a conference (with some 420 participants representing the full range of stakeholders in the rail domain) was held on the 24th September. Commission services have also met with sector representatives on an on-going basis throughout 2012 to listen to the views, in particular with CER (railway undertakings and holdings), EPTO (passenger transport operators), ETF (transport workers), EPF (passenger federations), EIM (infrastructure managers) and UITP (urban transport). Dedicated meetings with stakeholders were also organised in France, Germany, Netherlands, Poland, Sweden and UK. The external consultant also conducted face-to-face interviews with stakeholders in Germany, United Kingdom, Italy, Hungary and Sweden.

In conclusion, all relevant parties have been given the possibility to participate in the consultation and the minimal standards of consultation of stakeholders have been met.

Principal findings of consultation

The majority of stakeholders of the targeted consultation agreed that the quality of rail services and the competitiveness of the rail sector in the EU were affected by the lack of competitive incentives, inadequate regulatory oversight, discriminatory framework conditions and market access barriers for railway undertakings. Stakeholders highlighted the main factors driving those problems as being in particular infrastructure capacity, access to rail-related facilities, rolling stock availability, inadequate resources, divergent interpretation of legislation, lack of financial transparency and lack of competitive tendering.

In terms of market opening, an equal majority of respondents (60%) agreed that market integration can be stimulated by additional new open access rights, compulsory competitive tendering, or a mix of thereof. Workers representatives expect that any market opening will result in worse working conditions and more strikes.

A policy of compulsory competitive tendering rather than direct award was considered more likely than full liberalisation with open access to reduce funding for PSCs. Also, a vast majority of EU citizens (71%) support opening the national and regional rail system to competition provided that all operators meet the same safety level (Eurobarometer). Open access subject to the viability of PSCs is seen more positively than all the other options (55% of agreeing respondents) – the current arrangements supported only by 20% of respondents.

Stakeholders did not support further EU harmonisation of the procedure for awarding public sector contracts, but agreed that relevant stakeholders should be consulted on the criteria applied on public service contracts. All groups were in favour of a transition period, except Workers' Representatives, who were against any form of competitive tendering on principle.

The Sectoral Social Dialogue Committee on railways was consulted on 26 March and 19 June, in particular on the options and the assessment of their social impact. The representatives of workers organisations were very sceptical that the opening of domestic rail passenger markets would contribute to the growth of rail traffic, the improvement of efficiency and quality of rail services. They highlighted that greater State funding of the rail sector and its infrastructure would be a more effective way to reach those same objectives. They also advocated the inclusion of social criteria in the award of contracts.

Views of the local (passenger transport) authorities (consulted via the network of the Committee of the Regions) were polarised regarding the compliance of EU criteria for PSOs with the subsidiarity principle, whereas competitive tendering was generally welcomed. Local authorities also stressed the importance of coordination and cohesion between national administrations within Member States for the delivery of public services.

More detailed overview of the consultation process, representativeness and content of responses is provided in Annexes 2[12] and 10.

2.3. Impact assessment Board

This impact assessment was reviewed by the Commission's Impact Assessment Board (IAB) that provided its opinions on 9 November 2012, 30 November 2012 and 10 January 2013. Based on the Board's recommendations, the impact assessment has been revised according to the following lines:

- The presentation of the report has been thoroughly reviewed. To ensure that there is a clear distinction between factual evidence and stakeholder opinions, references to the sources of information have been added systematically, including where relevant the references to the IA support study. To better underpin the analysis, references to all the studies used to support the IA were compiled in a dedicated annex. Conclusions and views of stakeholders have been presented in a clearer manner..
- The problem definition has been revised to strengthen the link between the existing deficiencies and the lack of competitive pressures. The report now provides more evidence on an improved performance (in terms of efficiency and satisfaction) on markets where competition has been introduced. In this context, the dynamics of a series of indicators of efficiency (productivity, use of subsidies), price, safety and quality (including availability) has been analysed in clusters of Member States reflecting their current degree of liberalisation. The presentation of the underlying methodology has been strengthened (cf. box 4a and 4b). The report emphasises limitations of comparing national railway systems because of the influence of factors such as population density, and geographic concentration and draws necessary conclusions.
- The central goal of completing the internal market was made more visible in the problem definition and objectives.
- The analysis of subsidiarity was strengthened, in particular in the area of public service obligations. Compliance with the subsidiary principle was also discussed in comparison to other fields like air transport, urban transport and public procurement.
- The presentation of policy options has been further improved by incorporating into the text the main reason for discarding certain options. As far as options on competition for PSCs

[12] The consultation of stakeholders took place in parallel to the legislative procedure of the Recast of the 1st Railway Package. As a result, some of the questions, in particular on rail-related services, have been solved already in the Recast and are therefore not relevant for this IA.

and the supervision of their scope are concerned, the report emphasises EU limited competences in the domain of definition and organisation of public services.

- The assessment of impacts has been improved by reinforcing the analysis of social impacts on consumers (fares) and workers (employment, working conditions, recruitment, productivity, cf. 6.2.3.1) as well as the impacts on investment, revenues and costs. An analysis of rolling stock options has been strengthened and discussion of congestion issues was included.
- The assessment of impacts and comparison of options has been improved to underline that the main factor distinguishing each of the options is the degree of market opening, which has been quantified for each option. Furthermore, for each of the options, impacts on Member States are differentiated according to their current degree of liberalisation. For each of the impacts analysed, the report also identifies potential associated risks. In cases where the evidence base has been limited or inconclusive, the text clearly indicates that the conclusions should be drawn with caution.
- The final assessment of the preferred policy scenario has been complemented with the estimates of the combined impacts of the different 4th Railway Package initiatives, both in terms of costs, and benefits.

3. PROBLEM DEFINITION

3.1. Overall context

3.1.1. Regulatory framework at EU level for domestic passenger rail services

As indicated in section 1, the EU has launched over the past decade an active policy for the revitalisation of rail transport based on progressively opening up of transport services to competition and on developing the interoperability of national rail systems. As a consequence, the European rail market has witnessed a range of regulatory changes to its structure and technical standards, with the aim of creation of a competitive internal market with more efficient services.

Markets for rail freight services have been fully opened to competition since January 2007[13]. Markets for international rail passenger transport services and cabotage services have also been opened to competition as of 1 January 2010.[14] On the contrary, domestic rail passenger transport in Europe (representing 94% of all passenger-kilometres in the EU) remains largely closed to foreign and national competition, independently of its typology (urban, suburban and regional services, conventional or high speed intercity services) and whether the services are provided in on a commercial basis or under PSCs. The latter cover about 2/3 of domestic rail services (cf. table 1 and Annex 9). PSCs in principle are regulated by Regulation 1370/2007EC on public passenger transport services by rail and by road, however the heavy rail sector has been excluded from the obligation to award PSCs through an open tendering procedure. Consequently, most local and regional rail services operated under PSO – that is almost all of them - are attributed to operators through direct award (cf. infra graph 4). In addition, even without PSO, rail service contracts in several countries are granted with an exclusive right – e.g. some incumbents operate as "legal monopolies" on commercial lines.

[13] As provided for in Directive 2004/51/EC, amending Council Directive 91/440/EEC of 29 July 1991 on the development of the Community's railways. In practice, however, many barriers still exist including those stemming from the incomplete and incorrect implementation of Community law by Member States.

[14] Council Directive 91/440/EEC of 29 July 1991 on the development of the Community's railways, as amended *inter alia* by Directive 2007/58/EC.

BOX 1 – PUBLIC SERVICE CONTRACTS (PSCs), PUBLIC SERVICE OBLIGATIONS (PSOs) AND LEGAL MONOPOLIES

A public service obligation (PSO) is a requirement determined by a competent authority in order to ensure public passenger transport service in the general interest.

Public service contracts (PSC) are requirements by competent authorities to perform PSOs.

"**Legal monopolies**" are, for the purposes of this impact assessment, rail service contracts granted with an exclusive right without PSOs (including directly awarded service concessions).

There is "**open access**" when no legal barriers restrict the access to the rail network.

In order to revitalise their rail sector in times of severe public budget constraints, more and more Member States have opened (or are in the process of opening) their domestic rail passenger services to competition, either through the introduction of open access rights for commercial services or through the competitive tendering of PSCs, or both. Given that there are no applicable common EU rules, a wide range of different national models is emerging in Europe, where some Member States have introduced full competition for domestic lines and others have kept their markets completely closed.

3.1.2. Market developments

Railways and their operations are an important economic sector with the total turnover and the number of persons employed estimated at 73 billion EUR[15] and 800.000 persons[16] (in many Member States railway undertakings are among the major national employers) and also absorbing substantial public funding (some 46 billion EUR of public subsidies, out of which some 20 billion EUR in 2009 were government payments for services and 26 billion EUR covered infrastructure[17]).

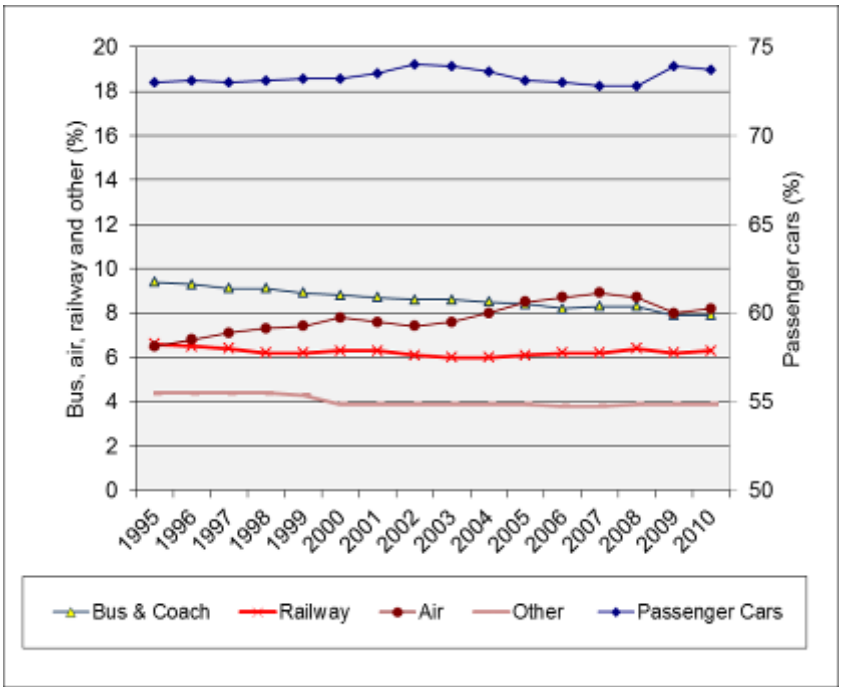
In the context of the goals of the 2011 White Paper, the performance of the rail sector compared to other transport modes is not yet satisfactory. The growth of passenger traffic by rail since the early 2000's has been insufficient to increase its modal share in comparison to cars and aviation. The 6% modal share for rail in the EU has remained fairly stable since the mid-nineties.

[15] Includes infrastructure managers that are integrated with railway undertakings (i.e. holdings)

[16] An estimated 463.000 persons are working in passenger railways.

[17] According to the State Aid Scoreboard 2011, non-crisis state aid in transport (excluding railways) remained at around some 2 billion EUR per year (with the notable exception of 2006) and the total non-crisis aid to other sectors amounted in average to some 75 billion EUR in 2008-2010; the EU railway sector also absorbed some 25 billion EUR of subsidies for infrastructure

Graph 1 – Evolution of the rail modal share in passenger transport
(based on number of passenger-km (p-km))



Source: Rail Market Monitoring Scheme (RMMS) 2010.

These overall trends mask however significant differences between different market segments (high-speed, long-distance/intercity, regional and commuter/suburban services) and Member States, in particular between the EU-15 and the EU-10 Member States.

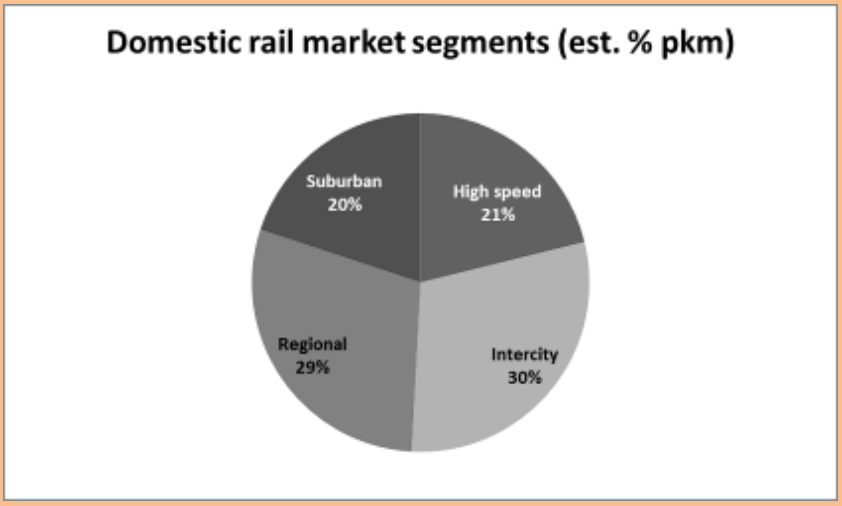
The modal share of rail has remained stable because even if high-speed rail traffic (thanks to important infrastructure investment) has managed to gain market share at the expense of air transport, this increase has been offset by decrease in other segments like regional and conventional long-distance services.

BOX 2 – RAIL MARKET SEGMENTS

High-speed train services (e.g. TGV, ICE…) and **long-distance** conventional train services (e.g. Intercity), which often (but not always) require seat reservation, compete mostly against air transport and, to some extent, cars. High-speed trains operate (almost always) in dedicated infrastructure – since 1990, high-speed railtracks have increased 6-fold (from 1024 km to 6178km in 2009) – and generally only stop in sizeable urban agglomerations.

Medium-distance/regional train services (e.g. Inter-Regio) and **suburban/commuter** train services (e.g. RER, S-Bahn, Cercanias…) compete mostly with cars and have free seating. **Suburban/commuter** train services are often interconnected with metro networks. These services operate almost exclusively with subsidies and public service contracts and call at a high number of stations. Suburban services require very often intensive railway operations.

Market structure of EU domestic rail passenger markets

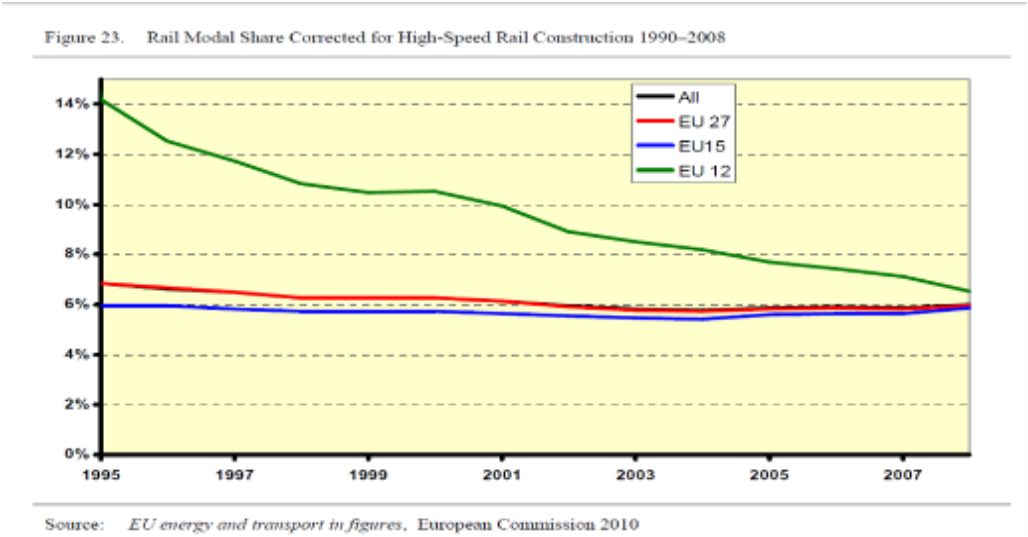


Source: UIC, Steer Davies Gleave, DG MOVE (White Paper on Transport), own calculations,

Rail passenger traffic in the EU-15 has increased by 16% between 2000 and 2009, with countries such as the UK, Sweden and Belgium experiencing growth in excess of 30%. Other Member States with growing modal share include Denmark, Germany, France, Hungary, Netherlands, Austria and Sweden. However, the increase of modal share in Spain, France and Belgium[18] is achieved only via significant investments into high-speed train infrastructure. At the same time traffic in EU-10 has fallen 25%, with falls of more than 35% in Romania, Lithuania and Bulgaria.

[18] Includes international traffic.

Graph 2 – Rail Modal Share Corrected for High-Speed Rail Construction

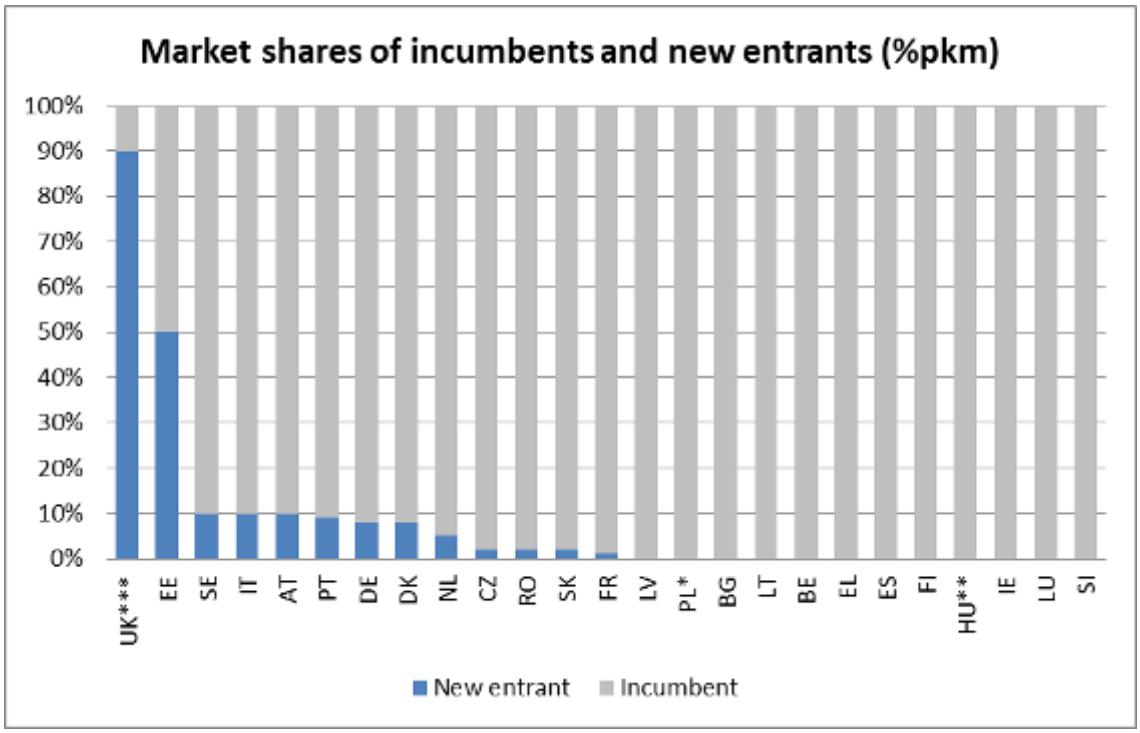


A wide range of external factors have in various ways contributed to these diverging trends, including economic developments, oil and petrol prices, congestion levels of roads, demographic trends, increased car ownership in EU-10 countries and on-going difficulties in securing public funding for rail services.

3.1.3. Existing market structures for passenger rail in Member States

In many Member States national incumbents are in either a monopolistic or dominant position (except in the UK, where the incumbent, British Rail, was dismantled in the nineties) and the market features many operators. In all but 2 Member States, there is an incumbent with a market share above 90%.

Graph 3 – Market share of incumbent railway operators (% p-km)



Source: Rail Market Monitoring System (2010) – includes international traffic
*-historical successors of incumbent, ** 2 incumbents, ***incumbent: largest operator in terms of p-km

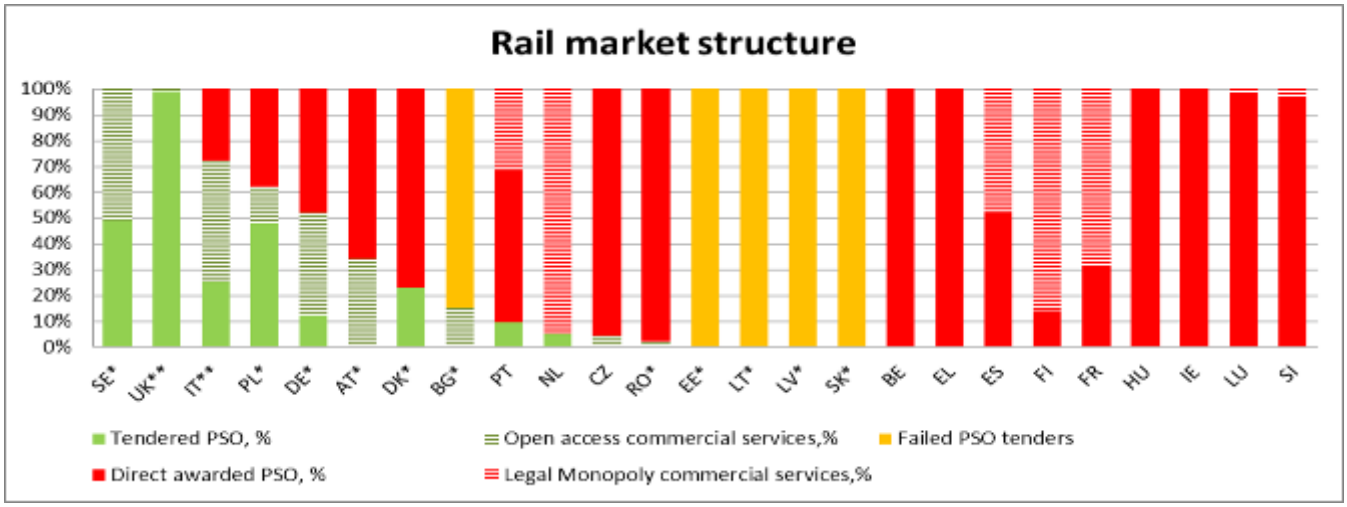
BOX 3 - PRINCIPLES OF COMPETITION IN RAILWAYS

Competition in railways takes either the form of **competition *for* the market** (several operators competing for the exclusive right of a specific route or bundles of routes – either a PSC (cf. box 1) or a service concession); or **competition *in* the market** (several operators running in the same route - i.e. the so-called "open access").

Experience in liberalised markets shows that regional and suburban trains are mostly run through PSCs, whereas high-speed trains and long distance inter-city trains are often operated on a commercial basis (with or without open access rights). There are however examples of PSCs for intercity trains, especially where they serve dual purposes of providing network efficient commuter capacity within the intercity operation. The United Kingdom has opted for generalised system of competitively-tendered PSCs for bundles of lines (which are called "franchises").

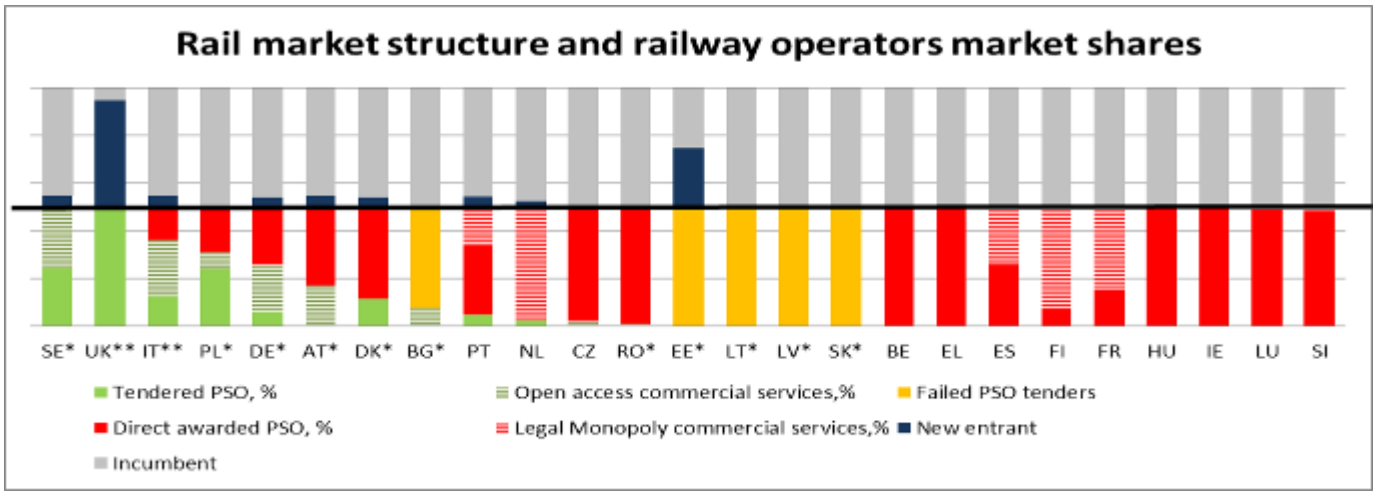
Graph 4 provides an overview of market access conditions in different Member States (more details are found in Annex 4).

Graph 4 – Rail market structure of EU Member States (% p-km)



*= open access can co-exist with PSC services
**= open access can co-exist with PSC services provided it does not compromise their economic equilibrium
Source: Rail Market Monitoring System (2010), CER (2011) – cf. Annex 4

Graph 5 – Railway market structure and railway undertakings market shares



About 40% of all passenger-kilometres in the EU are so far accessible to new entrants. Only two Member States (UK and Sweden) apply a fully open market based on open access and competitive tendering. Germany will now move towards full liberalisation, further to the decision of the *Bundesgerichtshof* that all future PSCs will have to be competitively tendered. However, currently half of passenger-km are still based on past direct awards of PSCs to Deutsche Bahn. Nine other Member States (Italy, Poland, Austria, Denmark, Bulgaria, Portugal, Netherlands, Czech Republic and Romania) have to some extent opened their market, however new entrant operators *de facto* operate only in seven of these countries (Austria, Czech Republic, Germany, Italy, Netherlands, Sweden and the United Kingdom), either in PSCs or open access.

10 Member States (with asterisk), representing 20% of all passenger-kilometres, have opened markets in a way that allows commercial services in open access to co-exist with directly-awarded PSCs. Further to the *Bundesgerichtshof* decision (as mentioned above), Germany will not be part of this group anymore. In Estonia, Latvia, Lithuania and Slovakia, full open access co-exists with a directly-awarded PSC covering all rail services. PSCs in these countries should be de jure competitively tendered, however de facto only the incumbent participated.

As a result, some 40% of all passenger-kilometres are not open for competition, as it fall either under exclusive rights or directly awarded PSCs (that do not co-exist with open access). Exclusive rights are mostly found in large-sized[19] Member States (France, Spain, Portugal, and Finland), whereas most small-sized Member States (Belgium, Hungary, Greece, Ireland, Luxembourg and Slovenia) have covered all their rail services by a directly awarded PSC with no right to provide open access services. In Austria, Czech Republic and Portugal a sizeable part of passenger-km results from PSC directly awarded to the incumbent. Finally, the Netherlands finds itself in a hybrid situation between a "legal monopoly" and a "directly awarded PSC", as NS pays a 20 million EUR concession fee to the Dutch government for operations on the largest part of the Dutch network and the exclusive right associated to this concession remains valid till 2015.

PSO services represent some 66% of all passenger-kilometres[20], whereas commercial services either under open access or legal monopolies represent some 33% of all passenger-kilometres in the EU. In 13 Member States – mostly all small-sized in area - almost all services are covered by a PSCs. In 12 Member States there is no competitive tendering for PSCs and in a further 5 Member States attempts to tender have failed (Bulgaria, Estonia, Lithuania, Latvia and Slovakia).

Following the characteristics above, the Member States can be accordingly grouped in 5 clusters (cf. Map 1):

fully liberalised markets like UK and Sweden, where all passenger-kilometres are in open access or where all public service contracts are competitively tendered.

– **largely liberalised markets** like Austria, Italy and Germany where more than 33% of the passenger-kilometres are in open access or correspond to competitively tendered PSCs; new entrants have been able to successfully compete *in* and *for* the market.

– **partially liberalised markets** like the Czech Republic, the Netherlands and Portugal, where less than 33% of the passenger-kilometres are in open access or correspond to competitively tendered PSCs, but where new entrants have taken an important share of the liberalised traffic.

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19 Large-sized Member States are not "large" Member States in terms of population. For instance, Sweden has an aarea of 450.000 km2, twice larger than Germany. Yet, the former has only 9 million inhabitants compared to Germany who ten times as big a population and is considered a "large" Member State. Cf. glossary

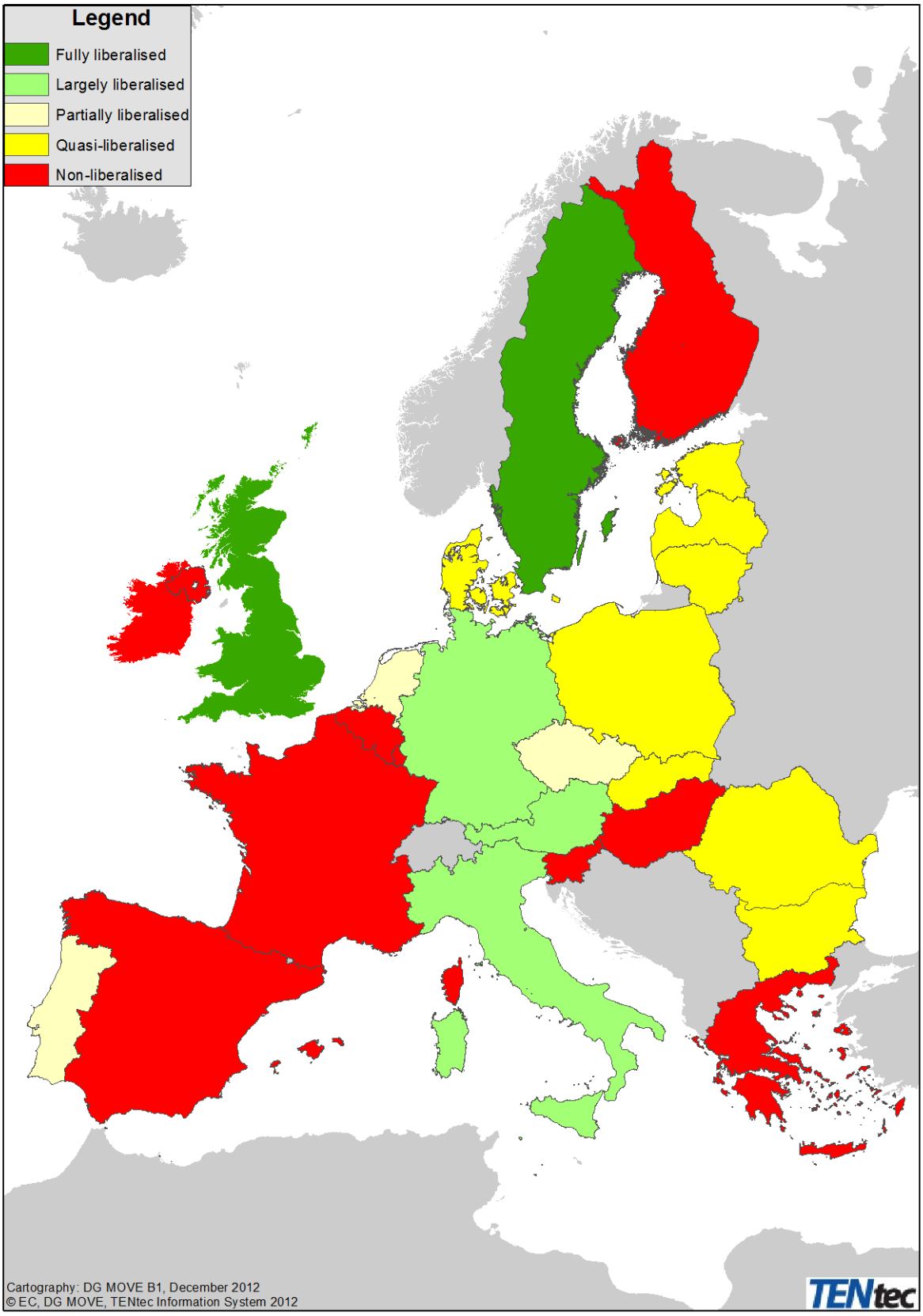
20 The Netherlands has been included in this group to simplify the presentation as NS does not have a legal monopoly but the concession (PSC) for the mainline network has been directly awarded to NS.

– **quasi-liberalised markets** like Bulgaria, Denmark, Estonia, Latvia, Lithuania, Poland, Romania and Slovakia, where the whole market is open through "open access" - but there is no effective competition *in* the market - and PSCs are directly awarded. New entrants, if any (Denmark, Slovakia, Estonia), are operating the directly awarded PSCs.

– **Non-liberalised markets** like Belgium, Finland, France, Greece, Hungary, Ireland, Luxembourg, Slovenia and Spain, where the incumbent operates all commercial services and PSOs

Some Member States can be difficult to classify and it is necessary to distinguish between prospective analysis (future) and retrospective analysis (past). As Sweden only has abolished exclusive rights in long distance in 2011 and as Germany will introduce competitive tendering as from 2012, it makes sense to use a cluster "fully and largely liberalised" for retrospective analysis. Also, successful tendering of international PSCs suggests that Denmark could easily join the group of "partially liberalised" countries for prospective analysis. Moreover, lack of *de facto* competition for years in quasi-liberalised markets, make them in reality quite similar to non-liberalised markets. Finally, it is important to underline that Austria, Czech Republic, Finland, Greece and Spain have signalled that they intend to take measures to open their railway markets. In the case of Finland, it appears the contract for the suburban services of Helsinki would be competitively tendered

Graph 6 – Clusters of Member States



3.2. Description of the problem

The modal share of rail has not increased over the years. Overall growth of rail sector has not been able to keep with the pace of 25% growth in air passenger traffic further to the liberalisation in the

90's[21]. In fact, since the mid-nineties, in some Member States local and regional passenger train services have fallen in a downward spiral of continuous operational losses and subsequent diminishing of services. This decline has been exacerbated in many of the EU-10[22] Member States by the decay of old infrastructure, the wealth driven high-growth of car ownership and the success of bus transport[23]. Also, although commuter transport appears to be one of the strongest rail transport segments, cars still secure a substantial share of urban transport. 59% of Europeans never use suburban trains, a situation that contrasts with the 75% urbanisation rate of the EU27 and thereby indicates a significant development potential for suburban and regional passenger rail transport. Even if high-speed trains have managed to gain market share at the expense of air transport services, competition remains tough in lines running in parallel with aggressively pricing low-cost airlines[24].

To some extent, the inability of the rail sector to gain market share vis-à-vis other modes of transport can be explained by exogenous factors and trends such as policies and investments that have favoured road transport. In this respect, policies pursued at EU level such as the internalisation of transport externalities, the elimination of tax distortions and unjustified subsidies are part of the effort to align market choices with sustainability needs (and to reflect the economic costs of 'non-sustainability') and, hence, to establish a level playing field between modes which are in direct competition.

Nevertheless, there seem to be also internal shortcomings in the passenger rail sector, as reflected by customer perceptions and certain performance gaps as discussed below. Stakeholders reported during the consultation process that the passenger rail in Europe is, despite some success stories, in general not attractive and competitive enough vis-à-vis other modes of transport. More than half (54%) of respondents of the 2012 Eurobarometer survey were not satisfied with their national and regional rail system[25]. Within the Consumer Scoreboard 2011[26] the overall satisfaction of train passengers was 6.7/10, well below of the most consumer goods and services. Among consumers rail services score worse than all other transport modes (urban transport and airlines in particular scored better) and are ranked 27th out of 30 services markets, with particularly poor scores on comparability, problems in general and satisfaction[27].

Methodological constraints

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21 At the same time, air transport has managed to maintain important flows of passenger traffic on routes competing with rail. 27 out of the 40 largest intra-EU air routes in the EU were within the reach of competing long-distance (high-speed) railway services and yet attracted some 50 million passengers a year - i.e. as much as the 4th largest EU airport, Madrid-Barajas

22 For the purposes of this impact assessment, the Member States that acceded the EU in 2004 (EU-12, except Malta and Cyprus who have no railways).

23 During the stakeholder conference of the 24th September 2011, the CEO of the Romanian Railways CFR Calatori referred to the strong competition of bus in domestic routes. DB has also highlighted the forthcoming liberalisation of coach services in Germany. In Poland, train-kilometres appear to have diminished by some 33% since 1993.

24 In the route Madrid-Barcelona and Rome-Milan, we have found low-cost airlines undercutting high-speed train fares (cf. annex 3) – in the former a low-cost airline has been found to provide more a competitive fare than the train. In its Competition Report 2011, DB complains of the low fares of 49 EUR or 99 EUR of Lufthansa in intra-German routes.

25 The Eurobarometre of 1997 indicated a 41% satisfaction rate for railways, whereas air transport had a 53% satisfaction rate (it was the eve of the air transport liberalisation)

26 http://ec.europa.eu/consumers/consumer_research/cms_en.htm;

27 The market records the second highest number of problems but considerably fewer complaints, which could indicate that consumers do not believe that the problems can be satisfactorily solved or perceive the complaint process as too complex and burdensome.

In general performance indicators and efficiency measures of railway undertakings cannot be easily compared between the countries as the outcome is very much shaped by geography and population density, but also how the public support for rail is arranged.

BOX 4a –BENCHMARKING EFFICIENCY AND QUALITY IN RAIL

Profitability - a wrong indicator

In most sectors, efficiency can be measured through profitability and all deriving financial ratios. However, in rail, the level of public subsidies distorts any "profitability" indicators. The amount of subsidies varies from Member State to Member State and can be, in some instances, quite substantial. For example, in 2007 public funds represented 74% of the revenues of the Danish incumbent railway undertaking, DSB. Furthermore, some railway undertakings are part of integrated structures with freight and infrastructure management activities and profitability of different activities is not always distinguishable in financial reports. On the other hand, chronic losses over a long period can be used to spot a problem of systematic underperformance or underfinancing.

Efficiency ratios - often incomparable

Another method could consist in comparing and benchmarking non-monetary efficiency ratios (such as p-km per train-km) or cost ratios (e.g. operational costs per p-km) across several Member States. However, this process is complicated by the variety of geographic and demographic realities across Europe, which have a strong impact on the functioning of national railway systems. For instance, the urban concentration of Portugal explains why the cost per p-km in remote areas of that country is 400 times higher compared to suburban services around Lisbon (cf. Annex 3 for further details).

Consequently, there is no optimal efficiency applicable to all operators. The literature on stochastic frontiers and DEA that are used to measure and benchmark efficiency in utilities have not been able to bring forward clear-cut conclusions for European railways (cf. Annex 6 for further details).

Quality and satisfaction ratios – often incomparable

Measuring and comparing quality and satisfaction is also challenging as there no optimal rate of satisfaction (should it be 50%? 70%? or 90 %?) and the level of satisfaction with rail is influenced by satisfaction with other services. Moreover, exogenous events (e.g. snow storm, industrial action) can also influence judgements and complicate cross-Member State comparisons.

Methodological approach applied to the assessment of efficiency and quality

As explained in detail in Annex 3, this impact assessment proposes a 'benchmarking exercise' to consider the railway system of each Member State as a system on its own and:

– to measure if quality and efficiency indicators of each Member State have improved or worsened since the early nineties or 2000s (depending on the availability of data);

– to benchmark Member States in terms of their progression in improving the quality and efficiency indicators to identify those that have progressed systematically across all indicators;

– to observe if the values of quality and efficiency indicators between Member States have converged or diverged. If the-variance of indicators has increased, these have diverged and if the variance of the indicators has decreased, these have converged.

This information is then linked to the clusters of Member States classified according to their degree of liberalisation, to conclude whether there is evident link between the market structure and performance. The box below defines the indicators used in the analysis.

Efficiency and satisfaction indicators analysed:

BOX 4b – EFFICIENCY AND SATISFACTION INDICATORS ANALYSED

1. - Efficiency:

a) Passenger-km to train-km: compares the output (passenger-km) with the input (train-km)

b) Productivity of rolling stock - train-km to rolling stock: measures utilisation rate of rolling stock. As it can take stock of the increase of frequencies, it is also a service performance indicator.

c) Productivity of labour - train-km to staff/FTEs: measures train services produced by one employee.

d) Usage of infrastructure – measures the number of passenger-km per km of rail lines

e) Subsidy efficiency - passenger-km to PSO subsidies in EUR: measures passenger-km produced by one EUR of subsidy to public service obligations

2. -Quality:

a) Modal split: measures the progress of rail versus other modes of transport

b) Satisfaction – index based on the comparison between Eurobarometer surveys of 1997 and 2012

c) Fares - evolution of price index for rail fares as provided by Eurostat, inflation adjusted

d) Punctuality – percentage of local, regional services trains with more than 5 minutes delay and of long-distance trains with more than 15 minutes delay.

e) Safety – number of victims (killed or injured) per train-kilometre

f) Satisfaction – indexes based on the analysis of all the quality indicators of Eurobarometer 2011 (cleanliness, quality of facilities, punctuality, frequency and information on delays),

The results at the global level are presented in Table 1.

Table 1 – Growth and divergence of quality and efficiency ratios[28]

	Evolution (%)	Divergence/ Convergence (evolution of variance)	Period
Quality of services			
Modal split	1%(a)	-19%	2000-2010
Satisfaction 1997-2012	12%(b)	-40%	1997-2012
Fares (real terms)	28%	indexes	2000-2011
Punctuality	n/a	n/a	2008
Safety	9%	-39%	2004-2010
Availability (train-km)	11%	31%	1993-2008
Efficiency			
pkm/train-km	5.8%	14%	1993-2008
Productivity of RS/Frequency	25%	45%	1995-2010
Productivity of labour	97%	337%	1993-2008
Pkm/line	18%	58%	1995-2008
Subsidy efficiency	9%	(c)	2000-08/2003-08
Important economic indicators			
pkm	11%	not relevant	1993-2008
Employment	-40%	not relevant	1993-2008

(a) 9% growth in EU15
(b) EU15 Member States only and
(c) exchange rate complicate comparison across Member States

[28] The last column divergence/convergence indicates whether the variance between the performances of different Member States is increasing or decreasing. Divergence (positive values) indicates that the gap between the best-performing and worst-performing railway systems has widened, while convergence (negative values) indicates consolidation towards the optimum. Further explanations of the methodology applied are provided in Annex 3.

As shown in table 1, there has been overall improvement in efficiency and quality since the nineties. However, there is also growing divergence between the performance of railway systems in Member States – with the exception of safety, satisfaction and modal split, variance in ratios is diverging. The analysis below tries to identify how performance indicators have evolved in Member States with different market structures.

3.2.1. Gaps in quality and low satisfaction with service

Respondents to Eurobarometer survey found that the level of quality of rail passenger services has not kept pace with evolving needs in terms of frequency of service and quality (reliability and comfort)[29]. Passengers perceive a mismatch between the expectations of potential travellers and the service provided by railway undertakings for the fare requested[30]. In several Member States, rolling stock is more than 30 years old and has not been retrofitted[31]. Satisfaction with service frequency is below 80% in most EU Member States (EU average at 70%).

The benchmarking exercise demonstrates (cf. box 4a-4b, Annex 3, graph 8 and table 2) that, while satisfaction, modal split and safety have improved and converged, the gap between Member States has widened in terms of availability and frequency (cf. Table 1) and the satisfaction indicators appear to have been improving faster in fully or largely liberalised Member States. Table 2a lists the 6 Member States that have best performed in terms of evolution of modal split, satisfaction and rail fares[32].

Table 2a- Evolution of satisfaction indicators

Satisfaction/Quality perception	Ranking MS "6++"	
Growth of modal split	UK, SE, FR, BE, DE, NL	a
Growth of satisfaction 1997-2012	UK, SE, FR, ES, BE, IT	b
Fares (decrease or lowest increases)	BE, LU, AT-SE, FR-DK	e
Punctuality	LV, LT, RO, FI, SK, BE	P
Safety	UK, NL, FR, DK, ES, DE	S
Satisfaction 2012	FI, AT, NL, DK, LU, SE	S1
Satisfaction EB2011	ES, LU, PT, UK, IE, AT	S2

At the next stage, for each indicator (growth of modal split, growth of satisfaction between 1997 and 2012, evolution of fares, punctuality, safety, detailed quality satisfaction as measured in the Eurobarometer 2011 and the overall satisfaction of Eurobarometer 2012.[33]), the first ranked Member States received grades from "6" to “1”. All other Member States have no grade (i.e. "0"). The average benchmarking points were then calculated for each cluster, as presented in Table2b The first ranked Member States receives a grade "6" till the sixth which received a grade "1" All other Member States have no mark (i.e. "0"). The average benchmarking points are then calculated for each cluster.

29 Eurobarometer 2a012 on competition in rail

30 Eurobarometer 2012 on competition in rail: 43% of citizens that do not travel by national or regional trains have indicated that they would do so if trains were cheaper and some 16%-20% if networks were better developed, services were more reliable and frequent, journeys were faster and trains were more comfortable.

31 The situation is particularly acute in Bulgaria (96% of all rolling stock is more than 30 years-old), Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, and Slovakia, but also in Belgium, Portugal, Italy and Finland. In Sweden, rolling stock is also above 30 years but has been retrofitted. Important investments in rolling stock are taking place in Slovenia, Czech Republic and Slovakia, Source: CER.

32 Member States have been ranked from those whose fares have decreased the most to those whose fares have the most increased. Fares have decreased in Belgium (taking into account the evolution) – cf. table 5g in Annex 3.

33 As punctuality, safety and satisfaction (2012) do not depend on geographic conditions, Member States were ranked in terms of their 2008 punctuality rate and the number of victims (killed or injured) in 2010 and not on the basis of their evolution

Table 2b – Annex 3 benchmarking points per type of cluster (satisfaction/quality indicators)

Fully Liberalised:	17.7
Largely liberalised:	5.2
Fully or largely liberalised	*10.2*
Partially liberalised:	5
Quasi-liberalised:	3.4
Non- liberalised:	6.6

While both countries with liberalised markets (Sweden, UK) score well in terms of satisfaction evolution, some Member States with non-liberalised markets, like Belgium, France, Luxembourg and Spain also score very well. Spain and Luxembourg score high on the Eurobarometer 2011 indicators, Finland tops the overall satisfaction rate of the Eurobarometer 2012, while fares have decreased in Belgium. Interestingly, non-liberalised markets score almost twice as much as quasi-liberalised markets. The next section considers the 'price of quality'. i.e. how efficient are different rail systems.

3.2.2. Gaps in operational efficiency

Box 4 explained why the efficiency measures of railway undertakings cannot be easily compared[34]. However, there is some concurring evidence suggesting that the operational efficiency of railway undertakings leaves some room for improvement.

Firstly, the labour productivity ratio of railway transport in the EU27 was in 2007 well below the overall EU27 average (119% against 142%)[35]. The benchmarking exercise also demonstrates that the productivity of labour between railway systems has significantly diverged since the early nineties (variance has tripled). There are also overall important variations between assumingly comparable railway systems. For instance, in 2008, the ratio passenger-kilometres per staff appears to be double in the Netherlands compared to in Belgium (which has similar economic and geographic characteristics); and up to five times as large in Spain or Sweden than in Czech Republic or Romania (which have comparable population density). The latter example demonstrates that the problem of productivity of labour is particularly acute in EU-10 Member States[36]. Their railway undertakings employ 39% of all railway jobs in the EU while providing only 11% of passenger activity (in terms of p-km). This seems to suggest that labour productivity in the rail sector has room for improvement and is an important efficiency driver given that labour costs represent some 30% of all costs of rail undertakings.

Secondly, there are significant differences in asset utilisation such as rolling stock and infrastructure (cf. graph 4). The ratio of p-km to train-km is almost double in France and Sweden compared to the rest of Europe (cf. table 7a of Annex 3) and variance of this indicator has diverged by 14% between 1993 and 2008 (cf. table 1). The utilisation rates of rolling stock and that of the infrastructure, while in general significantly improved, have also diverged between the Member States – the variance has increased respectively by 45% and 58%. For instance, the Paris-Lyon high-speed line has some 17 high-speed trains an hour and the Rome-Milan some 3.5 trains-hour, while the high-speed lines between Madrid-Barcelona and Frankfurt-Munich only have 1.7 and 1.3 trains per hour (operated only by the incumbents). In Portugal, public expenditure for railways has tripled but p-km have increased by barely 5% between 2000 and 2008, whereas in Sweden (also a sparsely populated country), public expenditure has increased by 40% and p-km by 80%.

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34 Geographic concentration, population density and public funding play an important role

35 Eurostat, Structural business statistics (SBS), 2009 edition, pp.445-446

36 The productivity of the best performing railway systems (Sweden, Spain and UK)is more than 3 times higher than the productivity of the worst performing railway undertakings (Romania, Poland, Bulgaria, Latvia)

Thirdly, the rail sector absorbs a substantial level of public funding compared to other economic sectors. Between 2008 and 2010, the subsidies[37] of railways outside infrastructure were 7 times larger than all the State aid to the remaining transport sector[38] while the modal share of rail is only 6%[39]. In spite of significant public support, many railway undertakings have been making losses for several years in a row (cf. table 3), which indicates either serious efficiency problems or systematic underfinancing. In many instances, railway undertakings had to be bailed out[40], costing serious money. This perspective will become increasingly acute within the context growing government spending cuts in many countries. In Austria, the new entrant Westbahn indicated that for the same amount of subsidies provided by the Austrian government to the incumbent ÖBB in the line Salzburg-Graz it could operate 7 daily services instead of the 3 provided by ÖBB, whose personnel costs are 20% higher than that of its competitors[41].

Table 3 - Performance of EU railway undertakings (operational profit 2000-2008)

RU	2000	2001	2002	2003	2004	2005	2006	2007	2008	Conclusion
DB (DE)	+	-	-	+	+	+	+	+	+	+
SNCF (FR)	+	-	-	-	+	+	+	+	+	+
SNCB (BE)	+	+	-	-	-	-	-	-	-	-
OBB (AT)	-	-	+	+	+	+	+	+	+	+
PKP (PL)	-	-	-	-	-	-	-	-	-	-
RENFE (ES)	+	+	+	+	-	+	+	+	+	+
BDZ (BG)	-	-	-	-	-	-	-	+	+	-
CD (CZ)	-	-	-	-	-	-	-	+	-	-
DSB (DK)	+	+	+	+	+	+	n.a.	+	+	+
OSE (EL)	-	-	-	-	-	-	-	-	-	-
VR (FI)	+	+	+	+	+	+	+	+	+	+
MAV* (HU)	-	-	-	-	-	-	-	-	-	-
FS (IT)	-	+	+	+	+	+	-	-	+	+
LG (LT)	+	+	+	+	+	+	+	+	+	+
CFL (LU)	-	+	-	-	+	n.a.	n.a.	n.a.	n.a.	-/+
NS (NL)	+	+	+	+	+	+	+	+	+	+
CFR Calatori (RO)	n.a.	n.a.	n.a.	n.a.	+	-	+	-	+	-/+
SJ (SE)	n.a.	n.a.	n.a.	+	+	+	+	+	+	+
SZ (SI)	-	-	-	+	+	-	+	+	+	+
ZSSK (SK)	n.a.	n.a.	+	-	-	-	-	-	-	-
CP (PT)	-	-	-	-	-	-	-	-	-	-
CIE (IE)	n.a.	-	-	-	-	+	-	+	-	-

"+"= profit / "-"= losses

* MAV data 2000-2006, MAV Start data 2007-2008. No data available for the UK ATOC operators

Source: Railway time-series data. International Union of Railways (UIC), 2009.

Overall efficiency of public subsidies can be measured in terms of PSO p-km per EUR of subsidy and as shown in Annex 3 tables 9c and 9d, in these terms there are important discrepancies between the Member States. Sweden and the UK, with liberalised rail markets, are in these terms outstanding

37 Railway subsidies include some 25 billion EUR of expenditure in infrastructure, which may not be accounted in the subsidies for road transport, hence we exclude them for the sake of comparison with other sectors.

38 Rail subsidies are to some extent justified to cover for the cost of externalities of other sectors such as cash for clunkers in the automotive industry, subsidies to regional airports etc

39 Even adding investment to road infrastructure, railway still absorbs 42% of all government infrastructure expenditure (based on CER/ITF data).

40 The Belgian railway incumbent had to transfer in 2004 a debt of 7.4 billion EUR to the Belgian State. This amount is comparable to 2% of Belgium's GDP

41 IA support study, Appendix J, Country Fiche: Austria, point 2.16

performers. However, some partially liberalised (Germany, Austria[42]) and non-liberalised (Belgium and Finland) have also achieved remarkable improvements. During the 2000-2008, Germany was able to increase its p-km by 9% while reducing the subsidies by 20%, achieving reduction in subsidy per p-km by 29%. In France, at the same time, subsidies increased by 48% but resulted only in 24% of additional p-km (increase in subsidy per km by 24%). For several EU-10 Member States the level of subsidies has doubled since 2003, while the number of p-km has remained fairly stable (graph 7a). A similar phenomenon appears to be emerging also in EU15 Member States (graph 7b).

Table 2c – Evolution of efficiency indicators

Evolution	Ranking MS "6++"	
Growth of productivity of RS/Frequency	HU, SI, DK, EE, SE, CZ	d
Growth of pkm/train-km	SE, BE, NL, UK, DE, FR	f
Growth of pkm/line	UK, SE, BE, SI, ES, FI	g
Growth of employment	SE, UK, NL, LU, IE-DE	h
Growth of productivity of labour	IE, HU, DE, UK, FI, ES	i
Improvement of subsidy efficiency	SE, UK, EE, DE, AT, BE	j

Finally, as suggested by the benchmarking exercise in Annex 3 (cf. graph 9 and table 2c), the growth of efficiency indicators has been more systematic in fully or largely liberalised markets, which figure more often among the 6 best performing countries. The average benchmarking points summarised across all the aforementioned efficiency indicators are provided in Table 2d.

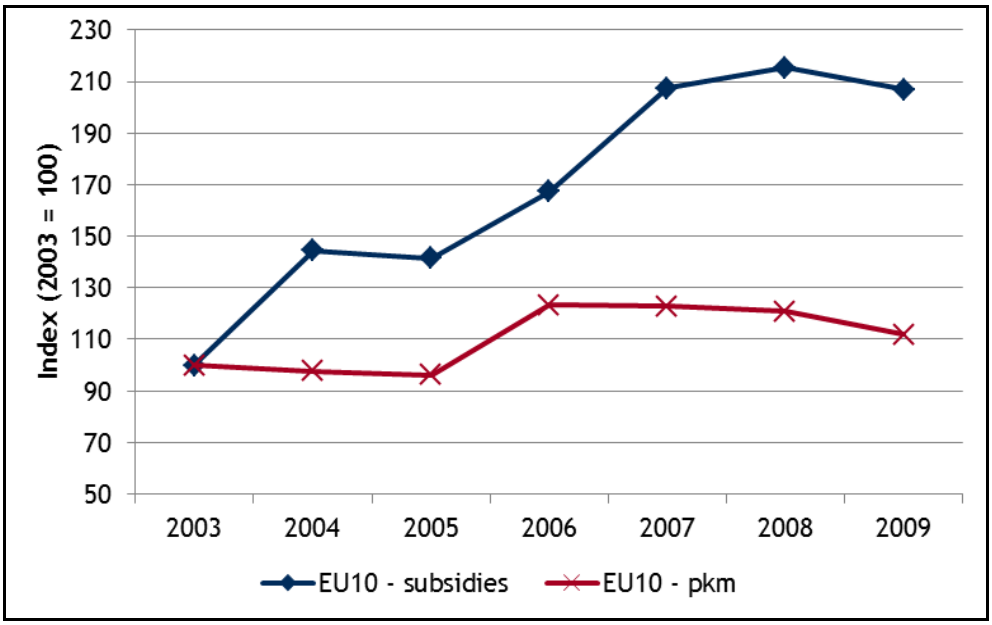
Table 2d – Annex 3 benchmarking points per type of cluster (efficiency indicators):

Fully Liberalised:	20.5
Largely liberalised:	5.5
Fully or largely liberalised	*11.5*
Partially liberalised:	3
Quasi-liberalised:	1.5
Not liberalised:	6

Like for quality, the countries with most liberalised markets (Germany, Sweden and UK) score well in terms of efficiency evolution. At the same time some Member States like Belgium, Slovenia and Hungary whose markets are "non-liberalised" also score very well. Hungary has seen an important improvement of labour productivity and Slovenia of the usage of its rolling stock. Interestingly, non-liberalised markets score almost twice as well as quasi-liberalised markets.

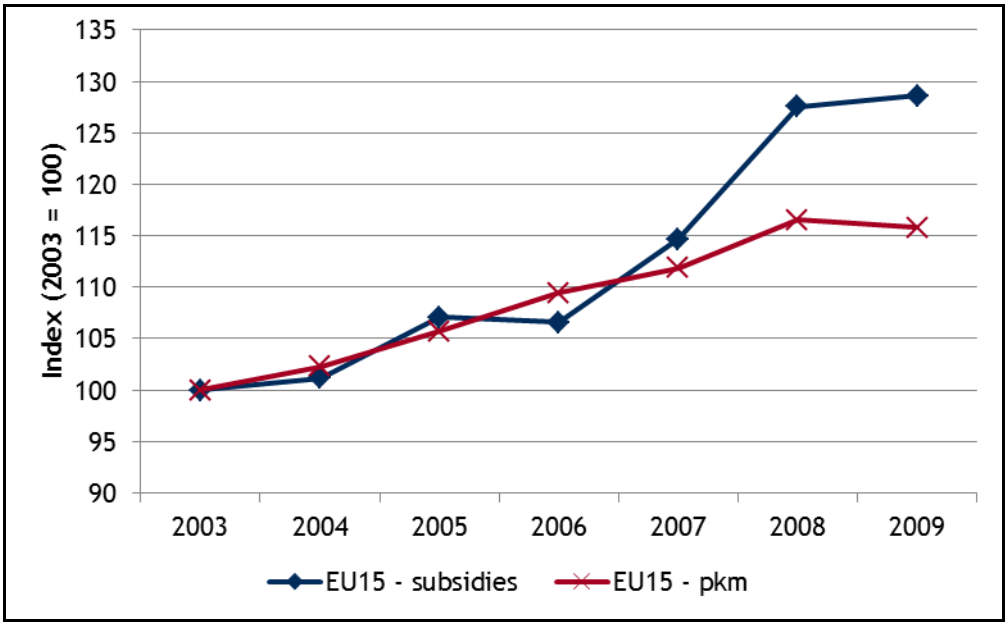
[42] While the PSO efficiency partially liberalised Italy has significantly worsened.

Graph 7a – Rail Subsidy payments in EU10



Source: IA support study (2012).

Graph 7b – Rail Subsidy payments in EU15

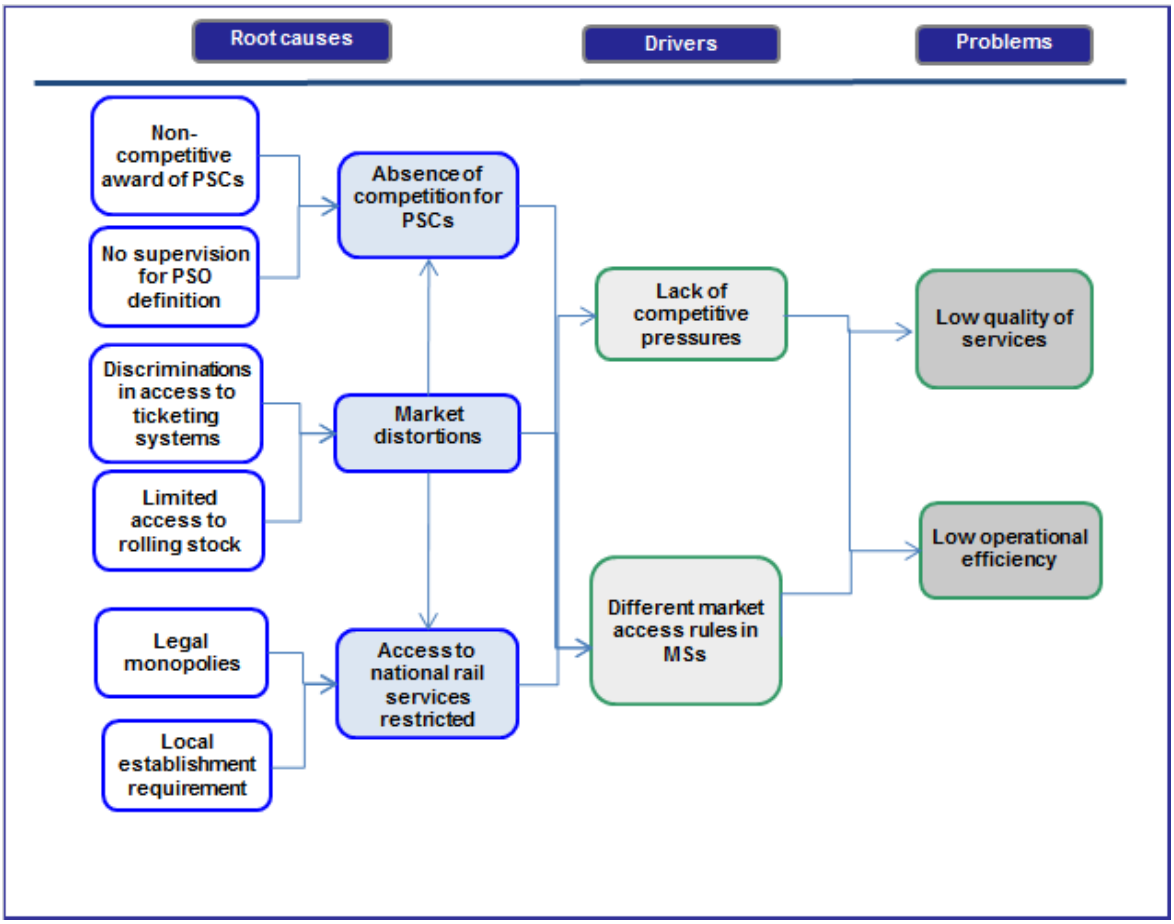


Source: IA support study (2012).

3.3. Problem drivers

According to stakeholders, existing railway undertakings are not sufficiently responding to market trends and curbing their operational inefficiencies due to a large extent to a lack of competitive pressures and to the existence of an increasingly complex patchwork of national approaches to liberalisation of domestic passenger rail markets which prevent the emergence of a genuine internal market for passenger rail services.

Graph 8: Problems, drivers and root causes



3.3.1. Lack of competitive pressures

Some 70% of respondents to the stakeholder consultation considered that the lack of competitive pressures on the European rail market affects negatively the quality of rail services and the competitiveness of the sector.

In many Member States, national incumbents are in either a monopolistic or almost monopolistic situation. As shown in Graph 3 (cf. supra), in all but 2 Member States (UK, Estonia), there is an incumbent with a market share above 90%[43]. In the UK, the incumbent (British Rail) was dismantled, whereas in Estonia, the incumbent Eesti Raaudtee abandoned long-distance services which were directly awarded to a private operator under a PSC.

Competition in the market

Competition in the market is in general more suited for high-speed and long-distance intercity services, which represent half of all rail passenger-kilometres in the EU (box 1). 16 Member States permit "open access" (exposing half of the EU market in passenger-km, cf. Graph 4 and Table 1 in Annex 4), but only in 6 of them effective competition happens. Map 2 and in table 3 list the few

[43] In Poland, the incumbent, PKP was subdivided into several entities, including Przewozy Regionalne, whose activities have been transferred to the 16 regional governments of Poland and cannot as such be considered as a new entrant.

lines with competition in the market. The new entrants competing *in* the market only have a 6% market share of the market in open access[44].

Map 2 – Domestic railway lines with competition *in* the market

- - - - - fringe competition ———— strong competition

44 Open access passenger-km represent 16% of all EU passenger-km in the EU (cf. Annex 4), as a result if new entrants competing in the market have an share of 1% of all EU passenger-km, then their share of open access passenger-km is estimated at 6%. The passenger-km produced in PSO where there is open access are not taken into account.

Table 3 – List of domestic railway lines with competition in the market

Member State	Operator	Route	Service	Entry	Total market (est. m-pkm) (% dom pkm)	Competitor	Rolling stock	Fares, services and ticketing
Austria	WESTbahn	Vienna-Linz-Salzburg	Long distance	2011	Ca. 700-1000 (10%)	ÖBB	New	Tickets purchased on board More stops
Czech Republic	RegioJet (RJ)	Prague-Ostrava	Long distance	2011	Ca. 116 (2%)	České dráhy (ČD) Leo Express	2nd hand	Price reduction(-30%) RJ Trains are slower than ČD Pendolinos
	Leo Express	Prague-Ostrava	Long distance	2012	Services launched on 16 November 2012	České dráhy (ČD) RegioJet	New	Competes on service quality
Germany	Veolia Verkehr Interconnex	Leipzig-Berlin-Rostock	Regional Long distance	2001	Ca.80-160 (0.1%)	DB	2nd hand	Simple fare structure Niche service
	HKX	Hamburg-Köln	Long distance	2012	<1%	DB	2nd hand	Niche Late night / Week-end service
Great Britain	Grand Central (Arriva)	London-Sunderland	Long distance	2007	Ca. 540 (1%)	Several	Leasing	Compete with PSCs that have regulated fares
	Hull trains	London-Hull	Long distance	2002		Several	Leasing	
Italy	NTV	Salerno-Naples-Rome-Milan-Turin	High speed	2012	Ca.750 (2%)	Trenitalia *(Frecciarossa)*	New	Price reduction (-30%) Competes on service quality Uses secondary stations
Sweden	Bla Taget	Stockholm-Göteborg	Long distance	2010	< 2%	SJ	?	2x day Faster service Single Fare
	Veolia	Stockholm-Malmö	Long distance	2012		SJ	?	Slower service Cheaper fare

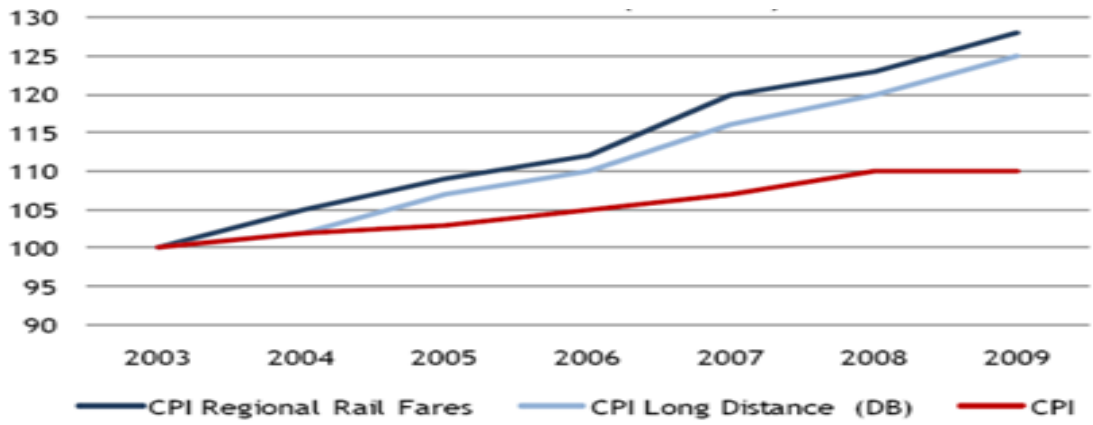
Source: Appendix K "Country fiches" of the IA support study and own estimations (Annex 4).

These routes have experienced a combination of traffic increase, price reduction and/or service innovation when new entrants have come in the market with critical mass (Italy, Czech Republic, Austria and the Stockholm-Malmö route in Sweden)[45] and a widening of services offered with 'niche' operators. Some new entrants opted for offering slower services at lower prices (Regiojet, Westbahn and Veolia Sweden) or to use quality to differentiate themselves (NTV[46], Leo Express and to some extent Grand Central and First Hull[47]). Also, some new entrants have voluntarily opted for 'niche' services (HKX and Blå Taget) or 'niche' routes (Interconnex). Where new entrants have come with critical mass, incumbents have also co-benefited from an overall traffic increase made at the expense of other modes. Finally, for some railway undertakings investing into new rolling stock is part of their business strategy (Italo high-speed trains for NTV and the new trains of Leo Express and Westbahn), while others have opted for second-hand rolling stock (RegioJet and the niche operators).

It is interesting to compare the Madrid-Barcelona (no competition) and Rome-Milan (competition) routes, which cover the same distance in countries with similar GDP per inhabitants: while the latter has doubled the number of trains and reduced the prices, the service characteristics of the former have not significantly changed. The business and leisure fares per km were found to be half the price between Rome and Milan than between Madrid and Barcelona (cf. table 5h of Annex 3).

However, competition is slow to expand and in some cases remains unsustainable in the long-term. Although there is formal open access in Italy since and 2001, NTV was launched in 2006 and started its operations only in 2012. In Germany open access has been liberalised since 1994, but there are just a few niche operators operating and no competition on the German trunk network Munich-Frankfurt-Köln-Hamburg/Berlin. Finally, competition in the market is not always successful: SJ, the Swedish incumbent, abandoned the route Malmö-Goteborg after the entry of a competitor and pulled out of the Copenhagen-Odense route in Denmark, and it would appear that some open access railway undertakings would operate at loss in UK.[48]

Graph 9 – Trend in DB rail fares



Source: Appendix K "Country fishes" of the IA support study.

45 After NTV entered the high-speed trunk Rome-Milan route, traffic increased by 28% (80% of this increase was captured by the incumbent), prices decreased on average 30%, yield management was also introduced by the incumbent. In Austria, ÖBB has almost not lost market share on the Vienna-Salzburg market.

46 NTV proposes business facilities, cinema wagons, high-quality catering and wi-fi

47 In the UK, the majority of revenues of open access operators come from inter-available tickets, the price of which is set by the PSC operator with which they compete.

48 IA support study quotes that the UK department for Transport would have stated that the published accounts of both Hull Trains and Grand Central would operate at loss , UK Country fiche, p.26

Major air routes in EU remain domestic and are almost all exposed to (high-speed) rail competition – except for the busy routes between mainland Spain and Balearics and Canary Islands. However, except for the Rome-Milan route, there is no intra-rail competition. At the same time, there are for instance in parallel 3 airlines on the Madrid-Barcelona route. As a result, rail fares on those lines are very likely to position themselves vis-à-vis air fares or cars rather than to reflect the actual costs of operation within the dynamics of intra-modal competition[49].

Table 4 – Air-rail competition versus rail-rail competition in the main intra-EU air routes[50]

Rank	Air route	Pass.	Train	Rail status	RU	Nat airl	Other airl
1	Madrid-Barcelona	3.1	Yes	Exclusive right	RENFE	IB, UX, VY	
2	Paris-Toulouse	2.1	Yes	Exclusive right	SNCF	AF	U2
3	Paris-Nice	2.1	Yes	Exclusive right	SNCF	AF	U2
5	Hamburg-Munich	1.7	Yes	Open access	DB	LH, AB	
7	Frankfurt-Berlin	1.7	Yes	Open access	DB	LH, AB	
8	Munich-Berlin	1.6	Yes	Open access	DB	LH, AB	
10	Dusseldorf-Munich	1.5	Yes	Open access	DB	LH, AB	
12	***Rome-Milan***	***1.5***	***Yes***	***Open access***	***FS, NTV***	***AZ***	***FR, U2***
14	Frankfurt-Hamburg	1.4	Yes	Open access	DB	LH	
16	London-Amsterdam	1.3	Yes	Open access	*	BA, KL, U2	
18	London-Paris	1.3	Yes	Open access	Eurostar	AF, BA	
19	Madrid-Rome	1.3	No-too long	-	-	AZ, IB, UX, VY	FR, U2
20	London-Frankfurt	1.3	Yes	Open access	**	BA, LH	

Source: Eurostat; own research, AB=air Berlin, AF=Air France, AZ=Alitalia, BA= British Airways, FR=Ryanair, IB=Iberia, KL=KLM, U2= Easyjet, UX=Air Europa, VY=Vueling, *=Eurostar intends to enter this market, **= DB a,d Eurostar intend to enter this market

Furthermore, in the quasi-liberalised Member States (Bulgaria, Denmark, Estonia, Latvia, Lithuania, Poland, Romania and Slovakia), "open access" has co-existed in parallel with a subsidised service under a directly awarded PSO[51], most likely deterring potential new entrants. The only country with open access entry has been Denmark, where SJ, the Swedish incumbent abandoned its intercity services between Copenhagen and Odense, the third largest city in Denmark,

Competition for the market

Competition *for* the market is in general more suited for regional and suburban services, which are mostly exclusively run through PSCs and represent half of all rail passenger-kilometres in the EU (box 1).Two-thirds of all passenger-kilometres in the EU are operated in PSCs as several Member States cover their entire network under PSO and therefore also cover long-distance services under PSOs (e.g. UK, Belgium and Netherlands - cf. graph 4).

The intensity of competition in competition for the market depends on whether the contracts are awarded directly or via competitive tendering. So far competitive tendering is fully or partially used in 11 Member States, while in 16 contracts are directly awarded (although in Bulgaria, Estonia, Latvia, Lithuania and Slovakia, this results from failed tenders). Furthermore, even if competitive tendering is de jure a requirement, effectiveness of tender depends notably on the number of bidders

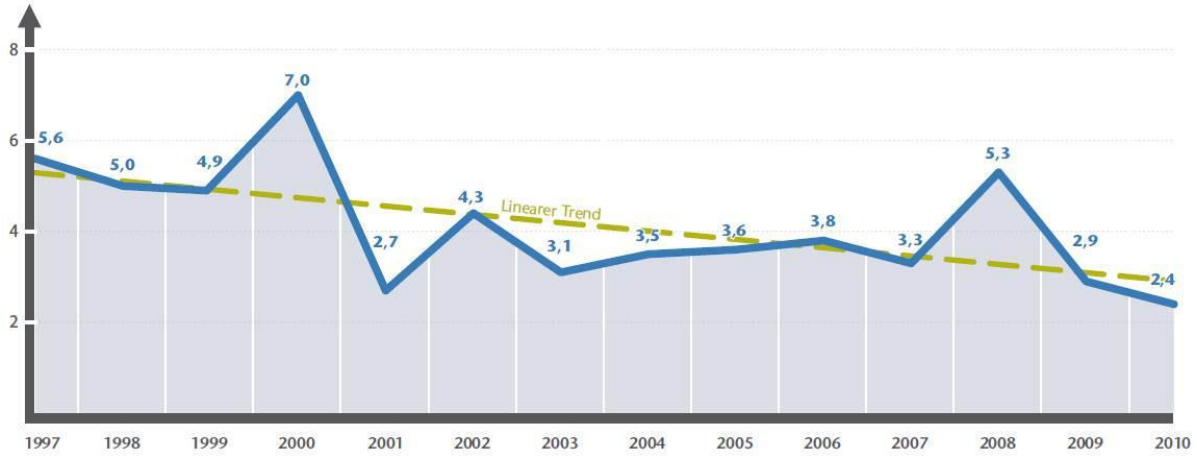
49 In the Rome-Milan line, NTV has been applying fares up to 70% below those of the incumbent Trenitalia (source: Steer Davies Gleave), this represents probably as wide a variation as all the fares of the competing airlines in that route (Alitalia, Ryanair)

50 The main intra-EU air routes, except those between UK and Ireland and mainland Spain and Italy and Baleares, Sicily and Canary Islands; the rank reflects the overall rank among EU intra-air routes

51 In Bulgaria, Latvia, Lithuania and Slovakia, direct award was necessary because of unsuccessful tenders. The same has happened in Polish regions, although one of the problems there has been the very short deadlines to tender

for each PSC[52]. However, the number of bidders remains low in most Member States, except maybe in the UK[53]. In Sweden and Germany, two fully or partially liberalised railway markets[54], 2 to 3 bids were typical[55] and in Italy only 1 or 2 bids[56]. There are several examples of tenders that have not been able to attract a single bidder (not even from the incumbent railway undertaking), in particular in the new EU10 quasi-liberalised Member States (e.g. Bulgaria, Lithuania, Latvia, Slovakia, Poland). This means that despite the efforts and costs to organise tenders PSCs are actually directly awarded to the incumbent or its historical successor (Poland).

Graph 10 – Number of bidders in Germany in PSC tenders (1997-2010)[57]



Source: IA support study quoting Holzhey, M., Berschin, F., Kühl, I. and Naumann, R. (2011) Wettbewerber-Report Eisenbahn 2010/2011 quoted in Appendix K of the IA support study.

Finally, the benchmarking exercises have shown that the Member States with fully liberalised rail market and thus highest level of competition (UK and Sweden) have improved performance across the board (cf. tables 2b and 2d). At the same time, many railway systems run as legal monopolies, also perform well in many aspects, but each of them seems to have certain "weak points". For instance productivity of labour in Belgium and Austria is low, usage of public funds in France is high and there seems to be service undersupply in Spain. It indicates that quality improvements in non-liberalised markets have been achieved with higher price than that in liberalised markets.

3.3.2. National approaches to liberalisation prevent the emergence of a genuine Single Market for rail passenger services

As said above, more and more Member States take measures aimed at revitalising their domestic rail passenger sectors through liberalisation. The Bundesgerichtshof has recently stated that public service contracts must be awarded through competitive tendering, whereas Finland, Austria and Czech Republic, Spain are now considering legislation to open or extend the opening of their railway markets to competition (Sweden has just withdrawn the exclusive rights of SJ on long

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52 Other parameters intervene such as the risk and the incentives in the contract. In "Net cost contracts", the risk is take by the railway undertaking, whereas in "Gross cost contracts" all risks belong to public authorities.

53 In the UK, according to the Department for Transport, franchises attract 7-8 bidders, out of which 4-5 are pre-qualified. Most bidders are either bus groups or incumbents, mostly from other EU Member States, whereas, for instance, procurement procedures in the EU public procurement market attract 5 bidders on average.

54 In the meaning that they have been opened for competition for more than 20 years

55 In Germany, it would appear that market maturation and greater experience have played a role, but also integrated franchises[55] and technical barriers (cf. Annex 6, KCW (2011)).

56 In Italy, in the 3 tenders that were organised, the one in Veneto only attracted 1 bidder (in spite of 3 invitations to tender sent to firms), while the tenders in Lombardy and Liguria attracted 2 bidders (in spite of respectively 8 and 5 invitations to tender sent to firms).

57 Holzhey, M., Berschin, F., Kühl, I. and Naumann, R. (2011) Wettbewerber-Report Eisenbahn 2010/2011.

distance lines). However, in the absence of a common approach at EU level, a patchwork of national models has emerged, which, according to stakeholders, prevents the emergence of the Single European Railway Area.

Given the high entry costs, foreign rail operators (including foreign incumbents), rather than 'green field' new entrants, are the actual source for intra-modal competition in railways, being able to create critical mass to challenge national incumbents. However, currently rules for making business vary significantly between Member States. For instance, PSCs may be awarded for entire networks or for small bundles of lines and bidding procedures vary. In the same manner, railway undertakings may enjoy full open access rights in some Member States while in others such rights are subject to the economic equilibrium of PSCs (e.g. Italy) or depend on the existence of reciprocity (Italy, Luxembourg). In several Member States there are services under legal monopoly (long-distance services in France, Spain, Portugal and most of Finland).

Because of these diverging approaches, it is difficult for railway undertakings to develop consistent business strategies throughout the EU, as low-cost airlines have been for instance able to do, and to create critical mass to challenge the national incumbents. Only 5 incumbents have developed activities in other Member States and only one of the UK franchise operators is actively present in the continent. In an interview and during the stakeholder conference of the 24th September 2012, a UK-based railway group explained that it would be more likely to bid overseas if the EU had a more consistent approach on market access rules.

This patchwork situation acts as a drag on the creation of innovative industrial and business structures for a better exploitation of economies of scope and scale, while enforcing on operators the business logic based on national rather than EU dimension.

3.4. Root Causes

These two problem drivers – low competitive pressure and patchwork of access rules, that prevents the emergence of more efficient Single Market for passenger rail services – are the result of interplay between several root causes.

3.4.1. Access to national rail markets is restricted

As indicated above, except in few Member States, domestic rail passenger transport remains in many Member States closed to competition.

3.4.1.1. – Local access rules on domestic rail passenger markets

(a) Establishment

Except for the opportunity for cabotage within the international passenger services, EU railway undertakings do not have the freedom to provide passenger rail services in the domestic markets of other Member States under EU law. In at least 9 Member States (Spain, France, Belgium, Portugal, Luxembourg, Finland, Hungary[58], Slovenia and Greece), the incumbent appears to still enjoy a legal monopoly for the provision of domestic passenger services laid down in the national legislation.

In most Member States, access to the domestic passenger market is subject to specific conditions, such as establishment in that Member State (the exceptions are Bulgaria, Denmark, Latvia, Slovakia, Sweden and the UK are the only exceptions – the situation appears to be unclear in Finland, Spain, Portugal and Poland). In this case, foreign railway undertakings face entry barriers compared to national operators as they must first set up a subsidiary in the host Member State. Italy and Luxembourg moreover apply reciprocity clauses against companies originating in Member States that have not opened their own domestic passenger market.

[58] In the case of Hungary, there are 2 historic operators: MAV and GYSEV

BOX 5 - ECONOMIC EQUILIBRIUM OF PSCs

The question of the economic equilibrium of PSC first arose in the context of the 3rd Railway Package and the opening of domestic cabotage in international services. Article 10 (3) (b) of Directive 2007/58/EC foresees that Member States may limit cabotage if it compromises the economic equilibrium of PSCs.

The question of the economic equilibrium of PSC was further clarified in the Interpretative communication on certain provisions of Directive 2007/58/EC. The interpretative communication[59] indicated that the assessment should be made transparently and on a non-discriminatory basis, based on economic analysis and it should determine how far the PSC is impaired.

The recast of the 1st Railway Package foresees that implementing measures should lay down the details of the procedure to assess whether the economic equilibrium is compromised.

The competition between RegioJet and the Czech incumbent Česke Drahy (ČD) provides a good example of the problems of economic equilibrium of PSCs. Both compete on the Prague-Ostrava line with ČD apparently calling at some stations under the terms of its directly awarded PSC. Nonstop intercity trains are not covered by PSCs. According to ČD, the price reduction against RegioJet would have resulted in an increase of losses from 15 to 40 million EUR. In parallel, at the time of writing, RegioJet has complained to the Czech competition authority that ČD has abused its dominant position to undercut its competitor by lowering prices on the Prague-Ostrava route while increasing prices in others[60]. The Czech competition authority has launched administrative proceedings and ČD risks a fine of up 10% of its revenues. ČD argues that similar commercial offers were available in other routes that are not subject to competition.

3.4.1.2 – Legal monopolies

In Finland, France, Portugal and Spain, national incumbents enjoy exclusive rights on 17% of EU passenger-km that cover routes that fall outside public service obligations, as, for instance, AVE and TGV lines (e.g. Paris-Lyon, Paris-Bordeaux, Madrid-Sevilla and Madrid-Barcelona) and the intercity services in Portugal and Finland (cf. table5). In those circumstances, it is not possible to develop any competition for railway services, which could result in underutilising of infrastructures, as monopolists tend generally to undersupply[61].

59 OJ C 353/01 28.12.2010, available at: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2010:353:0001:0006:EN:PDF

60 Source; Steer Davies Gleave (Czech Republic country fiche) and interviews with CER

61 cf Annex 3 Table 9 comparing the usage of the high-speed lines in France, Spain and Germany with the Italian Rome-Milan line, which is used almost twice as much.

Table 5 – Main lines falling under legal monopolies

Finland	France	Portugal	Spain
High-speed (Pendular) Helsinki–Oulu Helsinki–Turku Helsinki–Joensuu Helsinki–Jyväskylä–Kuopio	**High-speed (TGV)** Paris-Bordeaux Paris-Lille Paris-Lyon-Marseille Paris-Strasbourg	**High-speed (Pendular)** Alfa Pendular Lisbon-Porto	**High-speed (AVE)** Madrid-Cordoba-Sevilla Madrid-Barcelona Madrid-Valencia Madrid-Cordoba-Malaga Madrid-Zaragoza-Barcelona Madrid-Valladolid
Intercity Helsinki–Tampere–Oulu–Rovaniemi Helsinki–Turku Helsinki–Iisalmi Helsinki–Joensuu	**Intercity (Corail, Lunéa, Téoz)** Paris-Nice Paris-Toulouse Paris-Clermont-Ferrand	**Intercity** Lisbon–Coimbra–Porto–Guimarães Lisbon–Coimbra–Guarda Lisbon–C.Branco–Covilhã Lisbon–Faro Lisbon-Évora	

3.4.2. Obstacles to an effective 'regulated competition' for PSCs

3.4.2.1 - Direct award of Public Service Contracts

While PSCs remain essential part of rail passenger services, this section discusses the relevance of competition in awarding PSCs (e.g. competition *for* the market)). While some Member States have already introduced competitive tendering for PSCs, in other Member States the domestic urban, suburban and regional services, and often also inter-city services, are provided on the basis of a directly awarded PSC. In small-sized Member States like Belgium, Denmark, Estonia, Hungary, Ireland, Netherlands, Greece and Slovakia, the whole network is covered by a single PSC which is directly awarded.

Although Regulation 1370/2007 on public passenger transport services recognised that, *with appropriate safeguards, the introduction of regulated competition between operators leads to more attractive and innovative services at lower cost and is not likely to obstruct the performance of the specific tasks assigned to public service operators*, it excludes the rail sector from the obligation to award PSCs through an open tendering procedure.

As a result:

– 42% of all the EU p-km are not accessible to other railway undertakings than the national incumbent.

– The long-distance services of small-sized Member States Like Belgium, Hungary, Netherlands are not accessible to other railway undertakings, but the incumbent

– The regional services of many important EU regions (e.g. Ile-de-France) are not accessible to other railway undertakings, except the incumbent (cf. table 6a)

– The suburban services of all EU main cities, but Berlin and London are not accessible to other railway undertakings, but the incumbent (cf. table 6b)

At the same time introduction of competitive tendering has resulted in significant savings of 20% to 30% for PSC contracts in Germany, Sweden and Netherlands (cf. box 7)

60% of stakeholders agreed that further market integration of the rail sector should be progressed by opening of domestic passenger service through compulsory competitive tendering of PSCs. Some railway undertakings disagreed indicating that only the availability of state funding to the railway system as a whole would provide for the success of tenders. Passenger transport authorities reported that administrative costs would increase and therefore competitive tendering should only take place if there was the assurance that it would deliver best value for money

Table 6a – Intercity services under PSOs – type of award

Intercity services	Type of award
UK	
London-Birmingham-Manchester	Tender of franchise
London-Newcastle-Edimburgh	Tender of franchise
Netherlands	
Amsterdam-Utrecht-Eindhiven-Maastricht	Direct award of national PSC
Rotterdam-Utrecht-Groningen	Direct award of national PSC
Amsterdam-Rotterdam	Direct award of national PSC
Belgium	
Oostende-Gent-Brussels-Liège	Direct award of national PSC
Denmark	
Copenhagen-Odense-Aarhus-Aalborg	
Estonia	
Tallinn-Tartu	Direct award of national PSC
Greece	
Athens-Thessaloniki	Direct award of national PSC
Hungary	
Budapest – Miskolc–Tiszai–Debrecen–Budapest	Direct award of national PSC
Ireland	
Dublin-Cork	Direct award of national PSC
Dublin-Limerick	Direct award of national PSC
Slovakia	
Bratislava-Kosice	Direct award of national PSC

Table 6b – Regional services Main EU regions – type of award

Nordrhein-Westfalen	***17,996,621***	***Mix Direct Award/Tenders***	***DB Regio, misc.***
Bayern	***12,520,332***	***Mix Direct Award/Tenders***	***DB Regio, misc.***
Île de France	*11,659,260*	*Direct award*	*SNCF*
Baden-Württemberg	***10,749,755***	***Mix Direct Award/Tenders***	***DB Regio, misc.***
Bassin Parisien	*10,707,873*	*Direct award*	*SNCF*
Lombardia	***9,642,406***	***Mix Direct Award/Tenders***	***FS/LeNord***
South East (UK)	***8,332,013***	***Competitive tendering***	***Misc.***
Andalucía	*8,046,131*	*Direct award*	*RENFE*
Niedersachsen	***7,971,684***	***Mix Direct Award/Tenders***	***DB Regio, misc.***
London	***7,635,284***	***Competitive tendering***	***Misc.***
Cataluña	*7,238,051*	*Direct award*	*RENFE, FGC*
Comunidad de Madrid	*6,189,297*	*Direct award*	*RENFE*
Vlaams Gewest	*6,161,600*	*Direct award*	*SNCB-NMBS*
Rhône-Alpes	*6,117,229*	*Direct award*	*SNCF*
Hessen	***6,072,555***	***Mix Direct Award/Tenders***	***Misc.***
Campania	*5,811,390*	*Direct award*	*FS,-TI, SEPSA, Circumv*
Lazio (NUTS 2006)	*5,561,017*	*Direct award*	*FS-TI*
West Midlands (UK)	***5,393,394***	***Competitive tendering***	***Misc.***
Yorkshire and The Hum	***5,199,613***	***Competitive tendering***	***Misc.***
South West (UK)	***5,194,435***	***Competitive tendering***	***Misc.***
Mazowieckie	*5,188,488*	*In-house*	*Koleje Mazowiecke*
Scotland	***5,156,298***	***Competitive tendering***	***ScotRail***
Sicilia	*5,029,683*	*Direct award*	*FS-TI*
Comunidad Valenciana	*4,892,475*	*Direct award*	*RENFE, FGV*

3.4.2.2 – Difficulty to verify the absence of a manifest error for Public Service Obligations

The TFEU - including Protocol N°26 on Services of General Interest - gives Member States a wide margin of discretion in providing, commissioning and organising services of general economic interest. The Union's competence in this respect is limited to checking whether the Member State has made a manifest error when defining the service as public service obligation and to assessing any State aid involved in the compensation.[62] National competent authorities have core competence in defining PSO (i.e. identifying areas where it is necessary to impose PSO for passenger transport) and establishing the necessary service conditions (e.g. fares and frequencies).

As shown in graphs 4 to 6, the scope of PSOs varies from Member State to Member State. In Finland, it appears to cover only 14% of all p-km, whereas in 16 Member States, it covers more than 80% of p-km. In some countries, PSO covers the whole territory, most likely including services that could be profitable on their own but which could have been included in PSO definition in order to contribute to financial sustainability of remaining unprofitable parts of the network.

However, in this context, there is a risk that PSO definition could lead in some cases to an excessively wide scope of the definition of PSO with the consequence of market foreclosure. In the current situation, the EU lacks a control mechanism to verify the absence of a manifest error in the definition of PSOs. At the same time any EU control mechanism should respect the core competences of national authorities in identifying areas for PSO for passenger transport.

3.4.2.3 - The size of Public Service Contracts can be too large for other bidders beyond the incumbent

In Member States like Austria, Italy[63], Netherlands or Germany[64], the whole domestic passenger network is covered by a single or several voluminous PSCs (instead of several medium-sized bundles), which have been awarded through competitive tendering, but whose operational requirements (rolling stock, staff) are so extensive[65] that only the incumbent, which has actually access to rolling stock and other recourses, can obtain the contract, thus leading to a de facto monopoly.

For instance, the railway incumbent in Germany has successfully won in 58% of all tenders between 2006 and 2010 (with all access to rolling stock being a decisive factor). In particular, all contracts larger than 5.3 million train-km[66], were awarded directly to the incumbent[67]. Yet small entrants have been able to win 65% of small contracts. This is indicative of another current obstacle for new entrants to compete on large contracts. It is inter alia related to the question of availability of rolling stock as discussed below.

3.4.3. Market distortions hurting potential new entrants

The stakeholder consultation and the in-depth analysis undertaken by the Commission has identified a series of factors creating an uneven level playing field between the different service providers in

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62 Case T-289/03 BUPA and Others v Commission [2008] ECR II-81, paragraphs 166-169 and 172; Case T-17/02 Fred Olsen [2005] ECR II-2031, paragraph 216.

63 The Italian competition authority criticised the bundling of all lines in Liguria

64 In Germany, several PSCs have covered huge train-km sizes (a contract of some 99 million train-km was awarded in 2003). In recent years, the trend of the size of the PSC has quite decreased, with much networks below 1 million train-km (cf. Annex 8)

65 More information on the size of bundles is provided in Annex 8 – in the Netherlands 95% of all passenger-kilometres are covered by a single PSC (in the Ranstad) and in Germany in 2003 a PSC was awarded in Bavrai for 98 million train-km, i.e. as much as the whole networks of Austria or Hungary.

66 This figure is comparable to Lithuania's current passenger train-km.

67 Source: SDG, 2012

(partially) liberalised markets, thereby hampering the expansion of new entrants. While market distortions in terms of different access barriers were mentioned in consultation responses from new entrants, passenger associations and passenger transport authorities, many holding groups responding to the stakeholder consultation disagreed with discriminatory framework conditions.

Many sources of discriminations against new entrants have been identified, such as access to infrastructure, stations, key rail related services (like information display, marshalling yards shunting facilities) and maintenance services, ticketing systems and rolling stock availability. Many of those have been/will be dealt with in other legislations/proposals. The question of access to infrastructure is being dealt in the context of the initiative on the governance of infrastructure (cf. Annex 1), whereas the question of the non-discriminatory access to ticketing facilities in stations, travel information display, marshalling yards, shunting and maintenance services has been dealt with in the Recast of the 1st Package.

The core factors leading to uneven level playing field are: the discriminations in the access to ticket distribution systems and the access to rolling stock.

3.4.3.1 – Discriminations in the access to ticket distribution systems

Conceptually a distinction be made between services under PSC and open access services. In the case of PSC non-discriminatory access to integrated ticketing schemes is less of an issue, as the competent authorities decide about the existence of such schemes and their conditions of access. However, it may be interesting to establish ticket integration between services of different PSCs.

For open access services, access to ticketing is more of a problem if the new entrant wants to offer through-tickets and inter-available tickets. Therefore, the new entrants often face problems with the access to integrated ticketing systems, in particular when these are run nationwide through a *de facto* mandatory single system by incumbents[68]. This is the case in Germany, Denmark, Romania, Slovenia, Slovakia and the Czech Republic. 55% of stakeholders consulted agreed that it was necessary to improve non-discriminatory access to rail-related services, such as ticketing and information systems. For instance, according to an interviewed new entrant, the incumbent in one Member State takes a commission of 14% on all ticket sales, which are reimbursed to new entrants up to 2 years later (whereas in the UK, the payment is organised by ATOC, the association of train operating companies which reimburses operators within 8 days with a 1.5% commission). In the Czech Republic, although national law foresees through ticketing, the new entrant is required to pay a 25% commission on all through-tickets. There is no evidence of problems in the remaining aforementioned Member States, as there are no new entrants in open access in Denmark, Romania, Slovenia and Slovakia. However, as far as competition in international services is concerned, although DSB has the obligation in Denmark to sell tickets, the incumbent refused to sell tickets for competing services across the Oresund Bridge from Copenhagen.

At the same time, if every operator were running a different ticketing system, this would be to the detriment of the service offer from the passengers' view-point, fragmenting the service offer and diverting costs away from improvements in service towards covering commission in ticket sales.

3.4.3.2 - Problems of access to rolling stock

Competition *in* and *for* the market is often further complicated by limited access to rolling stock that is linked to investment costs, financial risks related to its long economic life and the time needed for its acquisition and homologation. In addition, much rolling stock is adapted to the particular

[68] Passenger authorities in Germany have reported that by requiring in their tenders to integrate with the main network of the incumbent (as there is no other railway undertaking in the long-distance lines), they involuntarily force railway undertakings to go through the incumbent ticketing clearing system

technical conditions or commercial needs of specific routes or networks[69]. 61% of respondents to the stakeholder consultation agreed that access to rolling stock was an access barrier for railway undertakings.

Access to rolling stock appears to be a serious problem in Germany, France, Italy, Greece, Portugal, Spain and the majority of EU-10 Member States that joined the EU in 2004 and 2007. In at least 8 Member States[70], ownership of rolling stock continues to be dominated by incumbent railway undertakings, which are unable or unwilling to make it available on commercially attractive terms to new market entrants. In Germany and Austria, it appears that the incumbent scraps rolling stock rather than putting it for sale[71]and second hand stock offered for sale typically does not meet the requirements of PSCs. In Italy, PSC tenders have been hampered due to problems of access to rolling stock by new entrants (as well as for the related requirements within these tenders[72]). Finally, in some small Member States, the pool of rolling stock is limited. Just to operate a typical suburban service, a new entrant could need up to 8% of the domestic rolling stock[73].

Emergence of rolling stock market is linked to liberalisation of services and harmonisation of technical standards. As it stands, leasing market is still immature as only 10% of passenger rolling stock is leased[74]. The short lifespan of some PSCs (10-15 years) compared to the longer operating life of rolling stock (30-35 years) discourages new entrants competing for the tender to invest into new rolling stock. In addition, new entrants do not have the bargaining power of incumbents that can place mega-orders[75].

The Member States with liberalised markets have already taken measures to ease the access to rolling stock. In Sweden and the UK, public authorities own rolling stock that they procure on behalf of railway undertakings, enjoying also economies of scale from increased bargaining power[76]. In the UK, rolling stock companies have been set up (the so-called ROSCOs), but also in non-liberalised Spain, it appears that the surplus rolling stock of the incumbent (RENFE) would be transferred to a new body with the view to facilitate the access to rolling stock by new entrants.

3.5. Who is affected in what way?

The problems described above and the measures to be proposed to address them will affect a large number of actors in the rail market and beyond. They affect primarily railway undertakings that either gain or lose business opportunities. They will also affect rail passengers who are likely to face a different offer of services, the railway manufacturing industry that will face a broader spectrum of customers and the workers of railway undertakings whose working conditions could be altered. More fundamentally, these measures will also affect the way public authorities – both at national and regional level –interact with railway undertakings and finance rail services.

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69 There are varying gauges and electric current used throughout the EU. For instance, gauge is 166mm (Spain and Portugal), 1520 mm (Lithuania, Latvia and Estonia), 1524 mm (Finland) whereas most of the EU is at 1435 mm.

70 Bulgaria, France Ireland, Portugal, Romania, Finland, Spain and Hungary; Source: Steer Davies Gleave

71 In Austria, new entrants have complained to the regulator, the Schienen Control, about this practice, which appears to take place also in Germany (source: Steer Davies Gleave).

72 The Italian Competition Authority recommended that adequate time should be conceded for bidders for public service contracts in order to procure rolling stock

73 Cf. table 17 in Annex 8, simulation of the rolling stock needed for a suburban line with 2.5 train-km/year compared to the rolling stock in Greece, Portugal, Finland and Ireland.

74 EPTTOLA, European Passenger Train and Traction Operating Lessors' Association (EPTTOLA) claims that its members own 12.350 passenger vehicles. EPTTOLA regroups the 7 largest lessors of rolling stock, including the UK ROSCOs.

75 Examples: SNCB-NMBS ordered 95 EMU trains with 200 options for 1.5 billion EUR, the DB Regio-Bombardier framework contract for 200 locomotives for 600 million EUR and the SNCF contract with the Alstom-Bombardier for 210 double-decker commuter trains for 1 billion EUR.

76 The UK DfT purchased some 500 carriages from Hitachi for 4.5 billion GBP for all intercity trains; Transitio AB procures rolling stock on behalf of all Swedish passenger transport authorities

3.6. How would the problem evolve?

The Commission has carried out an analysis of possible future developments in a scenario at unchanged policies, the so-called baseline scenario. The existing regulatory situation for the different aspects is summarised in the table below.

Issue	Assumption
Background	First Package Recast and other relevant legislation
Competitive tendering	Regulation 1370/2007, in which Competent Authorities may award PSCs directly or through a competitive tendering process
Open access	No domestic open access right provided under EU law, de jure monopolies can be retained
Rolling stock	No specific EU requirement
Ticketing	Implementation of the passenger rights Regulation and Recast Directive which envisage that: • Railway Undertakings and ticket vendors shall offer, where available, tickets, through tickets and reservations • Operators of ticketing services are not obliged to supply their services to all railway undertakings but when they decide to offer them to others, they shall supply them to Railway Undertakings on a non-discriminatory manner

The baseline scenario also assumes growth in demand in passenger markets in line with the projections of the Impact Assessment accompanying the 2011 White Paper. Based on these projections, the demand for rail services is expected to grow considerably in the coming years (1.8-1.9% for urban transport, 2.0-2.1% for long distance/medium rail services and 2.9%-3.1% for high-speed and international services), in particular because of increases in oil prices and congestion. In addition, whereas incumbent share in most Member States is currently 90-100%, the baseline assumes that, in the long distance and high speed markets, new open access operators will continue to increase their market share in Austria, the Czech Republic, Italy and Sweden, even in the absence of further liberalisation measures. In other markets, it is assumed that existing market shares will continue. At the same time, the variance of several efficiency ratios is likely to continue growing.

Table 4- Baseline growth in demand

Mode	Segment	2009-2010	2011-2015	2016-2020	2021-2025	2025-2035
Rail	Urban and suburban	0.9%	2.1%	1.9%	1.8%	
	Medium and regional	0.8%	1.9%	2.0%	2.1%	
	Long distance					
	High speed	2.1%	2.1%	2.9%	3.1%	
	International					
Road	All	0.7%	1.6%	1.1%	0.8%	
Air	All	1.3%	4%	3.5%	2.8%	
Inland waterways	All	0%	0%	0%	0%	

Competitive pressures

Directive 2007/58/EC on market opening for international services has already had a small impact on the opening of domestic passenger rail services through cabotage. In addition, some Member States have decided to open their domestic rail passenger services market independently of EU decisions (e.g. Germany, Sweden), and it cannot be excluded that other Member States also introduce such measures (e.g. Spain and Finland are already considering taking measures). Member States which have already opened their domestic passenger services market but that impose restrictive conditions may also decide to remove such restrictions.

The expected growth in demand for passenger services is likely to create more pressure for the improvement of rail services and operational efficiency, precisely at a time when most Member States are undergoing a period of constrained spending.

However, if no changes are brought at the EU level to the current restrictions in access to market, some *de jure* national monopolies will continue to exist, preventing the development of competition in railways. In these conditions, it will be impossible to operate within a Single European Railway Area, even more so as foreign railway undertakings will still need to establish themselves in other Member States to access their markets. Also some Member States will maintain their reciprocity clauses, thus leading some railway undertakings not to benefit from market opening outside their own Member State borders, until the Member State from which they originate accepts to withdraw its monopoly on the domestic market. Finally, the development of rail services throughout the EU will be impaired by the variety of assessments of the frictions between PSCs and open access operations.

Some Member States have decided to tender the PSCs competitively despite this not being called for through EU legislation and to actually publish calls for tender in the *EU Official Journal* (as many German and Swedish transport authorities already do), and it cannot be excluded that other Member States also introduce such measures (as the recent decision by the Bundesgerichtshof to make competitive tendering of public service contracts mandatory). However, without the introduction of an explicit requirement, it is not expected that all Member States will do so, and nothing prevents those Member States from backtracking.

If no changes are made to the current system of direct awards, several national incumbent railway undertakings will continue to operate exclusively all PSCs. This would maintain the low level of competition and limit the market share of new entrants.. Moreover, those Member States that organise competitive tendering for whole regions or countries with high volumes of train-km will not attract railway undertakings other than the national incumbent itself. As a result, the efficiency of railways and the level of service will most likely not improve.

Finally, in parallel, low-cost airlines and bus coach operators will continue to expand their services, further grabbing modal share from inert railway undertakings. In Germany, the federal government submitted a bill in December 2011 envisaging the liberalisation of the long-distance coach market.

Market distortions

Ticketing

If substantial changes are not introduced to prevent discriminatory measures against new entrants in ticketing systems (including their clearing mechanisms), the latter will continue to be discouraged to enter new markets, at least there where integrated ticketing schemes run by the incumbent exist, further decreasing competitive pressure and therefore giving few incentives to improve the efficiency and the quality of railway systems. If they do enter the markets, the new entrants will be discouraged from offering through-ticketing, reducing the overall attractiveness of rail compared to other modes. However, in the long run, it cannot be excluded that the development of interoperability and technical through-ticketing solutions in domestic rail through the implementation of the Technical Specification for Interoperability "Telematic Application for Passenger transport" (TAP TSI[77]) ultimately provides technical solutions which will facilitate non-discriminatory access to ticketing systems in domestic rail services, although this is not a primary purpose of this measure.

Finally, the European Court of Justice will provide an interpretation of Article 8(2) of the Rail Passenger Rights Regulation 1371/2007 to determine whether real-time timetable information made available by infrastructure managers should be made available or not to all operators, including new entrants.

Rolling stock

It can be anticipated over time that market consolidation and market changes induced by the implementation of TSIs will reduce the number of vehicle types on the market, and reduce the technical obstacles to running on particular networks. Hence the pool of vehicles of each type should increase. This will have beneficial impacts on the availability of 2nd hand rolling stock markets and vehicle leasing markets. While rolling stock leasing companies are already developing their activities throughout Europe, there are no guarantees whether they will reach in all Member States. In particular, the development of leasing companies could be complicated in national stand-alone or almost stand-alone railway networks such as in Finland, Ireland, Lithuania, Latvia, Estonia, and Greece.

Member States may also undertake national measures to ease the access to rolling stock (like has happened in UK and Sweden) or should be encouraged to do this. The ERA initiative will also help to solve this problem (cf. Annex 1).

[77] Commission Regulation 454/2011 on the technical specification for interoperability relating to the subsystem 'telematics applications for passenger services' (TAP TSI) of the trans-European rail system has not yet fully covered the development of applications for inter-availability of tickets or through-ticketing at domestic level. (it remains an open point) In addition, a Commission Decision will be adopted that will determine the timing of measures that railway undertakings have to implement in order to set up rail information and reservations systems based on TSI TAP pursuant to Art 10 of Regulation 1371/2007.

However, if no further changes are brought to ease access to rolling stock for new entrant, the latter will in many Member State continue to be de facto prevented from entering into new markets, keeping the competitive pressures low and therefore giving few incentives to improve the efficiency and the quality of railway systems.

Conclusion

Some Member States may be prompted to add competitive pressure in rail to improve its efficiency. Yet, by taking purely national measures, Member States will maintain a great variety of legal regimes preventing the emergence of true (cross-border) competition for PSCs or a real access to their domestic passenger markets.

Some Member States may for other reasons opt to keep their markets "partially or non-liberalised" which overall seems to slow down quality and efficiency improvements. As a result, competition in railways will continue to evolve at the fringe and the Single European Railway Area will remain incomplete.

3.7. Subsidiarity

3.7.1. Legal base

Articles 90 and 91 of the Treaty extend to railways the objectives of the Treaty in terms of competition and creation of a genuine internal market in the context of an EU Common Transport Policy. Pursuant to Articles 90 and 91 TFEU, the Common Transport Policy should contribute to the broader objectives of the treaties. The goal of the Common Transport Policy is to remove obstacles at the borders between Member States so as to facilitate the free movement of persons and goods. To this end, the prime objectives of the initiative are amongst others to complete the internal market for transport. In addition, Article 56 of the Treaty refers to the freedom to provide cross border services which is central to the effective functioning of the EU Internal Market. This is fully applicable to transport as recognised in Article 58 TFEU.

As far as PSOs are concerned, Article 14 of the Treaty confirms the place occupied by services of general economic interest in the shared values of the Union. The competence of the EU in this field is limited by Protocol n°26 to the TFEU to checking whether the Member State has made a manifest error when defining the service as public service obligation and to assessing any State aid involved in the compensation. Article 106(2) of the Treaty lays down that undertakings entrusted with the operation of services of general economic interest are subject to the rules contained in the Treaty, in particular to the rules on competition, in so far as the application of such rules does not obstruct the performance, in law or in fact, of the particular tasks assigned to them.

According to Article 4 of the TFEU, EU action on common transport policy has to be justified and the subsidiarity principle set out in Article 5(3) of the Treaty on the European Union must be respected. This involves assessing two aspects.

BOX 5 – SUBSIDIARITY IN AIR TRANSPORT, URBAN TRANSPORT AND PUBLIC PROCUREMENT

By analogy, the question of subsidiarity can be approached through the freedom to provide domestic air transport services in the whole internal market, competitive tendering for urban transport and public procurement policy.

Today, thanks to the opening of the domestic air transport market, several low-cost operators, most notably with from the UK (Easyjet), Hungary (Wizzair) and Ireland (Ryaniar) operate domestic routes in other Member States. NTV and Trenitalia compete with Ryanair and Easyjet on the Rome-Milan route.

The PSO Regulation is currently opening the market for for urban transport under public service contract through mandatory competitive tendering (these provisions will fully apply as from 2019).

Public procurement policy covers today some 400 billion EUR of government purchases throughout the EU and all tenders above specific thresholds are published in the TED database of the EU Official Journal (OJEU). In December 2011, the Commission adopted a proposal aiming at introducing competitive tendering for service concessions. Public service contracts for heavy rail are similar to service concessions, but do not fall within the scope of this initiative. Some 40 PSCs in railways have been already published on average in the OJEU on yearly since 2012[78], including the tender for the Berlin S-Bahn[79].

3.7.2. Necessity test

Firstly, it is important to be sure that the objectives of the proposed action could not be achieved sufficiently by Member States in the framework of their national constitutional system, the so-called necessity test.

Actions by Member States alone cannot ensure the coherence and coordination of market access rules needed for the emergence of a genuine internal market for rail transport. The absence of open access to specific rail routes and the lack competitive tendering for PSOs hinders the pan-European operations of railway undertakings. It also limits the potential of competition for international passenger services as new entrants do not have the possibility to offer integration with other services.

At the same time, it is not necessary or appropriate for EU to intervene as regards definition of PSO or conditions set to PSCs, as far as these do not carry risk of market foreclosure. The measures considered under different PSC options of this IA are therefore all assessed in terms of their compliance with the subsidiarity principle (cf. Annex 4) and geared towards maximum flexibility to be left to Member States. Subsidiarity concerns are equally high as far as different rolling stock and ticketing measures are analysed, where the Member States could at this stage be better placed for defining the appropriate solutions. For instance, it could not be appropriate to impose the creation of leasing companies or ticket distribution systems, even if those measures are were supported by stakeholders.

3.7.3. Test of EU added value

Secondly, it has to be considered whether and how the objectives could be better achieved by action on the part of the EU, the so-called "test of European added value".

Since the 1990s, the Commission has elaborated a framework of common rules and procedures intended to open the European rail market to competition and create a common European Railway

[78] There is currently no publication obligation for tenders that have the CPV procurement code '60210000' Public transport services by railways for publication in TED, the OJEU database. Yet, contract notices in the OJEU published with the aforementioned code: 38 (2008), 37 (2009), 46 (2010), 28 (2011) and 42 (2012), mostly in Germany, Poland, and Sweden. It can be estimated that on average some 40 PSC contract notices are published in TED every year.

[79] OJEU, Contract Notice S/144-241103 published by the Verkehrsverbund Berlin on the 28.07.2012

Area. The approach so far has been consistent with the objective of developing Europe's transport sector and contributes to the achievement of Lisbon Strategy objectives. The successive related EU legislations have already recognised the EU added value when they were adopted and the arguments, which substantiate this added value, still hold.

Problems affecting the railway passenger sector involve trans-national aspects and further action at EU level should allow ensuring consistency of proposed measures and initiatives with the acquis in railway policy and the regulation of PSOs. In these terms the EU is best-placed to adopt common rules for the rail passenger market that grant the right to all railway undertakings to operate throughout Europe without discrimination. The envisaged regulatory framework will provide railway undertakings with confidence to benefit from a single consolidated legislative framework and to face predictable business conditions throughout the EU, therefore providing the ground to consolidate the Single European Railway Area.

As far as the competitive tendering of PSCs in urban and suburban networks is concerned, Regulation 1370/2007 has already recognised the EU added value when it was adopted and the arguments which substantiate this added value (cf. section 3.4.2.1) still hold.

4. OBJECTIVES

Overall, the stakeholders have supported the problem drivers of insufficient quality and efficiency of rail sector and the problem drivers as identified by the Commission, as well as the general direction of EU action. 72% of stakeholders responding to the targeted consultation agreed that access to rail-related facilities was a barrier for railway undertakings and 69% agreed that the objective of improved access to infrastructure addressed the objectives of the initiative.

4.1. General objectives (GO):

The 2011 White Paper foresees a progressive modal shift from aviation and road vehicles, so that by 2050 the majority of medium-distance passenger transport should go by rail. This modal shift will contribute to the 20% reduction of GHG emissions foreseen in the Europe 2020 Agenda for smart, sustainable and innovative growth, and to the 60% reduction in transport emissions needed by 2050 to achieve the overall 80-95% cut targeted for the EU by that date.

In this context, the general objective of the proposed initiative is to:

GO: Improve the quality of rail passenger services and enhance their operational efficiency thereby improving the competitiveness and attractiveness of rail sector vis-à-vis other modes and developing further the Single European Rail Area.

Together with the other initiatives of the 4th railway package, the present impact assessment will identify the most suitable policy option(s) that will reach the above-described general objective by addressing the problems of insufficient quality and efficiency of rail services. To this aim, the general objective has been translated into specific and operational objectives.

4.2. Specific objectives (SO):

SO1:	**Intensify competitive pressure on domestic rail markets**
SO2:	**Create more uniform business conditions**

SO1 aims to contribute to the withdrawal of legal barriers and to stimulate competition in markets with PSOs, whereas SO2 aims to create a more predictable business environment with similar features.

4.3. Operational objectives (OO):

There are several dependencies between the operational objectives and specific objectives. For instance, in order to intensify competitive pressure on domestic markets (SO1), progress needs to be made in terms of all operational objectives. Equally, all operational objectives contribute to more

uniform business conditions (SO2). Better value for public money (SO3) can be achieved if the competition for PSCs will be made a reality; the latter however depends on the outputs defined in OO2 to OO4.

OO1: Facilitate cross-border entry into domestic rail passenger markets
OO2: Abolish legal monopolies
OO3: Open PSC market for competition
OO4: Establish a common approach to control the definition of PSOs and to define public service contracts
OO5: Facilitate the level playing field in access to rolling stock
OO6: Facilitate the level playing field in access to ticketing

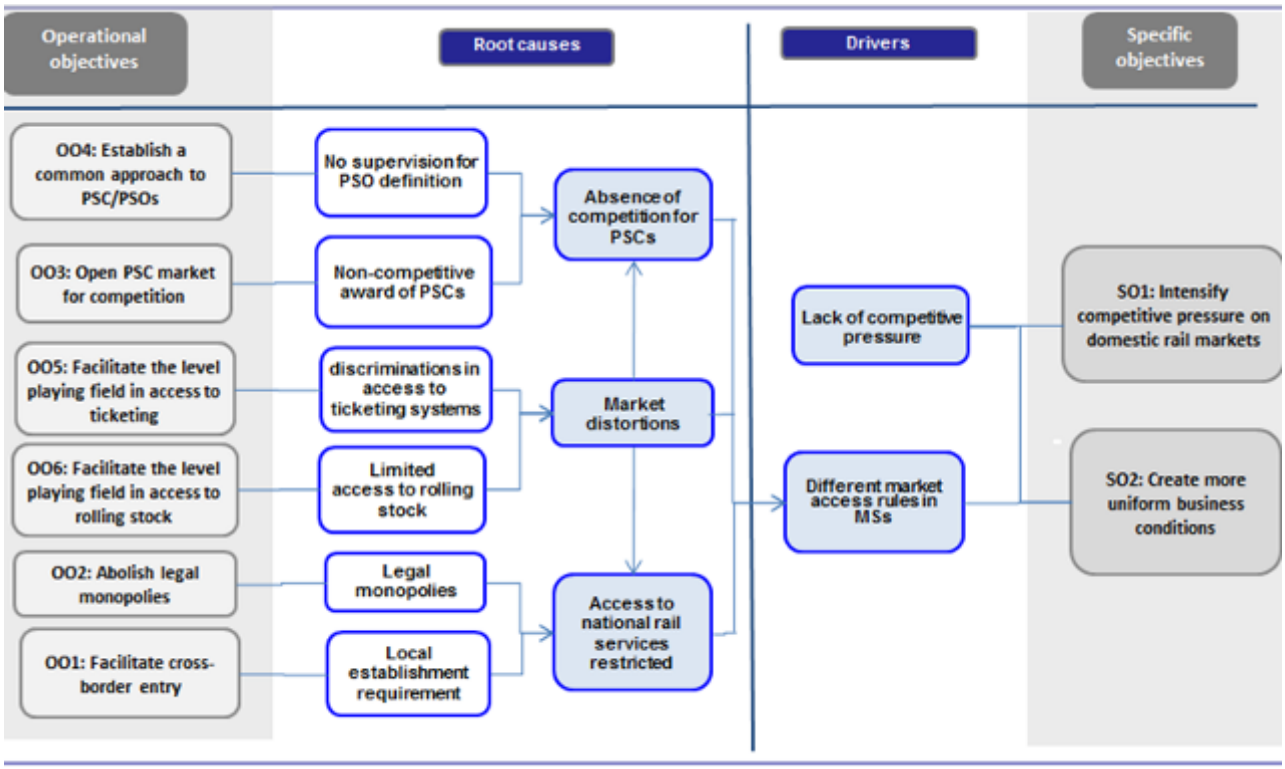
The operational objectives defined above are specific and realistic. However, given the nature of the initiative, no targets have been set. The initiative aims to act as a catalyst of more competitive rail passenger market, but its effectiveness heavily depends on specific approach taken at national level. The progress will be measured according to the monitoring indicators as outlined in Section 9.

4.4. Mapping problem, drivers and objectives:

Graph 12 hereunder presents the links between:

- the operational objectives and the root causes
- the drivers and the specific objectives

Graph 12: Mapping drivers, root causes and objectives



5. POLICY OPTIONS/POLICY SCENARIOS

5.1. Identification of possible policy options

Taking into account the stakeholders' consultation and the problem analysis, the Commission has defined four broad areas for action corresponding to the different root causes identified in section 2, namely restricted access to national rail markets, absence of competition for PSCs and the remaining market distortions on liberalised markets (access to ticketing systems and to rolling stock)[80]:

- Policy options A: addressing competition for open access lines (competition in the market)
- Policy options B: addressing the competition for PSCs and the supervision of their scope (competition for the market);
- Policy options T: addressing discriminatory access to ticketing systems;
- Policy options RS: addressing discriminatory access to rolling stock.

In a second step, the Commission services have identified several policy options in each of the above areas, which have the potential to address the identified root causes. Coherence with the EU Treaty objective of achieving a common transport policy, with the Europe 2020 Strategy and its main priorities, with the priorities set in the White Paper for transport and with the results of the stakeholder consultation has provided the main conceptual grid for considering the policy options in the first place.

5.2. Pre-screening of policy options

The combination of the 17 possible policy options could theoretically create 54 scenarios. The high number and complexity of the resulting possible policy combinations raised issues of feasibility and efficiency of an in-depth assessment for all of them, making a preliminary assessment and the discarding of policy options necessary.

Therefore, for each area for action, policy options have been pre-screened on the basis of stakeholder views, of their effectiveness in terms of policy objectives, of their efficiency as well as of their overall feasibility.

In parallel, the coherence of the possible policy options with the principles of subsidiarity and proportionality has been assessed. As compliance with these principles is a *sine qua non* condition for any Union policy initiative, any policy option that did not fulfil this condition could not therefore constitute a viable alternative for action. In this respect, given that the competence of the EU in the field of Public Service Obligations is limited,[81]only policy options B0 and B1 (supervision at national level) were retained for in-depth assessment. For the same reason, only policy options A2 and A3, impinging on Member States' wide discretion for defining PSO, have been discarded.

As far as competitive tendering is concerned, as stakeholders clearly supported competitive tendering with flexibilities akin to those of the negotiated procedure in public procurement (cf. figure 9 in Annex 2), no further sub-options were analysed (compared to direct award, which is the baseline).

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[80] As said above, other possible sources of discriminations against new entrants such as access to infrastructure or stations are or have been dealt with in other legislation.

[81] The competence of the EU in the field of Public Service Obligations is limited by Protocol n°26 to the TFEU to checking whether the Member State has made a manifest error when defining the service as public service obligation and to assessing any State aid involved in the compensation.

Where relevant, the implementing and mitigating measures are also discussed.

Table below presents all 18 policy options initially considered as well as the outcome of the screening process. A more detailed assessment of each scenario's impacts on the problem drivers is presented in Annex 5. 11 policy options, including 4 baseline scenarios, have been retained for further analysis.

Respective category of options	Policy options considered	Motivation	Retained?
A options: Open access	**Option A0: Baseline scenario** - no open access rights to domestic market provided under EU law, the progressive implementation of ctive 2007/58/EC.	Limited positive developments through international cabotage[82], and national measures. Some Member States have opened certain routes for cross border competition (e.g. Sweden, Italy, Czech Republic, Germany), but foreign operators face restrictions in market access.	√
	Option A1: Open access with possibility to limit access when the viability of PSC is compromised; legal monopolies and local establishment requirements are dismantled.	This is the approach already adopted in some Member States. It would abolish legal monopolies and local establishment requirements. It potentially ensures the cost-effectiveness of public funding for domestic rail passenger services under PSO and applies principles that have already been established for cabotage in international rail services. It minimises the risk of "cherry-picking", protects the viability of PSCs and offers the greatest scope for Competent Authorities to let PSCs on a net cost basis. However it could incite competent authorities to enlarge the range of services covered by PSC in order to limit the scope for open access services.	√
	Option A2: Open access limited to routes being commercially viable (such as high speed lines); legal monopolies and local establishment requirements are dismantled.	This option was ranked third by stakeholders. Like option A1, it would abolish legal monopolies and local establishment requirements. This option is not compliant with the subsidiarity principle in light of Protocol n°26 of the TFEU. In addition, there is no certainty that rules set in EU legislation could identify in advance, in each individual Member State, either (a) where open access would be viable and would occur and (b) where PSCs would not be needed. Therefore the set of routes to be covered by open access could be difficult to specify.	
	Option A3: Open access limited to routes not covered by PSCs[83]; ; legal monopolies and local establishment requirements are dismantled.	Received the second highest rating by stakeholders. Like options A1 and A2, it would abolish legal monopolies and local establishment requirements. At the same time the effects might be limited by new PSCs introduced either to meet genuine mobility needs or simply to prevent market opening. More widely, while new PSCs may be introduced, existing ones may never be cut back, raising the prospect of a gradual trend to PSCs extending to all stations.	√
	Option A4: Open access unlimited	Received the lowest rating form stakeholders being identified as likely to be costly for taxpayers. Unlimited open access may compromise the viability of PSC and put additional pressure on public subsidies.	

82 In force since January 2010.

83 If a Member States opts for competition for the market across the whole of its national network, it shall be considered as not granting open access rights

		There is no practical experience of how this option could be introduced and would work in a fully liberalised rail industry, but in practice there could be little commercial entry. This option is not compliant with the subsidiarity principle in light of Protocol n°26 of the TFEU.	
B options: Competitive tendering of PSCs	**Option B0: Baseline scenario -** as defined in Regulation 1370/2007 - competent authorities can choose between direct award and competitive tendering; no common criteria for defining PSCs	It is up to Member States whether to open their PSO contracts to competition or not. Differences in national approaches remain diverse and may lack transparency.	√
	Option B1: Mandatory tendering with flexibility, PSC scope under the control of national regulatory body. To allow for complexities and differences in national conditions, the requirement of competitive tendering would be subject to de *minimis* criteria and allotment thresholds, in addition the tendering procedure can be negotiated. Competent authorities are obliged to define transport policy objectives in public transport plan. National regulatory bodies need to carry out an assessment of compliance of a draft PSO to ensure compliance with fundamental legal principles. PSO should be financially sustainable (i.e. not underfinanced) and include efficiency and innovation incentives. The concerned stakeholders need to be consulted on draft PSO definition and results of assessment have to be published. Core operational information should be accessible to all bidders.	This option potentially ensures the competition for PSCs, while providing necessary flexibility to adjust the definition and tendering procedure to the specific characteristics of each PSC. Supervision and transparency requirements should secure against possible abuse or regulatory capture. However, given that control mechanism and PSC criteria will be applied at Member State (rather than EU) level, differences in national approaches are bound to remain, making cross-border bidding less smooth.	√
	Option B2: Mandatory tendering with flexibility, PSC scope under the control of the Commission. The same criteria would apply to tendering procedure as under Option B1. The PSC scope will be also defined as under Option B1, however assessment of compliance of PSO definition would be carried out by the Commission rather than by national regulatory bodies.	The same as above, but supervision will be performed at EU level, allowing for emerging more coherent EU approach. However, this option would not comply with subsidiarity principle, as national authorities *per se* are more competent for deciding on appropriateness of PSO. Furthermore, this option would be inconsistent with general policy approach in railways, which has granted any supervision competences to national regulatory bodies.	
T options: Integration of ticketing systems	**Option T0: Baseline -** implementation of the Passenger Rights Regulation 1371/2007 and the Recast of the 1st Railway Package. The Recast foresees that railway undertakings and ticket vendors shall offer tickets, through tickets and reservations. The operators of ticketing services, if they decide to offer services to other operators, shall do so in a non-discriminatory manner (i.e. allow access to everyone in equal conditions)[84]. These provisions preserve the commercial independence of RUs, who are not obliged to establish ticket integration schemes but only to sell the ones which are made available.	Implementation of the Recast should ensure some progress in the integration of ticketing systems, since some RUs have established joint ticketing systems with their competitors and will now have to open them to other RUs in a non-discriminatory manner. On the other hand, some Member States have established national ticketing systems without any EU legal framework and could create problems of distortion of competition.	√

[84] Article 10(1) of the Passenger Rights Regulation and Article 13(8) of the Recast.

	Option T1: voluntary national integrated ticketing systems; subject to non-discrimination requirements. It foresees an enabling clause allowing explicitly Member States and RUs to establish national-wide ticketing systems. It would also clarify existing provisions and would clarify that ticketing systems must be subject to non-discrimination requirements.	This option would reinforce to some extent the impacts of the baseline scenario.	√
	Option T2: mandatory national integrated ticketing systems; subject to non-discrimination requirements. Under this option Member States are imposed to set up national integrated ticketing systems. These systems should ensure the availability of all tickets throughout the national network.	This option has clear advantages for passengers in terms of accessibility to different services. It would also constitute a strong political encouragement to Member States and operators to put in place ticket integration schemes without prescribing specific measures. However the costs and benefits of such systems may vary considerably between Member States depending of the structure of the market (in particular the number of operators and the type of services offered). The efficiency of this measure can be low. Compliance with the subsidiarity principle has to be carefully assessed.	√
	Option T3: Integrated EU ticketing system, subject to non-discrimination requirements. Under this option a comprehensive, EU-wide ticketing system will be established, ensuring availability of all tickets for national as well as cross-border travel.	Establishing a single integrated ticketing system for the EU could foster further market integration and provide additional benefits to passengers using cross-border services. However, considering the number of operators involved and the diversity of the services provided, the cost of such measure would be very high while the benefits would remain limited (cross-border traffic represents around 5% of rail trips). This measure would have the same disadvantages than measure 2 in terms of efficiency and subsidiarity.	
RS options: Access to rolling stock	**Option RS0**: Baseline - no specific EU requirements, but only implementation of State aid Guidelines. Access to rolling stock appears to be a serious problem in Germany, France, Italy, Greece, Portugal, Spain and the majority of Member States that joined the EU in 2004 and 2007. There seem to be no national measures in pipeline to address this issue, except in Spain	Access to rolling stock remains a major issue in Germany, France, Italy, Greece, Portugal, Spain and the majority of EU-10 Member States. Key issue for emergence of rolling stock market is the number of vehicles per type and the development of a leasing rolling stock market. It can be anticipated that over time the market consolidation and implementation European standards[85] will lead to harmonisation of vehicle types and would have gradual beneficial impacts on the availability of 2nd hand rolling stock and leasing markets. It is unclear whether leasing market can develop in Member States whose railway networks are physically (almost) isolated (Ireland, Finland, Greece, Lithuania, Latvia and Estonia).	√
	Option RS1: Mandatory creation of rolling stock leasing companies (ROSCOs), with the objective of creating a leasing market for rolling	There was generally high support for this option among stakeholders. Also the evidence from Sweden and particularly Great Britain is that an	

[85] The development of interoperability and through-ticketing in domestic rail through the TAP TSI (Commission Regulation 454/2011 on the technical specification for interoperability relating to the subsystem 'telematics applications for passenger services') could ultimately provide technical solutions for non-discriminatory access to ticketing systems in domestic rail services, although this is not the primary purpose of this measure.

stock. This option would apply only where leasing markets are inexistent.	effective leasing market can remove many barriers to entry. However, this option inducing the obligation for Member States to create a leasing company is not compliant with subsidiarity principles. Also it would in practice difficult to establish at EU level who should create fund, manage it or, if necessary, regulate the ROSCOs.	
Option RS2: Mandatory ownership of rolling stock by competent authorities (where leasing companies do not exist). Would require that competent authorities owned all the rolling stock necessary to operate the PSCs.	This option could only apply to existing rolling stock if owners were willing to be bought out and, without powers amounting to confiscation, they would have every incentive to demand generous terms. The potential conflicts with generally established property rights can be avoided by requiring bidders for PSCs to commit to transfer their rolling stock to the competent authority at the end of the contract. There are, however, examples of dominant national incumbents refusing to bid on this basis. Even if operators were willing to accept these terms, it would not be until the end of the next PSC cycle, of up to 22½ years under current EU legislation, that all existing stock would be transferred.	
Option RS3: Mandatory selling or leasing of rolling stock by the previous PSC beneficiary (where leasing companies do not exist)	20% of stakeholders supported "automatic" transfer of rolling stock and only 5% supported "compulsory" transfer. This option conflicts also to a large extent with existing property rights and the subsidiarity principle similar to option RS2, but the core problem of illiquid rolling stock market could imply that it would be difficult to establish "market price".	√
Option RS4: Obligation for the competent authority to take the financial risks (where leasing companies do not exist). The competent authorities are obliged to provide or procure residual value guarantees on rolling stock if a bidder has no other means of avoiding residual value risk. This would not preclude Member States and competent authorities applying a mix of options RS1 (leasing companies), RS2 (competent authorities own rolling stock) and RS4 (competent authorities provide guarantees) as considered appropriate. It would leave it to competent authorities to decide the "least bad" approach to improving accessibility to rolling stock achievable with the funds available.	In this option competent authorities are obliged to take residual value risk on rolling stock, if there is no functioning rolling stock leasing market. However, this could have important implications for public finances and bring with it some counterproductive incentives such as maintaining old equipment and principal-agent problems.	√
Option RS5: Guidelines on best practices of rolling stock procurement. This option foresees that the Commission will prepare guidelines which Member States can referrer to when planning national measures for improving the access to rolling stock.	This option would enable to share the best practices between Member States as regards the effectiveness of different approaches to improve liquidity of rolling stock market. However, its added value would be limited, given that the known successful approaches of UK and Sweden are already known by railways stakeholders.	

5.3. Detailed description of the retained policy options

This section explains the content of retained options in more detail.

5.3.1. Core policy options on market opening

The retained A and B policy measures will be combined to define the 6 policy options on interaction of open access rights and PSCs:

Option A0: Baseline scenario - no open access rights to domestic rail market provided under EU law Some Member States have opened certain routes for cross border competition, but not all. Within the baseline, national measures and the progressive implementation of Directive 2007/58/EC may have an effect on market opening through the cabotage arrangements of international rail services.
Option A1: Open access with possibility to limit access when the viability of PSC is compromised Open access provided on the whole network with possibility for Member States to limit access when the economic equilibrium of PSC is compromised; open access abolishes legal monopolies and national establishment requirements.
Option A3: Open access limited to routes not covered by PSCs Open access provided only on the parts of network not covered by PSCs; open access abolishes legal monopolies and national establishment requirements.

Option B0: Baseline scenario - competent authorities can choose between direct award or competitive tendering, no common criteria for defining PSCs
Option B1: Mandatory tendering with flexibility, PSC scope under the control of national regulatory body, meaning that: PSCs are defined on the basis of general legal and economic principles and a list of compliance criteria is established at EU level. An independent entity such as the national regulatory body supervises the correct application of all the public service criteria To define the maximum size of networks that do not preclude competition, it is proposed to use a maximum threshold for PSCs of train-km or a percentage of total volume of directly awarded PSC in each Member State. Competitive tendering applies only for contracts above certain thresholds, foresees transitional measures for the phasing-in of tendering or existing, directly awarded PSC, mobilisation periods and would preclude "internal operators"[86] at the national level. Provisions include the possibility to negotiate after the pre-selection.

5.3.1.1. – Sub-options considered for PSCs ('B options')

Option B1 requires in parallel the definition of:

- *de minimis* thresholds under which tendering procedures would not be mandatory as the costs relegated to the arrangement of tender could be disproportionate to the price of the service purchased;
- *de maximis threshold* on the maximal size of clusters of train services (to ensure that there are bidders in the market capable of responding to the competitive tenders;
- the phasing-in of competitive tendering of PSC (i.e. the transition periods).

Below are summarised the key elements of each PSC sub-option, while detailed analysis is provided in Annexes 5 and 8.

[86] Practicalities related to the implementation of these elements are explained in Section 8 of the report.

(a) *De minimis* thresholds

The choice of potential *de minimis* threshold has been determined on the basis of two criteria:

1. **Cost of tendering for contracting authorities**: the analysis in Annex 8 shows that it is only proportionate to impose tendering for contracts respectively above **4.5 million EUR**[87].
2. **Consistency with other initiatives in public procurement policy:** Legislative initiatives in the area of public procurement of the Commission use the threshold of **5 million EUR**[88] for complex contracts

In this context, it is proposed to use a de minimis threshold of **5 million EUR,** which should be completed by a threshold of **150.000 train-km**. In fact, as shown in detail in Annex 8, depending on the level of financing of PSC per train-km, which varies throughout the Member States[89], the proposed *de minimis* thresholds could end up covering very small networks.

(b) Maximal size of clusters of train services ('*de maximis* thresholds')

The choice of a *de maximis* threshold has been performed on the basis of three considerations:

1. observations on maximum PSCs sizes awarded to new entrants ;
2. PSCs tender should not require accessing more than 10% of a Member State rolling stock ;
3. necessity to accommodate the characteristics of small and large Member States.

The impacts of 4 different thresholds (5 -10-25 and 50 million train-kilometres) were assessed. On the one hand, no single competitive tender with a size above **5 million train-km** has ever been won by a new entrant in Germany, while on the other hand, UK franchises with up to 45 million train-km have been successfully tendered. In Italy, new entrants operate PSCs with up to **10 million train-km**.

The choice of these thresholds of 5 and 10 million train-km could however disproportionally slice the networks of large Member States (some 100 packages in Germany and the UK). At the same time thresholds of 25 and 50 million train-km would imply that the PSCs of respectively 7 and 11 small-sized Member States would be put for tender *en bloc*. To ensure adjustability of *de maxims* thresholds for small and large Member States, it appeared necessary to complement the absolute train-km threshold with a relative threshold anchored to the size of each country network. Two values - **10%** and **33%** – were analysed.

Each of the combinations of absolute and relative thresholds has been assessed in Annex 8. The analysis covers potential number of packages and the respective number of tendering procedures, the consistency of suburban networks and amount of rolling stock required (including consideration of higher rolling stock needs for suburban services[90]).

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87 It would not be proportionate to impose competitive tendering for PSCs of small volume as the cost of the tender could outweigh the potential benefits. As the average cost of a tender is estimated at 450.000 EUR/pkm (cf. analysis of impacts on administrative burden in Annex 9), if savings are assumed at 10%,

88 This threshold is used for the procurement of public works and works concessions. This threshold has also been proposed in the recently adopted proposals on the access of third country operators to the EU procurement market (notification procedure) and, more importantly for this initiative, for the opening of service concessions (PSCs in rail are service concessions)

89 The level of financing of the PSCs per train-km, which greatly varies among Member States (15-25 EUR/train-km in France, 50-150 EUR/train-km in Germany, 10-35 EUR/train-km in Italy and an estimated 35 EUR/train-km in the UK)

90 For the operation of a same number of train-km, a suburban line requires more trains than a regional line, as the former is shorter but requires more frequent operations, whereas the latter is longer and requires less trains.

The analysis concluded that the *de maximis* threshold consisting of the higher value of either (a) an absolute threshold of **10 million train-km** or (b) a relative threshold of **33% of the total national volume of rail passenger services** shall be the optimum.

(c) Phasing-in of competition for PSCs

The phasing-in of competition for PSCs can take place under 3 main scenarios:

– "Big bang" scenario – no transitional phase, all PSCs are put for tender at adoption.

– Natural expiry of directly awarded PSC (16 years phasing-in): under the terms of the current PSO regulation, directly awarded contracts can last up to 10 years. All PSCs concluded up to 2 December 2019 (last day of the transitional phase of Regulation 1370/2007) could then last up to 2 December 2029.

– Transitional phasing-in between 2019 and 2023 (10 years phasing-in): this scenario would ensure consistency with urban transport[91] PSCs directly awarded between January 2013 (i.e. the moment when after publication of the Commission proposals the concerned actors would be aware that legislative changes may occur) and before 3 December 2019 may continue until they expire but shall not last longer than 1 January 2023.

There seems to be a need to regulate the phasing-in of competitive tendering to ensure a minimum of legal certainty to operators and to guarantee the continuity of public rail passenger services. A large majority of the respondents to the stakeholder consultation favoured transitional periods for the gradual letting of all PSCs (80% of respondents agreed). A workers' organisation that answered to the stakeholder consultation highlighted also that transitional aspects could soften social impacts.

Transitional periods would give all incumbent railway undertakings the time to restructure and prepare for competitive tendering of PSC. In addition, it would ensure for competent authorities a reasonable time to organise the re-award of existing PSCs. Additionally, a workers' organisation answered to the stakeholder consultation highlighted also that transitional aspects could soften social impacts.

Further to the analysis provided in Annex 8, a **10 years phasing-in lasting till 2023** was considered sufficient. Given that Germany, Austria and the Czech Republic will generalise competitive tendering, some 50% of all passenger-kilometres in PSO will be competitive tendered already by 2019.

5.3.1.2. Combination of market access and PSC competition options

A and B options are the core measures of the initiative and their combination determines the means and ambition of market opening. In this context, the following combined options are to be assessed:

Option 0 (A0, B0) - Baseline scenario
Option 1 (A1,B0) - Market opening based on 'broad open access', no measures on competitive tendering of PSCs
Option 2 (A3, B0) - Market opening based on 'limited open access', no measures on competitive tendering of PSCs
Option 3 (A0, B1) - Market opening based exclusively on competitive tendering of PSCs
Option 4 (A1, B1) - Market opening based on 'broad open access' and competitive tendering of PSCs
Option 5 (A3, B1) - Market opening based on 'limited open access' and competitive tendering of PSCs

[91] The obligation to tender out new PSC for rail would become effective on 3 December 2019, the date currently mentioned in Regulation 1370/2007 for the application of the provisions on contract award.

5.3.2. Ticketing policy options

The essence of the ticketing and rolling stock (cf. Section 5.3.3) option consideration is to create framework conditions necessary for more effective application of A/B core policy options.

The following ticketing policy options have been retained for further analysis:

Option T0: Baseline - implementation of the Passenger Rights Regulation and the Recast of the 1st Railway Package
Option T1: voluntary national integrated ticketing systems National ticketing systems established on a voluntary basis, subject to non-discrimination requirements. This option foresees an enabling clause allowing explicitly Member States and RUs to establish national-wide ticketing systems. It would also clarify existing provisions and remove some legal uncertainties.
Option T2: mandatory national integrated ticketing systems National ticketing systems established on mandatory basis, subject to non-discrimination requirements. Under this option Member States are obliged to set up national integrated ticketing systems. These systems should ensure the availability of all tickets throughout the national network.

5.3.3. Rolling stock options

The following rolling stock options have been retained for stand-alone analysis in Chapter 6 (Analysis of impacts):

Option RS0: Baseline - no specific EU requirements
Option RS3: Mandatory selling or leasing of rolling stock by the previous PSC beneficiary Rolling stock must be sold (if property rights allow this) or leased at market prices by the previous PSC beneficiary to the new one
Option RS4: Obligation for the competent authority to take the financial risk linked to the residual value of rolling stock at the end of the contract period If there is no functioning leasing market for rolling stock, obligation for the competent authority to take the risk of the residual value of rolling stock leaving the authority the choice of appropriate means. This option includes any appropriate measure taken by the Member State or the competent authority to facilitate the access to rolling stock. The competent authority may opt for different solutions to comply with this obligation such as e.g. to assume ownership of the rolling stock (to be made available to PSC beneficiary), providing a bank guarantee for the financing of new RS for the period after the expiry of the contract, issuing a guarantee of takeover of the rolling stock.

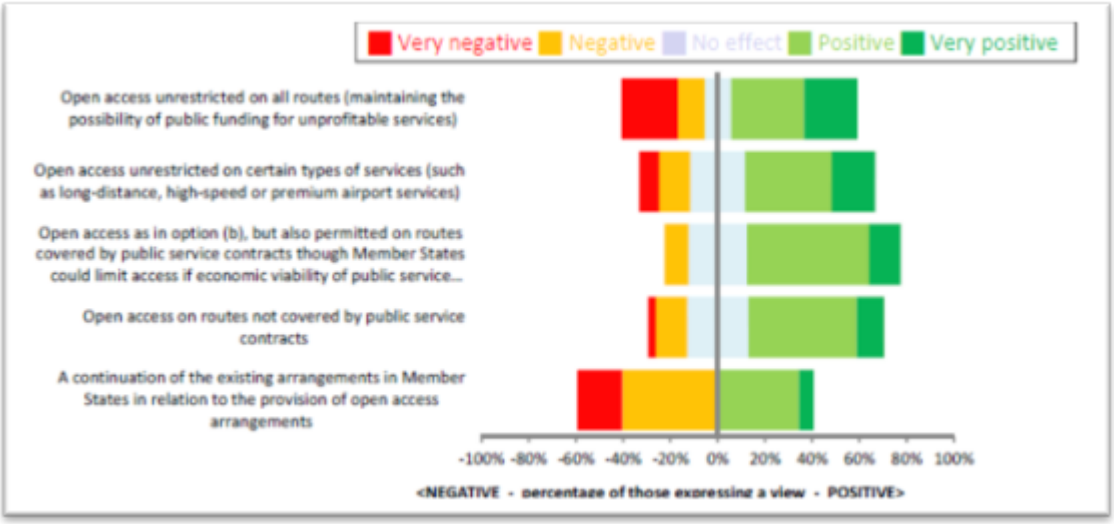
The favoured option of stakeholders was creation of leasing companies (RS1), however the Commission would not dare to impose because of subsidiarity concerns. In all shortlisted options the Member States should take the necessary measures to ensure non-discriminatory access to rolling stock only where no leasing companies would exist.

5.4. Options in the consultation of stakeholders

In terms of market opening, an equal majority of respondents (60%) agreed that additional new open access rights or compulsory competitive tendering could stimulate market integration. A small minority of respondents (15%) disagreed. Most of those agreeing are Transport Ministries and regulatory bodies, with most holding groups neither agreeing nor disagreeing.

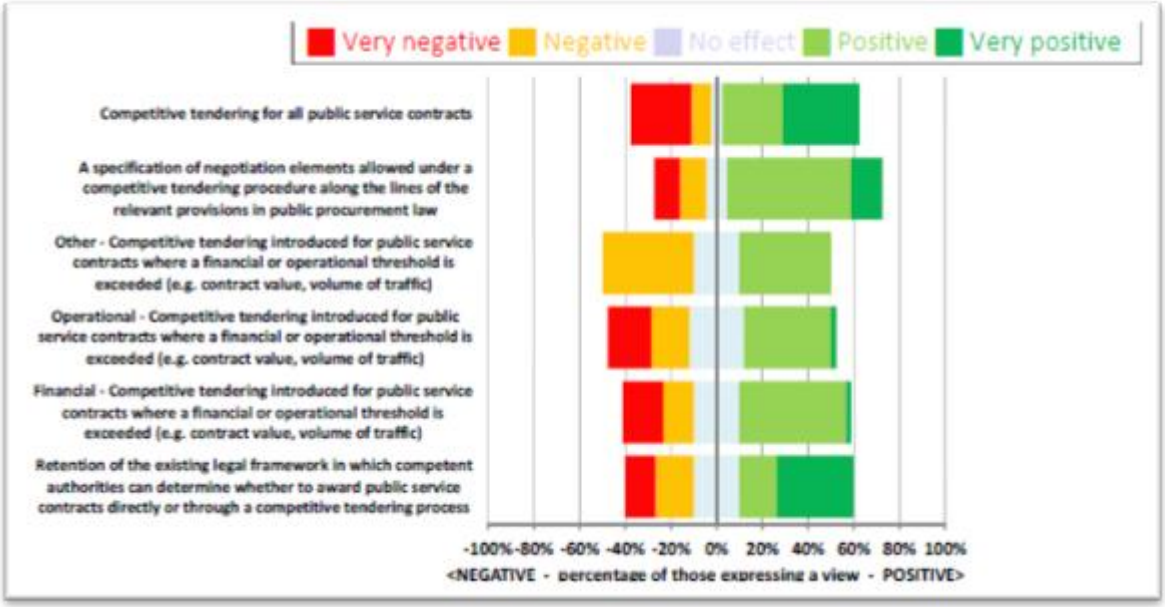
Open access subject to the viability of PSCs is seen more positively than all the other options (55% of respondents agreeing) – the current arrangements are seen very negatively (20% of support). The continuation of existing arrangements (i.e. baseline) was the worst rated option.

Graph 13 - Support of the different possible policies for open access



As regards compulsory competitive tendering, respondents were also more supportive of flexibilities akin to those of the negotiated procedure in public procurement (45% of agreeing respondents) and transitory periods for the gradual letting of all PSCs (80% of agreeing respondents).

Graph 14 - Support of the different possible policies for competitive tendering



Source: SDG analysis

In terms of framework conditions, there is overwhelming support (95%) for clear conditions on the transfer of staff during the transfer from one operator to another of a rail service contract. Regarding improved access to rolling stock, a majority of respondents (60%) agreed that the creation of rolling stock leasing companies would help to solve the problem and a vast majority (75%) called for full access to technical information to be provided by the infrastructure manager. As regards ticketing, there was a preference for a light approach such as non-binding provisions or enabling clauses for voluntary agreements rather than compulsory measures at EU level or at Member State level.

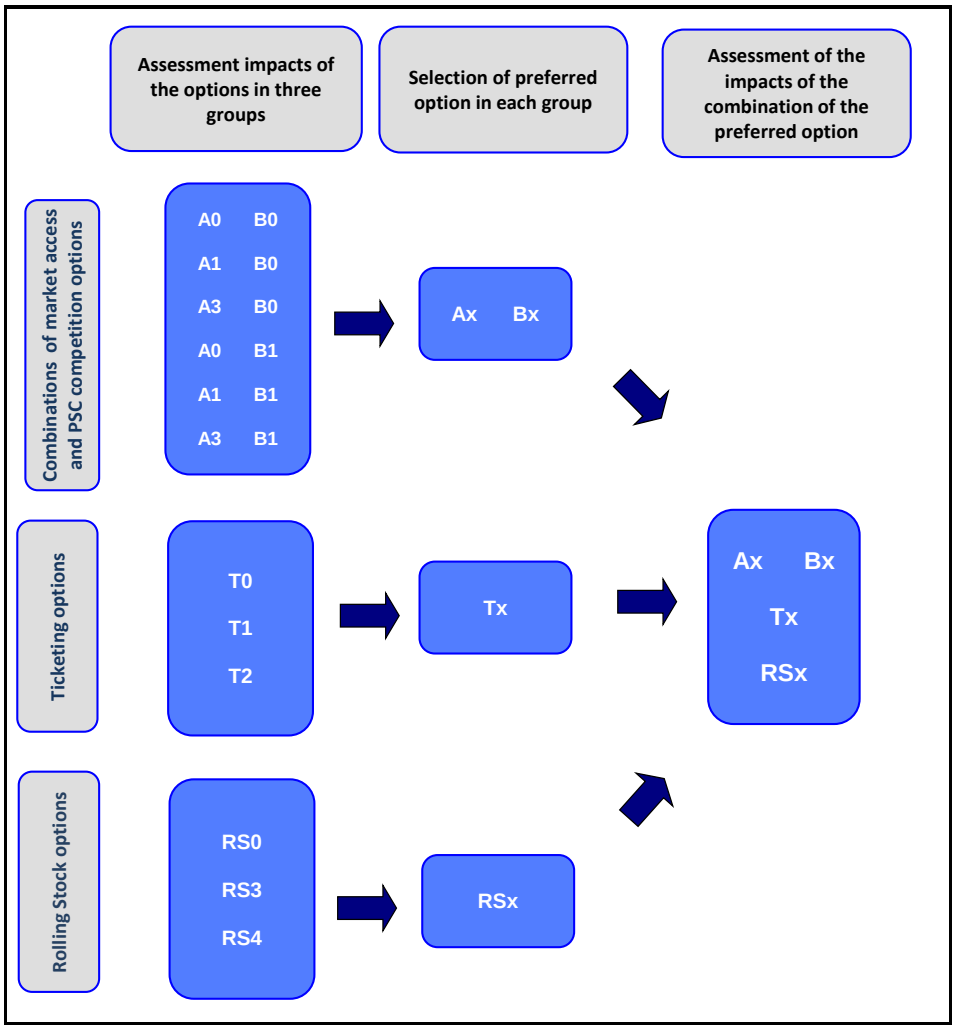
5.5. Identification of the preferred option

A and B options are the core measures of the initiative and their combination determines the means and ambition of market opening. Therefore, the IA report will start by assessing the 6 combinations of the core options A and B and concludes which is the preferred one as illustrated in graph 15 below.

In a second stage, the ticketing (T) options and rolling stock (RS) options will be assessed in order to identify which of these are best to support market opening.

The combination of the preferred choices in each group (c.f. Graph 14) would then form a preferred policy scenario, which will be assessed in its own right in order to identify possible overlaps and synergies in impacts.

Graph 15 – Combining retained options



6. ANALYSIS OF IMPACTS

6.1. General approach to the assessment of options and methodological constraints

The aim of the initiative on domestic rail passenger market opening is to remove the remaining institutional and legal obstacles which in some Member States still hamper market access and operational efficiency of rail services which is expected to make for better service offer and more efficient operations. However quantification of these impacts is very challenging:

– While the EU rules would aim to create necessary market structures to this end, the actual impacts of any measures depend largely on the 'baseline' situation in each Member State as well as the 'spirit' of transposition and enforcement at national level.

– Except for the UK and Sweden, the actual experience on market liberalisation so far is limited. This implies high uncertainties in any assumptions for extrapolation.

– There is also an important impact of other principal uncertainties, such as baseline developments and exogenous factors affecting the passenger rail demand.

The IA support study has made an attempt to quantify **impacts** in terms of potential investments, profits of operators and savings of public authorities; however results were rather illustrative estimates with up to 50% uncertainty range. These results were not robust enough to be used for a comparative assessment of options. Instead, the quantitative scenario analysis has been presented for the preferred policy scenario in Section 7. Being accompanied by sensitivity tests of the core assumptions, it should give a fair indication of the potential policy outcomes for operators, public authorities and passengers.

Analysis in this section, aiming to compare the impacts of different policy options, is mostly qualitative. However, the core liberalisation effects in terms of open p-km have been quantified (c.f. Table 7a). **Qualitative analysis** builds on (a) the scope of impacts, (b) lessons drawn from Member States' experiences (cf. table 5) and (c) associated risks (both exogenous and endogenous).

The scoring of options is made on the basis of a comparison of the relative impacts within a single selected impact (rows in tables) but not the relative importance of different rows.

Table 5 – Link between the options and experience in Member States

Option	Experiences
1	Quasi-liberalised Member States Austria, Italy and Germany networks with direct award
2	Czech Republic
3	Analogy[92] with UK, PT and NL
4	Fully Liberalised Member States: Sweden since 2011, parts of Germany
5	Sweden before 2011

The analysis focusses on most prominent economic, social and environmental impacts of different policy options and is subdivided into three parts:

[92] As the UK and the Netherlands are composed almost only of PSC, they have similarities with option 3. It is important however to underline that there are no legal monopolies in the UK, while option 3 retains the possibility to maintain them. Portugal combines exclusive rights, a competitive-tendered PSC and directly awarded PScs.

– Analysis of impacts of the market opening options (A and B options)

– Analysis of impacts of ticketing policy options (T options)

– Analysis of impacts of rolling stock policy options (RS options)

6.2. Analysis of impacts of the market opening options

This section is composed of (a) the presentation of the overall impact of market option measures on the different market segments including expected outcomes of the assessments of thresholds (*de minimis* and the size of packages of rail services) and transitory periods and (b) the assessment of the related most prominent economic, social and environmental impacts.

6.2.1. Overall impact of the market opening options

6.2.1.1 - Impact on the different rail market segments

The importance of any impacts in each Member State depends on to which extent the different rail market segments are present. Table 6 presents an estimation of the share of passenger-kilometres under each market segments, and whether each segment falls under PSO or not in the different Member States.

Table 6 – Market segments (%p-km) and PSO

		High-speed	Long-Distance/ Intercity	Medium-Distance/ Regional	Suburban/ Commuter
Austria	AT	-	34%	46%	19%
Belgium	BE	11%	34%	34%	21%
Bulgaria	BG	-	47%	26%	27%
Czech Republic	CZ	-	54%	36%	10%
Germany	DE	27%	23%	32%	18%
Denmark	DK	0%	24%	50%	26%
Estonia	EE	0%	17%	74%	9%
Greece	EL	0%	32%	32%	36%
Spain	ES	12%	37%	25%	27%
Finland	FI	9%	46%	13%	32%
France	FR	57%	22%	7%	15%
Hungary	HU	0%	33%	32%	35%
Ireland	IE	0%	32%	32%	36%
Italy	IT	18%	33%	33%	15%
Lithuania	LT	0%	50%	50%	0%
Latvia	LV	0%	34%	35%	31%
Luxembourg	LU	0%	4%	67%	29%
Netherlands	NL	5%	62%	10%	23%
Poland	PL	0%	31%	57%	11%
Portugal	PT	0%	30%	51%	19%
Romania	RO	0%	31%	38%	31%
Sweden	SE	20%	25%	27%	28%
Slovenia	SI	0%	37%	37%	25%
Slovakia	SK	0%	50%	50%	0%
Great Britain	UK	0%	28%	44%	28%
		PSO	Mix	Commercial	

Source: Steer Davies Gleave, own analysis based on UIC data and White Paper

The **urban and suburban** networks and the **medium/regional long-distance** services will be almost exclusively impacted by options 3, 4 and 5 that introduce competitive tendering for PSCs. This will mostly affect the densely populated Member States (Benelux, Germany, Northern Italy) but also the rail networks around important cities (as is already the case with the German S-Bahns). There could be some open access operators venturing in regional services (but most likely not in the congested suburban services) - open access could co-exist in regional services as few Member States.

As far as **high-speed** and **long-distance** services are concerned, they will be impacted mostly by options 1, 2, 4 and 5 that introduce open access for domestic services, but also to a limited extent by options 3, 4 and 5 that introduce competitive tendering. In several large-sized Member States, long-distance services are self-sustaining commercial services and do not need public service obligations (e.g. France, Spain, Portugal, Austria, Czech Republic, Italy, and Germany). In small-sized Member States and the UK, all passenger-kilometres are under PSO, including long-distance services.

International services are likely to be marginally affected, as *cabotage* in international services remains limited, but could benefit from the possibility to develop feeder services under open access. These views were also corroborated by stakeholders in the consultation.

The analysis of impacts examines separately the consequences of each option on traffic under PSO on the one hand and commercial traffic on the other hand:

– Some national rail markets, such as those of Belgium, Greece, Hungary, Luxembourg, Netherlands, Slovenia and the UK relates predominantly, if not in totality, to PSO traffic and it will be assumed that such situation will not change radically in a foreseeable future.

– Other national markets, those of most large-sized Member States, are characterised by a more balance division between PSO traffic and services provided on a commercial basis. Here again we assume that market opening will not modify substantially such characteristic.

As a result, in the analysis of impacts, the following potential developments will be considered:

As mentioned, precise impacts of liberalisation are difficult to detect, but box 5 below aims to illustrate the possible outcome using the example of air transport liberalisation.

BOX 5 - AIR TRANSPORT LIBERALISATION

Civil aviation greatly contributes to the European economy: more than 150 scheduled passenger carriers, a network of over 450 airports, some 4,5 million employees. Its activities contribute 1,5% to the EU GDP. The fact that the civil aviation sector has grown significantly since the early nineties is mainly a result of the liberalisation of the sector.

Prices have fallen quite dramatically in the sector and numerous new entrants have emerged. In 2009 some 750 million passengers were carried in Europe. The number of intra-community routes has increased by 140% between 1992 and 2010.

The internal aviation market gives every EU carrier freedom to perform services, i.e. to carry out flights within any EU country and between EU countries. It also gives them complete freedom to set tariffs. The regulatory framework works as a safeguard for passengers, for safety and security and for fair competition. It also allows Member States to serve certain routes/areas, which are not economically viable, but have to be served for reasons of territorial cohesion. They can do this by imposing a PSO on such a route.

The aviation sector employment has undergone substantial changes due to the development of new players, such as the low-cost carriers or the outsourcing of services previously contained within carriers and airports, like ground-handling or maintenance. These dynamics are the result of increased competition, the dynamics of which led to a sharp rise in productivity, which in turn helped sustain employment levels.

Finally, it is important to underline that PSOs in air transport remain a limited phenomenon compared to the same situation in rail, where they cover some 66% of all passenger-kilometres.

6.2.2. Economic impacts

6.2.2.1- Direct impacts

a) Impact on competition levels between railway undertakings

Option	0	1	2	3	4	5
Impact	0	+/++	+	++	++++	+++

* Here and afterwards, comparison tables compare the relative impacts within a row but not the relative importance of different rows

Scope of potential impact:

The larger the part of the market to be liberalised, the more significant are the potential impacts on intra-rail competition.

For PSO traffic the introduction of competitive tendering completely opens the market under options 3, 4 and 5 and makes all segments open. In options 1 and 2, PSCs are directly awarded, therefore closing the whole market of PSO.

The introduction of open access opens the market of commercial services under option 1, 2, 4 and 5, opening therefore most long-distance and high-speed services. In option 3, legal monopolies are maintained, therefore leaving most long-distance and high-speed services closed.

As a result:

– As suburban rail markets are always under PSO, they may not be opened under Option 1

– In Option 2 the whole market is closed through direct awards in "100% PSO Member States"

– In option 3, only PSO markets are open (suburban, regional)

– In options 4 and 5, the whole EU rail market is always open for competition (hence at least +++); Option 4 has a very slight advantage over option 5 as "open access" provides for the possibility to start a rail business at any moment, whereas competitive tendering constraints it to the timing of competitive tenders (hence ++++).

Table 7a – Scope of options in terms of opening of the rail market

	Option 1		Option 2		Option 3			
	Reference	Pessimistic	Reference	Pessimistic	Reference	Pessimistic	**Option 4**	**Option 5**
OPEN	55%	34%	54%	34%	84%	67%	100%	100%
CLOSED	-	14%	19%	33%	17%	34%	0%	0%
SEMI-CLOSED	45%	53%	34%	34%	0%	0%	0%	0%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Table 7b – Evolution in terms of opening of the Member States under each option

Options	0	1	2	3	4	5
AT	Large lib	Large lib	Large lib	Full lib	Full lib	Full lib
BE	No lib	Quasi-lib	No lib	Full lib	Full lib	Full lib
BG	Quasi-lib	Quasi-lib	Quasi-lib	Full lib	Full lib	Full lib
CZ	Part lib	Part lib	Part lib	Full lib	Full lib	Full lib
DK	Quasi-lib	Quasi-lib	Quasi-lib	Full lib	Full lib	Full lib
EE	Quasi-lib	Quasi-lib	Quasi-lib	Full lib	Full lib	Full lib
FI	No lib	Large lib	Large lib	Part lib	Full lib	Full lib
FR	No lib	Large lib	Large lib	Part lib	Full lib	Full lib
DE	Large lib	Large lib	Large lib	Full lib	Full lib	Full lib
GR	No lib	Quasi-lib	No lib	Full lib	Full lib	Full lib
HU	No lib	Quasi-lib	No lib	Full lib	Full lib	Full lib
IE	No lib	Quasi-lib	No lib	Full lib	Full lib	Full lib
IT	Large lib	Large lib	Large lib	Full lib	Full lib	Full lib
LV	Quasi-lib	Quasi-lib	Quasi-lib	Full lib	Full lib	Full lib
LT	Quasi-lib	Quasi-lib	Quasi-lib	Full lib	Full lib	Full lib
LU	No lib	Quasi-lib	No lib	Full lib	Full lib	Full lib
NL	Part lib	Part lib	Part lib	Full lib	Full lib	Full lib
PL	Quasi-lib	Quasi-lib	Quasi-lib	Full lib	Full lib	Full lib
PT	Part lib	Large lib	Large lib	Large lib	Full lib	Full lib
RO	Quasi-lib	Quasi-lib	Quasi-lib	Full lib	Full lib	Full lib
SK	Quasi-lib	Quasi-lib	Quasi-lib	Full lib	Full lib	Full lib
SI	No lib	Quasi-lib	No lib	Full lib	Full lib	Full lib
ES	No lib	Large lib	Large lib	Large lib	Full lib	Full lib
SV	Full lib	Full lib	Full lib	Full lib	Full lib	Full lib
UK	Full lib	Full lib	Full lib	Full lib	Full lib	Full lib

Experience in Member States: Competition has been strongest in Member States with legal frameworks that resemble to option 3, 4 and 5. Competition in Member States whose legal framework resembles option 1 has mostly remained confined to few routes (e.g. Vienna-Salzburg); in Denmark and Slovakia, governments have directly awarded contracts for PSCs to new entrants.

To take stock of the impact of each option on the degree of opening of each of the Member States, each Member State is re-categorised under each of the clusters of Member States ("fully liberalised", "largely liberalised", "partially liberalised", "quasi-liberalised" and "non-liberalised"). This simulation is conducted under the assumption that Member States don't backtrack from their current degree of market opening (baseline) and that the current percentage of passenger-kilometres remains identical (knowing that market opening is likely to lead to a change of this percentage either in the sense of more open access for commercials services or more public service obligations). For each of the options, Member States are likely to evolve in the following manner:

- In Option 1, most Member States become or remain quasi-liberalised markets (12), with some largely liberalised (6) and partly-liberalised (2). Non-liberalised markets do not exist anymore. The strongest impacts are felt in France, Spain and Finland, which move from a non-liberalised market to a largely-liberalised market, where more than 30% of all passenger-km are open for competition.
- In Option 2, all quasi-liberalised and largely-liberalised markets do not change category. Most non-liberalised Member States are also not affected, except France, Spain and Finland, which move from a non-liberalised market to a largely-liberalised market and are therefore the most impacted by this initiative.
- In Option 3, most Member States move to a fully liberalised market, except France and Finland become partly liberalised and Portugal and Spain that become largely liberalised. The biggest impact is felt in small Member States with a large portion of PSC such as Belgium, Greece, Hungary, Luxembourg and Slovenia.
- In Option 4 all Member States move to a fully liberalised market. The biggest change impact is felt from non-liberalised markets but also quasi-liberalised markets.
- In Option 5 all Member States move to a fully liberalised market. The biggest change impact is felt from non-liberalised markets but also quasi-liberalised markets.

Risks: There are several exogenous factors that influence the level of competition in all options, including the baseline (e.g. separation of infrastructure and operations, use of net contracts versus gross contracts). In option 2, it cannot be excluded that the size of PSCs is extended to foreclose competition (though this can be mitigated by appropriate processes to define PSOs). The actual number of bids and consequently the success of competitive tendering measures depends on the ease of the access to essential framework condition, such as station facilities, ticketing systems, rolling stock, essential business information (often available only to incumbent). Some of these are addressed by this initiative; others were covered by the Recast or will be addressed by the other initiatives of the 4th Package. Finally, it is important to avoid 'fake' bids, e.g. setting conditions where only the incumbent can de facto tender. Countermeasures to cover these risks are addressed in section 7.

b) Transport demand – modal share of rail

Option	0	1	2	3	4	5
Impact*	0	+	+	+	++	++

* Here and afterwards, comparison tables compare the relative impacts within a row but not the relative importance of different rows

Scope of potential impact:

New passengers could be attracted onto trains if travel journeys are reduced (time-elasticity), frequencies are added (time-elasticity) or fares decrease (price-elasticity).

Open access services increase demand, as suggested by the examples of the Vienna-Salzburg and the Rome-Milan lines (cf. table 2). The competitive tendering of PSC increases the prospects of savings that can be reinvested in additional train services, therefore increasing frequencies which then facilitate train to gain market share. Also, the usage of net cost contracts in PSC (box 6) gives commercial incentives to railway undertakings to increase traffic.

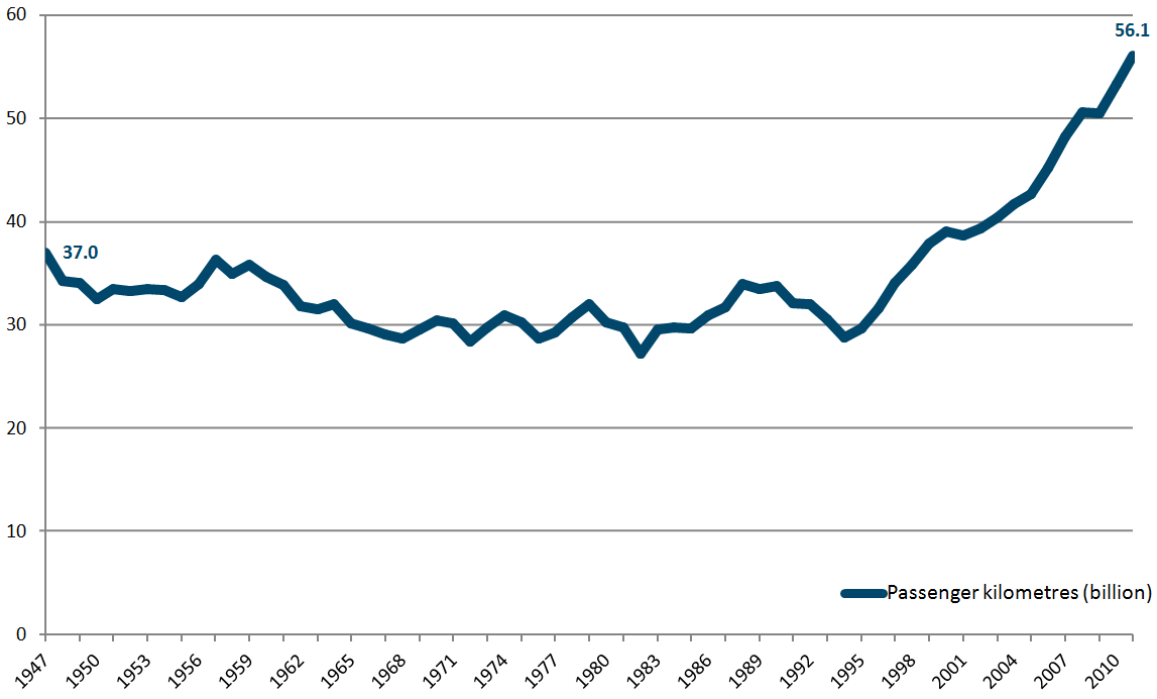
Given that options 4 and 5 combine both these possibilities (and that there is no evidence that competition *in* the market is more effective than competition *for* the market to increase traffic demand), they are better scored (++) than options 1 to 3 (+). In particular, option 3 does not provide for an opening of services under legal monopolies (essentially long-distance and high speed services in large Member States).

Experience of Member States: As shown in Annex 3 (table 10a), modal share of rail has taken off particularly well in countries like Sweden and the UK whose legal framework resembles options 3 and 5. In the UK after market opening rail passenger transport performance increased by 84% between 1995 and 2010. In Sweden performance rose by 70% in the same period (table 1c in Annex 3). While use of railways has also increased in countries like Belgium and France that have legal monopolies (by 47% and 54% respectively), this phenomenon can be to a large extent attributed to investments in high-speed lines (c.f. Section 3.1.1). And similarly road congestion has helped to stimulate rail traffic in the UK.

Estimations of price-elasticities[93] in the Member States suggest that there is room to increase the rail demand through price decreases. Also, in the Eurobarometer survey 43% of respondents indicated that they would be more likely to travel by train if prices decreased, while faster journeys, networks, services and comfort were all at 20% or below.

[93] France: price elasticity between -0.7 and -1.2 (source: Rapport à l'Assemblée Nationale n°875 – rapport d'information de Hervé Mariton; Elasticity in Spain, -0.4 and -0.57 according to Ganzalez-Savignat (2004) and Wardman-Whelan (1995); In the Netherlands, elasticity between -0.6 and -1.1 in the long-term according to CE Delft "Effect van prijsbelied in verkeer en vervoer; Elasticities in UK between -0.5 and -1.25 depending on segments according to DfT.

Graph 16 -Rail passenger performance in the UK 1947 – 2011: sustained growth since mid-1995



Source: Department for Transport and Office of Rail Regulation (quoted from ORR (2012))

Risks:

Several exogenous factors play into the transport modal split (oil prices, taxes on transport, congestions, internalisation of external costs in road etc.) and are likely to influence rail demand. It should be noted that among stakeholders, workers organisation have expressed scepticism on the capacity of the opening of domestic of passenger rail markets to stimulate the demand for rail. Also, there are bottlenecks in the conventional passenger rail network (e.g. Belgium, Germany, Netherlands, and UK) but also around the stations or junctions of some of the main European cities[94].

Congestion of certain railway networks will mostly impact on the development of commercial services in open access routes (public service obligations are in general pre-determined in the terms of reference of the public service obligation). As far as stations are concerned, railway undertakings will opt for alternative stations. NTV operates from Rome-Tiburtina and not from the main station Termini. SNCF has announced that it would operate low-cost TGV services from Marne-la-Vallée (Eurodisney) and not from central Paris stations. The success of open access commercial services also depends on their ability to operate in separate tracks compared to commuter or regional routes. The fact that ICE services operate partly not dedicated tracks is certainly one of the explanations for the lack of competition in German long-distance routes, compared to Italy, which has mostly dedicated rail tracks.

At the same time, the fact that open access operators in long-distance services may be inclined to operate at peak times could slightly impact congestion. However, it is unclear whether the impact will be major as the major users of paths are suburban trains that have restricted/constrained schedules.

[94] NTV the Italian new entrant was not able to start operations in Roma-Termini, the main station of Rome and is using the station of Tiburtina, instead. In Brussels, the Jonction Nord-Midi cutting the city of Brussels is completely congested.

Finally, it cannot be excluded that large-sized Member States will decide to move to cover all their services under PSC, keeping all fares regulated, as in the UK.

BOX 6 -INCENTIVES IN PSCs

There are two important types of PSCs:

- **Gross cost contracts** where (ticket) revenues are fully collected by passenger transport authorities, which refund them to the railway undertaking. Gross contracts have targets in terms of customer satisfaction. Railway undertakings face almost no commercial risks in such contracts and have no incentives to improve service beyond the requirements of the contract. Railway undertakings however bear all the operational risks and benefit from potential efficiencies that they realise on the top of the requirements of the PSC conditions
- **Net cost contracts,** where ticket revenues accrue directly to the railway undertaking, which bears the risks in terms of traffic. Net cost contracts give incentives to the operator to increase ridership and customer satisfaction. However, they generally deter bids from new entrants which have limited commercial expertise on the rail sector.

However, in most cases, a combination of gross and net cost contracts specifications is used to transfer parts of the commercial and operational risks to the railway operator.

c) Industry revenues and costs

Option	0	1	2	3	4	5
Impact	0	+	+	++	+++	+++

* Here and afterwards, comparison tables compare the relative impacts within a row but not the relative importance of different rows

Scope of potential impact:

Competitive tendering provides strong incentives to reduce costs, and therefore better use all resources (labour, rolling stock and infrastructure) whereas open access and net contracts in PSCs contribute to increase revenues in rail.

As a result, options 4 and 5 (+++), which combine both competitive tendering and open access, fare better in terms of potential improvement of **both** revenues and costs than that of options 1 to 3. As the size of p-km in PSOs is twice the size of potentially commercial services, option 3 is scored higher (++), compared to options 1 and 2 (+).

Experience in Member States: As shown in table 2c and 2d (cf. problem definition – 3.2.2), among the Member States whose efficiency growth rates have grown most since the nineties and early 2000s one finds the liberalised countries like UK, Sweden, Germany, which have all introduced competitive tendering. Belgium, Slovenia and Hungary also score well but mask excellent scores only in some indicators – labour productivity in Belgium appears to be half of the Netherlands.

Risks: Several exogenous factors linked to inter-modal competition influence the outcome of all the options. The scale of actual impacts importantly depends on how the Member States design PSOs[95], whether they provide incentives to increase revenues in PSCs (net contracts), and the level of subsidies for PSOs (this point was raised by Lithuania in the stakeholder consultation). Impacts on

[95] In PSCs, networks need to be organised around coherent bundles of lines (generally linked to a terminus station, a depot or a maintenance facility). This will allow the operator to seek for network efficiencies in terms of connections and use its rolling stock and staff as efficiently as possible

operator profits depend on the compressibility of costs. It should be noted that workers' organisation have been very sceptical about linking competition with incentives of operational efficiency.

d) Public funding

Option	0	1	2	3	4	5
Impact	0	+	0/+	++	++	+++

* Here and afterwards, comparison tables compare the relative impacts within a row but not the relative importance of different rows

Scope of potential impact:

Public funding is impacted mostly through savings in PSCs and to some extent through better usage of rail infrastructure. Competitive tendering allows for savings, whereas open access and net contracts in PSCs contribute to increase in supply of rail services within a given infrastructure. At the same time, "cherry picking" behaviour of open access services may compromise the economic equilibrium of PSCs.

Public savings in PSCs

The positive impact of competitive tendering on public finances is greater under options 3, 4 and 5. There is no competitive tendering in options 1 and 2.

All options provided for open access protect public funding from the negative effects of cherry picking i.e. where the competition is developed only for the most profitable lines, leaving PSO to deal with any loss making services. Options 1 and 4 contain safeguard measures to avoid potential negative impacts of open access vis-à-vis PSCs by allowing for the test of economic equilibrium. Options 2 and 5 prevent cherry-picking by the limiting the scope of open access services. In option 3, there is no open access.

Better usage of rail infrastructure

The scope of coverage of open access is greater in options 1 and 4 than in options 2 and 5.

If options 3 and 5 score better with competitive tendering, options 4 and 5 score with allow for open access as well. Option 1 scores better than option 2, as there could be no open access in the latter in some Member States;

Experience in Member States:

The analysis of the efficiency of public funds shows that among the 6 Member States whose efficiency of public spending has increased since the early 2000s, there is the UK, Sweden and Germany, which conduct competitive tenders for PSCs (cf. tables 9d and 10 of Annex 3). As explained in box 7, literature shows savings of 20-30% in those countries that have organised tenders. In particular in the Netherlands direct awards have only resulted in savings of 5-10% compared to 20-30% with competitive tendering. It is interesting to note that in constant terms, subsidies for PSOs increased by 48% in France in 2003-2008 while p-km only increased 24% and in Germany they decreased by 20% but still resulted in a 9% p-km increase during that period.

Sweden and UK are also top performers in terms of p-km growth per line growth (cf. table 7C in Annex 3). Finally, introducing competition in the market in high-speed lines can increase their usage. It is interesting to compare the frequencies on the Rome-Milan and Madrid-Barcelona routes. Both cities are at the same distance from each other and are located in member states with similar

GDP per inhabitant. Yet, the high-speed line Rome-Milan on which railway undertakings are competing with each other (FS vs. NTV) has double the number of trains per hour compared to high-speed lines Madrid-Barcelona (operated only by RENFE), as shown in table 7d of Annex 3,.

It is important to underline that, during the stakeholder hearing of 29th May, railway incumbents and a worker organisation expressed their concerns that unrestricted open access would lead new entrants to cherry picking (leaving incumbents with "potato picking" with the remaining unprofitable services), whereas a new entrant referred to the level of public funding as the key criteria to enter the PSC market. At the same time, 34% of respondents to the Eurobarometer survey considered that the level of public funding would decrease, whereas 30% thought that it would stay the same.

BOX 7 - SAVINGS FROM COMPETITIVE TENDERING AND OPERATIONAL EFFICIENCY

The evaluation of EU public procurement Directives suggests that savings increase (logarithmically) with the number of bids and with the use of open procedures. Savings in the procurement of goods, works and services have reached some 5% (where there are on average 5 bids). In railways, evidence in Germany, Sweden and Netherlands has pointed to savings of 20-30% per tender (ITF, OECD). It could be assumed that 5% of savings is the "benefit of tendering" (i.e. reduced margins of operators), whereas the remaining 15%-25% savings would derive from the "benefit of increased efficiency". Given that in Member States currently directly awarding their PSC, the subsidy level is about 17 billion EUR, a 20% saving would result in a ball-park figure of 3.4 billion EUR on a yearly basis. Finally, prospective studies have also estimated potential efficiency savings in the 20-30% area. The PREDIT[96] study on the impact of the opening of rail competition in France assumes a reduction of 30% of operational costs based on an analysis of different cost headings, whereas, in Germany, the PRIMON study on the privatisation of Deutsche Bahn assumed an efficiency differential of 20% between DB and its competitors[97]. Finally, it is also interesting to underline that Swedish passenger transport authorities appear to systematically use competitive tendering although they are not required.

Risks: Several factors under the control of national authorities influence the potential for savings, like the initial level of public funding, or usage of infrastructure, like congestion or the type of PSC (net cost versus gross cost PSCs). Also, there are sometimes complex interactions between the various factors on public finances, e.g. while there are savings expected from PSC financing and infrastructure revenues could increase, higher competition may reduce the profits of State-owned railway undertakings or bring extra costs for authorities in order to secure continuity of service (cf. section 7). Finally, there are also factors such as the level of track access charges that must be taken into account.

e) Impact on investment in rail

Option	0	1	2	3	4	5
Impact	0	+	+	+	++	++

* Here and afterwards, comparison tables compare the relative impacts within a row but not the relative importance of different rows

96 Programme de recherche et d'innovation dans les transports terrestres (PREDIT): Groupe opérationnel n°6 Etude sur l'Impact de l'ouverture à la concurrence dans le transport régional ferroviaire de voyageurs sur la consommation d'énergie et sur les émissions de carbone – Beauvais Consultants, KCW et RAILCONCEPT (2012)

97 Booz Allen & Hamilton: Bundesministerium der Finanzen, Bundesministerium für Verkehr, Bau und Stadtentwicklung: "Privatisierungsvarianten der Deutschen Bahn AG "Mit und Ohne Netz" (PriMON) – 01.2006, Annex, p.523

Scope of potential impact:

Open access encourages private investment (in particular in rolling stock but of facilities for rail-related services like maintenance). Rolling stock can be part of the business strategy of new entrants or incumbents alike. Overall, as open access takes place in long-distance and high-speed segments, it is likely that investment in new rolling stock is likely to be mostly directed towards high-speed or pendular trains (cf. Italian examples). In some instances, new entrants may also opt for second-hand rolling stock, also based on a decision to compete based on lower service (e.g. slower train) for a better price. Open access operators can also invest in rail maintenance facilities.

Competitive tendering for PSCs encourages public investment for rail services, as it allows for public savings. Although of course Member States retain the possibility to redirect their PSC savings to other policies and there are no signs that this would the case (UK). Decreases, if any, have had to do with the financial crisis. Overall both incumbents and new entrant will benefit from the reinvestment of public savings in the same level depending to whom contracts are awarded.

The combination of open access and competitive tendering will help expanding activities of rolling stock leasing throughout Europe (cf. 6.4 assessments of options on rolling stock), bringing institutional investors to invest in railway assets.

Investment in infrastructure (and its maintenance) is relatively independent from market opening, but the increase of rail services either as PSO or as commercial services generates a better return on investment for public authorities.

Open access encourages private investment (in particular in rolling stock), whereas competitive tendering encourage public investment for rail services. As a result, options 4 and 5 that combine open access with PSOs score better ('++') than options 1 to 3 (hence '+').

Experience in Member States:

The trend of subsidies for public service obligations in the Member States varies substantially and in some cases erratically, as table 9c in Annex 3 shows, but despite the current economic crisis there are no signs that public expenditure for rail would necessarily decrease[1]. However, budgetary constraints can play an important role. In the UK, the subsidy per mile has decreased since 2008, but important infrastructure works are foreseen for the years to come and the DfT has just awarded a 4.5 billion GBP contract for the UK Intercity Express to Hitachi-Agility Trains (one of the largest train orders in Europe). Between 2007 and 2008, subsidies in Ireland were almost halved (cf. table 9c), most likely because of the crisis.

In terms of rolling stock, there are divergent experiences. Operators like NTV invested 650 million EUR in purchasing new high-speed trains from Alstom and decided that rolling stock was part of a critical part of their business strategy (as Westbahn), whereas most other new entrants opted for second-hand rolling stock (RegioJet, HKX). At the same time, Trenitalia is investing in new generation of high speed trains like the Zefiro Frecciarossa to compete against NTV (and has invested in its own maintenance facilities). Competition also implies that railway undertakings may want to invest in additional facilities (e.g. automated ticket distribution systems of NTV).

In terms of investment of infrastructure, it is difficult to link the degree of market opening with infrastructure investment. The entry of NTV in the Italian high-speed network will certainly help Italy to better recoup its investment. But, Spain has also increased its p-km/line ratio by 33% since 1993 (cf. table 7c) and the UK has managed to increase its p-km by 84% while decreasing its infrastructure by 7%.

Risks: As explained previously, the level of investments is mostly determined by exogenous factors to rail as well as national policy choices. Investment in rolling stock is also highly reliant on

business strategies and policy choices to improve access to rolling stock (cf. options RS under rolling stock).

f) Administration[98] costs for operators

Option	0	1	2	3	4	5
Impact	0	0/+	0/+	- -	-	- -

* Here and afterwards, comparison tables compare the relative impacts within a row but not the relative importance of different rows

Scope of potential impact: The introduction of competitive tendering in options 3 to 5 will introduce bidding costs (hence'- -' for options 3/ 5 and '-' for option 4, taking into account that the scope of competitive tendering of options 3 and 5 is more important than 4), which will be proportional to the number of bidders, the number of competitive tenders and the number of packages that are put for tender –although the costs of bidding are in principle part of their business-as-usual activities ('marketing cost'). These costs have been estimated at 390.000 EUR in the EU10 against 780.000 EUR in the EU15, including a 10% probability of risk of remedies litigation to tenders. On the other hand, the opening of domestic markets in all options but the baseline will allow railway undertakings to save costs and delays of establishing a subsidiary in other Member States, although the savings are relatively modest compared to the bidding related costs.

BOX 8 – ADMINISTRATION COSTS FOR OPERATORS[99]

Average transaction costs (one-off tendering)			
Preparation of tender - Competent Authority	*200,000*	*100,000*	€ (2012 prices)
Preparation of tender-Total cost tenderers	*500,000*	*250,000*	€ (2012 prices)
Participation to bid-cost per tenderer	166,667	83,333	€ (2012 prices)
Average number of tenderers	3	3	Number
Other costs of tender - Regulatory Bodies/Authorities/Courts	*80,000*	*40,000*	€ (2012 prices)
Estimated cost of a legal dispute/Regulatory intervention	800,000	400,000	€ (2012 prices)
Propability of occurrence	0.10	0.10	Number
Total additional transaction costs	780,000	390,000	€ (2012 prices)

Risks: One of the main factors of uncertainty is litigation related to remedy procedures. Based on rough estimates for 200-2002, it appears that 2.5% of public procurement procedures in the EU have been affected by remedies, with great variations among Member States (the UK having the lowest number of remedies procedures because of their cost)[100].

98 Administration costs are considered of covering wider range of regulation related costs than traditional administrative costs and burdens. In particular these include also costs of defining PSO, arranging and participating in tenders and managing the PSCs.

99 More details are available in Annex 9

100 Impact Assessment on Remedies Procedures in Public Procurement (COM(2006) 195), http://ec.europa.eu/internal_market/publicprocurement/docs/remedies/sec_2006_557_en.pdf

g) Administrative costs for public authorities

Option	0	1	2	3	4	5
Impact	0	0	0	- -	-	- -

* Here and afterwards, comparison tables compare the relative impacts within a row but not the relative importance of different rows

Scope of potential impact: The introduction of competitive tendering in options 3 to 5 will introduce administrative costs for public authorities to handle the competitive tenders. As a result, all options 3 to 5 are likely to have a negative impact, which is slightly more important in options 3 and 5 ('- -') as they imply more competitive tendering than option 4 ('-'). In options 1, 3 and 4 national regulatory bodies have to supervise the economic equilibrium of PSCs and, where not yet in place, to establish transport plans.

BOX 9 - ADMINISTRATION COSTS FOR PUBLIC AUTHORITIES

Contract features		EU15	EU12	Unit value
Total number of contracts (PSC)				
	Current situation	273	6	279
	Baseline	289	11	300
	Option B1	321	58	379
One-off cost of PSC				
	Cost of setting a PSC	750,000	500,000	
Rump-up period to get all PSC				
	Rump-up	5	5	Years
Average monitoring cost				
	Average yearly cost of PSC	*78,000*	*39,000*	€ (2012 prices)

Experience in Member States: (cf. infra – risk of litigation)

Risks: (cf. infra – risk of litigation)

h) Multinational[101] rail activities

Option	0	1	2	3	4	5
Impact	0	+	+	+++	++++	++++

* Here and afterwards, comparison tables compare the relative impacts within a row but not the relative importance of different rows

Scope of potential impact: The capacity of operators to develop rail activities in several Member States will largely depend on the degree of openness of the various options, but also on the similarity of market structures throughout the EU. In this sense, the scope of potential impacts of multinational rail activities replicates the potential impacts of competition. However, by providing a general common framework on the proportionality and the necessity of PSCs, options 3 to 5 fare better than options 1 and 2. Given that options 4 and five address the rules both in open access and PSC market, their scores are better than that of option 3which regulates only PSC market.

[101] The impact on multinational rail activities development does NOT refer to the development of international services within the EU, but to the share of rail operators active in providing national services in several Member States

Experiences in Member States: UK, Sweden and, to a certain extent, Germany have subsidiaries of foreign railway undertakings (France, Germany, Italy and Netherlands) active in their PSCs. SNCF is also a shareholder of NTV and WestBahn, the new open access entrants respectively in Italy and Austria.

Risks: The development of rail activities in other Member States in PSC markets will also depend on the capacity of public authorities to honour their compensation payments on a regular basis. In this sense, the internationalisation of railway undertaking risks to be first oriented towards Member States with strong public finances[102].

BOX 10 -INTERNATIONALISATION OF RAILWAY UNDERTAKINGS

Thanks to the progressive opening of domestic markets like Germany, Sweden and the UK, several new companies run PSCs in other Member States (Veolia, Arriva, MTR). Progressively, incumbents are also venturing into domestic services outside their own Member State. SNCF bids outside France as Keolis, NS bids outside the Netherlands as Abellio, DB has purchased Arriva and Trenitalia has taken over Arriva's franchises in Germany (as Netinera). RegioJet, the Czech new entrant, operates PSCs in Slovakia. During interviews, it appeared that more and more EU-based incumbents are also bidding for UK franchises. Finally, SNCF has also invested into several EU new entrants like Westbahn and NTV. There are now 4 bidders for running the S-Bahn of Berlin, out of which only one is German (DB), the others being Raatp (France), MTR (Hong Kong) and National Express (UK).

j) Small and medium enterprises in rail

Option	0	1	2	3	4	5
Impact	0	0/+	0/+	+	+	+

* Here and afterwards, comparison tables compare the relative impacts within a row but not the relative importance of different rows

Scope of potential impacts: Overall, the initiative is not likely to have major impact on rail SMEs. Options 3 to 5 (+) are considered as scoring better than options 1 and 2 (0/+) due to the scale of potential liberalisation. Given the large upfront investments necessary to launch open access operations, opportunities for new SME entrants will be most likely confined to small scale tenders for PSCs. Based on extrapolations of the situation of operators of UK franchises, it appears that a medium enterprise (less than 250 staff or a turnover of 50 million EUR) could at most operate a PSC contract of around 2.5-3 million train-km.

Experience in the Member States: Most of the firms active in rail, even in markets with relatively small-size PSCs (like Germany but not Italy), tend to be either subsidiaries of railway incumbents or international groups (cf. Box 8). It is interesting to compare the situation in Germany with the situation in the UK. In the former bundles put for tender have had a median of less than 1 million train-km whereas in the UK many franchises have some 20 million train-km. In Germany, there are some 33 passenger railway undertakings[103] with less than 8% of German passenger-kilometres, some of which are local train companies[104]. In the UK, franchises have been mostly awarded to groups in the bus business (First, Arriva) or to railway undertakings from other Member States.

[102] Public service transport in the EU (CER-2011): there are appear to be problems with the regularity of payments for public service obligations in Member States like Romania, Slovakia and Greece, cf. p.32

[103] Wettbewerber-Report Eisenbahn 2008/2009, mofair – BAGSPNV.

[104] The so-called Landes- und Kommunalbahnen only represent one-third of the train-kilometres awarded to companies not being the incumbent (DB), whereas the subsidiaries of international groups or foreign railway

6.2.2.2- Indirect impacts

a) Innovation

Incentives to innovate will be stronger where there is the possibility for open access or competitive tendering with net contracts. In the Czech Republic, for instance, the new entrant RegioJet sells its tickets through the hard-discounter Lidl[105]. Freedom to innovate in PSCs may be constrained by terms of reference of PSCs (this is not to outright exclude any possibility of innovation in option 3), though PSC can equally encourage innovation by allowing operators to keep a share of efficiency savings or revenue from new passengers.

b) Macro-economic growth

It is difficult to predict how far domestic opening of rail services will impact growth. However, given the importance of the rail sector in the wider economy and its share in public investments , it is reasonable to assume that improved efficiency of rail operations will translate itself either into additional purchases of rail services, additional manufacturing of rolling stock or additional public savings, having overall positive effective on the economy.

c) Regional impacts

Regional services are mostly conducted through PSCs, therefore regional impacts are strongest in the options with a PSC tendering component. It can be assumed that regional mobility will benefit from efficient public spending, which will translate itself into the possibility to proceed to purchases of additional rail services and helping to stop the vicious circle of decaying regional services in some Member States (e.g. Central and South-Eastern Europe). At the same time, to ensure the continuity of services, it would be important that national authorities take account of any related risks as discussed in Section 7.Finally, the introduction of yield management in some open access commercial services will affect last minute travel between certain cities.

d) Relations with third countries

Some EU operators have already built activities in other rail markets (USA, Canada, India and Australia). More competitive EU railway undertakings will be even more inclined to venture outside the EU as they gain experience in different markets. As regards the impacts on the third country operators, none of the options is likely to affect existing trade agreements in services.

e) SMEs outside rail

Indirectly, higher service levels achieved by all options should have a positive impact on SMEs providing supplies or services to the rail sector. Furthermore, as voiced by stakeholders[106], liberalisation will normally lead to a more dynamic sector relying more on outsourced services than traditional incumbents. This would be a new business opportunity for SMEs. Last but not least, the creation of a Single European Area will be beneficial for the consistency of the EU internal market, further benefitting SMEs.

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operators (inculbents in France, Netherlands, Italy) represent the remaining two-thirds. Source: Wettbewerber-Report Eisenbahn 2008/2009, mofair – BAGSPNV, pp.27

105 NS, the Dutch incumbent also sells its tickets in retailers.

106 This comment was made during the stakeholder conference 'The Last Mile towards the 4th rail package'

6.2.2.3 – Summary of assessment of economic impacts

Table 8 – Economic impacts

	Option 0 Baseline scenario	Option 1 Broad open access only	Option 2 limited open access only	Option 3 Competitive tendering only	Option 4 Broad open access and competitive tendering	Option 5 limited open access and competitive tendering
Direct economic impacts						
Competition	0	+/++	+	++	++++	+++
Transport demand	0	+	+	+	++	++
Industry revenues and costs	0	+	+	++	+++	++/+++
Public funding	0	+	0/+	++	++	+++
Investment in rail	0	+	+	+	++	++
Administrative costs for operators	0	0/+	0/+	--	-	--
Administrative costs for public authorities	0	0	0	--	-	--
Multinational rail activities	0	+	+	+++	++++	++++
Small and medium enterprises	0	0/+	0/+	+	+	+

6.2.3. Social impacts

6.2.3.1- Direct impacts

a) Passenger fares

Option	0	1	2	3	4	5
Impact	0	+	0/+	0	+	0/+

* Here and afterwards, comparison tables compare the relative impacts within a row but not the relative importance of different rows

Scope of potential impacts:

First and foremost, it is important to underline that fares in PSO are regulated, whereas fares in commercial services are mostly not regulated (except in the UK, where open access operators have to set their fares by reference to the regulated fares of franchise operators).

As a result, the impact of competition on fares will largely be confined to those services that could potentially fall under open access (although there are also incentives in net cost PSCs) – i.e. high-speed services and long-distance intercity trains. This excludes from outset suburban commuter services and the vast majority of regional services (as per 6.2.1), which represent some 50% of all passenger-km in the EU. At the same time, Member States that will continue to have 100% PSCs (or actually switch to 100% PSCs) will have to maintain systems of regulated fares.

The experience of open access (cf. table 3 and infra) shows that price reductions are taking place in routes with competition *in* the market. However, most evidence is quite recent[107] and it is important to distinguish short-term effects on fares from long-term effects. In the short-term, new entrants

[107] Evidence before 2010 only exists for the UK. However in the UK, open access fares are regulated to avoid compromising the economic equilibrium of franchises (PSCs).

may wish to start fare wars to gain market share at the expense of incumbents, but in the long run new entrants may find themselves in duopoly and therefore maintain similar levels of price. Also, the evolution of fares will depend on the strategy of the new entrant, which may want to provide an upper service for a higher fare and could be impacted by exogenous factors (track access charges, price of electricity) or competition that fails to materialise (e.g. long-distance services in Germany). Finally, fares of open access operators that are operating in lines where there are PSCs in parallel may need to be regulated to avoid that the economic equilibrium of the PSC is compromised.

The potential for the fare decreases is concentrated in services in open access and in net cost PSCs, whenever there is scope for additional frequencies (no congestion). In Member States with the majority of traffic provided under PSC, most fares will be regulated. Options 1 and 4 give more room to competition than options 2, 3 and 5, where most fares will be regulated. In cases of sustainable commercial services, there is more room for price decreases in options 1, 2, 4 and 5 (but not in option 3 as these services would most likely still fall under legal monopolies). As a result, option 3 scores '0', options 2 and 5 score '0/+' and options 1 and 4 score '+'. It is also true that in the context of PSCs, public transport authorities may decide to use the savings from competitive tendering to lower the fares.

Experience in the Member States:

Fares appear to have increased 28% in real terms since 2000 according to Eurostat (cf. table 5g in Annex 3). In the UK and Germany fares have increased. As these are regulated fares as new entry in open access routes is recent, this reflects rather shifts in public authorities priorities (giving a preference to financial support in favour additional services rather than lower passenger fares for a more limited number of services). It is however interesting to underline that, in Sweden, fares "only" increased by 9% in real terms over the period since 2000(they only appear to have decreased in Belgium).

In those lines where there is competition in the market, price reductions have taken place, yet evidence is still recent and can only serve to assess short-term developments. In the Czech Republic, the new entrant RegioJet proposed fares 25% lower than those of CD, the Czech incumbent, which reacted by decreasing its own fares by 30%. In Italy, Trenitalia appears to have switched to yield management (differentiated prices) in its high-speed services further to the arrival of NTV, a new entrant competition on high speed, and there are reports that NTV proposes fares up to 70% those of the incumbent before its market entry. In Sweden, Veolia opted for cheaper fares (but slower trains) in the Malmö-Goteborg route. Finally, in Austria, Westbahn has undercut fares by 50% in the Salzburg-Vienna to equalise with ÖBB fidelity fare. In contrast fares have increased by 15% (Graph 9) in German long-distance routes which are under open access but there is no other competitor. Finally, based on a quick analysis of fares between Rome-Milan and Madrid-Barcelona, which are located at the same distance, prices in the former appear to be half those of the latter (table 5h in Annex 3).

Risks:

Several exogenous factors and national policy choices may play an important role in determining rail fares. Member States may decide to maintain national fare systems and/or to use gross cost contracts. Also, effects may be difficult to isolate because of the use of yield management.

The fare structure will also depend on the way Member States will organise their PSO network. The expectations of citizens may not be matched by reality, in particular in those Member States that will opt for a large part of services under PSCs. In the Eurobarometer some 72% of citizens expect fares to go down further to the introduction of competition.

Finally, some rail services may move from a single-fare system to a yield management system, with reservation requirements. This could affect short-term travel which could become more expensive. This has been for instance the case in the heavily commuted Dutch-Belgian travel with the introduction of the Fyra high-speed services.

BOX 11 –YIELD MANAGEMENT

Some railway undertakings operate yield management systems in long-distance railway services as airlines. Yield management systems allow railway undertakings to provide a wide range of fares at several types of conditions. In Italy, NTV appears to have prompted also Trenitalia to use yield management in the Rome-Milan route. In France, the incumbent SNCF has already for a long time used yield management in its TGV routes, where it is in monopoly. The introduction of yield management allows railway undertakings to exploit the various elasticities of demand (time-elasticity, price-elasticity), but could create problems of transparency for passengers. Yield management is not as frequent in short-distance routes. Finally, the introduction of yield management affects mostly last minute travel between large cities that becomes more expensive.

b) Service quality (frequency, destination choice and punctuality)

Option	0	1	2	3	4	5
Impact	0	+	0/+	+	++	++

* Here and afterwards, comparison tables compare the relative impacts within a row but not the relative importance of different rows

Scope of potential impacts:

Service frequency, availability and destination choice can improve with new open access rights filling service gaps (including a better price-quality ratio or 'niche' services as shown in table 3), as well as through the savings of competitive tendering being used to buy additional train-km. In terms of PSC, the ability to improve services will depend on the incentives established in PSCs (net costs versus gross costs contract, but also any additional conditions on quality such as minimum frequency and stations to be served) but also of geographical concentration (services are more costly in sparsely-populated remote areas). In this context options 4 and 5, containing both open access and PSC elements, score better (++) than options 3, where there is the risk that legal monopolies remain (in large-sized Member states) (hence'-'). Option 1 score better than option 3 in large Member States as it maintains open access, whereas Option 2 scores less than option 1 as it may imply the direct award of PSC for the entire services in small-sized Member States (with 100% PSCs), hence not providing any incentive for improvement.

Punctuality is influenced of course by exogenous factors like congestion or the traffic management by the infrastructure manager.

Experience of the Member States:

As shown in table 9 and graph 18 (cf. conclusions of Annex 3), among the Member States whose satisfaction/quality perception growth rates have grown most since the nineties and early 200s one finds the UK and Sweden, Germany, which have all introduced competitive tendering. Belgium, France and and Luxembourg also score well.

Service frequency, availability and destination choice:

Open access operators have sometimes opted for new services. NTV offers amenities that vary by type of customer rather than classes, while operators like RegioJet, Veolia (Sweden), Westbahn

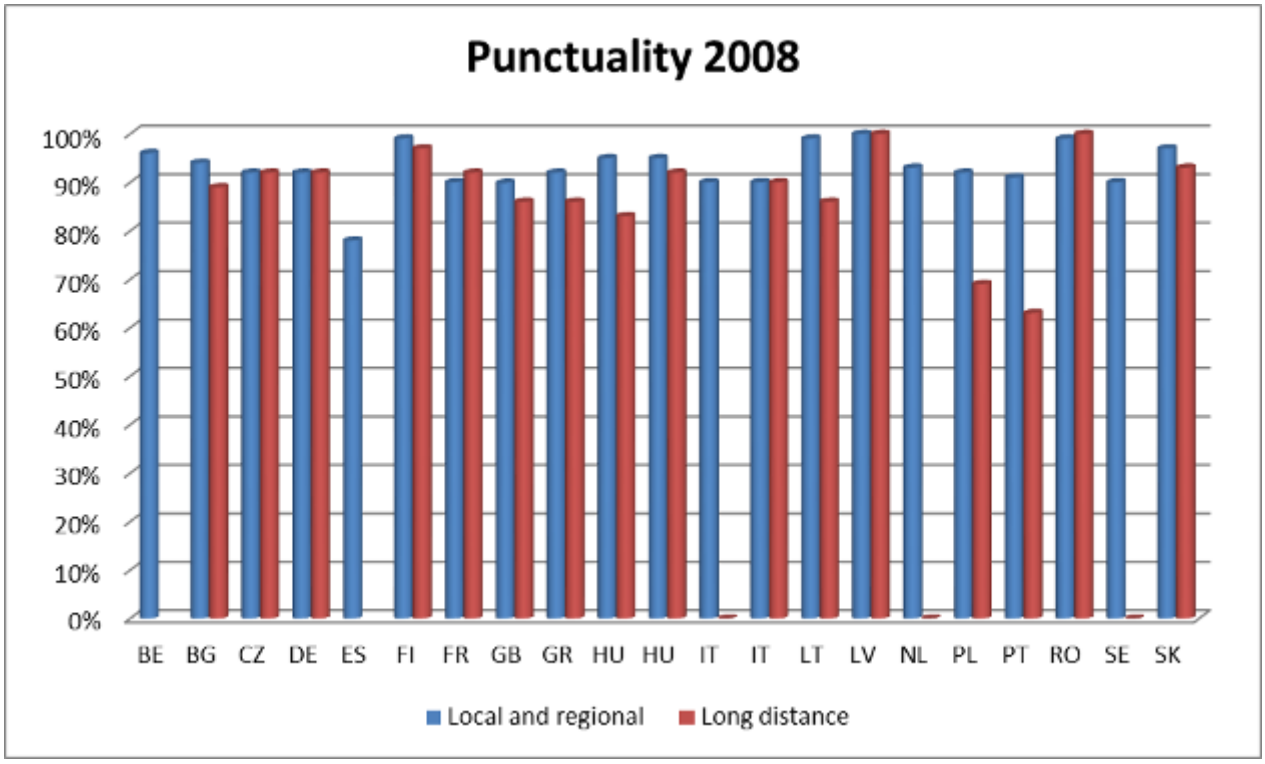
have opted for slower services at cheaper prices. In France, SNCF is considering to launch low-cost TGV services.

Availability could be an issue in some countries – in Sweden train supply has decreased (-25% of train-kilometres), but it has increased in the UK. On the other hand, analysis of the impacts of competitive tendering of public service contracts of rail transport in the German region of Baden-Württemberg indicates that from the 80 lines assessed (52 without competition, 28 with competition) the frequencies of services grew much stronger in the group of lines with competition than in the group of directly awarded contracts over the period 1994 and 2004[108]. Obviously this is not a direct effect of competition as service quality of PSO services is largely determined by the competent authorities but induced by reinvestment into better quality of savings of public funds. In the case of Sweden, geographic concentration makes some rail services to remote areas more expensive.

Punctuality:

Network Rail, the UK infrastructure manager, reports improved punctuality over the period of 2002-2009, despite increasing traffic intensity[109]. Punctuality is between 85%-90% in Sweden – as in France. Most of the countries with low traffic densities like Romania, Lithuania Latvia and Finland have higher punctuality rates. However data is patchy.

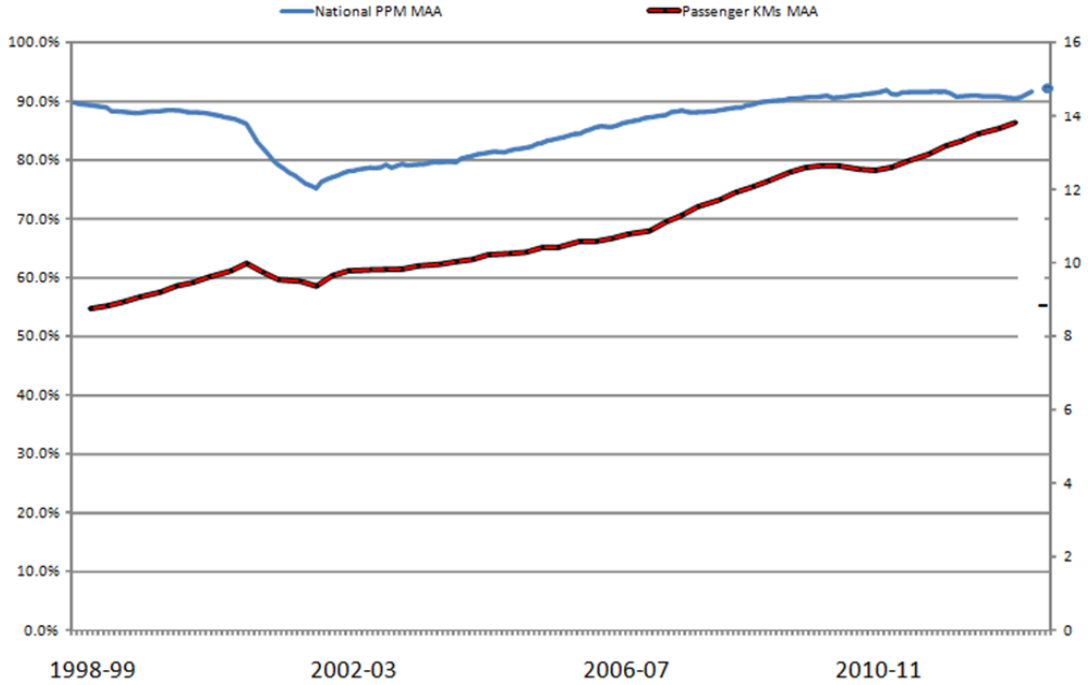
Graph 17: Punctuality in long-distance and local services (2008)



Source: UIC

108 Lalive and Schmutzler (2007), Exploring the effects of competition for railway markets, published manuscript, Zurich 5.2.2007 and data in table 5d.

Graph 18: Passenger service reliability and punctuality in the UK since 1998



Source: ORR and Network Rail (quoted from ORR (2012))

The graph shows the monthly annual average for the Public Performance Measure (reliability indicator) and the proportion of trains arriving at their destination within 5 minutes (10 minutes for long-distance trains) of the scheduled time (punctuality indicator)

The enhanced reliability and punctuality performance in the UK since the late nineties has led to a significant increase in passenger satisfaction (see graph 18).

Risks:

Service frequency, availability and destination choice: the ability to improve service in PSCs depends on the choice of Member States to introduce net cost contracts, which is a decision which rests on the Member States themselves.

Punctuality: Higher utilisation rates of infrastructure will increase congestion risk and service disruptions, if there is no matching investment in infrastructure capacity.

c) Employment in railway undertakings.

Option	0	1	2	3	4	5
Short-term impact	0	0	0	-	-	-
Long-term impact	0	0	0	+	+	+
Impact	0	0	0	-/+	-/+	-/+

* Here and afterwards, comparison tables compare the relative impacts within a row but not the relative importance of different rows

Scope of potential impacts:

The impact on employment is difficult to evaluate, as it will depend on different effects that counteract each other:

– Increase in demand for railway services (as foreseen in the White Paper baseline as well as the result of the current initiative) should lead to the creation of new jobs in the medium to long-run, especially in EU-10 where rail passenger services are currently relatively underdeveloped.

– Higher productivity called by competitive pressure would result in lay-offs in companies having room for efficiency gains (but these occur most prevalently in EU10), in particular in the short-run.

– Moreover, the previous point is partially neutralised by the fact that due to the age profile in the rail industry 30% of workers[110] in the rail sector will retire in next 10 years (cf. Annex 7, graph 14b) and that there are transitional periods for competitive tenders till 2023. However, effects may vary in each depending on the variation of the retirement age across Member States and its evolution in the years to come (likely to rise).

– There is a gradual move, especially by new entrants, to create multifunctional positions (except in the case of drivers), which is a divergence from the traditional approach. This creates scope for jobs requiring relatively higher levels of qualification and in-job training than in traditional incumbents.

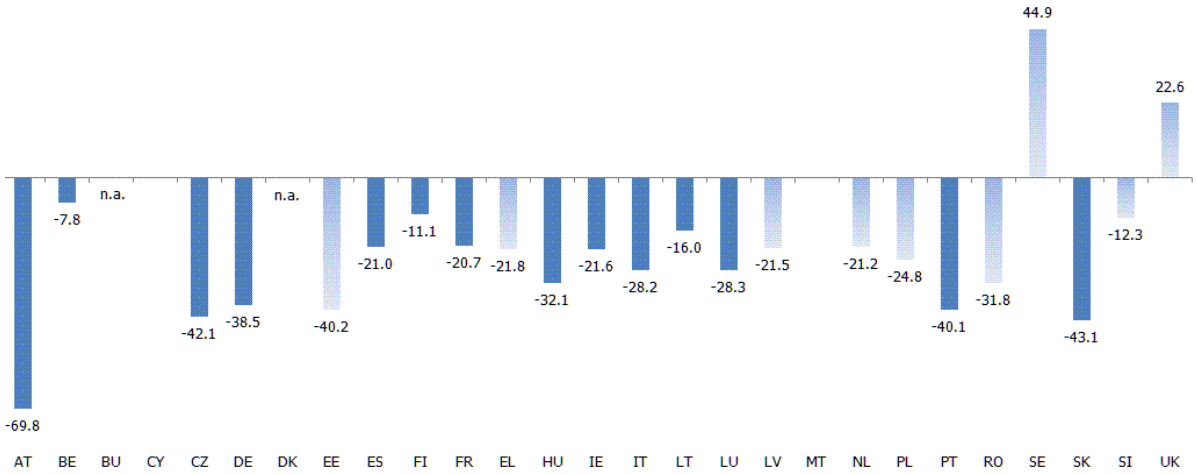
The options with the strongest market impact, potentially leading to significant restructuring of the sector, will be assumed to have the most negative impacts in terms of jobs in short term. However, as explained in box 12, in a long term perspective, the impacts should be neutral or even positive. Moreover, this assumption does not take into account the gradual effect of the movement to compulsory tendering of PSCs.

Experience in Member States: As shown in graph 19, based on a study from EIRO[111], total employment in railway transport decreased in all Member States, with Sweden and the United Kingdom creating jobs since 2001, which fit in the models of options 3 to 5. This is also confirmed in Annex 3 (table 8a) which analyses evolution in jobs since 1993. Employment in rail has decreased by 43% between 1993 and 2008 and by an estimated 13% between 2000 and 2008. Most of the employment losses appear to have been recorded in Central Eastern and South-Eastern Europe: in Hungary and Romania, more than 70% and 60% respectively. There was a decrease in jobs in the UK and Sweden in the nineties, but the latter was not more significant than in other Member States.

[110] CER (2011) Employability in the age of Demographic Change – Prospects for the European rail Sector: 54% of the rail workforce is older than 45 and 34% have already past the age of 50, In NMBS-SNCB, the Belgian incumbent, more than 50% of the working population had more than 50 years (source: Question écrite n° 5-2703 de Bert Anciaux (sp.a) du 12 juillet 2011 à la ministre de la Fonction publique et des Entreprises publiques)

[111] EIRO (2011), Eurofound - European Industrial Relations Observatory,, Study on Employment and industrial relations in the railway sector: http://www.eurofound.europa.eu/eiro/studies/tn1109030s/tn1109030s_3.htm

Graph 19 – Variation of total employment in railway freight and passenger transport in EU-27, years 2001/2010 (%)



Source: EIRO CAR 2 Employment and industrial relations in the railways sector, quoting Eurostat, LFS

Risks:

Specific groups of workers like older or younger workers could be exposed to restructurings. Important job reductions have already taken place in the railways because of the age profile of railway workers. Reductions related to productivity increases could affect older workers through early retirement or young workers – where old statutory regimes co-exist with flexible working conditions.

At the same time, the age pyramid of rail workers could point to shortages of personnel in the years to come, which should lead to continue encouraging the recruitment of women and young workers.

It is important to underline that effects on different groups may vary depending on the various retirement ages (cf. graph 21) that depend on statutory agreements, collective agreements, age, sex and, of course, profession.

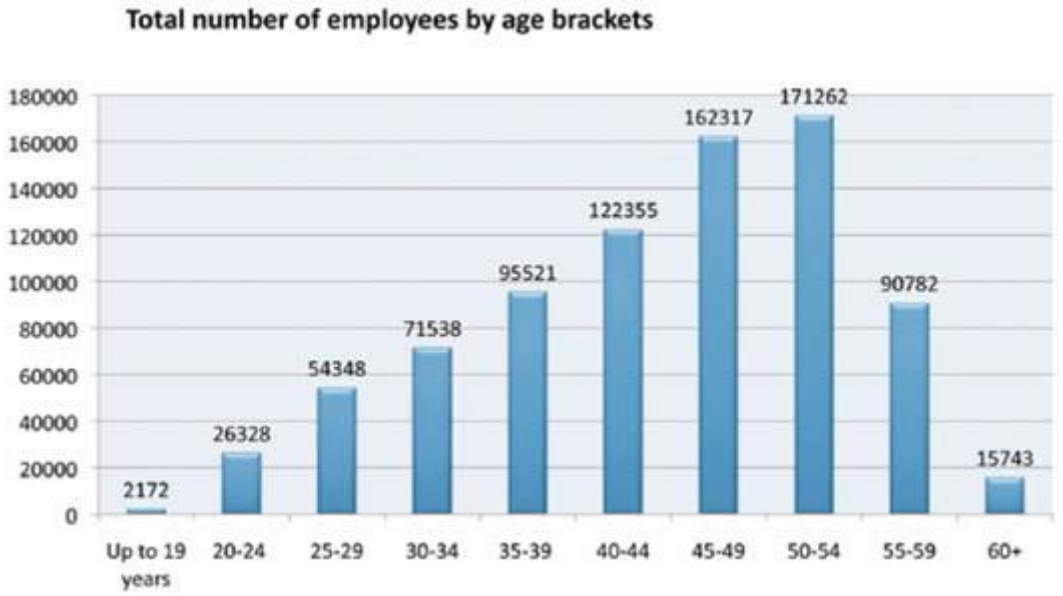
BOX 12 - IMPACT ON JOBS - A CONCRETE EXAMPLE

The potential impact on employment will greatly depend from the improvements in efficiency compared to the forthcoming ageing of the workforce in railways. 30% of the rail workforce (some 139.000 persons) will retire in the 10 years to come. If we were for instance to simulate a productivity improvement of 20%, based on a simple rule of three, some 92.600 workers could have been affected. However, in reality potential redundancies will be offset by the retirement of 139.000 persons, even more so if the transitional periods for existing contracts were to be foreseen as from 2021. In this sense, there is actually a risk of shortages.

At the same time, if the savings of competitive tendering were reinvested to purchase additional passenger-kilometres (box 7) the delivery of additional 34 million p-km would require more people work for rail, not counting additional infrastructure and rolling stock demand. Extra workforce needed could be up to 14 000 people.

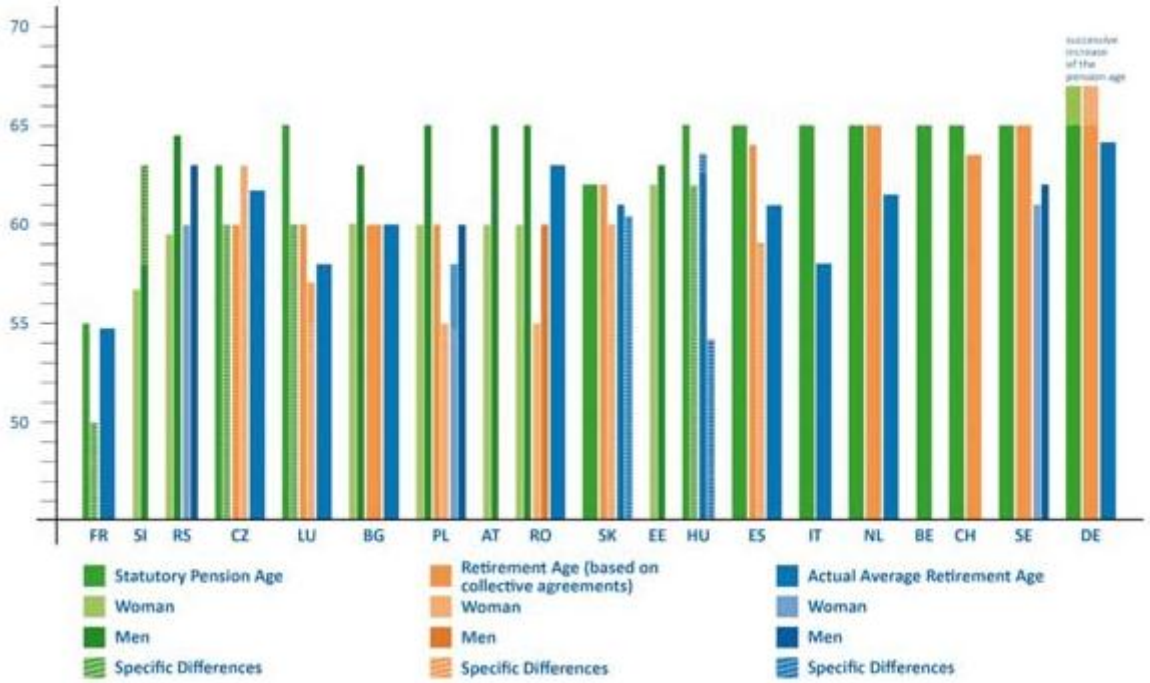
As a result, unless productivity increases by more than 30%, it is very likely that in the mid-long term perspective railways will face shortages of workers. In any case, time lags related to phasing the policies in, will play an important role in overall employment dynamics of the sector and will strongly depend on the starting position and measures taken in each Member State.

Graph 20 – Age pyramid of workers in rail (2011)



Source: CER (2011) –Employability in the face of demographic change – Prospects for the EU rail sector

Graph 21 – Retirement ages in railways



Source: CER (2011) –Employability in the face of demographic change – Prospects for the EU rail sector

d) Employment in rail-related sectors

Option	0	1	2	3	4	5
Impact	0	+	+	+	++	++

* Here and afterwards, comparison tables compare the relative impacts within a row but not the relative importance of different rows

Scope of potential impacts: The growth of railway activity will increase the demand for rolling stock and rail related services, therefore creating new jobs in connected industries. The impacts are directly correlated to the rail services demand, therefore the same scores have been attributed to each of the options.

e) Impact on working conditions

Option	0	1	2	3	4	5
Impact	0	-	-	--	--	--

* Here and afterwards, comparison tables compare the relative impacts within a row but not the relative importance of different rows

Scope of potential impacts, including experiences in the Member States and risks:

All the options that have an impact on labour costs could have some negative consequences for working conditions. In the stakeholder consultation, workers explained that they felt that competitive tendering could contribute to a deterioration of working conditions. According to van Dijk (ITF, OECD, 2008), this has been the case in The Netherlands, although the latter has legislated on transfer of staff.

Labour costs represent some 30% of railway operational costs. It is obvious that the opening of domestic markets to competition will impact the working conditions of railway undertakings currently operating in monopoly, but only within the lines of collective agreements negotiated within the Member States. In some Member States, railway undertakings had or will have to abandon the civil servant statutes of their workforce (Germany, Greece and Austria have already done this and are in a transition phase, while Belgium and Luxembourg currently maintain them). In others, railway undertakings are applying more profession-based collective agreements (e.g. the Austrian new entrant Westbahn applies to its catering staff the collective agreement of the catering sector and not that of the rail sector).

Wages are likely to evolve based on market conditions like specialisation, skills and scarcity. Higher-skilled professions (train drivers, train technicians) are most likely to witness an upward pressure on wages, with service, ticket control, catering and administrative functions aligning themselves with the rest of the market (mostly downward). This may involuntarily affect women more negatively than men, as high-skilled rail-related professions tend to be mostly occupied by men (drivers). Also, railway undertakings may be inclined to outsource the provision of services like catering (like air transport) or clerical functions to maximize efficiency.

BOX 13 – WAGES OF TRAIN DRIVERS

It is interesting to compare wages or incomes from drivers in different markets across the EU and their evolution in those countries that have taken steps to open up their domestic rail markets, based on different available sources.

During the conference of the 24 September 2012 (cf. Annex 10), it was claimed that the wages of train drivers in the UK reached some 50.000 €/year (hence some 4.200 €/month) and that those of private railway undertakings in Germany were at some 86% of the incumbent DB. The PREDIT study in France referred to net monthly driver wages at SNCF between 1500 € (career start) and 3400 € (end)[112] – hence probably between 3000 € and 7000€ gross. In those markets that have been liberalised, new entrants offer attractive salary conditions in order to ensure that they attract the staff and grow their service[113].

Finally, anecdotal evidence suggests that the opening to competition has not led to a deterioration of income. According to the European Foundation for the Improvement of Living and Working Conditions[114], between 1999 and 2004, the average monthly income of SJ (Swedish incumbent) increased by 18% (during the privatisation period of SJ while market opening had already taken place).

Productivity – cf. impact for the revenues and costs of the industry

Recruitment - The strengthening of efficiency and the introduction of competition will most likely result in an increase of flexibility and a move to a more contractual approach to employment.

Also, the usage of competitive tendering brings with it the question of transfer of staff. Directive 2001/23/EC on the approximation of the laws of the Member states relating to the safeguarding of employees' rights in the event of transfers of undertakings, already gives employees a considerable degree of protection[115]. Regulation 1370/2007 already extends the protection offered by Directive 2001/23/EC allowing for the possibility to ask for transfers of staff in tenders in cases where Directive 2001/23/EC would have not been applicable. Some Member States, like the Netherlands, have specific provisions on the transfer of staff[116]. And, in fact, taking into account the high median age of workers in rail, the possibility to request the transfer of staff may ultimately be beneficial to the subsequent operator.

Skills – As explained, the increase in demand for rail service could also lead to shortages of personnel. Railway undertakings that will cooperate with schools to train new personnel will be able to cope with this challenge. Finally, the progressive de-centralisation of railways into several types of businesses (maintenance, catering, traffic management,..) could lead to a trend towards more specialisation.

Finally, according to the Eurobarometer survey, more than 60% of Europeans think that the opening of rail competition is expected to have a positive influence on the way railway companies are managed. 55% of respondents of the Eurobarometer survey think that more competition in the rail market will be good for employees of rail transport operators (32% think there will be negative impacts on working conditions). Of the 3 representatives of worker's organisations that participated in the stakeholder consultation, all predicted more strikes with further opening of the domestic

112 PREDIT study on the opening of rail to competition in France – cf. references are provided in infra

113 New entrants indicated that in interviews that they were keen to offer multi-tasking activities or flexibilities to work on weekdays instead of weekdays.

114 European Foundation for the Improvement of Living and Working Conditions, Profile of the rail transport sector in Sweden

115 The directive 2001/23 is only applicable to transfers as defined therein. Consequently, following the case-law of the European Court of Justice, in sectors such as bus transport, based on tangible assets, the Directive "does not apply in the absence of a transfer of significant tangible assets from the old to the new contractor". The transfer will therefore depend on whether significant rolling stock and other tangible assets are transferred.

116 Dutch law requires staff transfer to the new operator after a tendering procedure - in such cases the transfer of tangible assets is not a condition for staff transfer

passenger rail market. Other stakeholders (almost 50% response rate) are much more diverse: 60% predict no change and 30% more strikes.

BOX 14 – EXISTING SOCIAL SAFEGUARDS IN RAIL

As detailed in Annex 7, the EU has implemented a series of social safeguards which apply for rail workers:

- The establishment of ERA and the adoption of safety legislation and drivers' licences and certificates protects the safety of rail workers.
- There is generally applicable legislation for working time and specific legislation for working time in cross-border services. The Posted Workers Directive obliges to apply to workers temporarily posted to carry out work in order to provide services in another Member State than the one in which they habitually carry out their work, including those involved in cabotage activities
- Legislation exists for working time in cross-border services, while for domestic services the Posted Workers Directive (PWD) obliges that host country core social legislation be applied to posted workers, including those involved in cabotage activities.
- EU legislation on the transfer of undertakings which obliges the transfer of workers has been strengthened by the PSO Regulation 1370/2007 which also allows competent authorities to impose specific social and service quality standards.
- European Works Council legislation aims to improve the right to information and consultation of employees at transnational level in Community-scale undertakings or Community-scale groups of undertakings on transnational issues. There are also other important legal acts applicable at national level and providing rules on information and consultation of employees including directive 98/59/EC (collective redundancies), Article 7 of Directive 2001/23/EC (transfer of undertakings) and Directive 2002/14/EC (general framework).
- The European Social Fund (ESF) can provide support to the training needed in the job transitions derived from any external restructuring or internal reorganisation, although it should be underlined that this could crowd out other beneficiaries.

f) Rail safety

Option	0	1	2	3	4	5
Impact	0	0	0	0	0	0

* Here and afterwards, comparison tables compare the relative impacts within a row but not the relative importance of different rows

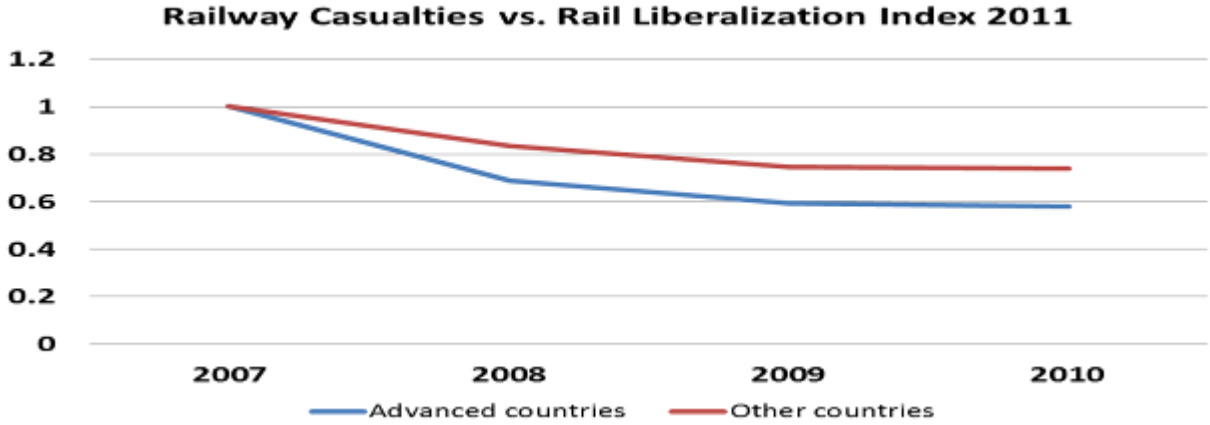
Scope of potential impacts: All options score identically as safety is not influenced by the degree of market opening (cf. tables 5e and 5f in Annex 3), as the mechanisms for certifying rail undertakings and authorising rolling stock as well as the remainder of the very comprehensive legislative framework will remain unchanged. Moreover, safety is mostly the result of interactions with the infrastructure manager (who is responsible for signalling and traffic management) than between railway undertakings. Finally, as rail is the safest transport mode, the potential increase of rail travel will result in overall safer passenger transport. This impact could be important in South-East Europe, where road traffic modal share is increasing and where the number of fatalities is highest.

Experience from the Member States: As explained in the EVERIS study,[117] there is no evidence that opening markets to competition jeopardises safety. Quite on the contrary, Sweden, Germany and UK score all very high in terms of safety (cf. Annex 3) and are "advanced" in terms of market opening, according to the IBM Rail Liberalisation Index. Academic studies have shown that

[117] EVERIS (2010), Study on regulatory options for further market opening in rail passenger transport, p.213

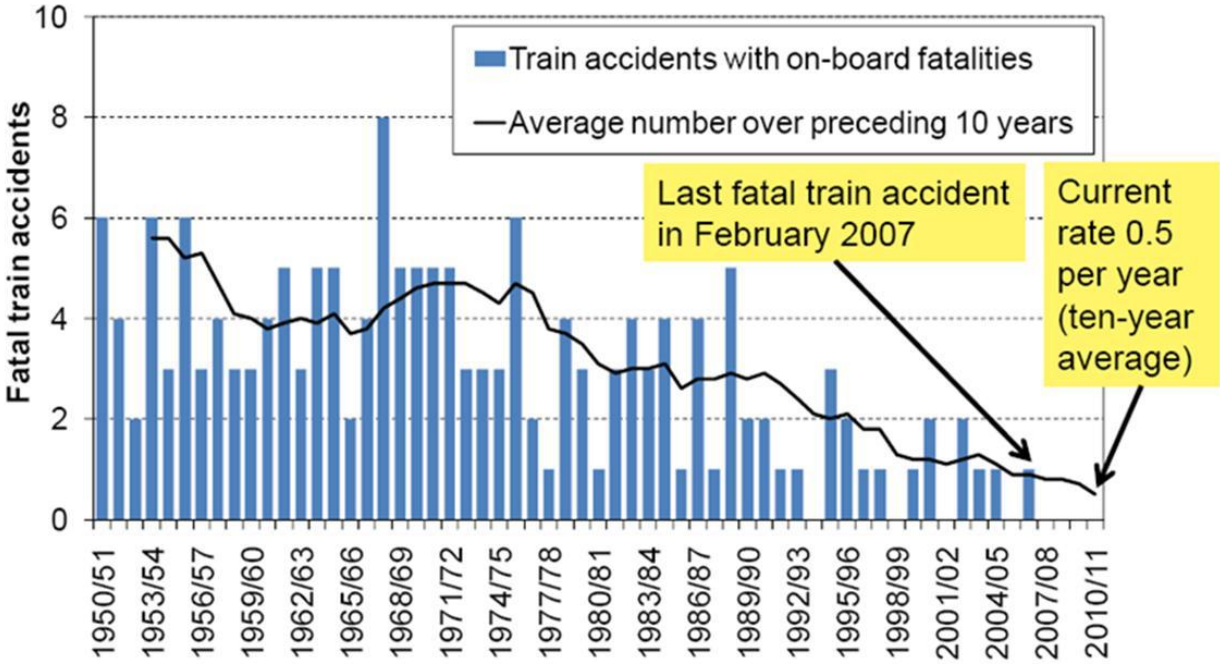
accident levels in the UK have fallen at a faster rate after market opening than before it[118]. See also graph 23 depicting the development of fatal train accidents in Britain since 1950. It illustrates that fatalities diminished significantly since market opening in the mid-nineties. Less than 20% of the respondents to the Eurobarometer survey think that the opening of railway competition is expected to have a negative influence on the safety of the network and 55% think that there will be an improvement. Those considering an increase in safety are responding from Member States with a very high safety level.

Graph 22- Safety in Member States with "advanced" market liberalisation



Source: European Railway Agency (ERA) and IBM Railway Liberalisation Index

Graph 23: Long-term decline in fatal train accidents in Britain since 1950



Source: ORR (2012)

[118] Evans A W Fatal Train Accidents on Britain's Main Line Railways, as quoted by EVERIS (2010), p.213

6.2.3.2 – Indirect impacts

a) Social inclusion

– cf. regional impacts

b) Noise

Noise is expected to grow in line with additional train activity. Also, as new rolling stock is introduced, it is likely to be built to more modern standards with improved noise reduction technology.

6.2.3.3 – Summary of assessment of social impacts

Table 10 – Social impacts

	Option 0 Baseline scenario	Option 1 Broad open access only	Option 2 limited open access only	Option 3 Competitive tendering only	Option 4 Broad open access and competitive tendering	Option 5 limited open access and competitive tendering
Direct social impacts						
Passenger fares	0	+	0/+	0	+	0/+
Service quality	0	+	0/+	+	++	++
Employment - rail undertakings	0	0	0	-/+	-/+	-/+
Employment – rail-related sectors	0	+	+	+	++	++
Working conditions	0	-	-	--	--	--
Rail safety	0	0	0	0	0	0

6.2.4. Environmental impacts

The policy options would have some positive impacts on GHG emissions, resource efficiency and air quality. All these impacts are correlated and derived from the potential growth of rail activity and related modal shift. As a result, options 4 and 5 (+/++) are likely to have a better, but still relatively modest impact on environmental sustainability, compared to option 3 (+) and options 1-2 (0/+).

Option	0	1	2	3	4	5
Impact	0	0/+	0/+	+	+/++	+/++

* Here and afterwards, comparison tables compare the relative impacts within a row but not the relative importance of different rows

6.2.5. Comparison of market opening options

The following table compares how the different market opening options 0-5 perform in terms of effectiveness, efficiency and coherence. Effectiveness is expressed using the three specific objectives, while the SO3: Better value for public money spent, is at the same time also an efficiency measure. The rest of the efficiency and coherence measures are derived from the different categories of impacts discussed above. The column 'Motivation' provides a brief summary of the overall assessment of each option.

Table 11 – Comparison of market opening options

	Effectiveness [119]		Efficiency				Coherence				Motivation
	SO1: Intensify competitive pressure in domestic rail markets	SO2: Create more uniform business conditions	Operational efficiency of RUs	Passenger fares	Administrative burdens for operators	Administrative burdens for public authorities	Employment and working conditions (rail)	Employment (rail related sectors)	Social inclusion, customer impacts	Environmental sustainability	
Option 0 Baseline scenario	0	0	0	0	0	0	0	0	0	0	Competition in railways will continue to evolve at the fringe, therefore no many new bidders would appear for competitive tenders and no improvements in public spending efficiency in rail. The disparity of market structures throughout the Member States remains and prevents the emergence of cross-European operators and development of a Single European Railway Area.
Option 1 Broad open access only	+/++	+	+	+	0/+	0	0	+	+	0/+	Broad open access rights would have positive impacts on competitiveness of rail market which should lead to some savings in public funds and possibly customer fares. Improved offer of rail services would be beneficial to customers. But given that only a minor part of services are under open access, the measure has limited 'teeth' and would not result in a major restructuring of the rail sector, therefore it is considered not having major impacts on employment and working conditions. Efficiency gains affect only a limited part of the market. There are no significant administrative burdens linked to this policy option, just that opening of domestic markets will allow railway undertakings to save establishment costs in other Member States.

[119] Effectiveness scores are linked to following categories of economic impacts assessed in Section 6: "competition" and "development of multinational rail activities."

	Effectiveness [119]		Efficiency				Coherence				Motivation
	SO1: Intensify competitive pressure in domestic rail markets	SO2: Create more uniform business conditions	Operational efficiency of RUs	Passenger fares	Administrative burdens for operators	Administrative burdens for public authorities	Employment and working conditions (rail)	Employment (rail related sectors)	Social inclusion, customer impacts	Environmental sustainability	
Option 2 Limited open access only	+	+	+	0/+	0/+	0	0	+	+	0/+	The impacts of this option are similar to that of Option 1, but even more limited. Given that under this option PSCs remain protected from the competition with open access operators, this option would hardly allow for any savings of public funds.
Option 3 Competitive tendering only	++	+++	++	0	--	--	-/+	+	++	+	This option addresses only the PSC part, i.e. the competition for the market, and thus only partially improves entry rights and uniformity of business conditions. Legal monopolies remain untouched. Competitive tendering is expected to inject more competition to the major part of the passenger rail market and support the growth of new entrant market share. Increasing competitive pressure should result in improved efficiency, especially felt by incumbents having so far operated in monopolistic conditions. Given that PSC market is characterised mostly by subsidised service and fixed fees, customer fares are expected to improve only marginally. There will be additional administrative burdens related to bidding procedures – both for operators and public authorities. The latter are, however, of a much smaller scale than the expected savings in subsidies. The mixed impacts, as regards employment and working conditions, mirror the fact that short term negative impacts should turn around as a result of increased demand for rail services. t. Other coherence indicators – social inclusion and environmental sustainability – are linked to expected slight increase in rail service provision.
Option 4 Broad open access and competitive tendering	++++	++++	+++	+	-	-	-/+	++	++	+/++	Option 4 is the most ambitious option addressing both – competition for the market and competition in the market, while to some extent allowing competition even between the two markets. At the same time, a safeguard clause is

	Effectiveness [119]		Efficiency				Coherence				
	SO1: Intensify competitive pressure in domestic rail markets	SO2: Create more uniform business conditions	Operational efficiency of RUs	Passenger fares	Administrative burdens for operators	Administrative burdens for public authorities	Employment and working conditions (rail)	Employment (rail related sectors)	Social inclusion, customer impacts	Environmental sustainability	Motivation
											foreseen to protect economic equilibrium of PSCs so as to avoid 'cherry picking' by new entrants. Therefore this option is most effective in terms of specific objectives. As regards industry revenues and operational efficiency, the results will be mixed – on the one hand elimination of monopoly profits of incumbents, on the other hand new business opportunities for new entrants. If the public authorities were to reinvest the saved money in rail sector, the overall turnover and service offer should increase along with improvement in passenger fares and service quality. Administrative burdens are same as for option 3. Regarding the coherence scores, the impacts on employment are again negative in short, but positive in long term perspective. The expected growth in rail services offer would be higher than under option 3, providing explanation of higher scores of other coherence indicators.
Option 5 Limited open access and competitive tendering	+++	++++	++/++ +	0/+	--	--	-/+	++	++	+/++	Option 5 has similar implications than option 4, however no competition is allowed between open access rights and PSCs. Therefore slightly fewer benefits are expected in the form of public savings. Impacts on operational efficiency are a bit more limited that for option 4, given that the PSC market is isolated from open access competition. The impacts on employment are largely the same as under option 3.

The analysis demonstrates that option 4 broad open access combined with competitive tendering performs best. This option will be included in the preferred policy scenario analysed in section 7.

6.3. Analysis of impacts of ticketing policy measures

While options 1-5 analysed above aim to open the rail passenger market to competition, the actual effectiveness of liberalisation measures depends of availability of certain framework conditions. Access to integrated ticketing systems is important in order to avoid fragmentation of service offer when provided by several operators. At the same time, 'over-integration' can hinder potential of service differentiation and price competition[120].

This section assesses the most likely economic and social impacts of ticketing options.

It is important to underline that there is a risk that the overall question of non-discriminatory access to ticketing systems may decline over time if ticketing is increasingly arranged by smart cards, internet or mobile phone, and passengers are willing to change from conventional ticket offices and on-train sales to other channels[121]. To ensure a level playing field between operators, however, equal access to sales channels including ticket offices and on-train sales may need to be mandated, at least in the short to medium term.

6.3.1. Economic impacts

a) Competition and other competition-driven impacts

Option	T0	T1	T2
Impacts	0	++	+

* Here and afterwards, comparison tables compare the relative impacts within a row but not the relative importance of different rows

Scope of potential impacts: Both options provide for the creation of common ticketing systems favouring availability of tickets. Mandatory ticketing systems may hamper the possibility of railway undertakings to develop their own business strategies, whereas voluntary systems have the advantage to leave the ultimate decision to join integrated systems to the railway undertaking on the basis of its own business analysis. T1 is therefore likely to leave more room for competition (hence ++) than T2 (+). It would also preserve price competition between the operators.

b) Industry revenues and costs

Option	T0	T1	T2
Impacts	0	0	-

* Here and afterwards, comparison tables compare the relative impacts within a row but not the relative importance of different rows

Scope of potential impacts: Mandatory ticketing systems may hamper the possibility of open access operators to control the distribution costs. T1 is therefore likely to leave more room for operational efficiency than T2 which would have a negative impact on operational efficiency (hence –).

[120] Experience in UK, where it has been required that certain types of through-tickets must be available has demonstrated that mandatory provision of through-fares may result in additional complexity which may be of little or no value to passengers, particularly if the through-fares are more expensive than the sum of the fares for each part of the journey. (Steer Davies Gleave (2012)

[121] A prospective open access operator in Germany told us that they intended to circumvent DB's resistance to selling tickets for their services in DB's offices by offering internet-based and on-board ticket sales.

c) Transport demand, multinational rail activities

It is impossible to determine whether T1 or T2 generates more transport demand and multinational rail activities. Both options will therefore be assumed to have a neutral effect.

Option	T0	T1	T2
Impacts	0	0	0

* Here and afterwards, comparison tables compare the relative impacts within a row but not the relative importance of different rows

d) Administrative costs for public authorities

Option	T0	T1	T2
Impacts	0	0	-

* Here and afterwards, comparison tables compare the relative impacts within a row but not the relative importance of different rows

Scope of potential impacts: T2 has higher enforcement costs as it requires transposition and monitoring of national legislation (hence –). T1 with an enabling clause leaves national authorities more room of manoeuvre (there are no enforcement costs, hence 0).

Risks: (none)

e) Innovation

Option	T0	T1	T2
Impacts	0	+	0

* Here and afterwards, comparison tables compare the relative impacts within a row but not the relative importance of different rows

Scope of potential impacts: T1 gives more flexibility to Member States to allow their operators to develop their own retail strategies and therefore develop innovative marketing solutions.

Risks: With a gradual transition from traditional station ticket offices and on-train ticket sellers to other sales channels such as travel agents, the internet and smartphone Apps, legislation may be required to ensure that access to all information and sales channels is on a non-discriminatory basis[122].

6.3.2. Social impacts

a) Passenger fares

Option	T0	T1	T2
Impacts	0	0/+	0/-

* Here and afterwards, comparison tables compare the relative impacts within a row but not the relative importance of different rows

[122] It might also be necessary to require that one operator's smartphone app list trains provided by all operators serving the same route or the same station-to-station journey. For example, the Austrian regulator Schienen-Control required the incumbent ÖBB to include the trains of competitor WESTbahn in its timetables.

Scope of potential impacts: It could be assumed that mandatory integrated ticketing systems might hamper the possibility for price differentiation. T1 is therefore likely to leave more room for the decrease of passenger fares than T2. Any ticketing options will have almost no impact on PSC market, because in many instances fares are laid down by the competent authority on contractual basis.

Risks: (none).

b) Service quality:

Option	T0	T1	T2
Impacts	0	+	0/+

* Here and afterwards, comparison tables compare the relative impacts within a row but not the relative importance of different rows

Scope of potential impacts: T1 gives more flexibility to allow operators to develop their own business strategies in terms of service (hence T1 scores +). For instance, the Italian new entrant NTV has a varied set of classes which do not necessarily match with the approach of its competitor Trenitalia. Therefore, NTV has a parallel ticketing system. However, from the passenger viewpoint co-existence of different ticketing systems can create inconvenience compared to one integrated system (hence T2 scores 0/+).

Table 12 – Impact of ticketing options

	T0 Baseline scenario	T1 Voluntary integration	T2 Mandatory integration
Economic impacts			
Competition and other competition-driven impacts	0	++	+
Industry revenues and costs	0	0	-
Transport demand, multinational rail activities	0	0	0
Administrative costs for public authorities	0	0	-
Innovation	0	+	0
Social impacts			
Passenger fares	0	0/+	0/-
Service quality	0	+	0/+

6.3.3. Comparison of the ticketing options

The following table compares how the different ticketing options perform in terms of effectiveness, efficiency and coherence. The approach is the same as for the market opening options above.

Table 13 – Comparison of ticketing options

	Effectiveness		Efficiency			Coherence	
	SO1: Intensify competitive pressure in domestic rail markets	SO2: Create more uniform business conditions	Operational efficiency of RUs	Passenger fares	Administrative burdens for public authorities	Service quality	Motivation
T0 Baseline scenario	0	0	0	0	0	0	Implementation of the Passenger Rights Regulation and the Recast would mean marginal improvement within the dynamics of the baseline.
T1 Voluntary integration	++	0	+	0/+	0	+/-	T1 leaves more room for competition. From the passengers' viewpoint a voluntary option would maintain a more fragmented market and thus would not allow for the 'seamless travel' that could be provided by T2.
T2 Mandatory integration	+	0	0	0/-	-	0/+	Mandatory ticketing systems would allow the passengers a 'seamless travel' but could also reduce impacts of price competition and related decrease of passenger fares. Furthermore, this option may hamper the possibility of open access operators to develop their own business strategies. For some Member States, establishment of mandatory integrated ticketing systems could result in disproportional cost.

The analysis demonstrates that option T1 Voluntary integration performs best. This option will be included in the preferred policy scenario analysed in section 7.

6.4. Analysis of impacts of rolling stock policy measures

This section analyses a set of options for another important framework condition – access to rolling stock. None of the pre-selected options actually can draw from experiences in Member States.

Finally, it should be mentioned that there are no substantial issues with access to rolling stock in Sweden and UK as rolling stock leasing companies (ROSCOs) are active in those Member States.

6.4.1. Overall impact

6.4.1.1 – Impact on rail market segment

It is also important to underline that the rolling stock options target primarily the problems of access to rolling stock in case of competitive tenders for PSCs, which is part of the measures in market opening options 3 to 5. The facilitation of access to rolling stock by new entrants in commercial, open access services is addressed through the ERA initiative (cf. Annex 1). It should be also noted that in case of competitive tenders the bidding undertaking is required to have the rolling stock available at a certain point in time, while open access operators do not face such time-bound limitations.

Options on rolling stock will primarily impact the market of suburban and regional services rolling stock as these are always covered by PSCs. Railway undertakings tend to use electrical multiple-units (EMUs- cf. glossary) or light rail in these services. As explained in Annex 8 (page 10), for a predetermined number of train-kilometres to be performed within a PSC, more rolling stock will be necessary in suburban services than on regional services. In this context, RS3 and RS4 will be more used when suburban services will be put for tender (compared to tenders for regional services). As shown in Annex 8, if more than 10 million train-kilometres of suburban services are put for tender in Ireland, Greece, Portugal, Slovenia, Finland and Sweden, the new entrant needs to find in the rolling stock market more than 10% of the currently existing domestic rolling to be able to respond to the tender.

Options RS3 and RS4 could also affect the market of long-distance rolling stock (coaches, diesel multiple-units, locomotives) as in those Member States 100% of passenger-km are under PSCs. High-speed trains are not concerned by these options as they are almost completely operated as part of commercial services, either under open access or exclusive rights.

As explained, there are reasonable grounds to believe that leasing markets for rolling stock will develop throughout Europe – in particular as institutional investors have entered or are entering the market[123] -, except probably in Member States whose network is "isolated" or almost "isolated" like Finland, Greece, Ireland, Lithuania, Latvia, Estonia (and in North Ireland) – possibly also Bulgaria and Romania -, which are all the Member States where up to now there appears to be no rolling stock leasing operator[124]. These countries are covered by 100% of PSO (except Finland and Bulgaria): RS3 and RS4 will impact therefore both the EMU and coaches markets in all these Member States (in Finland, some long-distance services appear to fall under PSO).

The rolling stock options RS3 and RS4 aim therefore to solve (1) the transition to complete and functioning leasing rolling stock markets and (2) possible problems in "isolated" Member States (which only represent some 3% of all train-kilometres). Yet, exogenous factors such as the reduction of the time-to-market further to the ERA initiative may reduce overall the need for rolling stock measures.

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[123] Some of the leasing companies are backed up by groups like Nomura or the Royal Bank of Scotland; the Australian group Macquarie has also indicated that it would enter in the EU rolling stock leasing market

[124] EPTTOLA website, the members are: Alpha Trains, Andel Trains, Ascendos, Beacon, CBrail, Eversholt and Porterbrooke

6.4.1.2 – Impact on the rolling stock market

RS3 (**Mandatory selling/leasing by previous beneficiary to the new one**): This option would create level playing field because the new entrant does not need to bring its own rolling stock. However, this initiative would not allow new entrants to use rolling stock as part of their bidding strategy. In the Netherlands, one of the main effects of competitive tendering has been the introduction by new entrants of light rail. Finally, this could have the adverse effect of maintaining old rolling stock and give no incentives to railway undertakings to retrofit the rolling stock.

RS4 (Obligation for the competent authority to take the financial risk of the residual value of rolling stock) : This option would create level playing field because all railway undertakings need to take any residual value, but they could raise a perverse incentive to competent authorities to specify rolling stock with low residual value (i.e. old rolling stock).

6.4.2. Economic impacts

a) Competition and other competition-driven impacts

Option	RS0	RS3	RS4
Impacts	0	+	++

* Here and afterwards, comparison tables compare the relative impacts within a row but not the relative importance of different rows

Scope of potential impacts: Access to rolling stock is the determining factor in whether a new entrant can participate in competitive tendering procedures. Both non-baseline options provide for equal level playing field[125] for rolling stock, increasing therefore the potential number of bidders. However, it is likely that the number of bidders will be greater in RS4 (hence ++), as financial risk related to the residual value is taken over by the competent authority while under option RS 3 (+) risk and administrative costs of takeover are carried by operators.

Finally, as explained previously, in the long run, RS3 and RS4 will help sustain competition until proper leasing markets will be in place and might be confined in the long run only to "isolated" Member States (representing only 3% of EU train-kilometres)

Risks: Overall, some new entrants that base their strategy on rolling stock innovation will ignore competitive tender with RS3 or RS4 possibilities.

b) Public funding

Option	RS0	RS3	RS4
Impacts	0	-	--

* Here and afterwards, comparison tables compare the relative impacts within a row but not the relative importance of different rows

[125] Level playing field goes in two directions: (1) access to the existing rolling stock market if it illiquid because it is completely owned by the incumbent and (2) it reduces the natural advantage of the incumbent which can relocate more easily its rolling stock if it fails to get a tender (it is therefore less risky for the incumbent to participate in a bid).

Scope of potential impacts:

According to UNIFE-Roland Berger[126], the market for coaches and EMUs would represent annually some 700 million EUR and 5 billion EUR[127]. If we consider that the PSO market in the EU would represent some 75% of all train-kilometres[128], then the annual new rolling stock that could be covered by the options would be worth 3.75 billion EUR (some 0.2% of the EU public expenditure on goods and services). However, if we extrapolate this amount to the train-kilometres of the "isolated" (Finland, Greece, Ireland, Lithuania, Latvia and Estonia) options RS3 and RS4 would cover only some 100 million EUR worth of rolling stock (0.005% of EU public expenditure on goods and services).

Option RS3 reduces the possibility for bidders of PSCs to explore efficiencies through innovative rolling stock like in Dutch tenders with light rail units, therefore reducing the savings resulting from competitive tendering.

Option RS4 puts the burden of the financial risk of residual value on public authorities, which have to provide guarantees as to the residual value of rolling stock. There are disincentives to the competent authority to terminate a poorly-performing contract and there are principal-agent problems (the railway undertaking has no incentives to maintain the rolling stock in good condition). Contracting may also lack the expertise to estimate the value of rolling stock.

Option RS4 also affects the public budget of local authorities, and ultimately Member States, as it may require competent authorities to dispose the whole book value of the trains – as the contract might be called off at any moment by the operator. However, it is important to underline that the procurement of rolling stock is currently part of public expenditure (and is covered by public procurement rules).

Overall, competent authorities might attempt to minimise these difficulties by guaranteeing only a low residual value, limiting the effect of the policy. Hence the '- -'.

Risks: As long as rolling stock markets is not functioning, the guarantee of residual value will have to be based on the market value of trains, which in conditions of illiquid markets cannot be easily determined and therefore remains subject to negotiations. Moreover, public authorities may lack the expertise and skills to properly evaluate rolling stock.

c) Multinational rail activities

Option	RS0	RS3	RS4
Impacts	0	+	+

* Here and afterwards, comparison tables compare the relative impacts within a row but not the relative importance of different rows

Scope of potential impacts: Both RS3 and RS4 present sufficiently consistent features to facilitate the predictability of business conditions throughout the EU and contribute to the development of business activities. They are both scored +.

Risks: In RS4, multinational rail activities risk being oriented towards rich countries rather than those with problems of regularity of their compensation payments.

126 UNIFE/Roland Berger - World Market Rail Study (2012 to 2017), pp.38-39

127 This range is confirmed by UIC figures where in 2008, some 3.4 billion EUR were invested in rolling stock in the EU

128 Public service obligations in train-km (estimations): Portugal (91%), Poland (85%), Italy (79%), Germany (75%), Spain (70%) and France (70%).

d) Property rights

Option	RS0	RS3	RS4
Impacts	0	-	0

Scope of potential impacts: RS3 involves the withdrawal of property of rolling stock from existing incumbents and putting it in the hands of a third body; therefore affecting the latter's property rights. This option may therefore create issues with fundamental rights and enforcement.

Risks: Both options RS3 and RS4 contain litigation risks. In RS3, the previous owner of the rolling stock has a better knowledge of its real technical conditions compared to the new owner or leaser. In RS4, there might need to be negotiations on the value of the financial guarantee.

e) Industry revenues and costs

Option	RS0	RS3	RS4
Impacts	0	0	+

*Here and afterwards, comparison tables compare the relative impacts within a row but not the relative importance of different rows

Scope of potential impacts: RS4 puts the burden of the financial risk related to the residual value on public authorities, diminishing costs for railway undertakings, whereas in RS3 there is no impact.

Risks: Option RS4 might ultimately slightly reduce competent authorities' capacity to purchase additional public service obligations.

f) Innovation

Option	RS0	RS3	RS4
Impacts	0	0/-	0/-

Here and afterwards, comparison tables compare the relative impacts within a row but not the relative importance of different rows

Scope of potential impacts: In both RS3 and RS4, the impact on innovation is rather negative as railway undertakings have incentives to use old rolling stock.

6.4.3. Social impacts

a) Safety

no impact

6.4.4. Summary table

Table 14 – Summary table rolling stock options

	RS1 Baseline scenario	RS3 Mandatory transfer	RS4 Risk for contracting entity
Economic impacts			
Competition and other competition-driven impacts	0	+	++
Public funding	0	-	--
Multinational rail activities	0	+	+
Property rights	0	-	0
Industry revenues and costs	0	0	+
Innovation	0	0/-	0/-
Social impacts			
Safety	0	0	0

6.4.5. Comparison of the rolling stock options

The following table compares how the different rolling stock options perform in terms of effectiveness, efficiency and coherence. The approach is the same as for the market opening and ticketing options above.

Table 15 – Comparison of rolling stock options

	Effectiveness		Efficiency		Coherence			
	SO1: Intensify competitive pressure in domestic rail markets	SO2: Create more uniform business conditions	Operational efficiency of RUs	Public Funding	Safety	Property rights	Innovation	Motivation
RS0 Baseline scenario	0	0	0	0	0	0	0	Access to rolling stock remains a major barrier in many Member States, hindering competition in the domestic rail market.
RS3 Mandatory transfer	+	+	0/-	-	0	-	0/-	RS3 and RS4 both provide for equal level playing field as regards access to rolling stock, increasing therefore the potential number of bidders and harmonising business conditions throughout EU. Option RS3 involves the withdrawal of property of rolling stock from existing incumbents and may therefore create conflicts with property rights. In both RS3 and RS4, the impact on innovation is rather negative as railway undertakings have incentives to specify old rolling stock.
RS4 Risk for contracting entity	++	+	0/-	--	0	0	0/-	This option would ease access to rolling stock more effectively than RS3, however, given that financial risks related to the residual value are taken by public authorities, there could be more slightly higher pressure on public funds. To minimise costs, competent authorities might prefer using old rolling stock to minimise the residual value and this hinders innovation and operational efficiency. RS4 puts a burden on financial risk of residual value on public authorities.

The analysis demonstrates that the choice between options RS3 and RS4 is not straightforward. Both options would be very effective in ensuring non-discriminatory access to rolling stock and hence foster competition for public service contracts. While RS4 could potentially be more effective, it increases demand for scarce public funds. Option RS3 has potential to improve the situation in a more cost-efficient manner, however may create issues with implementation due to contentious property right issues. Therefore both options will be considered in the context of the preferred policy scenario.

6.5. Summary of assessment

The assessment of the impact of the market opening, ticketing and rolling-stock options indicates that the options that score best in terms of effectiveness, efficiency and coherence are:

– **Option 4** Market opening based on broad 'open access' and competitive tendering of PSCs

– **T1** voluntary national integrated ticketing systems

– **RS3** Mandatory transfer of rolling stock or **RS4** Obligation for the competent authority to take the rolling stock related financial risks

As explained throughout this report, there is a certain degree of uncertainty in the assessment of impacts of some options, as evidence for instance on is fairly recent (competition in the market in open access services) and sometimes ambiguous (evidence is provided only by specific stakeholders). In this context, the choice to move forward with the aforementioned combination remains a political choice.

7. PREFERRED POLICY SCENARIO

7.1. Overall impact of the preferred policy scenario

The assessment underlying the choice of policy options has been conducted mostly on qualitative basis[129]. As explained in Section 6.1, reasons for that were the high uncertainties linked to calculations of aggregated impacts. These include:

– limited liberalisation experience (UK, SE, to some extent DE, CZ, IT, AT) on which to base evidence;

– other principal uncertainties in the baseline developments and exogenous factors affecting the passenger rail demand;

– any effects are dependent on baseline situations in Member States.

While the objective of the EU policy is to create market structures which support competition and internal market, final outcome at national level depends to a great extent on how the policy will be implemented and executed. For instance, how the relation between the PSO and open access markets will be established, how the PSC will be defined and tendered, what is the approach to subsidisation and how rolling stock availability ensured.

The uncertainties linked to assumptions as well as a wide range of possible national policy choices have not allowed for quantifications which would have been robust enough to underpin choice of policy options.

However, within the IA support study the consultant, in cooperation with the Commission, has prepared scenario analysis reflecting the potential outcome of the preferred market opening option 4 ('broad' open access and competitive PSC tendering). The analysis is based on the most credible information available to date and covers a variety of measures and indicators, such as public savings, industry revenues, new entrant market share and additional p-km. The effects of the other elements of the preferred policy scenario – the voluntary integrated ticketing (option T1) and taking financial risks related to acquisition of rolling stock (options RS3 or RS4) – are not quantified, as it would be very difficult to attach any reliable cost figure to these measures[130]. Ticketing and rolling stock measures are considered being important 'enablers' of the effectiveness of market opening.

The scenario analysis presented in this Chapter (and accompanied with sensitivity tests) enables however to exhibit the potential outcomes of the policy in different situations. In principle, the policy choices at national level ultimately determine the values of input assumptions as provided in Table 16.

The scenario analysis

The calculations[131] distinguish between the two different outcome scenarios depending on how the potential savings on PSC contracts will be treated by competent authorities:

– **Scenario 1 - Focus on cost savings –** assumes that competent authorities would aim to maximise the financial savings from compulsory competitive tendering, with no reinvestment in capacity or quality.

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129 However the one directly measurable indicator - the achievable scope of market opening - has been quantified for each option are quantified – c.f. Table 7.

130 Quantifying the impacts of potential rolling stock and ticketing measures would require assessment the costs at operational or contractual level depending on actual situation in each Member State.

131 Detailed information on the assessment methodology can be found in Annex 9 of the IA and in Appendix I of the IA support study.

– **Scenario 2 - Reinvestment -** assumes that, on average, competent authorities would take 50% of the potential savings of competitive tendering out of the rail industry and "reinvest" the remaining 50% in capacity and/or quality. Investments are in calculations considered as outflow of funds and thus reduce the benefit in terms of NPV. However, non-financial benefits appear in terms of additional passenger km-s.

Table 16 – Assumptions

Open access effects		
Sectors	High speed, long distance, medium/regional, international	
Effects	New entrant's open access train-kilometres as a proportion of current "commercial" train-kilometres	2%
	Share of incumbents' "commercial" services in this sector converted to PSC as a result of open access competition	20%
	New entrant's fares as a proportion of the incumbent's	95%
	Share of new entrant's passengers taken from incumbents	70%
	New entrants operating costs per train-kilometre as a proportion of incumbent's	80%
	Potential reduction in incumbent's operating costs (A)	20%
	Proportion of incumbent's services stimulated to higher efficiency by new entry (B)	15%
	(AxB) Resulting average reduction in incumbent's costs in this sector stimulated by competition from open access	3%
Compulsory competitive tendering effects		
Sectors	All PSCs, including commercial services becoming PSCs because of open access	
Effects	Reduction in incumbent's share of PSC train-kilometres	10%
	Potential reduction in PSC service operating costs (C)	15%
	Proportion of PSCs subject to effective competition (D)	75%
	(CxD) Resulting average reduction in PSC costs	11.25%
	Share of PSC cost savings invested rather than retained: **Scenario 1 - Focus on cost savings** **Scenario 2 - Reinvestment**	 0% 50%
	Quality-related rise: train-kilometres and capital expenditure	0.5%
	Quality-related rise: passenger-kilometres and revenue	0.5%
Timescales and discounting		
Start	Implementation of Package, creation of open access rights and award of first competitive tenders for PSCs	2019
End	Last existing PSC contracts replaced in competitive tendering	2025
	Base year for discounting purposes	2019

The results are summarised by market sector in the table below.

Table 17 Scenario assessment by market sector

CAVEAT: All changes are illustrative estimates Ranges of uncertainty are ±50%	Unit	Total	High speed	Long distance	Medium/ regional	Urban/ suburban	International
SCENARIO 1 – FOCUS ON SAVING							
NPVs to 2035, discounted at 4% to 2019							
Profits to incumbents and/or savings to public authorities	€ billion	29.84	3.28	8.29	10.43	7.83	0.00
Profits to new entrants	€ billion	0.01	0.01	0.00	0.00	0.00	0.00
Transaction and administration costs of PSCs and open access	€ billion	-0.42	-0.02	-0.10	-0.18	-0.12	0.00
Total NPV	**€ billion**	**29.43**	**3.27**	**8.19**	**10.25**	**7.71**	**0.00**
Key indicators in medium term, indicatively to 2035							
Increase in annual passenger revenue	€ billion	0.3	0.2	0.1	0.0	0.0	0.0
Increase in annual capex	€ billion	0.03	0.02	0.01	0.00	0.00	0.00
Increase in p-km by 2035	**billion**	**2.0**	**1.3**	**0.7**	**0.0**	**0.0**	**0.0**
From road	billion	0.5	0.3	0.3	0.0	0.0	0.0
From air	billion	0.5	0.4	0.1	0.0	0.0	0.0
New entry annual PSC train-km	million	179	4	55	72	48	0
New entry annual open access train-km	million	14	9	5	0	0	0
New entrant market share							
Baseline	%	19.3%	7.2%	16.6%	29.4%	22.1%	8.4%
Option 4 by 2035	%	23.1%	8.6%	20.9%	34.4%	27.1%	8.4%
Change	%	3.8%	1.4%	4.3%	4.9%	5.0%	0.0%
Reduction in CO_2 annual emissions	m tonnes	-0.1	0.0	0.0	0.0	0.0	0.0
SCENARIO 2 - REINVESTMENT							
NPVs to 2035, discounted at 4% to 2019							
Profits to incumbents and/or savings to public authorities	€ billion	21.45	3.12	6.03	6.98	5.32	0.00
Profits to new entrants	€ billion	0.01	0.01	0.00	0.00	0.00	0.00
Transaction and administration costs of PSCs and open access	€ billion	-0.42	-0.02	-0.10	-0.18	-0.12	0.00
Total NPV	**€ billion**	**21.04**	**3.11**	**5.93**	**6.80**	**5.20**	**0.00**
Key indicators in medium term, indicatively to 2035							
Increase in annual passenger revenue	€ billion	0.9	0.2	0.2	0.2	0.2	0.0
Increase in annual capex	€ billion	0.13	0.02	0.04	0.04	0.03	0.00
Increase in p-km by 2035	**billion**	8.4	1.5	2.4	2.7	1.8	0.0
From road	billion	3.5	0.3	0.9	1.3	0.9	0.0
From air	billion	0.7	0.4	0.3	0.0	0.0	0.0
New entry annual PSC train-km	million	186	4	57	76	50	0
New entry annual open access train-km	million	14	9	5	0	0	0
New entrant market share							
Baseline	%	19.3%	7.2%	16.6%	29.4%	22.1%	8.4%
Option 4 by 2035	%	23.0%	8.6%	20.8%	34.0%	26.8%	8.4%
Change	%	3.7%	1.4%	4.2%	4.6%	4.8%	0.0%
Reduction in CO_2 annual emissions	m-tonnes	-0.6	-0.1	-0.3	0.0	-0.1	-0.1

Under Scenario 1 – Focus on saving - competent authorities would aim to minimise expenditure on the railways maximising NPV in terms of public savings. Main source for that is the savings achieved via the competitive tendering of PSCs. However, with no reinvestment in capacity or quality of rail there will be modest improvement in service offer (in total only 2 bn p-km), and almost no mode shift or reduction in greenhouse gases.

Under Scenario 2 – Reinvestment – the financial savings expressed in terms NPV are lower (21 billion EUR compared to 29 billion EUR under Scenario 1), but benefits appear in terms of service offer – estimated increase in passenger-km is 8.4 billion, of which almost 4 billion p-km will be abstracted from other modes, resulting in mode split improvement and six times higher CO_2 reduction. In reality this means that there may be capacity issues at infrastructure bottlenecks. Thus, part of the savings of public money should go into infrastructure enhancements in order to render the increase in transport performance sustainable over the time horizon considered (this has not been factored into the calculations).

Results by the clusters of Member States

Given that the policy outcome is heavily dependent on the baseline situation (market and segment structures) in Member States, analysis was also conducted based on the 'clusters' of Member States. The two key dimensions for grouping[132] were (a) the level of market liberalisation and (b) separation between the infrastructure manager and rail operators. Assumptions and scenario approach is the same as above. The results are summarised in Table 18.

[132] The clustering approach here served calculations for two 4th Package IAs – Market Opening and Infrastructure Governance. Therefore it reflects two dimensions – liberalisation and separation – though the latter is mostly relevant to the infrastructure Governance

Table 18 Scenario assessment by cluster

CAVEAT: All changes are illustrative estimates	Unit	Total	Vertically integrated		Vertically separated		
			Partially liberalised	Not liberalised	Liberalised	Partially liberalised	Not liberalised
			AT DE IT	BE, EE FR, HU IE, LT LU, LV PL, SI	GB SE	CZ DK NL	BU, EL ES, FI PO, RO SK
SCENARIO 2 - – FOCUS ON SAVING							
NPVs to 2035, discounted at 4% to 2019							
Profits to incumbents and/or savings to public authorities	€ billion	29.84	5.87	14.90	0.20	4.25	4.61
Profits to new entrants	€ billion	0.01	0.00	0.12	0.00	0.00	-0.11
Transaction and administration costs of PSCs and open access	€ billion	-0.42	-0.07	-0.15	-0.04	-0.02	-0.14
Total NPV	**€ billion**	**29.43**	**5.79**	**14.88**	**0.17**	**4.23**	**4.35**
Key indicators in medium term, indicatively to 2035							
Increase in annual passenger revenue	€ billion	0.3	0.0	0.2	0.0	0.0	0.0
Increase in annual capex	€ billion	0.03	0.00	0.02	0.00	0.00	0.01
Increase in p-km by 2035	**billion**	2.0	0.0	1.6	0.0	0.2	0.3
From road	billion	0.5	Not identified by cluster				
From air	billion	0.5					
New entry annual PSC train-km	million	179	36	61	3	33	46
New entry annual open access train-km	million	14	0	10	0	2	3
New entrant market share							
Baseline	%	19.3%	8.7%	2.1%	87.1%	0.4%	0.6%
Option 4 by 2035	%	23.1%	10.8%	7.7%	87.4%	7.0%	8.2%
Change	%	3.8%	2.1%	5.6%	0.3%	6.6%	7.6%
Reduction in CO_2 annual emissions	m- tonnes	-0.1	0.0	-0.1	0.0	0.0	0.0
SCENARIO 2 - REINVESTMENT							
NPVs to 2035, discounted at 4% to 2019							
Profits to incumbents and/or savings to public authorities	€ billion	21.45	4.24	11.06	0.15	2.95	3.04
Profits to new entrants	€ billion	0.01	0.00	0.12	0.00	0.00	-0.11
Transaction and administration costs of PSCs and open access	€ billion	-0.42	-0.07	-0.15	-0.04	-0.02	-0.14
Total NPV	**€ billion**	**21.04**	**4.16**	**11.04**	**0.11**	**2.93**	**2.79**
Key indicators in medium term, indicatively to 2035							
Increase in annual passenger revenue	€ billion	0.9	0.2	0.5	0.0	0.1	0.1
Increase in annual capex	€ billion	0.13	0.02	0.05	0.00	0.01	0.05
Increase in p-km by 2035	**billion**	8.4	1.7	4.1	0.1	0.9	1.7
From road	billion	3.5	Not identified by cluster				
From air	billion	0.7					
New entry annual PSC train-km	million	186	38	64	3	34	47
New entry annual open access train-km	million	14	0	10	0	2	3
New entrant market share							
Baseline	%	19.3%	8.7%	2.1%	87.1%	0.4%	0.6%
Option 4 by 2035	%	23.0%	10.8%	7.8%	87.4%	7.1%	8.3%
Change	%	3.7%	2.2%	5.7%	0.3%	6.7%	7.7%
Reduction in CO_2 annual emissions	m-tonnes	-0.6	-0.1	-0.3	0.0	-0.1	-0.1

The table shows that there is little scope to increase new entrant market share in the cluster which is already liberalised and vertically separated (e.g. in the UK the new entrant market share is already effectively 100%). Elsewhere, option 4 can contribute to increases in market share through:

– open access, in high speed, long distance and medium/regional sectors;

– compulsory competitive tendering, in all market sectors.

Combining open access and compulsory competitive tendering effects in option 4 results in a greater effect that either of the two opening policies alone, primarily due to the assumption that even if open access would push a proportion of "commercial" services under PSCs arrangements, these services would become subject to compulsory competitive tendering.

Sensitivity tests

Given the limited empirical evidence, on which the assumptions in Table16 were based, a number of sensitivity tests were carried out to investigate the effects of more optimistic or pessimistic inputs.

The underlying considerations and results are summarised in the table below.

Table 19 Sensitivity tests

Issues	Test	Assumption	Core assumption	Alternative assumption
Incumbent response	Fewer "commercial" services survive open access	70% of "commercial" services become unviable and subject to PSCs once open access develops.	20% of commercial services becomes PSC	70% of commercial services becomes PSC
Open access fares	Lower fares offered by open access operators	Open access operator fares 20% below incumbent and pro rata increase in extra demand. No check that open access would remain viable or have sufficient capacity.	New entry fares are 95% of incumbent's	New entry fares are 80% of incumbent's
Efficiency gains	Higher potential efficiency gains	"Commercial" and open access operators and PSCs effectively open for competition become 25% more efficient.	Opex per train-km falls by 11.25%	Opex per train-km falls by 20%
	Lower potential efficiency gains	"Commercial" and open access operators and PSCs effectively open for competition become 10% more efficient.	Opex per train-km falls by 11.25%	Opex per train-km falls by 5%

The table below shows the results of these sensitivity tests.

Table 20 Results of sensitivity tests (one by one)

All changes are illustrative estimates

	Financial benefits (NPV, € bn)	Increase in annual revenue (€ bn)	Increase in annual CAPEX (€ bn)	Increase in passenger km (bn)	Increase in new entry market share (% points)
Scenario 1 –Focus on saving					
Higher potential efficiency gains	50.4	0.3	0.03	2.0	3.8%
Fewer "commercial" services survive open access	30.1	0.2	0.03	1.9	3.9%
Core assumptions	**29.4**	**0.3**	**0.03**	**2.0**	**3.8%**
Lower fares offered by open access operators	29.3	0.2	0.03	2.2	3.8%
Lower potential efficiency gains	13.6	0.3	0.03	2.0	3.8%
Scenario 2 – Reinvestment					
Higher potential efficiency gains	35.5	1.3	0.21	13.3	3.6%
Fewer "commercial" services survive open access	21.5	0.9	0.13	8.5	3.8%
Core assumptions	**21.0**	**0.9**	**0.13**	**8.4**	**3.7%**
Lower fares offered by open access operators	20.9	0.8	0.13	8.5	3.7%
Lower potential efficiency gains	10.0	0.5	0.08	4.9	3.8%

It appears that results are most sensitive towards the possible efficiency gains to be achieved as a result of more competitive open access services and PSC tenders. Subject to the assumptions made, it can be concluded that a credible estimate of the NPV of the financial impact of option 4 is around €30 billion for 'Saving' scenario and €21 billion for 'Reinvestment' scenario, the latter offering at the same time potential for additional 8.4 billion passenger km.

7.2. Combined impacts of the 4th rail package initiatives

The liberalisation benefits will be magnified by introducing full institutional separation of infrastructure managers from rail operators, which is the conclusion of the IA supporting another proposal of the 4th Railway package on Infrastructure Governance[133]. In particular, institutional separation, as envisaged under policy Scenario 3 in that IA, is an important precursor to the delivery of the full benefits of market opening, and that without it effective competition is likely to develop more slowly. The IA support study estimates accordingly, that in the Member States which have not yet institutionally separated infrastructure managers and rail operators, additional scope for entry and/or lower costs for new entrants arising from non-discriminatory access to infrastructure, could result in significant additional benefits.[134]

133 Impact Assessment on governance of railway infrastructure in the Single European Railway Area

134 Assumptions underpinning the calculations of combined impacts are presented in Annex 9

Table 21 Combined impacts of market opening and infrastructure governance policies

All changes are illustrative estimates	Financial benefirs (NPV*, € bn)	Increase in annual revenue (€ bn)	Increase in annual CAPEX (€ bn)	Additional passenger-km (bln by 2035)	Increase in new entry market share (% points)
Scenario 1 –Focus on saving					
Vertical separation alone[135]	6.6	0.1	0.01	0.8	0.5%
Market Opening alone	29.4	0.3	0.03	2.0	3.8%
Combination of market opening and vertical separation	43.4	0.5	0.1	3.8	6.4%
Scenario 2 – Reinvestment					
Vertical separation alone	4.4	0.1	0.01	1.1	0.5%
Market Opening alone	21.0	0.9	0.13	8.4	3.7%
Combination of market opening and vertical separation	33.8	1.7	0.2	16.4	6.2%

* NPVs to 2035, discounted at 4% to 2019, the benefits encompass mainly savings for competent authorities, but also profits of operators.

The results for both scenarios demonstrate existence of significant synergies between the separation and market access measures as proposed in the 4th package. 16 billion additional passenger-km potentially made available by implementing market opening and separation polices, while re-investing half of efficiency savings back to railways, would result in 6% increase of passenger-km on top of the baseline developments. In addition, more level playing field in access to infrastructure, as provided by vertical separation measures, would enable to increase the market share of new entrants from 19% in the baseline to 25%.

Further boost will be given by quicker time and cost to market for rail undertakings, as proposed by the revised scope of the European Railway Agency[136], being also the part of the 4th Package.

7.3. Implementing provisions

7.3.1. Transfer of staff, social standards and social dialogue

There is very large support among stakeholders (95%) for clear conditions on the transfer of staff during the change of operators of rail service contracts. The instruments for protection of staff currently provided through Directive 2001/23/EC[137] safeguarding employees' rights in the event of transfer of undertakings and through the provisions of Regulation 1370/2007 giving competent authorities the possibility to either prescribe a transfer of staff or defining social standards in public service contracts are potentially of considerable effectiveness. Implementing these instruments could ease social cost generated by the award of a PSC to a new operator and make competitive

135 As foreseen by Scenario 3 of IA Governance IA.

136 Impact assessment on elimination of remaining administrative and technical barriers in the field of interoperability and safety on the EU railway market

137 Directive 2001/23 applies to the railway sector as much as to other sectors; Regulation 1370/2007 allows applying Directive 2001/23/EC even in such cases that would otherwise not fall within the definition of "transfer" within the meaning of Directive 2001/23

tendering socially more acceptable. The application of a transfer of staff could also be of significant value for enhancing competition for public service contracts, when due to the contract volume it would be difficult for new entrants to obtain the appropriate number of trained staff for providing the transport services. In order to avoid a situation where new entrant operators could not participate in the tender procedure due to lack of staff a transfer of staff, could be helpful under certain conditions.

The existing applicable instruments would not leave any other possible policy measure but to make the transfer of staff and the setting of social standards mandatory. However, this could be problematic from the point of view of subsidiarity. Decisions on the appropriateness of a transfer of staff and social standards can best be taken at Member State level as the conditions on the labour markets vary considerably across Member States. Moreover, as labour costs represent some 30% of all operational costs of railway undertakings[138], imposing mandatory staff transfers or mandatory social standards could compromise the potential efficiency savings through competition for PSCs. Therefore existing provisions are considered as largely sufficient.

To soften any eventual negative effects in terms of employment or working conditions, it is proposed to maximise the usage of existing social safeguards like the European Social Fund that provides support for the retraining of staff or dialogue channels (in particular, for instance, railway new entrants should be encouraged to join the works of the Railway Social Sectoral Dialogue Committee).

7.3.2. Excluding the direct award of rail PSC based on the internal operator provision

Regulation 1370/2007 provides for the possibility that competent local authorities organising integrated transport services directly award PSC to an internal operator, i.e. a transport operator that they effectively control (e.g. the urban transport operator being a part of the city administration). This provision is not geared to the award of PSC beyond the territory of an urban agglomeration and its immediate surroundings, for instance covering a whole region (which could be a very large territory in some Member States) or even the entirety of the national territory as ~~it~~ this would undermine achieving the internal market objectives of the Regulation.

It is therefore necessary to clarify the current text of the Regulation so that it would limit the possibility of direct award to an internal operator to the case of integrated public passenger transport services of an urban agglomeration and its immediate surroundings to avoid that, for instance, regional competent authorities set up their own railway undertakings and continue to directly award PSC. This practice would lead to a further fragmentation of national rail transport markets and undermine the expected positive effects of domestic rail market opening.

7.3.3. Ensuring continuity of service in the event of a failure of a railway undertaking

The IA support study has identified the risk that bankruptcies or disputes could put to the continuity of a service. There has been diverging practice in this matter in those Member States that have already taken steps to open their domestic passenger rail markets to competition. In Sweden, railway undertakings have been allowed to fail to avoid overbidding (i.e. bidders that provide for bids that are not realistic from an economic point of view). Taking measures at EU level to address this problem seems disproportionate in terms of subsidiarity, therefore it will be left up to the Member State to design and implement relevant safeguard measures.

[138] Labour is one the main costs factors together with capital use (e.g. of rolling stock) that are responsive to competitive pressure within the railway costs structure. Track access charges are largely predetermined and are thus not compressible under competitive pressure. The costs of procured goods and services are also compressible – they fall under the coverage of public procurement directives

7.3.4. Levelling the playing field in tenders

As explained in section 6, one of the problems in competitive tenders is that incumbents have access to historical data on costs and revenues and can therefore calibrate much better their offers compared to new entrants, which must proceed by estimations. To level the playing field, it is therefore necessary to ensure that competent authorities make available to interested parties (upon their request) complete information on passenger demand, fares and revenues, in order to allow them to prepare competitive bids.

8. MONITORING AND EVALUATION

The Commission will monitor and evaluate the implementation and effectiveness of this legislation through a set of indicators.

In order for these indicators to be consistent throughout the EU legislation and not to increase the administrative costs, these indicators are in most cases aligned with those defined in the State Aid Scoreboard, Regulation 1370/2007 and Rail Market Monitoring System[139]. The latter requires the Commission to report every two years to the Council and the European Parliament on:

– the evolution of the internal market in rail services and services to be supplied to railway undertakings, as referred to in Annex II;
– the framework conditions referred to in paragraph 3, including for public passenger transport services by rail;
– the state of the Union railway network;
– the utilisation of access rights;
– barriers to more effective rail services;
– infrastructure limitations;

Combined with other sources, the full set of indicators, linked to the specific objectives, is the following:

Table 11 – Monitoring indicators

Specific objective	Indicator
SO1: Intensify competitive pressure in domestic rail markets	• Market share of new entrants* (relates to operational objective OO1, OO3) • Rail services covered by PSCs* (relates to OO3 and OO4) • Utilisation of access rights*(relates to OO1, OO2, OO3) • Barriers to more effective rail* (relates to all operational objectives) • Licensing* (relates to OO1, OO2)
SO2: Create more uniform business conditions	• Rail services covered by PSCs* • Utilisation of access rights* • Barriers to more effective rail*
Other parameters	
Working conditions	• Dynamics of employment* (e.g. increase of decrease in employment) • Social conditions* (e.g. wages, gender balance, median age and, if feasible and possible, transfer of staff and its impact on the protection of employees…)

* As foreseen in Article 15 of the Recast of the 1st Railway Package

[139] As reviewed by the Recast of the 1st Railway Package

8.1. Monitoring and evaluation arrangements

Directive 2012/34/EC already foresees a mechanism for monitoring, including active involvement of representatives of Member States, regulatory bodies, social partners, the European Railway Agency, users and also local and regional authorities representatives through the Rail Market Monitoring System and its existing working group. Regarding evaluation, it is planned that five years after the end of the transition period of its legislative proposals the Commission will evaluate whether the objectives of the initiative have been achieved.

GLOSSARY

The following definitions do not have any legal value and only aim to provide a simplified explanation of the concepts used in the impact assessment and its annexes. The definitions only serve for the impact assessment.

Cabotage: domestic railway service provided by a railway undertaking from another Member State (or a third country) within a rail route originating in a third country

EMU: Electrical Multiple-unit: An electric multiple unit or EMU is a multiple unit train with self-propelled carriages, using electricity as the motive power and that does not require any separate locomotive, as electric traction motors are incorporated within one or a number of the carriages. EMUs are often used in regional and suburban commuter services. An EMU is usually formed of two or more semi-permanently coupled carriages, but electrically powered single-unit railcars are also generally classed as EMUs.

GATS: General Agreement on Trade in Services: Multi-lateral treaty of the World Trade Organisation (WTO) on the opening of trade of services. The GATS covers four service provision modes: mode 1 (cross-border service provision), mode 2 (consumption abroad), mode 3 (commercial presence) and mode 4 (presence of a natural person).

Infrastructure – see railway infrastructure

Infrastructure manager: body or firm responsible in particular for establishing, managing and maintaining railway infrastructure, including traffic management and control-command and signalling; the functions of the infrastructure manager on a network or part of a network may be allocated to different bodies or firms;

Intermodal transport: Transport involving connections between different modes (air-train or train-bus).

Internal operator or 'in-house' operator: railway undertaking controlled by a local authority. The local authority controls the railway undertaking as its own department.

Large-sized Member States: Member States with a large area (above some 80.000 km2) – includes countries with a small population like Portugal or Sweden

Licence – see railway licence

Open access (in domestic rail services):

Public service obligations: Requirement determined by a competent authority in order to ensure public passenger transport services in the general interest that an operator, if it were considering its own commercial interest, would not assume or would not assume to the same extent or under the same conditions without reward.

Public service contract: Rail service contract to perform a public service obligation**.** In a public service contract, the railway undertaking is entrusted with the operation and the operation of the rail services covered by the public service obligation.

Railway infrastructure: Area comprising railway ground area, tracks and track bed (including *inter alia* embankments, goods platforms, passenger platforms, crossings), engineering structures (covering inter alia bridges, tunnels, underpasses), level crossings, superstructure (covering *inter alia* rails sleepers, traversers), access ways for passengers and goods), safety installations, signalling installations, telecommunication installations, lighting installations, catenaries, contact wires and buildings used by the infrastructure department.

Railway licence: Authorisation issued by a licensing authority to an undertaking, by which its ability to provide rail transport services as a railway undertaking is recognised; this ability may be limited to the provision of specific types of services.

Railway operator – see railway undertaking

Railway undertaking (RU): any public or private undertaking holding a railway licence to transport goods (freight RU) or persons (by extension a RU)

Rolling stock: All vehicles that run on a railway such as locomotives, carriages, wagons, or other vehicles used on a railway

Through ticket - ticket or tickets representing a transport contract for successive railway services operated by one or several railway undertakings

Ticket vendor: any retailer of rail transport services concluding transport contracts and selling tickets on behalf of a railway undertaking or for its own account;

Transport contract: contract of carriage for reward or free of charge between a railway undertaking or a ticket vendor and the passenger for the provision of one or more transport services;

List of acronyms

ARAF	Autorité de Régulation des Activités Ferroviaires
ARF	Association des Régions de France (French Regions' Association)
CEF	Connecting Europe Facility
CER	Community of European Railway and Infrastructure Companies
CLECAT	European association for forwarding, transport, logistics and customs services
DB	Deutsche Bahn AG (German railways)
DG CLIMA	Directorate-General for Climate Action
DG COMP	Directorate-General for Competition
DG ECFIN	Directorate-General for Economic and Financial Affairs
DG ELARG	Directorate General for Enlargement
DG EMPL	Directorate-General for Employment, Social Affairs & Inclusion
DG ENER	Directorate-General for Energy
DG ENTR	Directorate-General for Enterprise and Industry
DG ENV	Directorate-General for Environment
DG MARKT	Directorate-General for Internal Market
DG MOVE	Directorate-General for Mobility and Transport
DG REGIO	Directorate-General for Regional Policy
DG SANCO	Directorate General for Health & Consumers
DG TRADE	Directorate General for Trade
DGCCRF	Direction Générale de la Concurrence, de la Consommation et de la Répression des Fraudes
GDP	Gross Domestic Product
ECJ	European Court of Justice
EEAS	European External Action Service
EEIG	European Economic Interest Grouping
EIM	European Rail Infrastructure Managers
EPF	European Passenger's Federation
EPTO	European Passenger Transport Operators
EPTTOLA	European Passenger Train & Traction Operating Lessors' Association
ERA	European Railway Agency
ERFA	European Rail Freight Association
ERTMS	European Rail Traffic Management System
ESF	European Social Fund
ETCS	European Train Control System

ETF	European Transport Workers' Federation
EU	European Union
BAG-SPNV	Bundesarbeitsgemeinschaft der Aufgabenträger des SPNV e.V.
FIF	Fédération des Industries Ferroviaires
FNAUT	Fédération Nationale des Associations d'Usagers des Transports
FS	Ferrovie dello Stato
GHG	Greenhouse gas
IA	Impact Assessment
PWD	Directive 96/71/EC of the European Parliament and of the Council of 16 December 1996 concerning the posting of workers in the framework of the provision of services
Posted Workers Directive	
IAB	Impact Assessment Board
IASG	Impact Assessment Steering Group
ICA	Italian Competition Authority
IM	Infrastructure manager
LS	Legal Service
NMBS	Belgian railways
NS	Nederlandse Spoorwegen (Dutch Railways)
NSA	National Safety Authority
NTV	Nuovo Trasporto Viaggiatori
OBB	Austran railways
OECD	Organisation for Economic Co-operation and Development
PPP	Public-Private Partnership
PSC	Public service contract
PSO	Public service obligation
PZB	Punktförmige Zugbeeinflussung
RFF	Réseau Ferré de France (French Railway Network)
RFI	Rete Ferroviaria Italiana
RMMS	Rail Market Monitoring Scheme
RNE	RailNetEurope
ROSCOs	Rolling stock leasing companies
NPV	Net Present Value
RS	Rolling Stock
RU	Railway undertaking
SG	General Secretariat
SJ	Statens Jernväger (Swedish railways)

SMEs	Small and medium enterprises
SNCB	Belgian railways
SNCF	Société Nationale des Chemins de fer Français (National Community of French Railways)
TAP-TSI	Telematics Applications for Passenger Services Technical Specifications for Interoperability
TEN-T	Trans-European Transport Network
TFEU	Treaty on the Functioning of the European Union
UIC	International Union of Railways
UITP	International Association of Public Transport
UK	United Kingdom
ITF	International Transport Forum

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Part 2

COMMISSION STAFF WORKING DOCUMENT

IMPACT ASSESSMENT

Accompanying the documents

Proposal for a Regulation of the European Parliament and of the Council amending Regulation (EC) No 1370/2007 concerning the opening of the market for domestic passenger transport services by rail

Proposal for a Directive of the European Parliament and of the Council amending Directive 2012/34/EU of the European Parliament and of the Council of 21 November 2012 establishing a single European railway area, as regards the opening of the market for domestic passenger transport services by rail and the governance of the railway infrastructure

{COM(2013) 28 final}
{COM(2013) 29 final}
{SWD(2013) 11 final}
{SWD(2013) 12 final}
{SWD(2013) 13 final}

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Disclaimer: This impact assessment commits only the Commission's services involved in its preparation and does not prejudge the final form of any decision to be taken by the Commission

ANNEX 1

THE FOURTH RAILWAY PACKAGE – THE 'BIG PICTURE'

Caveat: The content of this Annex will be further refined and updated as the policy preparation processes for the different initiatives within the Fourth Package progress

1. INTRODUCTION

In its White Paper "Roadmap to a Single European Transport Area - Towards a competitive and resource efficient transport system" adopted on 28 March 2011 ('2011 White Paper'), the Commission unveiled its vision to establish a genuine Single European Transport Area and it clarified that this objective implies creating the true Single European railway Area. A crucial condition to meet this goal is the removal of all obstacles of administrative, technical or regulatory nature still holding back the rail sector. As announced in the 2011 White Paper, the Commission has prepared a set of proposals, to be adopted sequentially within the Fourth Railway Package.

Additionally, the European Council conclusions of January 2012 highlight the importance of releasing the growth-creating potential of a fully integrated Single Market, including as regards network industries.[1] More precisely, the Commission Communication on Action for Stability, Growth and Jobs adopted on 30 May 2012[2] stresses the importance of reducing further the regulatory burden and barriers to entry in the rail sector, making therefore country specific recommendations in that direction. In the same vein, the Commission adopted on 6 June 2012 the Communication on strengthening the governance of the single market, which stresses the importance of the transport sector with a special attention to rail.[3]

This Annex gives a brief background of the development of EU railway *acquis* and clarifies the necessity and objectives of the Fourth Railway Package within this context. It presents all the elements included in the Package (a chapeau communication and seven legislative proposals accompanied by three impact assessments) and explains how different pieces fit together.[4]

2. DEVELOPMENT OF EU RAILWAYS *ACQUIS*

In the past decade, the European legislator has considerably developed the EU *acquis* encouraging *competitiveness* and *market opening*. The overarching idea has been that greater competition makes for a more efficient and customer-responsive industry. In parallel measures have been taken to improve the *interoperability* and *safety* of national networks; and encourage the development of well integrated rail system leading to 'European', rather than 'national', railways.

Rail legislation in the early nineties introduced some limited degree of market opening and prompted the railways to improve efficiency by introducing management independence of railway undertakings from the state and separation of accounts between infrastructure management and transport operations. Since 2000, however, the European Commission has put forward further initiatives in the shape of packages of legislative measures.

The First Railway Package, adopted in 2001, was designed to*:*

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1 http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/127599.pdf
2 COM (2012) 299 final.
3 COM(2012) 259 final
4 The intention is to add this (identical) background Annex to each of the 3 rail package IAs.

- open the international rail freight market,
- establish a general framework for the development of European railways, and clarify the relationship between (a) the state and the infrastructure manager; (b) the state and railway undertakings and (c) the infrastructure manager and railway undertakings (Directive 2001/12/EC);
- set out the conditions that freight operators must meet in order to be granted a licence to operate services on the European rail network (Directive 2001/13/EC); and
- define policy for capacity allocation and infrastructure charging (Directive 2001/14/EC).

The Second Railway Package was adopted in 2004. Its aim was to determine:

- a common approach to rail safety (Directive 2004/49/EC)
- requirements for interoperability of the European high speed and conventional rail systems (Directive 2004/50/EC)
- the opening of national and international rail freight markets on the entire European network (Directive 2004/51/EC)
- the establishment of the European Railway Agency (Regulation (EC) 881/2004, amended by Regulation 1335/2008).

The Third Railway Package was adopted in 2007, to open up international passenger services to competition. The objective of the package was:

- opening the market for international passenger services to competition (Directive 2007/58/EC)
- setting the conditions and procedures for the certification of train crews operating locomotives and trains (Directive 2007/59/EC); and
- ensuring basic rights for rail passengers (Regulation 1371/2007), for example, with regard to insurance, ticketing, and for passengers with reduced mobility.

The Recast of the First Railway Package was proposed by the Commission in 2010. Following a final vote of approval in the European Parliament on 3 July 2012, the new EU rules should come into force by the end of 2012. The recast aims to simplify and consolidate the rules by merging three directives and their amendments into a single text. Importantly, the Recast also seeks to clarify existing provisions and tackle key problem areas which have been identified in the market over the last ten years. In particular, the new legislation will strengthen the power of national regulators, improve the framework for investment in rail, and ensure fairer access to rail infrastructure and rail related services.

3. DEVELOPMENTS IN EU RAIL MARKET

Despite the considerable development of the EU *acquis* and rail markets, the modal share of passenger rail in intra-EU transport has in average remained more or less constant since 2000, at around 6%. The latest Euro-barometer survey suggests that only 6% of Europeans uses the train at least once per week.[5] It should be noted that there are marked differences between Member States, but in overall rail loses out in terms of modal share compared to other modes, reflecting a (real or perceived) low level of efficiency, service levels and quality compared to other transport modes. In

[5] http://ec.europa.eu/public_opinion/flash/fl_326_en.pdf

the Consumer Scoreboard 2011[6], train services score worst of all transport services and four in ten consumers consider the choices in that service category to be inadequate.

Improvements will be necessary in all rail segments

As demonstrated by the EVERIS study[7], to improve the overall modal split in favour of rail, improvement will be necessary in all rail segments, including conventional long-distance and urban train services.

The 6% modal share for rail in the EU has remained fairly stable in spite of the impressive development **of high-speed train networks**. The latter have managed to gain some markets at the expense of air transport services, but at the same time air transport has maintained important flows of passenger traffic on routes competing with rail[8].

Since the mid-nineties, **local and regional passenger train services** in most Member States that did not open up their market have fallen in a downward spiral of continuous operational losses and subsequent reduced service offer. This decline has been exacerbated in the EU12 Member States by the decay of old infrastructure and rolling stock on the one hand, and wealth driven high-growth of car ownership, on the other hand.

Although **commuter transport** around urban agglomerations experiences growth in some Member States, cars still secure an important share of urban transport – 59% of Europeans never use suburban trains. This situation contrasts with the 75% urbanisation rate of the EU27 and therefore indicates a huge market development potential for suburban and regional passenger rail transport, especially given the raising congestions on roads.

The **rail freight markets** within the EU have been opened for a number of years, and the industry's stagnation cannot therefore be simply explained by the existence of legal barriers of the kind that continue to restrict competition in domestic passenger services. The problem to be addressed therefore also needs to be defined in terms of technical, physical capacity and institutional barriers, which have frustrated action to open markets taken at the EU level.

4. WHAT ARE THE PROBLEMS NECESSITATING ANOTHER RAIL PACKAGE?

According to available studies, the modest development of the rail sector, as explained above, can be attributed to the presence of several administrative, technical, institutional and legal obstacles, which still hamper market access and operational efficiency of service providers.

Domestic passenger market opening

Whereas markets for rail freight services have been fully opened to competition since January 2007[9] and those for international passenger transport services as of 1 January 2010[10], national domestic passenger markets remain largely closed[11]. However, by removing the legal barrier by allowing open access to infrastructure for domestic passenger services, would have rather limited effects

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6 http://ec.europa.eu/consumers/consumer_research/cms_en.htm

7 http://ec.europa.eu/transport/rail/studies/doc/2010_09_09_study_on_regulatory_options_on_further_market_opening_in_rail_passenger_transport.pdf

8 27 out of the 40 largest intra-EU air routes in the EU were within the reach of competing long-distance (high-speed) railway services and yet attracted some 50 million passengers a year - i.e. as much as the 4th largest EU airport, Madrid-Barajas.

9 Directive 2004/51/EC, amending Council Directive 91/440/EEC.

10 Council Directive 91/440/EEC, as amended *inter alia* by Directive 2007/58/EC.

11 Some Member States, such as United Kingdom, Germany, Sweden or Italy, have unilaterally opened their domestic markets.

given that major part of the domestic rail market is covered by public service contracts (PSC). The rules on the provision of transport services under public service obligations (PSO) are laid down in Regulation 1370/2007[12] which gives the possibility to competent authorities to exclude rail transport services from the obligation to award PSCs through an open tendering procedure. This means that most local and regional services, and certain long-distance services, are operated under PSO and attributed to operators through direct award. In addition, the actual impact of market opening depends on the specific requirements imposed for and within PSCs, making the call either attractive or disguisedly non-attractive for new entrants in tendering procedures (e.g. with the aim to protect the incumbent railway undertaking).

Infrastructure governance

The First Railway Package established a distinction between infrastructure managers (IM), who run the network, and railway undertakings (RUs), that use it for transporting passengers or goods. The legislation requires that infrastructure charging and capacity allocation, being key factors in opening up the market, must be performed independently of the incumbent RU so as to ensure fair and non-discriminatory access of all operators to infrastructure. Independence of essential functions of infrastructure management has to be ensured in legal, organisational and decision-making terms as to allow for all railway undertakings an equal access to infrastructure and related services. Member States must also have independent regulatory bodies in place to monitor railway markets and to act as an appeal body for rail companies if they believe they have been unfairly treated.

There are, however, problems with the transposition and enforcement of these requirements and the Commission has initiated several infringement procedures, on which it expects the Court of Justice of the EU to express its view by the spring 2013. The interactions between railway undertakings and infrastructure managers, where these independence rules have not been implemented, have created conflicts of interest still resulting in access barriers and market distortions at the expense of new entrants, such as access denials to infrastructure and discriminatory charges.

However, even where the existing legislation has been respected, there remain certain problems related to the use of infrastructure and related services. Partially these issues are expected to be solved through the more precise provisions provided in the Recast of the First Package, especially through the strengthened role of rail regulators. However, certain issues appear to require further legislative intervention. For instance, according to the structure and economics of the railway sector, it could be necessary for the purpose of efficient infrastructure management to keep certain IM functions together, rather than allowing them to be performed by separate (though independent) bodies (e.g. it could be useful to couple traffic management with planning of maintenance works). Furthermore, today the independence requirements apply only to the essential functions (infrastructure charging and capacity allocation), but it might be necessary to extend these requirements also to certain other activities of the IM crucial for competition, such as infrastructure investments planning, financing and maintenance. The optimal governance structure has also led to reflections on the degree of institutional separation between infrastructure management and service provision.

Interoperability and safety

Specific EU legislation exists to promote interoperability in order to overcome national historic differences in the field of technical specifications for infrastructure (gauge widths, electrification

[12] Regulation (EC) No 1370/2007 of the European Parliament and of the Council of 23 October 2007 on public passenger transport services by rail and by road and repealing Council Regulations (EEC) Nos 1191/69 and 1107/70

standards and safety and signalling systems[13]). EU legislation also sets the framework for a harmonised approach to rail safety in the EU[14]. Furthermore, it obliges the Member States to set up the system of national authorities, consisting of national safety authorities, notified bodies, national investigation bodies and regulatory bodies.

The European Railway Agency (ERA)[15], established by the Second Railway Package, plays a central role in promoting interoperability, harmonising technical standards, and developing common approach to safety, all requiring close interaction with the Member States and rail sector stakeholders.

While the level of safety on EU railways has gradually increased, and therefore safety levels as such are not an issue, stakeholders have drawn the Commission's attention to the fact that certain technical and administrative hurdles still persist, creating excessive administrative costs and market access barriers, especially for new entrants. This suggests that the highly decentralised system of railway authorities in place may not have fully coped with the European dimension of the rail services. Firstly, existence of largely non-transparent national technical and safety rules, which overlap and/or are in conflict with the EU legislation, creates unnecessary complexities for RUs. Secondly, there are marked discrepancies in how the national safety authorities (NSAs) conduct vehicle authorisation and safety certifications processes, some NSAs being less efficient and effective than others. This has led to reflections on how to further enhance the role of the ERA in the integration processes.

5. RATIONALE OF THE FOURTH RAILWAY PACKAGE

The main objective of the Fourth Railway Package is to enhance the quality and efficiency of rail services by removing remaining legal, institutional and technical obstacles, fostering the performance of the railway sector and its competitiveness. As announced by the 2011 White Paper, these issues will be addressed by the different initiatives in three main domains:

- **Domestic passenger market opening –** opening domestic rail passenger market to competition, including open access lines as well as the routes under PSOs;
- **Infrastructure governance -** ensuring that the infrastructure manager performs a consistent set of functions that optimises the use of infrastructure capacity, and its organisation guarantees non-discriminatory access to the infrastructure and rail related services**.**
- **Interoperability and safety -** removing remaining administrative and technical barriers, in particular by establishing a common approach to safety and interoperability rules to decrease administrative costs, to accelerate procedures, to increase economies of scale for RUs and to avoid disguised discrimination.

What about infrastructure?

Obviously, to contribute to the growth of the modal share of rail, new rail infrastructures need to be built across Europe. The 2011 White Paper calls for completing the European high-speed rail network by 2050, so that it would be fully connected to airports enabling the majority of medium-distance passenger transport to be performed by rail. Future EU strategy for infrastructure

[13] Directive 2008/57/EC of the European Parliament and of the Council of 17 June 2008 on the interoperability of the rail system within the Community (Recast)

[14] Directive 2004/49/EC of the European Parliament and of the Council of 29 April 2004on safety on the Community's railways (Railway Safety Directive).

[15] Regulation (EC) No 1335/2008 of the European Parliament and of the Council of 16 December 2008 amending Regulation (EC) No 881/2004 establishing a European Railway Agency (Agency Regulation)

development has been already set out in the Commission proposals for Connecting Europe Facility[16] and the new TEN-T Guidelines[17] and therefore remains out of the scope of the Fourth Package.

6. CONTENT OF THE FOURTH RAILWAY PACKAGE

The package consists of following elements in the three domains:

Domestic passenger market opening: amendments to:

- Council Directive 91/440/EEC on the development of the Community's railways/the Recast of the first railway package
- Regulation (EC) No 1370/2007 of the European Parliament and of the Council of 23 October 2007 on public passenger transport services by rail and by road

The initiatives will be accompanied by the *Access to Domestic Passenger Rail Markets*.

Infrastructure governance: amendments to:

- Council Directive 91/440/EEC on the development of the Community's railways as amended and Directive 2001/14/EC on the allocation of railway infrastructure capacity and the levying of charges for the use of railway infrastructure/the Recast of the first railway package

The initiatives will be accompanied by the *IA on the Governance of Railway Infrastructure in the Single European Railway Area*.

Interoperability and safety: amendments to:

- Directive 2004/49/EC of the European Parliament and of the Council of 29 April 2004 on safety on the Community's railways
- Directive 2008/57/EC of the European Parliament and of the Council of 17 June 2008 on the interoperability of the rail system within the Community
- Regulation (EC) No 881/2004 of the European Parliament and of the Council of 29 April 2004 establishing a European Railway Agency

The initiatives will be accompanied by *the IA on improving interoperability of the Single European Railway Area*.

In addition the Fourth Package contains:

- a chapeau Communication, providing overall context and justifications for the package of proposals;
- an ancillary initiative repealing Regulation (EEC) 1192/69 on common rules for the normalisation of the accounts of railway undertakings, which has become obsolete and is inconsistent with EU law in force today.

[16] Proposal for a Regulation of the European Parliament and of the Council establishing the Connecting Europe Facility, COM(2011) 665 final – 2011/0302 (COD)

[17] Proposal for a Regulation of the European Parliament and of the Council on union guidelines for the development of the Trans-European Transport network, COM/2011/0650 final/2 - 2011/0294 (COD).

7. OBJECTIVES OF THE FOURTH RAILWAY PACKAGE

The analysis conducted by the Commission shows, that the operational inefficiencies and quality issues of rail services are mainly caused by low degree of competition, remaining market distortions and suboptimal structure of EU rail market. Underlying reasons – long and costly procedures, access barriers for new entrants and different market access rules in Member States – will be addressed from different angles by all the Fourth Package initiatives.

Given that, the initiatives in the Fourth Package are complementary, they all contribute to the same general objective of improving the competitiveness of rail sector vis-à-vis other modes. In addition, some specific objectives are also similar of the initiatives, e.g. facilitating entrance of new operators into the market. The operational objectives are unique for each domain of action. The table below demonstrates how the different elements fit together.

Figure I-2: Summary table of the objectives of the Fourth Railway package initiatives.

	Domestic passenger market opening	Infrastructure governance	Interoperability and safety
General objective			
	Improve the quality of rail passenger services and enhance its operational efficiency …	Strengthen further the governance of railway infrastructure	Eliminate existing administrative and technical barriers …
	… thereby enhancing the competitiveness of rail sector vis-à-vis other modes and developing further the Single European Rail Area.		
Specific objectives	**SO1:** Intensify competitive pressure on domestic rail markets	**SO1:** Improve the IM ability to manage efficiently the infrastructure to the benefit of the users	**SO1:** Facilitate entrance of new operators into market
	SO2: Create more uniform business conditions	**SO2:** Eliminate conflict of interest and discrimination in decisions and operations of the IMs	**SO2:** Reduce administrative costs of railway undertakings
	SO3: Better value for public money spent on public transport services		

8. OPTIONS AND MAIN IMPACTS

To achieve these objectives, all IAs will consider a range of different options, which ultimately should improve the operational efficiency and quality of rail services.

The IA for the domestic passenger market opening would propose and assess options on how the interaction of access conditions between open access services and services under PSC should be arranged. The IA would also discuss different criteria for the design of PSC and analyse a possibility of introducing mandatory competitive tendering for PSC. The aim of these options would be to open the domestic rail market to competition, which should lead more passenger friendly services and better use of public money. In order to enhance the positive effects of market opening, the IA would analyse also additional options for 'framework conditions', such as access to rolling stock, through-ticketing and inter-availability of train tickets of different RUs.

The IA for the infrastructure governance initiative would study two dimensions of options: on the one hand, what functions should be included in the portfolio of an 'ideal IM' in order to optimise its operational and in investment decisions, and on the other hand, how should the separation between the IM and RUs to be enhanced in order to ensure equal level playing field for the access to infrastructure and the related services. As a result, new-entrant RUs should get a better access to infrastructure and related services, at the same time the efficiency of infrastructure utilisation at national and EU level should increase.

The IA under the interoperability and safety pillar would assess several 'institutional' options on the level of interaction between ERA and national authorities with the aim to (a) enhance the effectiveness and efficiency of safety certification and rolling stock authorisation processes and (b) reduce complexity caused by excessive national railway rules. As a separate option, a set of additional horizontal measures would be considered, which on their own could achieve the mentioned objectives, but could also be applied on top of the institutional options to reinforce the overall impact of reduced administrative costs/less fragmented markets.

These policy options and their impacts will be presented and assessed in detail in the respective IAs.

9. EXPECTED SYNERGIES OF THE PACKAGE

The idea of the proposed package approach is that there are synergies to be achieved via the combined effects of the individual initiatives. Some examples of such synergies are provided below.

- Effectiveness of *de jure* market opening depends on allowing for certain 'framework conditions', such as access to infrastructure, rolling stock, stations, train path allocation, etc. Some of these framework conditions will be addressed within the domestic passenger market opening initiatives, while the others via the proposal on infrastructure governance.
- One way to improve rolling stock availability is to support development of rolling stock leasing market (as considered under in the domestic passenger market opening IA). However, a necessary condition for that is more standardised equipment and the on-going standardisation process[18] is expected to be enhanced by the European "passport" for vehicles, considered within the interoperability and safety initiatives.
- All initiatives would, in their own terms, contribute to a more predictable business models for RUs operating across the borders of EU Member States:
    - interoperability initiative by harmonising approach to safety certification and authorisation of rolling stock,
    - market access initiative by introducing universal licence for provision of passenger services throughout the EU and setting common principles for PSO definition, and
    - infrastructure governance initiative by proposing a more harmonised institutional setup of infrastructure managers in different Member States.
- Better infrastructure governance should improve the operational efficiency of railways and possibly allow to improve the travel times for passengers and freight.

Overall, the different operational gains expected as a result of each initiative should allow a better value for public money, on which the functioning of railways is still heavily reliant.

[18] As the result of the changes induced by the Technical Specifications for Interoperability (TSIs) decision.

ANNEX 2
PUBLIC CONSULTATION

1. Introduction – overview of the consultation process

The consultation process was executed through several channels to reach out to different groups that face different problems vis-à-vis railways and that may be impacted differently by the 4th railway package initiative.

In this context, 4 consultations run in parallel were preferred to an open consultation:

- a stakeholder consultation
- a Eurobarometer survey
- a consultation of the Sectoral Social Dialogue Committee for Railways
- a consultation of regional authorities (together with the Committee of the Regions)

The views of **stakeholders** were collected through targeted detailed questionnaires and w ere completed by face-to-face interviews, one intermediate hearing and a final conference.

The views of citizens and passengers were collected through a broad **Eurobarometer survey** involving 25.591 interviews in 25 Member States (Cyprus and Malta have no railways) asking some 25 questions.

The **Sectoral Social Dialogue Committee on Railways** was consulted twice, in February and June 2012.

Finally, the network of the Committee of the Regions was used to reach **local and regional authorities**.

2. Consultation of stakeholders

2.1 -Overview of the consultation

The consultation of stakeholders was organised in 5 phases.

Figure 1- The Stakeholders Consultation Action Plan

After a thorough identification of 427 potential respondents (cf. infra), in-depth questionnaires were sent to each group of main stakeholders (railway undertakings, infrastructure managers, public transport authorities, safety authorities, ministries, representative bodies, social stakeholders, etc.).

The contractor in charge of the support study conducted face-to-face interviews with with stakeholders in Germany, UK, Italy, Hungary and Sweden. In parallel, face-to-face interviews were organised with those stakeholders that wished to meet DG MOVE, including face-to-face meetings in Sweden, Poland, Belgium, France, Germany and The Netherlands.

On 29 May 2012 a public hearing with 85 participants was organised in Brussels to share preliminary results obtained in the analysis of completed questionnaires and to obtain feedback on these findings. The workshop also sought to explore some specific issues: access to rolling stock, unbundling and social impacts for consumers and workers.

On 24 September, a stakeholder conference was organised in Brussels with some 420 participants. The conference gave the opportunity to stakeholders to provide their views on the opening of domestic rail markets to competition, on their role to growth, on rail and the value for society.

All feedback made by way of the questionnaire, the public hearing, by phone or by face-to-face sessions was analysed in detail and contributed to the definition of the problem and the analysis of impacts. The comprehensive consultation process described meets the Commission's standards for public consultation.

2.2 Profile of identified stakeholders and respondents

2.2.1 – Profile of respondents to the stakeholder questionnaires

Initially, almost 427 stakeholders from EU-25 (EU-27 excluding Cyprus and Malta which have no railway) were identified as being involved and potentially affected by the market opening. The detail of these persons and organisations is at the end of this annex.

These stakeholders can be categorised in four groups:

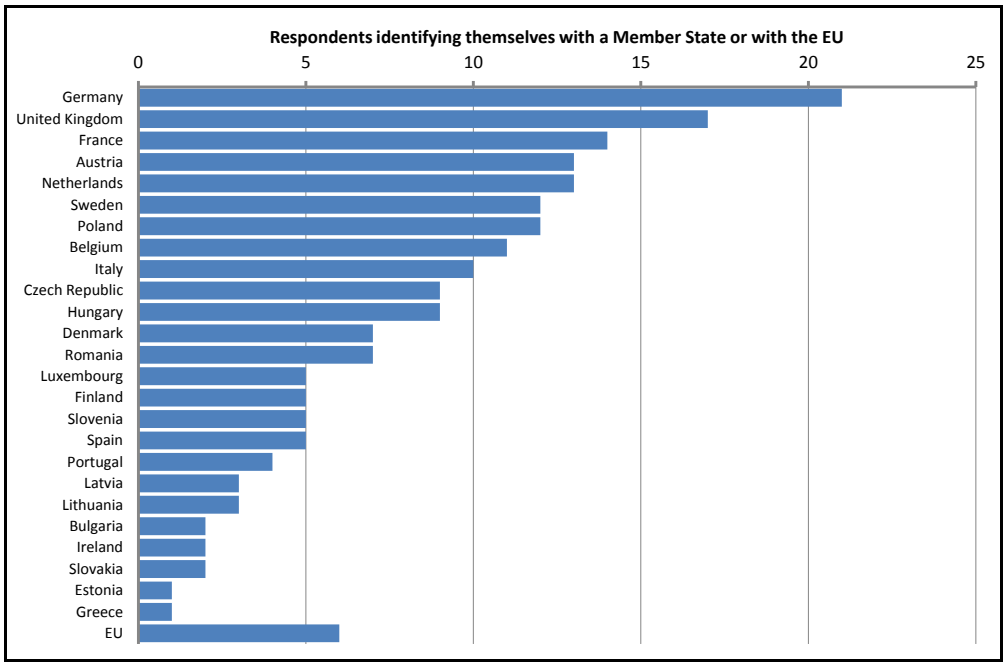
- authorities (rail regulatory bodies, competition authorities and ministries of transport)
- infrastructure managers
- railway undertakings (including incumbent and newcomers), and

– other stakeholders (railway manufacturers, wagon keepers and rail car leasing companies, terminal operators, maintenance workshop operators and other providers of rail related services, customer and rail passenger organisations, railway workers' organisations).

In March 2012, these 427 stakeholders were sent several on-line questionnaires that comprised a set of common questions like the important factors associated with quality of rail services, the problems that affect the quality of rail services, the objectives of the Fourth Package policy initiative, policy options with market opening, but also specific questions related to the issue that might have greatest relevant to the organisation(s) that they are representing. Of almost 427 questionnaires sent, 99 completed questionnaires were returned representing 172 organisations (cf. infra).

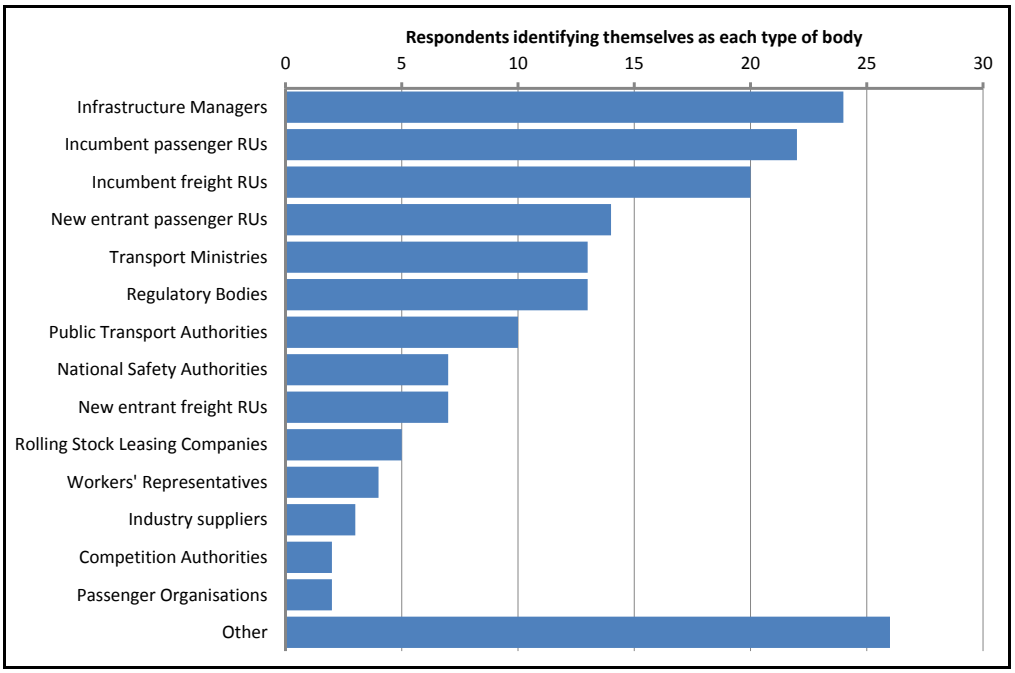
Responses were obtained from the 25 Member States. However, for 12 Member States there were 5 or fewer responses.

Figure 1 - Respondents' self-reported location of activities



The 99 respondents identified themselves as representing a total of 172 different types of organisations (which represents a response rate of 41%).

Figure 2 - Respondents' self-reported type of activity



Because of double identifications[158], respondents were reclassified to provide a better view of the profile of the types of stakeholders. Respondents might have more than one role for reasons such as:

- Railway undertakings identifying themselves as both passenger and freight, or as incumbent in one Member State and new entrant in one or more others
- Holding companies identifying all the roles fulfilled by their subsidiaries
- Regulatory bodies which are also competition authorities
- Representative bodies that represent different types of stakeholder

As noted above, we received fewer responses from some Member States and types of organisation. We concluded that it would not be possible to analyse systematically by both Member State and respondent type.

After careful review of the identity of the respondents we therefore reclassified them with the objective of providing a clearer basis for analysis:

From the organisation name provided, we identified and distinguished:

- Holdings/groups
- Associations/representatives

For railway undertakings:

[158] The 99 respondents reported 172 different industry roles:

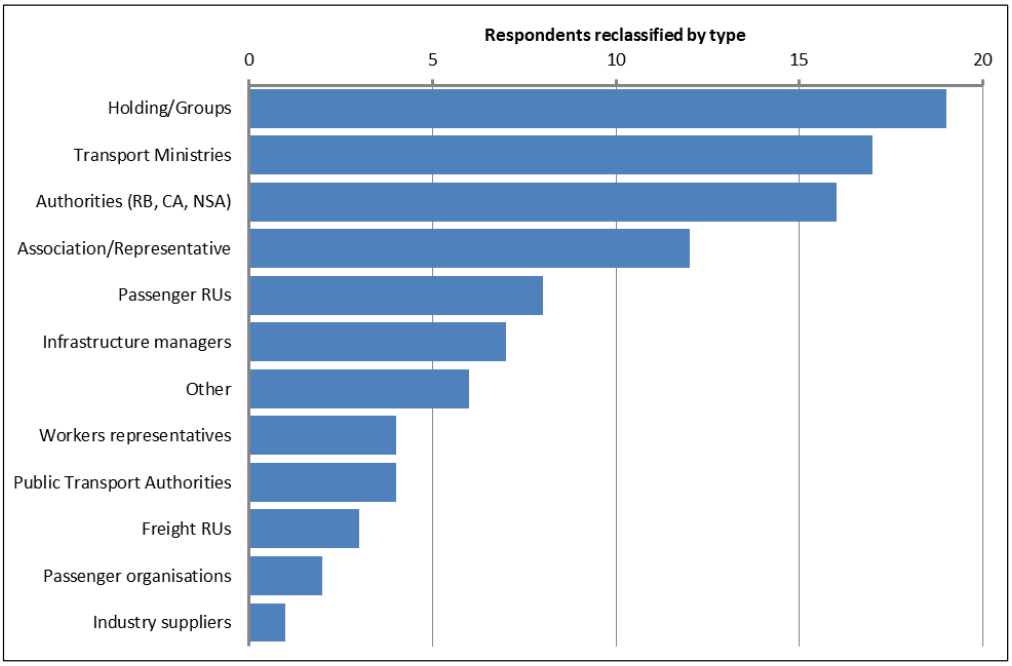
- 38 described themselves as having a single role
- 35 described themselves as having more than one role
- 26 described their role as “other”

- Incumbent and new entrant passenger railway undertakings were combined as "Passenger RU"
- Incumbent and new entrant freight railway undertakings were combined as "Freight RU"

We combined into a single category of "National Authorities" three different types of respondent, all with at least some regulatory role:

- Regulatory bodies
- Competition authorities
- National safety authorities

Fig. 3 – Respondents reclassified by type



Finally, the answers represent an exhaustive sample and a good cross-section of stakeholders from almost all MS.

2.2.2 – Profile of participants in face-to face interviews

In April 2012, targeted interviews with stakeholders were organised by the contractor in charge of the support study in UK, Italy, Sweden, Hungary and Germany to discuss and understand better their responses during the extensive stakeholder consultation exercise. The majority of these interviews were held as face-to-face sessions, with many of the most significant stakeholders within Member States of those countries for which more detailed case studies were prepared. In addition, the Commission held bilateral meetings with certain Member States as well as with numerous associations from the rail sector in order to hear their views.

TABLE 1 STAKEHOLDER INTERVIEWS (CONTRACTOR)

Rationale	Location	Face-to-face	Telephone	Written
Full country fiche	France	7		
	Germany	6		
	Great Britain	5		
	Hungary	4		
	Italy	4		
Intermediate country fiche	Austria	1	1	
	Czech Republic	1		1
	Netherlands	1		
Pan-European organisations		4		

Commission services met (in Brussels) with representatives from the following organisations throughout 2012:

- BAFG – German Association of Passenger Rail Authorities
- CER – Community of European railways
- DB – German railways
- EIM – European Infrastructure Managers Association
- EPTO – European Passenger Transport Operators
- EPF – European Passenger Federation
- ERFA – European Railway Freight Association
- ETF – European Transport Worker's Federation
- Network Rail (UK infrastructure manager)
- NMBS-SNCB Holding (Belgian Railways)
- ÖBB – Austrian railways
- SNCF - French railways
- UITP – Union Internationale des Transports Publics

- UK Department for Transport

Additionally, the Polish, Swedish and Dutch authorities organised meetings between stakeholders (infrastructure managers, regulators, railway undertakings) and Commission services in Stockholm, Frankfurt, Warsaw and Utrecht:

2.2.3- Profile of participants of stakeholder hearings and conferences

The list of participants to the stakeholder hearings and conferences was drawn on the basis of the list of initially 427 identified stakeholders and others who requested participation.

The following organisations took the floor at the stakeholder hearing of 29th May:

- Association of Train Operating Companies (ATOC) UK
- BAG SPNV (German passenger transport authorities)
- Community of European Railways (CER)
- Deutsche Bahn
- European Infrastructure Managers (EIM)
- European Passenger Federation (EPF)
- European Passenger Transport Operators (EPTO)
- European Rail Freight Association (ERFA)
- European Transport Workers Federation (ETF)
- Ferrovie dello Stato / Trenitalia
- Freighliner
- Irish Department of Transport
- JSC Lithuanian Railways
- Ministry of Transport, Infrastructure and Environment (Netherlands)
- Ministry of Transport (France)
- SNCF
- Network Rail (UK Infrastructure Managers)
- NTV Nuovo Trasporto Viaggatori
- Transportstyrelsen (Swedish regulator)
- Union Internationale des Transports Publics (UITP)
- Veolia

The following organisations made presentations at the stakeholder conference of 24th September:

- Ministry of Transport (Sweden)
- Community of European Railways (CER)
- NTV Nuovo Trasporto Viaggatori
- First Group (UK)
- Amadeus
- Ministry of Transport (Belgium)
- CFR Calatori (Romanian railways)
- GATX Railcar Leasing

- Office of Railway Regulation (UK NSA)
- Freighliner UK
- Freighliner Poland
- UNIFE (European railway industry)
- European Infrastructure Managers (EIM)
- Network Rail (UK Infrastructure Manager)
- BAG SPNV (German passenger transport authorities)
- European Passenger Transport Operators (EPTO)
- Verkehrverbund Berlin-Brandenburg
- European Passenger Train and Traction Operating Lessors' Association (EPTTOLA)
- Province of Gelderland (Netherlands)
- - as well as:

Members of the European Parliament who are Members of the Transport Committee (see detailed conference summary in Annex 10).

2.3 The stakeholder consultation process

This targeted consultation was organised by the contractor in charge of the support study. The consultation took place from 1st March till 16 April (responses obtained till mid-June were accepted and incorporated).

As a first step, the contractor consulted stakeholders through a two-part questionnaire sent via email. The first questionnaire was common to all stakeholders and was completed by extra questions for each type of organisation (infrastructure manager, passenger operations, worker's representative etc…).

The questionnaires were structured in four sections focused on:

- The quality of rail services in the EU, which includes punctuality, passenger comfort, on board services, information, service frequency and intra-modal and intermodal integration,
- Obstacles which hamper market access, limit new entrants and hinder the internal market for rail passenger services;
- The different objectives of this policy initiatives that could improve the quality of rail services
- Checking the preferences of stakeholders for specific options to achieve/secure market opening

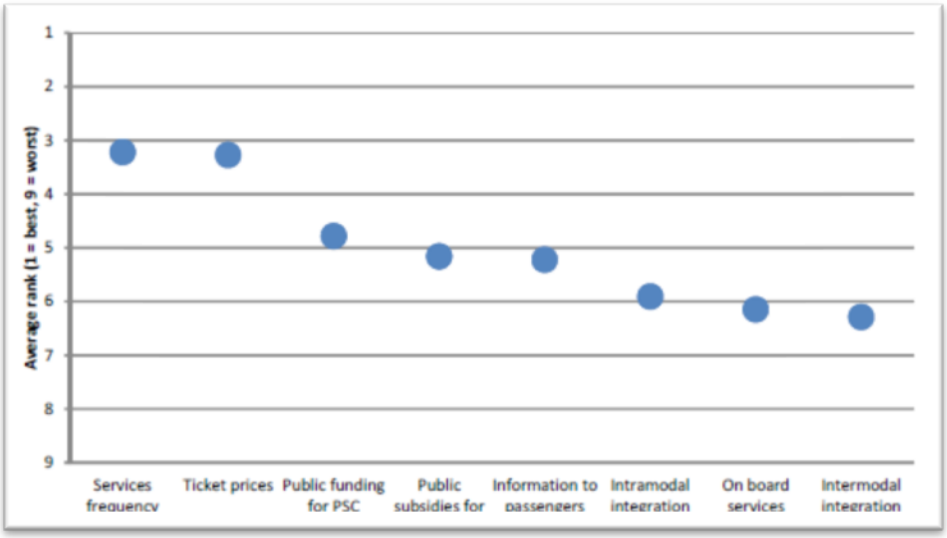
2.4 - Main results of the on-line consultation

The majority of the stakeholders (85% for passenger services and 90% in freight services) agreed that the quality of rail services affects the competitiveness of the rail sector and 60% of the

stakeholders think that quality issues are different for passenger services provided under public service contracts than those provided by open access.

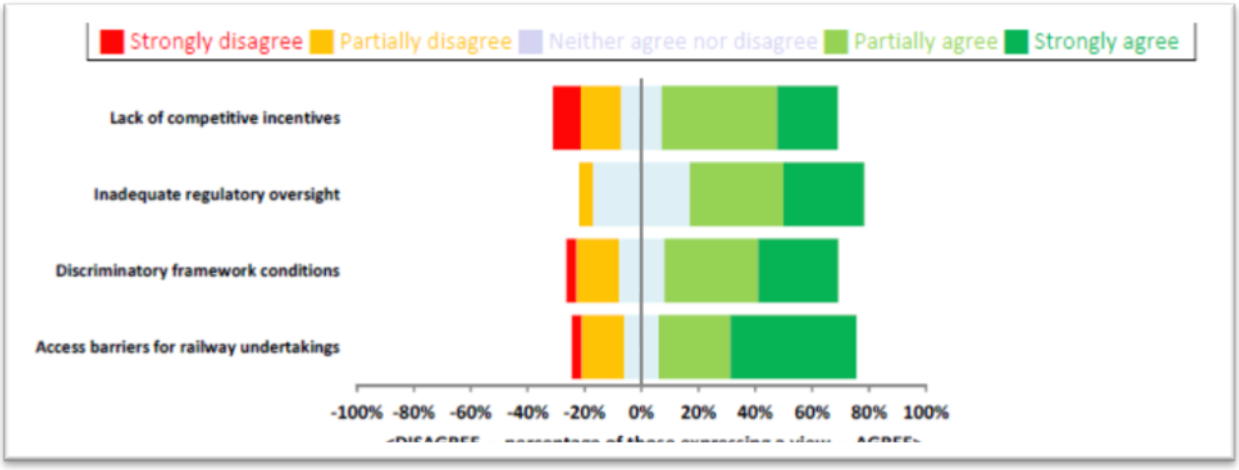
Concerning the importance of each issue that affects quality of rail services, services frequencies and ticket prices ranked most important, as shown the following table:

Figure 4 - Elements that affect the competitiveness of the rail sector. Source: SDG



The majority of stakeholders of the targeted consultation supported the problem drivers and agreed that the quality of rail services and the competitiveness of the rail sector in the EU were affected by the lack of competitive incentives, inadequate regulatory oversight, discriminatory framework conditions and access barriers for railway undertakings. Many holdings disagreed with "discriminatory framework conditions" and many authorities disagreed with "inadequate regulatory oversight".

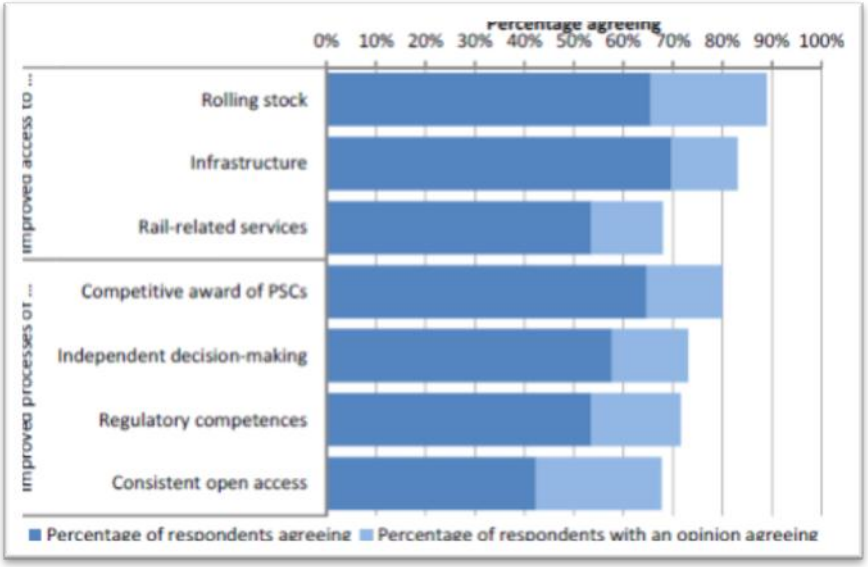
Figure 5 – Support of the stakeholders about aspects that affect quality of rail and have an impact on the competitiveness of the rail sector in the EU.



Stakeholders highlighted in particular infrastructure capacity, access to rail-related facilities, rolling stock availability, inadequate resources, divergent interpretation of legislation, lack of financial transparency and lack of competitive tendering as the main factors driving those problems.

Overall, the stakeholders have supported the general problem and the problem drivers as identified by the Commission, as well as the general direction of EU action. 72% of stakeholders agreed that access to rail-related facilities was an access barrier for railway undertakings and 69% agreed that the objective of improved access to infrastructure addressed the objective of the initiative.

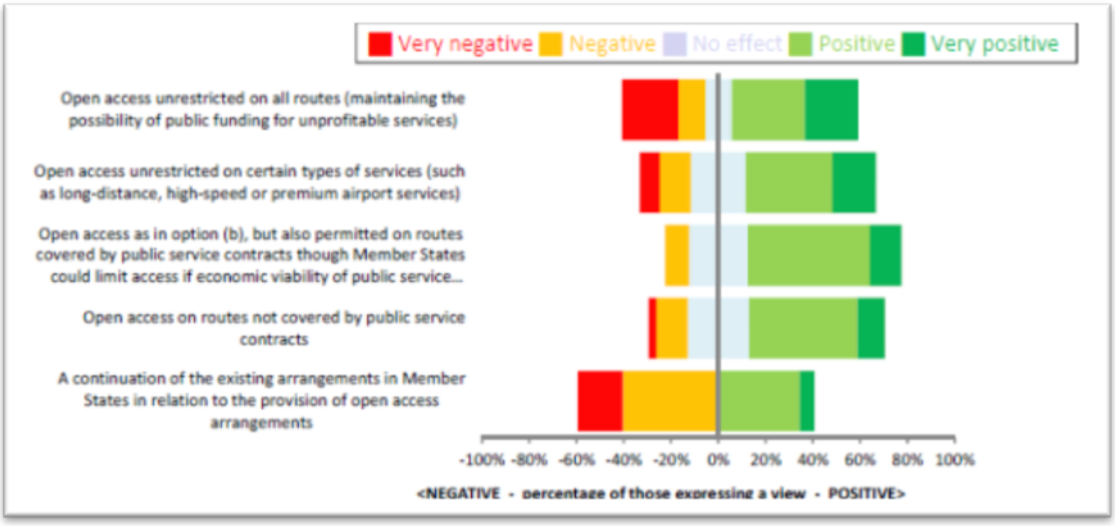
Figure 6 - "do you believe that the following objectives address the issue of improving the quality of rail and the competitiveness of the rail sector in the EU.



In terms of market opening, an equal majority of respondents (60%) agreed that additional new open access rights or compulsory competitive tendering could stimulate market integration. A small minority of respondents (15%) disagreed. Most of those agreeing are Transport Ministries and regulatory bodies, with most holding groups neither agreeing nor disagreeing.

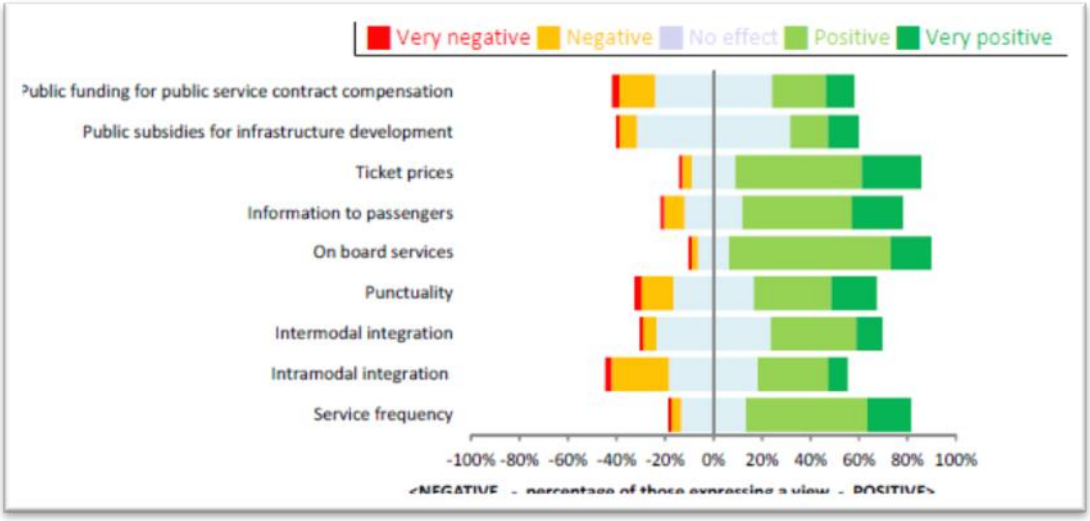
Open access subject to the viability of public service contracts is seen more positively than all the other options (55% of agreeing respondents) – the current arrangements are seen very negatively (20% of support). The continuation of existing arrangements (i.e. baseline) was the worse rated option.

Figure 7 - Support of the different possible policies for open access.



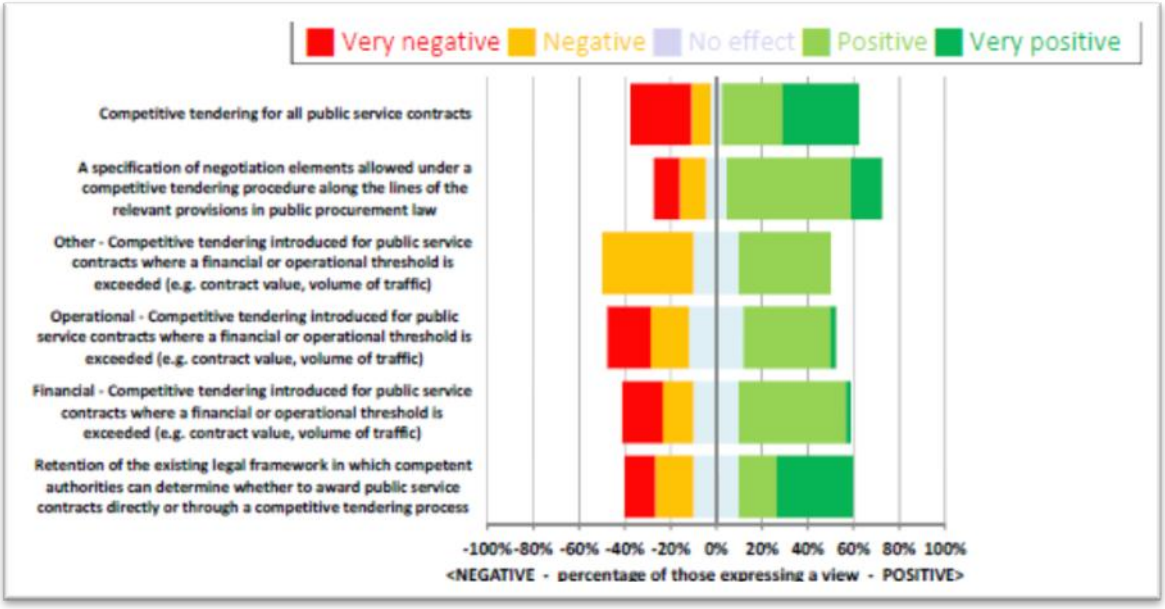
The expected benefits by the stakeholders of further market opening through new open access rights in the domestic market have been assessed. The best benefits are foreseen in ticket prices, services frequencies and on-board services, as shown in the following table.

Figure 8 - Effects of further market opening through new open access rights in the domestic market. Source: SDG



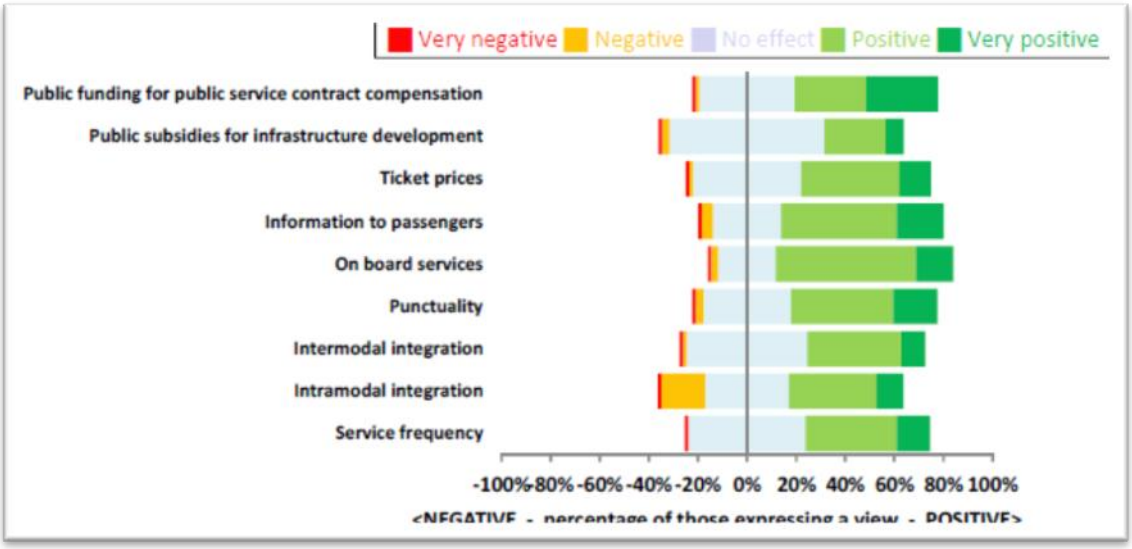
As regards compulsory competitive tendering, respondents also were more supportive of flexibilities akin to those of the negotiated procedure in public procurement (45% of agreeing respondents) and transitional periods for the gradual letting of all public service contracts (80% of agreeing respondents).

Figure 3 - Support of the different possible policies for competitive tendering. Source: SDG



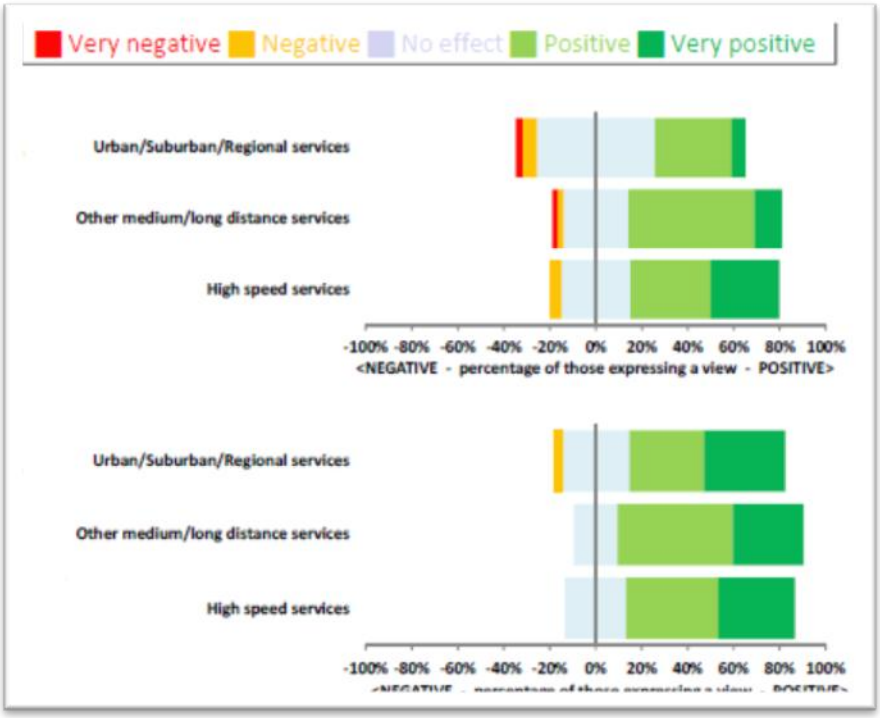
The expected benefits expressed by the stakeholders, of further market opening through new open access rights in the domestic market have been assessed. The best benefits are foreseen in ticket prices, services frequencies and on-board services, as shown in the following table.

Figure 4 -Effects of further market opening through new compulsory competitive tendering for public service contracts in the domestic market. Source: SDG



Open access is seen as most successful on high-speed services and least successful in the urban, suburban and regional segments. Competitive tendering has been rated more positively than open access in all segments.

Figure 5 - Comparison of the options of open access and competitive tendering: past experience (assessed with an increasing demand after a new services has been opened). Source: SDG



Views are polarised regarding the development at EU level of compliance criteria in public service obligations, with a slight majority responding negatively. None of the proposals of compliance criteria (quality of train service, impact of public service funding, scope of the contract, proportionality and necessity test) was supported by more than 50% of those with an opinion. In

any case, if criteria were to be developed, then a very large majority of stakeholders (95%) agrees that a consultation of stakeholders would be needed. A majority of respondents (65%) supports an extension of the compensation rules of Regulation 1370/2007 on public service obligations in rail and urban transport in the case of a single bidder.

In terms of framework conditions, there is overwhelming support (95%) for clear conditions on the transfer of staff during the transfer from one operator to another of a rail service contract. Regarding improved access to rolling stock, a majority of respondents (60%) agreed that the creation of rolling stock leasing companies would help to solve the problem and a vast majority (75%) called for full access to technical information to be provided by the infrastructure manager. As regards ticketing, there was a preference for a light approach such as non-binding provisions or enabling clauses for voluntary agreements rather than compulsory measures at EU level or at Member State level.

2.5 - The stakeholder hearing of the 29th May

The stakeholder hearing was devoted to the presentation of the results of the on-line consultation and subsequent discussions on access to rolling stock, market opening (open access versus competitive tendering), unbundling (not relevant for this impact assessment) and the overall impacts for consumers and workers.

2.5.1 - Access to rolling stock

All participants agreed that access to rolling stock was a major problem. Several stakeholders linked the question of access to rolling stock to the problem of the length of public service contracts in terms of financial outlay/guarantee. For some stakeholders, the problem was broader and required action at EU level to make rolling stock more similar throughout the EU, whereas one national Ministry raised the question whether it was not a matter to be regulated at national level.

2.5.2 - Market opening

A large variety of opinions were expressed regarding market opening, in particular regarding a perceived "cherry picking" of services. Railway incumbents and a worker organisation felt that open access leads to cherry-picking (an incumbent went as far as to describe the railway market for incumbents as "potato picking" with all unprofitable services being left to them). New entrants were very vocal in arguing that incumbents also cherry-picked in their own network and that they would be eager to participate in calls for tender for public service contracts provided that adequate funding was provided for the latter. A workers organisation indicated that the Protocol XXVI of the TFEU on Services of General Interest provides local authorities to provide for public service obligations.

2.5.3 - Overall impacts on consumers and workers

Stakeholders commented on the impacts for consumers and workers on the basis of the outcome of the Eurobarometer surey (cf. infra). Several stakeholders raised questions on the sampling and surveying methods of the Eurobarometer, which were answered by the contractor in charge of the survey (TNS Opinion). As far as ticketing was concerned, a new entrant and a regulator called for more integration in ticketing. A passenger federation indicated that what most passengers wanted was through-ticketing. As far as workers were concerned, a workers organisation pointed to the decrease in employment and deterioration in workers conditions. Several new entrants and freight operators contested this analysis: they indicated that in the UK the wages of drivers had increased as a direct result of rail liberalisation.

1.1.1. 2.6 - The stakeholder conference of 24 September

A stakeholder conference was organised on 24 September with several presentations, which allowed gathering facts regarding experiences with domestic opening, in particular in the context of a specific workshop devoted to "Rail and its value for Society". The conference was attended by 420 representatives across the industry who participated in 3 key workshops as well as hearing an array of speakers.

It was clear that there was a desire to get the structure of the railway right once and for all. An interactive and competitive railway across all of Europe was in the best interests of everybody. Interoperability is vital to allow innovation through liberalisation and a level playing field is a pre-requisite for encouraging new market entrants.

The Minister of Transport of Sweden presented the experience of Sweden in rail liberalisation, which came after the Swedish crisis of the early 90s. CER explained that it was important that open access did not compromise PSCs, while advocating direct awards and reciprocity clauses. The new entrant First Group emphasized the need to generalise competitive tendering, whereas NTV showed how the high-speed rail market in Italy was growing (+5% of traffic) in spite of the recession in Italy. CFR Calatori, the Romanian Railways, explained the difficulties of operating in Romania, with an increasing competition with rail. EPF, the European Passengers Federation, called for more transparency in the awards of public service contracts.

Participants were broadly in favour of improving the competitiveness of rail and further development of the Single European Rail Area. For sustainable high quality and efficient transport a move to mandatory tendering of contracts with some open access provision was felt to provide improved value through a reduction in public subsidies and benefits through improvements in service quality and infrastructure use. Fears of social dumping and lowering of safety standards were tempered down drawing on the experience of the Member States that liberalised their rail markets. Access to rolling stock for market entry was deemed to be vital as was the need for consistency and clarity of regulations and stability in the marketplace.

The VBB (Verkehr Berlin-Brandenburg) presented its own experience with tendering in Berlin and with the splitting of S-Bahn lines in Berlin. It contested that tenders reduce jobs. In fact, the increase of traffic creates new jobs. Finally, the SNCF expressed its overall scepticism with the opening of domestic passenger rail markets as rail is capital-intensive industry (that requires important investments in infrastructure which incumbents are better placed to maintain than new entrants).

Further details of this conference are presented in Annex 6.

1.1.2. 3- Consultation of the passengers: the Eurobarometer survey

3.1 – Overview

An Eurobarometer survey was organised to reach citizens and trail passengers to better understand their opinions on issues that affect them directly, like the impact of competition on travel journeys and their perceptions on that. The survey was conducted through face-to-face interviews in the respondent's home. The survey was organised by an external consultant and took place from the 10 to 25 March 2012

3.2 – Profile of respondents

The Eurobarometer survey reached out 25 591 respondents evenly spread across the 25 Member states with railways.

Respondents to the Eurobarometer were asked how often they travel by **national or regional trains** (this excludes suburban trains). It resulted that only a small minority (6%) of Europeans are regular rail passengers: 2% use them on a daily or almost daily basis, 2% several times a week, 2% only once a week. Almost a quarter (23%) of the interviewees is occasional rail passenger whotravel by national or regional trains several times a month (4%) or several times a year (19%). Slightly over four in ten Europeans (41%) **use suburban trains**: it revealed that only small minorities (7%) of Europeans are regular suburban train passengers and almost six in ten Europeans do not take such trains (59%). Finally, rail passengers' **main reason for travelling** by national or regional train is to go on leisure trips (70%); just a few rail passengers mention going to work or study (10%) or business trips (10%).

3.3 – Main results of the survey

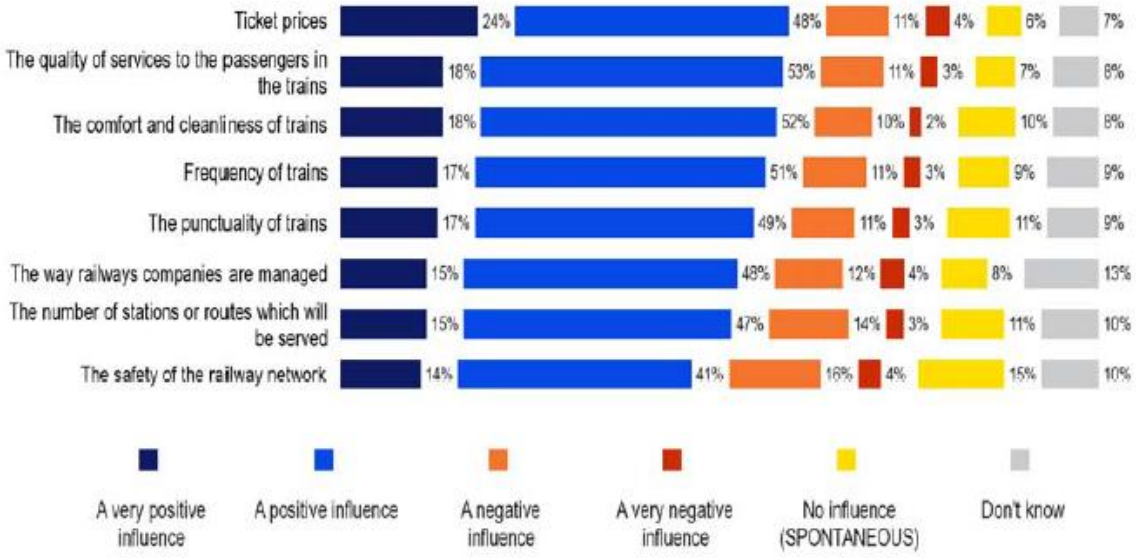
Only almost half of Europeans (46%) are **satisfied** with the current national and regional rail system in their country. A significant proportion nevertheless answers that they are not satisfied (36%). The level of satisfaction of rail has slightly improved since 1997 (then 41% of satisfaction), but remains below the level of satisfaction of air transport before the full opening of air transport throughout the EU (in 1997, 53% of Europeans were satisfied with air transport).

When Europeans who travel by train never or at most once a year are asked **what improvements would encourage** them to rail travel, more than four in ten mention lower prices (43%). Other improvements are cited far less often: better network with more routes or stations (20%), faster journeys (17%), more reliable services (16%), more comfortable and cleaner trains (16%), and more frequent services (14%). Nearly three in ten respondents who never or rarely travel by train spontaneously mention that nothing could encourage them to do so (28%).

The majority of Europeans (71%) **support** opening the national and regional rail system to competition provided that all operators must meet the same safety standards.

Absolute majorities of Europeans expect that more competition in the rail market will have a **positive influence on the following**:

Figure 6 - expectations concerning the effects of further competition in the rail market



Absolute majorities of Europeans expect that more competition in the rail market will be **good for individual stakeholders**:

- Passengers (78%)
- Private rail operators (68%)
- Employees of rail transport operators (55%)

European opinion is divided about the impact of more competition in the rail market on the **public funding of the rail sector**: 34% say public funding will decrease, 30% think it will stay the same, 19% believe it will increase, and another 17% have no opinion on this.

Moreover, striking differences exist between supporters and opponents of rail market competition with respect to their expectations about the influence of competition on various matters. This is true in particular for the safety of the railway network, the way railway companies are managed, the passengers, and the employees of rail transport operators; absolute majorities of the opponents believe competition will have a negative influence in these four matters.

When Europeans are asked about their **wishes regarding railway offers** as an effect of more competition:

- 70% wish for low-cost offers or 'no frills' rail service similar to that provided by some airlines
- 43% wish for premium offers which would be more expensive but would include additional services (meals, films, newspapers, etc…)

Turning to their **wishes regarding ways to purchase tickets** as an effect of more competition:

- 65% of Europeans wish for more ways of buying tickets (e.g. online, via smartphones, or on board)

- 75% of those for whom multiple-operator rail journeys are relevant, say that they would like to be able to buy tickets and obtain information covering the whole journey through one single point.

1.1.3. 4 – Consultation of social partners

The railway manufacturing industry responded through one questionnaire and worker organisations were also consulted through the Social Dialogue Committee and through ETF (European Transport Workers Association) in the consultation of stakeholders (social aspects were also covered during the stakeholder hearing of 29 May).

The Sectoral Social Dialogue Committee on Railways was consulted on 26 March and 19 June, in particular on the options and the social impact assessment. Associations of workers were overall sceptical that the opening of domestic rail passenger markets would contribute to the growth of the rail traffic, the improvement of the efficiency and quality of rail services. Worker organisations present at the meeting highlighted that funding of the rail sector and its infrastructure would be more effective to reach those same objectives. Worker organisations did not position themselves on any of the options that were presented to them on those meetings, since these involved liberalisation of the sector, which they fundamentally opposed whereas the employer's side did not take part in the discussion.

In the context of the stakeholder consultation, specific questionnaires were sent to workers organisations. During the stakeholder hearing of the 29th May, views were exchanged regarding the social impacts of the opening of domestic passenger rail markets. Commission services also met bilaterally twice with ETF.

1.1.4. 5 – Consultation of local and regional authorities

5.1 - Overview

The targeted consultation of local authorities through the network of the Committee of the Regions was used to remedy to the relatively low level of responses of public transport authorities. Local (passenger transport) authorities were consulted with the help of the Committee of the Regions from the 14 May till 18 June.

5.2 Profile of the respondents

The following 11 regional competent authorities responded to the consultation:

- Extremadura (Spain)
- Aragon (Spain)
- Basque Government (Spain)
- Association des Régions de France
- Association of European Border Regions
- Netwerkstad Twente (The Netherlands)

- Fundacion Transpirenaica (France-Spain)
- Vienna City Administration (Austria)
- Wielkopolska (Poland)
- Galicia-Northern Portugal Grouping of Territorial Coopeartion
- Cataluña (Spain)

5.3 – Main results of the survey

Compliance with the subsidiarity principle:

- *Should EU define/specify additional criteria for competent authority? (Yes 7/11)*
    - *No it's sufficient : Extremadura Assembly, Wielkopolska Spatial Planning Office*
    - *No, because of the principle of subsidiarity: Association des Régions de France*
    - *No, it's problematic, but recommendations could be acceptable: Vienna City Administration*
    - *Yes : Basque Government, Galicia-Northern Portugal European Grouping of Territorial Cooperation, Parliament of Catalonia, Aragon Government, Association of European Border Regions, Fundacion Transpirenaica*
    - *Yes, but not in detail Service Level agreements: Netwerksad Twente*

Local and regional authorities that participated in the consultation expressed conflicting views on the introduction of additional criteria (based on general principles of the Treaty) to be applied by competent authorities when defining PSO in rail. A large majority of the local and regional authorities (64% of respondents) supported the introduction of additional criteria to be applied by competent authorities in particular the Spanish ones and the Association of Europeans Border Regions).

- *Degree of detailed in these additional criteria should be defined?*
    - *The maximal degree: Basque Government, Fundacion Transpirenaica, Parliament of Catalonia, Aragon Government*
    - *In many cases, only a minor intervention is needed: Association of European Border Regions*
    - *Preferably a directive rather than regulations- general guidelines is sufficient : Galicia-Northern Portugal European Grouping of Territorial Cooperation*
    - *Additional criteria everywhere except in detail Service Level agreements : Netwerksad Twente*

According to the local and regional authorities, particularly for the Spanish ones, this measure could help to further completion of a single market for rail transport services and bring clear added value, especially from a cross-border point of view (see above): harmonisation and integration of the markets. Other (Extremadura Assembly, Association des regions de France, Vienna City Administration, Wielkopolska Spatial Planning Office, hence some 36% of respondents) consider that there is no need for additional criteria, since the existing regulatory environment already

provides all the elements needed. They also consider that local and regional authorities are better placed to respond the needs of users in their territories, viewing this as a competence that should remain at regional level. In any case, the introduction of additional criteria could raise some concerns from a subsidiarity point of view. Therefore, the argument for their introduction should reflect this and be as comprehensive as possible, taking into account the special needs of the different regions and territories in the EU.

- *Added value?*
    - *Economical :*
    - *In the case of the central Pyrenees crossing, according to the most recent study, carried out June 2012, GVA would be generated of over EUR 19 billion, i.e 0.16% of the EU-27 GDP (freight rail link): Aragon Government, Fundacion Transpirenaica.*
    - *Increasing economic activity : Association of European Border Regions*
    - *Harmonisation and integration of the market : Basque Government*
    - *Avoid inequalities and unfairness : Galicia-Northern Portugal European Grouping of Territorial Cooperation*

Procedure for awarding PSCs for passenger services

- ***To complete the Internal Market, should there be further EU harmonisation of the procedure for awarding PSCs for passenger services? (merits and problems)***

Problems:

- *Poorer quality and management: Extremadura Assembly*
- *Difficulties for authorities (crisis, different situations) because of inappropriate rules: Régions de France*
- *Burden of the implementation : Régions de France*
- *Harmonisation adds further complexity to contracting procedures, abolish the possibility to award contracts directly: Vienna City Administration*
- *Damage to rail service providers from smaller countries: Galicia-Northern Portugal European Grouping of Territorial Cooperation*

Merits

- *Cross border links overcoming major physical barriers, facilitate cross-border cooperation: Aragon Government, Association of European Border Regions , Fundacion Transpirenaica*
- *Harmonisation for awarding PSCs: Aragon Government, , Fundacion Transpirenaica, Galicia-Northern Portugal European Grouping of Territorial Cooperation*
- *Less costly for the public purse: Aragon Government*
- *Further and integrated market in rail services: Basque Government*
- *Prevent protectionism : Basque Government*
- *Easier for operators to provide services in all the EU : Basque Government*
- *Sustainability, environmental protection: Association of European Border Regions*
- *Viability: Association of European Border Regions*
- *Regional development : Association of European Border Regions*
- *Encourage large conglomerate : Galicia-Northern Portugal European Grouping of Territorial Cooperation*

Further EU harmonisation of the procedure for awarding PSCs for passenger services in order to complete the single market for rail services would help to liberalise rail transport services, avoid protectionism behaviour and favour the provision of services across MS, provided that legal and technical specifications are harmonised first. It would also benefit cross-border regions (particularly when there is a physical barrier such as the Pyrenees, that's why a lot of Spanish authorities are in favour of further EU harmonisation) and more quality services for users. Nevertheless, it must be taken into account that such a measure could risk adding more complexity to the system, which could amount to more red tape.

- *Aspects that should be taken into account*
    - *Joint planning (cross-border and transnational public calls for tender) issued by the relevant national or EU authorities : Aragon Government, Association of European Border Regions, Fundacion Transpirenaica*
    - *Technical coordination (single approval system) – full interoperability : Aragon Government, Basque Government, Fundacion Transpirenaica*
    - *Harmonisation of the legal requirements: Basque Government*
    - *Quality of services and the volume of services provided, frequencies, number of destinations: Galicia-Northern Portugal European Grouping of Territorial Cooperation*
    - *Outlying locations : Galicia-Northern Portugal European Grouping of Territorial Cooperation*
    - *Transparency, equality, conditions of access: Parliament of Catalonia*

Compliance with the proportionality principle

- *Alternative action if proposed action goes further than is necessary to complete the Internal Market for rail:*
    - *EU action is appropriate: Basque Government*
    - *Set up systems for direct award by the EU: Aragón government, Fundacion Transpirenaica*
    - *Before anything is done, the legislation 1370/2007 must be fully implemented : regions de France*
    - *Enhancing passenger rights: Netwerksad Twente*
    - *Preserving the existing legal provisions till 2015: , Wielkopolska Spatial Planning Office*
    - *General Guidelines (through directive): Galicia-Northern Portugal European Grouping of Territorial Cooperation*

In this context, the proportionality principle should be duly taken into account and complied with.

Cross –border cooperation

Further market liberalisation in the rail transport sector would be positive for cross-border cooperation (for 60% of those who had given opinions on the impacts of further market opening

through new open access rights or compulsory competitive tendering regarding cross-border cooperation). In particular, liberalisation could improve that quality of cross-border cooperation, increase competition, encourage integrated services, reduce prices and improve quality, force railway companies to cooperate and also contribute to the opening of new routes.

Governance

All the local and regional authorities agreed that coordination between different levels of administration is essential to ensure quality rail services and, in the case of cross-border cooperation, it is crucial. In this context, multilevel governance can be a key for success and should be guaranteed.

More than 90% of the respondents supported that the involvement of local and regional authorities in the preparation of national rail strategies is essential, in ensuring high quality rail services. Local and regional authorities are best placed to detect the different need of the citizens in their respective territories: they can bring their knowledge and experience to the table.

EUROPEAN
COMMISSION

Brussels, 30.1.2013
SWD(2013) 10 final

Part 3

COMMISSION STAFF WORKING DOCUMENT

IMPACT ASSESSMENT

Accompanying the documents

Proposal for a Regulation of the European Parliament and of the Council amending Regulation (EC) No 1370/2007 concerning the opening of the market for domestic passenger transport services by rail

Proposal for a Directive of the European Parliament and of the Council amending Directive 2012/34/EU of the European Parliament and of the Council of 21 November 2012 establishing a single European railway area, as regards the opening of the market for domestic passenger transport services by rail and the governance of the railway infrastructure

{COM(2013) 28 final}
{COM(2013) 29 final}
{SWD(2013) 11 final}
{SWD(2013) 12 final}
{SWD(2013) 13 final}

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Disclaimer: This impact assessment commits only the Commission's services involved in its preparation and does not prejudge the final form of any decision to be taken by the Commission

ANNEX 3

Problem definition – facts & figures

1. OVERALL CONTEXT

Table 1a – Evolution of the rail modal share

EU-27 modal split for passenger transport (in %, based on pkm, 1995-2009)

	Passenger cars	P2W	Bus&Coach	Railway	Tram&Metro	Air	Sea
1995	73,1	2,3	9,4	6,6	1,3	6,5	0,8
1996	73,1	2,3	9,3	6,4	1,3	6,8	0,8
1997	73,1	2,3	9,1	6,3	1,3	7,1	0,8
1998	73,2	2,3	9,1	6,2	1,3	7,2	0,8
1999	73,2	2,3	8,9	6,2	1,3	7,3	0,7
2000	73,0	2,3	8,8	6,3	1,3	7,7	0,7
2001	73,3	2,3	8,7	6,2	1,3	7,5	0,7
2002	73,8	2,3	8,6	6,0	1,3	7,3	0,7
2003	73,7	2,3	8,5	5,9	1,3	7,6	0,7
2004	73,6	2,3	8,3	5,9	1,3	7,9	0,7
2005	73,0	2,4	8,3	6,0	1,3	8,4	0,6
2006	73,0	2,4	8,0	6,1	1,3	8,6	0,6
2007	72,8	2,3	8,1	6,1	1,3	8,8	0,6
2008	72,7	2,4	8,1	6,3	1,4	8,6	0,6
2009	73,5	2,4	7,8	6,2	1,4	8,0	0,6
2010	73,7	1,9	7,9	6,3	1,4	8,2	0,6

Source: Eurostat

Notes:

P2w: Powered 2-wheelers

Road: national and international haulage by vehicles registered in the EU-27

Source: EU Transport in Figures, Statistical Pocketbook 2011, tables 2.2.2 and 2.3.2.

Table 1b – Modal Split of Passenger Transport on Land by Country

2010

passenger-km in %

	Passenger Cars	Buses and Coaches	Railways	Tram & Metro	
EU27	***82.5***	***8.9***	**7.0**	***1.6***	**EU27**
EU15	***82.9***	***8.4***	**7.3**	***1.3***	**EU15**
EU12	***80.0***	***11.6***	**5.4**	***3.0***	**EU12**
BE	*78.4*	*13.6*	*7.2*	*0.8*	**BE**
BG	77.5	17.5	3.5	1.5	**BG**
CZ	65.8	18.1	6.8	9.3	**CZ**
DK	79.8	9.9	9.9	0.4	**DK**
DE	*84.6*	*5.9*	*7.9*	*1.6*	**DE**
EE	*80.9*	*16.5*	*2.0*	*0.6*	**EE**
IE	*84.1*	*12.6*	*3.1*	*0.3*	**IE**
EL	*80.5*	*17.1*	*1.1*	*1.4*	**EL**
ES	81.1	12.1	5.3	*1.5*	**ES**
FR	83.0	5.7	9.8	1.5	**FR**
IT	*81.6*	*12.1*	*5.5*	*0.8*	**IT**
CY	*82.1*	*17.9*	-	-	**CY**
LV	*85.3*	*10.2*	*3.9*	*0.6*	**LV**
LT	90.7	8.2	1.1	-	**LT**
LU	*83.5*	*12.1*	*4.5*	-	**LU**
HU	*66.8*	*20.3*	*9.8*	*3.2*	**HU**
MT	*81.5*	*18.5*	-	-	**MT**
NL	*82.9*	*7.1*	*9.0*	*0.9*	**NL**
AT	74.7	10.1	11.0	4.2	**AT**
PL	87.2	6.3	5.2	*1.3*	**PL**
PT	*84.1*	*10.6*	*4.1*	*1.1*	**PT**
RO	*75.5*	*12.0*	*5.4*	*7.1*	**RO**
SI	*86.5*	*10.7*	2.7	-	**SI**
SK	77.4	15.2	6.6	0.8	**SK**
FI	84.3	9.8	5.2	0.7	**FI**
SE	81.8	7.1	9.2	1.9	**SE**
UK	85.3	6.1	7.3	1.3	**UK**

Source: Eurostat

Table 1c – Evolution of rail modal split

GEO/TIME	1993	2000	2008	2009	2010	2010/1993	2010/2000
European Union (27	:	7.1	7.2	7.1	7.1		0
European Union (25	:	7	7.2	7.2	7.2		
European Union (15	6.7	6.7	7.3	7.3	7.4		
Belgium	5.9	6.1	7.2	7.3	7	19%	15%
Bulgaria	25.4	7.7	4	3.7	3.7	-85%	-52%
Czech Republic	12	8.3	7.1	6.8	7.6	-37%	-8%
Denmark	8.3	7.5	8.4	8.3	8.6	4%	15%
Germany (including	7.3	7.7	8.1	7.9	8	10%	4%
Estonia	:	2.7	2.1	2	2.1	-	-22%
Ireland	6.4	3	3.4	2.9	2.9	-55%	-3%
Greece	2.8	2.2	1.3	1.2	1.2	-57%	-45%
Spain	5.4	5.4	5.5	5.4	5.4	0%	0%
France	8	8.6	10.1	10.3	9.9	24%	15%
Italy	5.9	5.7	5.6	5.6	5.5	-7%	-4%
Latvia	:	4.8	5.2	4.8	4.8	-	0%
Lithuania	:	3.2	1	0.9	0.7	-	-78%
Luxembourg	5	5.5	4.3	4.3	4.4	-12%	-20%
Hungary	12.3	12.9	11.8	12.3	11.8	-4%	-9%
Netherlands	9.2	9	9.7	9.5	9.7	5%	8%
Austria	12.1	9.8	11.1	11.1	11.2	-7%	14%
Poland	:	11.7	6.2	5.5	5.2	-	-56%
Portugal	8.3	4.6	4.1	4.2	4.1	-51%	-11%
Romania	:	16.3	7.6	6.5	5.9	-	-64%
Slovenia	3.1	2.9	2.7	2.6	2.5	-19%	-14%
Slovakia	13.6	7.7	6.4	6.6	6.7	-51%	-13%
Finland	5	5.1	5.4	5.1	5.2	4%	2%
Sweden	6.4	7.5	9.4	9.5	9.4	47%	25%
United Kingdom	4.6	5.3	6.9	6.8	7.5	63%	42%
Variance EU15	25.6	6.6	8.4	9.0	8.9		
Variance EU25 rail		11.4	8.7	9.2	9.2		

Source: Eurostat

UK, Sweden, Belgium and France (and to a lesser extent Germany and the Netherlands) have seen their modal split increase in favour of rail.

Table 1d – Billion Passenger-kilometres in the EU, breakdown per Member State (2000-2010)

	1990	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	change 09/10 %	
EU27	**400.7**	**350.5**	**370.7**	**372.7**	**365.6**	**361.9**	**367.8**	**377.1**	**390.6**	**395.9**	**411.1**	**402.6**	***403.8***	***0.3***	**EU27**
EU15	**268.9**	**276.1**	**309.4**	**314.1**	**311.7**	**310.0**	**316.9**	**327.6**	**340.2**	**345.9**	**361.7**	**356.7**	***359.5***	***0.8***	**EU15**
EU12	**131.8**	**74.4**	**61.4**	**58.7**	**53.8**	**51.9**	**50.9**	**49.6**	**50.3**	**50.1**	**49.3**	**46.0**	**44.2**	**-3.8**	**EU12**
BE	6.5	6.8	7.7	8.0	8.3	8.3	8.7	9.2	9.6	9.9	10.4	10.4	*10.0*	*-3.8*	**BE**
BG	7.8	4.7	3.5	3.0	2.6	2.5	2.4	2.4	2.4	2.4	2.3	2.1	2.1	-2.1	**BG**
CZ	13.3	8.0	7.3	7.3	6.6	6.5	6.6	6.7	6.9	6.9	6.8	6.5	6.6	1.3	**CZ**
DK	5.1	4.9	5.5	5.7	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.2	6.3	3.2	**DK**
DE	61.0	71.0	75.4	75.8	70.8	71.3	72.6	74.9	78.8	79.1	82.4	81.2	83.0	2.2	**DE**
EE	1.5	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.2	-0.6	**EE**
IE	1.2	1.3	1.4	1.5	1.6	1.6	1.6	1.8	1.9	2.0	2.0	1.7	1.7	-0.3	**IE**
EL	2.0	1.6	1.9	1.7	1.8	1.6	1.7	1.9	1.8	1.9	1.7	1.4	1.3	-5.4	**EL**
ES	15.5	16.6	20.1	20.8	21.2	21.1	20.4	21.6	22.1	21.9	24.0	23.1	22.4	-3.2	**ES**
FR	63.7	55.6	69.9	71.5	73.5	71.7	74.3	76.2	79.5	81.6	86.6	86.0	85.9	-0.2	**FR**
IT	44.7	46.7	49.6	50.1	49.3	48.7	49.3	50.5	50.9	49.7	49.5	48.1	47.3	-1.7	**IT**
CY	-	-	-	-	-	-	-	-	-	-	-	-	-		**CY**
LV	5.4	1.4	0.7	0.7	0.7	0.8	0.8	0.9	1.0	1.0	1.0	0.8	0.7	-0.9	**LV**
LT	3.6	1.1	0.6	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	4.5	**LT**
LU	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	4.2	**LU**
HU	11.4	8.4	9.7	10.0	10.5	10.3	10.2	9.9	9.7	8.8	8.3	8.1	7.7	-4.8	**HU**
MT	-	-	-	-	-	-	-	-	-	-	-	-	-		**MT**
NL	11.1	16.4	14.7	14.4	14.3	13.8	14.5	15.2	15.9	15.5	15.3	15.4	15.4	0.0	**NL**
AT	8.9	10.1	8.7	8.8	8.8	8.7	8.7	9.5	9.3	9.6	10.8	10.7	10.7	0.8	**AT**
PL	50.4	26.6	24.1	22.5	20.7	19.6	18.7	18.2	18.6	19.9	20.2	18.6	17.9	-3.8	**PL**
PT	5.7	4.8	*4.0*	*4.0*	3.9	3.8	3.7	3.8	3.9	4.0	4.2	4.2	4.1	-1.0	**PT**
RO	30.6	18.9	11.6	11.0	8.5	8.5	8.6	8.0	8.1	7.5	7.0	6.1	5.4	-11.3	**RO**
SI	1.4	0.6	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	-3.2	**SI**
SK	6.4	4.2	2.9	2.8	2.7	2.3	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.0	**SK**
FI	3.3	3.2	3.4	3.3	3.3	3.3	3.4	3.5	3.5	3.8	4.1	3.9	4.0	2.1	**FI**
SE	6.6	6.8	8.2	8.7	8.9	8.8	8.7	8.9	9.6	10.3	11.1	11.3	11.2	-1.2	**SE**
UK	33.4	30.3	38.4	39.4	39.9	41.2	43.3	44.4	47.0	50.2	53.0	52.8	55.8	5.8	**UK**

Source: Eurostat

Table 1e – Thousand train-kilometres in the EU, breakdown per Member State (2000-2010)

	1993	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
AT	726,938	90,690	87,109	85,454	86,249	87,192	87,839	90,469	93,661	96,667	99,336	99,349
BE	250	77,466	76,224	79,390	79,789	81,498	79,861	79,403	80,696	81,375	77,061	-
BG	19,009	25,086	25,034	25,051	23,638	22,644	22,254	23,819	24,288	24,181	24,403	23,893
CZ	12,855	98,422	100,870	102,187	111,206	112,631	113,157	115,523	117,553	120,924	125,172	122,149
DK	81,194	56,505	58,178	59,138	56,672	56,469	58,795	59,755	56,730	57,667	70,317	74,140
EE	11,140	3,985	2,714	2,167	3,296	3,188	3,012	2,995	2,780	2,650	2,505	2,616
FI	-	27,575	28,654	30,467	31,275	31,365	31,408	32,537	34,601	35,079	35,120	35,048
FR	249,366	373,414	380,570	396,840	385,329	397,623	393,530	397,812	430,125	408,850	450,985	395,948
DE	139,608	741,257	694,853	725,920	709,958	717,880	711,400	702,710	694,092	687,179	675,930	674,886
GR	-	-	-	-	15,169	16,553	15,893	16,905	17,399	18,318	-	-
HU	203,274	78,413	81,903	82,631	81,308	85,647	81,542	80,765	88,938	88,393	88,324	94,038
IE	31,603	10,580	12,356	12,602	12,245	12,417	15,122	14,505	15,860	13,666	15,562	16,582
IT	37,275	251,831	259,849	265,268	270,002	277,659	273,791	278,649	284,245	282,826	280,424	265,943
LV	-	9,229	8,327	7,427	7,439	7,401	7,533	7,328	7,450	5,862	6,030	5,070
LT	10,511	7,682	6,603	6,077	6,299	5,534	5,366	4,697	4,814	5,432	5,762	5,487
LU	7,555	6,157	5,912	5,647	5,516	5,715	5,907	6,029	6,258	6,134	6,139	7,390
NL	135,502	119,379	107,500	107,400	112,097	115,200	114,149	109,915	109,604	110,820	112,693	113,298
NO	8,543	25,247	24,114	22,667	28,433	28,158	28,223	27,946	27,476	27,328	28,091	28,811
PL	67,092	167,581	161,529	161,452	155,191	140,429	119,765	125,207	123,054	122,917	121,348	124,304
PT	94,800	31,775	30,465	30,159	29,198	29,208	30,001	30,056	30,914	31,603	31,587	30,707
RO	418,400	-	-	-	-	68,011	134	185	187	231	231	222
SK	418,400	35,853	35,557	35,590	30,828	31,144	31,292	31,271	31,360	31,319	31,703	31,591
SI	-	10,943	11,533	11,465	11,626	11,939	11,887	11,816	11,600	11,673	11,700	11,805
ES	5,665	148,595	153,062	154,254	155,415	160,074	161,928	157,283	165,516	177,212	180,266	180,478
SV	516,340	59,800	63,500	64,688	52,300	46,800	41,700	43,800	43,300	44,100	50,600	50,300
CH	818,836	103,226	107,875	110,327	113,333	116,229	125,515	138,245	142,006	134,913	150,460	152,448
UK	972,499	430,822	435,900	443,300	446,200	458,400	466,327	468,046	469,824	455,234	485,903	507,384

Source: Union Internationale des Chemins de Fer (UIC)

Table 1f – Billion passenger-kilometres in the EU for domestic services, breakdown per Member State

(2000-2010)

	1990	1995	2000	2005	2007	2008	2009	2010
EU 25	**286104**	**320660**	**347956**	**369451**	**367228**	**378906**	**286879**	**245514**
AT				6895	7262	7403	n.a.	n.a.
BE	5592	5785	6317	7771	8547	8913	9005	9231
BG	7793	4693	3472	2388	2238	2264	2089	2045
CZ	n.a.	7602	6681	6285	6536	6324	6133	6263
DE	44600	70977	75404	74946	75516	76909	76583	78515
DK				5421	5915	5983	5999	6200
EE	1510	421	261	248	246	245	232	229
EL		1513	1608	1804	1852	1599	1296	n.a.
ES	14992	14834	18035	19155	19348	21461	21184	20421
FI	3254	3133	3345	3401	3675	3940	3785	3869
FR	73900	64500	80700	88900	72800	77000	n.a.	n.a.
HU	11403	8441	9693	9880	8379	7923	7681	7316
IE				1564	1902	1876	1604	1582
IT		40700	44308	43889	44707	44707	43389	n.a.
LT	1521	746	335	259	223	235	213	226
LU				254	233	246	239	246
LV	3327	779	568	800	889	865	686	670
NL	n.a.	13500	14700	14752	15634	15895	15927	16002
PL	49683	26346	23844	17109	18772	19628	18243	17918
PT				3753	3933	4085	4049	4008
RO	29417	19928	11384	7816	7329	6805	5995	5308
SE	5946	6271	7706	8338	9771	10462	10706	10674
SI	1166	491	593	666	690	713	718	680
SK					1953	2077	n.a.	n.a.
UK	32000	30000	39002	43157	48878	51348	51123	54111

Source: Contributions of Member States provided to Commission services in the context of the Railway Market Monitoring Survey (RMMS)

Table 1g – Size of domestic market as a percentage of pkm

	2005	2007	2008	2009	2010
EU 25 domestic pkm	369	367	379	376	378
% all pkm	98.0%	93.0%	92.6%	93.5%	93.9%

Source: Contributions of Member States provided to Commission services in the context of the Railway Market Monitoring Survey (RMMS) and Eurostat

2. QUALITY OF PASSENGER SERVICES

2.1. Consumer scoreboard 2011

Every year, the Directorate-General Health and Consumer protection (SANCO) and its executive agency (EAHC) analyses the customer satisfaction of several markets which it then scores on the basis of a Market Performance Index (MPI). The screening hinges on comparability of offers, trust of consumers, complaints, switching and ease of switching and overall satisfaction. The results of the Consumer Scoreboard are available in the website of DG SANCO.

Table 2 - Consumer Scoreboard 2011, market performance indicators per type of goods and services

	Normalised MPI by market - EU27 unweighted		diff	2011	2010
SERVICES	personal care services	108.8	1.4	1	1
	culture and entertainment	107.4	1.0	2	2
	commercial sport services	105.5	1.3	3	3
	holiday accommodation	104.8	0.9	4	4
	airline services	104.8	1.3	5	7
	postal services	103.7	0.6	6	8
	cafés, bars and restaurants	103.7	2.1	7	10
	vehicle insurance	103.2	1.3	8	9
	packaged holidays & tours	103.0	1.6	9	13
	vehicle rental services	102.2	0.7	10	11
	gambling and lottery services	101.7	0.3	11	12
	home insurance	101.5	0.7	12	14
	tram, local bus, metro	101.4	0.9	13	15
	fixed telephone services	100.5	0.9	14	17
	gas services	100.2	0.0	15	16
	vehicle maintenance and repair	98.6	0.9	16	22
	legal and accountancy services	98.6		17	
	train services	98.5	-0.8	18	18
	loans, credit and credit cards	98.4		19	
	bank accounts	98.3	0.4	20	21
	water supply	98.3	-0.1	21	20
	private life insurance	97.8		22	
	mobile telephone services	97.2	-0.4	23	24
	maintenance services	96.9	0.6	24	27
	internet provision	96.1	0.3	25	28
	electricity services	95.0	-1.3	26	26
	mortgages	94.2		27	
	real estate services	93.9	1.6	28	29
	TV-subscriptions	93.3		29	
	investment products, private pensions and securities	92.6	1.7	30	30
GOODS	books, magazines and newspapers	105.2	-0.6	1	1
	non-alcoholic drinks	103.0	0.1	2	3
	spectacles and lenses	102.7		3	
	bread, cereals, rice and pasta	102.4	-0.6	4	2
	dairy products	102.2		5	
	small household appliances	101.8	0.5	6	7
	entertainment goods	101.7	2.2	7	12
	alcoholic drinks	101.4	-0.7	8	4
	personal care products	101.2	-0.2	9	5
	large household appliances	101.1	-0.3	10	6
	non prescription medicines	100.7	0.3	11	9
	electronic products	100.6	-0.7	12	8
	furniture and furnishings	99.9	-0.3	13	10
	maintenance products	99.7	1.3	14	17
	new cars	98.9	-0.3	15	13
	ICT products	98.8	-0.4	16	15
	fruit and vegetables	97.9	-1.2	17	16
	meat and meat products	97.6	-0.2	18	18
	fuel for vehicles	96.7	-2.5	19	14
	clothing and footwear	95.5	-0.9	20	19
	second hand cars	90.8	-0.5	21	20

2.2. Eurobarometer surveys on passenger satisfaction

The Directorate Generals on Mobility and Transport (MOVE) and Communication (COMM) have taken stock of consumer satisfaction in rail in two Eurobarometer surveys:

- Flash Eurobarometer 2011 survey devoted to satisfaction with frequency, purpose of journeys by rail, railway stations and with various features of the trains (presented in 2.2.2)

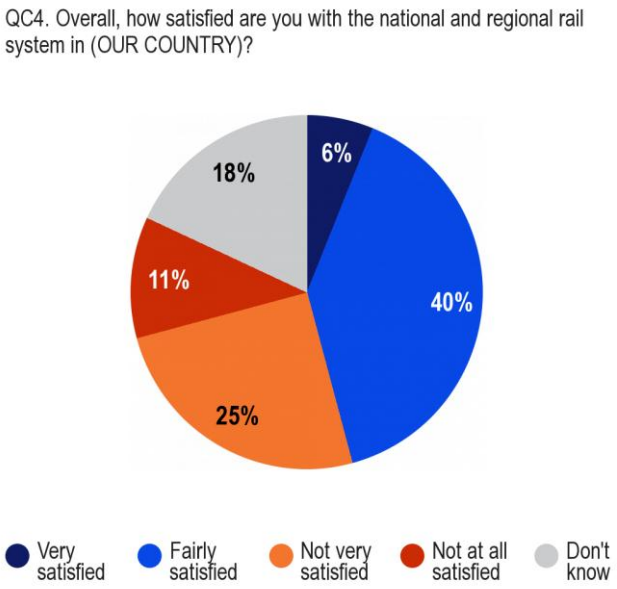
- Eurobarometer 2012 on competition in rail which a question on the overall satisfaction with rail (presented in 2.2.1)

2.2.1 – Overall satisfaction with rail

The Eurobarometer 2012 survey is based on face-to-face interviews with approximately 26.000 persons in the 25 Member States of the EU that have railways (Malta and Cyprus don't have any railway network). The survey was carried out from 10-25 March 2012.

Respondents to the Eurobarometer 2012 survey were asked to what extent they are satisfied with their national and regional rail system[159]. Almost half responded that they were satisfied with it: *very satisfied* (6%) or *fairly satisfied* (40%). However, over one-third is not satisfied: *not very satisfied* (25%) or *not at all satisfied* (11%). Almost one-fifth could not form an opinion on this matter (18%).

Graph 1 – Overall level of satisfaction

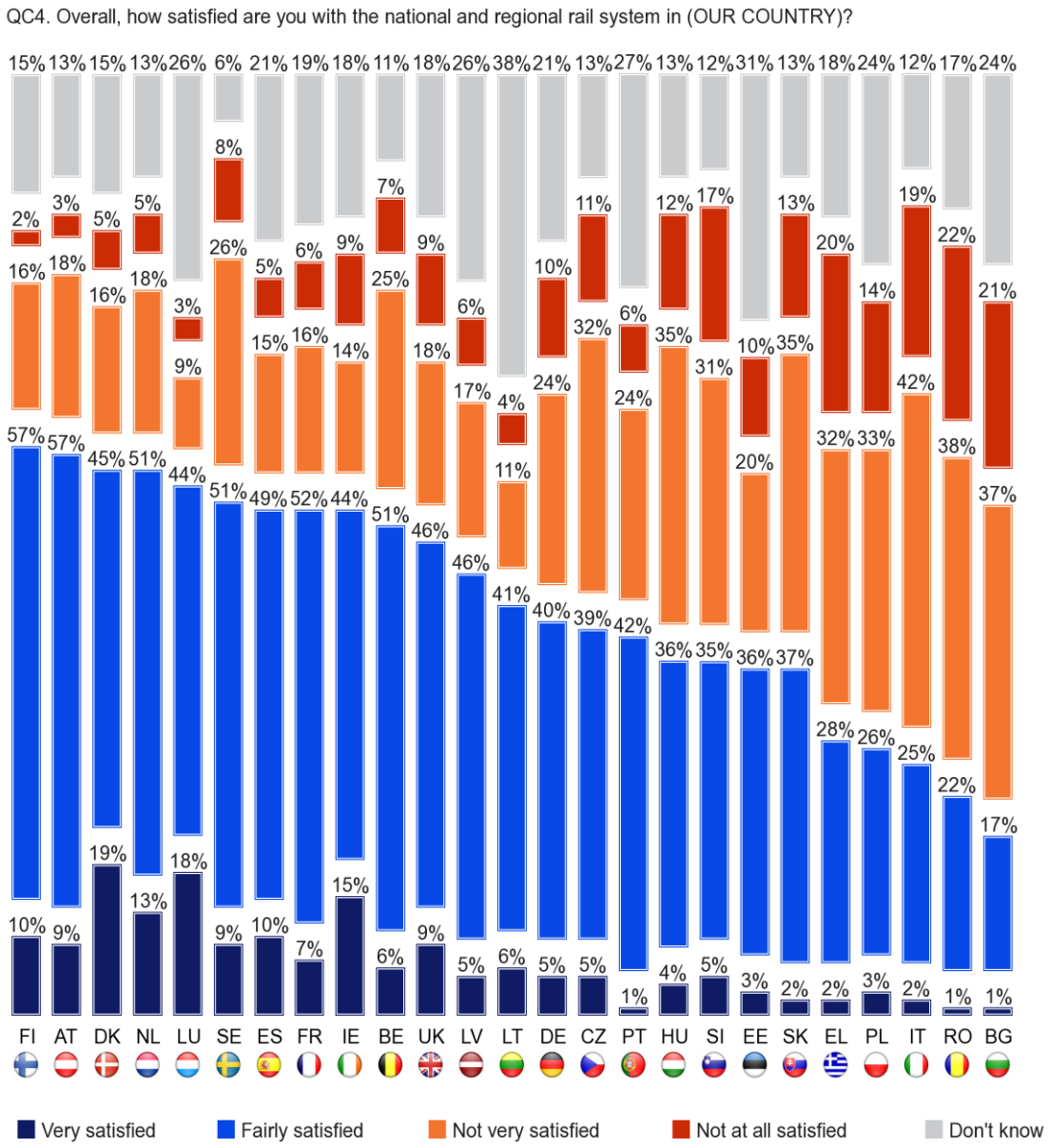


Base: Total number of respondents (n=25591)

[159] QC4 Overall, how satisfied are you with the national and regional rail system in (OUR COUNTRY)?

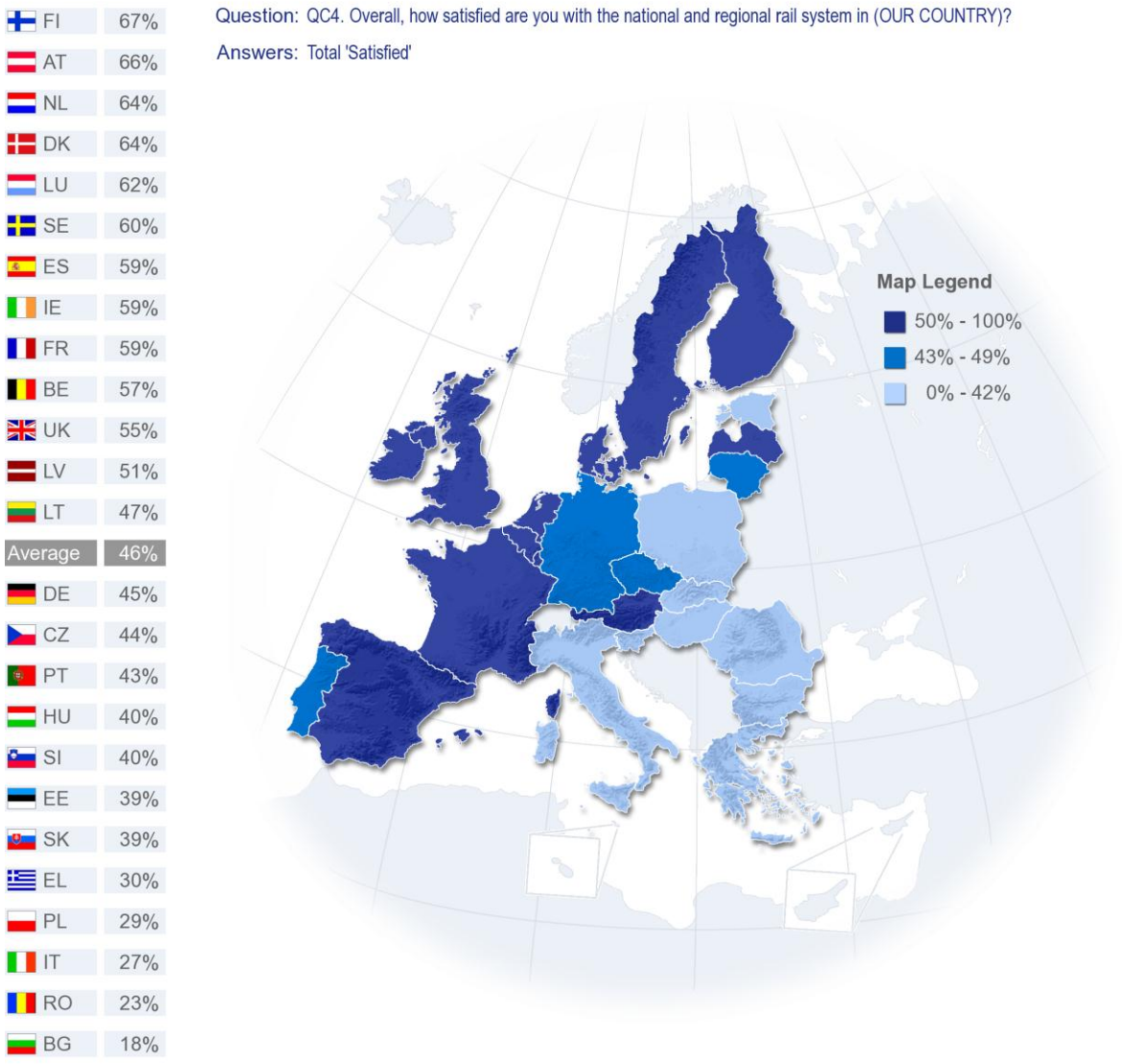
Country-by-country analysis reveals that the majority of respondents in 12 of the 25 Member States surveyed are *satisfied* with their national or regional rail system. These include the northern European countries Finland (67%), Sweden (60%), Denmark (64%) and Latvia (51%) and the western European countries Austria (66%), the Netherlands (64%), Luxembourg (62%), Ireland, France and Spain (all 59%), Belgium (57%), and the UK (55%). In eight Member States, more interviewees were dissatisfied than satisfied. These include Italy (61% dissatisfied), Romania (60%), Bulgaria (58%), and Greece (52%). Finally, interviewees in Lithuania (38%) and Estonia (31%) are most likely to answer they *don't know*.

Graph 2 – Level of satisfaction per Member State



Base: Total number of respondents (n=25591)

Graph 3 – Overall satisfaction per Member State



Base: Total number of respondents (n=25591)

Table 3 – Socio-economic breakdown of satisfaction

QC4 Overall, how satisfied are you with the national and regional rail system in (OUR COUNTRY)?

	Total 'Satisfied'	Total 'Not satisfied'	Don't know
TOTAL	46%	36%	18%
Age			
15-24	55%	35%	10%
25-39	46%	39%	15%
40-54	42%	40%	18%
55 +	44%	32%	24%
Education (End of)			
15-	40%	33%	27%
16-19	43%	38%	19%
20+	51%	37%	12%
Still studying	58%	34%	8%
Subjective urbanisation			
Rural village	45%	33%	22%
Small/ Mid-size town	44%	39%	17%
Large town	50%	36%	14%
National or regional trains			
At least once a week	63%	36%	1%
Several times month\ Year	66%	33%	1%
Once a year\ Less\ Never	38%	37%	25%

Base: Total number of respondents (n=25591)

A **socio-demographic** breakdown shows that age, education, subjective urbanisation and user frequency influence the extent of satisfaction with the national or regional rail system.

The younger the interviewees, the more likely they are to be *satisfied (fairly satisfied or very satisfied)*: 55% of the youngest respondents (aged 15-24) compared to 42% of the 40-54 age group and 44% of the oldest category (55+). Respondents educated until the age of twenty or beyond (51%) are more likely to be satisfied than respondents who studied only until age 15 or younger (40%). The same is true of managers (55%) and students (58%) compared to self-employed interviewees (37%). Inhabitants of small or mid-size towns (39%) are slightly more inclined to be *not satisfied (not very satisfied or not at all satisfied)* than rural villagers (33%).

Turning to user frequency of national and regional trains, rail passengers are notably more likely to be satisfied than non-rail passengers: 63% of regular passengers (at least once a week) and 66% of occasional passengers (several times monthly or early) compared to 38% of non-rail passengers (who seldom or never travel by train).

2.2.2 – Satisfaction with rail services

2.2.2.1 – Satisfaction in 2011

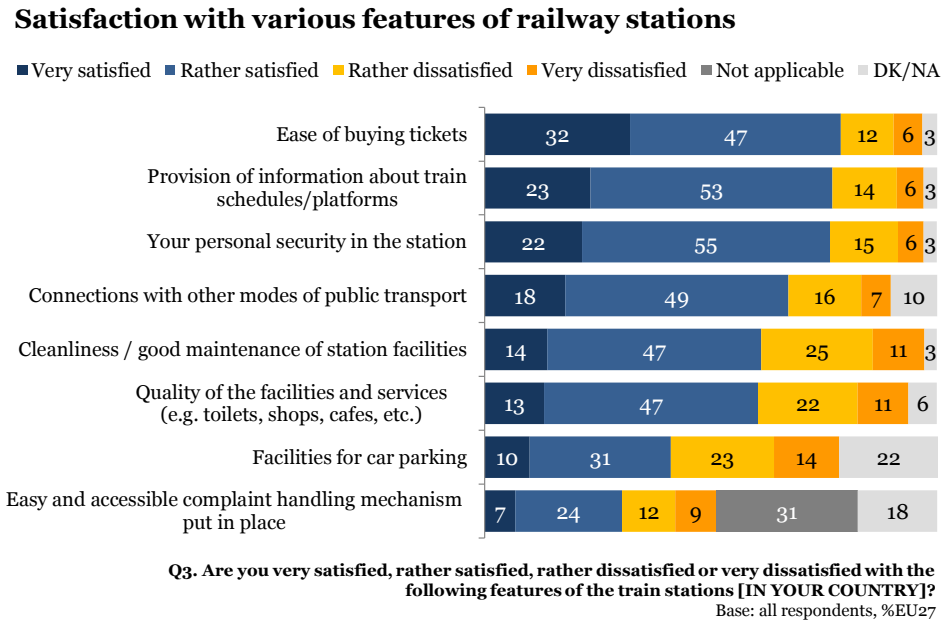
The quality of rail freight services in the European Union remains difficult to measure as a result of a general lack of indicators. Nevertheless, the gradual implementation of performance monitoring of rail freight services on the different freight corridors should provide some information on service punctuality.

In this context, Directorate Generals on Mobility and Transport (MOVE) and Communication (COMM) commissioned a Eurobarometer survey, where some 10.000 persons per surveyed over the telephone on frequency and purpose of journeys by rail, satisfaction with various features of stations and trains.

The flash Eurobarometer 2011 found that the main concerns of passengers are cleanliness and the quality of the facilities and services, where satisfaction is below 60%. Passengers also consider that particular attention should be paid in stations to car parks, the quality of facilities and cleanliness and maintenance. On the other hand, passengers are generally satisfied with security on board trains, journey times forecast, comfort levels in passenger coaches, ticket distribution, information and security. The level of satisfaction with regard to stations varies considerably from one country to the next; it is very high in Spain and Luxembourg, but remains low in Poland and Hungary.

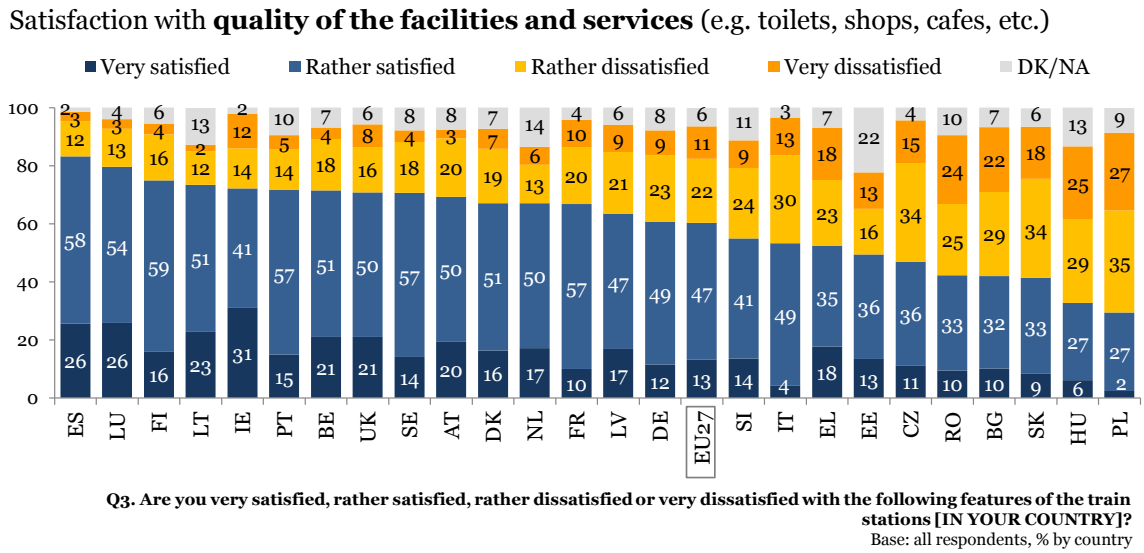
Punctuality appears satisfactory in a significant number of Member States (66% of overall satisfaction in the EU), but is considered insufficient by more than 40% of those surveyed in Poland, Germany, Sweden, Romania and France.

Graph 4 - Satisfaction with various features of railway stations



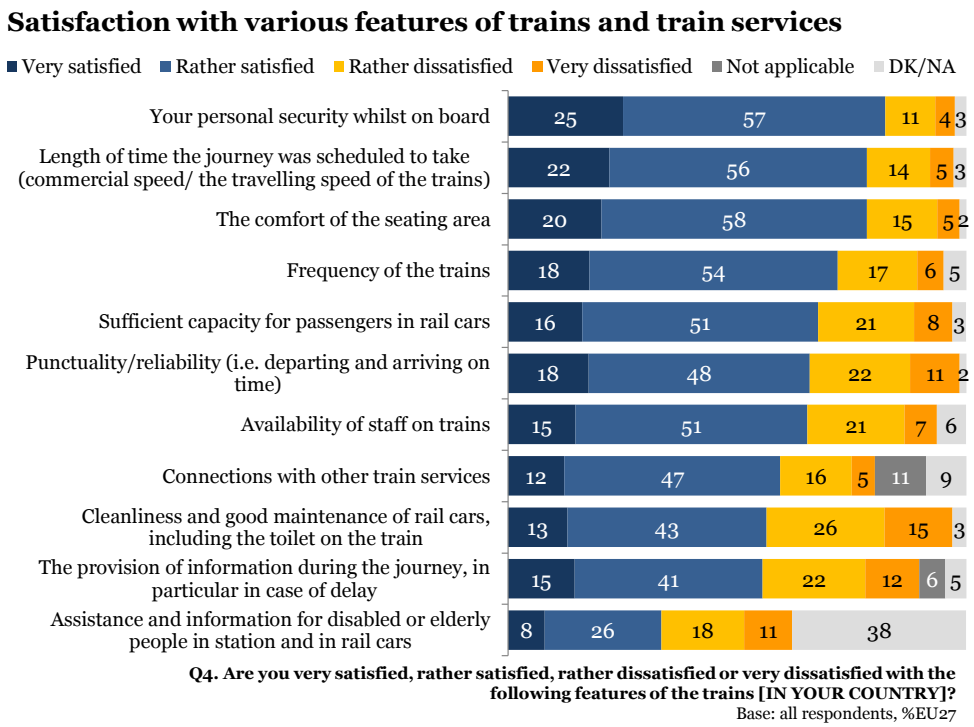
Source: Flash Eurobarometer survey on passengers' satisfaction with rail services, June 2011

Graph 5 - Satisfaction with quality of the facilities and services



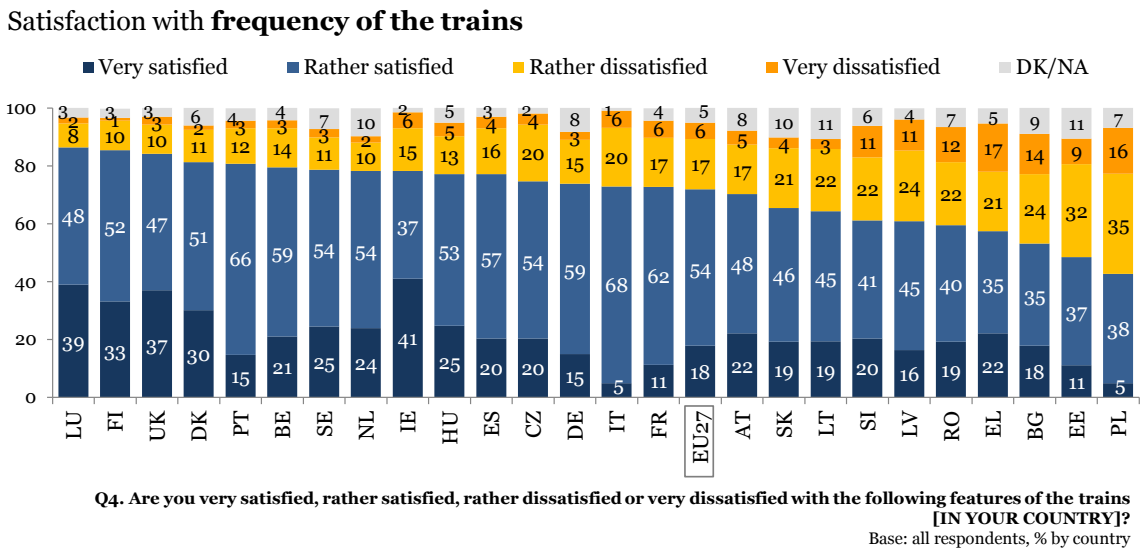
Source: Flash Eurobarometer survey on passengers' satisfaction with rail services, June 2011

Graph 6 - Satisfaction with various features of trains and train services



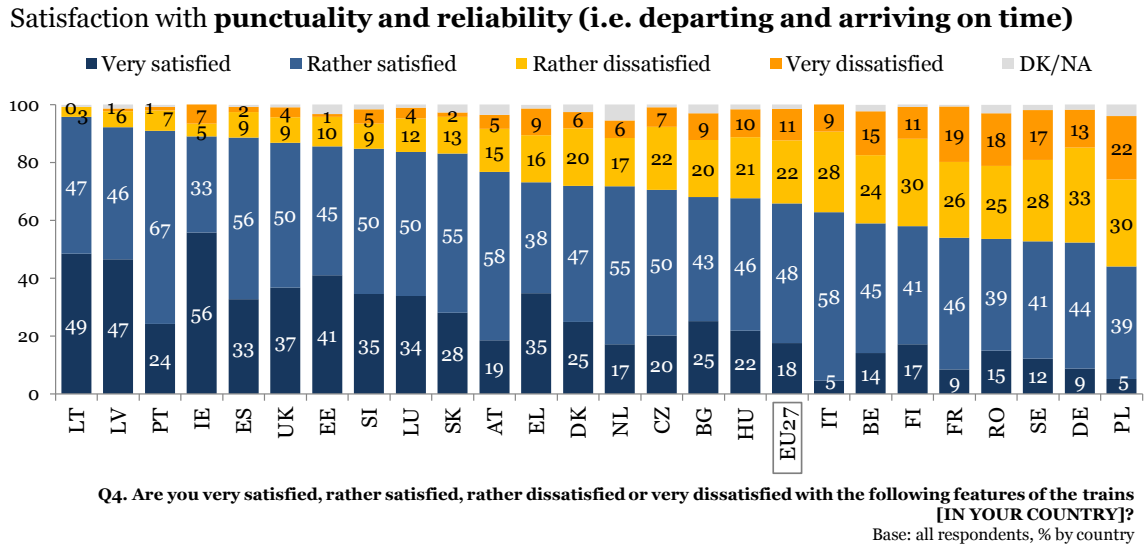
Source: Flash Eurobarometer survey on passengers' satisfaction with rail services, June 2011

Graph 7 - Satisfaction with frequency of the trains



Source: Flash Eurobarometer survey on passengers' satisfaction with rail services, June 2011

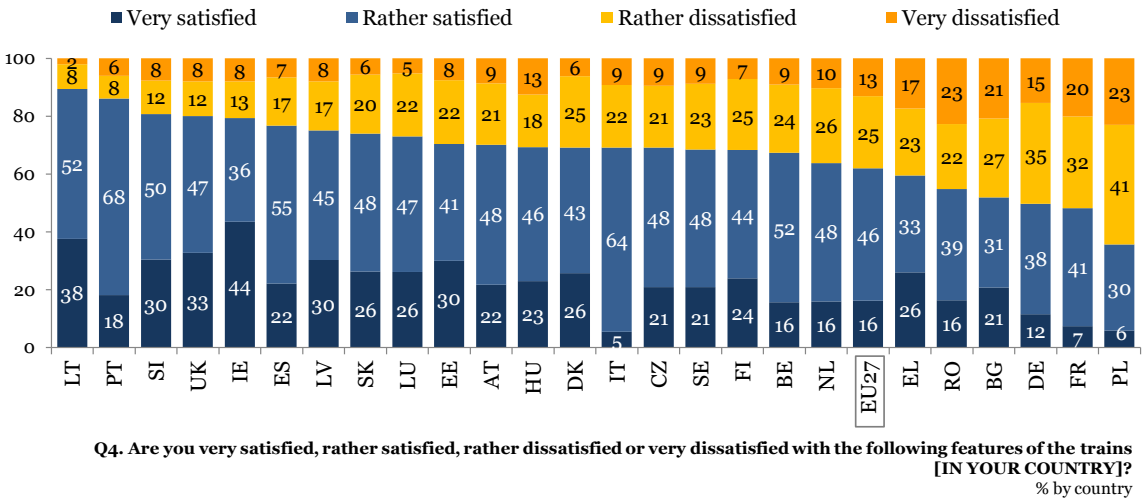
Graph 8 - Satisfaction with punctuality and reliability



Source: Flash Eurobarometer survey on passengers' satisfaction with rail services, June 2011

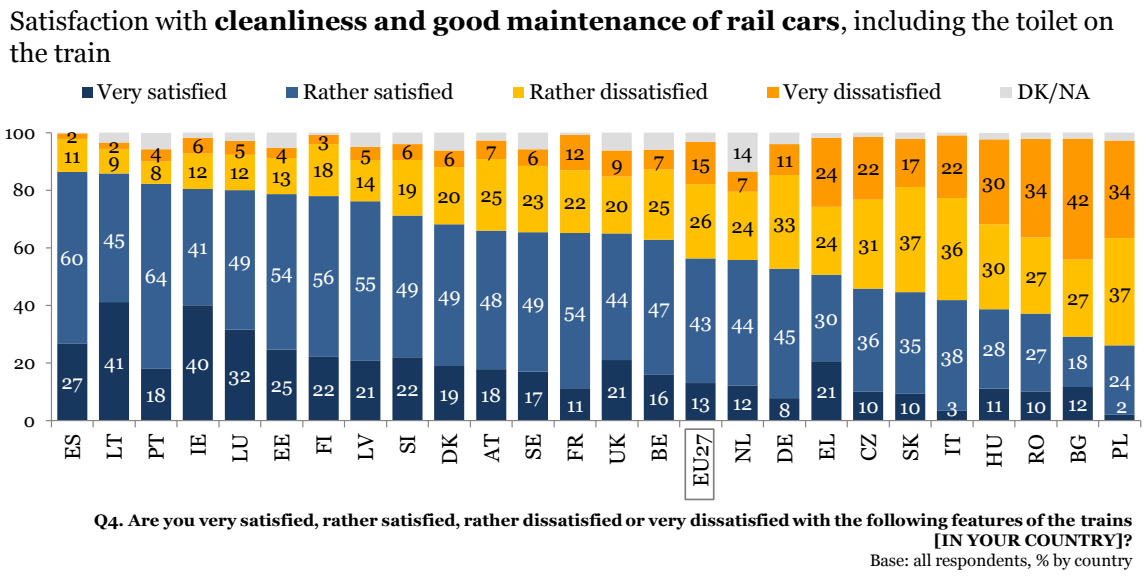
Graph 9 - Satisfaction with the provision of information during the journey, in particular in case of delay

Base: those respondents who provided an answer



Source: Flash Eurobarometer survey on passengers' satisfaction with rail services, June 2011

Graph 10 - Satisfaction with cleanliness and good maintenance of rail cars



Source: Flash Eurobarometer survey on passengers' satisfaction with rail services, June 2011

2.2.2.2-Benchmarking satisfaction

On the one hand, it is difficult to identify a definitive benchmark for customer satisfaction. On the other hand, it is obvious that if satisfaction levels are below 50%, it will be difficult to lure travellers to rail from other transport modes.

The table below provides an analysis of the number of Member States whose level of satisfaction is above 75% and 70%.

Table 4a – Analysis of satisfaction in the Flash Eurobarometer 2011

	MS with satisfaction rates above 75%	(Other) MS with satisfaction rates above 70%	EB2011 EU average
Quality of facilities	ES, LU, FI	LT, IE, PT, BE, UK, SE, AT	60%
Frequency	LU, FI, UK, DK, PT, BE, SE, NL	IE, HU, ES, CZ, DE, IT, FR, AT	72%
Punctuality	LT, LV, PT, IE, ES, IE, UK, EE, SI, LU, SK, AT	EL, DK, NL, CZ	66%
Information on delays	LT, PT, SI, UK, IE, ES, LV	SK, LU, EE, AT	62%
Cleanliness	ES, LT, PT, IE, LU, EE, FI, LV	SI	56%
MS quoted 5 times	-	ES, LU, PT	
MS quoted 4 times	LU, ES, PT	UK, IE, AT	
MS quoted 3 times	FI, UK, LT, LV, IE	FI, LT, LV, SI	

The railway systems which have scored best in the Eurobarometer 2011 are Spain, Luxembourg, Portugal, UK, Ireland and Austria. Citizens in Finland, Lithuania, Latvia and Slovenia rate also well their railway systems. With the notable exception of Portugal and Slovenia, all these Member States score well in terms of overall satisfaction in the Eurobarometre 2012.

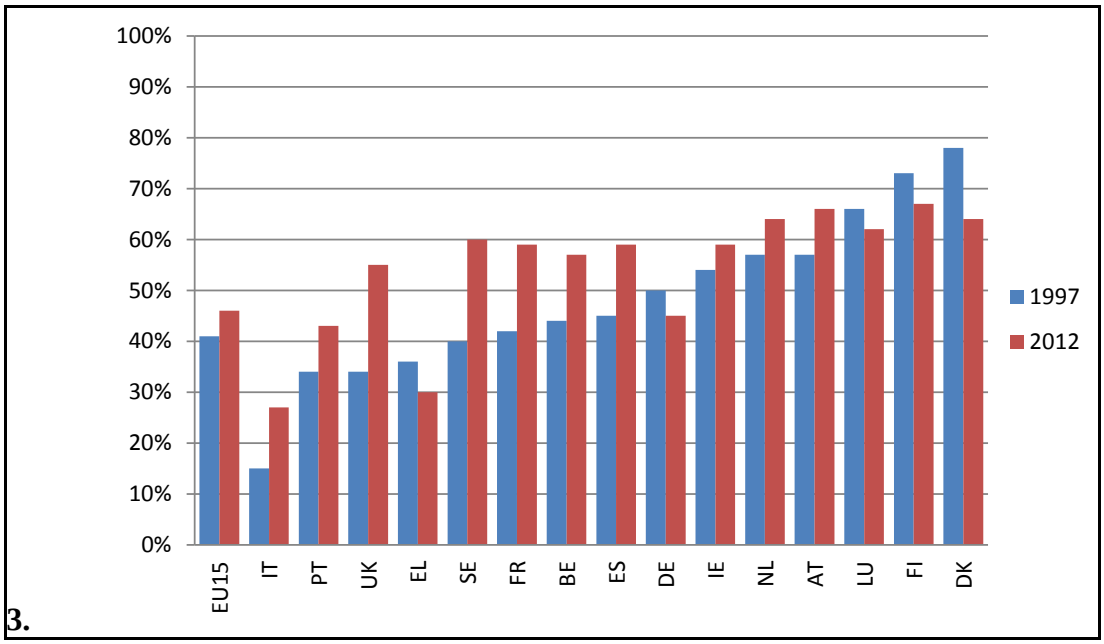
Similarly, while overall satisfaction appears to be relatively high in Sweden, France, Belgium and Netherlands in the Eurobarometer 2012, these countries do not appear well ranked in the Eurobarometer 2011. A series of delays resulting from snow in 2010-2011 and leading to important service disruption probably reflect dissatisfaction in the Flash Eurobarometer 2011 which is not found in the Eurobarometer 2012.

2.2.2.3- Evolution of satisfaction: 1997-2011

The Graph 11 shows the level of, and changes in, overall satisfaction with rail services in different Member States between 1997 and 2012 (a Eurobarometre survey on railway services was conducted in 1997[160]). Satisfaction for these Member States as a whole increased from 41% to 46% over this period but the responses for individual Member States vary considerably. In 10 of the 15 Member States shown there was an increase in satisfaction and this exceeded 10 percentage points in Belgium, France, Spain, Sweden and the UK. However, a number of Member States with developed rail systems, including Denmark, Germany and Finland, experienced a reduction in satisfaction and the satisfaction score remains below 65% in all but two.

[160] European Commission – INRA (1997), Eurobarometre 47.0, Eurobaromtre 47.0, L'Europe des consommateurs: les citoyens face à l'ouverture à la concurrence des monopoles de services publics", prepared for DG XXIV, 21.05.1997

Graph 11 – Satisfaction with railways services – 1997 and 2012



3.

Source: Eurobarometer May 2012 - special survey 388, Eurobaromtre 47.0, L'Europe des consommateurs: les citoyens face à l'ouverture à la concurrence des monopoles de services publics".

2.2.3 – ANALYSIS OF THE QUALITY OF RAIL SERVICES

2.2.3.1- AVAILABILITY AND FREQUENCY

TABLE 5A PROVIDES THE EVOLUTION OF TRAIN-KILOMETRES BETWEEN 1993, 2000 AND 2008. IT ALSO PROVIDES THE GROWTH RATES AND THE VARIANCE OF TRAIN-KILOMETRES, BASED ON THE DATA PROVIDED IN TABLE 1E.

Train-kilometres have grown some 11% in the EU since 1993 and some 2% since 2000. The variance of train-kilometres between the Member States has increased by 31% between 1993 and 2008.

Train-kilometres have increased the most in Spain, Ireland, Finland, France and the UK since 1993. They have decreased most in Sweden and the Baltic States.

Table 5b provides the evolution of train-kilometres per rolling stock to approach train frequency (i.e. utilisation rates of trains) – see also 3.2.4

Train-km per rolling stock has increased by 7% since 2000 in the EU25 (no data for 1990). The variance has increased since 1990.

Table 5a – Evolution of train-kilometres 1993-2000-2008

	1993	2000	2008	2008/1993	2008/2000
EU	2,624,752	2,863,040	2,920,312	11%	2%
AT	94,111	90,690	96,667	3%	7%
BE	72,329	77,466	81,375	13%	5%
BG	33,272	25,086	24,181	-27%	-4%
CZ	93,259	98,422	120,924	30%	23%
DE	636,861	741,257	687,179	8%	-7%
DK	49,937	56,505	57,667	15%	2%
EE	5,479	3,985	2,650	-52%	-34%
EL	13,273	-	18,318	38%	-
ES	125,290	148,595	177,212	41%	19%
FI	25,169	27,575	35,079	39%	27%
FR	321,456	373,414	408,850	27%	9%
HU	71,746	78,413	88,393	23%	13%
IE	9,734	10,580	13,666	40%	29%
IT	241,295	251,831	282,826	17%	12%
LT	12,004	7,682	5,432	-55%	-29%
LU	5,525	6,157	6,134	11%	0%
LV	14,193	9,229	5,862	-59%	-36%
NL	111,845	119,379	110,820	-1%	-7%
PL	183,047	167,581	122,917	-33%	-27%
PT	29,524	31,775	31,603	7%	-1%
RO	n/a	n/a	231	n/a	-
SE	58,451	59,800	44,100	-25%	-26%
SI	11,505	10,943	11,673	1%	7%
SK	35,099	35,853	31,319	-11%	-13%
UK	370,348	430,822	455,234	23%	6%
VAR	2.2039E+10	2.981E+10	2.885E+10		

Table 5b – Train-kilometres per rolling stock

	1995	2010	2008/1990
AT	23.92	33.41	40%
BE	21.39	22.59	6%
BG	12.89	17.45	35%
CZ	18.04	27.06	50%
DE	26.53	36.35	37%
DK	32.58	56.73	74%
EE	8.35	13.84	66%
EL	20.22	-	-
ES	31.55	31.86	1%
FI	26.10	32.72	25%
FR	19.54	23.44	20%
HU	16.92	29.99	77%
IE	28.44	28.01	-2%
IT	18.26	21.34	17%
LT	15.52	16.28	5%
LU	51.25	34.53	-33%
LV	9.81	10.33	5%
NL	47.66	40.12	-16%
PL	14.56	17.95	23%
PT	23.94	31.82	33%
RO	-	-	-
SE	35.07	57.75	65%
SI	18.97	33.25	75%
SK	14.38	20.65	44%
UK	30.39	43.18	42%
EU25*	23.74	29.59	25%
VAR*	69.2	100.1	45%
*average and variance of complete data series			

2.2.3.2- PUNCTUALITY AND RELIABILITY

It is difficult to trace back data on punctuality and reliability.

Table 5c compares punctuality from various sources between 2005 and 2010.

		2005 (COMPETE Report)		2008 (UIC / Network rail)	
		Local and regional	Long distance	Local and regional	Long distance
	Railway company	Trains on time (<5 mn)	Trains on time (<5 mn)	Trains on time (<5 mn)	Trains on time (<5 mn)
BE	SNCB/NMBS			96%	
BG	BDZ			94%	89%
CZ	CD	92.3% (overall)		92%	92%
DE	DB	95% (overall)			
ES	RENFE		96%	78%	
FI	VR	97%		99%	97%
FR	SNCF		82-86%	90%	92%
GB	ATOC	83% (overall)	79%	89.9% (overall)	86%
GR	OSE			92%	86%
HU	GySEV			95%	83%
HU	MAV START			95%	92%
IT	FNM			90%	
IT	FS			90%	90%
LT	LG			99%	86%
LV	LDZ			100%	100%
NL	NS			93%	
PL	PKP	97% (overall)		92%	69%
PT	CP			91%	63%
RO	CFR Calatori			99%	100%
SE	SJ			90%	
SK	ZSSK			97%	93%

Evolution of punctuality in United Kingdom

2000/1	2001/2	2002/3	2003/4	2004/5	2005/6	2006/7	2007/8	2008/9
79.10%	78%	79.20%	81%	83.60%	86.40%	88.10%	89.90%	90.60%

Source: Network rail

Table 5d – Punctuality 2010 and 2011.

		2010 (quality reports to ERA)		2011 (quality reports to ERA)	
		Local and regional	Long distance	Local and regional	Long distance
	Railway company	rains on time (<5 mn	rains on time (<5 mn	Trains on time (<5 mn)	Trains on time (<5 mn)
BE	SNCB/NMBS	90.4		91.7	
BG	BDZ	96	89	94%	84%
CZ	CD	94%		96.8	
DE	DB	84%		80	
ES	RENFE			97.01	88.8
FI	VR				72.7
FR	SNCF				90.8
GB	ATOC	91.5%			
GR	OSE				
HU	GySEV	GySev only provides data for delays less or more 60 min: 99,71/98,16 in 2010 and 99.79/9			
HU	MAV START				
IT	FNM			88.60	
IT	FS	97%	92%	97.6	93.7
LT	LG			98.1	70.9
LV	LDZ				
NL	NS	92.5		94.7	
PL	PKP	88%		89.6	
PT	CP			83.8	78.4
RO	CFR Calatori				
SE	SJ	85		88	89
SK	ZSSK	95%		95.94	

Source: Quality Reports European Railways Agency (ERA)

2.2.3.3-SAFETY

Table 5e- Number of victims in rail (2004-2011)

GEO/TIME	2004	2005	2006	2007	2008	2009	2010	2011	2011/2004	Variance
European	:	:	2,855	2,911	2,845	2,573	2,580	2,322		52,164
European	3,176	3,049	2,422	2,479	2,322	2,186	2,221	1,953	-39%	181,089
European	1,450	1,395	1,329	1,302	1,114	1,104	1,207	952	-34%	28,248
Belgium	42	50	48	85	41	39	223	50	19%	3,923
Bulgaria	:	:	123	61	82	50	38	118		1,262
Czech Rep	343	337	141	126	183	118	155	103	-70%	9,360
Denmark	36	35	30	19	21	30	18	17	-53%	62
Germany (	382	366	382	399	362	323	295	323	-15%	1,315
Estonia	37	45	37	33	19	17	12	16	-57%	153
Ireland	3	1	1	3	4	9	0	0	-100%	9
Greece	51	80	89	54	46	44	49	28	-45%	395
Spain	175	97	111	109	72	62	80	43	-75%	1,627
France	133	121	136	126	132	137	114	141	6%	82
Italy	146	231	168	120	107	153	150	107	-27%	1,638
Latvia	74	66	63	45	60	29	37	34	-54%	283
Lithuania	59	49	72	49	53	45	46	41	-31%	96
Luxembou	0	0	17	0	0	4	0	0		36
Hungary	451	413	163	151	175	176	152	160	-65%	15,712
Netherland	45	44	29	30	26	23	20	17	-62%	107
Austria	119	109	104	115	93	101	81	86	-28%	183
Poland	689	694	502	633	574	564	483	543	-21%	6,374
Portugal	122	91	86	92	81	50	38	24	-80%	1,068
Romania	41	51	310	371	441	337	321	251	512%	21,246
Slovenia	54	23	20	47	50	25	26	16	-70%	228
Slovakia	19	27	95	93	94	108	103	88	363%	1,211
Finland	31	35	35	21	27	24	21	13	-58%	59
Sweden	47	40	35	40	23	37	70	40	-15%	179
United Kin	118	95	58	89	79	68	48	63	-47%	519

Source: Eurostat

TABLE 5F PRESENTS THE NUMBER OF VICTIMS (KILLED OR INJURED) PER TRAIN-KILOMETRE BETWEEN 2004 AND 2010, THEIR OVERALL DECREASE IN THE EU AND THE YEARLY VARIANCE OF THIS INDICATOR (WHICH ALSO DECREASES OVER TIME). WHERE SERIES WERE INCOMPLETE (E.G. BULGARIA, BELGIUM, GREECE), INDICATORS REFER TO THE PERIOD IN QUESTION.

TABLE 5F – VICTIMS PER THOUSAND TRAIN-KM

	2004	2005	2006	2007	2008	2009	2010	2010/2004*	Average	Variance
EU25rail		0	0.10%	0.10%	0.10%	0.09%	0.09%	-9%	0.09%	0.00%
AT	0.14%	0.12%	0.11%	0.12%	0.10%	0.10%	0.08%	-40%	0.10%	0.0000%
BE	0.05%	0.06%	0.06%	0.11%	0.05%	0.05%	-	-2%	0.07%	0.0000%
BG	-	-	0.52%	0.25%	0.34%	0.20%	0.16%	-	0.29%	-
CZ	0.30%	0.30%	0.12%	0.11%	0.15%	0.09%	0.13%	-58%	0.12%	0.0001%
DE	0.05%	0.05%	0.05%	0.06%	0.05%	0.05%	0.04%	-18%	0.05%	0.0000%
DK	0.06%	0.06%	0.05%	0.03%	0.04%	0.04%	0.02%	-62%	0.04%	0.0000%
EE	1.16%	1.49%	1.24%	1.19%	0.72%	0.68%	0.46%	-60%	0.86%	0.0014%
ES	0.11%	0.06%	0.07%	0.07%	0.04%	0.03%	0.04%	-59%	0.05%	0.0000%
FI	0.10%	0.11%	0.11%	0.06%	0.08%	0.07%	0.06%	-39%	0.07%	0.0000%
FR	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	-14%	0.03%	0.0000%
GR	0.31%	0.50%	0.53%	0.31%	0.25%	-	-	-	0.36%	
HU	0.53%	0.51%	0.20%	0.17%	0.20%	0.20%	0.16%	-69%	0.19%	0.0003%
IE	0.02%	0.01%	0.01%	0.02%	0.03%	0.06%	0.00%	-100%	0.02%	0.0000%
IT	0.05%	0.08%	0.06%	0.04%	0.04%	0.05%	0.06%	7%	0.05%	0.0000%
LT	1.07%	0.91%	1.53%	1.02%	0.98%	0.78%	0.84%	-21%	1.03%	0.0006%
LU	0.00%	0.00%	0.28%	0.00%	0.00%	0.07%	0.00%	0%	0.07%	0.0001%
LV	1.00%	0.88%	0.86%	0.60%	1.02%	0.48%	0.73%	-27%	0.74%	0.0004%
NL	0.04%	0.04%	0.03%	0.03%	0.02%	0.02%	0.02%	-55%	0.02%	0.0000%
PL	0.49%	0.58%	0.40%	0.51%	0.47%	0.46%	0.39%	-21%	0.45%	0.0000%
PT	0.42%	0.30%	0.29%	0.30%	0.26%	0.16%	0.12%	-70%	0.22%	0.0001%
SE	0.10%	0.10%	0.08%	0.09%	0.05%	0.07%	0.14%	39%	0.09%	0.0000%
SI	0.45%	0.19%	0.17%	0.41%	0.43%	0.21%	0.22%	-51%	0.29%	0.0002%
SK	0.06%	0.09%	0.30%	0.30%	0.30%	0.34%	0.33%	434%	0.31%	0.0001%
UK	0.03%	0.02%	0.01%	0.02%	0.02%	0.01%	0.01%	-63%	0.01%	0.0000%
Variance	6.58%	6.50%	7.12%	5.84%	5.65%	4.28%	4.04%	-39%	5.38%	0.0137%

Source: Eurostat, own calculations

2.2.3.4 –PRICES

Table 5g presents the harmonized consumer price index for railway transport between 2000 and 2010, and presents the nominal and real price increases during that period. The real price is increase in comparison with the harmonized consumer price index for all items.

Railway transport prices have increased by 23% in real terms since 2000. The average increase of each railway system is 28% (no weighting attached to the price increases). The lowest increases were recorded in Sweden (9%), Austria (9%), and Luxembourg (6%), with Belgium recording a decrease of 7% in real terms.

It is important to underline that the prices relate to railway purchased by households (i.e. passenger transport) and, as explained in Annex 4, mostly regulated. Given that open access commercial services only existed marginally in the UK and were not so much (yet) established in 2011 in Austria, Czech Republic, Sweden and Italy, their influence is most likely marginal.

Table 5g- HICP railway transport (2000-2011)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2011/2000 (nom)	2011/2000 (real)
European Union (EU6-1	87.10	89.18	91.04	93.61	96.65	100.00	103.20	108.05	112.47	117.62	123.54	128.21	47%	19%
European Union (27 co	83.94	86.79	90.42	93.24	96.46	100.00	103.39	108.36	112.79	117.95	123.89	128.57	53%	23%
Euro area (EA11-2000,	88.14	89.38	91.00	94.24	96.65	100.00	102.95	107.35	111.34	115.75	119.82	122.85	39%	14%
Euro area (17 countrie	87.96	89.31	90.92	94.22	96.66	100.00	102.92	107.30	111.26	115.65	119.72	122.75	40%	13%
Belgium	86.44	87.28	90.54	93.24	96.21	100.00	99.60	94.71	97.19	102.43	103.08	103.65	20%	-7%
Bulgaria	62.42	76.88	80.48	87.73	92.68	100.00	106.68	112.85	135.96	142.04	142.04	142.48	128%	43%
Czech Republic	76.2	85.2	100.4	100.1	98.9	100.0	100.6	104.8	118.6	126.6	127.3	128.8	69%	41%
Denmark	85.1	88.1	90.1	92.9	98.4	100.0	101.8	103.8	107.4	110.5	112.9	114.7	35%	10%
Germany	89.5	88.9	90.2	93.2	95.7	100.0	104.0	110.0	114.3	118.6	121.1	122.2	37%	16%
Estonia	78.44	85.45	89.11	89.45	88.32	100.00	111.77	120.59	145.97	163.89	171.88	184.37	135%	76%
Ireland	78.2	79.8	82.7	89.0	93.9	100.0	103.2	106.4	110.6	120.6	120.9	122.6	57%	31%
Greece	89.96	98.16	100.00	100.00	100.00	100.00	103.58	104.30	104.32	120.23	142.51	154.52	72%	28%
Spain	85.40	87.40	91.00	94.26	96.93	100.00	103.65	108.05	112.08	118.26	124.02	128.15	50%	14%
France	86.96	89.12	91.44	94.77	97.26	100.00	102.48	104.95	107.18	110.50	112.84	115.49	33%	10%
Italy	92.2	96.0	96.8	99.4	99.7	100.0	100.2	107.3	114.2	119.7	132.5	141.7	54%	25%
Latvia	121.33	116.16	112.19	99.79	100.00	100.00	100.00	134.95	169.28	204.85	225.90	227.54	88%	12%
Lithuania	95.57	95.26	95.41	93.20	94.25	100.00	110.76	126.09	136.18	168.77	174.41	188.94	98%	58%
Luxembourg	86.12	88.65	89.01	96.51	97.49	100.00	107.71	112.98	115.22	118.31	119.32	120.87	40%	6%
Hungary	:	74.86	79.69	85.22	94.47	100.00	108.09	152.80	161.73	166.18	193.36	195.25	161%	82%
Netherlands	82.85	85.67	85.92	90.77	95.58	100.00	103.81	105.79	109.62	113.72	115.81	117.20	41%	15%
Austria	85.52	89.73	89.27	94.56	95.68	100.00	103.54	106.42	108.95	111.64	114.32	114.32	34%	9%
Poland	79.4	85.6	89.0	94.0	98.2	100.0	101.6	105.1	108.9	112.5	121.3	127.5	61%	23%
Portugal	70.50	72.90	77.31	84.81	93.71	100.00	110.25	113.00	116.05	117.95	120.24	133.71	90%	58%
Romania	:	41.96	65.72	74.65	86.63	100.00	110.94	126.70	138.59	144.63	154.64	174.41	316%	84%
Slovenia	64.99	72.69	81.29	90.82	96.48	100.00	102.23	104.34	107.53	111.51	117.67	124.45	91%	37%
Slovakia	65.47	72.31	72.82	85.67	100.00	100.00	100.25	103.29	103.76	104.06	104.06	111.96	71%	16%
Finland	86.27	90.81	92.78	95.46	97.81	100.00	102.54	104.55	107.93	113.35	116.38	119.42	38%	16%
Sweden	80.02	82.72	85.82	90.09	97.69	100.00	99.72	93.85	92.83	97.44	102.14	105.15	31%	9%
United Kingdom	85.7	89.3	91.5	92.5	96.3	100.0	104.2	109.4	114.2	120.6	130.5	139.3	63%	34%
												Average MS	72%	28%

Source: Eurostat, own calculations

2.2.3.5 – Air-rail price competition in some high speed lines

Pour comparer les différence de prix entre l'avion, des simulations ont été conduites pour 2 types de trajet :

- Le trajet « business »
- Le trajet « loisir »

Chacune de ces deux typologies de voyage, a fait l'objet d'une comparaison de données homogènes, élaborée dans certaines conditions spécifiques.

Pour le trajet « business » on a considéré un trajet aller-retour sur la même journée. Celui est modélisé par un voyage d'affaire le mardi, et par un billet acheté 6 jours à l'avance. Le billet est choisi comme le billet le plus flexible possible (et donc souvent le plus cher). La plage horaire de départ est 7h-9h et celle de retour est 17h-19h. Nous traitons dans ce cas deux choix : la première classe ou la classe business.

Pour le trajet « Loisir » on a considéré un trajet où l'individu part le vendredi soir et revient le dimanche soir. Le départ du vendredi soir est situé entre 17h-19h, et le retour du dimanche soir entre 17h et 19h. Ce trajet est acheté environ 2 semaines à l'avance. Nous décidons de ne tenir compte que du tarif de la 2nde classe. Dans cette catégorie, nous ne prenons pas les billets moins chers qui augmentent fortement le trajet (par exemple si un billet à 89€ est pour un trajet Paris-Lyon en 2h et qu'un billet à 59€ fait Paris-Lyon en 5h, nous choisirons tout de même le billet à 89€). Quand il n'y avait pas de vol disponible pour ces horaires là, ce qui n'est très peu arrivé, on aura pris le vol après 19h considérant que les voyages loisirs sont tributaires des horaires de travail du vendredi. Pour avoir une offre comparable avec l'aérien, on choisit les billets les moins chers (et qui sont la plupart du temps, non échangeables et/ou non remboursable)

Les trajets aériens ont été choisis avec les mêmes conditions (dates et heures) de voyage à 5 reprises (5 mercredis à 15:00: le 23 mai 2012, le 30 mai 2012, le 13 juin 2012, le 20 juin 2012 et le 28 juin 2012). Les trajets "business" ont été choisis en prenant les tarifs des billets les plus flexibles, alors que les trajets "loisir" ont été choisis sur la base de la minimisation du coût du trajet, générant souvent une flexibilité moindre ou nulle du voyage.

A partir de cette méthodologie, nous avons cherché les différents tarifs sur les sites internet. Le résultat est présenté sur la page suivante. Les couleurs permettent de repérer aisément les prix qui sont comparables entre eux.

Finalement, sur base d'une série d'hypothèses présentées dans le tableau 11 sur le temps de trajet ville-aéroport, il a été possible de comparer l'attractivité de l'avion par rapport au train. Cela s'est avéré possible dans un seul cas sur la ligne Madrid-Barcelone où le prix proposé par Vueling en trajet "business" s'est avéré plus compétitif.

Table 5h – Train fares in major domestic lines in Europe

	Service ferroviaire								
Ligne	Compagnie	Type de voyage	Confort	Durée (per journey)	Tarifs A/R	Distance parcourue (en km)	Temps de trajet (en minutes)	Prix au km	Prix de la minute
Paris-Lyon	SNCF	Business	Pro 2nde classe	2h	188 €	409	120	0.50 €	1.60 €
			Pro 1ère classe		255 €	409	120	0.60 €	2.10 €
		Loisir	2nde classe		178 €	409	120	0.40 €	1.50 €
Madrid - Barcelone	Renfe	Business	1ère classe	2h30 - 3h	375 €	621	165	0.60 €	2.30 €
			Business		469 €	621	165	0.80 €	2.80 €
		Loisir	2nde classe		240 €	621	165	0.40 €	1.50 €
Rome - Milan	Trenitalia	Business	2nde classe	3h -3h30	100 €	515	195	0.20 €	0.50 €
			1ère classe		150 €	515	195	0.30 €	0.80 €
			Business		270 €	515	195	0.50 €	1.40 €
		Loisir	2nde classe		124 €	515	195	0.20 €	0.60 €
	NTV	Business	Pro 2nde classe	3h10	176 €	515	190	0.30 €	0.90 €
			Pro 1nde classe		236 €	515	190	0.50 €	1.20 €
			Club		260 €	515	190	0.50 €	1.40 €
		Loisir	2nde classe		124 €	515	190	0.20 €	0.70 €
Frankfort - Munich	DB	Business	1ère classe	3h10	308 €	392	190	0.39 €	1.60 €
			2ième classe		201€	392	190	0.25 €	1.10 €
		Loisir	2nde classe		187 €	392	190	0.23 €	1.00 €
Madrid - Séville	Renfe	Business	1ère classe	2h30	225 €	472	150	0.50 €	1.50 €
			Business	2h30	300 €	472	150	0.60 €	2.00 €
		Loisir	2nde classe	2h30	155 €	472	150	0.30 €	1.00 €
Frankfort - Cologne	DB	Business	1ère classe	1h10	326 €	177	70	1.80 €	4.70 €
			2ième classe		201€	177	70	1.10 €	2.90 €
		Loisir	2nde classe		128 €	177	70	0.70 €	1.80 €

Source: own research (cf. supra)

Table 5i – Air fares in major domestic lines in Europe competing with high speed trains

	Service aérien										
Ligne	Compagnie	Type de voyage	Durée (de vol)	Prix	Distance parcourue	Distance totale (avion + transferts)	Temps de vol	Temps total (transferts + 1h check-in + 20 min pour sortir de l'aéroport + temps de vol)	Prix total	Prix total au km	Prix total de la minute
Paris-Lyon	Air France	Business	1h10	418 €	391	439	70	205	440 €	1.00 €	2.10 €
		Loisir		191 €	391	439	70	205	213 €	0.50 €	1.00 €
Madrid - Barcelone	Iberia	Business	1h20	418 €	502	537	80	232	422 €	0.80 €	1.80 €
		Loisir		338 €	502	537	80	232	343 €	0.60 €	1.50 €
	Vueling	Business	1h15	132 €	502	537	75	227	137 €	0.30 €	0.60 €
		Loisir		206 €	502	537	75	227	211 €	0.40 €	0.90 €
	Air Europa	Business	1h25	399 €	502	537	85	237	404 €	0.80 €	1.70 €
		Loisir		226 €	502	537	85	237	231 €	0.40 €	1.00 €
Rome - Milan	Alitalia	Business	1h10	714 €	485	524	70	210	729 €	1.40 €	3.50 €
		Loisir		184 €	485	524	70	210	199 €	0.40 €	0.90 €
	Ryanair	Business (sans flexibilité)	1h10	69 €	485	550	70	250	78 €	0.10 €	0.30 €
		Loisir		91 €	485	550	70	250	100 €	0.20 €	0.40 €
Frankfort - Munich	Lufthansa	Business	1h	698 €	485	527	60	196	712 €	1.40 €	3.60 €
		Loisir		405 €	485	527	60	196	419 €	0.80 €	2.10 €
Madrid - Séville	Iberia	Business	1h10	534 €	392	424	70	215	539 €	1.30 €	2.50 €
		Loisir	1h10	196 €	392	424	70	215	201 €	0.50 €	0.90 €
Frankfort - Cologne	Lufthansa	Business	0h55	470 €	153	184	55	166	479 €	2.60 €	2.90 €
		Loisir		363 €	153	184	55	166	372 €	2.00 €	2.20 €

Source: own research (cf. supra)

Table 5j - Assumptions in terms of price and distance to airport

	Madrid	Barcelone	Cologne	Francfort	Paris	Lyon	Séville	Munich	Rome fiumi	Rome ciam	Milan linat	Milan Berga
Temps de trajet	40	32	20	11	25	30	25	45	35	40	25	60
Distance	22	13	18	13	23	25	10	29	32	15	7	50
Prix du trajet	2 €	2.50 €	5.50 €	3.50 €	8.20 €	14 €	2.50 €	10.50 €	11 €	4 €	4 €	5 €

Source: own research (cf. supra)

3. GAPS IN EFFICIENCY

3.1 – Evolution of efficiency ratios

3.1.1 – ANALYSIS OF EFFICIENCY RATIOS

TO MEASURE THE EFFICIENCY OF RAILWAY UNDERTAKINGS, THE MAIN INPUTS ARE MEASURED IN COMPARISON WITH THE MAIN OUTPUT, I.E. PASSENGER-KILOMETRES.

THE MAIN INPUTS TO PRODUCE PASSENGER-KILOMETRES ARE:

- Infrastructure
- Rolling-stock
- Labour
- Capital (PSO Subsidies)
- Energy

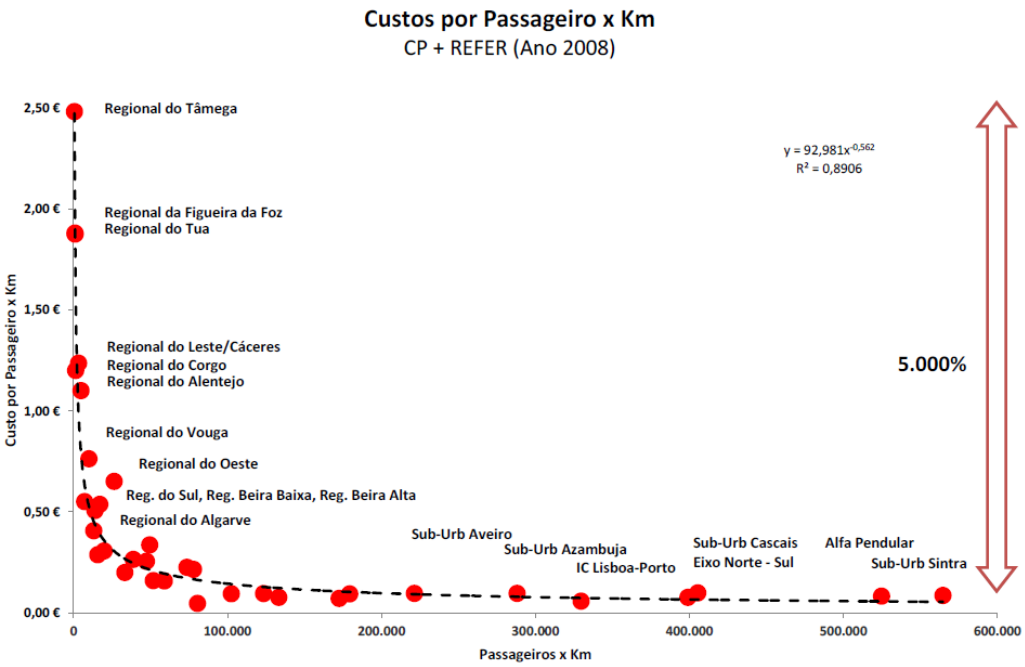
These inputs are transformed into train-kilometres.

In this context, we propose to measure:

1. The overall ratio passenger-kilometres to train-kilometres
2. Usage of infrastructure: passenger-kilometres to the km of infrastructure
3. Productivity of labour (i.e. train-kilometres to staff)
4. Productivity of capital (i.e. train-kilometres to rolling stock)

THE COST STRUCTURE OF EACH NATIONAL RAILWAY SYSTEM IS DETERMINED BY GEOGRAPHICAL CONDITIONS LIKE POPULATION DENSITY AND GEOGRAPHIC CONCENTRATION. FOR INSTANCE, IN THE CASE OF PORTUGAL (THE SECOND MOST URBANELY CONCENTRATED MEMBER STATE OF THE EU, THE DIFFERENCE OF COSTS BETWEEN REGIONAL SERVICES – WITH LITTLE TRAFFIC BUT NECESSARY FOR TERRITORIAL COHESION POLICY – AND LONG-DISTANCE (ALFA PENDULAR/LISBON-PORTO RAIL SERVICES) OR COMMUTER SERVICES (SINTRA, CASCAIS) – WHICH HAVE MUCH MORE TRAFFIC CAN REACH AS MUCH AS 5000% (CF. GRAPH 12). IT IS ALSO INTERESTING TO NOTE THAT LONG-DISTANCE SERVICES TEND TO BE SUCCESSFUL AND WITHOUT PSO IN THESE COUNTRIES (E.G. SWEDEN, PORTUGAL, SPAIN, ITALY, AUSTRIA, FRANCE AND TO SOME EXTENT FINLAND), PRECISELY BECAUSE TWO OR THREE CITIES CONCENTRATE MAKE MOST OF THE ACTIVITY. IN GEOGRAPHICALLY SPARSE MEMBER STATES, THIS DIFFERENCE SHOULD NOT BE AS BIG AS TRAFFIC IS MORE EVENLY SPREAD.

Graph 12 – Cost per passenger-km in Portugal



Source: Portuguese government - Ministerio da Economia e do Emprego (2011), relatorio sobre Mobilidade sustentavel,

Table 6 - Urban concentration in the EU

	1995	2008
Slovak Republic	12	11.7
Slovenia	19.5	19.9
Czech Republic	20.8	20.1
Hungary	21.5	22
Belgium	23.1	23
Netherlands	27.4	26.9
Poland	28.3	28.2
Denmark	28.8	28.9
Ireland	21.7	29.2
Germany	29.8	30.2
Estonia	34.1	34
France	34.2	34.5
Austria	34.9	36.3
Greece	35	36.4
Italy	39.1	39.3
Finland	41.9	44
United Kingdom	45.3	44.8
Spain	43.4	45
Portugal	49	49.3
Sweden	50.7	52.7
MS average	30.0	30.8

Source: OECD

The variety of geographical realities within the EU complicates to a large extent the comparisons between the railway systems of the Member States.

This also implies that the impact of efficiency measures will never equalise efficiency between railway systems within the EU. In fact, the efficiency frontier of each railway system is different (i.e. with the same input, the railway systems will achieve different levels of efficiency) and the maximal efficiency points of each railway system will vary, no matter which legislative actions are undertaken.

However, if the efficiency of all railway systems increases, then the difference between the least performing and the best performing railway system should stay the same or, more probably, decrease (as least performing operator will increase relatively more their efficiency than the best performing).

We propose therefore to analyse the aforementioned key efficiency ratios for all EU railway systems since the early nineties (to take stock of the effects of liberalisation processes), and determine whether any potential increase has been accompanied by convergence (like in safety, where the variance of victims per train-kilometres has decreased) or divergence.

3.1.2 – ANALYSIS OF THE RATIO PASSENGER-KM TO TRAIN-KM

In this part, the passenger-km to train-km ratio is presented, including its evolution since 1993 and 2000 till 2008. Data on passenger-kilometres comes from Eurostat, whereas data on train-kilometres comes from UIC (Union Internationale des Chemins de Fer).

The ratio Thousand passenger-km/train-km scores best in Sweden and France (20%), whereas it is very low in Luxembourg, Lithuania, Slovakia and Slovenia.

Table 7a- Ratio Thousand passenger-km/train-km, EU-27 and by Member State

	2008	2009	2010
AT	11%	11%	11%
BE	13%	14%	-
BG	10%	9%	9%
CZ	6%	5%	5%
DK	11%	9%	9%
EE	10%	10%	9%
FI	12%	11%	11%
FR	21%	19%	22%
DE	12%	12%	12%
GR	9%	-	-
HU	9%	9%	8%
IE	14%	11%	10%
IT	18%	17%	18%
LV	16%	13%	15%
LT	7%	6%	7%
LU	6%	5%	5%
NL	14%	14%	14%
NO	11%	11%	11%
PL	16%	15%	14%
PT	13%	13%	13%
RO	-	-	-
SK	7%	7%	7%
SI	7%	7%	7%
ES	14%	13%	12%
SV	25%	22%	22%
CH	13%	12%	13%
UK	12%	11%	11%
EU	14%	13%	14%

Source: Eurostat, own calculations

It is interesting to measure the evolution of this ratio since 1993 and 2000 till 2008 and compare the evolution between Member States. The ratio has substantially increased in Sweden and Belgium, but also in Latvia and Estonia. But in these countries, its variation is erratic, increasing one year and decreasing the other (cf. variance of growth rate).

It is also important to underline that the growth of this efficiency ratio could be hindered by the lack of investments in additional infrastructure. In this sense it will be useful to also take stock of the evolution of the **growth** of passenger-kilometres to the **growth** of kilometres of infrastructure (cf. infra)

Table 7b- Annual growth of the Ratio Thousand passenger-km/train-km, EU-27 and by Member State – average and variance

	Average growth		Variance of growth	
	93-08	00-08	93-08	00-08
AT	-0.2%	1.5%	0.5%	0.2%
BE	**2.1%**	**3.6%**	**0.1%**	**0.1%**
BG	-3.7%	-3.1%	1.5%	0.5%
CZ	-2.9%	-2.6%	0.3%	0.2%
DK	-1.1%	-0.8%	0.3%	0.5%
EE	**-0.5%**	**5.9%**	**2.9%**	**3.0%**
FI	-0.9%	-0.9%	0.2%	0.2%
FR	0.5%	1.8%	0.3%	0.4%
DE	0.8%	1.9%	0.3%	0.2%
HU	-3.2%	-3.1%	0.5%	0.4%
IE	-0.5%	-1.8%	0.9%	1.1%
IT	-0.3%	-0.3%	0.1%	0.1%
LV	**-3.0%**	**4.7%**	**2.7%**	**2.4%**
LT	-5.4%	-2.3%	1.8%	1.6%
LU	-1.0%	0.3%	0.7%	1.1%
NL	1.8%	1.1%	1.1%	0.2%
NO	1.5%	1.3%	0.5%	0.9%
PL	-1.5%	1.8%	0.9%	0.7%
PT	-2.0%	-0.2%	0.2%	0.1%
SK	-3.1%	-0.7%	0.4%	0.1%
SI	-1.6%	1.4%	1.6%	0.2%
ES	-0.1%	-0.7%	0.2%	0.2%
SV	**3.8%**	**6.7%**	**0.8%**	**1.0%**
CH	0.2%	-0.4%	0.4%	0.2%
UK	1.3%	1.8%	0.4%	0.2%
EU	-1%	1%	0%	1%

Source: Eurostat, own calculations

3.1.3 – EFFICIENCY OF INFRASTRUCTURE

3.1.3.1 - ANALYSIS OF THE RATIO PASSENGER-KM TO KILOMETRES OF INFRASTRUCTURE

Table 7c – Domestic pkm-lines ratio

	Domestic pkm		Lines		pkm/line		pkm/line ratio growth	pkm growth	Line ratio growth
	1995	**2008**	**1995**	**2008**	**1995**	**2008**			
EU 25**	**320660**	**378906**	**216307**	**217271**	1.5	1.7	18%	11%	-4%
AT	-	7403	-	5664	-	1.3		-	-
BE	5785	8913	3,368	3,513	1.7	2.5	48%	54%	4%
BG	4693	2264	4,293	4,144	1.1	0.5	-50%	-52%	-3%
CZ	7602	6324	9,327	9,586	0.8	0.7	-19%	-17%	3%
DE	70977	76909	41,718	37,798	1.7	2.0	20%	8%	-9%
DK	-	5983	-	3,181	-	1.9		-	
EE	421	245	1,020.7	1,196.0	0.4	0.2	-50%	-42%	17%
EL	1513	1599	2,474	2,552	0.6	0.6	2%	6%	3%
ES	14834	21461	12,280	13,353	1.2	1.6	33%	45%	9%
FI	3133	3940	5,859	5,919	0.5	0.7	24%	26%	1%
FR	64500	77000	31,940	31,041	2.0	2.5	23%	19%	-3%
HU	8441	7923	7,632	7,813	1.1	1.0	-8%	-6%	2%
IE	-	1876	1,945	1,889	-	1.0		-	-3%
IT	40700	44707	16,005	16,529	2.5	2.7	6%	10%	3%
LT	746	235	2,001.8	1,765.4	0.4	0.1	-64%	-68%	-12%
LU	-	246	-	657	-	0.4		-	
LV	779	865	2,413	2,263	0.3	0.4	18%	11%	-6%
NL	13500	15895	2,813	2,888	4.8	5.5	15%	18%	3%
PL	26346	19628	23,986	20,196	1.1	1.0	-12%	-25%	-16%
PT	-	4085	3,065	2,842	-	1.4		-	-7%
RO	19928	6805	11,376	10,785	1.8	0.6	-64%	-66%	-5%
SE	6271	10462	10,925	11,032	0.6	0.9	65%	67%	1%
SI	491	713	1,201	1,228	0.4	0.6	42%	45%	2%
SK	-	2077	3,665	3,623	-	0.6		-	-1%
UK	30000	51348	16,999	15,814	1.8	3.2	84%	71%	-7%
				Variance	**1.1**	**1.7**			
**** data for EU= only for MS with data**				Increase of variance		58%			

Source: Eurostat, own calculations

The ratio passenger-kilometres to lines has increased from 1.5 million pkm/km of line to 1.7 million pkm/km of line between 1995 and 2008. The ratio has grown most significantly in the UK (84%) and in Sweden (65%), but has also grown importantly in Belgium (48%), Slovenia (48%) and to a lesser extent in Spain (33%), France (24%) and Finland (24%). It has decreased in Poland because the closure of lines has been smaller than the decrease of passengers.

Overall, the variance of the ratio passenger-kilometres to lines has increased by 58% between 1995 and 2008.

3.1.3.2 - Usage of infrastructure in important high speed lines

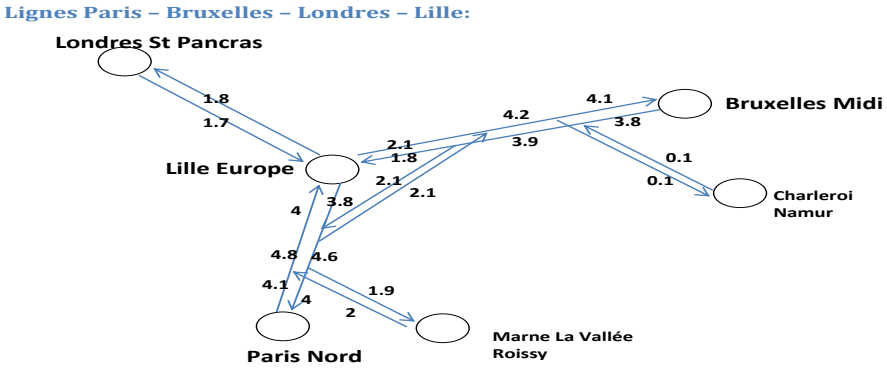
WE HAVE ESTIMATED THE TRAFFIC IN HIGH-SPEED LINES IN SEVERAL MEMBER STATES BY CALCULATING THE NUMBER OF TRAINS PER HOUR BETWEEN 6H AND 22H. THIS WAS DONE FOR MAIN

IMPORTANT DOMESTIC LINES LIKE MADRID-BARCELONA, ROME-MILAN AND FRANKFURT-MUNICH (THE LATTER HAS NO FULLY DEDICATED HIGH-SPEED LINE). DATA FOR PARIS-LYON[161] WAS TAKEN FROM A STUDY COMMISSIONED BY RFF, THE FRENCH INFRASTRUCTURE MANAGER. INFORMATION ON THE TRIANGLE BRUSSELS-LONDON-LILLE-PARIS WAS ALSO ADDED ON THE BASIS OF SIMILAR RESEARCH.

Table 7d – Usage of main domestic high-speed lines

Ligne	Sens	Nombre de trajets par jour	Nombre de trains par heures	Espacement possible entre chaque train	Nombre maximal théorique de train par heure	Utilisation de la ligne
Madrid - Barcelone	Madrid- Barcelone	27	**1.7**	**3min**	**20**	**8,5%**
	Barcelone - Madrid	28	**1.8**	**3min**	**20**	**9%**
Paris - Lyon	Paris - Lyon	Env.130	**17**	**3.5min**	**20**	**85%**
	Lyon - Paris	Env.130	**17**	**3.5min**	**20**	**85%**
Rome-Milan	Rome – Milan	57 (17 par NTV et 40 par Trenitalia)	**3.6**	**3min**	**20**	**18%**
	Milan - Rome	57 (17 par NTV et 40 par Trenitalia)	**3.6**	**3min**	**20**	**18%**
Francfort – Munich	Francfort – Munich	21	**1.3**	**3min**	**20**	**6,5%**
	Munich - Francfort	20	**1.3**	**3min**	**20**	**6,5%**

Graph 13- Estimated hourly frequency of high-speed trains in the Brussels-Paris-London triangle



3.1.4 – EMPLOYMENT AND PRODUCTIVITY OF LABOUR

3.1.4.1 – Employment in railways

Table 8a – Employment in rail (as annual FTEs)

[161] Railconcept, RFF (2011): Diagnostic du fonctionnement et perspectives de développement et évolution de laa ligne LGV Paris-Lyon-Marseille: http://www.debatpublic-lgv-pocl.org/docs/documents-debat/etudes-mo/etudes-de-trafic/diagnostic-du-fonctionnement-et-perspectives-d-evolution-de-la-lgv-paris-lyon-marseille.pdf

	pkm TOTAL (contains int'l)			Staff (contains freight)			Evolution			
	1993	2000	2008	1993	2000	2008	93/2008	00/08	93/2008	00/08
AT	9.8	8.7	10.8	65,102	51,026	43,484	- 21,618	- 7,542	-33%	-12%
BE	6.7	7.7	10.4	43,504	41,384	36,810	- 6,694	- 4,574	-15%	-11%
BG	5.8	3.5	2.3	52,879	39,024	33,269	- 19,610	- 5,755	-37%	-11%
CZ	8.5	7.3	6.8	116,142	86,079	56,951	- 59,191	- 29,128	-51%	-25%
DK	4.9	5.5	6.3	19,392	12,737	11,447	- 7,945	- 1,290	-41%	-7%
EE	0.7	0.3	0.3	8,530	5,674	1,972	- 6,558	- 3,702	-77%	-43%
FI	3.0	3.4	4.1	18,277	12,832	10,109	- 8,168	- 2,723	-45%	-15%
FR	58.4	69.9	86.6	192,090	175,379	159,265	- 32,825	- 16,114	-17%	-8%
DE	63.4	75.4	82.4	371,525	191,703	177,500	-194,025	- 14,203	-52%	-4%
GR	1.7	1.9	1.7	12,155	10,294	6,856	- 5,299	- 3,438	-44%	-28%
HU	8.4	9.7	8.3	79,024	57,033	22,249	- 56,775	- 34,784	-72%	-44%
IE	1.3	1.4	2.0	11,266	5,358	4,906	- 6,360	- 452	-56%	-4%
IT	42.7	49.6	49.5	159,577	114,373	93,611	- 65,966	- 20,762	-41%	-13%
LV	2.4	0.7	1.0	22,152	15,319	13,520	- 8,632	- 1,799	-39%	-8%
LT	2.7	0.6	0.4	18,365	15,618	10,717	- 7,648	- 4,901	-42%	-27%
LU	0.3	0.3	0.3	3,370	3,084	2,993	- 377	- 91	-11%	-3%
NL	15.2	14.7	15.3	28,169	24,292	27,383	- 786	3,091	-3%	11%
PL	30.9	24.1	20.2	261,053	182,784	121,663	-139,390	- 61,121	-53%	-23%
PT	5.4	4.0	4.2	14,550	12,529	7,742	- 6,808	- 4,787	-47%	-33%
RO	19.4	11.6	7.0	178,820	104,795	64,567	-114,253	- 40,228	-64%	-22%
SK	4.6	2.9	2.3	58,161	46,713	34,060	- 24,101	- 12,653	-41%	-22%
SI	0.6	0.7	0.8	11,979	9,016	8,010	- 3,969	- 1,006	-33%	-8%
ES	15.2	20.1	24.0	44,423	37,790	32,398	- 12,025	- 5,392	-27%	-12%
SV	6.4	8.2	11.1	15,776	10,263	14,317	- 1,459	4,054	-9%	26%
UK	30.6	38.4	53.0	128,413	73,474	89,638	- 38,775	16,164	-30%	13%
	349.1	370.7	411.1	1,934,694	1,338,573	1,085,438	-849,256	-253,135	-44%	-13%

Source: Eurostat, UIC, EIRO CAR2, own calculations

Employment has decreased by 43% between 1993 and 2008 and by an estimated 13% between 2000 and 2008 (for the UK we used the 2001 estimations of the EIRO study as UIC does not provide data on UK rail employment in 2000). Most of the employment losses appear to have been recorded in Central Eastern and South-Eastern Europe: in Hungary and Romania, more than 70% and 60% respectively. UK and Sweden appear to have created jobs since 2001. Data for Germany is special as it contains data in 1993 for both DB and DR (the former East German rail undertaking), whereas we did take into account the 65.000 persons working in the road operations of DB Schenker in the 2008 data.

3.1.4.2 – Productivity of labour – million domestic p-km per staff

Table 8b – p-km per staff (FTEs)

	pkm/staff			Variation		Non-labour variation	
	1993	2000	2008	93/2008	00/08	93/2008	00/08
AT	149.98	171.28	249.23	66%	46%	33%	34%
BE	153.87	186.88	282.61	84%	51%	68%	41%
BG	110.38	88.97	70.19	-36%	-21%	-74%	-32%
CZ	73.60	84.81	119.46	62%	41%	11%	16%
DK	254.69	434.72	**548.60**	115%	26%	74%	20%
EE	84.64	46.00	138.81	64%	202%	-13%	158%
FI	164.52	265.35	400.83	144%	51%	99%	36%
FR	304.18	398.37	**543.75**	79%	36%	62%	28%
DE	170.54	393.34	333.90	96%	-15%	62%	0%
GR	142.00	183.21	241.69	70%	32%	27%	4%
HU	106.70	169.95	372.74	249%	119%	177%	75%
IE	113.08	259.24	402.77	256%	55%	200%	51%
IT	267.71	433.42	**529.02**	98%	22%	56%	9%
LV	106.49	46.67	70.34	-34%	51%	-73%	43%
LT	147.02	39.12	37.14	-75%	-5%	-116%	-32%
LU	77.74	107.65	115.27	48%	7%	37%	4%
NL	541.20	603.74	**559.22**	3%	-7%	1%	4%
PL	118.23	131.81	165.99	40%	26%	-13%	3%
PT	370.93	321.81	**544.17**	47%	69%	0%	36%
RO	108.50	111.00	107.76	-1%	-3%	-65%	-25%
SK	78.56	61.44	67.41	-14%	10%	-56%	-12%
SI	47.25	78.19	104.12	120%	33%	87%	25%
ES	342.93	533.05	**739.82**	116%	39%	89%	27%
SV	407.07	803.18	**778.52**	91%	-3%	82%	23%
UK	238.29	522.72	**591.29**	148%	13%	118%	26%
VAR	15,336.47	42,487.90	51,701.15				
MOY	187.20	259.04	324.59				

Source: Eurostat, UIC, EIRO CAR2, own calculations

The ratio domestic pkm per staff appears to be biased towards Member States that have a large area (there could be economies of scale in terms of area for this ratio), with the notable exceptions of Denmark and The Netherlands (whose productivity appears to be twice the one of Belgium), or those that have major freight operations (Latvia, Lithuania).

It is important to underline that this indicator is an **approximation of productivity,** as data sources are not clear-cut in terms of railway jobs as they include in some cases freight and infrastructure management, but also maintenance (which is outsourced by some operators). It has been preferable to measure productivity in terms of FTEs (as UIC to prevent double counting temporary work).

It is interesting to note however that the variance of the ratio has tripled since 1993, indicating increasing disparities within the best performers and the worst performers.

Most important growth was recorded in Hungary, Ireland, Germany, Spain, Finland and UK. For all these systems - and also in Belgium – the improvement of pkm per staff is not only due to the

reduction of staff (the "non-labour variation" is the difference between the pkm-staff variation and the reduction of staff with the view to estimate the increase of pkm-staff productivity that is not related to labour reductions.

The analysis of train-kilometres (whose available data includes international traffic) provides similar results, except that the reductions in train-kilometres in Sweden paired with the increase of rail jobs in that country actually interestingly

Table 8d – Train-kilometres per staff (as FTEs)

	1993	2000	2008	93/2008	200/2008
AT	1.4	1.8	2.2	54%	25%
BE	1.7	1.9	2.2	33%	18%
BG	0.6	0.6	0.7	16%	13%
CZ	0.8	1.1	2.1	164%	86%
DK	2.6	4.4	5.0	96%	14%
EE	0.6	0.7	1.3	109%	91%
FI	1.4	2.1	3.5	152%	61%
FR	1.7	2.1	2.6	53%	21%
DE	1.7	3.9	2.8	62%	-28%
GR	1.1	-	2.7	145%	-
HU	0.9	1.4	4.0	338%	189%
IE	0.9	2.0	2.8	222%	41%
IT	1.5	2.2	3.0	100%	37%
LV	0.6	0.6	0.4	-32%	-28%
LT	0.7	0.5	0.5	-22%	3%
LU	1.6	2.0	2.0	25%	3%
NL	4.0	4.9	4.0	2%	-18%
NO	2.0	2.6	4.8	137%	87%
PL	0.7	0.9	1.0	44%	10%
PT	2.0	2.5	4.1	101%	61%
SK	0.6	0.8	0.9	52%	20%
SI	1.0	1.2	1.5	52%	20%
ES	2.8	3.9	5.5	94%	39%
SV	3.7	5.8	3.1	-17%	-47%
UK	2.9	5.9	5.1	76%	-13%
VARIANCE	0.9	2.7	2.3		

Source: Eurostat, UIC, EIRO CAR2, own calculations

3.1.5-Productivity of rolling stock

Data is provided in table 5b, where Hungary, Portugal, Sweden, Slovenia, Germany and UK have witnesses the largest increases.

The variance has tripled, showing that there are increasing disparities in the productivity of rolling stock.

3.1.6-Efficiency of subsidies

The railway sector absorbed some 46 billion EUR of subsidies in 2009, compared to some 3 billion EUR for all other transport sector. It is important to underline that state support infrastructure goes through public gross capital formation and is not necessarily accounted in road transport.

Table 9a - State aid to the transport sector (excluding railways), EU-27 and by Member State, in million EUR; 2005-2010

Transport sector	2005	2006	2007	2008	2009	2010	Average 2005-2007	Average 2008-2010
Road and combined transport	684	23045	786	748	557	416	**8172**	**574**
Maritime transport	1671	1857	1771	1971	1876	1809	**1767**	**1885**
Inland water transport	18	8	9	8	8	9	**12**	**8**
Air transport	405	391	425	261	693	104	**407**	**353**
Total	**2778**	**25300**	**2991**	**2988**	**3133**	**2338**	**10357**	**2820**
	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**Average 2005-2007**	**Average 2008-2010**
EU-27	**2778**	**25300**	**2991**	**2988**	**3133**	**2338**	**10357**	**2820**
Belgium	238	236	277	241	328	215	**251**	**261**
Bulgaria	0	0	0	0	0	0	**0**	**0**
Czech Republic	4	6	5	39	26	13	**5**	**26**
Denmark	99	96	94	93	94	89	**96**	**92**
Germany	223	188	140	242	220	174	**184**	**212**
Estonia	0	0	0	0	0	0	**0**	**0**
Ireland	3	2	4	10	6	3	**3**	**6**
Greece	291	298	261	127	1	2	**284**	**43**
Spain	166	169	142	129	136	146	**159**	**137**
France	391	22992	538	634	403	285	**7974**	**441**
Italy/Italia	429	390	543	529	362	384	**454**	**425**
Cyprus	41	4	21	3	3	3	**22**	**3**
Latvia	83	97	106	74	77	74	**95**	**75**
Lithuania	0	0	5	1	2	1	**2**	**1**
Luxembourg	0	0	0	0	0	0	**0**	**0**
Hungary	55	62	45	28	46	48	**54**	**40**
Malta	0	0	2	1	3	8	**1**	**4**
Netherlands	160	155	166	159	142	268	**161**	**190**
Austria	45	41	37	32	542	12	**41**	**195**
Poland	13	6	12	15	99	11	**10**	**42**
Portugal	2	2	2	2	10	9	**2**	**7**
Romania	50	46	86	30	16	4	**61**	**17**
Slovenia	0	0	0	0	14	12	**0**	**9**
Slovakia	26	29	24	23	22	7	**26**	**17**
Finland	92	90	89	91	91	79	**90**	**87**
Sweden	198	195	200	204	204	191	**198**	**200**
United Kingdom	168	196	192	282	287	299	**186**	**289**
Source: DG Competition								

Table 9b - Subsidies to railways (including infrastructure), EU-27 and by Member State, in million EUR; 2003-2009

	2003	2004	2005	2006	2007	2008	2009
EU-27	**-**	**-**	**-**	**42,807**	**46,345**	**43866**	**46216**
EU-25	**39,527**	**40,427**	**42,698**	**42,743**	**46,232**	**43192**	**45616**
EU-15	**38,629**	**39,077**	**41,376**	**41,178**	**44,293**	**41,179**	**43,967**
EU-10	**935**	**1,350**	**1,322**	**1,565**	**1,939**	**2,013**	**1,649**
Austria	647	632	533	637	636	1900	1593
Bulgaria	-	-	-	61	102	121	155
Belgium	2,412	2,057	3,129	3,226	2,588	2666	2462
Czech Republic	239	239	264	270	317	407	499
Denmark	813	813	916	891	945	1125	1140
Germany	9,144	8,239	8,114	8,001	8,435	13234	13485
Estonia	12	12	12	12	14	16	17
Greece	636	329	257	275	397	397	549
Spain	1,338	1,370	455	563	1,009	1019	970
Finland	489	562	516	467	461	521	500
France	7,921	9,120	9,912	10,100	9,695	10326	10895
Ireland	544	416	576	603	797	728	613
Italy	6,006	5,699	6,040	5126	8,320		8104
Latvia	3	15	23	31	37	50	41
Lithuania	0	5	6	3	6	9	2
Luxemburg	293	310	315	394	418	411	281
Hungary	451	411	439	530	810	815	708
Netherlands	3,322	2,936	2,686	2,719	2,210	1943	1883
Poland	104	172	184	310	341	277	340
Portugal	58	56	64	74	80	84	91
Romania	-	-	-	3	11	553	445
Slovenia	125	331	176	186	148	153	42
Slovakia	0	165	218	223	266	286	
Sweden	1,003	1,167	1,271	1,415	1,653	1113	1401
UK	4,002	5,371	6,592	6,689	6,650	5712	
NB: SK: DG TREN estimates for 2008							
UK: DG TREN estimates for 2006, 2007 and 2							

As shown in Table 9c, some 18-19 billion EUR are provided annually for public service obligations in the EU. In 2008, totals show some 18 billion EUR, but miss data from Italy. In this context, it is better to consider a figure of 18-20 billion EUR (at 2008 prices).

Table 9c - Subsidies to public service obligations, EU-27 and by Member State, in million EUR; 2005-2010

	Subsidies to public service obligations (constant 2008 prices)											
EUR	2000	2001	2002	2003	2004	2005	2006	2007	2008	Average	2003/2008	2000/2008
Austria	809.5	771.5	791.1	731.1	701.1	563.5	652.9	620.9	668.6	701.1	-9%	-17%
Belgium	973.1	981.3	949.3	941.6	929.8	1,281.0	1,382.7	918.2	905.0	1,029.1	-4%	-7%
Bulgaria	-	-	-	-	-	-	78.4	123.2	120.5	107.4	-	-
Czech Republic	-	-	-	271.1	266.9	288.1	297.4	337.8	362.6	304.0	-	-
Czech Republic (CZK)				8,611.7	8,573.7	8,631.3	8,451.8	9,379.7	9,046.2	8,782.4	5%	-
Denmark	620.1	651.0	597.6	706.5	622.4	665.1	660.4	624.1	575.0	635.8	-19%	-7%
Estonia	-	-	-	20.2	19.4	17.5	15.6	16.9	16.1	17.6	-20%	
Finland	91.8	90.4	93.5	93.1	92.6	91.5	90.8	98.1	95.0	93.0	2%	3%
France	4,629.6	5,829.2	6,059.9	6,047.2	5,290.7	5,382.6	5,542.0	5,701.6	6,855.0	5,704.2	13%	48%
Germany	5,903.5	5,916.9	5,978.6	5,887.9	5,768.7	5,475.0	5,254.5	4,912.6	4,722.0	5,535.5	-20%	-20%
Greece	12.3	11.9	9.7	8.3	-	-	-	-	-	10.6	-	-
Hungary	-	-	-	630.2	546.1	539.8	613.5	685.9	733.0	624.7	16%	
Hungary (HFL)				158,893	137,802	133,843	154,461	174,166	184,207	157,228.6	16%	
Ireland	250.4	320.9	304.0	299.4	298.1	294.1	303.6	317.0	179.5	285.2	6%	27%
Italy	2,066.7	2,133.9	2,067.7	1,997.5	2,024.3	2,040.8	1,910.4	2,639.7	-	2,110.1	32%	28%
Latvia	-	-	-	5.8	11.1	39.7	52.3	45.9	-	30.9	693%	
Latvia (LVL)				1.1	4.7	25.1	33.9	30.1	-	19.0	2749%	
Lithuania	-	-	-	-	1.8	2.8	3.2	9.8	9.1	5.3	-	
Luxemburg	99.6	120.0	111.8	110.6	121.6	140.6	142.9	264.7	265.4	153.0	140%	167%
Netherlands	101.5	94.4	103.5	107.8	98.9	-	-	-	-	101.2	-	-
Poland	-	-	-	120.3	191.2	200.4	332.7	353.5	276.9	245.9	130%	
Poland (PZL)				525.4	872.8	811.1	1,298.9	1,336.3	1,090.0	989.1	107%	
Portugal	27.0	34.9	37.7	79.5	69.5	74.6	77.5	82.3	84.2	63.0	6%	211%
Romania	-	-	-	-	-	-	3.8	12.1	324.1	113.4	-	
Slovakia	-	-	-	-	111.7	129.9	139.1	160.6	172.7	142.8	-	
Slovenia	-	-	-	44.0	38.4	40.0	43.3	45.4	42.3	42.2	-4%	
Spain	312.2	311.2	304.6	296.2	290.2	279.1	324.9	338.4	380.0	315.2	28%	22%
Sweden	39.0	40.7	52.4	51.0	43.2	38.6	-	36.6	40.5	42.8	-	-
Sweden (SEK)	329.5	376.5	479.4	465.7	394.4	357.4	0.0	338.3	389.0	347.8	-16%	18%
UK (EUR)	2,399.0	2,125.1	2,493.7	1,667.9	2,032.4	1,839.0	1,786.3	1,703.1	1,410.5		-	-
UK (GBP)	1,456.9	1,318.5	1,561.7	1,145.3	1,379.6	1,250.5	1,214.7	1,164.9	1,123.2	1,290.6	-2%	-23%
EU	18,335.4	19,433.3	19,955.0	20,117.0	19,570.2	19,423.5	19,708.3	20,048.5	18,238.0			
										data for 2007		

Source: data provided by Member States to the services of the European Commission, data was calculated at 2008 constant prices based on the Harmonised Consumer Index of Eurostat

Subsidies for railways appear to have decreased in several Member States in real terms (UK, Germany Austria, and Belgium) over the period 2000-2008. The same situation can be witnessed in Sweden for the period 2003-2008. Subsidies to public service obligations appear to have increased substantially in Latvia, Luxembourg, Portugal (in this case during the period 2000-2003) but also France (where part but not all increase is due to pensions). It is important to underline that data for Italy, Ireland and Latvia used 2007 as last year. In the case of Italy and Latvia, this was due to lack of data. In the Ireland, it was used to isolate the sudden drop in 2008, probably most related to budgetary cuts further to the Irish crisis. The exchange rate effect was isolated for the currencies that are not part of the ERM III (GBP, SEK, PLZ, CZK, HFL and also LVL).

Table 9d provides for the difference between the variation in passenger-kilometres and subsidies for public service obligations. For those countries outside the ERM III or Latvia the correct percentages depend from the evolution of subsidies in national currency (not in euros).

Table 9d – Evolution of pkm versus PSO subsidies

	Evolution of PSO subsidies		Evolution of pkm		Evolution of pkm versus subsidies	
EUR	2003/2008	2000/2008	2003/2008	2000/2008	2003/2008	2000/2008
Austria	-9%	-17%	25%	24%	33%	41%
Belgium	-4%	-7%	25%	35%	29%	42%
Bulgaria	-	-	-7%	-33%	-	-
Czech Republic	-	-	5%	-7%	-	-
Czech Republic (CZK)	5%	-	5%	-7%	0%	-
Denmark	-19%	-7%	8%	13%	27%	21%
Estonia	-20%		37%	5%	57%	
Finland	2%	3%	23%	19%	21%	16%
France	13%	48%	21%	24%	7%	-24%
Germany	-20%	-20%	16%	9%	35%	29%
Greece	-	-	4%	-12%	-	-
Hungary	16%		-19%	-14%	-36%	
Hungary (HFL)	16%		-19%	-14%	-35%	
Ireland	6%	27%	24%	42%	18%	16%
Italy	32%	28%	2%	0%	-30%	-27%
Latvia	693%		19%	33%	-674%	
Latvia (LVL)	2749%		19%	33%	-2731%	
Lithuania	-		-1%	-35%	-	-35%
Luxemburg	140%	167%	15%	4%	-125%	-163%
Netherlands	-	-	11%	4%	-	-
Poland	130%		3%	-16%	-127%	
Poland (PZL)	107%		3%	-16%	-104%	
Portugal	6%	211%	11%	4%	5%	-207%
Romania	-		-18%	-40%	-	
Slovakia	-		0%	-20%	-	
Slovenia	-4%		4%	18%	8%	
Spain	28%	22%	14%	19%	-15%	-3%
Sweden	-	-	27%	-	-	-
Sweden (SEK)	-16%	18%	27%	35%	43%	17%
UK (EUR)	-	-			-	-
UK (GBP)	-2%	-23%	38%	38%	40%	61%
	data for 2007					

Source: Cf. infra

The best performing ratios over the period 2000-2008 are found in UK (61%), Belgium (42%), Austria (41%), Germany (29%), Denmark (21%) and Sweden (17%). Portugal, France and Luxembourg perform badly with subsidies growing much more than pkm.

The best performing ratios over the period 2003-2008 are found in Sweden, UK, Estonia, Germany, Austria, and Belgium. Similarly, Portugal, France and Luxembourg perform badly with subsidies growing much more than pkm.

Subsidies to infrastructure

According to CER (2011), investments in road infrastructure in Europe amounted annually to some 54 billion EUR in 2008 – based on data from the International Transport Forum (OECD). As rail still also gets some 20 billion EUR of subsidies for PSC, whereas road and other transport modes only get some 3 billion EUR, it can be assumed that rail still absorbs some 40% of all public subsidies.

It is difficult to use this data to make ratios of efficiency on public service obligations and series are sometimes incomplete, as the data is partially complete

4. CONCLUSIONS

As indicated previously, rather than comparing the efficiency of all the domestic networks, which is heavily influenced by geography, it is more important to measure the evolution of these systems since the nineties. At the same time, some indicators of major importance, like safety and punctuality, do not depend on geography and deserve therefore to be compared throughout the Member States.

Table 10a lists for each indicator the 6 best performing Member States based on the analysis of efficiency and satisfaction performed in this Annex. For the efficiency of public spending, it is proposed to take the classification for the period 2003-2008 rather than 2000-2008 as it covers all Member States (however ranking will be analysed slightly differently – cf. infra).

Table 10a – Best performing Member States

Evolution	Ranking MS "6++"	#
Growth of modal split	UK, SE, FR, BE, DE, NL	a
Growth of satisfaction 1997-2012	UK, SE, FR, ES, BE, IT	b
Growth of availability	ES, IE,GR, CZ,FI, FR	c
Growth of productivity of RS/Frequency	HU, SI, DK, EE, SE, CZ	d
Growth of fares	BE, LU, AT-SE, FR-DK	e
Growth of pkm/train-km	SE, BE, NL, UK, DE, FR	f
Growth of pkm/line	UK, SE, BE, SI, ES, FI	g
Growth of employment	SE, UK, NL, LU, IE-DE	h
Growth of productivity of labour	IE, HU, DE, UK, FI, ES	i
Improvement of subsidy efficiency	SE, UK, EE, DE, AT, BE	j
Overall quality		
Punctuality	LV, LT, RO, FI, SK, BE	P
Safety	UK, NL, FR, DK, ES, DE	S
Satisfaction 2012	FI, AT, NL, DK, LU, SE	S1
Satisfaction EB2011	ES, LU, PT, UK, IE, AT	S2

The ranking of the Member States for each indicator of evolution (a-j) and overall quality (P, S, S1 and S2) is analysed in Table 10b. The first ranked Member States receives a grade "6" till the sixth which received a grade "1" All other Member States have no mark (i.e. "0"). For the efficiency of public spending, we propose to take the mean of the rankings in the 2000-2008 and 2000-2003 classification (for Estonia and Denmark which are listed only once we take the only existing ranking). For punctuality, we propose to remain with the data of 2008 as the ERA data for 2010 and 2011 is incomplete. Finally, where member States had values putting them ex aequo, then the median ranking was used.

Table 10b – Analysis of rankings

	a	b	c	d	e	f	g	h	i	j	Total growth	P	S	S1	S2	Total today	Count1	Count2
AT				2	4					3	9			5	1	15	3	5
BE	4	2			6	5	4			4	25	1				26	5	6
BG											0					0	0	0
CZ			2								2					2	1	1
DE	2			1		2		5		3	13					13	4	4
DK				6	2			1			9		3	3		15	3	5
EE										4	4					4	1	1
ES		3	6				2		3		14		2		6	22	4	6
FI			4				1				5	3	1	6		15	2	5
FR	3	4	1			1					9		4			13	3	4
GR			3								3					3	1	1
HU				5					5		10					10	2	2
IE			5						6		11				2	13	2	3
IT		1									1					1	1	1
LT											0	5				5	0	1
LU					5			2			7			2	5	14	2	4
LV					1						1	6				7	1	2
NL	1					4		3			8		5	4		17	2	4
PL											0					0	0	0
PT											0				4	4	0	1
SE	5	5		4	3	6	5	6	1	3	38			1		39	8	9
SI				3			3		2		8					8	3	3
SK											0	2				2	0	1
UK	6	6	3			3	6	4	4	5	37		6		3	46	7	9
RO											0	4				4	0	

The UK and Sweden are the networks that have improved in most a-j indicators since the nineties, followed by Belgium, Spain and Germany. It is important to underline that these indicators only refer to the evolution and progress since the nineties, NOT to the current quality of the system.

As soon as indicators of overall quality are added, then France, Austria, Finland, Denmark and the Netherlands also rank well.

The UK and Sweden are the Member States that are listed most times (cf. indicators "Count" that counts the number of times each Member State is among the 6 best ones of a particular indicator).

Table 10c –Evolution and variance of the evolution indicators

	Evolution (%)	Divergence/ Convergence	Period
pkm	11%	not relevant	1993-2008
Modal split	1%(a)(z)	-19%	2000-2010
Satisfaction 1997-2012	12%(b)(c)	-40%	1997-2012
Availability (train-km)	11%	31%	1993-2008
Productivity of RS/Frequency	25%	45%	1995-2010
Fares (real terms)	28%	indexes	2000-2011
pkm/train-km	5.8%	14%	1993-2008
Pkm/line	18%	58%	1995-2008
Employment	-40%	not relevant	1993-2008
Productivity of labour	97%	337%	1993-2008
Subsidy efficiency	7%-11%	(*)	2000-08/2003-08
Safety	9%	-39%	2004-2010
(a)increase of 0.1 percentage points			
(b) EU15 only			
(c) increase of 5 percentage points			
(z) EU15: 9% increase/0.6 percentage points			
(*) exchange rate problems complicate comparability			

Table 10c highlights the evolution of the various indicators through different periods, which depend on the availability and comparability of data (several data series going back to 1993 do not contain information for all the Member States that have acceded to the EU since 2004 or 2007). Also, for employment, the period 2000-2008 was preferred as there was creation of jobs during that period (the objective is to measure creation of jobs).

Table 10c also highlights whether the data sets have converged (there are less difference between Member States) or actually diverged (the difference between member States has increased). To measure convergence or divergence we can use the growth or the decrease of variance between two years (i.e. if data sets converge then the variance decreases and if data sets diverge then variance increases over time).

Table 10d – Evolution of efficiency indicators

Evolution	Ranking MS "6++"	
Growth of productivity of RS/Frequency	HU, SI, DK, EE, SE, CZ	d
Growth of pkm/train-km	SE, BE, NL, UK, DE, FR	f
Growth of pkm/line	UK, SE, BE, SI, ES, FI	g
Growth of employment	SE, UK, NL, LU, IE-DE	h
Growth of productivity of labour	IE, HU, DE, UK, FI, ES	i
Improvement of subsidy efficiency	SE, UK, EE, DE, AT, BE	j

If we isolate the efficiency growth ratios, rankings vary slightly, with Germany becoming the 4th system that has grown the most in terms of efficiency.

Graph 14 – Growth of efficiency index and competition

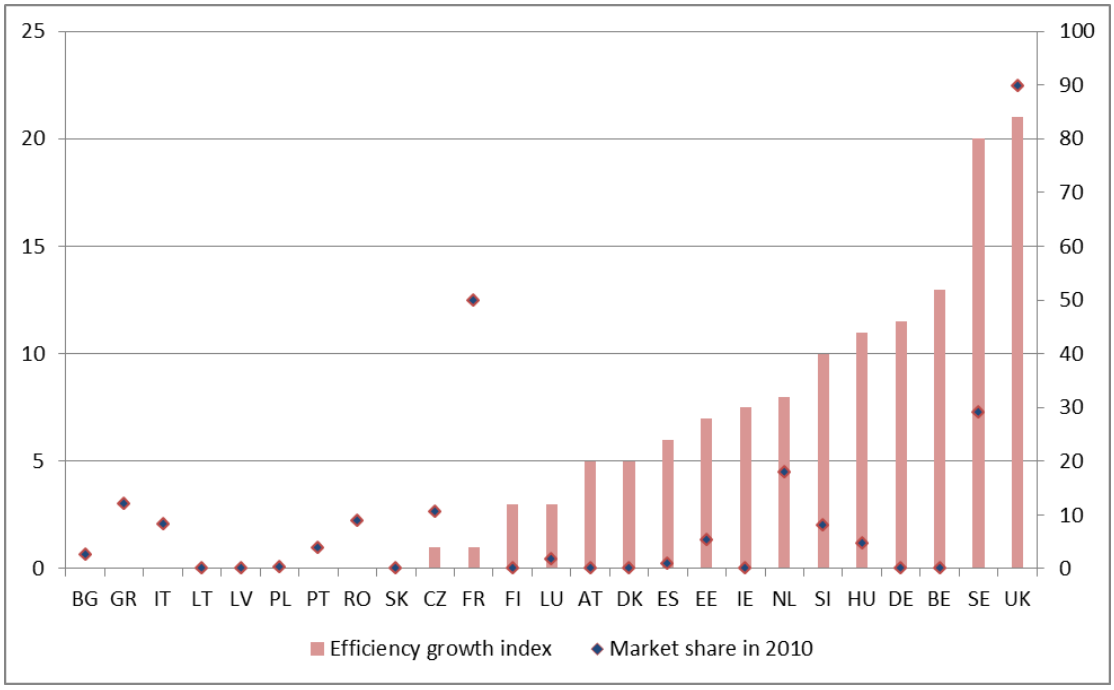
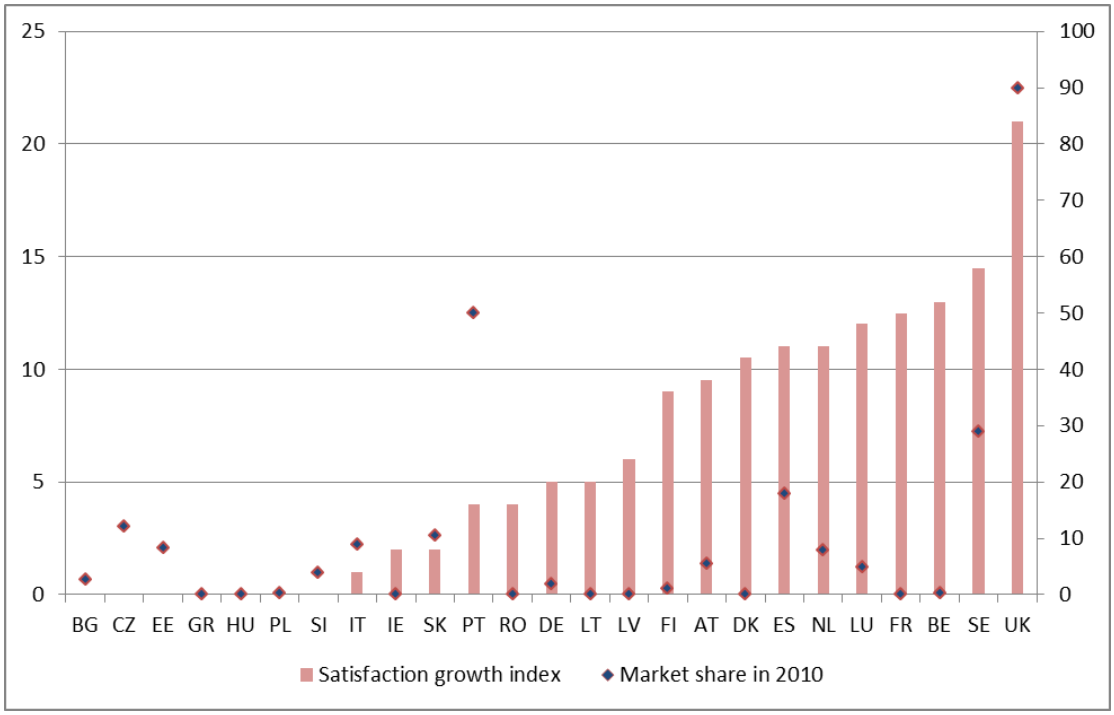


Table 10e- Evolution of satisfaction indicators

If we isolate the satisfaction growth ratios, rankings vary slightly, with France becoming the 4th system that has grown the most in terms of satisfaction.

Satisfaction/Quality perception	Ranking MS "6++"	
Growth of modal split	UK, SE, FR, BE, DE, NL	a
Growth of satisfaction 1997-2012	UK, SE, FR, ES, BE, IT	b
Growth of fares	BE, LU, AT-SE, FR-DK	e
Punctuality	LV, LT, RO, FI, SK, BE	P
Safety	UK, NL, FR, DK, ES, DE	S
Satisfaction 2012	FI, AT, NL, DK, LU, SE	S1
Satisfaction EB2011	ES, LU, PT, UK, IE, AT	S2

Graph 15 – Growth of "satisfaction"/"quality perception" index and competition



It is also possible to check the benchmarks in terms of clusters of Member States. As explained in the main report, Member States can be accordingly grouped in 5 clusters (cf. Map 1):

- **fully liberalised markets** like UK and Sweden, where all passenger-kilometres are in open access or where all public service contracts are competitively tendered.

- **largely liberalised markets** like Austria, Italy and Germany where more than 33% of the passenger-kilometres are in open access or correspond to competitively tendered PSCs; new entrants have been able to successfully compete *in* and *for* the market.

- **partially liberalised markets** like the Czech Republic, the Netherlands and Portugal, where less than 33% of the passenger-kilometres are in open access or correspond to competitively tendered PSCs, but where new entrants have taken an important share of the liberalised traffic.

- **quasi-liberalised markets** like Bulgaria, Denmark, Estonia, Latvia, Lithuania, Poland, Romania and Slovakia, where the whole market is contestable through open access - but there is no effective competition *in* the market - and PSCs are directly awarded. New entrants, if any (Denmark, Slovakia, Estonia), are operating the directly awarded PSCs.

- **Non-liberalised markets** like Belgium, Finland, France, Greece, Hungary, Ireland, Luxembourg, Slovenia and Spain, where the incumbent operates all commercial services and PSOs

Some Member States can be difficult to classify and it is necessary to distinguish between prospective analysis (future) and retrospective analysis (past). As Sweden only has abolished exclusive rights in long distance in 2011 and as Germany will introduce competitive tendering as from 2012, it makes sense to use a cluster "fully and largely liberalised" for retrospective analysis. Also, successful tendering of international PSCs suggests that Denmark could easily join the group of "partially liberalised" countries for prospective analysis. Finally, lack of *de facto* competition for years in quasi-liberalised markets, make them in reality quite similar to non-liberalised markets.

In that context, the following results are obtained:

Table 11a – Annex 3 benchmarking points per type of cluster (satisfaction/quality indicators)

Fully Liberalised:	17.7
Largely liberalised:	5.2
Fully or largely liberalised	*10.2*
Partially liberalised:	5
Quasi-liberalised:	3.4
Non- liberalised:	6.6

Table 11b – Annex 3 benchmarking points per type of cluster (efficiency indicators):

Fully Liberalised:	20.5
Largely liberalised:	5.5
Fully or largely liberalised	*11.5*
Partially liberalised:	3
Quasi-liberalised:	1.5
Not liberalised:	6

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Part 4

COMMISSION STAFF WORKING DOCUMENT

IMPACT ASSESSMENT

Accompanying the documents

Proposal for a Regulation of the European Parliament and of the Council amending Regulation (EC) No 1370/2007 concerning the opening of the market for domestic passenger transport services by rail

Proposal for a Directive of the European Parliament and of the Council amending Directive 2012/34/EU of the European Parliament and of the Council of 21 November 2012 establishing a single European railway area, as regards the opening of the market for domestic passenger transport services by rail and the governance of the railway infrastructure

{COM(2013) 28 final}
{COM(2013) 29 final}
{SWD(2013) 11 final}
{SWD(2013) 12 final}
{SWD(2013) 13 final}

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Disclaimer: This impact assessment commits only the Commission's services involved in its preparation and does not prejudge the final form of any decision to be taken by the Commission

ANNEX 4

ANALYSIS OF NATIONAL RAIL MARKETS

Introduction

This annex gives an overview of the structure of the current national rail markets in terms of competition for the market (mostly public service obligations) and competition in the market (mostly commercial services under open access).

The result of the analysis is presented in the table 1 hereunder:

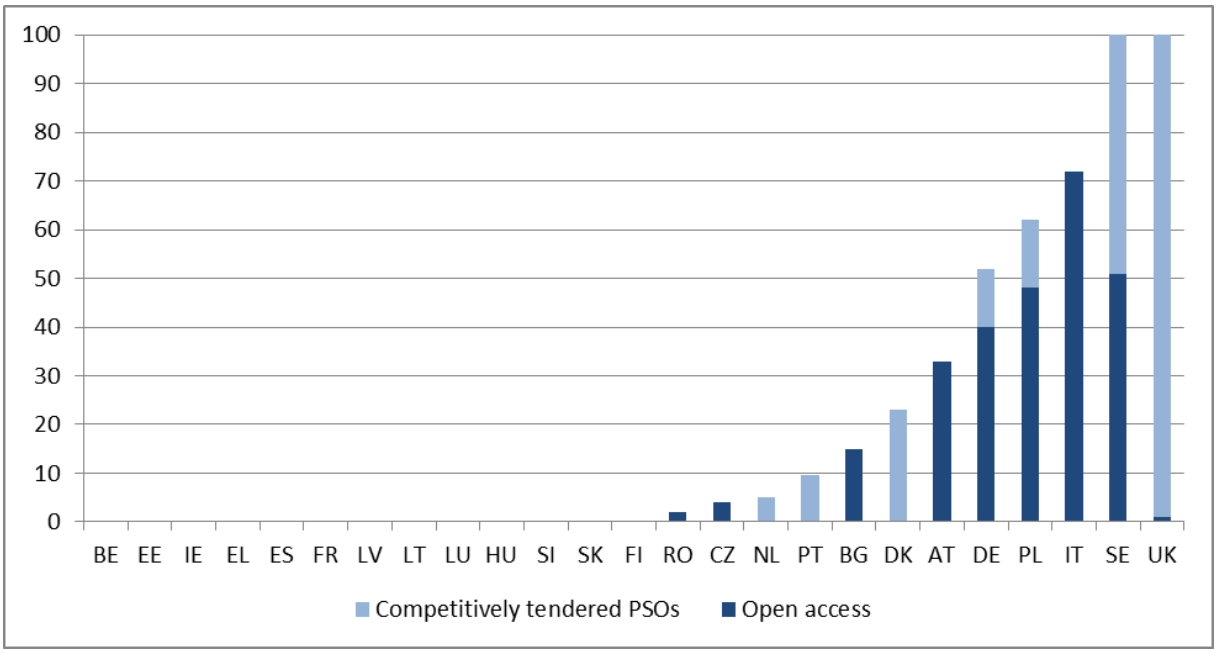
Table 1 – Structure of the EU railway market

	Million p-km	(%)	Examples
Networks that are CLOSED de facto (pkm)			
Directly awarded PSC & NO open access	76.99	19%	Belgium, 52% of Spanish pkm
Directly awarded "exclusive rights w/o PSO" & NO open access	68.25	17%	French and Spanish HSL
Total CLOSED	**152.7**	**36%**	
Networks that are OPEN de facto			
Competitively tendered PSC (NO open access in parallel)	56.75	14%	99% of pkm in UK (franchises)
Open access (no PSO in parallel)	66.83	17%	6% of Austrian pkm (Wien-Salzburg line)
Unrestricted Open access & tendered PSCs in parallel	22.76	6%	PSO pkms in Sweden (52% pkm)
Open access restricted only if it compromises PSOs (tendered PSCs)	0.56	0%	1% of open access pkm in UK
Total OPEN	**146.9**	**37%**	
Networks that are SEMI-OPEN			
Unrestricted Open access & directly awarded PSCs in parallel	89.14	22%	PSOs in Bulgaria (15% of pkm)
Open access restricted only if it compromises PSOs (directly awarded PSCs)	24.59	6%	PSO pkms in Italy (52% of pkm)
Total SEMI-OPEN	**105.6**	**28%**	
TOTAL OF EU pkm	**405.22**	**100%**	

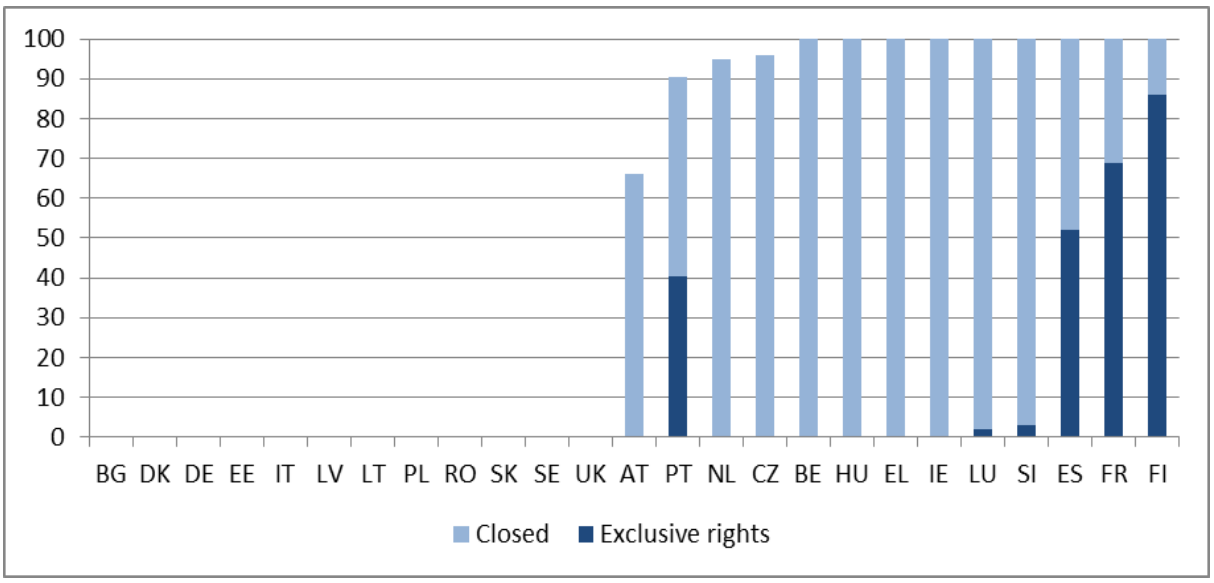
Different ways to open domestic passenger market are outlined in the graph 1, which shows the total level of opened market in each Member State as per cent of the total pkm and distinguishes between competition for the market (competitively tendered PSOs) and

competition in the market (open access). To this day, only SE and UK have 100% opened domestic passenger market. Although IT, PL, DE, AT, and BG have a substantial share of their markets opened, it is dominated by competition in the market rather than competition for the market. DE is a special case, because due to recent court decision[162] approximately 48% of domestic passenger market will be now opened for competition since, which will make DE market 100% opened.

Graph 1. Level of openness of domestic passenger market, %

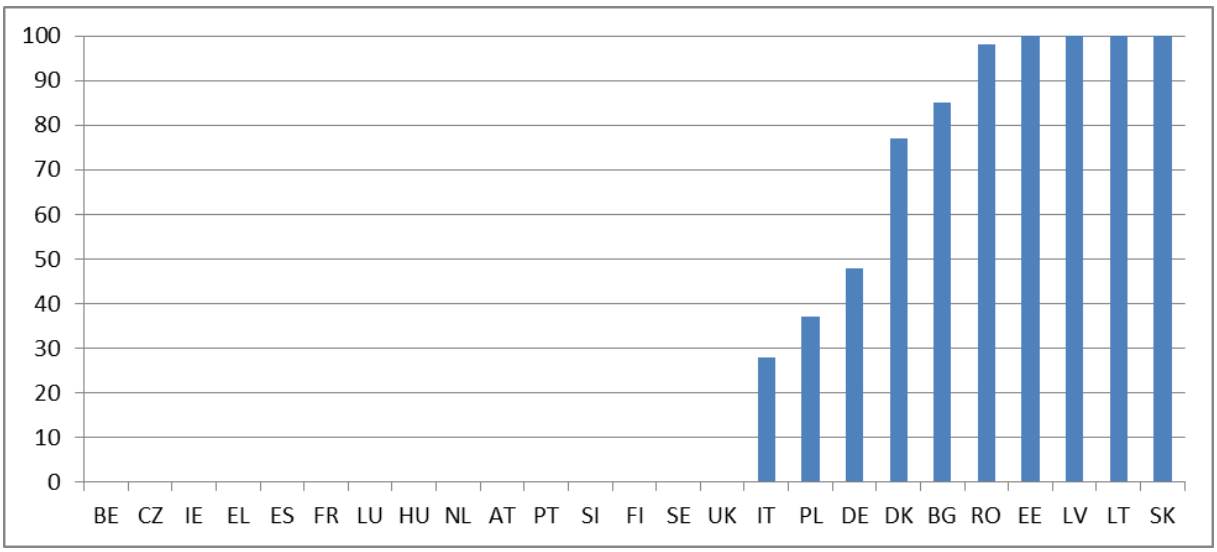


Graph 2. Closed markets and share of exclusive rights, %



In some Member States the incumbent operator enjoys exclusive rights to a part of the passenger transport market, which are outlined in the legislation. In these cases, such rights are not awarded in the form of a PSO, which means that they were not subject neither to competitive tendering nor direct award. As can be seen in the graph 2, such cases amount from 40% to 85% of domestic passenger markets of PT, EF, FR and FI.

Graph 3. Semi-opened markets, %



However, there are parts of the markets of some Member States which are difficult to classify as closed or opened. Reasons for that are different in each country, but mainly are due to differences in the approach of implementation of EU legislation and reflect a high degree of lack of clarity in the market regulation. Differences in *de jure* legislation and *de facto* implementation also contribute to this difficulty. Share of such cases, termed as "semi-opened markets", is shown in the chart 3 as part of the total domestic passenger market (in terms of per cent of pkm). In case of Germany, the above-mentioned currently directly awarded 48% (direct-award practice will have to be abolished in future), is used here.

Chart 4. Competitively tendered PSOs and total PSOs, % of total pkm

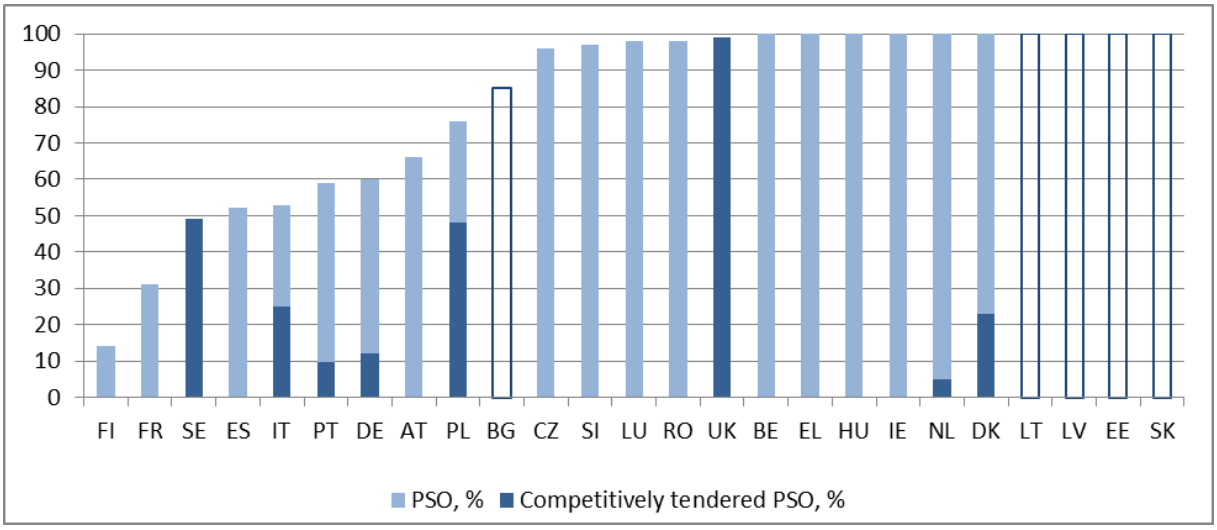
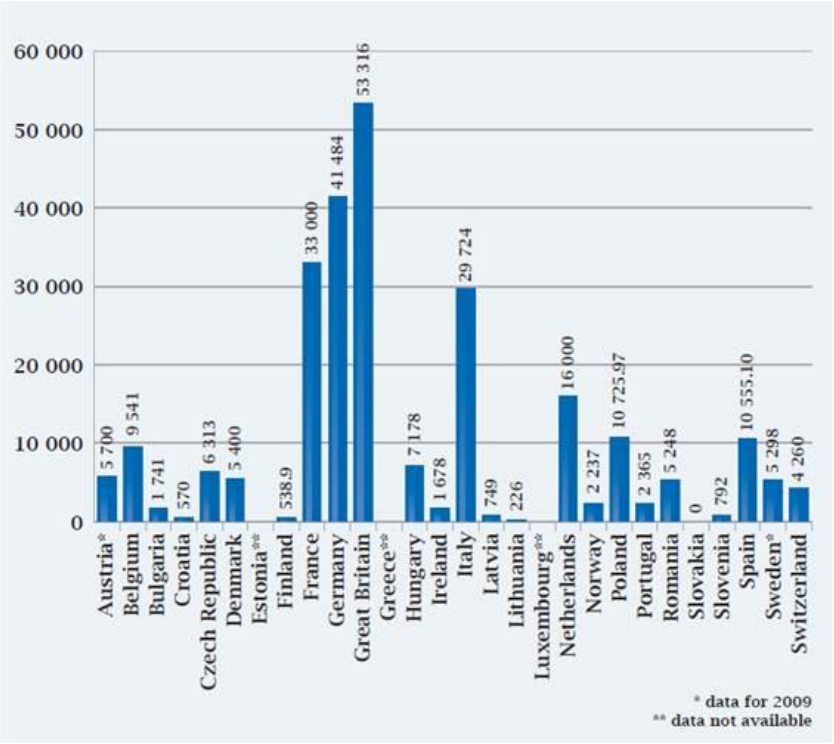


Chart 4 groups the Member States according to the total share of PSOs and shows the percentage of the competitively tendered PSOs. Although Bulgaria, Slovakia and three Baltic countries have their domestic passenger market opened for tenders, however only one bidder chose to take part in each tender in practice, which show a low degree of competitiveness. Also, although PSOs may be seen as a predominant tool to organise passenger transportation in railways, it is clear that most often it is not selected using a procedure of competitive tendering.

The rest of the annex is structured in fiches for each Member State (except Cyprus and Malta that have no railway system) presenting an analysis of the legal framework in terms of open access to domestic services and competitive tendering. This assessment is completed by data on the domestic passenger-kilometres falling under public service obligations (PSO) and the market shares of passenger railway undertakings (in terms of pkm). The latter are extracted from the Railway Market Monitoring Survey (RMMS) produced every two years by Commission services on the basis of contributions from Member States. Missing data has been completed with the help of Eurostat data series on domestic and international traffic and from the Community of European railways (CER) (cf. hereunder) report on public service obligations (CER (2011): Public service rail transport in the European Union: an overview, available at http://www.cer.be/media/2265_CER_Brochure_Public_Service_2011.pdf).

Figure 3 **The chart represents the scope of PSO national and regional in terms of million passenger-kilometers operated by the main operator[34] in each country concerned in 2010**



Analysis of national rail markets

Austria

1. Overview of domestic open access for commercial services and public service obligations

Member State	Domestic open access (other than cabotage)		Competitive tendering for PSO services			
	De jure	De facto***	Long-distance	Regional	Suburban	PSO (% p km)*
Austria	✓	✓	×	×	×	66%

*cf. tables 2 and 4

0=no PSO applies to long-distance services; C= concession till 2015, w=unsuccessful competitive tendering, government had to make direct award

***= Open de facto= whether new entrants have entered the open access market

2 –Overall traffic in passenger-km

		1990	1995	2000	2005	2007	2008	2009	2010
Passenger transport	National (m pkm)				6895	7262	7403	8178*	8257*
	International (m pkm)				1749	1841	1877	1442*	1456*
	Of which under PSO (m pkm)					6305	6428	n.a.	5700**.

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission, Eurostat (*) and CER (**)

3- Market shares of railway undertakings

	Railway undertakings	Market share (%)	Total market share of all but the principal railway undertakings (%)
AT	ÖBB PV	94,2	5,4
	Other railway undertakings	5,8	

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission,

4 – Public service obligations

To date, all contracts under PSO appear to have been awarded directly. In February 2001 SCHIG, on behalf of the Ministry of Transport, concluded a new contract with the incumbent ÖBB Personenverkehr AG that covers the entirety of the Austrian railway network for regional transport and a number of specific long-distance services and will expire in 2019.

According to the Community of European Railways, the main incumbent in Austria, ÖBB operated 5700 passenger-km under public service obligations in 2010 (data is the RMMS 2010 is not available).

		Examples
NETWORKS		
Networks that are CLOSED de facto (pkm)		
Directly awarded PSC & NO open access		
Directly awarded "exclusive rights w/o PSO" & NO open access		
Total CLOSED	66%	
Networks that are OPEN de facto		
Competitively tendered PSC (NO open access in parallel)		
Open access (no PSO in parallel)	33%pkm	Wien-Salzburg line (long-distance services)
Unrestricted Open access & tendered PSCs in parallel		
Open access restricted only if it compromises PSOs (tendered PSCs)		
Total OPEN	33%	
Semi-opened		
Unrestricted Open access & directly awarded PSCs in parallel	66% pkm	All services outside Vienna-Salzburg line
Open access restricted only if it compromises PSOs (directly awarded PSCs)		

Belgium

1. Overview of domestic open access for commercial services and public service obligations

Member State	Domestic open access (other than cabotage)		Competitive tendering for PSO services			
	De jure	De facto***	Long-distance	Regional	Suburban	PSO (% p km)*
Belgium	×	×	×	×	×	100%

*cf. tables 2 and 4

0=no PSO applies to long-distance services; C= concession till 2015, w=unsuccessful competitive tendering, government had to make direct award

***= Open de facto= whether new entrants have entered the open access market

2 –Overall traffic in passenger-km

		1990	1995	2000	2005	2007	2008	2009	2010
Passenger transport	National (m pkm)	5592	5785	6317	7771	8547	8913	9005	9231
	International (m pkm)	948	972	1415	1379	1386	1491	1488	1379
	Of which under PSO (m pkm)					8442	8902	8992	9225

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission

3- Market shares of railway undertakings

	Railway undertakings	Market share (%)	Total market share of all but the principal railway undertakings (%)
BE	SNCB/NMBS	99,8	0,2
	Eurostar Limited	0,2	

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission

4 – Market structure – open access for commercial services and public service obligations (PSOs)

		Examples
NETWORKS		
Networks that are CLOSED de facto (pkm)		
Directly awarded PSC & NO open access	100% pkm	All domestic services
Directly awarded "exclusive rights w/o PSO" & NO open access		
Total CLOSED	100% pkm	
Networks that are OPEN de facto		
Competitively tendered PSC (NO open access in parallel)		
Open access (no PSO in parallel)		
Unrestricted Open access & tendered PSCs in parallel		
Open access restricted only if it compromises PSOs (tendered PSCs)		
Total OPEN		
Semi-opened		
Unrestricted Open access & directly awarded PSCs in parallel		
Open access restricted only if it compromises PSOs (directly awarded PSCs)		

Bulgaria

1. Overview of domestic open access for commercial services and public service obligations

Member State	Domestic open access (other than cabotage)		Competitive tendering for PSO services			
	De jure	De facto***	Long-distance	Regional	Suburban	PSO (% p km)
Bulgaria	✓	×	O	w	w	85%*

*cf. tables 2 and 4

0=no PSO applies to long-distance services; C= concession till 2015, w=unsuccessful competitive tendering, government had to make direct award

***= Open de facto= whether new entrants have entered the open access market

According to CER (2011), the PSO contract was put for tender and does not cover long-distance domestic services. Competitive tendering was unsuccessful as only BDZ, the incumbent submitted an offer.

2 –Overall traffic in passenger-km

		1990	1995	2000	2005	2007	2008	2009	2010
Passenger transport	National (m pkm)	7793	4693	3472	2388	2238	2264	2089	2045
	International (m pkm)				60	86	49*	55	55
	Of which under PSO (m pkm)				334	2040	1972	1807	1740

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission and Eurostat(*)

3- Market shares of railway undertakings

	Railway undertakings	Market share (%)	Total market share of all but the principal railway undertakings (%)
BG	BDZ Passenger Services	97,4	2,6
	BDZ EAD	2,6	

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission

4 – Market structure – open access for commercial services and public service obligations (PSOs)

		Examples
NETWORKS		
Networks that are CLOSED de facto (pkm)		
Directly awarded PSC & NO open access		
Directly awarded "exclusive rights w/o PSO" & NO open access		
Total CLOSED		
Networks that are OPEN de facto		
Competitively tendered PSC (NO open access in parallel)	85% pkm	Local and regional services (situation *de jure*)
Open access (no PSO in parallel)	15% pkm	Long-distance services
Unrestricted Open access & tendered PSCs in parallel		
Open access restricted only if it compromises PSOs (tendered PSCs)		
Total OPEN	100%	situation *de jure*
Semi-opened		
Unrestricted Open access & directly awarded PSCs in parallel	85% pkm	Local and regional services (situation *de facto*)
Open access restricted only if it compromises PSOs (directly awarded PSCs)		
Total SEMI-OPEN	85%pkm	situation *de facto*

Czech Republic

1. Overview of domestic open access for commercial services and public service obligations

Member State	Domestic open access (other than cabotage)		Competitive tendering for PSO services			
	De jure	De facto***	Long-distance	Regional	Suburban	PSO (% p km)
Czech Republic	✓	✓	×	Mix	×	96%*

*cf. tables 2 and 4

0=no PSO applies to long-distance services; C= concession till 2015, w=unsuccessful competitive tendering, government had to make direct award

***= Open de facto= whether new entrants have entered the open access market

The Czech government has recently withdrawn support for Eurocity and Intercity services and has confirmed its intention to gradually open the long-distance market by putting around 75% of services operated now by the incumbent CD to competitive tender by 2020.

2 –Overall traffic in passenger-km

		1990	1995	2000	2005	2007	2008	2009	2010
Passenger transport	National (m pkm)	n.a.	7602	6681	6285	6536	6324	6133	6263
	International (m pkm)	n.a.	403	619	381	364	479	371	328
	Of which under PSO (m pkm)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	6313

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission and CER(*)

3- Market shares of railway undertakings

	Railway undertakings	Market share (%)	Total market share of all but the principal railway undertakings (%)
CZ	České Dráhy	99.76	0,24
	Viamont	0.16	
	Rail Transport	0.03	
	RegioJet	0.02	
	Vogtlandbahn-GmbH, organizační složka	0.01	

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission

It is important to underline that this data does not take into account of RegioJet and Leo Express, the 2 additional railway undertakings operating commercial services between Prague and Ostrava (and competing with the incumbent České Dráhy) that have started in 2011 and 2012 (November).

4 – Market structure – open access for commercial services and public service obligations (PSOs)

CER indicates that 96% of railway services fall under public service contracts. PSO are awarded through a mix of competitive-tendered and directly awarded contracts. Existing contracts also contain clauses whereby passenger transport authorities can be gradually provided by another operator chosen by the authority before the end of the contract (with a 75% cap).

Public service contracts for long-distance services have been awarded directly to České Dráhy. In 2008, most regional PSC appeared to have been awarded directly, but 2 contracts were successfully competitively tendered (Liberec-Pardubice, Most-Plzen, Karlovy Vary-Mariánské Lázně)[163] and awarded to Viamont.

Since the market share of pkm of Viamont appears to be only 0.16%, the share of currently competitively tendered contracts cannot exceed 0.16%.

[163] JASPER Study (2008) KCW Kompetenz Centrum Wettbewerb Consulting: Funding Regional Passenger Rolling Stock – The Example of the Czech Republic, http://www.jaspers-europa-info.org/attachments/115_Jaspers%20working%20paper%20Funding%20Regional%20Rail%20Stock%20Czech%20Republic.pdf ; 3 tenders were organised: Liberec-Pardubice (winner České Dráhy) , Most-Plzen (winner Viamont), Karlovy Vary-Mariánské Lázně (winner Viamont). The tender Liberec-Pardubice appear to have been cancelled.

In this context, the table hereunder reflects the Czech rail market structure. Yet, it is important to underline that the recent policies of the Czech government (open access and competitive tenders) are likely to profoundly affect these figures.

		Examples
NETWORKS		
Networks that are CLOSED de facto (pkm)		
Directly awarded PSC & NO open access	96% pkm	Long-distance services (except Intercity) and most regional services
Directly awarded "exclusive rights w/o PSO" & NO open access		
Total CLOSED	96% pkm	
Networks that are OPEN de facto		
Competitively tendered PSC (NO open access in parallel)	0.16% pkm	Most-Plzen, Karlovy Vary-Mariánské Lázně lines
Open access (no PSO in parallel)	4% pkm	Long-distance services (Intercity services)
Unrestricted Open access & tendered PSCs in parallel		
Open access restricted only if it compromises PSOs (tendered PSCs)		
Total OPEN	4.16%pkm	
Semi-opened		
Unrestricted Open access & directly awarded PSCs in parallel		
Open access restricted only if it compromises PSOs (directly awarded PSCs)		

Denmark

1. Overview of domestic open access for commercial services and public service obligations

Member State	Domestic open access (other than cabotage)		Competitive tendering for PSO services			
	De jure	De facto***	Long-distance	Regional	Suburban	PSO (% p km)
Denmark	✓	✓	Mix	Mix	×	100%

*cf. tables 2 and 4

0=no PSO applies to long-distance services; C= concession till 2015, w=unsuccessful competitive tendering, government had to make direct award

***= Open de facto= whether new entrants have entered the open access market

All traffic appears to be covered by public service obligations, based on CER (2011). In Denmark, railway undertakings have withdrawn commercial services.

2 –Overall traffic in passenger-km

		1990	1995	2000	2005	2007	2008	2009	2010
Passenger transport	National (m pkm)				5421	5915	5983	5999	6200
	International (m pkm)				330	438	488	377*	380*
	Of which under PSO (m pkm)					6176	6275	6174	6347

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission and Eurostat(*)

3- Market shares of railway undertakings

	Railway undertakings	Market share (%)	Total market share of all but the principal railway undertakings (%)
DK	DSB: Kobenhavn (incumbent)	65	18
	DSB S-tog A/S: Kobenhavn (incumbent)	17	
	DSB First: Molmö (SE)	8	
	Arriva Tog A/S: Tarnby	4	
	Metro Service A/S: Kobenhavn	3	
	Nordtjyske Jernbaner A/S: Hjorring	<1	
	Lokalbanen A/S: Hillerod	1	
	Midtjyske Jernbaner Drift A/S: Odder	<1	
	Regionstog A/S: Holbaek	1	
	Nord-Ostsee Bahn GmbH: Kiel (DE)	<1	
	SJ (SE)	<1	
	Regionalbahn Schleswig-Holstein (DE)	<1	

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission and CER(*)

4 – Market structure – open access for commercial services and public service obligations (PSOs)

According to CER (2011), 23% of pkm of public service contracts have been tendered out, whereas the rest (77%) was negotiated.

		Examples
NETWORKS		
Networks that are CLOSED de facto (pkm)		
Directly awarded PSC & NO open access		
Directly awarded "exclusive rights w/o PSO" & NO open access		
Total CLOSED		
Networks that are OPEN de facto		
Competitively tendered PSC (NO open access in parallel)		
Open access (no PSO in parallel)		
Unrestricted Open access & tendered PSCs in parallel	23% pkm	
Open access restricted only if it compromises PSOs (tendered PSCs)		
Total OPEN	23%pkm	
Semi-opened		
Unrestricted Open access & directly awarded PSCs in parallel	77% pkm	
Open access restricted only if it compromises PSOs (directly awarded PSCs)		
Total SEMI-OPEN	77%pkm	

Estonia

1. Overview of domestic open access for commercial services and public service obligations

Member State	Domestic open access (other than cabotage)		Competitive tendering for PSO services			
	De jure	De facto***	Long-distance	Regional	Suburban	PSO (% p km)
Estonia	✓	×	Mix	×	×	100%

*cf. tables 2 and 4

0=no PSO applies to long-distance services; C= concession till 2015, w=unsuccessful competitive tendering, government had to make direct award

***= Open de facto= whether new entrants have entered the open access market

Public service contracts have been awarded directly as it appears that the market is not able to allow successful competitive tendering, although the Estonian law foresees competitive tendering (CER, 2011).

2 –Overall traffic in passenger-km

		1990	1995	2000	2005	2007	2008	2009	2010
Passenger transport	National (m pkm)	1510	421	261	248	246	245	232	229
	International (m pkm)							17	18
	Of which under PSO (m pkm)	1510	421	261	248	246	245	232	229

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission and Eurostat(*)

3- Market shares of railway undertakings

	Railway undertakings	Market share (%)	Total market share of all but the principal railway undertakings (%)
EE	Edelaraudtee	50	50
	Elektriraudtee	42	
	GoRail	7	

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission

GoRail is an international service outside public service intervention (CER, 2011).

4 – Market structure – open access for commercial services and public service obligations (PSOs)

		Examples
NETWORKS		
Networks that are CLOSED de facto (pkm)		
Directly awarded PSC & NO open access		
Directly awarded "exclusive rights w/o PSO" & NO open access		
Total CLOSED		
Networks that are OPEN de facto		
Competitively tendered PSC (NO open access in parallel)		
Open access (no PSO in parallel)		
Unrestricted Open access & tendered PSCs in parallel	X	Situation *de jure*
Open access restricted only if it compromises PSOs (tendered PSCs)		
Total OPEN		
Semi-opened		
Unrestricted Open access & directly awarded PSCs in parallel	x	Situation *de facto*
Open access restricted only if it compromises PSOs (directly awarded PSCs)		

Finland

1. Overview of domestic open access for commercial services and public service obligations

Member State	Domestic open access (other than cabotage)		Competitive tendering for PSO services			
	De jure	De facto***	Long-distance	Regional	Suburban	PSO (% p km)
Finland	x	×	×	×	×	14%

*cf. tables 2 and 4

0=no PSO applies to long-distance services; C= concession till 2015, w=unsuccessful competitive tendering, government had to make direct award

***= Open de facto= whether new entrants have entered the open access market

The Finnish legislation appears to be undergoing a process of revision with the view to introduce some form of competitive tendering (CER, 2011).

2 –Overall traffic in passenger-km

		1990	1995	2000	2005	2007	2008	2009	2010
Passenger transport	National (m pkm)	3254	3133	3345	3401	3675	3940	3785	3869
	International (m pkm)	77	51	60	76	103	112	91	90
	Of which under PSO (m pkm)					1350	n.a.	n.a.	539*

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission and CER*)

3- Market shares of railway undertakings

	Railway undertakings	Market share (%)	Total market share of all but the principal railway undertakings (%)
FI	VR Ltd.	100	0

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission

4 – Market structure – open access for commercial services and public service obligations (PSOs)

		Examples
NETWORKS		
Networks that are CLOSED de facto (pkm)		
Directly awarded PSC & NO open access	14% pkm	1/3 of long-distance services and regional services
Directly awarded "exclusive rights w/o PSO" & NO open access	86% pkm	2/3 of long-distance services and commuter services
Total CLOSED	100%	
Networks that are OPEN de facto		
Competitively tendered PSC (NO open access in parallel)		
Open access (no PSO in parallel)		
Unrestricted Open access & tendered PSCs in parallel		
Open access restricted only if it compromises PSOs (tendered PSCs)		
Total OPEN		
Semi-opened		
Unrestricted Open access & directly awarded PSCs in parallel		
Open access restricted only if it compromises PSOs (directly awarded PSCs)		

France

1. Overview of domestic open access for commercial services and public service obligations

Member State	Domestic open access (other than cabotage)		Competitive tendering for PSO services			
	De jure	De facto***	Long-distance	Regional	Suburban	PSO (% p km)
France	×	×	0	×	×	31%

*cf. tables 2 and 4

0=PSO applies only partly to long-distance services; C= concession till 2015, w=unsuccessful competitive tendering, government had to make direct award

***= Open de facto= whether new entrants have entered the open access market

Although the SNCF has a monopoly for domestic passenger rail services, not all of its services are covered by public service obligations (e.g. TGV).

2 –Overall traffic in passenger-km

		1990	1995	2000	2005	2007	2008	2009	2010
Passenger transport	National (m pkm)	73900	64500	n/a	69066*	72800	77000	78629*	76790**
	International (m pkm)					7500	8000	9883*	9100**
	Of which under PSO (m pkm)	6100	6800	8500	10200	22500	24100	24300	24400

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission, Eurostat (*) and Bulletin Trimestriel des Transports du SOeS, données amenées au 02/03/2012 (http://www.statistiques.developpement-durable.gouv.fr/transports/i/transport-voyageurs.html)

3- Market shares of railway undertakings

	Railway undertakings	Market share (%)	Total market share of all but the principal railway undertakings (%)
FR	SNCF	99	1
	Other railway undertakings	1	

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission

4 – Market structure – open access for commercial services and public service obligations (PSOs)

		Examples
NETWORKS		
Networks that are CLOSED de facto (pkm)		
Directly awarded PSC & NO open access	31% pkm	Regional services (e.g. TER), Trains d'equilibre du territoire (TET)
Directly awarded "exclusive rights w/o PSO" & NO open access	69% pkm	TGV services (except Trains d'equilibre du territoire)
Total CLOSED	100%	
Networks that are OPEN de facto		
Competitively tendered PSC (NO open access in parallel)		
Open access (no PSO in parallel)		
Unrestricted Open access & tendered PSCs in parallel		
Open access restricted only if it compromises PSOs (tendered PSCs)		
Total OPEN		
Semi-opened		
Unrestricted Open access & directly awarded PSCs in parallel		
Open access restricted only if it compromises PSOs (directly awarded PSCs)		

Germany

1. Overview of domestic open access for commercial services and public service obligations

Member State	Domestic open access (other than cabotage)		Competitive tendering for PSO services			
	De jure	De facto***	Long-distance	Regional	Suburban	PSO (% p km)
Germany	✓	✓	O	Mix	Mix	60%*

*cf. tables 2 and 4

0=no PSO applies to long-distance services; C= concession till 2015, w=unsuccessful competitive tendering, government had to make direct award

***= Open de facto= whether new entrants have entered the open access market

Long-distance intercity services fall under open access in Germany. There are competitive tenders and direct awards of public service contracts, although the Bundesgerichtshof has clarified in February 2011 that direct awards were not allowed by German law.

2 –Overall traffic in passenger-km

		1990	1995	2000	2005	2007	2008	2009	2010
Passenger transport	National (m pkm)	44600	70977	75404	74946	75516	76909	76583	78515
	International (m pkm)					3587	3856	4349	4538
	Of which under PSO (m pkm)	27400	36277	36226	33695	n.a.	n.a.	n.a.	47000*.

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission and CER*)

3- Market shares of railway undertakings

	Railway undertakings	Market share (%)	Total market share of all but the principal railway undertakings (%)
DE	DB AG	92	8
	Other railway undertakings	8	

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission

4 – Market structure – open access for commercial services and public service obligations (PSOs)

It could be estimated that 12% of all pkm have been awarded through competitive tendering. According to Mofair (2011)[164], some 37% of train-km of PSC services in Germany has been put for tender. To a large extent, the vast majority of PSC operated by railway undertakings than DB (25% PSC train-km - 8% of national pkm) were awarded through a tendering procedure. If we maintain the same train-km to pkm ratio, it can be extrapolated that these 37% of all train-km represent some 12% of all national pkm.

Some 48% of all pkm in Germany have been directly awarded (although there is full open access to the whole domestic network). Given the verdict of the Bundesgerichtshof, these pkm will have to be tendered out in the future.

		Examples
NETWORKS		
Networks that are CLOSED de facto (pkm)		
Directly awarded PSC & NO open access		
Directly awarded "exclusive rights w/o PSO" & NO open access		
Total CLOSED		
Networks that are OPEN de facto		
Competitively tendered PSC (NO open access in parallel)		
Open access (no PSO in parallel)	40% pkm	Long-distance services (intercity)
Unrestricted Open access & tendered PSCs in parallel	12% pkm 48%	

[164] MoFair, Wettbewerber Report Eisenbahn, 2010/2011, http://www.mofair.de/content/20110519_wettbewerber-report-eisenbahn-2010-2011.pdf

Open access restricted only if it compromises PSOs (tendered PSCs)		
Total OPEN	52% pkm	
Semi-opened		
Unrestricted Open access & directly awarded PSCs in parallel	48% pkm**	**= according to decision of Bundesgerichtshof, in the future these services will have to be tendered out
Open access restricted only if it compromises PSOs (directly awarded PSCs)		

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Greece

1. Overview of domestic open access for commercial services and public service obligations

Member State	Domestic open access (other than cabotage)		Competitive tendering for PSO services			
	De jure	De facto***	Long-distance	Regional	Suburban	PSO (% p km)
Greece	×	×	×	×	×	100%*

*cf. tables 2 and 4

0=no PSO applies to long-distance services; C= concession till 2015, w=unsuccessful competitive tendering, government had to make direct award

***= Open de facto= whether new entrants have entered the open access market

2 –Overall traffic in passenger-km

		1990	1995	2000	2005	2007	2008	2009	2010
Passenger transport	National (m pkm)		1513	1608	1804	1852	1599	1296	1337*
	International (m pkm)		55	21	50	77	59	47	46*
	Of which under PSO (m pkm)					0	0	n.a.	n.a.

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission and Eurostat (*)

3- Market shares of railway undertakings

	Railway undertakings	Market share (%)	Total market share of all but the principal railway undertakings (%)
EL	Trainose SA	100%	n.a.

4 – Market structure – open access for commercial services and public service obligations (PSOs)

		Examples
NETWORKS		
Networks that are CLOSED de facto (pkm)		
Directly awarded PSC & NO open access	100% pkm	All domestic services
Directly awarded "exclusive rights w/o PSO" & NO open access		
Total CLOSED		
Networks that are OPEN de facto		
Competitively tendered PSC (NO open access in parallel)		
Open access (no PSO in parallel)		
Unrestricted Open access & tendered PSCs in parallel		
Open access restricted only if it compromises PSOs (tendered PSCs)		
Total OPEN		
Semi-opened		
Unrestricted Open access & directly awarded PSCs in parallel		
Open access restricted only if it compromises PSOs (directly awarded PSCs)		

Hungary

1. Overview of domestic open access for commercial services and public service obligations

Member State	Domestic open access (other than cabotage)		Competitive tendering for PSO services			
	De jure	De facto***	Long-distance	Regional	Suburban	PSO (% p km)
Hungary	x	×	×	×	×	100%

*cf. tables 2 and 4

0=no PSO applies to long-distance services; C= concession till 2015, w=unsuccessful competitive tendering, government had to make direct award

***= Open de facto= whether new entrants have entered the open access market

2 –Overall traffic in passenger-km

		1990	1995	2000	2005	2007	2008	2009	2010
Passenger transport	National (m pkm)	11403	8441	9693	9880	8379	7923	7681	7316
	International (m pkm)	486	334	387	403	372	381	391	376
	Of which under PSO (m pkm)	11403	8441	9693	9880	8379	7923	7681	7316

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission and Eurostat (*)

3- Market shares of railway undertakings

	Railway undertakings	Market share (%)	Total market share of all but the principal railway undertakings (%)
HU	MAV Start Zrt (incumbent)	98,2	1,8
	GySEV Zrt (incumbent)	1,8	

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission

4 – Market structure – open access for commercial services and public service obligations (PSOs)

		Examples
NETWORKS		
Networks that are CLOSED de facto (pkm)		
Directly awarded PSC & NO open access	100% pkm	All domestic services
Directly awarded "exclusive rights w/o PSO" & NO open access		
Total CLOSED		
Networks that are OPEN de facto		
Competitively tendered PSC (NO open access in parallel)		
Open access (no PSO in parallel)		
Unrestricted Open access & tendered PSCs in parallel		
Open access restricted only if it compromises PSOs (tendered PSCs)		
Total OPEN		
Semi-opened		
Unrestricted Open access & directly awarded PSCs in parallel		
Open access restricted only if it compromises PSOs (directly awarded PSCs)		

Ireland

1. Overview of domestic open access for commercial services and public service obligations

Member State	Domestic open access (other than cabotage)		Competitive tendering for PSO services			
	De jure	De facto***	Long-distance	Regional	Suburban	PSO (% p km)
Ireland	×	×	×	×	×	100%*

*cf. tables 2 and 4

0=no PSO applies to long-distance services; C= concession till 2015, w=unsuccessful competitive tendering, government had to make direct award

***= Open de facto= whether new entrants have entered the open access market

2 –Overall traffic in passenger-km

		1990	1995	2000	2005	2007	2008	2009	2010
Passenger transport	National (m pkm)				1564	1902	1876	1604	1582
	International (m pkm)				127	105	100	79	96
	Of which under PSO (m pkm)					2007	1976	1683	1678

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission and Eurostat (*)

3- Market shares of railway undertakings

	Railway undertakings	Market share (%)	Total market share of all but the principal railway undertakings (%)
IE	Iarnrod Eireann	100	0

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission

4 – Market structure – open access for commercial services and public service obligations (PSOs)

		Examples
NETWORKS		
Networks that are CLOSED de facto (pkm)		
Directly awarded PSC & NO open access	100% pkm	All domestic services
Directly awarded "exclusive rights w/o PSO" & NO open access		
Total CLOSED		
Networks that are OPEN de facto		
Competitively tendered PSC (NO open access in parallel)		
Open access (no PSO in parallel)		
Unrestricted Open access & tendered PSCs in parallel		
Open access restricted only if it compromises PSOs (tendered PSCs)		
Total OPEN		
Semi-opened		
Unrestricted Open access & directly awarded PSCs in parallel		
Open access restricted only if it compromises PSOs (directly awarded PSCs)		

Italy

1. Overview of domestic open access for commercial services and public service obligations

Member State	Domestic open access (other than cabotage)		Competitive tendering for PSO services			
	De jure	De facto***	Long-distance	Regional	Suburban	PSO (% p km)
Italy	✓	✓	×	Mix	Mix	53%*

*cf. tables 2 and 4

0=no PSO applies to long-distance services; C= concession till 2015, w=unsuccessful competitive tendering, government had to make direct award

***= Open de facto= whether new entrants have entered the open access market

2 –Overall traffic in passenger-km

		1990	1995	2000	2005	2007	2008	2009	2010
Passenger transport	National (m pkm)			44308	43889	44707*	44707*	43389*	42486*
	International (m pkm)			2825	2255	1278*	1059*	1107*	863*
	Of which under PSO (m pkm)			408	444	n.a.	22180	22168	22711.

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission and Eurostat (*)

CER (2011) reports that 29000 pkm would be covered by PSOs in Italy (by Trenitalia) whereas Italy declares that 22711pkm fall under PSO (data for 2010).

3- Market shares of railway undertakings

	Railway undertakings	Market share (%)	Total market share of all but the principal railway undertakings (%)
IT	Trenitalia	91.7	8.3.
	New entrants.	8.3	

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission

4 – Market structure – open access for commercial services and public service obligations (PSOs)

According to CER(2011), competitive tenders have been used for "*all or part*" of PSO contracts in Veneto, Lombardia, Liguria, Emilia-Romagna and Piemonte. Based on the data of the Rapporto Pendolaria 2011[165] all the train-kilometres of these PSO contracts represent 48% of all train-kilometres of Italian PSCs. It could be extrapolated that these 48% of train-kilometres represent 48% of all PSC passenger-km (or therefore ca. 25% of all Italian pkm).

		Examples
NETWORKS		
Networks that are CLOSED de facto (pkm)		
Directly awarded PSC & NO open access		
Directly awarded "exclusive rights w/o PSO" & NO open access		
Total CLOSED		
Networks that are OPEN de facto		
Competitively tendered PSC (NO open access in parallel)		
Open access (no PSO in parallel)	47% pkm	Long-distance services
Unrestricted Open access & tendered PSCs in parallel		
Open access restricted only if it compromises PSOs (tendered PSCs)	25% pkm	PSCs in Liguria, Emilia-Romagna, Lombardy, Veneto and Piemonte
Total OPEN		
Semi-opened		
Unrestricted Open access & directly awarded PSCs in parallel		

[165] Legambiente: Rapporto Pendolaria 2011, available: http://www.legambiente.it/sites/default/files/docs/dossier_pendolaria2011_0_2.pdf

Open access restricted only if it compromises PSOs (directly awarded PSCs)	28% pkm	PSCs in other Italian regions than Liguria, Emilia-Romagna, Lombardy, Veneto and Piemonte

Latvia

1. Overview of domestic open access for commercial services and public service obligations

Member State	Domestic open access (other than cabotage)		Competitive tendering for PSO services			
	De jure	De facto***	Long-distance	Regional	Suburban	PSO (% p km)
Latvia	✓	×	w	w	w	100%*

*cf. tables 2 and 4

0=no PSO applies to long-distance services; C= concession till 2015, w=unsuccessful competitive tendering, government had to make direct award

***= Open de facto= whether new entrants have entered the open access market

2 –Overall traffic in passenger-km

		1990	1995	2000	2005	2007	2008	2009	2010
Passenger transport	National (m pkm)	3327	779	568	800	889	865	686	670
	International (m pkm)	2039	477	147	94	102	86	70	79
	Of which under PSO (m pkm)				800	889	865	686	670

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission and Eurostat (*)

According to CER (2011), PSO contracts have been awarded through competitive tenders. Yet, probably because of a lack of bids, the tenders have been unsuccessful and the PSC appear still to have been awarded directly to the incumbent.

3- Market shares of railway undertakings

	Railway undertakings	Market share (%)	Total market share of all but the principal railway undertakings (%)
LV	A/s Pasazieru vilciens (AS PV)	89,43	10,54
	SAI LDZ Cargo	10,54	

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission

4 – Market structure – open access for commercial services and public service obligations (PSOs)

		Examples
NETWORKS		
Networks that are CLOSED de facto (pkm)		
Directly awarded PSC & NO open access		
Directly awarded "exclusive rights w/o PSO" & NO open access		
Total CLOSED		
Networks that are OPEN de facto		
Competitively tendered PSC (NO open access in parallel)		
Open access (no PSO in parallel)		
Unrestricted Open access & tendered PSCs in parallel	X	Situation *de jure*
Open access restricted only if it compromises PSOs (tendered PSCs)		
Total OPEN		
Semi-opened		
Unrestricted Open access & directly awarded PSCs in parallel	x	Situation *de facto*
Open access restricted only if it compromises PSOs (directly awarded PSCs)		

Lithuania

1. Overview of domestic open access for commercial services and public service obligations

Member State	Domestic open access (other than cabotage)		Competitive tendering for PSO services			
	De jure	De facto***	Long-distance	Regional	Suburban	PSO (% p km)
Lithuania	✓	×	w	w	w	100%*

*cf. tables 2 and 4

0=no PSO applies to long-distance services; C= concession till 2015, w=unsuccessful competitive tendering, government had to make direct award

***= Open de facto= whether new entrants have entered the open access market

2 –Overall traffic in passenger-km

		1990	1995	2000	2005	2007	2008	2009	2010
Passenger transport	National (m pkm)	1521	746	335	259	223	235	213	226
	International (m pkm)	2119	384	276	169	186	162	144	147
	Of which under PSO (m pkm)					223	235	n.a.	226*

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission and CER (*)

According to CER (2011), PSC contracts have been awarded through competitive tenders. Yet, probably because of a lack of bids, the tenders have been unsuccessful and the PSC appear still to have been awarded directly to the incumbent.

3- Market shares of railway undertakings

	Railway undertakings	Market share (%)	Total market share of all but the principal railway undertakings (%)
LT	SC Lithuanian Railways	100	0

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission

4 – Market structure – open access for commercial services and public service obligations (PSOs)

		Examples
NETWORKS		
Networks that are CLOSED de facto (pkm)		
Directly awarded PSC & NO open access		
Directly awarded "exclusive rights w/o PSO" & NO open access		
Total CLOSED		
Networks that are OPEN de facto		
Competitively tendered PSC (NO open access in parallel)		
Open access (no PSO in parallel)		
Unrestricted Open access & tendered PSCs in parallel	X	Situation *de jure*
Open access restricted only if it compromises PSOs (tendered PSCs)		
Total OPEN		
Semi-opened		
Unrestricted Open access & directly awarded PSCs in parallel	x	Situation *de facto*
Open access restricted only if it compromises PSOs (directly awarded PSCs)		

Luxembourg

1. Overview of domestic open access for commercial services and public service obligations

Member State	Domestic open access (other than cabotage)		Competitive tendering for PSO services			
	De jure	De facto***	Long-distance	Regional	Suburban	PSO (% p km)
Luxembourg	x	×	×	×	×	98%

*cf. tables 2 and 4

0=no PSO applies to long-distance services; C= concession till 2015, w=unsuccessful competitive tendering, government had to make direct award

***= Open de facto= whether new entrants have entered the open access market

2 –Overall traffic in passenger-km

		1990	1995	2000	2005	2007	2008	2009	2010
Passenger transport	National (m pkm)				254	233	246	239	246
	International (m pkm)				18	84	99	n.a.	103
	Of which under PSO (m pkm)				51	302	328	316	343

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission

The important cross-border commuter traffic between Luxembourg and Belgium, France and Germany is also covered by public service obligations.

3- Market shares of railway undertakings

	Railway undertakings	Market share (%)	Total market share of all but the principal railway undertakings (%)
LU	N.a.	100%	n.a.

4 – Market structure – open access for commercial services and public service obligations (PSOs)

		Examples
NETWORKS		
Networks that are CLOSED de facto (pkm)		
Directly awarded PSC & NO open access	98%pkm	
Directly awarded "exclusive rights w/o PSO" & NO open access	2%pkm	
Total CLOSED	100%	
Networks that are OPEN de facto		
Competitively tendered PSC (NO open access in parallel)		
Open access (no PSO in parallel)		
Unrestricted Open access & tendered PSCs in parallel		
Open access restricted only if it compromises PSOs (tendered PSCs)		
Total OPEN		
Semi-opened		
Unrestricted Open access & directly awarded PSCs in parallel		
Open access restricted only if it compromises PSOs (directly awarded PSCs)		

Netherlands

1. Overview of domestic open access for commercial services and public service obligations

Member State	Domestic open access (other than cabotage)		Competitive tendering for PSO services			
	De jure	De facto***	Long-distance	Regional	Suburban	PSO (% p km)
Netherlands	×	×	C	Mix	✓	100%*

*cf. tables 2 and 4

0=no PSO applies to long-distance services; C= concession till 2015, w=unsuccessful competitive tendering, government had to make direct award

***= Open de facto= whether new entrants have entered the open access market

PSC contracts in specific provinces have been put for tender. However, most of the regional traffic is still covered by the concession directly-awarded to the incumbent (NS). According to the BNB-NBB, the unprofitable routes of NS were outsourced and put for tender[166] - NS appears not to have taken part in these tenders.

2 –Overall traffic in passenger-km

		1990	1995	2000	2005	2007	2008	2009	2010
Passenger transport	National (m pkm)	n.a.	13500	14700	14752	15634	15895	15927	16002
	International (m pkm)	n.a.	n.a.	n.a.	231	254	275	920	966
	Of which under PSO (m pkm)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	16000*

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission and CER(*)

[166] Banque Nationale de Belgique – Nationale Bank van België, (2012), Working paper 211 (Verduyn-Deville): Implementation of EU legislation in rail liberalisation in Belgium, France, Germany and Netherlands, p.103, http://www.nbb.be/pub/01_00_00_00_00/01_06_00_00_00/01_06_01_00_00/20120314_WP221.htm

3- Market shares of railway undertakings

	Railway undertakings	Market share (%)	Total market share of all but the principal railway undertakings (%)
NL	Netherlands Railways	95,2	4,8
	Other railway undertakings	4,8	

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission

4 – Market structure – open access for commercial services and public service obligations (PSOs)

		Examples
NETWORKS		
Networks that are CLOSED de facto (pkm)		
Directly awarded PSC & NO open access	95%pkm	Concession contract awarded to NS
Directly awarded "exclusive rights w/o PSO" & NO open access		
Total CLOSED		
Networks that are OPEN de facto		
Competitively tendered PSC (NO open access in parallel)	5% pkm	PSCs in Friesland, Gelderland and East Netherlands.
Open access (no PSO in parallel)		
Unrestricted Open access & tendered PSCs in parallel		
Open access restricted only if it compromises PSOs (tendered PSCs)		
Total OPEN		
Semi-opened		
Unrestricted Open access & directly awarded PSCs in parallel		
Open access restricted only if it compromises PSOs (directly awarded PSCs)		

Poland

1. Overview of domestic open access for commercial services and public service obligations

Member State	Domestic open access (other than cabotage)		Competitive tendering for PSO services			
	De jure	De facto***	Long-distance	Regional	Suburban	PSO (% p km)
Poland	✓	×	×	Mix	×	76%*

*cf. tables 2 and 4

0=no PSO applies to long-distance services; C= concession till 2015, w=unsuccessful competitive tendering, government had to make direct award

***= Open de facto= whether new entrants have entered the open access market

According to CER (2011), PSC contracts cover 80% of pkm the long-distance (intercity) services and 90.5% of pkm regional services.

2 –Overall traffic in passenger-km

		1990	1995	2000	2005	2007	2008	2009	2010
Passenger transport	National (m pkm)	49683	26346	23844	17109	18772	19628	18243	17918
	International (m pkm)	690	289	248	706	529	489	449	530
	Of which under PSO (m pkm)	50373	26635	24092	14448	15895	16196	15316	13645

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission

CER reports 10725 pkm of PSO operated by the incumbent.

3- Market shares of railway undertakings

	Railway undertakings	Market share (%)	Total market share of all but the principal railway undertakings (%)
PL	PKP Intercity SA	46,82	48,31
	Przewozy Regionalne SP ZO O	36,22	
	Koleje Mazowieckie – KM SP ZO O	10,15	
	PKP SKM SP ZO O	4,87	

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission

4 – Market structure – open access for commercial services and public service obligations (PSOs)

Table hereunder provides estimations for the different types of markets in Poland. According to CER (2011), local *voivoideships* prefer competitive tendering, whereas those interregional PSC (46.8% of Polish pkm, according to CER) have been directly awarded. Moreover, always according to CER (2011), PSC contracts cover 80% of pkm the long-distance (intercity) services and 90.5% of pkm regional services.

		Examples
NETWORKS		
Networks that are CLOSED de facto (pkm)		
Directly awarded PSC & NO open access		
Directly awarded "exclusive rights w/o PSO" & NO open access		
Total CLOSED		
Networks that are OPEN de facto		
Competitively tendered PSC (NO open access in parallel)		
Open access (no PSO in parallel)	24% pkm	20% of long-distance (intercity services) and 9.5% of regional services
Unrestricted Open access & tendered PSCs in parallel	38% pkm	90.5% pkm of regional services
Open access restricted only if it compromises PSOs (tendered PSCs)		
Total OPEN		
Semi-opened		

Unrestricted Open access & directly awarded PSCs in parallel	37% pkm	80% of long-distance services
Open access restricted only if it compromises PSOs (directly awarded PSCs)		

Portugal

1. Overview of domestic open access for commercial services and public service obligations

Member State	Domestic open access (other than cabotage)		Competitive tendering for PSO services			
	De jure	De facto***	Long-distance	Regional	Suburban	PSO (% p km)
Portugal	-X	×	O	×	Mix	59%

*cf. tables 2 and 4

0=no PSO applies to long-distance services; C= concession till 2015, w=unsuccessful competitive tendering, government had to make direct award

***= Open de facto= whether new entrants have entered the open access market

Long-distance (intercity) services are not covered by PSCs. The public service contract for all regional and local services has been awarded to the incumbent CP, except for the important suburban commuter services to the South Lisbon, which have been awarded through a tender to the railway undertaking Fertagus.

2 –Overall traffic in passenger-km

		1990	1995	2000	2005	2007	2008	2009	2010
Passenger transport	National (m pkm)				3753	3933	4085	4049	4008
	International (m pkm)				57	55	120	103	103
	Of which under PSO (m pkm)					2799	2833	2391	2365

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission

3- Market shares of railway undertakings

	Railway undertakings	Market share (%)	Total market share of all but the principal railway undertakings (%)
PT	Fertagus	9,6	n.a.
	CP	91.4	

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission, and Commission services

4 – Market structure – open access for commercial services and public service obligations (PSOs)

		Examples
NETWORKS		
Networks that are CLOSED de facto (pkm)		
Directly awarded PSC & NO open access	50%pkm	Regional services
Directly awarded "exclusive rights w/o PSO" & NO open access	40.4%pkm	Long-distance intercity
Total CLOSED		
Networks that are OPEN de facto		
Competitively tendered PSC (NO open access in parallel)	9.6% pkm	South Lisbon commuter rail services – across the Tagus
Open access (no PSO in parallel)		
Unrestricted Open access & tendered PSCs in parallel		
Open access restricted only if it compromises PSOs (tendered PSCs)		
Total OPEN		
Semi-opened		
Unrestricted Open access & directly awarded PSCs in parallel		
Open access restricted only if it compromises PSOs (directly awarded PSCs)		

Romania

1. Overview of domestic open access for commercial services and public service obligations

Member State	Domestic open access (other than cabotage)		Competitive tendering for PSO services			
	De jure	De facto***	Long-distance	Regional	Suburban	PSO (% p km)
Romania	✓	×	×	×	×	98%*

*cf. tables 2 and 4

0=no PSO applies to long-distance services; C= concession till 2015, w=unsuccessful competitive tendering, government had to make direct award

***= Open de facto= whether new entrants have entered the open access market

2 –Overall traffic in passenger-km

		1990	1995	2000	2005	2007	2008	2009	2010
Passenger transport	National (m pkm)	29417	19928	11384	7816	7329	6805	5995	5308
	International (m pkm)	1164	197	247	144	146	152	133	129
	Of which under PSO (m pkm)	29417	19928	11384	7816	7476	6958	n.a.	5248*

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission and CER (*)

3- Market shares of railway undertakings

	Railway undertakings	Market share (%)	Total market share of all but the principal railway undertakings (%)
RO	CFR Calatori	95,51	3,93
	SC REGIOTRANS SRL	3,93	

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission, and Commission services

4 – Market structure – open access for commercial services and public service obligations (PSOs)

		Examples
NETWORKS		
Networks that are CLOSED de facto (pkm)		
Directly awarded PSC & NO open access		
Directly awarded "exclusive rights w/o PSO" & NO open access		
Total CLOSED		
Networks that are OPEN de facto		
Competitively tendered PSC (NO open access in parallel)		
Open access (no PSO in parallel)	2%pkm	
Unrestricted Open access & tendered PSCs in parallel		
Open access restricted only if it compromises PSOs (tendered PSCs)		
Total OPEN	2%	
Semi-opened	98%	
Unrestricted Open access & directly awarded PSCs in parallel	98%pkm	
Open access restricted only if it compromises PSOs (directly awarded PSCs)		

Slovakia

1. Overview of domestic open access for commercial services and public service obligations

Member State	Domestic open access (other than cabotage)		Competitive tendering for PSO services			
	De jure	De facto***	Long-distance	Regional	Suburban	PSO (% p km)
Slovakia	✓	×	w	w	w	100%*

*cf. tables 2 and 4

0=no PSO applies to long-distance services; C= concession till 2015, w=unsuccessful competitive tendering, government had to make direct award

***= Open de facto= whether new entrants have entered the open access market

The Slovakian government has organised competitive tenders for PSCs which appear to have been unsuccessful. It appears to have proceeded to direct awards, but not only to the incumbent ZSSK, but also to the Czech railway operator RegioJet.

2 –Overall traffic in passenger-km

		1990	1995	2000	2005	2007	2008	2009	2010
Passenger transport	National (m pkm)					1953	2077	2094*	2079*
	International (m pkm)			179	143	195	202	185*	188*
	Of which under PSO (m pkm)			2741	2023	2148	2279	n.a.	n.a.

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission and Eurostat (*)

There is no estimation of the pkm of PSC in Slovakia, as neither CER nor Slovakia has provided these figures for 2009 and 2010 (the data on PSOs before 2008 appears to include also international PSOs).

3- Market shares of railway undertakings

	Railway undertakings	Market share (%)	Total market share of all but the principal railway undertakings (%)
SK	ZSSK Slovensko	99,97	0,03

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission and CER (*)

It is unclear whether this data already reflects to the PSC contract awarded to the Czech railway undertaking RegioJet.

4 – Market structure – open access for commercial services and public service obligations (PSOs)

		Examples
NETWORKS		
Networks that are CLOSED de facto (pkm)		
Directly awarded PSC & NO open access		
Directly awarded "exclusive rights w/o PSO" & NO open access		
Total CLOSED		
Networks that are OPEN de facto		
Competitively tendered PSC (NO open access in parallel)		
Open access (no PSO in parallel)		
Unrestricted Open access & tendered PSCs in parallel		
Open access restricted only if it compromises PSOs (tendered PSCs)		
Total OPEN		
Semi-opened		
Unrestricted Open access & directly awarded PSCs in parallel	100%pkm	
Open access restricted only if it compromises PSOs (directly awarded PSCs)		

Slovenia

1. Overview of domestic open access for commercial services and public service obligations

Member State	Domestic open access (other than cabotage)		Competitive tendering for PSO services			
	De jure	De facto***	Long-distance	Regional	Suburban	PSO (% p km)
Slovenia	x	×	×	×	×	97%*

*cf. tables 2 and 4

0=no PSO applies to long-distance services; C= concession till 2015, w=unsuccessful competitive tendering, government had to make direct award

***= Open de facto= whether new entrants have entered the open access market

2 –Overall traffic in passenger-km

		1990	1995	2000	2005	2007	2008	2009	2010
Passenger transport	National (m pkm)	1166	491	593	666	690	713	718	680
	International (m pkm)	263	104	112	111	122	121	n.a.	n.a.
	Of which under PSO (m pkm)	1166	491	593	666	689	711	822	792

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission and Eurostat (*)

The percentages of PSOs seem to also include international PSOs as from 2008. CER (2011) indicates that 97% of all domestic services fall under PSO – the remaining 3% of pkm being special trains that are not subsidized. We will therefore assume 97% pkm are under PSO.

3- Market shares of railway undertakings

	Railway undertakings	Market share (%)	Total market share of all but the principal railway undertakings (%)
SI	SZ Passenger transport	99,99	0,01

4 – Market structure – open access for commercial services and public service obligations (PSOs)

The Slovenian rail legislation appears to refers to SŽ as the sole operator in Slovenia.

		Examples
NETWORKS		
Networks that are CLOSED de facto (pkm)		
Directly awarded PSC & NO open access	97%pkm	
Directly awarded "exclusive rights w/o PSO" & NO open access	3%pkm	
Total CLOSED	100%	
Networks that are OPEN de facto		
Competitively tendered PSC (NO open access in parallel)		
Open access (no PSO in parallel)		
Unrestricted Open access & tendered PSCs in parallel		
Open access restricted only if it compromises PSOs (tendered PSCs)		
Total OPEN		
Semi-opened		
Unrestricted Open access & directly awarded PSCs in parallel		
Open access restricted only if it compromises PSOs (directly awarded PSCs)		

Spain

1. Overview of domestic open access for commercial services and public service obligations

Member State	Domestic open access (other than cabotage)		Competitive tendering for PSO services			
	De jure	De facto***	Long-distance	Regional	Suburban	PSO (% p km)
Spain	x	×	O	×	×	52%*

*cf. tables 2 and 4

0=no PSO applies to long-distance services; C= concession till 2015, w=unsuccessful competitive tendering, government had to make direct award

***= Open de facto= whether new entrants have entered the open access market

The Spanish legislation is currently being modified to introduce competition in domestic services. The situation here reflects the situation as of now (and in numeric terms, as in 2010).

2 –Overall traffic in passenger-km

		1990	1995	2000	2005	2007	2008	2009	2010
Passenger transport	National (m pkm)	14992	14834	18035	19155	19348	21461	21184	20421
	International (m pkm)	484	479	536	653	618	611	516	557
	Of which under PSO (m pkm)	9538	8206	9596	8617	11500	11581	10912	10555

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission

3- Market shares of railway undertakings

	Railway undertakings	Market share (%)	Total market share of all but the principal railway undertakings (%)
ES	Renfe Operadora	100	0

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission

4 – Market structure – open access for commercial services and public service obligations (PSOs)

The Spanish legislation is currently being modified to introduce competition in domestic services.

		Examples
NETWORKS		
Networks that are CLOSED de facto (pkm)		
Directly awarded PSC & NO open access	48%pkm	RENFE Cercanias, FGC, FGV
Directly awarded "exclusive rights w/o PSO" & NO open access	52%pkm	Long-distance services (intercity) like AVE
Total CLOSED	100%	
Networks that are OPEN de facto		
Competitively tendered PSC (NO open access in parallel)		
Open access (no PSO in parallel)		
Unrestricted Open access & tendered PSCs in parallel		
Open access restricted only if it compromises PSOs (tendered PSCs)		
Total OPEN		
Semi-opened		
Unrestricted Open access & directly awarded PSCs in parallel		
Open access restricted only if it compromises PSOs (directly awarded PSCs)		

Sweden

1. Overview of domestic open access for commercial services and public service obligations

Member State	Domestic open access (other than cabotage)		Competitive tendering for PSO services			
	De jure	De facto***	Long-distance	Regional	Suburban	PSO (% p km)
Sweden	✓	✓	×	✓	✓	49%*

*cf. tables 2 and 4

0=no PSO applies to long-distance services; C= concession till 2015, w=unsuccessful competitive tendering, government had to make direct award

***= Open de facto= whether new entrants have entered the open access market

Sweden has been at the forefront of rail liberalisation with the introduction of competitive tendering for regional services in the early nineties. In 2010, open access to whole network was introduced ending with the monopoly of the incumbent on the long-distance services (where it operated at its own financial risk).

2 –Overall traffic in passenger-km

		1990	1995	2000	2005	2007	2008	2009	2010
Passenger transport	National (m pkm)	5946	6271	7706	8338	9771	10462	10706	10674
	International (m pkm)	654	562	537	598	499	555	615	544
	Of which under PSO (m pkm)	2448	3098	3386	3992	4601	4763	5298	n.a.

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission

No data is available for the share of PSC services, we will therefore assume the same percentage as per 2009 (i.e. 49%)

3- Market shares of railway undertakings

Sweden does report on the shares of each operator, but according to the support study of Steer Davies Gleave, quoting the IBM Rail Liberalisation Study, estimates that the share of SJ is some 90%.

	Railway undertakings	**Market share (%)**	**Total market share of all but the principal railway undertakings (%)**
SE	Arriva Tåg AB	n.a.	n.a.
	A-Train AB	n.a.	
	Bottniatåg AB	n.a.	
	DB Regio Sverige AB	n.a.	
	DSB	n.a.	
	DSB Småland	n.a.	
	DSBFirst Sverige AB	n.a.	
	DSBFirst Väst AB	n.a.	
	Inlandståget AB	n.a.	
	Merresor AB	n.a.	
	Roslagståg AB	n.a.	
	SJ AB	90% (est.)	
	SJ Norrlandståg AB	Cf. SJ AB	
	Stockholmståg KB	Cf. SJ AB	
	Svenska Tågkompaniet AB	n.a.	
	Tågåkeriet i Bergslagen AB	n.a.	
	Veolia Transport Sverige AB	n.a.	

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission and Steer Davies Gleave

4 – Market structure – open access for commercial services and public service obligations (PSOs)

		Examples
NETWORKS		
Networks that are CLOSED de facto (pkm)		
Directly awarded PSC & NO open access		
Directly awarded "exclusive rights w/o PSO" & NO open access		
Total CLOSED		
Networks that are OPEN de facto		
Competitively tendered PSC (NO open access in parallel)		
Open access (no PSO in parallel)	51% pkm	
Unrestricted Open access & tendered PSCs in parallel	49% pkm	
Open access restricted only if it compromises PSOs (tendered PSCs)		
Total OPEN	100%	
Semi-opened		
Unrestricted Open access & directly awarded PSCs in parallel		
Open access restricted only if it compromises PSOs (directly awarded PSCs)		

United Kingdom

1. Overview of domestic open access for commercial services and public service obligations

Member State	Domestic open access (other than cabotage)		Competitive tendering for PSO services			
	De jure	De facto***	Long-distance	Regional	Suburban	PSO (% p km)
Great Britain	✓	✓	✓	✓	✓	99%*
Northern Ireland	x	x	x	x	x	100%

*cf. tables 2 and 4

0=no PSO applies to long-distance services; C= concession till 2015, w=unsuccessful competitive tendering, government had to make direct award

***= Open de facto= whether new entrants have entered the open access market

UK (for the part on Great Britain) has been at the forefront of rail liberalisation with the introduction of competitive tendering for regional services in the early nineties.

2 –Overall traffic in passenger-km (Great Britain)

		1990	1995	2000	2005	2007	2008	2009	2010
Passenger transport	National (m pkm)	32000	30000	39002	43157	48878	51348	51123	54111
	International (m pkm)				1485	1595	1654	1641	1720
	Of which under PSO (m pkm)				42977	48635	51017	50738	53630

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission

Data does not cover Northern Ireland.

3- Market shares of railway undertakings (Great Britain)

The market shares are to a very large extent influenced by the size of franchises, as open access commercial services are limited.

	Railway undertakings	**Market share (%)**	**Total market share of all but the principal railway undertakings (%)**
UK	Virgin Trains	10,1	89,9
	South West Trains	9,7	
	First Great Western	9,6	
	East Coast	7,9	
	Southern	7,1	
	Southeastern	7,1	
	National Express East Anglia	6,9	
	First Capital Connect	5,8	
	Cross Country	5,5	
	First Scotrail	5,0	
	East Midlands	3,7	
	London Midland	3,3	
	First Transpennine Express	2,7	
	Eurostar	2,6	
	Northern-East	2,2	
	Arriva Train Wales	2,0	
	C2C	1,7	
	Chiltern	1,6	
	Northern West	1,4	

Source: Rail Market Monitoring Survey (2010), contributions from Member States to the European Commission and Steer Davies Gleave

4 – Market structure – open access for commercial services and public service obligations (PSOs)

		Examples
NETWORKS		
Networks that are CLOSED de facto (pkm)		
Directly awarded PSC & NO open access		
Directly awarded "exclusive rights w/o PSO" & NO open access		
Total CLOSED		
Networks that are OPEN de facto		
Competitively tendered PSC (NO open access in parallel)	99%pkm	Situation *de facto*: UK franchises
Open access (no PSO in parallel)		
Unrestricted Open access & tendered PSCs in parallel		
Open access restricted only if it compromises PSOs (tendered PSCs)	100%pkm	Situation *de jure*
	1%pkm	Situation *de facto*: commercial services in open access in the West Coast Main Line (i.e. services that were deemed not to compromise the existing PSCs/franchises)
Total OPEN	100%	
Semi-opened		
Unrestricted Open access & directly awarded PSCs in parallel		
Open access restricted only if it compromises PSOs (directly awarded PSCs)		

ANNEX 5

OPTION ANALYSIS

1. APPROACH TO POLICY OPTIONS

Different root causes of problems - competition for open access lines, competition for PSCs, as well as market distortions linked with limited access to ticketing systems and rolling stock - have been identified as hindering the competition in domestic rail passenger markets. Consequently, this annex considers four groups of options, each proposing measures to remedy these different problem elements. The aim is to justify and make it transparent why certain initial policy measures have been dropped while some new measures have been included during the IA process; and how the options in different groups will be assessed and combined.

For the each group of options the annex explains the context, discusses possible policy choices and screens them on the basis of stakeholder views, effectiveness, efficiency, compliance with subsidiarity principle and overall feasibility. Where relevant, the different aspects of implementation are also discussed.

2. DESCRIPTION OF DIFFERENT GROUPS OF OPTIONS

2.1. A OPTIONS: OPEN ACCESS

2.1.1. Context

Competition in rail market can be organised either (a) through competition *in* the market (the so-called *open access*), (b) through competition *for* the market, i.e. via competitive tendering for public service contracts (PSCs) or (c) a combination of the two.

Experience in liberalised markets and further to the opening of cabotage in international passenger rail services has shown that open access can cause problems of economic equilibrium of Public service organisation (PSO), while also *vice versa* - state support of PSOs can be detrimental to open access. It is therefore important to define how the two approaches relate to each other.

2.1.2. Stakeholder views

During the targeted consultation, majority of respondents (60%) agreed that market integration can be stimulated by additional new open access rights.

Less than 10% of respondents found the current (i.e. the baseline) arrangements completely satisfactory. 55% of stakeholders preferred open access on routes covered by PSCs, though Member States should have a possibility to limit access if the economic viability of a PSC is affected (option A1 below). Open access was seen as most successful on high-speed services and least successful in the urban, suburban and regional segments.

Stakeholder comments were varied, but the most common themes were that:

- The issues were different in each Member State.
- Open access could lead to cherry-picking and worsen the industry's finances.
- Framework conditions would be needed to protect wages and working conditions and to ensure that long term investments, such as in rolling stock, could still be made.

Many incumbent RUs said that unrestricted open access competition on all routes will be the most costly solution for taxpayers (option A4 below), and may therefore not be welcome in times of austerity. Some public sector stakeholders emphasised that even if markets were fully opened (like in Sweden and Lithuania) there might still be no new entrants. An association of RUs suggested that open access services would emerge where there was customer demand and would be customer-focused, but that customers do not usually like a choice of operator.

2.1.3. Description of options

In this context, the following options have been initially considered:

- **Option A0: Baseline scenario -** no open access rights provided under EU law. Some Member States have opened certain routes for cross border competition (e.g. Sweden, Italy, Czech Republic, Germany), but non-residents need to acquire a separate license for operations in each Member State. Within the baseline, the progressive implementation of Directive 2007/58/EC may have an effect on market opening through the cabotage arrangements of international rail services[167].

- **Option A1:** Open access provided on the whole network with possibility for Member States to limit access when the viability of PSC is compromised; legal monopolies and local establishment requirements are dismantled.

- **Option A2:** Open access limited to the categories of routes which are pre-determined as commercially viable (such as high speed lines)

- **Option A3:** Open access limited to routes which are not covered by PSCs[168]; legal monopolies and local establishment requirements are dismantled.

- **Option A4:** Open access unlimited.

2.1.4. Screening of options

The initial set of options will be screened in terms stakeholder support, effectiveness in achieving the operational objectives, efficiency and compliance with the subsidiarity principle. In addition, the overall feasibility is verified, i.e. whether the options are legally and/or technically possible pursue. Brief explanation backing the scores is presented in the column 'motivation'.

Key of scores applied:

--- -	decreasingly negative
0	neutral
+ … +++	increasingly positive
/	not relevant
√	complying
~	not complying

[167] In force since January 2010.

[168] If a Member States opts for competition for the market across the whole of its national network, it shall be considered as not grating open access rights

	Stakeholder support	Effectiveness in terms of operational objectives						Efficiency	Subsidiarity	Feasibility	Motivation
		Cross-border entry	Abolish legal monopolies	Open PSC market	Common approach to PSCs	Access to rolling stock	Integrated ticketing				
Option A0: Baseline	--	0	0	0	0	/	/	0	√	√	Limited positive developments through international cabotage, and national measures.
Option A1: Open access unless PSC affected	++	++	++	0	/	/	/	++	√	√	This is the approach already adopted in some Member States. It would abolish legal monopolies and local establishment requirements. It potentially ensures the cost-effectiveness of public funding for domestic rail passenger services under PSO and applies principles that have already been established for cabotage in international rail services. It minimises the risk of "cherry-picking", protects the viability of PSCs and offers the greatest scope for Competent Authorities to let PSCs on a net cost basis. However it could incite competent authorities to enlarge the range of services covered by PSC in order to limit the scope for open access services.
Option A2: Open access in selected routes	+	+	+	0	/	/	/	?	~/√	~	This option was ranked third by stakeholders. Like option A1, it would abolish legal monopolies and local establishment requirements. However, there is no certainty that rules set in EU legislation could identify in advance, in each individual Member State, either (a) where open access would be viable and would occur and (b) where PSCs would not be needed. Therefore the set of routes to be covered by open access could be difficult to specify.
Option A3: Open access except PSCs	++	+	++	0	/	/	/	+	√	√	Received the second highest rating by stakeholders. Like options A1 and A, it would abolish legal monopolies and local establishment requirements. At the same time the effects might be limited by new PSCs introduced either to meet genuine mobility needs or simply to prevent market opening. More widely, while new PSCs may be introduced, existing ones may never be cut back, raising the

	Stakeholder support	Effectiveness in terms of operational objectives						Efficiency	Subsidiarity	Feasibility	Motivation
		Cross-border entry	Abolish legal monopolies	Open PSC market	Common approach to PSCs	Access to rolling stock	Integrated ticketing				
											prospect of a gradual trend to PSCs extending to all stations.
Option A4: Open access unlimited	--	++	++	+	/	/	/	--	~	~	Received the lowest rating form stakeholders being identified as likely to be costly for taxpayers. Unlimited open access may compromise the viability of PSC and put additional pressure on public subsidies. There is no practical experience of how this option could be introduced and would work in a fully liberalised rail industry, but in practice there could be little commercial entry.

Options A0, A1 and A3 will be retained for further analysis of different policy scenarios in the impact assessment.

2.2. B OPTIONS: COMPETITIVE TENDERING OF PSCS

2.2.1. Context

A majority of rail services (an estimated 83% of EU passenger-km) is provided under PSOs and currently several Member States have opted for a direct award of such contracts. This means that in these Member States there is no competition *for* the market (as explained in Section 2.1.1). The Commission's intention is to inject competition into these parts of domestic rail market by applying rules to (a) how the PSCs are tendered out and (b) how the PSCs are defined

2.2.1.1. Tendering procedure

Several aspects of the design of the tendering procedure - such as complexity, bidding procedure, scope of tender - are critical for ensuring that it would lead to successful results. Relevance and applicability of these issues to PSO contracts is discussed below.

- The procedure must take into account of the complexity of the purchase.

In public procurement processes in general, complex projects are purchased through competitive dialogue. Rail service contracts, subject to tender, are often very complex and hence some flexibility should be foreseen in the procedures. The public procurement

Directives 2004/17/EC[169] and 2004/18/EC[170] foresee flexibilities like the competitive dialogue or negotiated procedures. Regulation 1370/2007[171] has already foreseen some flexibility in competitive tendering procedures for public passenger transport services[172] and it provisions can be extended to heavy rail.

- The burden of procedure must be proportionate to the subject matter

It could be necessary to foresee some flexibility regarding the obligation to use competitive tendering procedures, as these entail costs that must not be disproportionate to the price of the service purchased. Therefore, arranging competitive tender for small rail service contracts may not be practical. Regulation should allow competent authorities to procure small variations or additions to commercial services, such as additional station calls, connections, earlier first or later last trains, on a "de minimis" basis. The public procurement Directives 2004/17/EC and 2004/18/EC have therefore foreseen thresholds under which its procedures do not apply, and so does Regulation 1370/2007 for urban transport. The latter can be amended by defining a threshold for heavy rail under which direct awards are possible. The principles of such threshold have already established by Article 5(4) of the Regulation and are linked to annual revenue or gross cost of the PSC or number of vehicle-kilometres covered.

2.2.1.2. *Definition of public service obligation*

In addition, any tender must be defined in a way that suppliers in the market were able to respond to its subject matter. If, for instance, major parts of networks have been put for tender without a liquid rolling stock market, only those possessing rolling stock (i.e. normally incumbent) can respond. Also it could be possible to set certain requirements, which could effectively exclude cross-border operators from bids.

To ensure that the scope of call and that the criteria to perform PSO are necessary, proportionate and non-discriminatory, and allow for an adequate number of competing bids, it is necessary to foresee conditions under which exclusive rights of PSC are defined. This would also provide a mechanism to ensure that networks are not put for tender with the sole objective to preclude competition.

2.2.2. Stakeholder views

During the targeted consultation, majority of respondents (62%) agreed that market integration can be stimulated through compulsory competitive tendering for PSCs. Stakeholders expected it having a positive effect on service quality while allowing savings of public subsidies. The responses suggested that the tender structure must be tailored to the situation, 45% being in favour of the negotiated procedure in public procurement. 80% found that there should be transitory periods for the gradual letting of all PSCs. Stakeholder mentioned also that:

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169 Directive 2004/17/EC of the European Parliament and of the Council, 31 March 2004, coordinating the procurement procedures of entities operating in the water, energy, transport and postal services sectors.

170 Directive 2004/18/EC of the European Parliament and of the Council, 31 March 2004, on the coordination of procedures for the award of public works contracts, public supply contracts and public service contracts

171 Regulation (EC) No 1370/2007 of the European Parliament and of the Council, 23 October 2007, on public passenger transport services by rail and by road.

172 Article 5, § 3 of Regulation 1370/2007 gives the possibility to urban transport contracting authorities to use the negotiating procedure after tender submission or in the phase of pre-selection in order to meet specific or complex requirements within the contract.

- A new entrant underlined the importance of competitive tendering for the quality of rail services.
- Associations of RUs suggested that compulsory competitive tendering would bring benefits such as increased efficiency and quality, as new entrants would develop different solutions and new ideas.
- Incumbent RUs commented that effective compulsory competitive tendering for PSCs would depend principally on the availability of state funding and that there would be no new entry if this was inadequate.

As regards the development of compliance criteria at EU level, views were polarised, with a slight majority responding negatively, but 40% supporting more precise rules. None of the compliance criteria included in the questionnaire (quality of train service, impact of public service funding, scope of the contract, proportionality and necessity test) were supported by more than 50% of those with opinion. In any case, if criteria for PSO were to be developed, then a very large majority of stakeholders (95%) agrees that a consultation of stakeholders on those would be needed. A majority of respondents (65%) supports and extension of the compensation rules of Regulation 1370/2007 on PSOs in rail and urban transport in the case of a single bidder.

The targeted consultation of local authorities through the network of the Committee of the Regions reviled that large majority of the local and regional authorities **(**64% of respondents) supported the introduction of additional criteria to be applied by competent authorities (in particular the Spanish authorities and the Association of Europeans Border_Regions). In their view common criteria could support single market for rail transport services and bring clear added value, especially from a cross-border point of view. Those being opposed (Extremadura Assembly, Association des regions de France, Vienna City Administration, Wielkopolska Spatial Planning Office , 36% of respondents) argued that there is no need for additional criteria, since the existing regulatory environment already provides all the elements needed. They also consider that local and regional authorities are best placed to respond the needs of users in their territories. Introduction of additional criteria could raise concerns from a subsidiarity point of view. Therefore, if any measures would be proposed, these should take into account the special needs of the different regions and territories in the EU.

2.2.3. Description of options

The options below are designed to address competition for PSCs. Each option contains elements covering the two aspects of PSC competition – tendering procedure and definition.

- **Option B0: Baseline scenario -** competent authorities have the choice between direct award and competitive tendering *(procedure)*, no common criteria for defining PSCs *(definition)*.

  As defined in Regulation 1370/2007 - competent authorities may award PSCs directly or through a competitive tendering process.

- **Option B1:** Mandatory tendering with flexibility *(procedure)*, PSC scope determined according to defined criteria at EU level under the control of national regulatory body *(definition).*

  Under this option the *tendering procedure* would be mandatory. However, to allow for complexities and differences in national conditions, the requirement of competitive tendering would be subject to de minimis criteria and allotment thresholds, in addition the tendering procedure can be negotiated.

Regarding the *PSC definition*, Member States and/or competent authorities would have the obligation to define transport policy objectives and a desirable transport offer in a detailed and transparent manner (e.g. public transport plan). National regulatory bodies would have to carry out an assessment of compliance of a draft PSO to ensure that it is necessary, proportional, non-discriminatory and cost-effective solution for reaching the predefined transport objectives. PSO should also be financially sustainable (i.e. not underfinanced) and include efficiency and innovation incentives for operators. In addition, national regulatory bodies have to consult the concerned stakeholders on draft PSO definition and to publish results of assessment and consultation. Competent authorities, should provide to the potential bidders information on passenger demand, fares and revenues, to enable to prepare well informed business plan and submit a bid.

- **Option B2:** Mandatory tendering with flexibility *(procedure)*, PSC scope determined according to defined criteria under the control of the Commission *(definition)*

  The same criteria would apply to tendering procedure as under Option B1. The PSC scope will be also defined as under Option B1, however assessment of compliance of PSO definition would be carried out by the Commission rather than by national regulatory bodies.

2.2.4. Options discarded at an early stage

As explained above, while tackling competition for PSCs, there are actually two elements to cover – **(a) tendering *procedure*** and **(b) *definition* of PSC**. A wide range of different sub-options can be considered in both dimensions.

For example, as regards tendering procedure, different degree and choice of flexibility elements, such as negotiation procedure, de minimis principle or allotment threshold, could be used. However, given the diversity of national conditions in which PSCs are used, the only feasible solution is to allow for all these flexibility elements.

Similarly, rules for defining PSC could be based on general legal and/or economic criteria, or alternatively on exhaustive list of compliance criteria. Again, given the variety of national conditions, only the former is practicable. The key question though is whether the application of any criteria should be supervised at the national (better in terms of subsidiarity) or at the EU (better for internal market) level, and this has been reflected in the design of alternative options.

2.2.5. Screening of options

Criteria applied to screening of options are the same as in previous section.

	Stakeholder support	Effectiveness in terms of operational objectives						Efficiency (including public spending)	Subsidiarity	Feasibility	Motivation
		Cross-border entry	Abolish legal monopolies	Open PSC market	Common approach to PSCs	Access to rolling stock	Integrated ticketing				
Option B0: Baseline	-	0	0	0	0	/	/	0	√	√	It is up to Member States whether to open their PSO contracts to competition or not. Differences in national approaches remain diverse and may lack transparency.
Option B1: Mandatory tendering, PSC scope assessed at national level	0[173]	+	0	+	+	/	/	++	√	√	This option potentially ensures the competition for PSCs, while providing necessary flexibility to adjust the definition and tendering procedure to the specific characteristics of each PSC. Supervision and transparency requirements should secure against possible abuse or regulatory capture. However, given that control mechanism and PSC criteria will be applied at Member State (rather than EU) level, differences in national approaches are bound to remain, making cross-border bidding less smooth.
Option B2: Mandatory tendering, PSC scope assessed at EU level	-	++	0	++	++	/	/	+	~	~	The same as above, but supervision will be performed at EU level, allowing for emerging more coherent EU approach. However, this option would not comply with subsidiarity principle, as national authorities *per se* are more competent for deciding on appropriateness of PSO. Furthermore, this option would be inconsistent with general policy approach in railways, which has granted any supervision competences to national regulatory bodies.

Options B0 and B1 will be retained for further analysis.

[173] As mentioned in Section 2.2.2, stakeholders in general supported competitive tendering, although only when there is some flexibility built into system. It has not been asked form stakeholders whether assessment of compliance with PSO condition has to be carried out at EU or national level, but subsidiarity concerns highlighted by local/regional authorities point towards less interventionist option. Therefore the stakeholder support scores for option B2 are lower than for option B1.

The appropriate values of de minimis and allotment thresholds are established according to the analysis provided in Annex 8 of this impact assessment.

2.2.6. Aspects of implementation

i. Transition periods

A large majority of the respondents to the stakeholder consultation favoured transitional periods for the gradual letting of all PSCs (80% of respondents agreed).The obligation to tender out new PSC for rail would become effective on 3 December 2019, the date currently mentioned in Regulation 1370/2007 for the application of the provisions on contract award.

There is a need to regulate transitional periods to ensure a minimum of legal certainty to operators and to guarantee the continuity of public rail passenger services. In addition, competent authorities should be given a reasonable time to organise the re-award of existing PSCs.

In this context further to an analysis detailed in Annex 8, it would be reasonable to stipulate that PSCs directly awarded before 3 December 2019 and still valid for a minimum of thereafter shall be re-awarded on a competitive basis according to the following schedule:

- 30% of the volume of such contracts at national level in terms of train-km by 3 December 2020;
- 60% of the volume of such contracts at national level in terms of train-km by 3 December 2021;
- 100% of the volume of such contracts at national level in terms of train-km by 3 December 2022 (or by 31 December 2022).

ii. Levelling the playing field in access to documents

It may be necessary to take measures to ensure that interested parties while preparing an offer under a competitive tender procedure have access to all information (in particular as incumbents have access to all historical data on networks which new entrant can't access) to prepare their offer like information on passenger demand, fares and revenues.

iii. Excluding the direct award of rail PSC based on the internal operator provision

Regulation 1370/2007 provides for the possibility that competent local authorities organising integrated transport services directly award PSC to an internal operator, i.e. a transport operator that they effectively control (e.g. the urban transport operator being a part of the city administration). This provision is not geared to the award of PSC beyond the territory of an urban agglomeration and its immediate surroundings, for instance covering a whole region (which could be a very large territory in some Member States) or even the entirety of the national territory as ~~it~~ this would undermine achieving the internal market objectives of the Regulation. It is therefore necessary to clarify the current text of the Regulation so that it would limit the possibility of direct award to an internal operator to the case of integrated public passenger transport services of an urban agglomeration and its immediate surroundings (to avoid that, for instance, regional competent authorities set up their own railway undertakings and continue to directly award PSC. This practice would

iv. Ensuring continuity of service in the event of a failure of a railway undertaking

The IA support study has identified the risk that bankruptcies or disputes could put to the continuity of a service. There has been diverging practice in this matter in those Member States that have already taken steps to open their domestic passenger rail markets to competition. In Sweden, railway undertakings have been let fail to avoid overbidding (i.e. bidders that provide for bids that are not realistic from an economic point of view). In the UK, the UK government appears to need to take over for the services of the West Coast Mail Line further to the review of the franchise award. Taking measures at EU level to address this problem does seem disproportionate in terms of subsidiarity, therefore it will be left up to the Member State to design and implement relevant safeguard measures.

v. Avoiding 'fake' tenders

One of the problems in competitive tenders is that an incumbent maybe in some circumstances the only potential bidder because of technical aspects of the bid. To avoid these 'fake' tenders, it is proposed to extend the rules of compensation of the Regulation 1370/2007 (which are currently applicable in the event of direct award) to cases where only one bid was submitted.

2.3. T OPTIONS: INTEGRATION OF TICKETING SYSTEMS

2.3.1. Context

Opening markets to competition would necessarily bring some fragmentation. In case of rail, it would mean that customers will have an inconvenience of dealing with different operators, when booking their tickets. Ticketing and information systems are mostly run by incumbents and if new entrants are refused from access to these services, this could create serious distortion of market. Therefore, possible options to regulate ticketing systems are considered within the context of this initiative.

2.3.2. Stakeholder views

Stakeholders consistently ranked intra-modal integration (implicitly including ticket integration) low as a factor in the competitiveness of the rail sector, although they may not have been aware of all the practical issues of cooperation and/or competition between multiple operators. There is more support for inter-availability of tickets or reinforced access rules for ticketing facilities than to compulsory through-ticketing.

- Public sector respondents emphasised the need to be able to buy a ticket from one operator valid for the whole journey, including the services of other operators.
- Passenger associations said that lack of inter-available ticketing worsens the quality and competitiveness of rail, that inter-available ticketing and retail information should be guaranteed, and that there should be a separation of ticket distribution and transport operations.
- One stakeholder said that the effect of market opening would only be neutral if a legal framework or a service contract forces RUs to cooperate with each other in terms of through-ticketing and integrated ticketing.
- Conversely, many incumbent RUs said that the distribution of tickets is one of the core businesses of rail and a means of competitive differentiation

2.3.3. *Description of options*

- **Option T0: Baseline scenario** - implementation of Regulation 1371/2007 within the context of the Recast would bring some positive developments. The Recast foresees that railway undertakings and ticket vendors shall offer, where available, tickets, through tickets and reservations. At the same time, operators of ticketing services are not obliged to supply their services to all railway undertakings, however when they decide to offer services to others, they shall do so in a non-discriminatory manner (i.e. allow access to everyone in equal conditions)[174]. These provisions preserve the commercial independence of RUs, who are not obliged to establish ticket integration schemes but only to sell the ones which are made available.

- **Option T1:** National ticketing systems established on voluntary basis. This option foresees an enabling clause allowing explicitly Member States and RUs to establish national-wide ticketing systems. It would also clarify existing provisions and remove some legal uncertainties (in particular to ensure that the obligation to open ticketing systems applies as soon as arrangements exist between two separate legal entities). It would clarify that such systems must be subject to non-discrimination requirements.

- **Option T2:** National ticketing systems established on mandatory basis, subject to non-discrimination requirements. Under this option Member States are imposed to set up national integrated ticketing systems. These systems should ensure the availability of all tickets throughout the national network.

- **Option T3:** Integrated ticketing systems established at EU level, subject to non-discrimination requirements. Under this option a comprehensive, EU-wide ticketing system will be established, ensuring availability of all tickets for national as well as cross-border travel.

2.3.4. *Screening of options*

	Stakeholder support	**Effectiveness in terms of operational objectives**						Efficiency (including public spending)	Subsidiarity	Feasibility	**Motivation**
		Cross-border entry	Abolish legal monopolies	Open PSC market	Common approach to PSCs	Access to rolling stock	Integrated ticketing				
Option T0: Baseline	+	0	0	0	/	/	0	0	√	√	Implementation of the Recast should ensure some progress in the integration of ticketing systems, since some RUs have established joint ticketing systems with their

[174] Article 10(1) of the passenger right regulation and Article 13(8) of the Recast.

	Stakeholder support	Effectiveness in terms of operational objectives						Efficiency (including public spending)	Subsidiarity	Feasibility	Motivation
		Cross-border entry	Abolish legal monopolies	Open PSC market	Common approach to PSC	Access to rolling stock	Integrated ticketing				
											competitors and will now have to open them to other RUs in a non-discriminatory manner. On the other hand, some Member States have established national ticketing systems without any EU legal framework and could create problems of distortion of competition.
Option T1: Voluntary national systems	+	0	/	0	/	/	+	+	√	√	This option would reinforce to some extent the impacts of the baseline scenario.
Option T2: Mandatory national systems	-	+	/	+	/	/	++	-	~/√	√	This option has clear advantages for passengers in terms of accessibility to different services. It would also constitute a strong political encouragement to Member States and operators to put in place ticket integration schemes without prescribing specific measures. However the costs and benefits of such systems may vary considerably between Member States depending of the structure of the market (in particular the number of operators and the type of services offered). The efficiency of this measure can be low. Compliance with the subsidiarity principle has to be carefully assessed..
Option T3 EU level system	?	+	0	+	/	/	++	--	~	~	Establishing a single integrated ticketing system for the EU could foster further market integration and provide additional benefits to passengers using cross-border services. However, considering the number of operators involved and the diversity of the services provided, the cost of such measure would be very high while the benefits would remain limited (cross-border traffic represents around 5% of rail trips). This measure would have the same disadvantages than measure 2 in terms of efficiency and subsidiarity.

Options T0, T1 and T2 will be retained for further analysis.

2.3.5. *Aspects of implementation*

Clearing systems must be made fair and non-discriminatory (i.e. payments must be made in reasonable periods of times as in the rest of the economy).

Also, it is necessary to foresee that railway undertakings in all circumstances accept tickets of other railway undertakings when passengers have been affected by a disruption.

2.4. RS OPTIONS: ACCESS TO ROLLING STOCK

2.4.1. *Context*

Ownership of rolling stock continues to be dominated by incumbent railway undertakings, which are unable or unwilling to make it available on attractive commercial terms to new entrants. The measures introducing competition for PSCs (B options) can be effective only if there actually are several bidders having access to adequate rolling stock within a reasonable timeframe[175]. E.g. in Germany, all contracts above 5 million train-kilometres have been awarded directly to the incumbent, given that lack of rolling stock has made it impossible for new entrants to bid[176]. In principle, new entrants could commission new rolling stock, but they may prefer to lease it rather than purchase, particularly if they are uncertain about market prospects over the 40-year life of rolling stock assets. Similarly, manufacturers and potential providers of lease financing are unlikely to offer attractive terms if there is uncertainty surrounding future demand for the rolling stock and hence a significant risk of inadequate returns.

2.4.2. *Stakeholder views*

According to stakeholders, access to rolling stock is another key framework condition for a more competitive rail sector. 65% of respondents (and 90% of those with a view) supported an objective of improving access to rolling stock. 60% of respondents considered rolling stock availability an access barrier to RUs. However, only 20% thought that there should be "automatic" transfer of rolling stock from one operator to another at the start of a new PSC, and there was only 5% net support for "compulsory" transfer or rolling stock. Several RUs and authorities considered that either compulsory transfer, or provision of rolling stock provided by the authorities, would remove a key element from the competitive tendering process. These RUs saw provision of their own rolling stock as a key part of their competitive offer. Overall, stakeholder responses did not support any firm conclusions although some agreed that no universal solution was possible.

2.4.3. *Description of options*

In this context the following policy options have been identified:

- **Option RS0: Baseline scenario –** no specific EU requirements, but only implementation of State aid Guidelines. Access to rolling stock appears to be a serious problem in Germany, France, Italy, Greece, Portugal, Spain and the majority of Member States that joined the EU in 2004 and 2007. There seem to be no national measures in pipeline to address this issue.

[175] Ordering and authorising rolling stock is not just capital intensive, but also can take up to several years.
[176] SDG analysis

Key issue for emergence of rolling stock market is the number of vehicles per type. It can be anticipated that over time the market consolidation and implementation European standards[177] will lead to harmonisation of vehicle types and would have gradual beneficial impacts on the availability of 2nd hand rolling stock and leasing markets.

At the same time, the single EU vehicle authorisation, as foreseen by another initiative in 4th railway package, should ease to some extent cross-border rolling stock market.

- **Option RS1:** Mandatory creation of rolling stock leasing companies (ROSCOs), with the objective of creating a leasing market for rolling stock.

- **Option RS2:** Mandatory ownership of rolling stock by competent authorities.

  This option would require that competent authorities owned all the rolling stock required to operate the PSCs for which they were responsible. This would place an obligation of competent authorities to make sure that stock would be available.

- **Option RS3:** Mandatory selling or leasing of rolling stock at market price by the previous PSC beneficiary to the new one.

- **Option RS4:** Obligation for the competent authority to take the financial risk of the residual value of rolling stock with choice of means.

  In principle, competent authorities are obliged to provide or procure residual value guarantees on rolling stock if a bidder has no other means of avoiding residual value risk. This would not preclude Member States and competent authorities applying a mix of options RS1 (leasing companies), RS2 (competent authorities own rolling stock) and RS4 (competent authorities provide guarantees) as considered appropriate. It would leave it to competent authorities to decide the "least bad" approach to improving accessibility to rolling stock achievable with the funds available.

- **Option RS5**: Guidelines on best practices of rolling stock procurement.

  This option foresees that the Commission will prepare guidelines which Member States can referrer to when planning national measures for improving the access to rolling stock. The guidelines would build on few successful examples in Member States such as UK and Sweden.

2.4.4. Screening of options

	Stak	**Effectiveness in terms of operational objectives**	Effici	Sube	Feas ibilit y	Motivation

[177] The development of interoperability and through-ticketing in domestic rail through the TAP TSI (Commission Regulation 454/2011 on the technical specification for interoperability relating to the subsystem 'telematics applications for passenger services') could ultimately provide technical solutions for non-discriminatory access to ticketing systems in domestic rail services, although this is not its primary purpose of this measure.

		Cross-border entry	Abolish legal monopolies	Open PSC market	Common approach to PSC	Access to rolling stock	Integrated ticketing				
Option RS0: Baseline	--	0	0	0	/	0	/	0	√	√	Access to rolling stock remains a major issue in many Member States.
Option RS1: ROSCOs	++	++	0	++	/	++	/	++	~	~	There was generally high support for this option among stakeholders. Also the evidence from Sweden and particularly Great Britain is that an effective leasing market can remove many barriers to entry. Although it would in practice difficult to establish at EU level who should create fund, manage it or, if necessary, regulate them.
Option RS2: Mandatory ownership	-	+	0	++	/	+	/	+	~	~	This option could only apply to existing rolling stock if owners were willing to be bought out and, without powers amounting to confiscation, they would have every incentive to demand generous terms. The potential conflicts with generally established property rights can be avoided by requiring bidders for PSCs to commit to transfer their rolling stock to the competent authority at the end of the contract. There are, however, examples of dominant national incumbents refusing to bid on this basis. Even if operators were willing to accept these terms, it would not be until the end of the next PSC cycle, of up to 22½ years under current EU legislation, that all existing stock would be transferred.
Option RS3: Mandatory selling or leasing	-	++	0	+	/	+	/	+	√ / ~	√/~	20% of stakeholders supported "automatic" transfer of rolling stock and only 5% supported "compulsory" transfer. This option conflicts to a lesser extent with property rights and subsidiarity principle than option RS2, but the core problem of illiquid rolling stock market could imply that it would be difficult to establish "market price".
Option RS4: Sharing financial risks	?	+	0	++	/	+	/	?	√ / ~	√	In this option competent authorities are obliged to take residual value risk on rolling stock. This could raise a perverse incentive to competent authorities to specify old stock. It also requires offering the guarantee in advance, for it to be callable at any time. There are disincentives to the competent authority to terminate a poorly-performing contract and the

	Stakeholder support	Effectiveness in terms of operational objectives						Efficiency	Subsidiarity	Feasibility	Motivation
		Cross-border entry	Abolish legal monopolies	Open PSC market	Common approach to PSC	Access to rolling stock	Integrated ticketing				
											lack of any obligation on the operator to hand over the stock. More widely, it is not normal procurement practice for competent authorities to be obliged to guarantee the future value of their contractors' assets. It might also be difficult for a competent authority to explain to interested parties why, on early termination of an underperforming operator's contract, it was obliged to buy from it unpopular, unreliable or obsolete stock at a price guaranteed many years earlier(H4.28). Competent authorities might attempt to minimise these difficulties by guaranteeing only a low residual value, limiting the effect of the policy.
Option RS5: Guidelines	0	0	0	+	/	0/+	/	0	√	√	This options would enable to share the best practices between Member States as regards the effectiveness of different approaches to improve liquidity of rolling stock market. However, it's added value would be limited, given that the known successful approaches of UK and Sweden are already known by railways stakeholders.

Given the analysis above, addressing the need for a rolling stock market is likely to be problematic. All of the options considered could be difficult to implement effectively, rapidly or without additional cost. However, options **RS0, RS3 and RS4 will be retained** for further analysis.

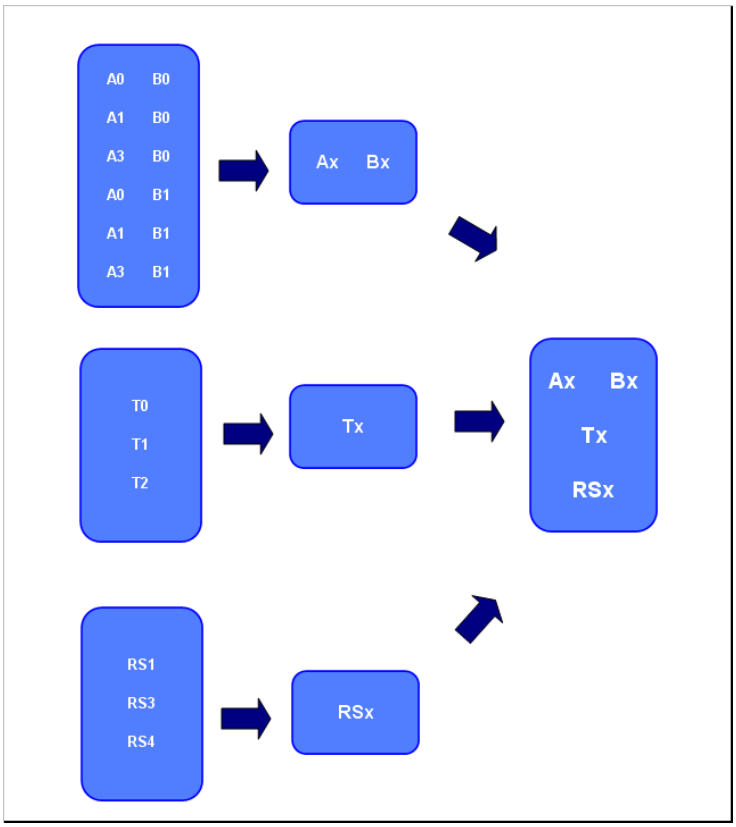
3. SUMMARY OF RETAINED OPTIONS

The table below provides an overview of all the screened and retained options in 4 groups.

Problem element	Respective category of options	Policy options considered	Retained?
Restrictions to provision domestic passenger rail services	**A options: Open access**	**Option A0: Baseline scenario** - no open access rights to domestic rail market provided under EU law	√
		Option A1: Open access with possibility to limit access when the viability of PSC is compromised	√
		Option A2: Open access limited to routes being commercially viable	
		Option A3: Open access limited to routes not covered by PSCs	√
		Option A4: Open access unlimited	
Absence of competition for PSCs	**A options: Competitive tendering of PSCs**	**Option B0: Baseline scenario -** competent authorities can choose between direct award and competitive tendering	√
		Option B1: Mandatory tendering with flexibility, PSC scope under the control of national regulatory body	√
		Option B2: Mandatory tendering with flexibility, PSC scope under the control of the Commission	
Discriminatory access to ticketing systems	**T options: Integration of ticketing systems**	**Option T0: Baseline -** implementation of the Passenger Right Regulation and the Recast	√
		Option T1: voluntary national integrated ticketing systems	√
		Option T2: mandatory national integrated ticketing systems	√
		Option T3: Integrated EU ticketing system	
Limited access to rolling stock	**RS options: Access to rolling stock**	**Option RS0**: Baseline - no specific EU requirements	√
		Option RS1: Mandatory creation of ROSCO**s**	
		Option RS2: Mandatory ownership of rolling stock by competent authorities	
		Option RS3: Mandatory selling or leasing of rolling stock by the previous PSC beneficiary	√
		Option RS4: Obligation for the competent authority to take the financial risks	√
		Option RS5: Guidelines	

4. CONSTRUCTION OF POLICY SCENARIOS

Of 17 options screened in 4 groups, 11 have been retained including 4 baseline scenarios. The combination of all these options could create theoretically 54 scenarios, which would however be impracticable to assess.



A and B options are the core measures of the initiative and their combination determines the means and ambition of market opening. Therefore, the IA will start by assessing the 6 combinations of these core options and concludes which is the preferred one. Then the ticketing (T) options and rolling stock (RS) options will be assessed in order to identify which of these are best to support the market opening.

The combination of the preferred choices in each group would then form a preferred policy scenario, which will be assessed on its own right in order to identify possible overlaps and synergies in impacts.

Annex 6

BIBILIOGRAPHY AND LITERATURE REVIEW ON MARKET OPENING ISSUES

1. Literature review

This annex contains the literature review which outlines variety of existing opinions on the key problems of liberalization and market opening in the railway sector as well as on measures aimed at tackling them. It provides with the European Commission's perspective towards the questions or conclusions of available research in the area. The aim of the review is to provide the background to the measures proposed in the Impact Assessment accompanying the Legislative Proposal on Access to Domestic Passenger Rail Markets (Impact Assessment).

The main issues outlined in the literature review have been grouped into the following categories:

a) measuring performance of railway systems

Measuring the performance of different railway systems is crucial to provide evidence for system inefficiency and suggest measures for improvement. The European Rail Performance Index (RPI) developed by Boston Consulting Group (2012) is one of the most recent analyses measuring three components of railway performance: intensity of use of infrastructure, quality of service, and safety. The report suggests that neither unbundling nor market liberalization have any correlation with rail performance but that a correlation can be observed with direct state subsidization. It states that focusing solely on policy changes such as liberalizing markets and changing governance models may not produce the performance improvements desired. Rather, effective application of public subsidies and investments to drive higher performance may be the critical factor for improving passengers and freight services throughout Europe.

The report suggests that a railway system's overall performance generally correlates with the level of public cost (that is, subsidies and investments in the system), stating that no correlation between performance and the degree of market liberalization or the choice of governance model is found. More generally the report attempts to ask what the drivers of railway performance are on the basis of 3 variables: intensity of use, quality of service, and safety. However, the approach to defining performance is highly simplistic, because it assigns the same weight to each of those variables as well as their constituents. The geographical and demographical specificities of Member States are not taken into account as well as the public opinion on the quality of services is not assessed.

First, the RPI is based on an even split between these 3 variables with no evidence based weighting characteristics. The report itself admits the index's simplicity results in two biases, namely passenger performance relative to freight is over-weighted and big countries are favoured relative to smaller ones. Furthermore, the database used is not fully representative of impacts and benefits across the EU as it does not include Denmark, Estonia, and Greece in the analysis.

Second, all constituting variables are also made from even splits of several variables:

- "The intensity of use" variable is made from an even split of passenger and freight ton km per inhabitant. There is no consideration of Member States' modal share, availability or condition of existing and other modal infrastructure, geographical demography or any other of a multitude of factors that impact on utilisation.
- "Quality of service" is allegedly designed to measure whether the service offered is punctual, fast, and affordable but comes from an even split of four sub-variables, one of which is the percentage of high speed train services within long distance traffic. As a result, more than half Member States are scored unfavorably as they do not have high speed rail lines and only France and Spain score over 50%. The other variables were delays on regional and long distance services, again with no weighting according to Member States' diversity and assuming that both are as important as each other, even though one or other may carry a disproportionately higher number of passengers and price as measured by average price in euro per passenger- km. Also, no adjustments for purchasing power parity have been carried out, thus benefitting some countries over others in the final analysis.

The report compares RPI rating with public cost suggesting that railway systems' overall performance generally correlates with the level of public cost. This is an argument that has been developed through a number of studies. However, the study does not take into consideration the time lag effect or cyclical nature of any infrastructure maintenance, renewal or enhancements, leading to serious distortions in comparing countries across time.

As a result, there are clear limitations in providing sound railway efficiency comparisons on a wide international scale, which may lead to oversimplification and overgeneralization. These limitations were well outlined in numerous studies on stochastic frontier analysis (Cantos and Maudos (2001), Cantos, Pastor and Serrano (2010a), Cantos, Pastor and Serrano (2010b)), which aimed at comparing large number of countries over long period of time. However, neither of them was able to find any hard evidence in favor of any reform in railways as measured by its impact on efficiency of the system. Most methods rank the countries in terms of efficiency in the same order.

In this context, literature as well encounters difficulties to benchmark efficiency and with comparison between Member States. Therefore, the Impact Assessment focuses on the growth and the convergence/divergence of efficiency and productivity ratios since the nineties, and considers railway systems of the 25 Member States as systems that evolved with their own characteristics, mostly shaped by demography and geography (population density, urban concentration).

b) absence of open access rights

Literature analyzing competition in the market (as concerns passengers) is rare as the phenomenon is quite new. Start of activities of prominent new entrants in this market, such as WestBahn in Austria, NTV in Italy or RegioJet in Czech Republic dates back to 2011 only. Also, Sweden has provided open access in 2011 as well. Therefore it is difficult to find sound evidence-based studies on the subject.

However, there is literature on open access to freight markets. In a study of projects conducted by the World Bank, Thompson (2004) shows that on-road competition is so strong relative to the market size, that the rail freight market is unable to sustain more than one major operator. Although the author proposes maintaining the protection of the railways from intra-mode competition, he does concede, that intermodal competition is often enough to prevent high profits, and thus the possibility of cross-subsidisation, from occurring. His findings also suggest that open access, even if permitted under legislation, may not arise due to the limited number of commercial opportunities in the rail industry.

On the other hand, the potential for open access operators to undermine the economic equilibrium of services provided under PSCs is well documented in the existing literature. New market entrants may engage in "cream-skimming" - i.e. competing in the most lucrative sectors of the market (Krol, 2009). This is the case with many existing or planned open-access passenger operations, with two entrants competing with the incumbent on the Prague-Ostrava line in the Czech Republic, or the Rome-Milan service of NTV, who wish to compete with the incumbent Italian RU. Incumbent RUs argue, that due to reduced profits on these flagship routes they have less money available to cross-subsidise other, less or not profitable operations, leading to their withdrawal.

c) privatisation and competition for PSCs

While it is difficult to quantify the benefits of the privatisation process itself (as distinct from the benefits of greater competition), a number of sources claim that privatisation has helped the competitiveness of the rail industry. Williams, Greig and Wallis (2005), who studied the privatisation and unbundling processes taking place throughout Australia and New Zealand show that privatising a vertically integrated railway company tends to encourage growth of passenger and/or freight volumes. When comparing privatised railways to the sole remaining state-owned company (Queensland Rail), they claim that private companies have managed to reform and improve their performance at a faster rate. The authors have also found no evidence of the abuse of the integrated companies' monopolistic position, as their profits were kept in check by road competition.

However, it is important to note that these positive trends have partially occurred as a result of private companies divesting themselves of uneconomical flows, which, had they remained state-owned, they would most likely have continued to serve. Service reductions of this kind are generally more difficult in the case of passenger rail services, which have a different economic structure, and whose wider economic benefits usually merit their retention and subsidisation. Also, due to their different nature, they are usually privatised through competition for the market, rather than on-rail competition within the market.

This situation makes privatisation more difficult, as services must be privatised as a concession or franchise, which essentially grants a single company a time-limited monopoly, for a price. While evidence shows that generally the threat of competition makes companies lower their prices, (Yvrande, 2005), Williams, Greig and Wallis (2005) provide evidence that in the case of passenger rail services privatisation achieves mixed results. Similar evidence is provided by CER (2005) and Nilsson (2003) for Sweden, where non-profitable services have been tendered out since 1988, making this country the EU Member State with the longest experience with franchising. Both the Australian and Swedish experience shows that a number of privatisation

attempts ran into problems as a result of bidders being overoptimistic when forecasting their expenditure and/or revenue streams.However, in Sweden at least, tendering appears to have resulted in a reduction in the costs borne by the Competent Authority.

Nevertheless, privatisation of passengers services has brought about a number of benefits in different countries. Williams, Greig and Wallis (2005) claim that while the concessioning of the Melbourne suburban rail system has had a number of problems, it is currently on track to deliver cost benefits which would have otherwise been difficult to achieve if the system was still under state ownership and stewardship.

While there have been a number of issues with tendering of passenger services, it could be argued that this method brings about a degree of stability throughout the duration of the franchise. This does depend, however, on how the contracts are constructed, and whether the bidder did not bid too aggressively – Williams, Greig and Wallis (2005) explain in detail how much of a problem an overly aggressive bid could be once the concession fails.

As per Regulation (EC) 1370/2007 on Public Service Contracts, Competent Authorities have the right to award contracts directly to companies which are considered Internal Operators. As per Article 2(j) of the Regulation, the Competent Authority must be able to exercise control over the Internal Operator as if it were one of its own departments. This, by definition, means the Internal Operator must be state owned or state controlled and receives monopoly power over the market.

Yet more evidence is provided by Yvrande (2005), who discusses tendering processes for public transport services in France. Her study concludes that the threat of competition alone can contribute to a reduction in the amount of money requested by incumbent operators for running public transport services. The study quotes an example from Lyon, where the incumbent, Keolis, won a tender with 16% lower amount of subsidy (ca. €300 million) than it had requested prior to the tender being announced.

KCW (2011) point out that there are significant difficulties in Germany with attracting new bidders to the market. Their analysis shows that the number of bidders has been gradually declining since the opening up of the market and - conversely - the percentage of tenders won by the incumbent has been increasing.

A number of factors may explain this:

- The market itself has matured, with the number of bidders declining and – conversely – DB improving its performance as a result of competitive pressure
- An increase in the number of Competent Authorities choosing to procure rail services through competitive tendering – leading to bidders considering their choices more carefully
- The incumbent choosing to take advantage of its integrated structure and offering integrated franchises
- The barriers to entry being too high, including technical barriers and access to capital

While there is no evidence in the literature for institutional bias against new entrants in Germany similar in scope and nature to what has been observed in Italy, it is possible that the lessening of interest of private companies in the passenger rail market could be due to the chances of winning franchises from DB becoming too low. Whereas DB won only 30% of tendered train-kilometres

between 1995-2000, the figure was nearly 63% in 2010. As mentioned above, this could be due to DB becoming more efficient under competitive pressure, however, there is also evidence that DB could be abusing its position as a vertically-integrated state-owned operator.

d) prospective analysis

The evaluation of EU public procurement Directives suggests that savings increase with the number of bids and with the use of open procedures. Savings in the procurement of goods, works and services have reached some 5% (where there are on average 5 bids). In railways, evidence in Germany, Sweden and Netherlands has pointed to savings of 20-30% per tender (ITF, OECD). It could be assumed that 5% of savings is the "benefit of tendering" (i.e. reduced margins of operators), whereas the remaining 15%-25% savings would derive from the "benefit of increased efficiency".

Given that in Member States currently directly awarding their PSC, the subsidy level is about 17 billion EUR, a 20% saving would result in a ball-park figure of 3.4 billion EUR on a yearly basis. Finally, prospective studies have also estimated potential efficiency savings in the 20-30% area. The study on the impact of the opening of rail competition in France carried out by Beauvais Consultants, KCW and RAILCONCEPT (2012) tables on a reduction of 30% of operational costs based on an analysis of different cost headings. In Germany, Booz Allen & Hamilton (2006) in their study on the privatisation of Deutsche Bahn tabled on an efficiency differential of 20% between DB and its competitors.

In an evaluation of introduction of competitive tendering in Dutch regional public railway transport in 1997-2005 Van Dijk (2007) concludes that it has led to a substantial increase in public transport supply an improvement of efficiency, although it did not result in an increase of passenger flows. Tendering for regional rail services has led to larger efficiency gain (20-50%) as compared to direct award contracts (0-10%). Moreover, the analysis shows that neither the number of people employed in the public rail transport, nor their working conditions have changed.

In Germany, introduction of tendering of public transport services for regional transport enabled the local authorities to save 20% and increase the traffic performance by 30%, as reported by Brenck and Peter (2007). Cost-savings have also been reported in Sweden, where competitive tenders have resulted in significant reductions of the public subsidies to the railway passenger services, in some cases producing cuts of 20-30% (Alexanderson and Hulten (2007)).

Although all reports on introduction of competitive tendering outline problems of the reform, these are different in countries and mainly arise due to inappropriate selection of implementation measures. In case of Germany, for example, the central government did not provide sufficient administrative and financial incentives for local governments to engage in even more efficient tendering. In Netherlands, problems with rolling stock emerged. These issues might well be solved with the adequate institutional, financial and policy setup, which proves the point that it is the general set of measures which matters.

e) access to rolling stock

Privatisation has also highlighted issues relating to access to rolling stock. The German solution, whereby tenderers bidding for public service contracts are required to provide their own rolling

stock, is problematic, since only the incumbent has access to a large pool of used rolling stock - in some instances the incumbent can also use older locomotives to pull newly purchased passenger carriages, thereby reducing rolling stock procurement costs. Furthermore, if the length of the franchise is much shorter than the useful life of the vehicles purchased, the incumbent runs the risk of being left with rail vehicles at the end of the franchise, with no gainful employment for them. This is a significant risk for the competitive bidder, which does not have the same portfolio of operations as the incumbent, and is therefore less likely to find a use for rolling stock at the end of the concession or franchise.

The British solution was to create Rolling Stock Companies (or ROSCOs), which own the rolling stock and lease it out to franchisees. In its investigation into the rolling stock market, the UK Competition Commission (2009) was unable to ascertain whether ROSCOs enjoy above-normal profits stemming from their quasimonopolistic position, as alleged by the Department for Transport who issued the initial complaint. However, they did note that train operators have a shortage of options available when procuring rolling stock for their services. Furthermore, ROSCOs charge lease charges for rolling stock even if it has little residual value due to its age - this is something which does not occur in RUs that own their vehicles.

The McNulty report (2011) claims that TOC and ROSCO profits are generally relatively low, and do not contribute a high proportion of the overall costs of the railway industry (3% in the 2009/10 financial year).

f) access to related services

In Italy, where the links between the IM and RU are still relatively strong, two entrants into the passenger rail market have been hampered by bureaucracy. Arenaways, who wished to operate trains between Turin and Milan, was declared bankrupt as a result of a regulatory decision not to permit them to stop at stations en-route. A different development hampered another new entrant, NTV, who wish to operate high-speed trains between Naples, Rome and Milan. As reported by Eurotribune (2011), the company first found it difficult to obtain paths for homologation and acceptance testing of their new fleet, and was later affected by a requirement of RFI (the Italian IM) to have a fully commissioned fleet at the time of bidding for paths. This requirement was subsequently lifted.

Private operators have also allegedly been subject to discrimination in Poland, where, during the disaggregation of the incumbent undertaking, it was decided that the freight RU should take over transhipment terminals in ports and at the gauge change-over points on the eastern borders of the country. As a result, private operators have openly complained about being discriminated against with regard to access to the terminals (ZNPK, 2011).

g) social aspects

Difficulties of evaluating social aspects of any changes in railway transport sector arise from the scarce literature available on the subject per se. Recent report of CER (2011) provides a thorough overview of the development of employability in the European railway sector, especially in light of the risks of the ageing workforce. Its main findings conclude that due to ageing, European railway sector will face large workforce shortages within a period of 0-15 years. However, the report does not have the status of a formal, statistical analysis due to data and geographical coverage shortages.

Some additional sources were used to cover the social impact issues in the Impact Assessment. Statistical analysis provided by the EIROnline study (2012) was used to complete the picture about general level of employment, its evolution and some anecdotal evidence on job losses in the EU rail sector. Also. European Commission analyses and monitoring of employment and working conditions in other sectors (primarily air, as provided in SEC(2010) 503 final) reveal a clearer picture of potential benefits and risks related to the impact of restructuring of network industries on the employment levels and working conditions.

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ANNEX 7

ASSESSMENT OF SOCIAL IMPACTS

1. Introduction

The social impacts of the opening of competition in and for the market iin rail will be different in the short, medium and long term (options 1-5 assessed in this Impact Assessment). Railway companies will have to adapt to the Single European Railway Area in the short term and compete with each other in open markets. Changes in the industrial structure of the sector will impose sometimes difficult company restructurings, which may be made more bearable if internal flexibility exists and if the effects are mitigated by adequate planning including a phased approach, and through regulatory safeguards. Also, changes could impact older workers in a different way across the EU because of the different application of legislation.

In the medium to long-term the confluence of the following factors will foster the development of the sector and job creation: economic integration, high oil prices, technology development, congestion in roads and airports, "tertiarization" or development of a service society, tourism, perhaps a decline in disposable income.

The main social issues involved in the development of a Single European Railway Area will arise from the **restructuring** needed to transform the current national railway operators (the "incumbents") into passenger transport operators able to operate throughout Europe in fair competition with many newcomers and the other passenger transport modes. They will also have to share the infrastructure with European multimodal freight operators.

Not all the needed restructuring takes place between firms. Internal restructuring is also needed and the latter requires **flexibility** in order that staff and resources can provide the best of themselves, while providing good working conditions and respecting safety legislation. The **employability** of individual workers will have to be strengthened, first of all within their firms, but also in the railways sector and the transport sector at large. Internal flexibility will reduce the need for external restructuring.

As with all other sectors of the economy, the rail sector has already gone through various reorganisations and restructurings often involving job reductions. As explained in the Annex 3 of this Impact Assessment, jobs have been declining in rail since the 90's; however, UK and Sweden have created jobs since then. In the medium term restructuring will be made easier because the rail sector is expected to become a **growth sector**, well adapted to the needs of a continental and low-carbon Single European Transport Area. The EU is backing this growth with its policies as shown in the White Paper.

This annex describes firstly the scope of the social impact assessment, describing general railway market conditions across the EU and outlines in more detail issues having the key role in how the railway sector will be influenced by proposed actions. The annex describes also the possibilities and options for facilitating the transfer of the sector to the expansion opportunities foreseen in the long term.

3. Impact on employment in railway undertakings

a) long-term growth and demand for railway services

The first impact of the Options 1-5 could be negative as some incumbent companies could be overstaffed due to the public administration character of their employment conditions (see

section 5 (c) *status of workers*). The new and old RUs may close services with little demand and increase the ones with more demand (e.g. by putting more carriages per train). They can also reduce personnel for instance through multi-tasking which means the assignment of a number of tasks to be carried out simultaneously or in a close sequence e.g. when train drivers check at the stations whether passengers have safely boarded the train, or when cabin staff starts cleaning in the airlines industry. Firms can also reduce staff in some places such as management layers or jobs rendered obsolete by new technologies. Still, the general effects on employment will be positive, as a service economy relies largely on passenger transport. Europe is also the main tourist destination in the world.

In theory the historic railway monopolies would be able to exploit better economies of scale and scope at national level but this would be possibly compensated by the slack brought by lack of competition and some level of ineffectiveness in public surveillance. Above all, the new operators would be able to reach economies of scale and scope as well as network externalities not any longer at Member State level but at EU level triggering a higher efficiency-expansion-employment effect.

Although difficult to measure in practice the long-term growth factor proves important in those Member States that have taken the initiative to open domestic passenger services to competition on the basis of national law. In UK, Germany or Sweden it appears that this has led to an increase in the volume and quality of services offered to passengers therefore keeping or increasing the number of jobs in the sector, and allowed salaries to remain competitive as companies (want to) retain solid staff through attractive conditions.

b) workforce shortages

The railways sector is an ageing sector which could give rise in the near future to critical **skill shortages**, in spite of high unemployment in the rest of the economy. The participation of women, the reserve labour pool, is also very low. The risk of skill shortages will be bigger because technological change and cross-border integration will add to the effects of ageing. Taking the example of Belgium, 30% of the current rail workforce will retire over the next 10 years, while opening to competition will be introduced gradually over the same period.

Liberalised market will enable workforce flow towards companies which provide better conditions. New entrants willing to attract skilled workforce will introduce measures to facilitate the transmission of knowledge to them. On the other hand, incumbents will be under pressure to improve working conditions as well, resulting in a more dynamic approach towards workforce in sector in general.

A special survey[178] from 19 European countries has produced a clear picture, even if the interpretations drawn from it do not have the status of a formal, statistical analysis. In workforces totalling 812,366 employees:

- 54% of employees are older than 45 and
- 34% are already past the age of 50.

BOX 1 - AGEING IN SNCB ACCORDING TO A QUESTION PUT IN THE BELGIAN SENATE

Réponse à la question écrite n° 5-2703 de Bert Anciaux (sp.a) du 12 juillet 2011 à la ministre de la Fonction publique et des Entreprises publiques

Le nombre de jours d'absence pour maladie des conducteurs de train

Le nombre moyen de jours de maladie des conducteurs de trains s'élevait selon le Groupe Société nationale des Chemins de fer belges (SNCB) à douze jours en 2006, à quatorze jours en 2007, à treize jours en 2008, à treize jours en 2009 et à treize jours en 2010. Il s'agit ici du nombre moyen de jours d'absence d'un conducteur de train malade. Ce nombre reste donc assez stable.

Proportionnellement le nombre moyen de jours de maladie est considérablement plus bas que la moyenne totale pour le Groupe SNCB. Ceci a sans doute à voir avec l'âge moyen de

Within 10 years, 15 at the latest, this segment of workers will have left the workforce. Whether workers in this age bracket continue in employment for the entire period will depend on whether they can continue to perform their tasks right up until retirement and where working conditions and their health permit this and more specifically depending on what arrangements exist within incumbents for early retirement (meaning earlier than the statutory retirement age). There will be particular problems where these workers are employed in physically demanding jobs.

Skill shortages could be critical, for example, in the deployment of European Railway Traffic Management System which should provide the nervous system of the Single European Railway Area. Drivers, maintenance workers, inspectors and network traffic managers need to **upgrade their skills** to adapt to the **digital era**. Training means should be deployed in a timely manner. EU instruments such as the European Social Fund and national instruments should be used to increase the **employability** of workers, in particular through training. Existing or newly recruited network management employees and public procurement officials will also need training to be able to live up to the requirements of their crucial roles.

BOX 2 – TACKLING THE WORKFORCE SHORTAGE

School cooperation agreements launched by Deutsche Bahn AG targets young people at schools and their teachers with the aim to provide practical activities and courses in the company, led by DB's staff. The program is a win-win situation, because older (experienced and skilled) workers are valued, transfer of knowledge is ensured without interruption and possibilities for younger generation are provided to integrate smoothly into the labor market. This increases the workforce supply for the company, minimizing the risk of potential performance problems in the longer term.

just over 18% against 45%. These proportions are quite insufficient taking into account that the whole of the transport sector is ageing and is older (29% of workers over 50) than the average of the economy (27%). If upcoming skill shortages are to be avoided, a higher female presence will be needed to help replace the retiring baby boom cohorts.

In most transport sectors "mobile jobs" such as drivers, are occupied by men although some crew members are women. High speed trains or short range trains allow an easier conciliation of working and private life. Still women and men raising families could be less mobile due to the pressing need they have to preserve a work-life balance. The strong cultural inertia in the male-dominated transport (and railways) professions cannot be easily changed.

c) higher productivity

The potential impact on employment will greatly depend from the improvements in efficiency compared to the forthcoming ageing of the workforce in railways. Since 1990, some European countries witnessed a growth in productivity of railway sector[179]. Although in some cases this increase of productivity was achieved by cuts in workforce, in other cases reduction of staff does not fully explain the outcome, meaning that better management also played an important role.

If in the 10 years to come we make a retirement simulation of 30% of the rail workforce mentioned under point (b) (some 139.000 persons) retires and we simulate in parallel a productivity improvement of 20%, some 92.600 workers could be affected. However, in reality potential redundancies will be offset by the retirement of 139.000 persons, even more so if the transitional periods for existing contracts were to be foreseen as from 2019 till 2023. In this sense, there is actually a risk of shortages.

At the same time, if the savings of competitive tendering were reinvested to purchase additional passenger-kilometres, the delivery of additional 34 million p-km would require more people work for rail, not counting additional infrastructure and rolling stock demand. Extra workforce needed could be up to 14 000 people. As a result, unless productivity increases by more than 30%, it is very likely that in the mid-long term perspective railways will face shortages of workers.

In any case, measures taken in each Member State will be different as the starting position is also not the same. Those RUs which have not performed well in efficiency improvement will have much more potential in increasing performance, including cuts of staff. Such RUs are mostly, but not always, common to the Central-Eastern and Southern-Eastern part of the EU. Yet as explained in the Annex 3, productivity is difficult to compare between Member States due to geographical concentration of population density)On the contrary, other railway undertakings have already reached the point when further staff cuts will bring no improvement in performance and will face serious risk of workforce shortages in the medium-to-long term.

d) multifunctional positions and multitasking

Our interviews revealed that the introduction of multifunctional positions and multitasking can provide substantial incentives for younger people to work in the railway sector. Young people prefer to have the possibility to try different tasks in order to acquire more skills and be better prepared for possible changes in the labour market, looking at it as a life-learning experience. In addition, multitasking provides more opportunities for flexible time schedule, which is more acceptable for some specific worker groups, such as women, due to maternity-related reasons. In general, such measures could substantially reduce the risk of workforce shortages to railway undertakings, provide more opportunities to specific workforce groups as well as introduce more flexibility.

[179] See table 8b in Annex 3 of this Impact Assessment.

4. Impact on employment in rail-related sectors

Employment in rail-related sectors will be mainly influenced by two key factors. First, the long-term drive for growth in the railway services will directly increase demand for rolling stock and need for infrastructure renewals. This will translate into growth and increased demand for jobs in railway manufacturing and construction business.

Secondly, examples from other sectors (aviation primarily) show that breaking down integration and increasing competitive pressure results in a focus on core activities of the business in order to increase efficiency. Non-core activities to passenger transport, such as maintenance, cleaning, catering tend to be outsourced, thus creating more businesses as well as providing more opportunities for unskilled workforce, securing their share of the labour market.

Between 1998 and 2006, the number of ground handling service providers directly employed by air carriers fell by almost 27%, from 88 000 to 64 000 jobs and of those directly employed by airports remained stable or fell slightly, between 1996 and 2007. However, most of these jobs were outsourced to independent groundhandling service providers, whose total number of workers rose from 13 000 in 1996 to almost 60 000 in 2007.[180]

However, change was not the same across the EU. While employment remained stable, or even increased in several Member States, (Austria, France, Italy, Portugal, Spain), it has, however, fallen sharply in others (Belgium, Denmark, Germany, Switzerland). This indicates clearly the need for adequate national measures to be taken in order to facilitate change and transition.

Regulation 1371/2007 on rail passengers' rights and obligations gives the possibility to Member States to set minimum quality standards for the provision of railway services and can act as an incentive for railway undertakings to deliver quality services.

5. Impact on working conditions and status of workers

a) job security

Workers and employees suffer risks incurred by the firm which employs them. A worker can be dismissed for his lack of performance, lose his job as his firm goes bankrupt, or because of restructuring. Losing one's job is a bad experience for anyone, with important impacts on health and quality of life in general. The mere prospect or possibility of losing it is also a source of stress. All these issues are independent of the introduction of competition in rail. Workers also suffer or benefit from the economic health of the railway sector and of the economy at large.

From the point of view of job security:

- The risk of a public monopoly is that its public authority – competition authorities included – may decide to dismantle it, given its inefficiencies or its lack of functionality with the rest of the economy. A monopoly may sustain more jobs inside the firm but it will support fewer jobs in the rest of the economy than a firm in a competitive market. A monopoly may also afford investing more in R&D making jobs more secure in the longer run.

[180] SEC(2010) 503 final, p. 8. http://ec.europa.eu/transport/modes/air/internal_market/doc/sec_2010_503_en.pdf

- According to Option 4, a PSC offers a maximum of 15 years monopoly and therefore a possible restructuring every 15 years. For the new bidders competition takes place on paper and they only risk the cost of the dossier. They have not contracted yet most of the workers needed to fill a new PSC. The stability offered by long enough PSCs is good for training and for investment. The geographic scope should also be wide enough.
- In open access the railway undertaking risks everything: it may lose its equity, its creditors can lose their loans, and the workers their jobs. There is a perpetual threat of restructuring. Still, it has to be acknowledged that the licences and certificates required to operate a railway service as well as the access agreements have a stabilising role, not to mention the serious financial commitments that a new entrant has to assume.

The losing of a service contract is a particular case where jobs may be at risk, but only in the case where the new contractor does not retain those employed by the previous contractor. If there is high unemployment workers have little choice, but if the market becomes tighter as expected they will be able to choose. Thus some older workers, or some young workers settling down to create a family, could prefer to stay with the new firm in order to remain in the same place where they have home, family and friends, while some single younger workers could prefer to follow the old firm to other places to improve their career perspectives.

According to EU legislation (Directive 2001/23/EC on the approximation of the laws of the Member States relating to the safeguarding of employees' rights in the event of transfers of undertakings) when a firm is transferred, the new owner must respect the labour contracts which exist in the firm which has been acquired. In sectors based on tangible assets and not on manpower the application of the Directive will depend on whether significant rolling stock and other tangible assets are transferred. PSO Regulation 1370/2007 extends the protection of Directive 2001/23/EC allowing for the possibility to transfer employment relationships in cases where Directive 2001/23/EC would have not been applicable (e.g. when rolling stock and other tangible assets are not transferred).

For employees it is important that job security is preserved, but for firms it is also important that skills and quality service are kept. The transfer of workers at the end of a concession is already possible, even going beyond of the scope of Directive 2001/23/EC, in the case of Public Transport according to Regulation (EC) No 1370/2007, if competent authorities decide to require it. It is up to the Member States to decide whether to guarantee job continuity in each case.

Ideally restructuring should take place before the changes foreseen by the Option 4. Smooth restructuring requires anticipation, information and consultation through employees' representatives. It will also require re-training and active help to find new jobs, provided that there are funds available and that the social security will not accept pre-retirement, which has been commonly used to smooth restructuring operations. It also requires money, perhaps from the European Social Fund if Member States include railway restructuring needs in their plans and apply for this kind of EU aid.

The Commission has no role interfering in the public sector like contractual relations that many railway sector workers keep from the past and which are detailed in section (c) below.

b) status of workers[181]

In some countries the employees of the state-owned railway companies have retained the special status they had when the railways were part of the public administration:

- In Belgium, 97% of the employees of Belgian National Railways (SNCB-NMBS) are employed under a special public service employment statute dating back to 1926 and similar to the civil service status, which was kept by SNCB-NMBS employees following the split of the company in 2005.
- In France, employees of the SNCF Group have a special status and specific rules on working time; despite some employees within SNCF Group being employed under non-standard contracts and not enjoying these benefits, there is still some recruitment under the former agreement.
- In Luxembourg, the status of Luxembourg National Railway Company (CFL) employees is similar to that of civil servants and applies to most workers (within CFL Cargo, a joint venture with the private company Arcelor, this status does not apply to workers transferred from Arcelor and to newly hired employees).

In other cases, railway companies still have a significant number of employees with special status, but the framework is changing.

- In Denmark, longer serving employees of Danish Railways (DSB) are employed under the act of statutory civil servants but those hired since 2000 do not.
- In Austria, more than half of the employees of Austrian Federal Railways (ÖBB) employees are tenured public servants. However, under specific transition regulations (a new service law applied to those hired from 1995), a new general collective agreement laying down new service employment regulations for the whole ÖBB Group was concluded in 2004 following the conversion of OBB into a holding company. This agreement included provisions on working hours, leave and reduced sickness benefits.
- In Germany, the number of civil servants employed in the DB Group declined steadily from 24 in 2000 to 14% in 2010). In Norway, employees of Norway Rail (NSB AS) lost their civil servant status but maintained some privileges such as the special severance pay arrangement for state employees or the right of preference for a new post in the public sector if they lose their job due to downsizing or health situation.
- In Greece, employees of the Hellenic Railways Organisation (OSE) and its subsidiaries had a special status, but recent restructuring plans will enact new working terms and conditions for the group's companies that can be modified unilaterally by the management. The new staff regulations approved by the management of TRAINOSE provide for dismissals of employees upon unilateral termination of the contract by the company's management due to financial reasons or, for example, professional inadequacy.

6. Wages

[181] Employment and industrial relations in the railways sector. Eironline, http://www.eurofound.europa.eu/eiro/studies/tn1109030s/tn1109030s_3.htm

It is interesting to compare wages or incomes from drivers in different markets across the EU and their evolution in those countries that have taken steps to open up their domestic rail markets, based on different available sources.

During the conference of the 24 September 2012[182], it was claimed that the wages of train drivers in the UK reached some 50.000 €/year (hence some 4.200 €/month) and that those of private railway undertakings in Germany were at some 86% of the incumbent DB. The PREDIT study in France referred to net monthly driver wages at SNCF between 1500 € (career start) and 3400 € (end) – hence probably between 3000 € and 7000€ brut. In those markets that have been liberalised, new entrants offer attractive salary conditions in order to ensure that they attract the staff and grow their service.

Finally, anecdotal evidence suggests that the opening to competition has not led to a deterioration of income. According to the European Foundation for the Improvement of Living and Working Conditions, between 1999 and 2004, the average monthly income of SJ (Swedish incumbent) would have increased by 18% (during the privatisation period of SJ while market opening had already taken place).

7. Existing social safeguards in rail – the mitigation measures in the social area

The Options 1 to 5) makes it necessary to examine whether there is any need to clarify or adapt the EU horizontal social legislation which applies to railways to the new situation created by the market opening reform as the latter may require a strengthening of the social protection net. The areas of particular interest are those covered by horizontal Directives on the transfer of undertakings (2001/23/EC), working time (2003/88/CE), and posted workers (96/71/EC). These three instruments improve job security, preserve basic working conditions and prevent any unfair competition. They could require measures of enforcement such as exchanges of information or inspections both currently and for the post-reform situation.

In case adaptations or clarifications of the horizontal legislation proved to be necessary this could be done first of all by including social clauses in the market opening legislation. The latter could clarify the application of the legislation to the specific transport sector (e.g. in the case of the Posting of Workers Directive) or could widen the scope of horizontal social legislation (e.g. transfer of undertakings). Secondly, the Union could also issue sectoral social legislation preferably coming from a social partners' agreement and if not as a Commission's own initiative. Examples of these kinds of actions are the Public passenger services regulation (1370/2007) which in its Article 4 (5) builds on Directive 2001/23/EC or the Directive on working conditions in cross-border services in the railways sector (2005/47/EC) which is implementing a social partner agreement.

Measures on training and certification could also be necessary to cope with the dynamism of the sector and to facilitate any redeployment derived from the reform. The sector should make wider use of the European Social Fund support available to that purpose.

Some tools available for the EU social safeguards system are:

a) common EU social standards

[182] *The Last Mile towards the 4th Railway Package*. 24 September 2012, Brussels. See Annex 10 of this Impact Assessment for a summary of the conference.

Taking into account that PSCs incur fewer risks than open access companies, higher social standards might be applied in PSCs by competent authorities. Under Regulation 1370/2007 the competent authority can also ask that a high level of social standards be applied and afterwards monitor that the contract is properly implemented. There may be an impact on wages in case workers from other Member States join the market, but the core labour law of the host MS will be applied to them according to the Posting of Workers Directive or the full labour law, including applicable collective agreements, if they reside in that Member State as worker (free movement of EU nationals). Free movement of workers within Europe would contribute to a wage convergence mostly upwards as the pool of skilled railway workers is quite restrict.

A "race to the bottom" in social conditions would be prevented through a tight market and through EU and national social legislation. There is horizontal EU working time legislation which regulates certain aspects of the working time in railways such as the maximum 48 hours per week and annual leave, although there is an opt-out which allows Member States not to apply the 48-hours' limit, while respecting the general principles of the protection of the safety and health of workers, and provided that strict conditions are respected. Collective agreements may continue to apply. De facto situations which are much better than what the legislation or the collective agreements determine may disappear. Negotiations to arrive at collective agreements may be difficult.

b) working conditions and working time

Railway workers are protected by horizontal EU working time legislation (Directive 2003/88/EC concerning certain aspects of the organisation of working time) and some of them by a Directive (2005/47/EC) on **working conditions** in cross-border rail services.

Directive 2003/88/EC is a framework directive setting out key rights of workers across the EU, such as a limit to weekly working time, a minimum daily rest period, a rest break during working time, a minimum weekly rest period, paid annual leave, as well as extra protection in the case of night work. Directive 2005/47/EC, applicable for cross-border operations, introduced the involvement of the social partners in rail sector, thus ensuring satisfactory working conditions for workers in interoperable rail services. Among other conditions, rail workers are entitled to a daily rest period of 12 consecutive hours and breaks of between 30 and 45 minutes, daily driving time limit of 9 hours on a day shift and 8 hours on a night shift.

An implementation report on Directive 2005/47/EC has been published. This Directive is based on an agreement between social partners. The combination of this Directive with other EU legal acts seems to make it unnecessary at the moment to develop further EU legislation on working conditions for domestic railways. The increase in the number of operators that market opening will imply that Member States will need to increase the resources they devote to the **enforcement of the existing working time rules.**

The purpose of Council Directive 2005/47/EC of 18 July 2005 was to implement the Agreement concluded on 27 January 2004 between the Community of European Railways (CER) and the European Transport Workers' Federation (ETF) on certain aspects of the working conditions of mobile workers engaged in interoperable cross-border services.

> The Agreement provides in Clause 4 that any rest away from home must be followed by a daily rest at home. However, social partners at national or enterprise level may agree upon a second rest away from home. This second rest away from home has been negotiated in only eight Member States: Germany, Hungary, Romania, Slovenia, the Netherlands, France, Italy and Portugal. However, it often only covers

some operators in those countries. This issue has proved divisive among social partners in the railway sector and no agreement has been possible at EU level. The social partners have closed these negotiations for the time being.

A report on the implementation of this Directive has been published. The experience gathered with this Directive could be taken into account in case any new protective measure is judged necessary to accompany the opening of the domestic passenger market.

According to the draft implementation report, when this Directive was adopted 14 Member States had to increase the level of protection of their cross-border railway workers. Some companies, for example, had to decrease the driving time from 10/11 hours to 9 hours during the day and 8 during the night, which should reduce health and safety risks. Most Member States have the same legislation for national and international railway personnel. Nine Member States have a different legislation for national railway personnel and these differences are very diverse. There are, for example, differences concerning driving time, breaks, rest away from home, etc.

The most controversial matter from the start was the regulation of the number of daily rests away from home. The Agreement allowed one daily rest and provided the possibility for social partners to agree upon a second rest away from home. This second rest away from home has only been agreed in seven Member States. For most employees' representatives, the period spent away from home is regarded to have a particularly negative impact on the work-life balance. However, in some countries, where domestic routes are long and as a result there is a traditional habit of spending several days away from home for domestic rail services, the issue appears as less important.

The main impact of Directive 2005/47/EC may, instead, lie in its role as a safety net, that prevents a "race-to-the-bottom" on the issue of working conditions by imposing a harmonised floor below which no operator may go. It thereby ensures a level playing field and prevents unfair competition.

The implementation report contains other data of interest for this Impact Assessment. The total number of locomotive drivers in the EU with licences for at least two countries has been estimated by the abovementioned study commissioned in support of this report at between 5,000 and 7,000. This number of cross-border drivers is limited (less than 10% of all drivers) compared to the total number of train drivers in the European Union, which is approximately 93,000, especially considering that most of these drivers are both involved in domestic services and cross-border services. The number of other cross-border workers is more difficult to estimate. The number of conductors is estimated at 6,000, based on the assumption that on every driver in passenger transport on average two conductors are active. However, most of these conductors will only work cross-border on part of their shifts. Apart from the conductors, some passenger trains have other staff on board, serving passengers such as bar tendering, catering, restaurant or night train staff making beds and breakfast. Other staff numbers are even more difficult to calculate than conductors.

c) transfer of staff

An essential process to smooth restructuring is **anticipation** which is straightforward in the case of concessions or in our case public service contracts where restructurings take place regularly. As these contracts come to an end operators can change. In certain of those cases, in particular where there is significant transfer of assets, the protection of employees' rights will be guaranteed by the application of the horizontal Directive 2001/13/EC on the approximation

of the laws of the Member States relating to the safeguarding of employees' rights in the event of transfers of undertakings, businesses or parts of undertakings or businesses.

The Commission's approach followed in the **Public Service Obligations Regulation** (1370/2007) in rail and road transport is to **leave Member States the possibility** of organising **the transfer of workers** from one concession-holder to the next. Therefore, the existing legal instruments for ensuring employees' rights in case of a transfer of public service contract from one operator to another one appear to be already quite comprehensive while taking account of the situation and needs at local or national level.

In any case, the Commission has carefully assessed the impact on jobs and working conditions of all the options. The Commission has consulted the Social Dialogue Committee on potential impacts that should be also taken into account and has met with ETF. The responses to the stakeholder consultation completed by ETF have been evaluated.

What the Commission **cannot do** is to go towards a **harmonisation of the level of social protection** when there is a transfer of contract. Due to subsidiarity considerations this is clearly an issue for Member States and their competent authorities to decide. This, of course, is without prejudice of the areas covered by EU labour law in force.

d) the posting of workers directive

The emergence of international operators will make the safety net provided by Directive 96/71/EC concerning **the posting of workers** in the framework of the provision of services more important, which obliges granting workers posted from other Member States the protection of the core social legislation of the host country. The PWD applies to staff on board international passenger trains and it will apply in future to posted crews carrying out domestic rail services. Directive 96/71/EC must also apply to all cabotage operations.

To guarantee that the rights and working conditions of a posted worker are protected throughout the European Union, and to avoid "social dumping", the European Union law has established a core of mandatory rules regarding the terms and conditions of employment to be applied to an employee posted to work in another Member State. The core of mandatory rules on posting covers a wide range of issues such as maximum work periods and minimum rest periods, minimum paid annual leave, minimum rates of pay, equal treatment and the conditions of hiring out workers, in particular the supply of workers by temporary employment undertakings. The legislation also tackles issues such as health and safety at work and includes protective measures in the terms and conditions of employment of pregnant women, of children and of young people.

According to Directive 96/71/EC, Member States may derogate from applying minimum levels of pay in case the posting lasts less than one month or is considered non-significant. In the latter case they can also derogate the minimum paid annual holidays, but all the rest should apply such as maximum work and minimum rest periods, as well as health, hygiene and gender measures.

The probability of application of the posted workers directive is mostly theoretical, except in cabotage and international services.

e) licences and certifications for drivers, employability and training facilities

Social dialogue had an important influence in the genesis of the system of **licences and certifications for railway drivers**, as the Commission had put forward the corresponding proposal on the basis of a pre-existing social partner agreement. This system apart from

improving railway safety will facilitate the labour mobility of drivers and increase their employment security. The Commission intends also to put forward recommendations on a system of safety attestations for other crew members.

All train drivers must have the necessary fitness and qualifications to drive trains and hold the following documents:

a **licence** valid for all the Union identifying the driver and authority issuing the certificate and stating the duration of its validity. The licence will be the property of the driver and will be issued, on application, to drivers meeting the minimum requirements as regards medical and psychological fitness, basic education and general professional skills;

a **harmonised complementary certificate** as evidence that the holder has received additional training under the railway undertaking's safety management system. The certificate should state the specific requirements of the authorised service (rolling stock and infrastructure) for each driver and its validity will therefore be restricted.

Training requirements

The employability and intra-European labour mobility within the sector will be reinforced by training and certification at EU level of the qualifications acquired.

The social partners in the railway sector define employability in the following way: "Employability as a strategic concept is based on prevention and aims to create a working environment which maintains and improves the capacity of the workers in respect of qualifications and competences as well as health and fitness in order to be "employable" in general terms. The responsibility is a shared responsibility of the company, the employees, works councils and trade unions".

Existing training centres have a national orientation; greater weight should be given to their ability to operate in international environments. There is a study of 2007 "Rail Training in 2020[183]" on evolution of skills and training in the railway field which provides insights that can also be checked for training in other modes:

Capacity: The existing rail training centres in Europe train an estimated 11,000 train drivers and around 20,000 other rail related staff a year. In comparison, the European railway sector employs more than 900,000 people.

Trainers: In a time with a shortage of train staff, potential trainers may be required to, or prefer to, operate trains rather than teach in a training facility.

Admittance to training: Compared to the rest of the education and training market where one gets the main training prior to the employment it is rather unusual that most often than not in this field the applicant must already be employed by a company before he can be admitted to training and education.

Main challenges: the impression is that it is hard to identify strong agreement on what tomorrow's agenda will be. That said, new regulation, environmental requirements, and internationalisation are seen as very relevant challenges by many training centres. Improving basic qualifications and standardising training to improve job mobility is on the agenda as well.

[183] Rail Training 2020. Training needs and offers in the European railway area the next 10 - 15 years. 2007, http://ec.europa.eu/transport/rail/studies/doc/2007_rail_training_2020.pdf

Internationalisation: half of the training facilities have some form of internationalisation but none of the training centres who answered the questionnaire can be classified as an international training facility.

f) European Social Fund and European Globalisation Fund

Whether as a result of changes of firm or of changes within the firm, the workers have every interest in increasing their employability so that they have employment security rather than job security. Training is a fundamental tool to improve employability, associated if need be with job-search assistance for the unemployed. Temporary workers and ageing workers could require particular attention as firms may have less interest in investing in them given the short period of time that they will remain in the firm.

The main instrument that the Union has to promote training at an EU level is the European Social Fund. The current priority of the European Social Fund is to increase adaptability of workers and firms by improving the anticipation and management of economic change. Within this priority, the European Social Fund supports active labour market measures and lifelong learning actions, including within companies.

However, surprisingly the railways sector makes little use of this resource. The room for improvement in the use that the sector makes of the fund can also be grasped by the fact that the above-mentioned study "Rail Training in 2020" does not mention at all the European Social Fund as a possible source of funding. There is, however, the need to acknowledge that more intensive use of European Social Fund for rail could possibly crowd out other targeted beneficiaries in other sectors.

Railway projects that appear in the European Social Fund website are listed below:

- Vocational training for workers, employees and managers in the Slovak Republic
- Language training for railway employees in SK
- Information technologies and computer skills training in SK
- Education of managers in SK
- Training of railway trainers in Romania for complying with EU standards
- Service-oriented modernisation of the trade union structure in Hungary
- Vocational training programmes for wagon repairers in Lithuania
- Capacity building for managers and staff of Lithuania railways
- Education on handover and takeover of trucks from wagons for CD cargo (Czech Republic)
- Integration of unemployed people in SNCF maintenance workshops

Instruments such as European Globalisation Fund (EGF) may provide substantial support for individual workers during the transition period. Although EGF cannot be used to keep enterprises in business or to help them with structural adjustment, it finances measures aimed at individual workers, such as job-search assistance, careers advice, tailor-made training and re-training, mentoring and entrepreneurship promotion. With up to € 500 million available each year, the EGF helps workers find new jobs and develop new skills when they have lost their old job. In 2011, the fund granted 22 contributions, targeting 21 213 redundant workers in twelve Member States with a total of € 128 167 758 paid from the EGF.[184]

[184] COM(2012) 462 final, p. 9. http://ec.europa.eu/social/BlobServlet?docId=8757&langId=en

g) Information and consultation of employees

The market opening of domestic rail will strengthen the movement towards the creation of large and medium pan-European firms operating in many EU countries. This will give more importance within the railway sector to the companies' or group of companies' European Works Councils through which employees are informed and consulted at a transnational level of the business development and all important decisions that can affect their interests. Notwithstanding the fact that European Works Councils only have powers of information and consultation they can initiate legal action to enforce their rights. A number of European Works Councils which have been set up so far belong to air transport and logistics, two sectors where internationalisation is more advanced than in railways. In railways there are some European Works Councils, such as those of Deutsche Bahn, Arriva, or SNCF. Many European Works Councils have signed agreements about the procedures to follow in case of restructuring.[185]

The right to establish European Works Councils, introduced by Directive 94/45/EC, applies to **undertakings or groups of undertakings with 1000 or more employees**, with **at least 150 in two or more** EU or EEA (Norway, Iceland and Liechtenstein) countries.[186] Since 6 June 2011, national legislation has to ensure that European Works Councils are established and operate within the framework of the provisions of the recast Directive 2009/38/EC.

Several EU Directives in the field of information and consultation of employees apply also at national level. Directive 98/59/EC on collective redundancies (decisions by employers to lay off a group of employees aims to improve protection for workers affected by decisions of this kind. It sets out that any employer contemplating collective redundancies must hold consultations in good time with the workers' representatives, with a view to reaching an agreement. These consultations must, at the minimum, cover means of avoiding collective redundancies or reducing the number of workers affected, and of mitigating the consequences, in particular by recourse to accompanying social measures aimed at redeploying or retraining those workers made redundant.

Article 7 of Directive 2001/23/EC on transfers of undertakings foresees an obligation for a transferor and transferee to inform the representatives of their respective employees affected by the transfer on the timing and reasons of the transfer as well as possible implications for employees and mitigation measures foreseen. Directive 2002/14/EC on the general framework for informing and consulting employees sets minimum principles, definitions and arrangements for information and consultation of employees at the enterprise level within each country. The directive establishes a requirement to consult worker's representatives in case of the development of the undertaking's activities and economic situation, development of employment within the undertaking and any anticipatory measures envisaged and decisions likely to lead to substantial changes in work organisation or in contractual relations.

[185] Consensus by committee? Transport International Magazine, Issue 28 July 2007, http://www.itfglobal.org/transport-international/ti28-ewc.cfm;

[186] Employee Involvement - European Works Councils. European Commission, http://ec.europa.eu/social/main.jsp?catId=707&langId=en&intPageId=211

8. Conclusion.

Market opening does not mean "wild liberalisation" but market regulation at EU level. Market opening of domestic and international rail passenger markets will reinforce each other in the creation of a substantial number of European market operators competing in these and other railways and passenger transport market segments.

It goes without saying that market opening shall respect all requirements of EU social legislation e.g. on working time or training. While this legislation aims at improved living and working conditions it provides in doing so a system of safeguards for the protection of those working conditions. An important part of this social safeguard system has been initiated and developed by the social partners in the context of EU social dialogue.

Further EU horizontal labour legislation which applies to the railways sector includes the Posting of Workers Directive (which guarantees that the working conditions of railway workers in a given Member State will not be undermined by railway workers posted from other Member States); the Transfer of Undertakings Directive lays down the conditions for transfer of staff when a firm is transferred (and would apply in the case of transfer of tenders to new market entrants); the European legislation in the area of information and consultation of employees requires that worker representatives are informed and consulted in case of restructuring.

Previous railway packages have included legislation proposals such as train driver licensing or passenger rights. The present package benefits from these previous proposals and from previous sectoral railway labour legislation such as working conditions in cross-border railway services. It should however encourage railway workers and railway firms to make use of the existing mechanisms so that they set up European Works Councils, they ask for European Social Fund support for training and they help to monitor the application of the Posting of Workers Directive to the railways sector notably in the cases of cabotage.

ANNEX 8

ANALYSIS OF THE SCOPE OF PSC VOLUME THRESHOLDS AND TRANSITORY PERIODS

1. Simulations on the maximum size of thresholds for packages of networks

1.1 - Theoretical analysis

In the problem definition, we identified that in Germany no single competitive tender with a size above five million train-km has ever been won by any other railway undertaking than the incumbent. This is due to a number of factors (e.g. maturity of market, existence of market entry barriers such as limited access to rolling stock, etc.). In other Member States with mature bidder markets and low entry barriers such as for instance the UK PSC volumes of about 45 million train-km have been tendered out successfully. It is clear that if Member States do not ensure that market entry barriers are low defining a broad scope of PSC going up to cover the whole national territory could lead to a market foreclosure even in case of mandatory competitive tendering for PSC.

According to a recent survey commissioned by regional competent authorities in Germany among rail passenger operators has shown that the companies consider PSC volumes of between 2 million and 7 million train-km as "optimal" given the specific financial and operational conditions of running rail passenger services under PSC in Germany.

In this context, it is proposed to proceed to a simulation of the impact of the following maximum absolute thresholds for the size of packages of train services under PSC available for tender:

- 5 million train-km (as much as Lithuania)
- 10 million train-km (slightly less than Slovenia)
- 20 million train-km (slightly less than Bulgaria)
- 50 million train-km (slightly less than Sweden)

At the same time, we have applied an alternative metric based on relative thresholds such as 50%, 33%and 10% of the national volume of rail passenger services under PSC (in terms of train-km).

Usual operational patterns of commuter and regional train services have been applied to estimate "typical" sizes in terms of train-kilometres.

(a) Suburban line

One line of a commuter-type rail operation (e.g. S-Bahn line) appears to represent some 2.3 million train-km/annum. For that, we have assumed a train-line operating with trains every 10 minutes on each direction (hence 12 trains per hour) on 50 km-long line with stops of 1.5 minutes at 20 stations. The line has been assumed to operate from 6:00 till 22:00.

Table 7 - Simulation of a suburban line

Trains per hour	Time span	Hours	Distance (km)	Stations	Speed (kmph)	Travel time (minutes)	Train km/year
8	6:00-22:00	16,00	50	20	40	80	2 336 000

This line would require 8 trains in total.

As a result, the impact of the threshold on suburban rail networks would be the following:

- 5 million train-km threshold: suburban networks will have to be tendered with packages of 2 lines
- 10 million train-km: suburban networks will have to be tendered in packages of up to 6 lines
- 20 million train-km: suburban networks can be tendered in packages of train services of up to 9 lines (the 20 million train-km threshold is likely to maintain the integrity of most suburban networks).
- 50 million train-km suburban networks can be tendered in packages of up to 18 lines (the 50 million train-km threshold is likely to maintain the integrity of suburban networks).

(b) Regional line

One line of a regional rail operation appears to represent some 1.7 million train-km/annum. For that, we have assumed a train-line operating with trains every hour on each direction (hence 2 trains per hour) on 150 km-long line with stops of 1,5 minutes at 8 stations. The line has been assumed to operate from 6:00 till 22:00.

Table 8 - Simulation of a regional line

Trains per hour	Time span	Hours	Distance (km)	Stations	Speed	Travel time	Train km
1	6:00-22:00	16,00	150	8	75	142	876 000

This line would require 3 trains in total..

As a result, the impact of threshold on suburban rail networks would be the following:

- 5 million train-km threshold: regional packages of train services under PSC can cover 5 to 6 lines
- 10 million train-km: regional packages can cover 11 to 12 lines
- 20 million train-km: regional packages can cover 22 to 23 lines
- 50 million train-km: regional packages can cover 57 lines.

1.2 - Impact of thresholds on existing public service contracts

Table 9a provides an indication on the likely impact of the definition of maximum thresholds for PSC volumes both in absolute terms (train-km) and in relative terms (% share of total national rail passenger transport volume under PSC in train-km). The table indicates a) how many packages of train services under PSC would have to be set up for threshold variants in absolute terms (5, 10, 20 and 50 million train-km) and

b) how big the packages could be at most for three variants of thresholds in relative terms (1/10, 1/3 and ½ of the total passenger rail market under PSC).

Table 9a – Number of packages of train services in function of several thresholds (simulation with the total volume of rail passenger transport in million train-kilometres per Member State)

		Number of packages in function of package threshold (in terms of mill. train-km)				Size of packages (millions of train-km)		
	Mo train-km	5	10	20	50	**10%**	**33%**	**50%**
Austria	99.3	20	10	5	2	9.9	6.6	5.0
Belgium	77.1	15	8	4	2	7.7	5.1	3.9
Bulgaria	23.9	5	2	1	0	2.4	1.6	1.2
Czech Repub.	122.1	24	12	6	2	12.2	8.1	6.1
Denmark	74.1	15	7	4	1	7.4	4.9	3.7
Estonia	2.6	1	0	0	0	0.3	0.2	0.1
Finland	35	7	4	2	1	3.5	2.3	1.8
France	395.9	79	40	20	8	39.6	26.1	19.8
Germany	674.9	135	67	34	13	67.5	44.5	33.7
Greece	18.3	4	2	1	0	1.8	1.2	0.9
Hungary	94	19	9	5	2	9.4	6.2	4.7
Ireland	16.6	3	2	1	0	1.7	1.1	0.8
Italy	265.9	53	27	13	5	26.6	17.5	13.3
Latvia	5	1	1	0	0	0.5	0.3	0.3
Lithuania	5.5	1	1	0	0	0.6	0.4	0.3
Luxemburg	7.4	1	1	0	0	0.7	0.5	0.4
Netherlands	113.3	23	11	6	2	11.3	7.5	5.7
Poland	124.3	25	12	6	2	12.4	8.2	6.2
Portugal	30.7	6	3	2	1	3.1	2.0	1.5
Romania	n/a	-	-	-	-	-	-	-
Slovakia	31.6	6	3	2	1	3.2	2.1	1.6
Slovenia	11.8	2	1	1	0	1.2	0.8	0.6
Spain	180.5	36	18	9	4	18.1	11.9	9.0
Sweden	50.3	10	5	3	1	5.0	3.3	2.5
UK	507.4	101	51	25	10	50.7	33.5	25.4

Table 9b – Number of packages of train services in function of several thresholds (simulation with the total volume of rail passenger transport under PSO in million train-kilometres per Member State, where data is available)

			Number of packages in function of package threshold (in terms of mill. train-km)				Size of packages (millions of train-km)		
	Mo train-km	PSO (train-km)	5	10	20	50	**10%**	**33%**	**50%**
Belgium	77.1	77.1	15	8	4	2	7.7	5.1	3.9
Denmark	74.1	74.1	15	7	4	1	7.4	4.9	3.7
Estonia	2.6	2.6	1	0	0	0	0.3	0.2	0.1
France	395.9	275	55	28	14	6	27.5	18.2	13.8
Germany	674.9	513	103	51	26	10	51.3	33.9	25.7
Greece	18.3	18.3	4	2	1	0	1.8	1.2	0.9
Hungary	94	94	19	9	5	2	9.4	6.2	4.7
Latvia	5	2.6	1	0	0	0	0.3	0.2	0.1
Lithuania	5.5	18.3	4	2	1	0	1.8	1.2	0.9
Luxemburg	7.4	7.4	1	1	0	0	0.7	0.5	0.4
Netherlands	113.3	113.3	23	11	6	2	11.3	7.5	5.7
Slovakia	31.6	31.6	6	3	2	1	3.2	2.1	1.6
Spain	180.5	99.8	20	10	5	2	10.0	6.6	5.0
UK	507.4	507.4	101	51	25	10	50.7	33.5	25.4

1.2.1 – Member States where PSC are currently tendered out

While there is no detailed data available for all Member States it is possible to simulate the impact of each of the thresholds on the existing public service contracts of Denmark, Germany, Italy and UK.

(a) Denmark

Table 10 - Packages oft rain services in Danmark

Bundles	Million Train-km
S-Tog	14,6
East Great Belt	12,6
West Great Belt	17
Cross Great Belt	19,2
Average	15,85

Source: Statsbank-DK

In Denmark, the average size of packages has been 15,8 million train-kilometres. Most of the competitive tenders have actually been awarded to the incumbent DSB, except for the West Great Belt which was directly awarded to the new entrant DB Arriva.

If a threshold below 20 million train-kilometres were chosen, then it would be necessary to reorganise packages in Denmark.

If a threshold in relative terms would be applied, the existing packages could be maintained except in case of the 10% threshold.

(b) Germany

In Germany, although the median package put for tender since 2006 has only 0.38 million train-kilometres, no bundle above 5.28 million train-kilometres has ever been won by any railway undertaking but the incumbent. At the same time, all the bundles above 6.36 million train-kilometres have been directly awarded.

Table 11 - Largest contract awards in Germany since 2003

Type of award	Start	train-km	Winner
Direct	2004	98,1	DB
Direct	2003	49,0	DB
Direct	2004	44,0	DB
Direct- expires in 2012*	2002	35,0	DB
Direct	2003	33,0	DB
Direct	2004	32,4	DB
Direct	2003	29,5	DB
Direct	2003	27,8	DB
Direct	2003	16,2	DB
Direct	2005	12,7	DB
Direct – (re-awarded since)	2003	12,5	DB
Direct	2012	11,6	DB
Direct	2010	10,96	DB
Direct	2009	10,1	DB
Direct	2006	9,1	DB
Direct	2007	7,87	DB
Direct	2010	6,85	DB
Competitive	2012	6,36	DB
Competitive	2012	5,28	Other
Competitive	2010	4,9	DB

Thresholds of 50 million train-kilometres would not affect the existing public service contracts in Germany. Selecting a 20 million train-kilometre and a 10 million train-kilometres threshold would only affect respectively 7 and 13 contracts[187] that have

[187] Two contracts with (*) have expired; the S-Bahn of Berlin is one of them and will be for tender with smaller packages in 2012

been directly awarded. Finally, selecting a threshold of 5 million train-kilometres would affect 15 contracts, most of them directly awarded to the incumbent.

In this context, the forthcoming competitive tendering of the Berlin S-Bahn is likely to be one of the largest PSC ever awarded in Germany. In the stakeholder conference of 24 September, the Verkehrsverbund Berlin-Brandenburg announced that it would organise 10 tenders for the 40 million train-km of the whole Land, with 1 tender of 20 million train-kilometres for the Berlin S-Bahn (all lines except the Ring Line) and 1 tender of 10 million train-kilometers (for the Ring Line) – this actually shows that cities can cut their commuter networks.

If a threshold in relative terms would be applied, the existing packages could be maintained in all cases.

(c) Italy

In Italy, although the median package size of public service contracts amounts to 3.18 million train-kilometres, most PSC have been awarded directly. Two PSCs above 5 million train-km are operated by a different operator than Trenitalia: the PSC of Lombardy by LeNord (9.83 million train-km) – in Veneto, a PSC of 11 million train-km has been awarded to a consortium between Trenitalia and ATI Sistemi Territoriali.

Table 12 – PSCs in Italy

Region/Province	RU	Million train-km
Abruzzo	FS-TI	3.96
Basilicata	FS-TI	2
Basilicata	FAL	0.7
Calabria	FS-TI	7.1
Calabria	FC	1.17
Campania	FS-TI	10.56
Campania	Circumv	3.94
Campania	SEPSA	1.63
Campania	MetroC	1.05
Emilia-Romagna	CTI	18.7
Friuli VG	FS-TI	3.27
Friuli VG	FUC	0.23
Lazio	FS-TI	17.3
Liguria	FS-TI	7.4
Lombardia	FS-TI	27.7
Lombardia	LeNord	9.83
Marche	FS-TI	4.19
Molise	FS-TI	2.51
Piemonte	FS-TI	19.9

Piemonte	GTT	1.05
Puglia	FS-TI	7.2
Puglia	FSE	3.3
Puglia	FG	0.4
Puglia	Ferrotram	0.9
Puglia	FAL	0.7
Sardegna	FS-TI	3.6
Sardegna	FSrd	1.13
Sicilia	FS-TI	9.78
Sicilia	Circumt	0.76
Toscana	FS-TI	23.1
Toscana	TFT	0.79
Trento	FS-TI	2.38
Bolzano	FS-TI	3.2
Bolzano	SAD	2.1
Umbria	FS-TI	3.6
Umbria	UM	1.45
Valle d'Aosta	FS-TI	1.75
Veneto	FS-TI	3.16
Veneto	ATI	11.78
Veneto	ST	0.48

Source: Rapporto Pendolaria 2011

The threshold of 50 million train-kilometres would not affect the existing public service contracts in Italy.

Selecting a 20 million train-km threshold would affect the 2 PSCs (i.e. Tuscany and Lombardy), whereas a 10 million train-kilometres threshold would only affect 7 contracts representing 57% of train-kilometres in PSO.

Finally, selecting a threshold of 5 million train-kilometres would affect 12 contracts, representing 72% of train-kilometres in PSO.

If a threshold in relative terms would be applied, the existing packages could be maintained except in case of the 10% threshold where the Lombardia PSC of 27.7 train-km would be beyond the threshold and would have to be broken up.

(d) United Kingdom

In the UK, the average franchise appears to have a size of 25 million train-kilometres. It is important to underline that there is no incumbent with a dominant market share in the UK.

Table 13 - UK franchises

Operator	Train-km

Arriva Trains Wales	22,2
c2c	6,3
Central Trains	
Chiltern Railways	8,4
CrossCountry	30,6
East Coast Main Line Rail	19,2
East Midlands Trains	21,6
First Capital Connect	23,2
First Great Western	40,1
London Midland	22,0
London Overground Rail Operations Ltd	4,3
Merseyrail	5,8
Midland Mainline	0,0
National Express East Anglia	31,2
National Express East Coast	0,0
North Yorkshire Moors Railway	0,0
Northern Rail	43,1
ScotRail	40,4
Silverlink Train Services	0,0
South West Trains	37,5
Southeastern	29,3
Southern	33,0
Thameslink Rail	0,0
Transpennine Express	16,4
Virgin Trains Crosscountry	0,0
Virgin Trains West Coast	34,6
West Anglia Great Northern Railway	0,0
Total Franchised Passenger	469,1

Source: Steer Davies Gleave

A threshold of 50 million train-kilometres would not affect the existing public service contracts in the UK. Selecting a 20 and 10 million train-kilometres threshold would affect respectively 14 and 16 franchises contracts. Finally, selecting a threshold of 5 million train-kilometres would affect all but one franchise contract.

The setting up of a threshold below 50 million train-kilometres would disproportionately affect the UK, which has no incumbent.

If a threshold in relative terms would be applied, the existing packages could be maintained in all cases.

1.2.2 - Simulation of the impact in Member States where PSC are directly awarded

We have made a simulation of the effect of thresholds in 4 Member States (of different sizes) where there is currently no competitive tendering for public service contracts.

(a) Spain

The incumbent RENFE currently operates some 99 million train-kilometres of public service contracts (only long-distance services are not covered by a PSC). It is possible to estimate that the commuter networks of Madrid and Barcelona cover respectively some 40 and 20 million train-kilometres.

Table 14 - Examples of potential bundles in Spain

Operations that fall/could fall under PSO	Train-km (Mo)
RENFE Cercanias & Media Distancia	99
RENFE Cercanias Madrid*	40
RENFE Rodalies Barcelona*	20
Euskotren	4.9
Ferrocarils de la Generalitat de Catalunya	9
FEVE	8

Source: UIC,, RENFE Annual Report and (*) own estimations

A threshold of 50 million train-kilometres would affect the PSC of RENFE, but could leave intact the networks of Madrid and Barcelona. Selecting a 20 and 10 million train-kilometres threshold would imply cutting the commuter networks of Madrid and Barcelona. Finally, selecting a threshold of 5 million train-kilometres would affect the public service contracts of FEVE, FGC and Euskotren.

If a threshold in relative terms would be applied, the existing packages could be maintained except in the case of the PSC of RENFEE for all variants of the threshold definition and the PSC for the networks Madrid and Barcelona in case of the 10% threshold variant.

(b) Belgium

The whole Belgian territory is covered by a single public service contract. The future RER of Brussels is expected to have 23 million train-kilometres[188] , whereas the SNCB PSC covers 41 million train-kilometres in Flanders (the remaining part of the territory with Wallonia should cover then 27 million train-km in Wallonia). The future RER of Brussels is expected to have 23 million train-kilometres[189] .

A threshold of 50 million train-kilometres would affect the PSC of SNCB, but could give the possibility for a regional PSCs. Selecting a 20 million train-kilometres (or less) threshold would imply cutting the commuter network of Brussels and having a network organisation that does not follow regional lines (both Flanders and Wallonia appear to fall above the threshold of 20 million train-kilometres).

[189] Significance-Stratec-Tractebel-Tritel (2009-: Evolution et optimisation du RER de Bruxelles: développement 2015 et vision aux horizons 2020 et 2030 – Rapport pour le SPF Mobilité et Transports

If a threshold in relative terms would be applied, the existing packages could only be maintained in the case of the 50% threshold variant.

(c) Ireland

The public service contract in Ireland appears to cover all services, but the commuter train services (DART, Dublin suburban railways). We estimate that the latter services represent between 3.5-5 million train-kilometres leaving about 10 million train-km for the regional and national rail services under PSC. In these circumstances, any threshold above 5 million train-km will not affect PSCs in Ireland.

If a threshold in relative terms would be applied, the existing package for regional and national train services could not be maintained. The package for the DART services could be maintained except in the case of the 1/10 threshold variant.

(d) Lithuania

Lithuania is covered by a single PSC covering 5 million train-kilometres. In this context, Lithuania would be most likely not affected by any of the choices in terms of thresholds.

If a threshold in relative terms would be applied, the existing packages could not be maintained.

1.3 - Impact on rolling stock of each threshold variant in terms of train-kilometre

Based on the previous assumptions regarding the operation of a suburban and a regional line, we have calculated the number of train units (EMU) and carriages that would be necessary to operate a suburban network and a regional network in terms of train-kilometres.

Table 15 – Number of carriages equivalents needed per package of train services for a suburban network (in train-kilometres)

package of train services (in million train-km)	EMUs	carriage equivalents
2.4	8	48
5	17	102
10	34	204
20	67	402
50	167	1002

Table 16 - Number of carriages equivalents needed per package of train services for a regional network (in train-kilometres)

package of train services (in million train-km)	EMUs	carriage equivalents
0.8	2	11
5	11	68
10	23	137
20	46	274
50	114	685

To approximate the impact of the size of thresholds on required rolling stock, it is possible to estimate the percentage of existing rolling that a bidder would need to procure in order to perform the regional and suburban services of the tendered package of suburban or regional train services (based on our previous assumptions). We have also assumed that 10% of rolling stock would be needed as a replacement for rolling stock in maintenance.

In approximation one could argue that the higher the share of the rolling stock required for the operation of a package of rail routes in a PSC is in the total amount of rolling stock available on a national rail network, the more difficult it could possibly be for a non-incumbent to procure suitable rolling stock. We have highlighted in blue those markets where the needed rolling stock is above 10% of whole Member State's rolling stock.

Table 17 – Percentage of national rolling stock needed to perform suburban PSCs

		Threshold of packages (in train-kilometres)				
MS	Rolling stock	2.5	5	10	20	50
BE	3412	1.5%	3.3%	6.6%	13.0%	32.3%
BG	1602	3.3%	7.0%	14.0%	27.6%	-
CZ	4553	1.2%	2.5%	4.9%	9.7%	24.2%
DK	1737	3.0%	6.5%	12.9%	25.5%	63.5%
DE	18607	0.3%	0.6%	1.2%	2.4%	5.9%
EE	189	27.9%	-	-	-	-
IE	592	8.9%	19.0%	37.9%	-	-
EL	793	6.7%	14.1%	28.3%	-	-
ES	5253	1.0%	2.1%	4.3%	8.4%	21.0%
FR	16524	0.3%	0.7%	1.4%	2.7%	6.7%
IT	12474	0.4%	0.9%	1.8%	3.5%	8.8%
LV	491	10.8%	22.9%	-	-	-
LT	340	15.5%	33.0%	-	-	-
LU	187	28.2%	60.0%	-	-	-
HU	3071	1.7%	3.7%	7.3%	14.4%	35.9%
NL	2531	2.1%	4.4%	8.9%	17.5%	43.5%
AT	2995	1.8%	3.7%	7.5%	14.8%	36.8%
PL	6945	0.8%	1.6%	3.2%	6.4%	15.9%
PT	1043	5.1%	10.8%	21.5%	42.4%	-
RO	3312	1.6%	3.4%	6.8%	13.4%	33.3%
SI	360	14.7%	31.2%	62.3%	-	-
SK	1646	3.2%	6.8%	13.6%	26.9%	-
FI	1033	5.1%	10.9%	21.7%	42.8%	-
SE	879	6.0%	12.8%	25.5%	50.3%	-
UK	11751	0.4%	1.0%	1.9%	3.8%	9.4%

Table 18- Percentage of national rolling stock needed to perform regional PSCs

		Threshold of packages (in train-kilometres)				
MS	Rolling stock	3.5	5	10	20	50
BE	3412	0.1%	0.4%	0.7%	1.5%	3.7%
BG	1602	0.1%	0.8%	1.6%	3.1%	-
CZ	4553	0.0%	0.3%	0.6%	1.1%	2.8%
DK	1737	0.1%	0.7%	1.4%	2.9%	7.2%
DE	18607	0.0%	0.1%	0.1%	0.3%	0.7%
EE	189	1.1%	-	-	-	-
IE	592	0.3%	2.1%	4.2%	-	-
EL	793	0.3%	1.6%	3.2%	-	-
ES	5253	0.0%	0.2%	0.5%	1.0%	2.4%
FR	16524	0.0%	0.1%	0.2%	0.3%	0.8%
IT	12474	0.0%	0.1%	0.2%	0.4%	1.0%
LV	491	0.4%	2.6%	-	-	-
LT	340	0.6%	3.7%	-	-	-
LU	187	1.1%	6.7%	-	-	-
HU	3071	0.1%	0.4%	0.8%	1.6%	4.1%
NL	2531	0.1%	0.5%	1.0%	2.0%	5.0%
AT	2995	0.1%	0.4%	0.8%	1.7%	4.2%
PL	6945	0.0%	0.2%	0.4%	0.7%	1.8%
PT	1043	0.2%	1.2%	2.4%	4.8%	-
RO	3312	0.1%	0.4%	0.8%	1.5%	3.8%
SI	360	0.6%	3.5%	7.0%	-	-
SK	1646	0.1%	0.8%	1.5%	3.1%	-
FI	1033	0.2%	1.2%	2.4%	4.9%	-
SE	879	0.2%	1.4%	2.9%	5.7%	-
UK	11751	0.0%	0.1%	0.2%	0.4%	1.1%

1.4 – Advantages and drawbacks of train-km thresholds

In this context:

- A threshold of 5 million train-km would require less than 10% of rolling stock for regional operations in all Member States and for suburban train services in all but 6 Member States.

- A threshold of 10 million train-km would require less than 10% of rolling stock for suburban operations in all but 6 Member States; regional PSCs would all fall under the 10% share.

- A threshold of 20 million train-km would require less than 10% of rolling stock for suburban operations in 11 Member States; regional PSCs would all fall under 10%

- A threshold of 50 million train-km would require less than 10% of rolling stock for suburban operations in all Member States but the 5 largest in terms of train-km (Germany, France, Poland, Italy and UK); regional PSCs would all fall under the 10% share except for two Member States.

The aforementioned analysis suggests that:

- A threshold of 5 million train-kilometres will ease problems of access to rolling stock but affect most of existing public service contracts

- A threshold of 10 million train-kilometres will ease problems of rolling stock except to run suburban services in small Member States. It would affect PSC in most of the medium sized and bigger Member States; it will not affect most German public service contracts, but will affect all the PSCs for suburban networks of several important cities

- A threshold of 20 million train-kilometres will not ease problems of rolling stock to run suburban services in small Member States; it will not affect German, Danish or most of Italian public service contracts, but it will almost not affect all the PSCs for suburban networks of several important cities as well as PSC in the UK and Spain.

- A threshold of 50 million train-kilometres will cause problems of access to rolling stock but maintain intact most of the public service contracts in the Member States.

- A definition of a threshold in relative terms would ensure that small and medium sized Member States could not set packages of train services at a volume hat would be too big to be rewarded by several bids when being tendered out. In this way, the likelihood would be diminished that only the incumbent would present a bit and hence de facto foreclose the market.

- A definition of a threshold in relative terms would be less effective in the case of bigger Member States as the resulting package sizes would be considerable for all variants of the threshold definition (10%, 33%, 50% of the total national rail passenger volume under PSC). Even in case of the 10% threshold variant the package size could theoretically amount to 60 million train-km in Germany and to 46 million train-km in the UK. However, all bigger Member States (DE, UK, FR, PL, ES, IT) have chosen an administrative breakdown of competent rail authorities that would make it very unlikely that the size of package reaches these dimensions.

However, applying maximum thresholds in relative terms could render it impossible for competent authorities in many small Member States to set the package size at an

optimal level maximising chances to obtain many offers in the tender procedure. In not yet mature markets with remaining market entry barriers, e.g. in terms of difficulties to access suitable rolling stock and staff, it can be assumes that such an optimal package size is between 2 and 7 million train-km.

In conclusion, it is proposed to introduce a two-pronged threshold definition marrying the flexibility of a threshold in relative terms with the possibility of setting the package size at an optimal level guaranteed through a threshold in absolute terms. Thus, the given structure of rail packages in Member States and the estimation of an optimal package size would suggest a two-pronged threshold definition, where the competent authority can choose between the **higher value** of **either an absolute threshold in train-km or a threshold of a percentage of the total national volume of rail passenger services under PSC**.

1.5 – Advantages and drawbacks of train-km thresholds

In this context, we propose to analyse the combination of the two smaller percentages in train-km (5 million train-km and 10 million train-km) together with the two highest percentages (33% and 50%), and to assess the impact in terms of number of packages (and therefore tendering procedure) and the number of Member States where the participation of a new entrant to tender for suburban services will require the new entrant to get hold of more than 10% of all the domestic rolling stock.

Table 19 – Combination of thresholds and packages

Thresholds	Packages	RS MS problem
5 Mo - 33%	64	2
5 Mo - 50%	44	3
10 Mo - 33%	58	4
10 Mo - 50%	41	5

The thresholds of "5 million train-km and 50%" or "10 million train-km and 33%" represent the best combination in terms of packages and Member States potentially not solving the problem of rolling stock. However, under the option "10 million train-km and 33%" the potentially problematic Member States represent a smaller share of the whole market.

Table 20a- Simulation with 10 million train-km and 33%

	Mo train-km	Threshold	RS	Wagons nec.	RS(%)	Packages
Austria	99.3	32.8	2995	114.7	4%	3
Belgium	77.1	25.4	3412	89.1	3%	3
Bulgaria	23.9	10.0	1602	35.0	2%	2
Czech Republic	122.1	40.3	4553	141.0	3%	3
Denmark	74.1	24.5	1737	85.6	5%	3
Estonia	2.6	10.0	189	35.0	**20%**	0
Finland	35	11.6	1033	40.4	4%	3
France	395.9	130.6	16524	457.3	3%	3
Germany	674.9	222.7	18607	779.5	5%	3

Greece	18.3	10.0	793	35.0	5%	2
Hungary	94	31.0	3071	108.6	4%	3
Ireland	16.6	10.0	592	35.0	7%	2
Italy	265.9	87.7	12474	307.1	3%	3
Latvia	5	10.0	491	35.0	8%	1
Lithuania	5.5	10.0	340	35.0	**11%**	1
Luxemburg	7.4	10.0	187	35.0	**21%**	1
Netherlands	113.3	37.4	2531	130.9	6%	3
Poland	124.3	41.0	6945	143.6	2%	3
Portugal	30.7	10.1	1043	35.5	4%	3
Romania	n/a	-	3312	-	-	-
Slovakia	31.6	10.4	1646	36.5	2%	3
Slovenia	11.8	10.0	360	35.0	**11%**	1
Spain	180.5	59.6	5253	208.5	4%	3
Sweden	50.3	16.6	879	58.1	7%	3
UK	507.4	167.4	11751	586.0	5%	3

Table 20b- Simulation with 5 million train-km and 50%

	Mo train-km	Threshold	RS	Wagons nec.	RS(%)	Packages
Austria	99.3	49.7	2995	173.8	6%	2
Belgium	77.1	38.6	3412	134.9	4%	2
Bulgaria	23.9	12.0	1602	41.8	3%	2
Czech Republic	122.1	61.1	4553	213.7	5%	2
Denmark	74.1	37.1	1737	129.7	8%	2
Estonia	2.6	5.0	189	17.5	**10%**	1
Finland	35	17.5	1033	61.3	7%	2
France	395.9	198.0	16524	692.8	5%	2
Germany	674.9	337.5	18607	1181.1	7%	2
Greece	18.3	9.2	793	32.0	4%	2
Hungary	94	47.0	3071	164.5	6%	2
Ireland	16.6	8.3	592	29.1	5%	2
Italy	265.9	133.0	12474	465.3	4%	2
Latvia	5	5.0	491	17.5	4%	1
Lithuania	5.5	5.0	340	17.5	6%	1
Luxemburg	7.4	5.0	187	17.5	**10%**	1
Netherlands	113.3	56.7	2531	198.3	9%	2
Poland	124.3	62.2	6945	217.5	3%	2
Portugal	30.7	15.4	1043	53.7	6%	2
Romania	n/a	-	3312	-	-	-
Slovakia	31.6	15.8	1646	55.3	4%	2
Slovenia	11.8	5.9	360	20.7	6%	2
Spain	180.5	90.3	5253	315.9	7%	2
Sweden	50.3	25.2	879	88.0	**11%**	2
UK	507.4	253.7	11751	888.0	8%	2

2. Simulations on the *de minimis* threshold for packages of routes and networks

2.1- Identification of potential limit values for the de minimis threshold

It is possible to estimate an appropriate *de minimis* threshold in terms of contract size or value for rail on the basis of the costs and expected gains of tendering, or by analogy to the legal provisions for service concessions.

(a) Administrative burden

It would not make sense to require mandatory competitive tendering for PSC of a small volume as the cost of the tender procedure could outweigh the expected benefits. It is therefore reasonable to introduce a *'de minimis'* threshold until which competent authorities can directly award small scale PSC.

In the preparatory study for this impact assessment, Steer Davies Gleave has estimated the total average cost of tender to be 780.000 EUR in the EU15 (with 3 bids) and 390.000 EUR (with 3 bids) in the EU12. The weighted average cost of tender in function of passenger-kilometres is 451.000 EUR (EU27).

Table 21 – Estimation of administrative burden

Average transaction costs (one-off tendering)			
Preparation of tender - Competent Authority	*200,000*	*100,000*	€ (2012 prices)
Preparation of tender-Total cost tenderers	*500,000*	*250,000*	€ (2012 prices)
Participation to bid-cost per tenderer	166,667	83,333	€ (2012 prices)
Average number of tenderers	3	3	Number
Other costs of tender - Regulatory Bodies/Authorities/Courts	*80,000*	*40,000*	€ (2012 prices)
Estimated cost of a legal dispute/Regulatory intervention	800,000	400,000	€ (2012 prices)
Propability of occurrence	0.10	0.10	Number
Total additional transaction costs	780,000	390,000	€ (2012 prices)

If one pessimistically assumes that the efficiency ratio is 10% (i.e. the potential efficiency gains through competitive tendering), then the fixed cost of tendering should not offset 10% the value of the potential contract. As a result, the threshold should be set at 4.5 million EUR.

Table 22 – Thresholds in EUR in relation with assumed efficiency savings

	Efficiency assumption		
Threshold	10%	20%	30%
780,000	7,800,000	3,900,000	2,600,000
390,000	3,900,000	1,950,000	1,300,000
450,000	**4,500,000**	**2,250,000**	**1,500,000**

It is possible to link this contract value threshold to train-kilometres, but this will vary very much from Member State to Member State (cf. infra)

(b) Analogy with similar initiatives of the European Commission

Rail services are service concessions in Regulation 1370/2007. In December 2011, the Commission adopted a proposal to establish rules on the procedures for procurement by contracting authorities using a threshold of 5 million EUR. It is possible to link this contract value threshold to train-kilometres, but this will vary very much from Member State to Member State (cf. infra)

2.2- Impact on existing contracts

(a) Germany

Based on the analysis of Brenck and Peter in 2007[190], it is possible to extract a list of the main contracts directly awarded to DB in value. The smallest contract presented on table 22 amounts to 700 million EUR for 12.5 million train-kilometres/a., the biggest amounts to 8 billion EUR for about 98 million train-kilometres/a. The unit costs of directly awarded rail PSC in Germany vary from about 50 EUR/train-km to 150 EUR/ train-km.

Table 22- Values of important contracts in Germany

State	Conclusion of contract	Train-km (mil. 1st year)	Value (bn €)	Duration of contract
Berlin / Brandenburg	December 2002	35.0	1.9	10 years
Lower Saxony	January 2003	27.8	2.5	10 years
Saxony-Anhalt	March 2003	16.2	2.5	12 years
Hesse (Rhine-Main-Area)[a)]	April 2003	33.0	4.4	11 years
Baden-Wuerttemberg[b)]	July 2003	49.0	4.6	13 years
Hamburg (S-Bahn)	July 2003	12.5	0.7	6 years
Rhineland-Palatinate	January 2003	29.5	2.4	11 years
Northrhine-Westfalia	July 2004	44.0	6.0	15 years
Berlin (S-Bahn)	August 2004	32.4	3.0	15 years
Bavaria	November 2004	98.1	ca. 8.0	10 years
Northrhine-Westfalia[c)]	June 2005	12.7	1.1	11 years

a) Rhein-Main-Verkehrsverbund; b) without region Stuttgart; c) five contracts with different authorities

Source: Steer Davies Gleave quoting Brenck/Peter (2007)

In this context, the threshold of 4.5 or 5 million EUR would have covered none of the 'grand' contracts listed in table 21.

[190] Steer Davies Gleave (2012) quoting Brenck/Peter (2007)

(b) Italy

Based on the analysis of Pendolaria (2011) in 2007, it is possible to extract a list of the main PSCs in Italy. The smallest contract volume presented on table 22 amounts to 2 million EUR for 230.000 train-kilometres. Only 2 contracts would have been excluded from the obligation to tender out these contracts with a threshold of 5.000.000 EUR (one PSC with 235.000 train-kilometres and one with 1.45 million train-km). The unit costs of contracts in Italy vary from 10 EUR/train-km to 35 EUR /train-km, and from 15 EUR/train-km to 30 EUR train-km in France.

Table 23 – Values and train-km of Italian PSCs

Region/Province	Railway undertaking	Million train-km	Contract value (Mo EUR)	EUR/train-km
Abruzzo	FS-TI	3.96	57.30	14.5
Basilicata	FS-TI	2	27.80	13.9
Basilicata	FAL	0.7	20.80	29.7
Calabria	FS-TI	7.1	85.20	12.0
Calabria	FC	1.17	41.60	35.6
Campania	FS-TI	10.56	162.60	15.4
Campania	Circumv	3.94	102.12	25.9
Campania	SEPSA	1.63	28.70	17.6
Campania	MetroC	1.05	27.90	26.6
Emilia-Romagna	CTI	18.7	118.40	6.3
Friuli VG	FS-TI	3.27	36.00	11.0
Friuli VG	FUC	0.23	2.10	9.1
Lazio	FS-TI	17.3	215.00	12.4
Liguria	FS-TI	7.4	97.10	13.1
Lombardia	FS-TI	27.7	313.74	11.3
Lombardia	LeNord	9.83	88.54	9.0
Marche	FS-TI	4.19	40.30	9.6
Molise	FS-TI	2.51	23.50	9.4
Piemonte	FS-TI	19.9	156.85	7.9
Piemonte	GTT	1.05	19.19	18.3
Puglia	FS-TI	7.2	60.00	8.3
Puglia	FSE	3.3	111.00	33.6
Puglia	FG	0.4	14.80	37.0
Puglia	Ferrotram	0.9	22.21	24.7
Puglia	FAL	0.7	15.35	21.9

Sardegna	FS-TI	3.6	36.28	10.1
Sardegna	FSrd	1.13	28.45	25.2
Sicilia	FS-TI	9.78	111.50	11.4
Sicilia	Circumt	0.76	16.00	21.1
Toscana	FS-TI	23.1	242.30	10.5
Toscana	TFT	0.79	5.60	7.1
Trento	FS-TI	2.38	27.00	11.3
Bolzano	FS-TI	3.2	38.48	12.0
Bolzano	SAD	2.1	18.95	9.0
Umbria	FS-TI	3.6	35.95	10.0
Umbria	UM	1.45	4.98	3.4
Valle d'Aosta	FS-TI	1.75		0.0
Veneto	FS-TI	3.16	43.53	13.8
Veneto	ATI	11.78	70.41	6.0
Veneto	ST	0.48	5.58	11.6

Source: Rapporto Pendolaria 2011

It cannot be excluded that there are methodological variations in the calculation of the contract value between the Member States.

(c) France

The PREDIT[191] study provides an analysis of the unit cost of the French public service contracts that have been directly awarded to the SNCF.

Table 24 – values of train-kilometres of French PSCs

Region/Province	EUR/train-km
Alsace	17.78
Aquitaine	18.47
Auvergne	17.78
Bourgogne	17.49
Bretagne	16.95
Centre	17.48
Champagne-Ardenne	18.88
Franche-Comté	17.37

[191] Programme de recherche et d'innovation dans les transports terrestres (PREDIT): Groupe opérationnel n°6 Etude sur l'Impact de l'ouverture à la concurrence dans le transport régional ferroviaire de voyageurs sur la consommation d'énergie et sur les émissions de carbone – Beauvais Consultants, KCW et RAILCONCEPT (2012) quoting "Conseils régionaux (données collectées par Ville, rail et Transports en collaboration avec l'ARF et publiées dans le numéro du 6 avril 2011)

Languedoc-Roussillon	21.96
Limousin	14.69
Lorraine	18.4
Midi-Pyrénées	22.1
Basse-Normandie	17.99
Haute-Normandie	21.99
Nord-Pas-de-Calais	19.33
Pays de la Loire	19.7
Picardie	23.41
Poitou-Charentes	19.23
PACA	26.52
Rhône-Alpes	21.04

2.3-Conclusions

Comparing the situations of Italy, France and Germany allows taking into account different situations in terms of contract cost per train-km. In Italy, a threshold of 4.5 million EUR is likely to cover in some cases contracts with more than 1 million train-kilometres.

Table 25 – Train-km in function of contract value thresholds for given unit costs (EUR /train-km).

Contract value (EUR/train-km)	Train-km as a function of contract value threshold (EUR)			
	3,000,000	4,500,000	5,000,000	10,000,000
10	300,000	450,000	500,000	1,000,000
20	150,000	225,000	250,000	500,000
35	85,714	128,571	142,857	285,714
50	60,000	90,000	100,000	200,000
100	30,000	45,000	50,000	100,000
150	20,000	30,000	33,333	66,667

The choice of a threshold of 4.5 to 5 million EUR threshold implies that in "low-unit cost countries" with say a 10 EUR/train-km, contracts of a size up to 450.000 to 500.000 train-km will be covered by a de minimis exemption from the obligation to tender.

Taking account of possible methodological divergences estimating PSC unit costs across the Union Member States and empirical data available for the UK[192] it is reasonable and proportionate to assume an overall total unit cost of rail PSC (including infrastructure fees)of about 35 EUR/train-km. This would translate into de minimis threshold of either 5 million EUR contract value or a contract size of 150.000 train-km/annum.

3. Transitory periods

In 2010, 37% of the rail passenger market has been open to competition de facto including under tendered out PSC. It can be expected that by 2019, at the end of the transitory period defined in Regulation 1370/2007 for the application of Art 5 on the award of PSC (including the obligation to award PSC based on an open tender procedure), about 50% of the total EU rail passenger market will be open to competition. This assumption is corroborated by an enhanced wave of open tender procedures for PSC in Germany replacing directly awarded contracts in the coming years and a comparable obligation for PSC award recently reinforced in Italy, and competitive tenders for PSCs have already been announced in Austria, Finland and the Czech Republic. Thus by 2019 about 200 billion passenger-km will have been awarded by competitive tender leaving about 200 billion passenger-km of directly awarded PSC to be tendered out after 2019.

In order to assess the effects of different scenarios of transitory periods until effective market opening for rail PSC we can consider the following scenarios:

Scenario 1 - 'Big Bang' – no transitional phase: all PSCs are put for tender at adoption

Scenario 2 – 'Natural expiry of directly awarded PSCs': In principle, directly awarded PSC for rail transport have a legal maximum duration of 10 years. If we assume a proportional, linear distribution of expiry dates for these contracts in the EU, 100% of the existing directly awarded PSC would have still to be tendered out by the end of the transitory period on 3 December 2019. One year later in December 2020 90% of the market volume would still have to be tendered out and so forth. The table underneath illustrates the remaining market volume that still will have to be tendered out for the period 2019 to 2029. The maximum permissive scenario of a transitory period of 10 years for rail PSC would result in an effective market opening only in 2029. An EU market volume of about 20 billion passenger-km would have to tendered out annually during this 10 year transitional period.

Scenario 3 – 'Transitional phasing-in': competitive re-award of total volume of all directly awarded PSC in 2019: 30% by 2020, 60% by 2021 and 100% by 31 December 2022.

Table 26: Market volume still to be tendered out (bill. pax-km) according to various scenarios:

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Scenario	All										

[192] Nash, C.A., et al. (2006), Passenger rail franchising – British experience, ECMT Workshop on competitive tendering for passenger rail services, Paris 12 January 2006, table 6 showing total cost per train-km of 24 £ in 2004/04.

1: Big-Bang	PSCs tendered										
Scenario 2: natural expiry of directly awarded PSC	200	180	160	140	120	100	80	60	40	20	0
Scenario 3: Transitional phasing-in	200	140	80	0							

The results of this simulation documented in table 26 indicate that an intermediate scenario (N°3) annually an average market volume of 60 billion passenger-km except for the last year would have to be tendered out by the competent authorities, whereas in the 'big bang' scenario, some 200 billion passenger-km would be put in the market at once. In the 'natural expiry' scenario, some 20 billion passenger-km would be put in the market for a period of 10 years. .

The intermediate scenario N°3 would have the advantage of shortening the transitory period until effective rail market opening to 2023 while limiting the market volume to be tendered out (about 60 billion passenger-km)..

Scenario 3 appears hence as the preferred scenario.

ANNEX 9

METHODOLOGY APPLIED TO QUANTITATIVE ANALYSIS

1. INTRODUCTION

This Annex summarises the background information of carrying out the quantitative analysis in different parts of the IA report.

2. IMPACTS OF DIFFERENT OPTIONS ON MARKET LIBERALISATION[193]

2.1 - Option 1

Table 8-2-1 hereunder indicates how each of the categories would change further the implementation of option 1 (broad open access and directly awarded PSCs). However, as the option gives the right to use direct awards, it cannot be excluded that in this option, some Member States that use competitive tendering actually go backwards and decide using direct awards.

[193] Results are incorporated into Section 6 of the main report

Table 8-2-1 - Impact of option 1 on each of the categories of networks

	Million p-km	(%)	Most likely new category	Going backwards
Networks that are CLOSED de facto (pkm)				
Directly awarded PSC & NO open access	76.99	19%	Open access restricted only if it compromises PSOs (directly awarded PSCs)	
Legal monopolies	68.25	17%	Open access (no PSO in parallel)	
Total CLOSED	**152.7**	**38%**		
Networks that are OPEN de facto				
Competitively tendered PSC (NO open access in parallel)	56.75	14%	Competitively tendered PSC (NO open access in parallel)	Directly awarded PSC & NO open access
Open access (no PSO in parallel)	66.83	17%	Open access (no PSO in parallel)	
Unrestricted Open access & tendered PSCs in parallel	22.76	6%	Unrestricted Open access & tendered PSCs in parallel	Unrestricted Open access & directly awarded PSCs in parallel
Open access restricted only if it compromises PSOs (tendered PSCs)	0.56	0%	Open access restricted only if it compromises PSOs (tendered PSCs)	Open access restricted only if it compromises PSOs (directly awarded PSCs)
Total OPEN	**146.9**	**37%**		
Networks that are SEMI-OPEN				
Unrestricted Open access & directly awarded PSCs in parallel	89.14	22%	Unrestricted Open access & directly awarded PSCs in parallel	
Open access restricted only if it compromises PSOs (directly awarded PSCs)	24.59	6%	Open access restricted only if it compromises PSOs (directly awarded PSCs)	
Total SEMI-OPEN	**105.6**	**26%**		
TOTAL OF EU pkm	**405.22**	**100%**		

Option 1 would therefore lead to the following market structure for the EU:

	Optimistic	Pessimistic
OPEN	55%	34%
CLOSED	-	14%
SEMI-CLOSED	45%	53%

2.2 - Option 2

Table 8-2-2 hereunder indicates how each of the categories would change further the implementation of option 2 (limited open access and directly awarded PSCs). However, as the option gives the right to use direct awards, it cannot be excluded that in this option, some Member States that use competitive tendering actually go backwards and decide using direct awards.

Table 8-2-2 Impact of option 2 on each of the categories of networks

	Million p-km	(%)	Most likely new category	Going backwards
Networks that are CLOSED de facto (pkm)				
Directly awarded PSC & NO open access	76.99	19%	Directly awarded PSC & NO open access	
Legal monopolies	68.25	17%	Open access (no PSO in parallel)	
Total CLOSED	**152.7**	**38%**		
Networks that are OPEN de facto				
Competitively tendered PSC (NO open access in parallel)	56.75	14%	Competitively tendered PSC (NO open access in parallel)	Directly awarded PSC & NO open access
Open access (no PSO in parallel)	66.83	17%	Open access (no PSO in parallel)	
Unrestricted Open access & tendered PSCs in parallel	22.76	6%	Unrestricted Open access & tendered PSCs in parallel	Unrestricted Open access & directly awarded PSCs in parallel
Open access restricted only if it compromises PSOs (tendered PSCs)	0.56	0%	Open access restricted only if it compromises PSOs (tendered PSCs)	Open access restricted only if it compromises PSOs (directly awarded PSCs)
Total OPEN	**146.9**	**37%**		
Networks that are SEMI-OPEN				
Unrestricted Open access & directly awarded PSCs in parallel	89.14	22%	Unrestricted Open access & directly awarded PSCs in parallel	
Open access restricted only if it compromises PSOs (directly awarded PSCs)	24.59	6%	Open access restricted only if it compromises PSOs (directly awarded PSCs)	
Total SEMI-OPEN	**105.6**	**26%**		
TOTAL OF EU pkm	**405.22**	**100%**		

Option 2 would therefore lead to the following market structure for the EU:

	Optimistic	Pessimistic

OPEN	54%	34%
CLOSED	19%	33%
SEMI-CLOSED	34%	34%

2.3 - Option 3

Table 8-2-3 hereunder indicates how each of the categories would change further the implementation of option 3 (no open access and competitive tendering of PSCs). However, as the option gives no open access rights, it cannot be excluded that in this option, some Member States actually go backwards and decide restricting the existing open access.

Table 8-2-3- Impact of option 3 on each of the categories of networks

	Million p-km	(%)	Most likely new category	Going backwards
Networks that are CLOSED de facto (pkm)				
Directly awarded PSC & NO open access	76.99	19%	Competitively tendered PSC (NO open access in parallel)	
Legal monopolies	68.25	17%	Legal monopolies	
Total CLOSED	**152.7**	**38%**		
Networks that are OPEN de facto				
Competitively tendered PSC (NO open access in parallel)	56.75	14%	Competitively tendered PSC (NO open access in parallel)	
Open access (no PSO in parallel)	66.83	17%	Open access (no PSO in parallel)	Legal monopolies
Unrestricted Open access & tendered PSCs in parallel	22.76	6%	Unrestricted Open access & tendered PSCs in parallel	Competitively tendered PSC (NO open access in parallel)
Open access restricted only if it compromises PSOs (tendered PSCs)	0.56	0%	Open access restricted only if it compromises PSOs (tendered PSCs)	Competitively tendered PSC (NO open access in parallel)
Total OPEN	**146.9**	**37%**		
Networks that are SEMI-OPEN				
Unrestricted Open access & directly awarded PSCs in parallel	89.14	22%	Unrestricted Open access & tendered PSCs in parallel	Unrestricted Open access & tendered PSCs in parallel
Open access restricted only if it compromises PSOs (directly awarded PSCs)	24.59	6%	Open access restricted only if it compromises PSOs (tendered PSCs)	Open access restricted only if it compromises PSOs (tendered PSCs)
Total SEMI-OPEN	**105.6**	**26%**		

TOTAL OF EU pkm	**405.22**	**100%**		

Option 3 would therefore lead to the following market structure for the EU:

	Optimistic	Pessimistic
OPEN	84%	67%
CLOSED	17%	34%
SEMI-CLOSED	0%	0%

2.4 - Option 4

Table 8-2-4 hereunder indicates how each of the categories would change further the implementation of option 4 (broad open access and competitive tendering of PSCs). This option does not give any room for those Member States that have opened their markets to go backwards towards direct award or limit existing open access.

Table 8-2-4- Impact of option 4 on each of the categories of networks

	Million p-km	(%)	Most likely new category
Networks that are CLOSED de facto (pkm)			
Directly awarded PSC & NO open access	76.99	19%	Open access restricted only if it compromises PSOs (tendered PSCs)
Legal monopolies	68.25	17%	Open access (no PSO in parallel)
Total CLOSED	**152.7**	**38%**	
Networks that are OPEN de facto			
Competitively tendered PSC (NO open access in parallel)	56.75	14%	Open access restricted only if it compromises PSOs (tendered PSCs)
Open access (no PSO in parallel)	66.83	17%	Open access (no PSO in parallel)
Unrestricted Open access & tendered PSCs in parallel	22.76	6%	Unrestricted Open access & tendered PSCs in parallel
Open access restricted only if it compromises PSOs (tendered PSCs)	0.56	0%	Open access restricted only if it compromises PSOs (tendered PSCs)
Total OPEN	**146.9**	**37%**	
Networks that are SEMI-OPEN			
Unrestricted Open access & directly awarded PSCs in parallel	89.14	22%	Unrestricted Open access & tendered PSCs in parallel
Open access restricted only if it compromises PSOs (directly awarded PSCs)	24.59	6%	Open access restricted only if it compromises PSOs (tendered PSCs)
Total SEMI-OPEN	**105.6**	**26%**	
TOTAL OF EU pkm	**405.22**	**100%**	

Option 4 would therefore lead to the following market structure for the EU:

	Optimistic	Pessmistic
OPEN	100%	100%
CLOSED	0%	0%
SEMI-CLOSED	0%	0%

2.5 - Option 5

Table 8-2-5 hereunder indicates how each of the categories would change further the implementation of option 5 (limited open access and competitive tendering of PSCs). This option does not give any room for those Member States that have opened their markets to go backwards towards direct award or limit existing open access.

Table 8-2-5- Impact of option 4 on each of the categories of networks

	Million p-km	(%)	Most likely new category
Networks that are CLOSED de facto (pkm)			
Directly awarded PSC & NO open access	76.99	19%	Competitively tendered PSC (NO open access in parallel)
Legal monopolies	68.25	17%	Open access (no PSO in parallel)
Total CLOSED	**152.7**	**38%**	
Networks that are OPEN de facto			
Competitively tendered PSC (NO open access in parallel)	56.75	14%	Competitively tendered PSC (NO open access in parallel)
Open access (no PSO in parallel)	66.83	17%	Open access (no PSO in parallel)
Unrestricted Open access & tendered PSCs in parallel	22.76	6%	Competitively tendered PSC (NO open access in parallel)
Open access restricted only if it compromises PSOs (tendered PSCs)	0.56	0%	Competitively tendered PSC (NO open access in parallel)
Total OPEN	**146.9**	**37%**	
Networks that are SEMI-OPEN			
Unrestricted Open access & directly awarded PSCs in parallel	89.14	22%	Competitively tendered PSC (NO open access in parallel)
Open access restricted only if it compromises PSOs (directly awarded PSCs)	24.59	6%	Competitively tendered PSC (NO open access in parallel)
Total SEMI-OPEN	**105.6**	**26%**	
TOTAL OF EU pkm	**405.22**	**100%**	

Option 5 would therefore lead to the following market structure for the EU:

	Optimistic	Pessimistic
OPEN	100%	100%
CLOSED	0%	0%
SEMI-CLOSED	0%	0%

2.6- Quantitative analysis of the impacts of the core policy options on market opening

The level of competition will vary in each option depending on the number of passenger-km that will fall either under competitive tendering (for PSCs) or open access - i.e. the so-called "open markets".

	Option 1		**Option 2**		**Option 3**			
	Optimistic	Pessimistic	Optimistic	Pessimistic	Optimistic	Pessimistic	Option 4	Option 5
OPEN	55%	34%	54%	34%	84%	67%	100%	100%
CLOSED	-	14%	19%	33%	17%	34%	0%	0%
SEMI-CLOSED	45%	53%	34%	34%	0%	0%	0%	0%

Options 4 and 5 have the largest potential regarding competition, followed by option 3, 1 and 2 respectively.

3. QUANTITIATIVE ASSESSMENT OF PREFERREFD MARKET OPENING OPTION[194]

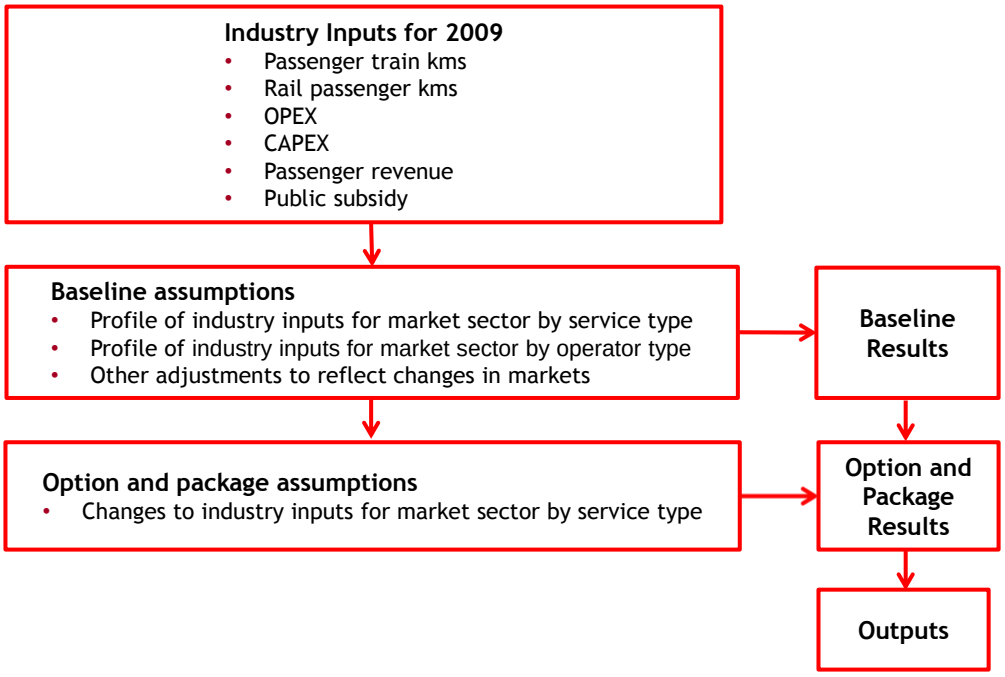
The information in this section is organised as follows:

1. Overview of the **approach** employed
2. Summary of the **input data**
3. Assumptions used to generate the **baseline data**
4. The range of **assumptions** employed in scenario analysis
5. The range of possible **outputs** that can be calculated
6. Sensitivity **analysis**

3.1. Overview of the approach

Overview of the assessment of impacts is presented on the Figure 8-3- 1below:

Figure 8-3- 1 OVERVIEW OF THE ASSESSMENT PROCESS



3.2. Input data

Primary input is industry data by Member State from the following sources:

Table 8-3- 1 INDUSTRY DATA ITEMS AND SOURCES

194 Results are incorporated into Section 8 of the main report

Industry data item	Source
Passenger train kilometres	UIC 2009
Rail passenger kilometres	RMMS 2009/2012, Transport White Paper 2011
Share of passenger kilometres under PSC	RMMS 2009/2012, Operators' reports 2009/2010, UIC 2009, SDG calculations
Passenger services operating costs (OPEX)	UIC 2009, RMMS 2009, Operators' reports 2009/2010, Infrastructure Managers reports 2009/2010
Capital expenditure on passenger rolling stock (CAPEX)	UIC 2009, Operators' reports 2009/2010, SDG calculations
Passenger Revenue (real)	UIC 2009, Operators' reports, CER Annual Report 2009-2010, SDG calculations
Public Subsidy for passenger services	UIC 2009, CER Annual Report 2009-2010, Operators' reports 2009/2010, SDG calculations

The input data is from 2009, as it is consistent with the 2011 Transport White Paper and the most comprehensive year in terms of alternative data sources such as UIC statistics and most operator reports. All revenue and cost information is in real 2009 prices.

Table 8-3-2 provides a summary of the industry input data by Member State:

Table 8-3-2 BASE YEAR INDUSTRY DATA

Member State	Code	Passenger train km (million)	Rail passenger km (thousand millions)	Passenger services operating costs (€ billion)	Capital expenditure on passenger rolling stock (€ billion)	Passenger Revenue (real) (€ billion)	Public Subsidy for passenger services (€ billion)
Belgium	BE	81.08	10.43	2.27	0.33	1.87	0.93
Bulgaria	BG	24.81	2.14	0.13	0.00	0.13	0.10
Czech Republic	CZ	125.91	6.50	0.77	0.16	0.72	0.47
Denmark	DK	63.19	6.17	1.17	0.01	0.57	0.60
Germany	DE	688.42	82.43	9.24	0.33	11.15	4.47
Estonia	EE	4.65	0.25	0.10	0.00	0.10	0.00
Ireland	IE	13.67	1.68	0.27	0.12	0.18	0.18

Member State	Code	Passenger train km (million)	Rail passenger km (thousand millions)	Passenger services operating costs (€ billion)	Capital expenditure on passenger rolling stock (€ billion)	Passenger Revenue (real) (€ billion)	Public Subsidy for passenger services (€ billion)
Greece	EL	16.31	1.41	0.19	0.03	0.10	0.05
Spain	ES	184.43	23.14	2.01	1.02	1.66	0.38
France	FR	424.09	86.00	13.09	0.89	12.41	4.14
Italy	IT	287.25	48.21	4.66	0.57	4.70	2.29
Latvia	LV	6.95	0.76	0.02	0.00	0.01	0.00
Lithuania	LT	5.75	0.36	0.07	0.02	0.02	0.00
Luxembourg	LU	7.11	0.33	0.54	0.02	0.48	0.14
Hungary	HU	84.69	8.03	0.82	0.08	0.23	0.65
Netherlands	NL	133.00	16.42	2.64	0.30	2.51	0.00
Austria	AT	84.30	10.65	1.33	0.20	1.28	0.53
Poland	PL	124.79	18.64	1.37	0.05	0.64	0.29
Portugal	PT	33.20	4.15	0.30	0.00	0.21	0.03
Romania	RO	70.86	6.13	0.60	0.07	0.47	0.26
Slovenia	SI	10.68	0.84	0.08	0.01	0.08	0.05
Slovakia	SK	32.00	2.26	0.31	0.09	0.10	0.20
Finland	FI	35.12	3.88	0.37	0.09	0.41	0.04
Sweden	SE	90.57	11.30	0.61	0.05	0.62	0.00
Great Britain	UK	470.72	52.77	4.00	0.60	6.39	2.00

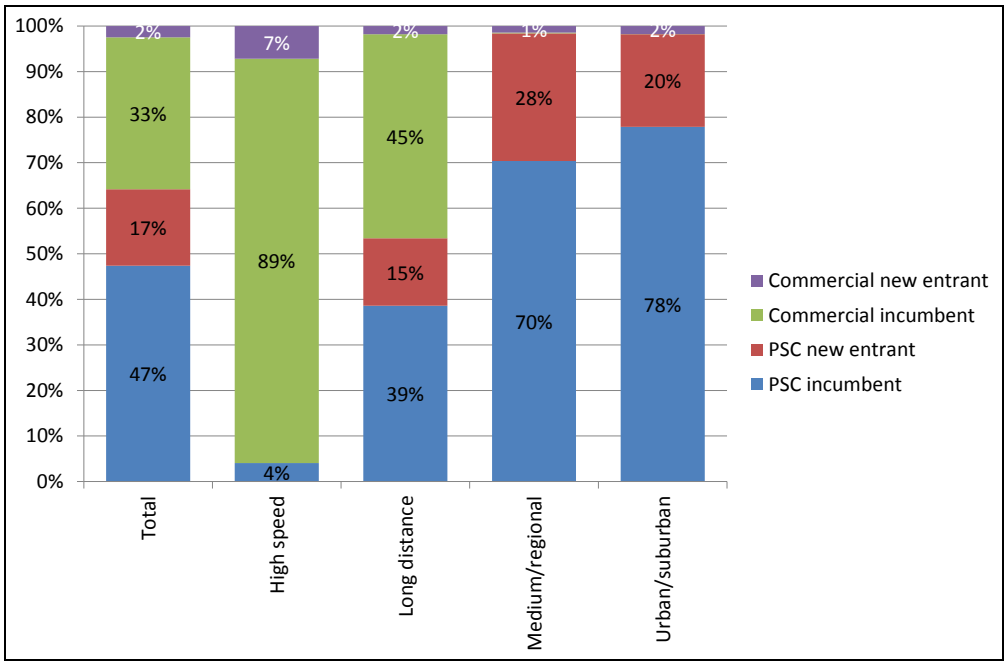
This base year information was then distributed across (a) the different market sectors and (b) the different service and operator types. A variety of sources was used to develop these distribution profiles, the most of important of which were RMMS, Infrastructure Managers and Operators Reports.

The end result of this stage in the calculation produces a multi-dimensional array with 500 segments for each year of interest and each data type (25 Member States x 5 market sectors x 2 operator types x 2 service types)

Figure 8-3-2 provides an example of the distribution profile for all market sectors by operator and service type as they appear in the baseline for the whole European rail market. Overall, incumbent operators in Member States operate the vast majority of passenger kilometres (around 90-95%). The level of new entry is highest in the regional sector, given the presence

of competitive tenders in some Member States, and in the high-speed sector, given the entry of new open access operators.

Figure 8-3- 2 MARKET SECTOR PROFILES BY OPERATOR AND SERVICE



3.3. Baseline Assumptions and Results

The calculations have been developed from a base year of 2009. Changes in the levels of industry inputs were adjusted through assumptions related to the baseline, aligned with the Transport White Paper[195] reference scenario. Baseline position is then adjusted, allowing for changes that have occurred in the market between 2009 and now as well as a number of other assumptions such as how the industry data is spread across the different market sectors, service and operator types (see Table 8-3-11).

195 Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system, http-://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52011DC0144:EN:NOT

Table 8- 3-3 ANNUAL GROWTH RATES IN BASELINE

Mode	Segment	2009-2010	2011-2015	2016-2020	2021-2025	2025-2035
Rail	Urban and suburban	0.9%	2.1%	1.9%	1.8%	
	Medium and regional	0.8%	1.9%	2.0%	2.1%	
	Long distance					
	High speed	2.1%	2.1%	2.9%	3.1%	
	International					
Road	All	0.7%	1.6%	1.1%	0.8%	
Air	All	1.3%	4%	3.5%	2.8%	
Inland waterways	All	0%	0%	0%	0%	

A number of other assumptions have been used to adjust the baseline to reflect changes in the market since 2009 which are not reflected in the 2011 White Paper.

These relate to:

- opening of the Madrid-Barcelona line was included in data on high speed lines
- A further set of segmentations was used to classify the current position in terms of operations and services in each Member State. These are grouped into three categories, according to whether:
  - Open access operations currently exist
  - PSC tendering exists
  - Full institutional separation of Infrastructure Manager from Railway Undertakings exists in the baseline.

Tables 8-3-4 to 8-3-8 summarise these assumptions for each of the market sectors. The assumptions have been based on the review of Member States conducted by the external consultant supporting the IA process. A “1” implies that a particular Member States meets the criteria of the classification and a “0” otherwise.

Table 8-3- 4 HIGH SPEED CLASSIFICATION OF MARKET

Member State	Code	De facto open access in baseline	PSC tendering in baseline ("Mix" treated as no)	Institutional separation in baseline
Belgium	BE	0	0	0
Germany	DE	1	0	0
Spain	ES	0	0	1
Finland	FI	0	0	1
France	FR	0	0	0
Italy	IT	1	0	0
Netherlands	NL	0	0	1
Poland	PL	0	0	0
Slovenia	SI	0	0	0
Sweden	SE	1	0	1

Table 8-3- 5 Long distance classification of market

Member State	Code	De facto open access in baseline	PSC tendering in baseline ("Mix" treated as no)	Institutional separation in baseline
Austria	AT	1	0	0
Belgium	BE	0	0	0
Bulgaria	BG	0	0	1
Czech Republic	CZ	1	0	1
Germany	DE	1	0	0
Denmark	DK	0	0	1
Estonia	EE	0	0	0
Greece	EL	0	0	1
Spain	ES	0	0	1
Finland	FI	0	0	1
France	FR	0	0	0
Hungary	HU	0	0	0
Ireland	IE	0	0	0
Italy	IT	1	0	0
Lithuania	LT	0	0	0
Latvia	LV	0	0	0
Luxembourg	LU	0	0	0
Netherlands	NL	0	0	1
Poland	PL	0	0	0

Member State	Code	De facto open access in baseline	PSC tendering in baseline ("Mix" treated as no)	Institutional separation in baseline
Portugal	PT	0	0	1
Romania	RO	0	0	1
Sweden	SE	1	0	1
Slovenia	SI	0	0	0
Slovakia	SK	0	0	1
Great Britain	UK	1	1	1

Table 8-3- 6 Medium/regional classification of market

Member State	Code	De facto open access in baseline	PSC tendering in baseline ("Mix" treated as no)	Institutional separation in baseline
Austria	AT	1	0	0
Belgium	BE	0	0	0
Bulgaria	BG	0	0	1
Czech Republic	CZ	1	0	1
Germany	DE	1	1	0
Denmark	DK	0	1	1
Estonia	EE	0	0	0
Greece	EL	0	0	1
Spain	ES	0	0	1
Finland	FI	0	0	1
France	FR	0	0	0
Hungary	HU	0	0	0
Ireland	IE	0	0	0
Italy	IT	1	0	0
Lithuania	LT	0	0	0
Luxembourg	LU	0	0	0
Latvia	LV	0	0	0
Netherlands	NL	0	1	1
Poland	PL	0	0	0
Portugal	PT	0	0	1
Romania	RO	0	0	1
Sweden	SE	1	1	1
Slovenia	SI	0	0	0
Slovakia	SK	0	0	1

Member State	Code	De facto open access in baseline	PSC tendering in baseline ("Mix" treated as no)	Institutional separation in baseline
Great Britain	UK	1	1	1

Table 8-3- 7 Urban/suburban classification of market

Member State	Code	De facto open access in baseline	PSC tendering in baseline ("Mix" treated as no)	Institutional separation in baseline
Austria	AT	1	0	0
Belgium	BE	0	0	0
Bulgaria	BG	0	0	1
Czech Republic	CZ	1	0	1
Germany	DE	1	1	0
Denmark	DK	0	0	1
Estonia	EE	0	0	0
Greece	EL	0	0	1
Spain	ES	0	0	1
Finland	FI	0	0	1
France	FR	0	0	0
Hungary	HU	0	0	0
Ireland	IE	0	0	0
Italy	IT	1	0	0
Lithuania	LT	0	0	0
Luxembourg	LU	0	0	0
Latvia	LV	0	0	0
Netherlands	NL	0	1	1
Poland	PL	0	0	0
Portugal	PT	0	0	1
Romania	RO	0	0	1
Sweden	SE	1	1	1
Slovenia	SI	0	0	0
Slovakia	SK	0	0	1
Great Britain	UK	1	1	1

Table 8-3- 8 International classification of market

Member State	Code	De facto open access in baseline	PSC tendering in baseline ("Mix" treated as no)	Institutional separation in baseline
Austria	AT	1	0	0
Belgium	BE	0	0	0
Bulgaria	BG	0	0	1
Czech Republic	CZ	1	0	1
Germany	DE	1	0	0
Denmark	DK	0	0	1
Estonia	EE	0	0	0
Greece	EL	0	0	1
Spain	ES	0	0	1
Finland	FI	0	0	1
France	FR	0	0	0
Hungary	HU	0	0	0
Ireland	IE	0	0	0
Italy	IT	1	0	0
Lithuania	LT	0	0	0
Luxembourg	LU	0	0	0
Latvia	LV	0	0	0
Netherlands	NL	0	0	1
Poland	PL	0	0	0
Portugal	PT	0	0	1
Romania	RO	0	0	1
Sweden	SE	1	0	1
Slovenia	SI	0	0	0
Slovakia	SK	0	0	1
Great Britain	UK	1	0	1

3.4. Assumptions for scenario analysis

For the assessment of the preferred policy scenario (Option 4 (A1 + B1)) assumptions have been developed as anticipated percentage changes to the main industry inputs. Then the range of opportunities and/or behaviours that might result from each of the policy changes was considered. Using a combination of industry expertise, benchmark information and insight in terms of what has happened in particular Member States, input assumptions were formulated. A number of sense-checks has been carried out against available corroborative information.

All inputs are applied as increments above the baseline which has been described in the previous step.

The modelling exercise was developed further to reflect the principal expected effects of the current options and packages, and their relative importance focused on first order and larger effects of combining the impacts of Domestic Passenger Market Opening and that of the Infrastructure Governance initiative.

While calculating impacts of open access, it was checked that assumptions on new entrant costs and new entrant fares would mean that open access was on average commercially viable. International markets were excluded from PSC impacts.

The calculations have been prepared for 2 outcome scenarios:

- **Focus on cost savings**, in which it was assumed that Competent Authorities would aim to minimise expenditure on the railways. This would maximise the financial savings from compulsory competitive tendering but, with no reinvestment in capacity or quality. Given no changes in fares or quality, competitive tendering would bring no additional market growth, mode shift or reduction in greenhouse gases.
- **Reinvestment in higher quality**, in which it is assumed that, on average, Competent Authorities would take 50% of the potential savings of competitive tendering out of the rail industry and "reinvest" the remaining 50% in capacity and/or quality.

Assumptions for combined effects of Domestic Passenger Market Opening and Infrastructure Governance initiatives are set out in the

Table 8-3- 9 below

Table 8-3- 9 ASSUMPTIONS FOR THE ASSESSMENT OF COMBINED IMPACTS

Assumption		IM Scenario 3	Domestic opening	Combined impacts
Open access effects				
Sectors	High speed, long distance, medium/regional, international			
Effects	New entrant's open access train-kilometres as a proportion of current "commercial" train-kilometres	1%	2%	3%
	Share of incumbents' "commercial" services in this sector converted to PSC as a result of open access competition	10%	20%	30%
	New entrant's fares as a proportion of the incumbent's	95%		
	Share of new entrant's passengers taken from incumbents	70%		
	New entrants operating costs per train-kilometre as a proportion of incumbent's	80%		
	Potential reduction in incumbent's operating costs (A)	20%		
	Proportion of incumbent's services stimulated to higher efficiency by new entry (B)	10%	15%	20%
	(AxB) Resulting average reduction in incumbent's costs in this sector stimulated by competition from open access	2%	3%	4%
Compulsory competitive tendering effects				
Sectors	All PSCs, including commercial services becoming PSCs because of open access			
Effects	Reduction in incumbent's share of PSC train-kilometres	2%	10%	15%
	Potential reduction in PSC service operating costs (C)	15%		
	Proportion of PSCs subject to effective competition (D)	25%	75%	90%
	(CxD) Resulting average reduction in PSC costs	3.75 %	11.25%	13.5 %
	Share of PSC cost savings invested rather than retained Scenario 1 - Focus on cost savings Scenario 2 - Reinvestment	0% 50%		
	Quality-related rise: train-kilometres and capital expenditure	0.1%	0.5%	0.75 %
	Quality-related rise: passenger-kilometres and revenue	0.1%	0.5%	0.75 %
Timescales and discounting				
Start	Implementation of Package, creation of open access rights and award of first competitive tenders for PSCs	2019		

End	Last existing PSC contracts replaced in competitive tendering	2025
	Base year for discounting purposes	2019

Further details on assumptions are provided below.

Assumptions for domestic markets with OA in the baseline but no separation

New entrant volumes and costs

New entry volume: In Member States where open access is currently permitted but there is no institutional separation institutional separation might result in an increase in open access equivalent to 1% of the incumbent's "commercial" train-kilometres. In Member States where there is institutional separation but open access is not currently permitted, Option A1 might result in open access equivalent to 2% of the incumbent's "commercial" train-kilometres. This is the assumed further increase over and above open access services existing in the baseline, including NTV in Italy, WESTbahn in Austria, and Hamburg-Köln Express and Veolia's InterConnex in Germany.

It is assumed that due to efficient business models focusing on market requirements developed by new entrants, their **costs will per train-kilometre be 20% below those of the incumbents**.

Conversion of "commercial" services to PSC

The limited data available suggest not only that many existing "commercial" services are not financially viable, but also that many services considered "commercial" are in fact of only marginal viability. However, there is little firm evidence, from the limited volume of open access which has emerged to date, as to the long term effect of open access on the "commercial" services provided by incumbent under a de jure monopoly, and in particular the proportion that would be converted to PSCs. For our quantitative Impact Assessment it has been assumed that:

- In Member States where open access is currently permitted but there is no institutional separation, IM scenario 3 might result in 10% of the incumbent's "commercial" train-kilometres being converted to PSCs.
- In Member States where open access is not currently permitted, introduction of domestic market opening might result in 20% of the incumbent's "commercial" train-kilometres being converted to PSCs.
- In Member States where there is neither institutional separation nor open access, institutional separation alone would result in no change but package 4 as a whole might result in 30% of the incumbent's "commercial" train-kilometres being converted to PSCs.

New entrant fares

For both IM Scenario 3 and Market opening initiatives new entrants' fares are assumed to be 5% below of those of the incumbent through open access. Sensitivity test below analyses impact of new entrant fares which are 20% below those the incumbent.

The limited financial data available suggests that, even at the lower operating costs new entrants could on average be loss-making if their average fares per passenger-kilometre were below 95% of existing fares. Any corresponding reduction in incumbents' fares, which might be constrained by a national ticketing system including, in some Member States, a fixed system of fares related directly to distance, is not assumed. In addition, any fares reduction by incumbents would reduce their incomes, worsen the finances of their public sector owners, and might result in them becoming loss-making or be converted to PSCs.

New entrant passengers

A key assumption is the origin of the open access operators' passengers. With an economic equilibrium test, open access will only be permitted if a high proportion of these passengers either change mode from car or air or are new travellers. The scope for mode shift, or generating new travel, will vary widely from station pair to station pair.

New entrants will increase overall passenger demand through a number of effects:

- Price elasticity, through the 5% lower fares of new entrants as compared to the fares of incumbents.
- Frequency elasticity, through the increased number of services on routes with new entry.
- Quality elasticity, through the expected higher quality, including factors such as new entrants' higher staffing levels.

The extent and mix of these factors will vary with the fares environment in each Member State and market and the market entry strategy of each future new entrant.

In open access Option A1, as in IM Scenario 3, it is assumed that 70% of the new entrants passengers will be abstracted from the incumbent and that the remaining 30% will result from either mode shift or new travel.

Operational expenditure efficiencies

Open access operators will add the costs of their own services but may, through competition, stimulate cost reductions in the incumbent, at least in the station-to-station markets in which they operate. The assumption is that incumbents' "commercial" services directly exposed to open access would, under pressure from competition, achieve reductions of 20% in operating costs, bringing them up to the levels of efficiency of new entrants. It is assumed that the proportion of incumbents' "commercial" services stimulated to achieve these 20% operating cost reductions is:

- 10%, from the 1% additional entry with IM Scenario 3 alone
- 15%, from the 2% additional entry with market opening alone
- 20%, from the 3% additional entry with both IM Scenario 3 and market opening

Assumptions for markets with tendering in the baseline but no separation

Incumbent PSC train-kilometres

New entrants' ability to win PSC tenders depends, at least in part, on the size of the PSC and the provision of suitable framework conditions, particularly relating to effective unbundling and the accessibility of rolling stock and transfer of staff. Practice shows that new entrants tend to win small tenders more often than big ones. In the absence of comprehensive arrangements to facilitate the transfer of staff, and given the potentially large scale of at least some PSCs it is assumed that:

- In Member States with no institutional separation but competitive tendering, institutional separation might enable new entrants to win a further 2% of the incumbent's share of PSCs.
- In Member States with no competitive tendering, package 4 might enable new entrants to win 10% of the incumbent's current share of PSCs.
- In Member States where there is neither institutional separation nor competitive tendering, institutional separation alone would result in no change but package 4 might enable new entrants to win a further 15% of the incumbent's current share of PSCs.

Operational expenditure

The effect of competition on the costs of PSCs will depend on the existing situation. There are two extremes that can be characterised:

- In PSCs where the incumbent has been generously supported and faced little pressure to strive for efficiency, there may be scope for cost reductions. Given the constraints that the PSC imposes how the services are operated, these might be around 10%.
- In PSCs where the incumbent has been starved of cash or underfunded, the efficient levels of costs may be above the subsidy currently made available to the incumbent, implying that PSC operating costs might rise after tendering.

Although there might be scope to reduce all PSC operating costs by 10%, it is reasonable to expect obtaining these savings on PSCs for which there is effective competition:

- In Member States with no institutional separation but competitive tendering, it is assumed that new entrants winning 2% more of the incumbent's current PSCs results in reductions in the prices and costs of 10% of the incumbents' services.
- In Member States with institutional separation but no competitive tendering, it is assumed that new entrants winning 10% of the incumbent's current PSCs results in reductions in the prices and costs of 60% of the incumbents' services.
- In Member States where there is neither institutional separation nor competitive tendering, it is assumed that new entrants winning 15% of the incumbent's current PSCs results in reductions in the prices and costs of 75% of the incumbents' services.

It may be difficult for 75% of current PSCs to be effectively contestable in the absence of effective framework conditions relating not only to rolling stock but also to staff transfers.

Reinvestment

Member States and Competent Authorities may focus on cost reduction and use compulsory PSC tendering as an opportunity to minimise the costs of provision of the current services. This will maximise the financial benefit to them but will not improve capacity or quality or result in any mode shift of external benefits. Two assumptions have been made:

- The first assumes zero reinvestment and demonstrates the case when the maximum revenue is realised by the industry.
- The second assumes that 50% of cost savings from operational expenditure will be reinvested back into service quality rather than being realised as revenue.

Quality-related rises in activity

A set of assumptions describes how compulsory competitive tendering changes train and passenger kilometres, CAPEX and revenue:

- Implementation of IM Scenario 3, train-kilometres and capital expenditure as well as passenger-kilometres and revenue will increase by 0.1% if 50% of savings are reinvested.
- Market opening initiative will increase train-kilometres and capital expenditure as well as passenger-kilometres and revenue by 0.5% if 50% of savings are reinvested

Timescales and discounting

The Fourth Package legislation would require implementation from the Member States in December 2019, after which the benefits of open access and compulsory competitive tendering would begin to appear. The rate of emergence of open access services is uncertain, but evidence suggests that it might take at least ten years before all profitable opportunities for new entry are exploited.

The scenario chosen for the rate of tendering of PSC contracts (30% by December 2021, 60% by December 2023 and 100% by December 2025), suggests that all the benefits of the Fourth Package would emerge gradually over the six-year period from December 2019 to December 2025, and that the full benefits would appear in 2025 and thereafter.

All impacts are discounted at 4% per annum to 2019, the year in which the Fourth Package legislation would come into effect.

3.5. Output results

As a result, a range of outputs over a 26 year period between 2009 and 2035 was generated. These include key metrics such as turnover, capital investment, costs to the industry, average fare, passenger kilometres, mode shifts and CO_2 emissions. These results can be presented by cluster of Member States, and by market sector or any combination of the above.

3.5.1. Segmentations

A number of segmentations is used in input and output data to reflect differences in the market. The segmentations are summarised in the Table 8-3-10 below.

Table 8-3- 100 SEGMENTATIONS USED IN CALCULATIONS

ID	Segment name	Segments	Details
1	Market sectors	5	High speed, Long distance, Medium/regional, Urban/suburban, International
2	Operator type	2	Incumbent, New Entrant
3	Service type	2	Public Service Contract, Commercial[196]

Five *market sectors* were defined as follows:

- International (IN) services crossing borders between Member States
- High speed (HS) services operating at more than 250 km/h at some point in the journey
- Long distance (LD), at conventional speed, operating at less than 250 km/h and linking major urban areas
- Medium distance and regional (MR), serving smaller communities but not providing the main or fastest link between any two cities[197]
- Urban and suburban (US) serving a city or conurbation and the surrounding suburbs or commuter catchment area.

Two *operator types* are used to distinguish between the relative differences in cost bases, operations and general strategy (such as fares) employed:

- Incumbent: all largely national operators who have historically run services and continue to do so. Examples include MÁV in Hungary and Deutsche Bah in Germany.
- New entrant: all non-incumbent operators in a given market. Examples include NTV in Italy and RegioJet in the Czech Republic.

The final segmentation is *the service type*, whether it is run as a Public Service Contract (PSC) or as a commercial operation. This differentiation was important to identify the network areas where open access operations are truly viable and those markets where the impact of competitive tendering will be strongest.

196 including legal monopolies operating non-PSC lines

197 UIC defines high-speed, long-distance and urban/suburban services. Here, the category of "medium/regional" has been added to include services, typically specified by regional authorities, serving smaller communities but not providing the main or fastest link between any two cities. In practice, individual trains may serve a mix of long-distance, medium/regional and urban/suburban travel, and any disaggregation into markets must be considered illustrative.

- Public Service Contracts: Services specified and contracted by the competent authorities. For example regional contracts in Sweden and franchises in Great Britain.
- Commercial: all non-PSC services which can include incumbent operators in a given market who operate on a commercial basis, for example high speed services in France and Spain, or new entrants operating open access services.

3.5.2. Outputs

As a result, a wide range of outputs is reported:

Calculations were generated for the following outputs over the evaluation period to 2035:

- NPVs
  - Savings for public authorities
  - Net gain to private sector
- Industry metrics
  - Change in turnover
  - Change in capital investment
  - Change in fare per passenger-kilometre (relative to baseline)
  - Change in passenger-kilometres
  - New entrant PSC volume:
  - Train-kilometres before policy change
  - New entrant PSC volume: Train-kilometres after policy change
  - New entrant open access volume: Train-kilometres before policy change
  - New entrant open access volume: Train-kilometres after policy change
  - New entrant market share: Market share in baseline
  - New entrant market share: Market share after policy change
  - Total PSC train-kilometres
- Transaction costs associated with PSCs
  - PSCs (pro-rated with total PSC train-kilometres)
  - Open access (pro-rated with new entrant commercial)
- Mode shift
  - Percentage of new rail shifted from road
  - Percentage of new rail shifted from air
- CO_2 emissions
  - Billion tonnes per billion passenger-kilometres
  - Million tonnes per billion passenger-kilometres
  - Shadow price of carbon in 2032 (€/tonne)
  - Net change in annual CO_2 emissions
  - Net value of annual CO_2 emissions saved.

Calculation of NPV outputs

NPVs are calculated over the period 2019 and 2035 using a 4% discount rate.

Calculation of CO_2 emissions

The impact on greenhouse gas emissions is measured in terms of million tonnes of CO_2 reduction (above the baseline) and the equivalent NPV of annual CO_2 emissions saved. The reduction in CO_2 emissions is derived from estimates of traffic abstraction from other more carbon-intensive transport modes (modal shift from road and air).

3.5.3. Aggregations

The results can be aggregated or disaggregated in a number of ways:

- For the total rail market
- By market sector
- Aggregated into clusters of Member States for each market sector using a definition as described in Table 8-3-11.

Table 8-3- 11 IMPACT ASSESSMENT: DEFINITION OF CLUSTERS

Separation	**Vertically integrated**		**Vertically separated**		
Liberalisation	**Partially liberalised**	**Not liberalised**	**Liberalised**	**Partially liberalised**	**Not liberalised**
Group	A	B	C	D	E
Member States	Austria Germany Italy	Belgium Estonia France Hungary Ireland Latvia Lithuania Luxembourg Poland Slovenia	Great Britain Sweden	Czech Republic Denmark Netherlands	Bulgaria Finland Greece Portugal Romania Slovakia Spain
Baseline share of 2019 estimate EU-27 train-kilometres	34%	25%	18%	10%	13%

Clusters are used to disaggregate the impacts of the preferred option and Package on different groups of Member States.

Figures 8-3-3 and 8-3-4 below present the time series and intermediate results for 2 core scenarios.

Figure 8-3- 3 – Detailed results of NPV calculations

(a.1) – IM Governance - Scenario 1 – Savings

			2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
I; Demand growth on previous year																													
High speed				2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.9%	2.9%	2.9%	2.9%	2.9%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%
Long distance				0.8%	1.9%	1.9%	1.9%	1.9%	1.9%	2.0%	2.0%	2.0%	2.0%	2.0%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%
Medium and regional				0.8%	1.9%	1.9%	1.9%	1.9%	1.9%	2.0%	2.0%	2.0%	2.0%	2.0%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%
Urban and suburban				0.9%	2.1%	2.1%	2.1%	2.1%	2.1%	1.9%	1.9%	1.9%	1.9%	1.9%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%
International				2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.9%	2.9%	2.9%	2.9%	2.9%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%
Total				1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	2.0%	2.0%	2.0%	2.0%	2.0%	2.2%	2.2%	2.2%	2.2%	2.2%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%
Option U2																													
I; Timing assumption (by year)														17%	33%	50%	67%	83%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Assume entry builds steadily over 15 years																													
Net gain to economy		**NPV**																											
High speed	€ billion/year	0.877	0.056											0.012	0.023	0.034	0.045	0.056	0.067	0.066	0.066	0.065	0.065	0.064	0.064	0.063	0.063	0.062	0.061
Long distance	€ billion/year	1.288	0.095											0.019	0.037	0.054	0.070	0.086	0.102	0.100	0.098	0.096	0.095	0.093	0.091	0.089	0.088	0.086	0.085
Medium and regional	€ billion/year	2.383	0.176											0.034	0.068	0.099	0.130	0.160	0.188	0.185	0.181	0.178	0.175	0.172	0.169	0.165	0.162	0.159	0.157
Urban and suburban	€ billion/year	1.187	0.089											0.018	0.034	0.050	0.066	0.081	0.095	0.093	0.091	0.089	0.087	0.085	0.083	0.082	0.080	0.078	0.076
International	€ billion/year	1.194	0.076											0.016	0.031	0.047	0.062	0.077	0.091	0.090	0.090	0.089	0.088	0.087	0.087	0.086	0.085	0.084	0.084
Total		**6.929**	**0.491**										0	**0.098**	**0.193**	**0.285**	**0.374**	**0.460**	**0.543**	**0.534**	**0.526**	**0.517**	**0.509**	**0.501**	**0.493**	**0.485**	**0.478**	**0.470**	**0.463**
U2 with Clusters																													
I; Timing assumption (by year)														17%	33%	50%	67%	83%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Assume entry builds steadily over 15 years																													
Net gain to economy		**NPV**																											
a	€ billion/year	6.247	0.445											0.089	0.175	0.257	0.338	0.415	0.490	0.482	0.474	0.466	0.459	0.451	0.444	0.437	0.430	0.423	0.416
b	€ billion/year	0.655	0.047											0.009	0.018	0.027	0.035	0.044	0.051	0.051	0.050	0.049	0.048	0.047	0.047	0.046	0.045	0.044	0.044
c	€ billion/year	0.000	0.000											0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
d	€ billion/year	0.000	0.000											0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
e	€ billion/year	0.000	0.000											0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total		**6.902**	**0.491**										0	**0.098**	**0.193**	**0.285**	**0.373**	**0.459**	**0.541**	**0.533**	**0.524**	**0.515**	**0.507**	**0.499**	**0.491**	**0.483**	**0.475**	**0.467**	**0.460**
Prorate to be consistent with analysis by market sector																													
Net gain to economy		**NPV**																											
a	€ billion/year	6.272																											
b	€ billion/year	0.658																											
c	€ billion/year	0.000																											
d	€ billion/year	0.000																											
e	€ billion/year	0.000																											
Total		**6.929**																											

(a.2) – IM Governance - Scenario 2 – Reinvestment

			2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
I; Demand growth on previous year																													
High speed				2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.9%	2.9%	2.9%	2.9%	2.9%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%
Long distance				0.8%	1.9%	1.9%	1.9%	1.9%	1.9%	2.0%	2.0%	2.0%	2.0%	2.0%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%
Medium and regional				0.8%	1.9%	1.9%	1.9%	1.9%	1.9%	2.0%	2.0%	2.0%	2.0%	2.0%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%
Urban and suburban				0.9%	2.1%	2.1%	2.1%	2.1%	2.1%	1.9%	1.9%	1.9%	1.9%	1.9%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%
International				2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.9%	2.9%	2.9%	2.9%	2.9%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%
Total				1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	2.0%	2.0%	2.0%	2.0%	2.0%	2.2%	2.2%	2.2%	2.2%	2.2%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%
Option U2																													
I; Timing assumption (by year)														17%	33%	50%	67%	83%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Assume entry builds steadily over 15 years																													
Net gain to economy		**NPV**																											
High speed	€ billion/year	0.812	0.052											0.011	0.021	0.032	0.042	0.052	0.062	0.061	0.061	0.060	0.060	0.059	0.059	0.058	0.058	0.057	0.057
Long distance	€ billion/year	0.999	0.074											0.014	0.028	0.042	0.055	0.067	0.079	0.077	0.076	0.075	0.073	0.072	0.071	0.069	0.068	0.067	0.066
Medium and regional	€ billion/year	1.316	0.097											0.019	0.037	0.055	0.072	0.088	0.104	0.102	0.100	0.098	0.097	0.095	0.093	0.091	0.090	0.088	0.086
Urban and suburban	€ billion/year	0.657	0.049											0.010	0.019	0.028	0.036	0.045	0.052	0.051	0.050	0.049	0.048	0.047	0.046	0.045	0.044	0.043	0.042
International	€ billion/year	1.003	0.064											0.013	0.026	0.039	0.052	0.064	0.077	0.076	0.075	0.075	0.074	0.073	0.073	0.072	0.071	0.071	0.070
Total		**4.786**	**0.335**										0	**0.067**	**0.132**	**0.196**	**0.257**	**0.316**	**0.374**	**0.368**	**0.363**	**0.357**	**0.352**	**0.347**	**0.341**	**0.336**	**0.331**	**0.326**	**0.321**
U2 with Clusters																													
I; Timing assumption (by year)														17%	33%	50%	67%	83%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Assume entry builds steadily over 15 years																													
Net gain to economy		**NPV**																											
a	€ billion/year	4.172	0.297											0.059	0.117	0.172	0.226	0.277	0.327	0.322	0.317	0.312	0.306	0.301	0.297	0.292	0.287	0.282	0.278
b	€ billion/year	0.538	0.038											0.008	0.015	0.022	0.029	0.036	0.042	0.042	0.041	0.040	0.040	0.039	0.038	0.038	0.037	0.036	0.036
c	€ billion/year	0.000	0.000											0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
d	€ billion/year	0.000	0.000											0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
e	€ billion/year	0.000	0.000											0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total		**4.709**	**0.335**										0	**0.067**	**0.132**	**0.194**	**0.255**	**0.313**	**0.369**	**0.363**	**0.357**	**0.352**	**0.346**	**0.340**	**0.335**	**0.329**	**0.324**	**0.319**	**0.314**
Prorate to be consistent with analysis by market sector																													
Net gain to economy		**NPV**																											
a	€ billion/year	4.240																											
b	€ billion/year	0.547																											
c	€ billion/year	0.000																											
d	€ billion/year	0.000																											
e	€ billion/year	0.000																											
Total		**4.786**																											

(b.1) – Market Opening - Scenario 1 – Saving

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
I; Demand growth on previous year																											
High speed		2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.9%	2.9%	2.9%	2.9%	2.9%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%
Long distance		0.8%	1.9%	1.9%	1.9%	1.9%	1.9%	2.0%	2.0%	2.0%	2.0%	2.0%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%
Medium and regional		0.8%	1.9%	1.9%	1.9%	1.9%	1.9%	2.0%	2.0%	2.0%	2.0%	2.0%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%
Urban and suburban		0.9%	2.1%	2.1%	2.1%	2.1%	2.1%	1.9%	1.9%	1.9%	1.9%	1.9%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%
International		2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.9%	2.9%	2.9%	2.9%	2.9%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%
Total		1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	2.0%	2.0%	2.0%	2.0%	2.0%	2.2%	2.2%	2.2%	2.2%	2.2%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%

Package 4: option T1+RS4+B1+A1																											
I; Timing assumption (by year)												17%	33%	50%	67%	83%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Assume entry builds steadily over 15 years																											
Net gain to economy		**NPV**																									
High speed	€ billion/year	3.764	0.239									0.050	0.099	0.148	0.195	0.242	0.288	0.285	0.283	0.280	0.278	0.275	0.273	0.271	0.268	0.266	0.264
Long distance	€ billion/year	8.188	0.603									0.118	0.232	0.342	0.447	0.549	0.647	0.635	0.623	0.612	0.601	0.590	0.579	0.568	0.558	0.548	0.538
Medium and regional	€ billion/year	10.303	0.759									0.149	0.292	0.430	0.563	0.691	0.814	0.799	0.784	0.770	0.756	0.742	0.729	0.715	0.702	0.689	0.677
Urban and suburban	€ billion/year	7.592	0.570									0.112	0.220	0.323	0.421	0.516	0.606	0.593	0.580	0.568	0.556	0.544	0.533	0.521	0.510	0.500	0.489
International	€ billion/year	0.000	0.000									0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total		**29.848**	**2.171**								0	**0.429**	**0.843**	**1.242**	**1.627**	**1.997**	**2.354**	**2.312**	**2.271**	**2.230**	**2.191**	**2.152**	**2.113**	**2.076**	**2.039**	**2.003**	**1.967**

Package 4 with Clusters																											
I; Timing assumption (by year)												17%	33%	50%	67%	83%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Net gain to economy		**NPV**																									
a	€ billion/year	5.999	0.427									0.085	0.168	0.247	0.324	0.399	0.471	0.463	0.455	0.448	0.441	0.434	0.427	0.420	0.413	0.406	0.400
b	€ billion/year	15.360	1.093									0.218	0.429	0.633	0.830	1.021	1.205	1.185	1.166	1.147	1.128	1.110	1.092	1.074	1.057	1.040	1.023
c	€ billion/year	0.209	0.015									0.003	0.006	0.009	0.011	0.014	0.016	0.016	0.016	0.016	0.015	0.015	0.015	0.015	0.014	0.014	0.014
d	€ billion/year	4.353	0.310									0.062	0.122	0.179	0.235	0.289	0.342	0.336	0.330	0.325	0.320	0.315	0.309	0.304	0.300	0.295	0.290
e	€ billion/year	4.594	0.327									0.065	0.128	0.189	0.248	0.305	0.360	0.355	0.349	0.343	0.337	0.332	0.327	0.321	0.316	0.311	0.306
Total		**30.515**	**2.171**								0	**0.433**	**0.853**	**1.258**	**1.650**	**2.028**	**2.394**	**2.355**	**2.316**	**2.279**	**2.242**	**2.205**	**2.169**	**2.134**	**2.100**	**2.066**	**2.033**

Prorate to be consistent with analysis by market sector

Net gain to economy		**NPV**
a	€ billion/year	5.868
b	€ billion/year	15.024
c	€ billion/year	0.204
d	€ billion/year	4.258
e	€ billion/year	4.494
Total		**29.848**

(b.2) – Market Opening - Scenario 2 – Reinvestment

			2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
I; Demand growth on previous year																													
High speed				2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.9%	2.9%	2.9%	2.9%	2.9%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%
Long distance				0.8%	1.9%	1.9%	1.9%	1.9%	1.9%	2.0%	2.0%	2.0%	2.0%	2.0%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%
Medium and regional				0.8%	1.9%	1.9%	1.9%	1.9%	1.9%	2.0%	2.0%	2.0%	2.0%	2.0%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%
Urban and suburban				0.9%	2.1%	2.1%	2.1%	2.1%	2.1%	1.9%	1.9%	1.9%	1.9%	1.9%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%
International				2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.9%	2.9%	2.9%	2.9%	2.9%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%
Total				1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	2.0%	2.0%	2.0%	2.0%	2.0%	2.2%	2.2%	2.2%	2.2%	2.2%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%
Package 4: option T1+RS4+B1+A1																													
I; Timing assumption (by year)														17%	33%	50%	67%	83%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Assume entry builds steadily over 15 years																													
Net gain to economy		**NPV**																											
High speed	€ billion/year	3.561	0.226											0.047	0.094	0.140	0.185	0.229	0.272	0.270	0.267	0.265	0.263	0.260	0.258	0.256	0.254	0.252	0.249
Long distance	€ billion/year	5.918	0.436											0.085	0.168	0.247	0.323	0.397	0.467	0.459	0.451	0.442	0.434	0.426	0.419	0.411	0.403	0.396	0.389
Medium and regional	€ billion/year	6.851	0.505											0.099	0.194	0.286	0.374	0.459	0.541	0.531	0.522	0.512	0.503	0.494	0.485	0.476	0.467	0.458	0.450
Urban and suburban	€ billion/year	5.128	0.385											0.076	0.149	0.218	0.285	0.348	0.409	0.400	0.392	0.384	0.376	0.368	0.360	0.352	0.345	0.337	0.330
International	€ billion/year	0.000	0.000											0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total		**21.457**	**1.552**										0	**0.308**	**0.604**	**0.891**	**1.167**	**1.433**	**1.690**	**1.660**	**1.631**	**1.603**	**1.575**	**1.548**	**1.521**	**1.495**	**1.469**	**1.443**	**1.419**
Package 4 with Clusters																													
I; Timing assumption (by year)														17%	33%	50%	67%	83%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Net gain to economy		**NPV**																											
a	€ billion/year	4.307	0.306											0.061	0.120	0.178	0.233	0.286	0.338	0.332	0.327	0.322	0.316	0.311	0.306	0.301	0.296	0.292	0.287
b	€ billion/year	11.367	0.809											0.161	0.318	0.469	0.614	0.755	0.892	0.877	0.863	0.849	0.835	0.821	0.808	0.795	0.782	0.770	0.757
c	€ billion/year	0.153	0.011											0.002	0.004	0.006	0.008	0.010	0.012	0.012	0.012	0.011	0.011	0.011	0.011	0.011	0.011	0.010	0.010
d	€ billion/year	3.006	0.214											0.043	0.084	0.124	0.163	0.200	0.236	0.232	0.228	0.225	0.221	0.217	0.214	0.210	0.207	0.204	0.200
e	€ billion/year	2.975	0.212											0.042	0.083	0.123	0.161	0.198	0.233	0.230	0.226	0.222	0.219	0.215	0.212	0.208	0.205	0.201	0.198
Total		**21.808**	**1.552**										0	**0.310**	**0.609**	**0.899**	**1.179**	**1.450**	**1.711**	**1.683**	**1.656**	**1.629**	**1.602**	**1.576**	**1.550**	**1.525**	**1.501**	**1.476**	**1.453**
Prorate to be consistent with analysis by market sector																													
Net gain to economy		**NPV**																											
a	€ billion/year	4.237																											
b	€ billion/year	11.184																											
c	€ billion/year	0.150																											
d	€ billion/year	2.958																											
e	€ billion/year	2.927																											
Total		**21.457**																											

(c.1) – Combined Impacts - Scenario 1 – Saving

			2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
I; Demand growth on previous year																													
High speed				2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.9%	2.9%	2.9%	2.9%	2.9%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%
Long distance				0.8%	1.9%	1.9%	1.9%	1.9%	1.9%	2.0%	2.0%	2.0%	2.0%	2.0%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%
Medium and regional				0.8%	1.9%	1.9%	1.9%	1.9%	1.9%	2.0%	2.0%	2.0%	2.0%	2.0%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%
Urban and suburban				0.9%	2.1%	2.1%	2.1%	2.1%	2.1%	1.9%	1.9%	1.9%	1.9%	1.9%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%
International				2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.9%	2.9%	2.9%	2.9%	2.9%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%
Total				1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	2.0%	2.0%	2.0%	2.0%	2.0%	2.2%	2.2%	2.2%	2.2%	2.2%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%
Option U2+A1+B1																													
I; Timing assumption (by year)														17%	33%	50%	67%	83%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Assume entry builds steadily over 15 years																													
Net gain to economy		**NPV**																											
High speed	€ billion/year	6.260	0.398											0.083	0.165	0.245	0.324	0.402	0.478	0.474	0.470	0.466	0.462	0.458	0.454	0.450	0.446	0.442	0.439
Long distance	€ billion/year	11.811	0.870											0.171	0.335	0.493	0.645	0.792	0.933	0.916	0.899	0.883	0.867	0.851	0.835	0.820	0.805	0.790	0.776
Medium and regional	€ billion/year	14.614	1.077											0.211	0.414	0.610	0.799	0.980	1.154	1.133	1.113	1.092	1.072	1.053	1.034	1.015	0.996	0.978	0.960
Urban and suburban	€ billion/year	10.242	0.769											0.152	0.297	0.436	0.568	0.696	0.817	0.800	0.783	0.766	0.750	0.734	0.719	0.703	0.689	0.674	0.660
International	€ billion/year	1.194	0.076											0.016	0.031	0.047	0.062	0.077	0.091	0.090	0.090	0.089	0.088	0.087	0.087	0.086	0.085	0.084	0.084
Total		**44.122**	**3.189**										0	**0.632**	**1.242**	**1.831**	**2.399**	**2.946**	**3.474**	**3.414**	**3.355**	**3.296**	**3.239**	**3.183**	**3.128**	**3.074**	**3.021**	**2.969**	**2.918**
U2+A1+B1 with Clusters																													
I; Timing assumption (by year)														17%	33%	50%	67%	83%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Assume entry builds steadily over 15 years																													
Net gain to economy		**NPV**																											
a	€ billion/year	14.115	1.004											0.200	0.394	0.582	0.763	0.938	1.107	1.089	1.071	1.054	1.037	1.020	1.003	0.987	0.971	0.956	0.940
b	€ billion/year	19.506	1.388											0.277	0.545	0.804	1.054	1.296	1.530	1.505	1.481	1.457	1.433	1.410	1.387	1.364	1.342	1.321	1.299
c	€ billion/year	0.250	0.018											0.004	0.007	0.010	0.014	0.017	0.020	0.019	0.019	0.019	0.018	0.018	0.018	0.018	0.017	0.017	0.017
d	€ billion/year	5.426	0.386											0.077	0.152	0.224	0.293	0.361	0.426	0.419	0.412	0.405	0.399	0.392	0.386	0.380	0.373	0.367	0.361
e	€ billion/year	5.522	0.393											0.078	0.154	0.228	0.299	0.367	0.433	0.426	0.419	0.412	0.406	0.399	0.393	0.386	0.380	0.374	0.368
Total		**44.819**	**3.189**										0	**0.637**	**1.252**	**1.847**	**2.423**	**2.979**	**3.516**	**3.459**	**3.402**	**3.347**	**3.292**	**3.239**	**3.186**	**3.135**	**3.084**	**3.034**	**2.985**
Prorate to be consistent with analysis by market sector																													
Net gain to economy		**NPV**																											
a	€ billion/year	13.895																											
b	€ billion/year	19.203																											
c	€ billion/year	0.246																											
d	€ billion/year	5.342																											
e	€ billion/year	5.436																											
Total		**44.122**																											

(c.2) – Combined Impacts - Scenario 2 – Reinvestment

			2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
I; Demand growth on previous year																													
High speed				2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.9%	2.9%	2.9%	2.9%	2.9%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%
Long distance				0.8%	1.9%	1.9%	1.9%	1.9%	1.9%	2.0%	2.0%	2.0%	2.0%	2.0%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%
Medium and regional				0.8%	1.9%	1.9%	1.9%	1.9%	1.9%	2.0%	2.0%	2.0%	2.0%	2.0%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%
Urban and suburban				0.9%	2.1%	2.1%	2.1%	2.1%	2.1%	1.9%	1.9%	1.9%	1.9%	1.9%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%
International				2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.9%	2.9%	2.9%	2.9%	2.9%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%
Total				1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	2.0%	2.0%	2.0%	2.0%	2.0%	2.2%	2.2%	2.2%	2.2%	2.2%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%
Option U2+A1+B1																													
I; Timing assumption (by year)														17%	33%	50%	67%	83%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Assume entry builds steadily over 15 years																													
Net gain to economy		**NPV**																											
High speed	€ billion/year	6.001	0.381											0.080	0.158	0.235	0.311	0.385	0.459	0.455	0.451	0.447	0.443	0.439	0.435	0.431	0.428	0.424	0.420
Long distance	€ billion/year	9.468	0.698											0.137	0.268	0.395	0.517	0.635	0.748	0.734	0.721	0.708	0.695	0.682	0.670	0.657	0.645	0.634	0.622
Medium and regional	€ billion/year	10.525	0.775											0.152	0.298	0.439	0.575	0.706	0.831	0.816	0.801	0.787	0.772	0.758	0.744	0.731	0.717	0.704	0.691
Urban and suburban	€ billion/year	7.597	0.570											0.112	0.220	0.323	0.422	0.516	0.606	0.593	0.581	0.568	0.556	0.545	0.533	0.522	0.511	0.500	0.489
International	€ billion/year	1.003	0.064											0.013	0.026	0.039	0.052	0.064	0.077	0.076	0.075	0.075	0.074	0.073	0.073	0.072	0.071	0.071	0.070
Total		**34.593**	**2.488**										0	**0.494**	**0.971**	**1.432**	**1.877**	**2.306**	**2.720**	**2.674**	**2.629**	**2.584**	**2.540**	**2.497**	**2.455**	**2.413**	**2.373**	**2.333**	**2.293**
U2+A1+B1 with Clusters																													
I; Timing assumption (by year)														17%	33%	50%	67%	83%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Assume entry builds steadily over 15 years																													
Net gain to economy		**NPV**																											
a	€ billion/year	10.950	0.779											0.156	0.306	0.451	0.592	0.728	0.859	0.845	0.831	0.818	0.804	0.791	0.779	0.766	0.754	0.741	0.729
b	€ billion/year	15.737	1.120											0.224	0.440	0.649	0.851	1.046	1.235	1.214	1.195	1.175	1.156	1.137	1.119	1.101	1.083	1.065	1.048
c	€ billion/year	0.213	0.015											0.003	0.006	0.009	0.011	0.014	0.017	0.016	0.016	0.016	0.016	0.015	0.015	0.015	0.015	0.014	0.014
d	€ billion/year	4.161	0.296											0.059	0.116	0.172	0.225	0.277	0.326	0.321	0.316	0.311	0.306	0.301	0.296	0.291	0.286	0.282	0.277
e	€ billion/year	3.904	0.278											0.055	0.109	0.161	0.211	0.260	0.306	0.301	0.296	0.292	0.287	0.282	0.278	0.273	0.269	0.264	0.260
Total		**34.966**	**2.488**										0	**0.497**	**0.977**	**1.441**	**1.890**	**2.324**	**2.743**	**2.698**	**2.654**	**2.611**	**2.569**	**2.527**	**2.486**	**2.446**	**2.406**	**2.367**	**2.329**
Prorate to be consistent with analysis by market sector																													
Net gain to economy		**NPV**																											
a	€ billion/year	10.834																											
b	€ billion/year	15.570																											
c	€ billion/year	0.210																											
d	€ billion/year	4.117																											
e	€ billion/year	3.863																											
Total		**34.593**																											

Figure 4 – Detailed results of market sector and cluster calculations

(a.1) – IM Governance - Scenario 1 - Savings

Unbundling Option U2 All results are illustrative estimates		Market sectors						Clusters					
		Total	High speed	Long distance	Medium/regional	Urban/suburban	International	Total	A: integrated part-liberalised	B: integrated not liberalised	C: separated liberalised	D: separated part-liberalised	E: separated not liberalised
			HS	LD	MR	US	IN		a	b	c	d	e
NPVs to 2035, discounted at 4% to 2012													
Financial benefits													
Profits to incumbents and/or savi	billion	6.73	0.69	1.26	2.48	1.26	1.05	6.73	6.06	0.66	0.00	0.00	0.00
Profits to new entrants	billion	0.20	0.09	0.08	0.00	0.00	0.02	0.20	0.21	-0.01	0.00	0.00	0.00
Financial costs													
Transaction and adminstration cos	billion	-1.37	Note: average of unbundling costs €1-2.9 billion					-1.37	Note: average of unbundling costs €1-2.9 billion				
Total	billion	**5.56**	cannot be allocated to market sectors					**5.56**	has not been allocated to clusters				
Key indicators in medium term													
Increase in annual turnover/passen	billion	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
Increase in annual capital investme	billion	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Change in average fare per passeng	%	0.01%	-0.01%	0.00%	0.00%	0.00%	-0.01%	0.01%	-0.01%	0.01%	0.00%	0.00%	0.00%
Mode shift													
Increase in annual passenger-kilo	billion	0.8	0.3	0.3	0.0	0.0	0.3	0.8	0.7	0.1	0.0	0.0	0.0
From road	billion	0.2	0.1	0.1	0.0	0.0	0.1	0.2	Abstraction by mode has not been identified at the level of clusters				
From air	billion	0.2	0.1	0.0	0.0	0.0	0.1	0.2					
New entrant PSC volume													
Annual train-kilometres in baselir	million	859	0	209	422	201	28	859	73	25	754	2	4
Annual train-kilometres with Opti	million	878	1	212	431	206	28	878	92	26	754	2	4
Net increase	million	19	1	3	9	5	1	19	18	1	0	0	0
New entrant open access volume													
Annual train-kilometres in baselir	million	127	63	25	21	17	0	127	78	1	49	0	0
Annual train-kilometres with Opti	million	135	66	28	21	17	2	135	84	2	49	0	0
Net increase	million	8	3	3	0	0	2	8	7	1	0	0	0
New entrant market share													
Market share in baseline	%	19.3%	7.2%	16.6%	29.4%	22.1%	8.4%	19.3%	8.7%	2.1%	87.1%	0.4%	0.6%
Market share with Option U3	%	19.8%	7.5%	17.0%	30.1%	22.6%	9.2%	19.8%	10.1%	2.2%	87.1%	0.4%	0.6%
Net increase	%	0.5%	0.4%	0.4%	0.6%	0.6%	0.8%	0.5%	1.4%	0.1%	0.0%	0.0%	0.0%
Emissions reductions													
Net change in annual CO2 emissio	tonnes	-0.1	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0
Net value of annual CO2 emission	million	-3.2	-1.1	-1.1	0.0	0.0	-1.0	-3.2	-2.7	-0.5	0.0	0.0	0.0

(a.2) – IM Governance - Scenario 2 - Reinvestment

Unbundling Option U2 All results are illustrative estimates		Market sectors						Clusters					
		Total	High speed	Long distance	Medium/regional	Urban/suburban	International	Total	A: integrated part-liberalised	B: integrated not liberalised	C: separated liberalised	D: separated part-liberalised	E: separated not liberalised
			HS	LD	MR	US	IN		a	b	c	d	e
NPVs to 2035, discounted at 4% to 2012													
Financial benefits													
Profits to incumbents and/or savi	billion	4.58	0.64	0.97	1.39	0.70	0.89	4.58	4.03	0.55	0.00	0.00	0.00
Profits to new entrants	billion	0.20	0.10	0.08	0.00	0.00	0.02	0.20	0.21	-0.01	0.00	0.00	0.00
Financial costs													
Transaction and adminstration cos	billion	-1.37	Note: average of unbundling costs €1-2.9 billion					-1.37	Note: average of unbundling costs €1-2.9 billion				
Total	billion	**3.42**	cannot be allocated to market sectors					**3.42**	has not been allocated to clusters				
Key indicators in medium term													
Increase in annual turnover/passen	billion	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
Increase in annual capital investme	billion	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00
Change in average fare per passeng	%	0.01%	-0.01%	0.00%	0.01%	0.00%	-0.01%	0.01%	-0.01%	0.01%	0.00%	0.00%	0.00%
Mode shift													
Increase in annual passenger-kilo	billion	1.1	0.3	0.3	0.1	0.1	0.3	1.1	0.9	0.1	0.0	0.0	0.0
From road	billion	0.3	0.1	0.1	0.1	0.0	0.1	0.3	Abstraction by mode has not been				
From air	billion	0.2	0.1	0.0	0.0	0.0	0.1	0.2	identified at the level of clusters				
New entrant PSC volume													
Annual train-kilometres in baselir	million	869	0	212	427	203	28	869	74	26	764	2	4
Annual train-kilometres with Opti	million	889	1	214	436	209	29	889	93	26	764	2	4
Net increase	million	19	1	3	10	6	1	19	19	1	0	0	0
New entrant open access volume													
Annual train-kilometres in baselir	million	129	64	26	22	17	0	129	78	1	50	0	0
Annual train-kilometres with Opti	million	137	67	29	22	17	2	137	85	2	50	0	0
Net increase	million	8	3	3	0	0	2	8	7	1	0	0	0
New entrant market share													
Market share in baseline	%	19.3%	7.2%	16.6%	29.4%	22.1%	8.4%	19.3%	8.7%	2.1%	87.1%	0.4%	0.6%
Market share with Option U3	%	19.8%	7.5%	17.0%	30.1%	22.6%	9.2%	19.8%	10.1%	2.2%	87.1%	0.4%	0.6%
Net increase	%	0.5%	0.4%	0.3%	0.6%	0.5%	0.8%	0.5%	1.4%	0.1%	0.0%	0.0%	0.0%
Emissions reductions													
Net change in annual CO2 emissio	tonnes	-0.1	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	0.0	0.0	0.0	0.0
Net value of annual CO2 emission	million	-4.3	-1.1	-1.3	-0.5	-0.3	-1.1	-4.3	-3.7	-0.5	0.0	0.0	0.0

(b.1) – Market Opening - Scenario 2 – Saving

		Market sectors						Clusters					
Market opening Package 4 **All results are illustrative estimates**		Total	High speed	Long distance	Medium/regional	Urban/suburban	International	Total	A: integrated part-liberalised	B: integrated not liberalised	C: separated liberalised	D: separated part-liberalised	E: separated not liberalised
			HS	LD	MR	US	IN		a	b	c	d	e
NPVs to 2035, discounted at 4% to 2012													
Financial benefits													
Profits to incumbents and/or savi	billion	29.84	3.28	8.29	10.43	7.83	0.00	29.84	5.87	14.90	0.20	4.25	4.61
Profits to new entrants	billion	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.12	0.00	0.00	-0.11
Financial costs													
Transaction and adminstration cos	billion	-0.42	-0.02	-0.10	-0.18	-0.12	0.00	-0.42	-0.07	-0.15	-0.04	-0.02	-0.14
Total	billion	**29.43**	**3.27**	**8.19**	**10.25**	**7.71**	**0.00**	**29.43**	**5.79**	**14.88**	**0.17**	**4.23**	**4.35**
Key indicators in medium term													
Increase in annual turnover/passen	billion	0.3	0.2	0.1	0.0	0.0	0.0	0.3	0.0	0.2	0.0	0.0	0.0
Increase in annual capital investme	billion	0.03	0.02	0.01	0.00	0.00	0.00	0.03	0.00	0.02	0.00	0.00	0.01
Change in average fare per passeng	%	0.02%	-0.03%	0.04%	0.00%	0.00%	0.00%	0.02%	0.00%	0.06%	0.00%	0.03%	-0.04%
Mode shift													
Increase in annual passenger-kilo	billion	2.0	1.3	0.7	0.0	0.0	0.0	2.0	0.0	1.6	0.0	0.2	0.3
From road	billion	0.5	0.3	0.3	0.0	0.0	0.0	0.5	Abstraction by mode has not been				
From air	billion	0.5	0.4	0.1	0.0	0.0	0.0	0.5	identified at the level of clusters				
New entrant PSC volume													
Annual train-kilometres in baselir	million	837	0	204	411	196	27	837	71	25	735	2	4
Annual train-kilometres with Pack	million	1015	4	258	483	244	27	1015	108	86	738	35	49
Net increase	million	179	4	55	72	48	0	179	36	61	3	33	46
New entrant open access volume													
Annual train-kilometres in baselir	million	124	62	25	21	17	0	124	76	1	48	0	0
Annual train-kilometres with Pack	million	138	71	30	21	17	0	138	76	11	48	2	3
Net increase	million	14	9	5	0	0	0	14	0	10	0	2	3
New entrant market share													
Market share in baseline	%	19.3%	7.2%	16.6%	29.4%	22.1%	8.4%	19.3%	8.7%	2.1%	87.1%	0.4%	0.6%
Market share with Package 4	%	23.1%	8.6%	20.9%	34.4%	27.1%	8.4%	23.1%	10.8%	7.7%	87.4%	7.0%	8.2%
Net increase	%	3.8%	1.4%	4.3%	4.9%	5.0%	0.0%	3.8%	2.1%	5.6%	0.3%	6.6%	7.6%
Emissions reductions													
Net change in annual CO2 emissio	tonnes	-0.1	-0.1	0.0	0.0	0.0	0.0	-0.1	0.0	-0.1	0.0	0.0	0.0
Net value of annual CO2 emission	million	-8.0	-5.3	-2.7	0.0	0.0	0.0	-8.0	0.0	-6.2	0.0	-0.6	-1.2

(b.2)– Market Opening - Scenario 2 – Reinvestment

Market opening Package 4 All results are illustrative estimates		Market sectors						Clusters					
		Total	High speed	Long distance	Medium/regional	Urban/suburban	International	Total	A: integrated part-liberalised	B: integrated not liberalised	C: separated liberalised	D: separated part-liberalised	E: separated not liberalised
			HS	LD	MR	US	IN		a	b	c	d	e
NPVs to 2035, discounted at 4% to 2012													
Financial benefits													
Profits to incumbents and/or savi	€ billion	21.45	3.12	6.03	6.98	5.32	0.00	21.45	4.24	11.06	0.15	2.95	3.04
Profits to new entrants	€ billion	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.12	0.00	0.00	-0.11
Financial costs													
Transaction and adminstration cos	€ billion	-0.42	-0.02	-0.10	-0.18	-0.12	0.00	-0.42	-0.07	-0.15	-0.04	-0.02	-0.14
Total	€ billion	**21.04**	**3.11**	**5.93**	**6.80**	**5.20**	**0.00**	**21.04**	**4.16**	**11.04**	**0.11**	**2.93**	**2.79**
Key indicators in medium term													
Increase in annual turnover/passen	€ billion	0.9	0.2	0.2	0.2	0.2	0.0	0.9	0.2	0.5	0.0	0.1	0.1
Increase in annual capital investme	€ billion	0.13	0.02	0.04	0.04	0.03	0.00	0.13	0.02	0.05	0.00	0.01	0.05
Change in average fare per passeng	%	-0.14%	-0.04%	-0.14%	-0.22%	-0.11%	0.00%	-0.14%	-0.12%	-0.18%	-0.05%	-0.13%	-0.01%
Mode shift													
Increase in annual passenger-kilo	billion	8.4	1.5	2.4	2.7	1.8	0.0	8.4	1.7	4.1	0.1	0.9	1.7
From road	billion	3.5	0.3	0.9	1.3	0.9	0.0	3.5	Abstraction by mode has not been identified at the level of clusters				
From air	billion	0.7	0.4	0.3	0.0	0.0	0.0	0.7					
New entrant PSC volume													
Annual train-kilometres in baselir	million	842	0	205	413	197	27	842	72	25	739	2	4
Annual train-kilometres with Pack	million	1027	4	261	489	247	27	1027	110	88	742	36	51
Net increase	million	186	4	57	76	50	0	186	38	64	3	34	47
New entrant open access volume													
Annual train-kilometres in baselir	million	125	62	25	21	17	0	125	76	1	48	0	0
Annual train-kilometres with Pack	million	139	71	30	21	17	0	139	76	11	48	2	3
Net increase	million	14	9	5	0	0	0	14	0	10	0	2	3
New entrant market share													
Market share in baseline	%	19.3%	7.2%	16.6%	29.4%	22.1%	8.4%	19.3%	8.7%	2.1%	87.1%	0.4%	0.6%
Market share with Package 4	%	23.0%	8.6%	20.8%	34.1%	26.8%	8.4%	23.0%	10.8%	7.8%	87.4%	7.1%	8.3%
Net increase	%	3.7%	1.4%	4.2%	4.6%	4.8%	0.0%	3.7%	2.2%	5.7%	0.3%	6.7%	7.7%
Emissions reductions													
Net change in annual CO2 emissio	tonnes	-0.6	-0.1	-0.2	-0.2	-0.1	0.0	-0.6	-0.1	-0.3	0.0	-0.1	-0.1
Net value of annual CO2 emission	million	-33.2	-5.8	-9.5	-10.5	-7.2	0.0	-33.2	-6.7	-16.1	-0.4	-3.5	-6.5

(c.1)– Combined Impacts - Scenario 1 – Saving

Combined Option U2+A1+B1 All results are illustrative estimates		Market sectors						Clusters					
		Total	High speed	Long distance	Medium/regiona	Urban/suburban	International	Total	A: integrated part-liberalised	B: integrated not liberalised	C: separated liberalised	D: separated part-liberalised	E: separated not liberalised
			HS	LD	MR	US	IN		a	b	c	d	e
NPVs to 2035, discounted at 4% to 2012													
Financial benefits													
Profits to incumbents and/or savi	billion	43.91	5.39	11.96	14.90	10.64	1.03	43.91	13.69	19.03	0.25	5.34	5.61
Profits to new entrants	billion	0.21	0.11	0.08	0.00	0.00	0.02	0.21	0.20	0.18	0.00	0.00	-0.17
Financial costs													
Transaction and adminstration cos	billion	-0.40	Note: (1) costs of PSC and open access cannot be					-0.40	-0.02	-0.10	-0.17	-0.11	0.00
Transaction and adminstration cos	billion	-1.37	allocated to market sectors.					-1.37	Note: average of unbundling costs €0.7-2.0 billion				
Total	billion	**42.35**	(2) average of unbundling costs €0.7-2.0 billion					**42.35**	cannot be allocated to clusters				
Key indicators in medium term													
Increase in annual turnover/passen	billion	0.5	0.3	0.2	0.0	0.0	0.0	0.5	0.1	0.3	0.0	0.0	0.0
Increase in annual capital investme	billion	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Change in average fare per passeng	%	0.04%	-0.05%	0.06%	0.00%	0.00%	-0.01%	0.04%	-0.01%	0.09%	0.00%	0.04%	-0.06%
Mode shift													
Increase in annual passenger-kilo	billion	3.8	2.3	1.3	0.0	0.0	0.2	3.8	0.7	2.5	0.0	0.2	0.5
From road	billion	0.2	0.1	0.1	0.0	0.0	0.1	0.2	Abstraction by mode has not been				
From air	billion	0.2	0.1	0.0	0.0	0.0	0.1	0.2	identified at the level of clusters				
New entrant PSC volume													
Annual train-kilometres in baselir	million	842	0	205	413	197	27	842	72	25	740	2	4
Annual train-kilometres with Opti	million	1140	11	296	531	275	28	1140	153	117	744	53	73
Net increase	million	297	11	91	118	78	1	297	81	92	5	51	69
New entrant open access volume													
Annual train-kilometres in baselir	million	125	62	25	21	17	0	125	76	1	48	0	0
Annual train-kilometres with Opti	million	154	78	35	21	17	2	154	83	16	48	2	5
Net increase	million	29	16	10	0	0	2	29	7	16	0	2	5
New entrant market share													
Market share in baseline	%	19.3%	7.2%	16.6%	29.4%	22.1%	8.4%	19.3%	8.7%	2.1%	87.1%	0.4%	0.6%
Market share with Option U3	%	25.6%	10.1%	23.8%	37.4%	30.1%	9.2%	25.6%	13.7%	10.6%	87.6%	10.5%	12.0%
Net increase	%	6.4%	2.9%	7.1%	8.0%	8.0%	0.8%	6.4%	5.1%	8.5%	0.5%	10.1%	11.4%
Emissions reductions													
Net change in annual CO2 emissio	tonnes	-0.3	-0.2	-0.1	0.0	0.0	0.0	-0.3	0.0	-0.2	0.0	0.0	0.0
Net value of annual CO2 emission	million	-15.1	-9.0	-5.1	0.0	0.0	-1.0	-15.1	-2.6	-9.8	0.0	-0.8	-1.9

(c.2)– Combined Impacts - Scenario 2 – Reinvestment

Combined Option U2+A1+B1 All results are illustrative estimates		Market sectors						Clusters					
		Total	High speed	Long distance	Medium/regiona	Urban/suburbar	International	Total	A: integrated part-liberalised	B: integrated not liberalised	C: separated liberalised	D: separated part-liberalised	E: separated not liberalised
			HS	LD	MR	US	IN		a	b	c	d	e
NPVs to 2035, discounted at 4% to 2012													
Financial benefits													
Profits to incumbents and/or savi	€ billion	34.38	5.19	9.62	10.78	7.93	0.86	34.38	10.63	15.39	0.21	4.11	4.03
Profits to new entrants	€ billion	0.21	0.11	0.08	0.00	0.00	0.02	0.21	0.20	0.18	0.00	0.00	-0.17
Financial costs													
Transaction and adminstration co	€ billion	-0.40	Note: (1) costs of PSC and open access cannot be					-0.40	-0.02	-0.10	-0.17	-0.11	0.00
Transaction and adminstration co	€ billion	-1.37	allocated to market sectors.					-1.37	Note: average of unbundling costs €0.7-2.0 billion				
Total	€ billion	**32.82**	(2) average of unbundling costs €0.7-2.0 billion					**32.82**	cannot be allocated to clusters				
Key indicators in medium term													
Increase in annual turnover/passen	€ billion	1.7	0.3	0.5	0.5	0.4	0.0	1.7	0.5	0.8	0.0	0.2	0.2
Increase in annual capital investme	€ billion	0.2	0.0	0.1	0.1	0.1	0.0	0.2	0.0	0.1	0.0	0.0	0.1
Change in average fare per passeng	%	-0.25%	-0.06%	-0.25%	-0.39%	-0.20%	-0.01%	-0.25%	-0.21%	-0.33%	-0.10%	-0.23%	-0.01%
Mode shift													
Increase in annual passenger-kilo	billion	16.1	2.7	4.7	5.0	3.4	0.3	16.1	4.4	7.0	0.2	1.6	2.9
From road	billion	0.3	0.1	0.1	0.1	0.0	0.1	0.3	Abstraction by mode has not been				
From air	billion	0.2	0.1	0.0	0.0	0.0	0.1	0.2	identified at the level of clusters				
New entrant PSC volume													
Annual train-kilometres in baselir	million	846	0	206	415	198	27	846	72	25	743	2	4
Annual train-kilometres with Opti	million	1162	11	302	541	280	28	1162	158	124	748	56	77
Net increase	million	316	11	96	126	82	1	316	86	99	5	54	73
New entrant open access volume													
Annual train-kilometres in baselir	million	126	62	25	21	17	0	126	76	1	48	0	0
Annual train-kilometres with Opti	million	155	79	35	21	17	2	155	83	16	48	2	5
Net increase	million	29	16	10	0	0	2	29	7	16	0	2	5
New entrant market share													
Market share in baseline	%	19.3%	7.2%	16.6%	29.4%	22.1%	8.4%	19.3%	8.7%	2.1%	87.1%	0.4%	0.6%
Market share with Option U3	%	25.5%	10.1%	23.6%	36.9%	29.7%	9.2%	25.5%	13.8%	10.8%	87.5%	10.7%	12.1%
Net increase	%	6.2%	2.9%	7.0%	7.5%	7.7%	0.8%	6.2%	5.1%	8.7%	0.4%	10.3%	11.5%
Emissions reductions													
Net change in annual CO2 emissio	tonnes	-1.1	-0.2	-0.3	-0.3	-0.2	0.0	-1.1	-0.3	-0.5	0.0	-0.1	-0.2
Net value of annual CO2 emission	million	-63.4	-10.8	-18.6	-19.6	-13.3	-1.0	-63.4	-17.2	-27.7	-0.8	-6.2	-11.4

3.6. Sensitivity analysis

Due to the limited empirical evidence to underpin key assumptions, there is a wide range of uncertainty linked to qualitative estimates. To explore the effects of uncertainty further, several sensitivity tests were carried out to investigate the effects of more optimistic or pessimistic assumptions. The assumptions used for these sensitivity tests are summarised in Table 8- 3-13 below.

Table 8-3-13 Scenario assessment: assumptions for sensitivity tests

Issues	Test	Assumption	Core assumption	Alternative assumption
Incumbent response	Fewer "commercial" services survive open access	70% of "commercial" services become unviable and subject to PSCs once open access develops.	20% of commercial services becomes PSC	70% of commercial services becomes PSC
Open access fares	Lower fares offered by open access operators	Open access operator fares 20% below incumbent and pro rata increase in extra demand. No check that open access would remain viable or have sufficient capacity.	New entry fares are 95% of incumbent's	New entry fares are 80% of incumbent's
Efficiency gains	Higher potential efficiency gains	"Commercial" and open access operators and effectively contestable PSCs become 25% more efficient.	Opex per train-km falls by 12.25%	Opex per train-km falls by 20%
	Lower potential efficiency gains	"Commercial" and open access operators and effectively contestable PSCs become 10% more efficient.	Opex per train-km falls by 12.25%	Opex per train-km falls by 5%

Table 8-3-14 summarises the results of the scenario analysis.

Table 8-3-14 Results of sensitivity tests

All changes are illustrative estimates	Financial benefits (NPV, € bn)	Increase in annual revenue (€ bn)	Increase in annual CAPEX (€ bn)	Increase in passenger km (bn)	Increase in new entry market share (% points)
Scenario 1 –Focus on saving					
Higher potential efficiency gains	50.4	0.3	0.03	2.0	3.8%
Fewer "commercial" services survive open access	30.1	0.2	0.03	1.9	3.9%
Core assumptions	**29.4**	**0.3**	**0.03**	**2.0**	**3.8%**
Lower fares offered by open access operators	29.3	0.2	0.03	2.2	3.8%
Lower potential efficiency gains	13.6	0.3	0.03	2.0	3.8%

Scenario 2 – Reinvestment					
Higher potential efficiency gains	35.5	1.3	0.21	13.3	3.6%
Fewer "commercial" services survive open access	21.5	0.9	0.13	8.5	3.8%
Core assumptions	**21.0**	**0.9**	**0.13**	**8.4**	**3.7%**
Lower fares offered by open access operators	20.9	0.8	0.13	8.5	3.7%
Lower potential efficiency gains	10.0	0.5	0.08	4.9	3.8%

4. CALCULATIONS OF ADMINISTRATION AND ENFORCEMENT COSTS

Specific assumptions for the baseline and the individual options and packages were also made around administration and enforcement costs. These are reported as outputs but do not form the core inputs or calculations.

4.1. Approach

Administration and enforcement costs were analysed using a methodology that is similar to the standard cost approach set, out in the IA Guidelines for administrative costs. The particular focus was on the monetary quantification of additional cost burden to the industry, generated by the introduction of the preferred policy scenario.

The approach differs from the IA Guideline standard cost model, as all transaction costs have been computed, not only those that could be accounted for information obligations. For example, it has been taken into account both the costs that have to be met by operators and public authorities to prepare and run tenders, or to bid for tenders[198] as well as other compliance costs like those incurred to prepare or to define the PSC.

For the purpose of this analysis this 'extended' approach to administration costs was considered relevant for two reasons:

- The policy options have a significant impact on the entire set of transaction costs of industry and public authorities (EU, national and local) and, as such, need to be analysed in detail
- It would be very difficult, if not infeasible to separate administrative and compliance costs.

4.2. Assumptions

4.2.1. Cost related to tendering process (tendering transaction costs)

198 It can be also argued that for operators, the costs related to participation in tenders could be considered marketing rather than administrative costs. However, for the purpose of this analysis these are included in administration costs.

Following the overall logic of standard costs model, the costs are calculated as the product between the average cost of the required transaction ('price') and the total number of transactions performed per year ('quantity'):

The average cost per tender (price)

In Member States where compulsory competitive tendering has yet to be introduced, the policy would result in additional transaction costs. Average cost per tender has been estimated on the basis of the information available at industry level using the costs:

- incurred by public authorities to launch a tendering process and
- operators to respond, considering an average participation of three tenderers and allowing for possible legal disputes on the results.

Different costs for EU15 and EU12 Member States have been considered to reflect the difference in salary levels across the industry, although it was assumed that EU12 costs will catch-up with EU15 by 2025

- €780,000 per tender in EU15
- €390,000 per tender in EU12 (in 2012 values).

Underlying assumptions are summarised in the figure below.

Figure 8-3- 5 – Underlying assumptions for calculating the cost of tenders

Average transaction costs (one-off tendering)				
Preparation of tender - Competent Authority	*200,000*	*100,000*	€ (2012 prices)	Covers only additional tasks required by the tendering process like tender preparation and enforcemen, but not those carried out in any case (e.g. planning of services, contract enforcement, etc.)
Preparation of tender-Total cost tenderers	*500,000*	*250,000*	€ (2012 prices)	Only additional burden due to tender process considered
Participation to bid-cost per tenderer	166,667	83,333	€ (2012 prices)	
Average number of tenderers	3	3	Number	
Other costs of tender - Regulatory Bodies/Authorities/Courts	*80,000*	*40,000*	€ (2012 prices)	Costs at national or EU level
Estimated cost of a legal dispute/Regulatory intervention	800,000	400,000	€ (2012 prices)	
Propability of occurrence	0.10	0.10	Number	
Total additional transaction costs	780,000	390,000	€ (2012 prices)	
EU15 catch up -Average growth per year 2012-2025	-	5.5%	€ (2012 prices)	EU15 catch up with EU12 by 2025

The number of tenders (quantity)

It has been also assumed that

- the baseline reflects the evolution of the current situation and foresees a small increase in the total number of tendered PSCs in the future (in Member States that were considered more likely to adopt this instrument without EU intervention) and
- for each option or package there will be an incremental number of new PSCs per NUTS2 territorial unit, unless a different pattern is already in place nationally.

Figure 8-3- 6 – Underlying assumptions for calculating the number of tenders

Contract features	EU15	EU12	Unit value	
Total number of contracts (PSC)				
Current situation	273	6	279	Assumes that 85% of all possible contracts (i.e. NUTS 2 regions) are already regulated through a PSC in EU15 against 10% in EU12 in the current situation
Baseline	289	11	300	Assumes that 90% of all possible contracts (i.e. NUTS 2 regions) are regulated through a PSC in EU15 against 20% in EU12
Option B1	321	58	379	All contracts will have a PSC under B1

A five year ramp-up period for the introduction of additional foreseen PSCs was also established. It was considered, that by 2020, a large share of the costs will be in place as the institutional reforms to set up tenders will have been implemented in most member states as well as the fact that additional PSCs will have come into force in several member states. An average duration of PSCs of seven years is assumed to estimate the number of tenders that are likely to be issued per year in the 2015 to 2035 period.

4.2.2. Implementation and monitoring costs of PSCs.

In addition to the costs related to the tendering process assumptions have been also made around the additional transaction costs due to the implementation and monitoring of a greater number of PSCs, particularly in those Member States where at present there is limited recourse to such contracts as mentioned above.

Implementation costs

As with the average cost per tender, the average introduction cost per PSC has been estimated on the basis of the information available at industry level, concerning the costs incurred by public authorities to set up a PSC for the first time. Differences in salary across the industry have been reflected through considering EU15 and EU12 Member States separately. It has also been assumed that EU12 contracting authorities will most likely require a higher effort to set this type of contract given a lesser level of familiarity with the instrument and the different institutional framework within which they operate.

The average introduction cost per PSC is calculated to be:

- €750,000 per tender in the EU15 and
- €500,000 in the EU12 (2012 values).

Figure 8-3- 7 – Underlying assumptions for calculating the PSC introduction costs

One-off cost of PSC				
Cost of setting a PSC	750 000	500 000		More work needed in EU12 but lower labour cost.
Rump-up period to get all PSC				
Rump-up	5	5	Years	All new additional contracts established by 2020
Average monitoring cost				
Average yearly cost of PSC	*78 000*	*39 000*	€ (2012 prices)	We consider yearly cost as 10% of one-off cost of tendering transaction costs
EU15 catch up -Average growth per year 2(	-	5,5%	€ (2012 prices)	EU15 catch up with EU12 by 2025

Monitoring costs

The annual cost of monitoring a PSC has been assumed to be equivalent to 10% of the tendering transaction costs.

4.2.3. Change in administration costs of new open access operations

A change in administration costs which would be incurred by *operators* and *public administrations* is assumed to apply to situations and options where new open access operations are in place.

For *operators*, it has been assumed that new open access operations will require one additional FTE (full time equivalent) per Member State for open access operators. This FTE represents the sum of all additional tasks that will be undertaken by operators of the sector due to the implementation of a policy change. Different gross salaries estimated through industry interviews have been used for EU15 and EU12 MS to reflect the differences in rail industry costs among these countries, although EU12 values are assumed to catch-up with EU15 ones in the longer term.

Figure 8-3- 8 – Underlying assumptions for calculating the cost of administration for operators

Assumptions	EU15	EU12	Unit value	
Additional FTE at industry level	15	10	FTE	It is assumed 1 FTE per MS where there are railways. This represents the cost at industry level, i.e. the sum of all additional tasks to be done by operators of the sector
Additional FTE at Public Administration level	-	0	FTE	It is assumed that the additional work undertaken by Competition Authorities compensate the lower amount of work for Regulatory Bodies with respect to the current situation
Avarage gross salary	87 237	21 885	€ 2012 prices	
Yearly growth rates	0%	7%	Real terms	

For *public administration*, it has been assumed that the additional work undertaken by competition authorities is cancelled out by the lower amount of work for regulatory bodies with respect to the current situation.

4.2.4. Implementation costs of IM Scenario 3

Additional costs of IM Scenario 3 are based on a recent study by Merkert et al (2012). Estimated transactions costs in Germany, Great Britain and Sweden include the procuring of access rights, franchise bidding and the allocation of train costs and are shown in Table 8-3-15 below.

TABLE 8-3-15 ESTIMATES OF RAIL INDUSTRY TRANSACTION COSTS

	Transactions cost per train-km (PPP €)	Transactions cost as proportion of total operating cost (%)
Germany	0.08	0.49
Great Britain	0.34	1.42
Sweden	0.22	1.27

Source: Merkert et al (2012)

The difference between the estimates of transactions cost as a proportion of total operating cost for Germany and Sweden is taken as an indication of the additional transactions costs arising from IM Scenario 3. Recognising that the estimates cover the costs of competitively tendering PSCs and other costs arising from institutional separation undertaken under existing legislation, the following assumptions have been made:

- 90% of the estimate for Germany represents the cost of complying with existing legislation relating to unbundling
- 60% of the estimate for Sweden represents the cost of implementing further unbundling consistent with U2.

In applying the proportions shown in the third column of the Table 8-3-15, it has been assumed that transactions costs are broadly scalable according to overall operating costs. This gives an estimate of the incremental costs of institutional separation of 0.32% of total operating costs (0.76% - 0.44%).

The costs of legal disputes and enforcement associated with an increase in competitive tendering are likely to be reduced in the event that market opening is combined with institutional separation. Separation as envisaged under IM Scenario 3 can be expected to reduce discriminatory behaviour and improve financial transparency. The probability of the need for legal or regulatory intervention has been therefore reduced from 10% to 5%.

Study by Merkert et al (2012) suggests that regulatory costs per train kilometre in Sweden are only 25% of those in Germany. This is evidence of a significant reduction in legal and regulatory intervention costs, so estimate of a 50% reduction in these costs through the introduction of separation in support of market opening is therefore considered conservative.

4.2.5. Assumptions for freight

The benefits of institutional separation arising in the freight sector, additional to the benefits arising in the domestic and international passenger sectors, have been estimated as an increase in turnover rather than a decrease in costs. The freight sector has been liberalised since 1 January 2007 under Directive 2004/51/EC, and is subject to extensive inter-modal competition, so efficiency savings should already have been stimulated.

However, further separation, where it does not already exist, could reduce discriminatory practices and improve transparency, increase the number of new entrants, stimulate price reductions and competition in some cases and generate new freight activity. Therefore, it will produce an increase in revenue from freight operations in the order of 1% of the 2009 revenue of the European freight sector. Applying this factor produces a Net Present Value of around €1 billion in the timescales considered.

4.2.6. Results

The analysis of costs has been carried out for the period 2019-2035 and has included the classification of Member States into the clusters defined in Table 8- 3-12 above.

NPVs are calculated over the period 2019 and 2035 using a 4% discount rate.

Figure 8-3- 9 DETAILED CALCULATIONS OF ADMINISTRATION AND ENFORCEMENT COSTS

Admin costs

TOTAL IMPACTS

Option B1

			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
A Competitive tendering transaction costs		**NPV (€ mil)**	€																				
Baseline	Transaction costs EU15		21 728 571	21 728 571	21 728 571	21 728 571	21 728 571	21 728 571	21 728 571	21 728 571	21 728 571	21 728 571	21 728 571	21 728 571	21 728 571	21 728 571	21 728 571	21 728 571	21 728 571	21 728 571	21 728 571	21 728 571	21 728 571
	Tranaction costs EU12		719 642	759 223	800 980	845 034	891 511	940 544	992 273	1 046 849	1 104 425	1 165 169	1 225 714	1 225 714	1 225 714	1 225 714	1 225 714	1 225 714	1 225 714	1 225 714	1 225 714	1 225 714	1 225 714
	Total transaction costs		22 448 214	22 487 794	22 529 551	22 573 605	22 620 082	22 669 115	22 720 845	22 775 420	22 832 997	22 893 740	22 954 286	22 954 286	22 954 286	22 954 286	22 954 286	22 954 286	22 954 286	22 954 286	22 954 286	22 954 286	22 954 286
	NPV (2012 base year)	**319,47**																					
Option B1	Transaction costs EU15		35 768 571	35 768 571	35 768 571	35 768 571	35 768 571	35 768 571	35 768 571	35 768 571	35 768 571	35 768 571	35 768 571	35 768 571	35 768 571	35 768 571	35 768 571	35 768 571	35 768 571	35 768 571	35 768 571	35 768 571	35 768 571
	Tranaction costs EU12		3 794 477	4 003 173	4 223 348	4 455 632	4 700 692	4 959 230	5 231 987	5 519 747	5 823 333	6 143 616	6 462 857	6 462 857	6 462 857	6 462 857	6 462 857	6 462 857	6 462 857	6 462 857	6 462 857	6 462 857	6 462 857
	Total transaction costs		39 563 049	39 771 745	39 991 919	40 224 203	40 469 263	40 727 801	41 000 559	41 288 318	41 591 904	41 912 188	42 231 429	42 231 429	42 231 429	42 231 429	42 231 429	42 231 429	42 231 429	42 231 429	42 231 429	42 231 429	42 231 429
	NPV (2012 base year)	**579,00**																					
Difference	Transaction costs EU15		14 040 000	14 040 000	14 040 000	14 040 000	14 040 000	14 040 000	14 040 000	14 040 000	14 040 000	14 040 000	14 040 000	14 040 000	14 040 000	14 040 000	14 040 000	14 040 000	14 040 000	14 040 000	14 040 000	14 040 000	14 040 000
	Tranaction costs EU12		3 074 835	3 243 951	3 422 368	3 610 598	3 809 181	4 018 686	4 239 714	4 472 898	4 718 908	4 978 448	5 237 143	5 237 143	5 237 143	5 237 143	5 237 143	5 237 143	5 237 143	5 237 143	5 237 143	5 237 143	5 237 143
	Total transaction costs		17 114 835	17 283 951	17 462 368	17 650 598	17 849 181	18 058 686	18 279 714	18 512 898	18 758 908	19 018 448	19 277 143	19 277 143	19 277 143	19 277 143	19 277 143	19 277 143	19 277 143	19 277 143	19 277 143	19 277 143	19 277 143
	NPV (2012 base year)	**259,52**																					

			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
B PSC setting one-off costs		**NPV (€ mil)**	€																				
Baseline	EU15: cost additional to current situation		2 407 500	2 407 500	2 407 500	2 407 500	2 407 500																
	EU12: cost additional to current situation		520 000	520 000	520 000	520 000	520 000																
	Total one-off costs		2 927 500	2 927 500	2 927 500	2 927 500	2 927 500																
	NPV (2012 base year)	**13,03**																					
Option B1	EU15: cost additional to current situation		7 222 500	7 222 500	7 222 500	7 222 500	7 222 500																
	EU12: cost additional to current situation		5 220 000	5 220 000	5 220 000	5 220 000	5 220 000																
	Total one-off costs		12 442 500	12 442 500	12 442 500	12 442 500	12 442 500																
	NPV (2012 base year)	**55,39**																					
Difference	EU15		4 815 000	4 815 000	4 815 000	4 815 000	4 815 000																
	EU12		4 700 000	4 700 000	4 700 000	4 700 000	4 700 000																
	Total one-off costs		9 515 000	9 515 000	9 515 000	9 515 000	9 515 000																
	NPV (2012 base year)	**42,36**																					

			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
C PSC monitoring costs - yearly costs		**NPV (€ mil)**	€																				
Baseline	Monitoring costs EU15		22 534 200	22 534 200	22 534 200	22 534 200	22 534 200	22 534 200	22 534 200	22 534 200	22 534 200	22 534 200	22 534 200	22 534 200	22 534 200	22 534 200	22 534 200	22 534 200	22 534 200	22 534 200	22 534 200	22 534 200	22 534 200
	Monitoring costs EU12		503 750	531 456	560 686	591 524	624 057	658 381	694 591	732 794	773 098	815 618	858 000	858 000	858 000	858 000	858 000	858 000	858 000	858 000	858 000	858 000	858 000
	Total monitoring costs		23 037 950	23 065 656	23 094 886	23 125 724	23 158 257	23 192 581	23 228 791	23 266 994	23 307 298	23 349 818	23 392 200	23 392 200	23 392 200	23 392 200	23 392 200	23 392 200	23 392 200	23 392 200	23 392 200	23 392 200	23 392 200
	NPV (2012 base year)	**326,38**																					
Option B1	Monitoring costs EU15		25 038 000	25 038 000	25 038 000	25 038 000	25 038 000	25 038 000	25 038 000	25 038 000	25 038 000	25 038 000	25 038 000	25 038 000	25 038 000	25 038 000	25 038 000	25 038 000	25 038 000	25 038 000	25 038 000	25 038 000	25 038 000
	Monitoring costs EU12		2 656 134	2 802 221	2 956 344	3 118 942	3 290 484	3 471 461	3 662 391	3 863 823	4 076 333	4 300 531	4 524 000	4 524 000	4 524 000	4 524 000	4 524 000	4 524 000	4 524 000	4 524 000	4 524 000	4 524 000	4 524 000
	Total monitoring costs		27 694 134	27 840 221	27 994 344	28 156 942	28 328 484	28 509 461	28 700 391	28 901 823	29 114 333	29 338 531	29 562 000	29 562 000	29 562 000	29 562 000	29 562 000	29 562 000	29 562 000	29 562 000	29 562 000	29 562 000	29 562 000
	NPV (2012 base year)	**405,30**																					
Difference	Monitoring costs EU15		2 503 800	2 503 800	2 503 800	2 503 800	2 503 800	2 503 800	2 503 800	2 503 800	2 503 800	2 503 800	2 503 800	2 503 800	2 503 800	2 503 800	2 503 800	2 503 800	2 503 800	2 503 800	2 503 800	2 503 800	2 503 800
	Monitoring costs EU12		2 152 384	2 270 766	2 395 658	2 527 419	2 666 427	2 813 080	2 967 800	3 131 029	3 303 235	3 484 913	3 666 000	3 666 000	3 666 000	3 666 000	3 666 000	3 666 000	3 666 000	3 666 000	3 666 000	3 666 000	3 666 000
	Total transaction costs		4 656 184	4 774 566	4 899 458	5 031 219	5 170 227	5 316 880	5 471 600	5 634 829	5 807 035	5 988 713	6 169 800	6 169 800	6 169 800	6 169 800	6 169 800	6 169 800	6 169 800	6 169 800	6 169 800	6 169 800	6 169 800
	NPV (2012 base year)	**78,91**																					

			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
D Total transaction costs: (A) + (B) + (C)		**NPV (€ mil)**	€																				
Baseline	Transaction costs EU15		46 670 271	46 670 271	46 670 271	46 670 271	46 670 271	44 262 771	44 262 771	44 262 771	44 262 771	44 262 771	44 262 771	44 262 771	44 262 771	44 262 771	44 262 771	44 262 771	44 262 771	44 262 771	44 262 771	44 262 771	44 262 771
	Tranaction costs EU12		1 743 392	1 810 678	1 881 666	1 956 557	2 035 568	1 598 924	1 686 865	1 779 643	1 877 523	1 980 787	2 083 714	2 083 714	2 083 714	2 083 714	2 083 714	2 083 714	2 083 714	2 083 714	2 083 714	2 083 714	2 083 714
	Total transaction costs		48 413 663	48 480 950	48 551 937	48 626 829	48 705 839	45 861 696	45 949 636	46 042 414	46 140 294	46 243 558	46 346 486	46 346 486	46 346 486	46 346 486	46 346 486	46 346 486	46 346 486	46 346 486	46 346 486	46 346 486	46 346 486
	NPV (2012 base year)	**658,89**																					
Option B1	Transaction costs EU15		68 029 071	68 029 071	68 029 071	68 029 071	68 029 071	60 806 571	60 806 571	60 806 571	60 806 571	60 806 571	60 806 571	60 806 571	60 806 571	60 806 571	60 806 571	60 806 571	60 806 571	60 806 571	60 806 571	60 806 571	60 806 571
	Tranaction costs EU12		11 670 611	12 025 395	12 399 691	12 794 574	13 211 176	8 430 691	8 894 379	9 383 570	9 899 666	10 444 148	10 986 857	10 986 857	10 986 857	10 986 857	10 986 857	10 986 857	10 986 857	10 986 857	10 986 857	10 986 857	10 986 857
	Total transaction costs		79 699 683	80 054 466	80 428 763	80 823 646	81 240 247	69 237 262	69 700 950	70 190 141	70 706 237	71 250 719	71 793 429	71 793 429	71 793 429	71 793 429	71 793 429	71 793 429	71 793 429	71 793 429	71 793 429	71 793 429	71 793 429
	NPV (2012 base year)	**1039,69**																					
Difference	Transaction costs EU15		21 358 800	21 358 800	21 358 800	21 358 800	21 358 800	16 543 800	16 543 800	16 543 800	16 543 800	16 543 800	16 543 800	16 543 800	16 543 800	16 543 800	16 543 800	16 543 800	16 543 800	16 543 800	16 543 800	16 543 800	16 543 800
	Tranaction costs EU12		9 927 219	10 214 716	10 518 026	10 838 017	11 175 608	6 831 767	7 207 514	7 603 927	8 022 143	8 463 361	8 903 143	8 903 143	8 903 143	8 903 143	8 903 143	8 903 143	8 903 143	8 903 143	8 903 143	8 903 143	8 903 143
	Total transaction costs		31 286 019	31 573 516	31 876 826	32 196 817	32 534 408	23 375 567	23 751 314	24 147 727	24 565 943	25 007 161	25 446 943	25 446 943	25 446 943	25 446 943	25 446 943	25 446 943	25 446 943	25 446 943	25 446 943	25 446 943	25 446 943
	NPV (2012 base year)	**380,80**																					

Open Access Option

A Additional transaction costs		**NPV (€ mil)**	€																				
Difference	Additional transaction costs EU15		1 308 551	1 395 788	1 395 788	1 395 788	1 395 788	1 395 788	1 395 788	1 395 788	1 395 788	1 395 788	1 395 788	1 395 788	1 395 788	1 395 788	1 395 788	1 395 788	1 395 788	1 395 788	1 395 788	1 395 788	1 395 788
	Additional transaction costs EU12		268 099	286 865	306 946	328 432	351 423	376 022	402 344	430 508	460 643	492 888	527 390	564 308	603 809	646 076	691 301	739 692	791 471	846 874	872 367	872 367	872 367
	Total additional transaction costs		1 576 650	1 682 653	1 702 734	1 724 220	1 747 211	1 771 810	1 798 132	1 826 296	1 856 431	1 888 676	1 923 178	1 960 096	1 999 597	2 041 864	2 087 089	2 135 480	2 187 259	2 242 662	2 268 155	2 268 155	2 268 155
	NPV (2012 base year)	**26,67**																					

Total Admin Costs

Total		**NPV (€ mil)**	€																				
Difference	Additional transaction costs EU15		22 667 351	22 754 588	22 754 588	22 754 588	22 754 588	17 939 588	17 939 588	17 939 588	17 939 588	17 939 588	17 939 588	17 939 588	17 939 588	17 939 588	17 939 588	17 939 588	17 939 588	17 939 588	17 939 588	17 939 588	17 939 588
	Additional transaction costs EU12		10 195 318	10 501 582	10 824 972	11 166 450	11 527 031	7 207 789	7 609 857	8 034 435	8 482 786	8 956 249	9 430 533	9 467 451	9 506 952	9 549 219	9 594 444	9 642 835	9 694 614	9 750 017	9 775 510	9 775 510	9 775 510
	Total additional transaction costs		32 862 669	33 256 170	33 579 560	33 921 037	34 281 619	25 147 377	25 549 445	25 974 023	26 422 374	26 895 837	27 370 121	27 407 039	27 446 540	27 488 807	27 534 032	27 582 423	27 634 202	27 689 605	27 715 098	27 715 098	27 715 098
	NPV (2012 base year)	**407,46**																					

Table 8- 3-1611 and Table 8- 3-17 summarise the administration and enforcement costs assumed for each country cluster.

Table 8- 3-16 Administration and enforcement costs for A1 (broad open access)

	Cluster a	Cluster b	Cluster c	Cluster d	Cluster e	Total
Total effects NPV (€ mil.)	4	9	2	4	7	27

The variation in transaction costs across clusters is attributable to the different number of Member States grouped in each, and is highest for clusters b and e which include 10 and 7 Member States respectively.

Table 8- 3-17 Administration and enforcement costs for B1 (mandatory competitive tendering)

	Cluster a	Cluster b	Cluster c	Cluster d	Cluster e	Total
Total effects NPV (€ mil.)	70	136	18	21	132	377
Tendering costs	41	95	14	8	102	260
PSC costs	29	41	4	13	30	117

The highest cost increases are assumed to be incurred by non-liberalised Member States: clusters b and e. In these Member States at present, the recourse to public tendering is almost negligible and the adoption of PSCs is limited, especially in EU12 MS. Cluster c assumes the lowest increase in these costs as it is composed of two Member States that have already liberalised and opened most of their rail market to competitive tendering, Sweden and Great Britain in the United Kingdom.

ANNEX 10

"The Last Mile towards the 4th Railway Package"

24 September 2012, Brussels

Summary document of the conference

Keynote addresses

Mr Siim Kallas, Vice-President of the European Commission

Many challenges lay ahead to enable the trans-European rail sector to achieve its full potential through the creation of a single European railway area. Plenty of progress has been made with recent agreement on the recast of the First Railway Package which will stimulate investment, improve market access conditions and reinforce national rail regulators. More reform is needed for rail to compete effectively with other modes, by removing barriers, attracting more operators to the market, making the industry more efficient and raising service quality, punctuality and reliability.

EU-wide standards are required, allowing trains to be built and certified to run everywhere in the EU and saving money in the process. The European Railway Agency (ERA) should become the authority to issue safety certificates and vehicle authorisations provided there is technical compatibility.

A combination of open access to domestic rail passenger markets and of competitive tendering for public service contracts (PSCs) should be encouraged to provide competition in and for the market.

Infrastructure management functions such as charging and the allocation of rail capacity, financial transparency, maintenance, renewal, upgrade and development of the infrastructure, day-to-day traffic management and the provision of real-time information must be kept apart from the operation of transport services and be exercised independently through a separated structure.

Mr Dominique Riquet, Member of the European Parliament (PPE-FR)

The creation of an integrated transport system had proven difficult with a continued need to overcome physical and organisational barriers. The freight industry has demonstrated the benefits of opening up the markets. It is time for rail to adapt to single European market ways of thinking and embrace interoperability, transparency, create the right fare conditions and open up the infrastructure. The extension of the competences of ERA should be supported, hoping that one day a single European regulator may exist.

Plenary I: Opening a new page in European Railways

(Moderator: Mr Matthias Ruete, Director General - European Commission, DG MOVE)

Ms Catherina Elmstäter-Svard, Swedish Minister for Infrastructure

Rail restructuring in Sweden started in 1988 when despite attempts at a financial overhaul, the quality of rail transport and infrastructure could not be maintained. Railway transport was not customer driven. There was a lack of funding for investment. The incumbent had become a “state within a state” that asserted its own interests at the expense of common interests.

Infrastructure management was separated from the operation of rail transport, both in terms of organisation and decision-making. The supply of rail transport services was diversified within a competitive procurement system. In return, demand for rail transport as well as investment in railway infrastructure and rolling stock began to increase. More rail companies were established; both railway freight and passenger transport increased capacity and efficiency. A vertically separated railway system considerably reduces the need for any detailed regulation which is neither efficient nor sufficient.

Some difficulties will remain which will need to be resolved in a way that does not damage competition. How shall we deal with the introduction of ERTMS in a neutral way without specifying the equipment to be purchased but ensuring interoperability? What incentives are needed to ensure that the infrastructure manager (IM) operates efficiently, and on the basis of the demand of rail companies for capacity so that they can offer transport services that correspond to customers’ requirements? An effective and consolidated rolling stock market is urgently required.

Mr Mauro Moretti, Chairman - CER

The rail sector needs a fair and stable regulatory framework, not one that changes every two or three years. Rules must be homogenous and valid for everybody to create a sound business environment, to attract private and public investment and to create a Single European Railway Area.

We must streamline the certification and authorisation processes that constitute huge barriers for market entry and consider the efficiency gains that an enhanced ERA may benefit the sector with, such as centralising some functions currently performed by national safety authorities (NSA), speeding up the processes for rolling stock authorisation and placing on the market, safety certification of railway undertakings (RUs) and the development and application of the legal framework. Since there seems to be agreement on this point, the Commission's proposal should be “fast tracked” through the legislative procedure in the case of ERA.

Consideration must be given to the best way to open domestic markets. Open access services must not lead to the detriment of services provided under PSCs.

Studies on different organisational models on the market show mixed results and suggest that other variables (such as system costs, modal share, and State funding) have a significant impact on performance. Different structures work best in different circumstances and therefore a flexibility of structural models may be beneficial.

Mr Philippe De Backer, Member of the European Parliament (ALDE-BE)

According to Directive 91/440/EEC, Member States have to separate infrastructure and services with the final aim of increasing rail's market share The results have been disappointing because most Member States did not want to give up their national monopolies. 3 rail packages have followed, 21 years later we are still discussing the issue. Eurostat data shows rail share of passenger and freight transport in still low for the EU27 at 6.3% and 10.2%.

A single European rail market will help to reach the 60% GHG emission reduction by 2050 as laid down in the Transport White Paper of 2011.

Member States must put interoperability into practice, allowing cross acceptance and a single process of placing vehicles into service. It's unacceptable to let years pass by before taking any action.

Trade unions claim that liberalisation leads to less safety on rail which is untrue and unproven.

ERA works well and it is accepted by all stakeholders so it should be turned into the one stop shop that is needed. In the future national technical and safety rules should no longer exist. There should be one authority that gives out licences, gives vehicles authorisation and monitors and controls the market.

It is very difficult to convince Member States of the added value an open market brings, as in most cases national passenger transport is in the hands of the State-owned incumbents. However, if carried out in a consistent manner, it will give the passenger greater choice and lead to better quality of service. Market liberalisation should be accompanied by a legal separation between IM and RU. Unbundling should be the standard. The debts many companies are bearing now are the result of the existing inefficient integrated structure. Efficiency gains are desperately needed, also for the public purse.

Mr Mark Hopwood, Managing Director - First Great Western, First Group

First Great Western is the largest train passenger operating business in the UK with over 25% of the market, winning tenders to operate long-distance, regional and commuter services.

Privatisation in the UK had been born from British Rail not delivering, with poor performance and low passenger satisfaction. Innovation came from the introduction of market competition which has

been so successful that significant growth has now led to a change of political context (all UK political parties support rail investment), limited support for returning to public sector operation and a continued move to funding from the fare payer rather than the taxpayer.

In London and South East demand is already 10% above forecasts and is likely to be by 2020 33% above 2007 expectations. Twice yearly National Passenger Surveys conducted by an independent organisation provide a focus of passenger perception with a number of aspects of the service provided. This is in addition to four weekly customer services monitoring to ensure that the service provided meets the needs of passengers.

A firm framework with flexibility for innovation and partnership needs to be created to allow private companies to grow in Europe. Obstacles to new entrants must be tackled, such as direct award in some “open” markets. Without leasing companies, state/regional authorities will need to absorb financial risks or new entrants will not be able to lease or acquire stock. Through-ticketing arrangements should be managed alongside a "clearing house" mechanism run by an independent body to ensure fairness and reimburse operators quickly.

Mr Vicenzo Cannatelli, Vice President – NTV

NTV entered the Italian rail market following the advent of liberalisation but it needed 6 years from incorporation to starting its transport services.

In Italy, many constraints exist as both the IM and train operators are 100% owned by the same companies. The cost of high speed access was one of the highest in Europe at more than € 13 per train-km and the homologation process not well defined and continuously thwarted by the incumbent operator. It took 45 months from request of homologation to commercial service operation.

The Italian Government announced in January the creation of an independent Transportation Authority which will have to introduce fair competition in all railway sectors and to constrain uncompetitive situations. It may analyse the benefits of unbundling in the upcoming months.

NTV have invested over € 1 billion in 25 trains, depots, IT, training and staff. The benefits have spread to the customer as the advent of NTV has had a positive effect on the incumbents' services as well. Prices have decreased while additional services are being operated with higher frequencies. Marketplace innovation has also led to a new more efficient mix of sales channels with 70% coming from the internet. This all demonstrates the vital benefits of the liberalisation agenda.

Plenary II: Railways - an agenda for growth, innovation and employment in Europe

(Moderator: Mr Karel Vinck, ERTMS coordinator)

Mr Melchior Wathelet, Minister of Mobility – Belgium

Rail has an enviable record on safety and respect of the environment. Rail demand is continually growing. Mobility leads to growth; therefore we need to remove bottlenecks, harmonise interoperability rules and introduce ERTMS.

Today, rail is not the preferred mode of transport for most Europeans or for key businesses. To chang this, we have to establish a single European rail market providing non-discriminatory access to all operators and to increase the predictability of major investments. Member States must take the responsibility to develop a corporate long term infrastructure development plan.

Mr Svend Leirvaag, Vice - President Industry Affairs - Amadeus

Connecting railways and other modes of transport will become the number 1 priority for European consumers. The integrated European transport system has to enable travellers to plan, book, pay for and collect their tickets in a seamless way. The sector needs to start preparing for deregulation and increased competition.

An efficient and competitive European railways sector will strengthen the competitiveness of Europe and their enterprises but this requires changes. Currently the dynamics of the marketplace mean that high price variation exists and sharing of technology to drive expansion and to keep costs down is not widely used. For instance, distribution channel ticketing bonds required for each and every RU could be replaced by a single European bond to cover them all.

Mr Johannes Mansbart, Chief Executive Officer - GATX

It is vital that entrants have availability of rolling stock on reasonable terms. The entities in charge of maintenance of vehicles (ECM) require solid operating data. An automated data exchange should be developed in a standardised format between workshops, keepers, RUs and customers.

New regulations such as vehicle noise emission standards have a material impact on the life cycle costs of rolling stock and as they deliver public rather than commercial benefits, manufacturers are not driven to seek the best solutions, choosing where applicable to pass the costs onto the RU.

Maintenance concepts need to be finetuned with unified rules and standards, optimised spare part logistics, shared services, component swaps, more preventive and less reactive maintenance.

ERA should be given a stronger role including the rights to enforce common rules and to bring clarity to a single information database.

Mr Stefan Roseanu, Chief Executive Officer - CFR Călători (RO)

The national railway passenger operator in Romania had been created in 1998 by splitting the former national railway in line with EC directives. Its key challenges are a very old fleet, poor infrastructure and a lack of investment funds.

Rail travel has been decreasing by 20% in train kilometres and by 60% in the number of passengers, with a corresponding increase in car usage. Acquisition of new rolling stock is essential to reverse this trend. Open access to domestic passenger markets and competitive tendering for PSCs are expected to improve the quality of services.

Workshop 1 – Rolling stock: reduced time-to-market

(Moderator: Mr Marcel Verslype, Director - European Railway Agency)

Mr Patrizio Grillo, Deputy Head of Unit B2 (Single European Railway Area) – DG MOVE

Several key problems identified in the sector relate to differing interpretations and implementation of EU law by Member States. National rules are often unclear, inappropriate, non-transparent (including incumbent staff seconded to NSAs), or they overlap with existing technical specifications of interoperability (TSIs). The authorisation process is long (up to 2 years), uncertain and expensive due to the multiplicity and unnecessary repetition of tests and verifications. The costs of safety certificates and for vehicle authorisations can be hugely variable.

On the basis of the impact assessment, the Commission suggests that ERA take the final decision on safety certification and vehicle authorisation in cooperation with NSAs. In this way, a single vehicle passport issued by ERA would be valid in all Member States.

Mr Alan Bell, Head of Railway Safety Policy - ORR UK

The length of time to get new vehicles into service leads to increased capital costs and hampers innovation. Inconsistent implementation of rules and bureaucracy delay the process further.

ERA's role should be enhanced to a ‘partner’ role promoting harmonisation and ensuring that the current structure works as it should by monitoring the implementation of directives and resolving disputes. The advantages of NSAs should not be lost including the knowledge base and feedback loop at a local level.

Mr Philippe Citroen, Director General – UNIFE

It takes on average 600 days to gain authorisation and the process is tying up € 1.4 billion capital that could be utilised for other benefits. There has only been a partial transposition of the Safety and Interoperability Directives, allowing a number of national processes to survive. UNIFE, CER, UIP and ERFA therefore all strongly support the enhancement of the role of ERA to become the European Railway Safety Agency. It should also become an appeal body and have decision-making powers in the event of disputes about vehicle authorisation processes and/or safety certificates. It should identify unnecessary national rules and be able to request their removal like aviation (EASA) and maritime (EMSA) agencies do.

RUs need to review their procurement processes to support standardisation amongst manufacturers as such initiatives have the potential to reduce costs and time to enter the market.

Mr Vicenzo Cannatelli, Vice President - NTV

Liberalisation should lead to better efficiency for all stakeholders and cheaper prices for users, however changes are required in order to get private investors to invest capital in the railway. The most fundamental of such changes was the need to set non-discriminatory rules and a clear timeframe for authorisation process that should become transparent.

Mr Konstantin Skorik, European Business Development Director – Freightliner

In freight transport, manufacturers and operators are reluctant to "experiment" and bring new innovative products to the market. There are fundamental differences in complexity, timing and cost of certification between locomotives and wagons due to different Member State requirements on safety and signalling systems, the lack of cross-acceptance, requirements for repetitive tests, unclear procedures and obstructive NSAs and IMs.

ERTMS costs may burden rail freight operators making them less competitive against road; however, success stories are possible like the certification of new GE Powerhaul locomotive in the UK which was delivered in less than two years through close cooperation between the parties involved during the design and construction phases.

There should be a clear role for ERA as a facilitator of cross-acceptance or as a one-stop shop, provided NSAs fully accept ERA rulings. Both ERA and NSAs should be urged to work fast and adhere to the interoperability rules.

Mr Michael Cramer - Member of the European Parliament (Greens-DE)

Fair competition is needed between modes of transport and a cross-modal plan is required to start this process. Cross-acceptance of rolling stock must be beneficial and more efficient but a more precise framework is required. We need a register of infrastructure so that all bidders have transparent access to the necessary information.

The new Airbus plane cost € 1 million for acceptance worldwide before introduction, whereas rolling stock costs in some cases twice that amount for acceptance in just one country.

Workshop 2 – The optimal infrastructure manager for the future

(Moderator: Mr Jean-Eric Paquet, Director, DG MOVE.B)

Ms Sian Prout, Head of Unit B2 (Single European Railway Area) – DG MOVE

Problems identified in the governance of IMs relate to efficiency and equal access. Railway infrastructure is a natural monopoly and the current governance arrangements do not provide sufficient incentives to respond effectively to the needs of users. There are no incentives for European cooperation. Existing separation requirements do not prevent conflicts of interests or discriminatory behaviour. There is a persistent risk of cross-subsidisation without complete

financial transparency. It has to be ensured that all IM activities which are potential sources of conflicts of interest are subject to separation requirements which guarantee at least legal, economic and financial independence from RUs, regarding institutional independence as an objective.

The proposed approach for the creation of common rules for the governance structure of IMs will ensure that all RUs are on an equal footing. It will include economic incentives and performance indicators, promote cooperation between IMs, establish a coordination body with IMs, RUs, customers, users and public authorities.

Ms Debora Serracchiani, Member of the European Parliament (S&D-IT)

Despite the recast ensuring greater competition between rail operators and better supervision by independent regulators, the primary goals of railway legislation have not been achieved. If we want to create a single market for railways, non-discriminatory access to rail infrastructure is essential. Member States must not use a no-one-size-fits-all excuse to preserve their current model. The goal is a system where a train can access each station in Europe and circulate throughout the infrastructure. Investment in the interoperability of the network and also in rolling stock is required along with a real separation of the IM from the operator to get rid of discrimination.

The conclusion of the Advocate General appears to be that the holding system is compatible with existing law. If in the aviation sector each airline had to ask the permission of their counterparts in other countries before being able to make any flights, the market would be far less competitive. Therefore the Commission must act fast to improve existing legislation.

Mr Hubert du Mesnil, President - EIM

A key role of separated IMs is to cooperate with their neighbours to form the backbone of European transport, over and above strict modal or national interests. This is one of the main differences from IMs structurally linked to their national carriers.

The optimal IM must adapt to customer needs, be entirely above suspicion and stand above any conflict of interest. At the same time, it shall be safe and efficient. This will create value for the whole system, including users and taxpayers through control over costs, prices and capacity.

Mr Garry White, Head of European and Strategic Affairs - Network Rail

Experience from the UK showed that liberalisation opened up valuable opportunities for new and existing operators, promoted new services and investment for passengers creating a competitive market served by over 20 passenger operators. Liberalisation has led to major growth in passenger demand (over a billion more passengers each year now), high levels of safety, punctuality and passenger satisfaction. There is a five-year agreement of €43 billion to finance the UK infrastructure with over €10 billion for capacity increase.

The McNulty study published last year recommended several changes to achieve potential efficiencies of around 30% through evolution, but ruled out radical legislative reform as disruptive and distracting. The industry should determine, under transparent and regulated conditions, how to work together for the benefit passengers, freight users and taxpayers.

IMs and RUs can deliver efficiencies through better alignment of incentives, higher train utilisation, new technologies, and stronger partnerships. Progress is being made towards building these ‘alliances’ at local level, based on shared information to create joint objectives with shared risk and reward benefits. Alliances do not mean the creation of new joint entities, with both sides retaining legal responsibility and decision-making powers.

An independent IM becomes a natural system integrator providing information to customers, coordinating research and development with suppliers, leading innovation for the benefit of the industry in a transparent, non-discriminatory and network-oriented manner.

Mr Rafal Milczarski, Managing Director - Freightliner Poland

To achieve the objectives of the Transport White Paper of 2011, IMs should be non-discriminatory, transparent, efficient and adequately financed. Maintenance of rail and road infrastructure should be financed by Member States in a way to eliminate modal discrimination (current proportions in Poland are 70% in road and 30% in rail). Rail share in EU cohesion fund spending should be at least 40% in EU-15 and 50% in EU-12 for 2014-2020. Access to basic loading and discharging assets and sidings must no longer be restricted.

Mr Ludger Sippel - BAG-SPNV

Rail authorities have good experience of competitive tendering of regional services and have been able to reduce subsidies on rural, suburban and interregional lines by up to 15%, 23% and 47% while improving the level of quality significantly. However, infrastructure charges and costs for staff and energy are increasing, while public budgets for financing non profitable services are becoming tighter.

There are several problems linked to the operation of infrastructure by integrated railway companies. Station and infrastructure charges paid by regional rail transport are not transparent and include high overhead costs. Some package deals have led to overcompensated directly awarded PSCs.

It is necessary to fully unbundle RUs and IMs in order to solve the structural problems of the integrated railway companies including transparency concerning business planning, cash-flow management, internal funding, financial flows across the group, cross subsidisation, profit transfer agreements and discrimination in the development of infrastructure based on the needs of incumbent RUs.

Workshop 3 – Rail and the value for society

(Moderator: Mr Alain Flausch, Secretary General – UITP)

Mr Eddy Liégeois, Head of Unit A5 (Legal matters & Infringements) – DG MOVE

Problems of poor service quality and operational performance in domestic rail passenger markets are driven by low intra-rail competition, inefficient use of public funds and a variety of national approaches to the provision of access. The objective is to open domestic rail passenger markets, getting better value for money spent on public services and creating more uniform business conditions.

Open access may be limited when the economic equilibrium of a PSC is compromised. Tendering of PSC should become mandatory. Member States, competent authorities and RUs should also be encouraged to set up integrated ticketing schemes and to use existing provisions on transfer of staff if necessary.

Mr Philippe De Backer, Member of the European Parliament (ALDE-BE)

Passengers often prefer the car because rail transport has poor service, is not punctual and has limited intermodal connection. For freight, cross border transport is made difficult by Member States by different entry barriers, causing unreliability and delay so customers choose road instead, despite congestion. A move away from the one-mode approach to focus on the multimodality for goods and passenger transport is now required.

Legal separation between the IM and the RU is the best way to create a level playing field with transparency, clarity and no more cross subsidies, leading to more efficient railway companies requiring less state funding. The TEN-T network aims to create a unified transport network, removing bottlenecks, upgrading infrastructure and streamlining cross border transport operations

for passengers and businesses on an intermodal basis. Railways are the backbone for these corridors.

Mr Christopher Irwin, Vice President - EPF

Consumer satisfaction with rail services in the EU is relatively poor with many passengers considering rail travel a distress purchase rather than the mode of choice. Consumer needs must be addressed using market opening and the advent of competition as a driver, measuring satisfaction and monitoring outcomes and considering end-to-end journey requirements.

Public transport and spatial planning must be considered to address congestion. Investment in capacity needs to be enabled by providing dependable services offering integrated seamless interfaces between modes. Through-ticketing and effective information systems should facilitate the use of collective transport.

Mr Michel Quidort, Director Institutional Relations - Veolia Transdev - EPTO

EPTO members (9 largest private public transport companies in Europe) support the opening of the passenger transport markets for competition.

Since market liberalisation a number of countries have seen considerable benefits: the UK (additional 450 M passenger journeys, 20 bn pkm between 1987 and 2009), the Netherlands (20–50% gains through competitive tendering efficiencies), Germany (28% increase in train km, 26% reduction in subsidies paid, 43% increase in patronage, 500 km of re-opened lines and 300 re-opened and new stations), France (Rhônexpress 55% increase in passengers in 19 months), Sweden (20–30% subsidy reductions through tendering and much higher customer satisfaction). Competition does not impact safety and employment conditions are not an issue. In the UK, train drivers earn some 50,000 EUR per year, while in Germany the drivers of private operators earn 86-94% of the wages of DB. Sustainable working conditions are required with lean management, empowerment, local responsibility and an ability to match the working time needs of local employees.

Competitive awarding procedures must become standard to provide value for society. This should be through a general obligation to tender for PSCs with a clear scope and no impairment of open access to ensure no restriction of market opportunities for new entrants. Direct award should remain an exception restricted to specific situations for limited duration. Tenders should be defined at local level and be coherent territorially and economically. Strong, independent national regulators with an adequate level of resources should co-operate through an EU network.

Mr Hans-Werner Franz, Managing Director - VBB

Competition for the regional and local rail market in Germany is still dominated by DB Regio with 76% of the market even though 91% of awards were made by competition.

Where competition exists benefits have included increases in patronage of up to 30%, improvements in quality and customer satisfaction, lower prices and cost reductions of 10-50%. Contracts should be at least 8 years with gross incentive contracts by taking risk preferred.

Interest in vehicle financing is slowly on the increase again but most banks possess little understanding of the SPNV market and therefore take a conservative approach which plays to DB's advantages of being a federal enterprise and therefore having more favourable credit conditions and low residual-value risks.

Mr Tim Gilbert, President – EPTOLA

With an asset life of 30–35 years, lessors are long-term investors in the market who provide flexible access to rolling stock throughout a competitive process. The market needs clarity, consistency and stability to allow continued growth.

Mr Ton Spaargaren – Gelderland province (NL)

When it was decided that the Dutch rail company should operate profitably, 32 train services (6 in the province of Gelderland) didn't fit the business case so, they were decentralised with competitive tendering. The province invested about € 100 M during the last 10 years, leading to a 26% increase in train km. Tenders are awarded on the basis of economic advantages rather than just the lowest price. They are net cost contracts (the operator is responsible for the industrial and commercial risks). Criteria relating to the concession include quality, sustainability, price, travel information and marketing strategy. The management of the PSC is based on output criteria such as punctuality, reliability or complaints.

An intermodal public transport network is desirable with the train as the backbone and bus transport feeding in, with transfer points such as Park and Ride facilities.

Plenary III: Presentation of Workshop findings

(Moderator: Mr Keir Fitch, Deputy Head of the Cabinet of Vice-President Kallas - European Commission)

Summaries of workshops by the moderators

Mr Verslype: There is a need for immediate action to prepare for a single certificate, but attention must be paid in the short term to better implementation of the current regime. There seems to be general agreement on the reinforced role of ERA but there are different possible solutions such as one-stop-shop, partnership with NSAs or ERA as single authorising body. An appeal body and a procedure to settle conflicts regarding vehicle authorisation is required; transparency of rules and processes should be improved and monitored. There seems to be a genuine enthusiasm in defending a Commission proposal which does not exist yet; several participants lobbied for more ambition and faster delivery.

Mr Paquet: Unbundling is the most contentious of the issues discussed. However, there is broad consensus on the needs of a better governance for IMs containing efficiency drivers. Arguments were raised about equality, impartiality and the need for a level playing field. In this respect it is difficult to see how an incumbent RU can make fair decisions on others. The Commission has to make a proposal ensuring stability for the medium to longer term, bearing in mind the potential tensions between equal access and efficiency.

Mr Flausch: A move to mandatory competitive tendering of PSCs with open access to domestic rail passenger markets would provide improved value through a reduction in public subsidies and improvements in service quality and infrastructure use. Tendering should not only be dependent on price; barriers to cross-border tenders should be removed. Most statements about social dumping or safety problems in liberalised markets are simply untrue. Access to rolling stock is vital for market entry. Integrated ticketing and workforce integration could lead to increased productivity.

Plenary IV: Presentation of the Eurobarometer survey and Conclusions of the Conference

Mr Matthias Ruete, Director-General - European Commission, DG MOVE

After a presentation of the Eurobarometer survey which had been carried out in the framework of the consultation process, Mr Ruete underlined that the three key workshop issues discussed would be properly addressed following a robust impact assessment and in-depth stakeholders' consultation.

Despite its comparative advantages versus road, rail is not considered reliable enough, flexible enough, innovative enough and affordable enough. All stakeholders appear to realise that current regulatory arrangements are not optimal. Long and costly procedures and discriminatory access barriers have caused a lack of new market entrants across many Member States.

Stakeholders also seem to agree that a new concept of a single vehicle "passport" valid in all Member States issued by ERA would improve efficiency. ERA may also be tasked with the facilitation of the deployment of ERTMS, strengthened communication, improved economic evaluation and cost-benefit analysis, and an enhanced role in international relations and research.

Further improvement of non-discriminatory access to rail infrastructure through clarifying the relations between IMs and RUs are required to create the Single European Railway Area. The Commission is finalising proposals for the opening of domestic rail passenger markets and mandatory competitive tendering for PSCs. Market opening requires integrating ticketing schemes and access to rolling stock to enable new RUs to participate in tender procedures.

Taxpayers expect that rail infrastructure usage will be optimised rather than restricted to the benefit of specific commercial interests for historical reasons.