EUROPEAN
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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

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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%

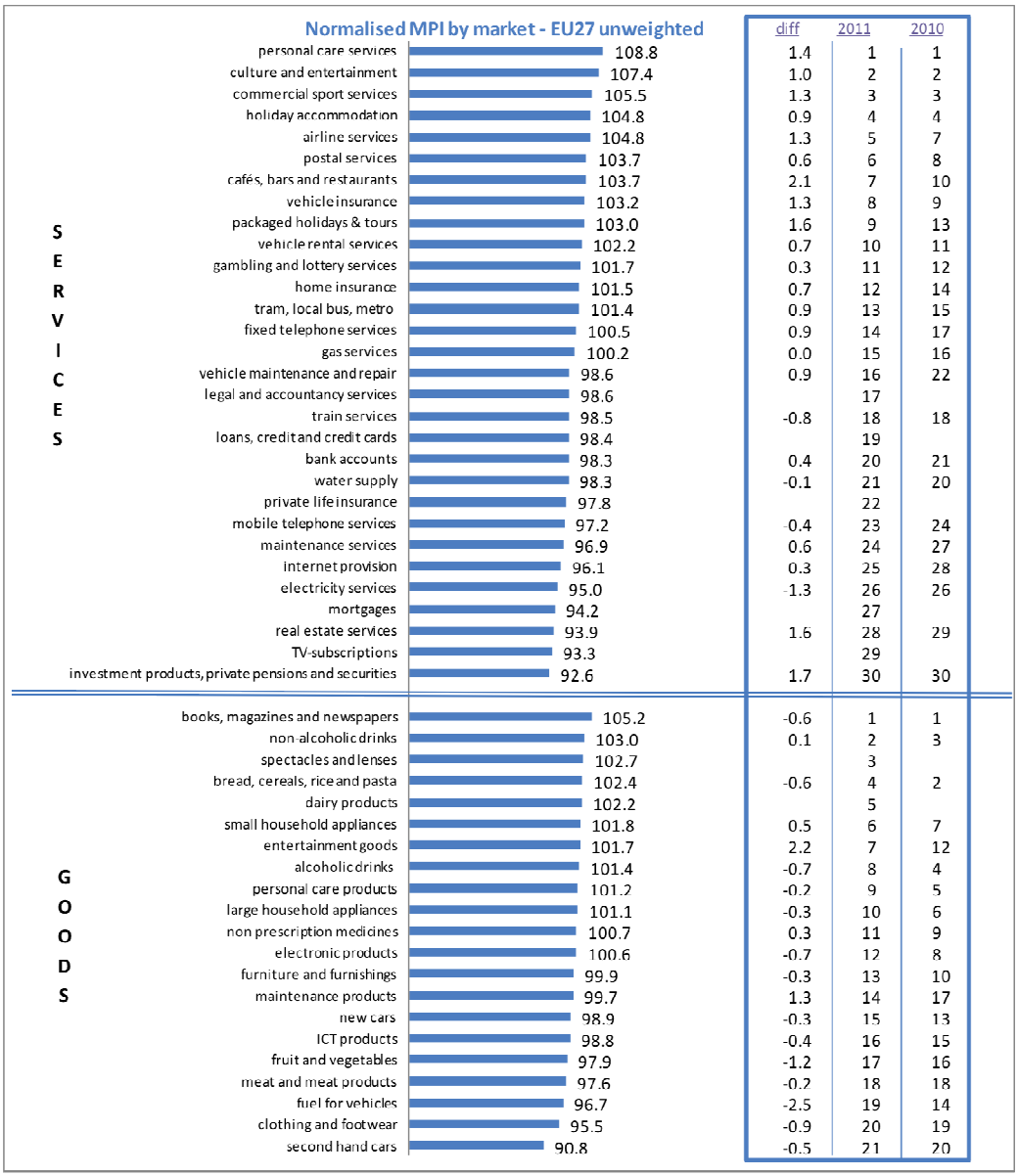
Source: Contributions of Member States provided to Commission services in the context of the Railway Market Monitoring Survey (RMMS) and Eurostat

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



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)

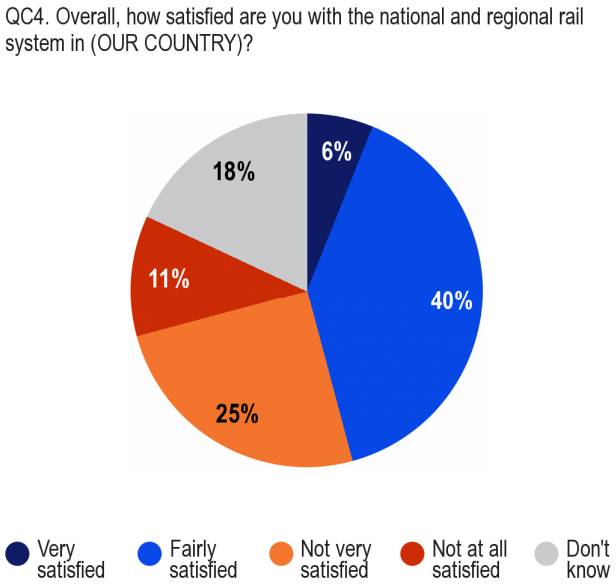
- Eurobarometer 2012 on competition in rail which a question on the overall satisfaction with rail (presented in 2.2.1)

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[1]. 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



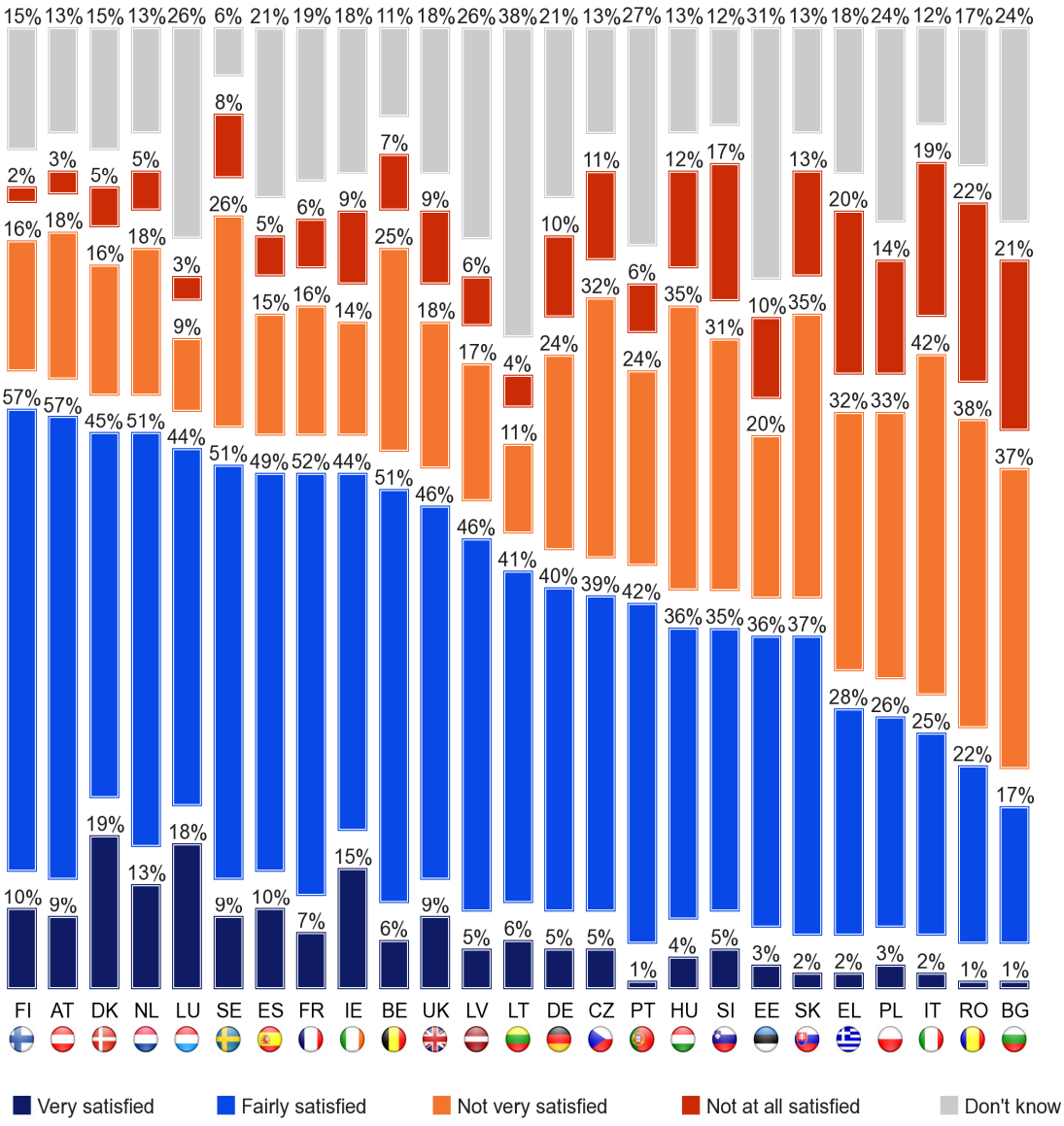
Base: Total number of respondents (n=25591)

[1] 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

QC4. Overall, how satisfied are you with the national and regional rail system in (OUR COUNTRY)?



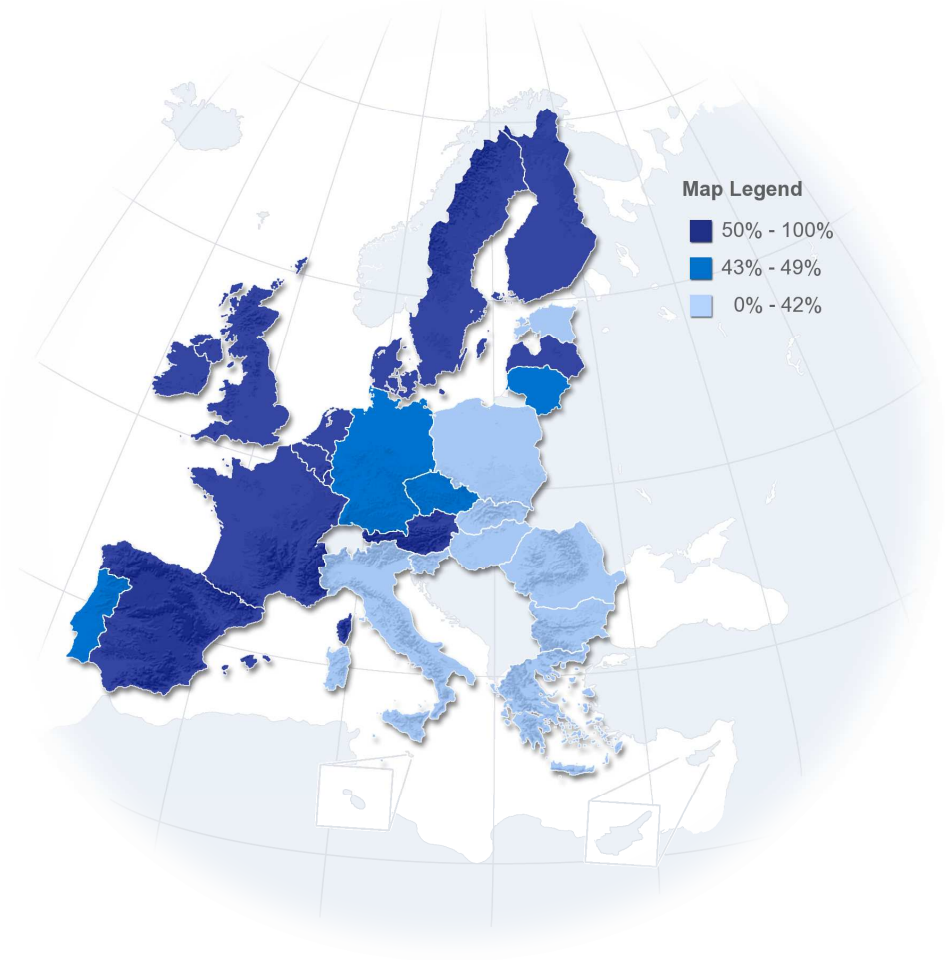
Base: Total number of respondents (n=25591)

Graph 3 – Overall satisfaction per Member State

FI	67%
AT	66%
NL	64%
DK	64%
LU	62%
SE	60%
ES	59%
IE	59%
FR	59%
BE	57%
UK	55%
LV	51%
LT	47%
Average	46%
DE	45%
CZ	44%
PT	43%
HU	40%
SI	40%
EE	39%
SK	39%
EL	30%
PL	29%
IT	27%
RO	23%
BG	18%

Question: QC4. Overall, how satisfied are you with the national and regional rail system in (OUR COUNTRY)?

Answers: Total 'Satisfied'



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

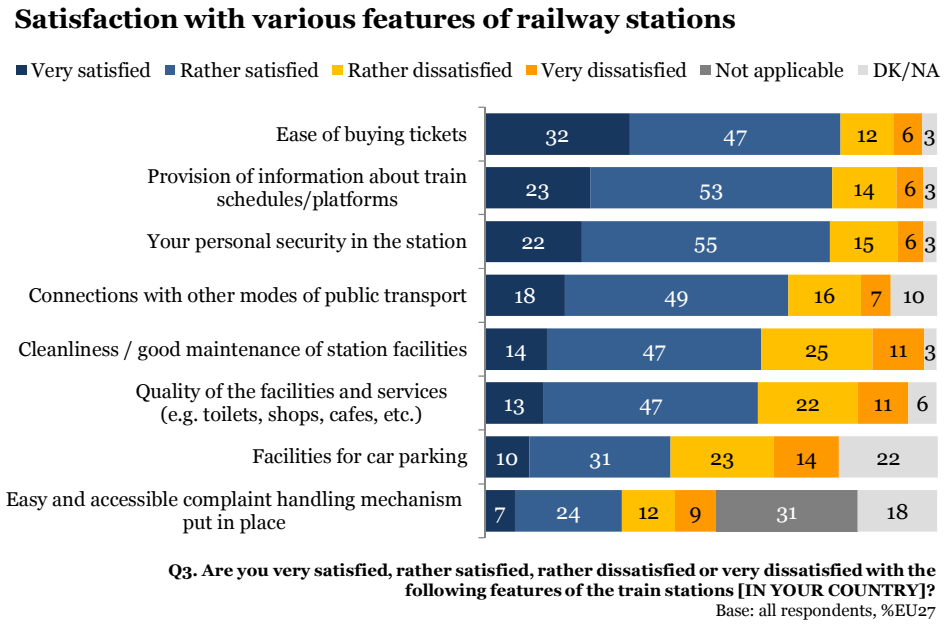
The quality of rail freight services in the European Union remains difficult to measure as a result of a general lack of indicators. Nevertheless, the gradual implementation of performance monitoring of rail freight services on the different freight corridors should provide some information on service 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.

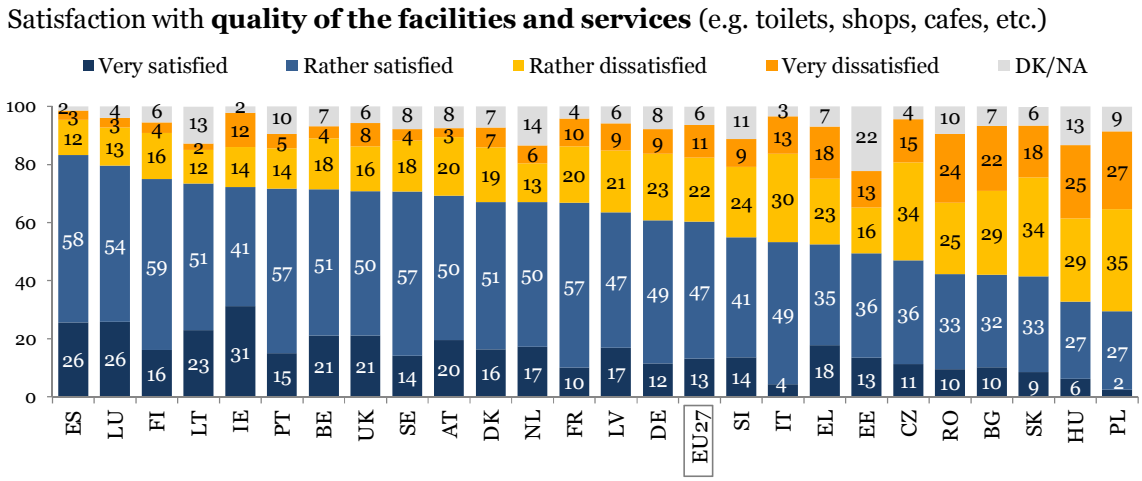
Graph 4 - Satisfaction with various features of railway stations



Q3. Are you very satisfied, rather satisfied, rather dissatisfied or very dissatisfied with the following features of the train stations [IN YOUR COUNTRY]?
Base: all respondents, %EU27

Source: Flash Eurobarometer survey on passengers' satisfaction with rail services, June 2011

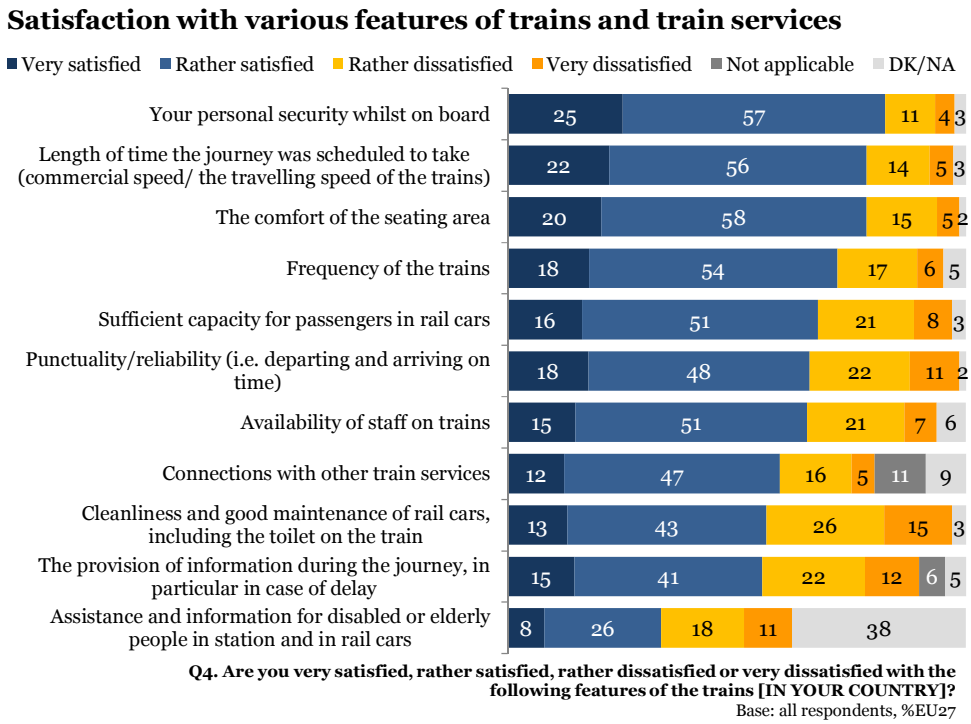
Graph 5 - Satisfaction with quality of the facilities and services



Q3. Are you very satisfied, rather satisfied, rather dissatisfied or very dissatisfied with the following features of the train stations [IN YOUR COUNTRY]?
Base: all respondents, % by country

Source: Flash Eurobarometer survey on passengers' satisfaction with rail services, June 2011

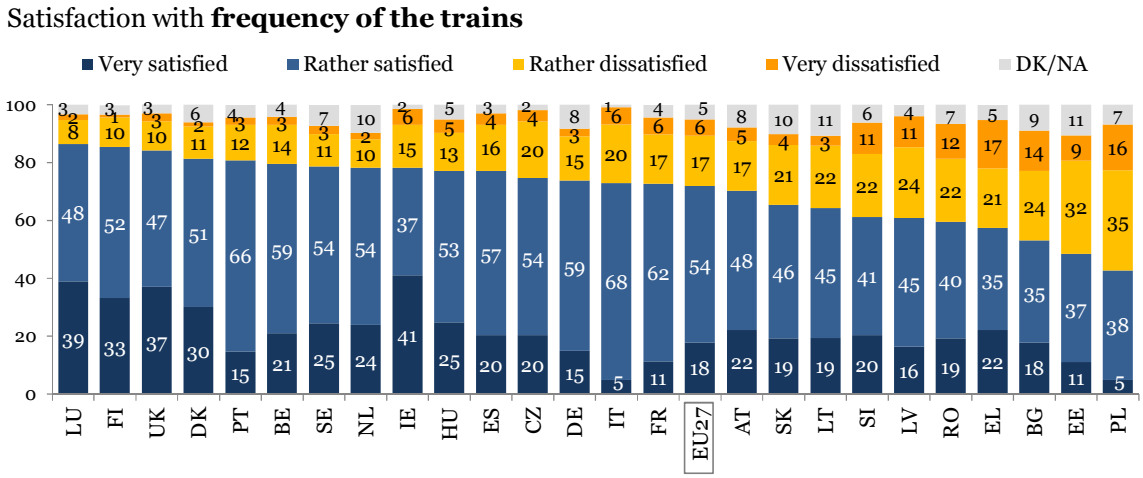
Graph 6 - Satisfaction with various features of trains and train services



Q4. Are you very satisfied, rather satisfied, rather dissatisfied or very dissatisfied with the following features of the trains [IN YOUR COUNTRY]?
Base: all respondents, %EU27

Source: Flash Eurobarometer survey on passengers' satisfaction with rail services, June 2011

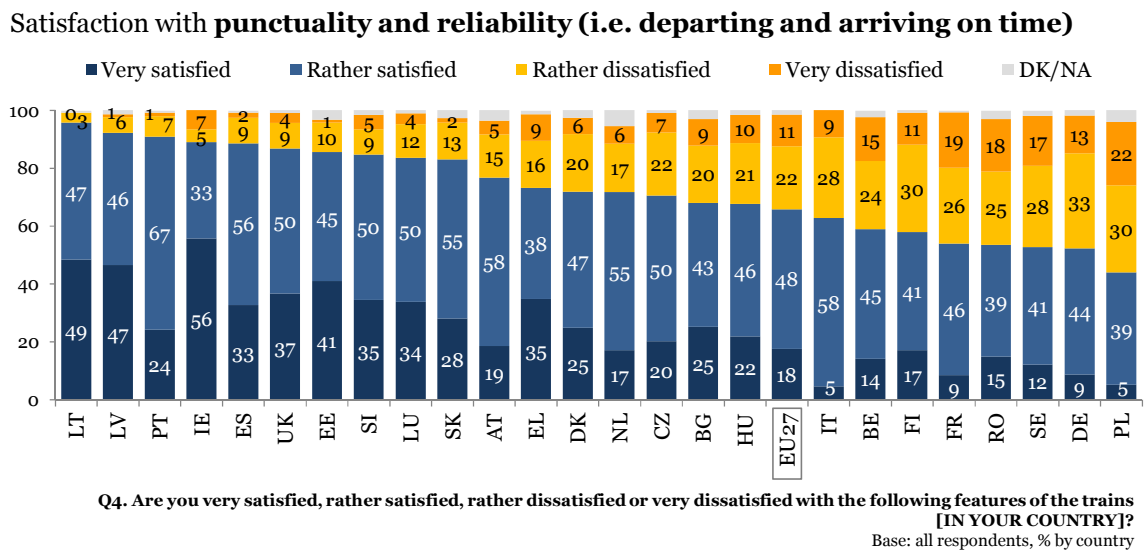
Graph 7 - Satisfaction with frequency of the trains



Q4. Are you very satisfied, rather satisfied, rather dissatisfied or very dissatisfied with the following features of the trains [IN YOUR COUNTRY]?
Base: all respondents, % by country

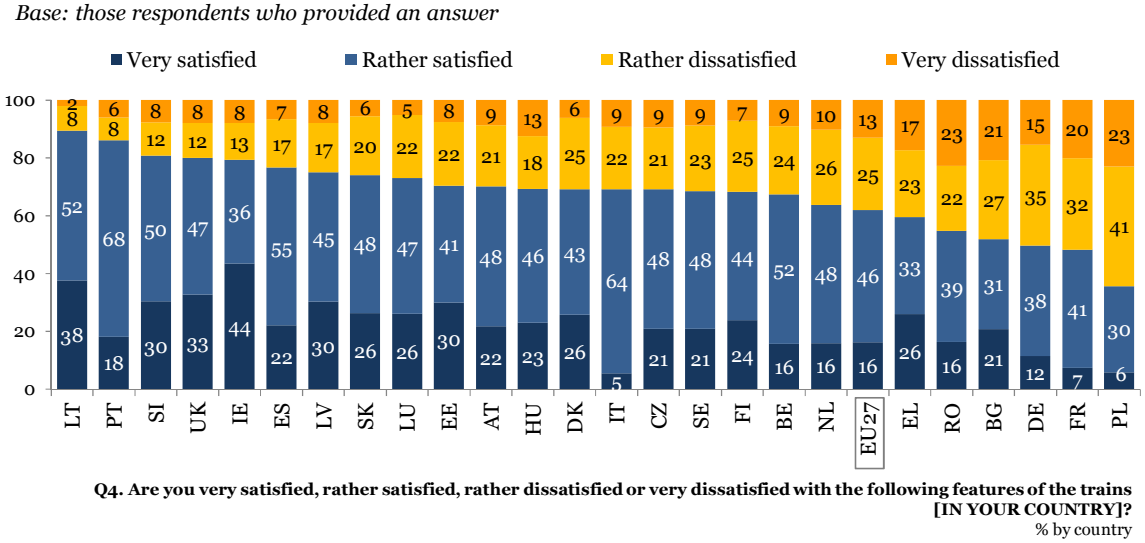
Source: Flash Eurobarometer survey on passengers' satisfaction with rail services, June 2011

Graph 8 - Satisfaction with punctuality and reliability



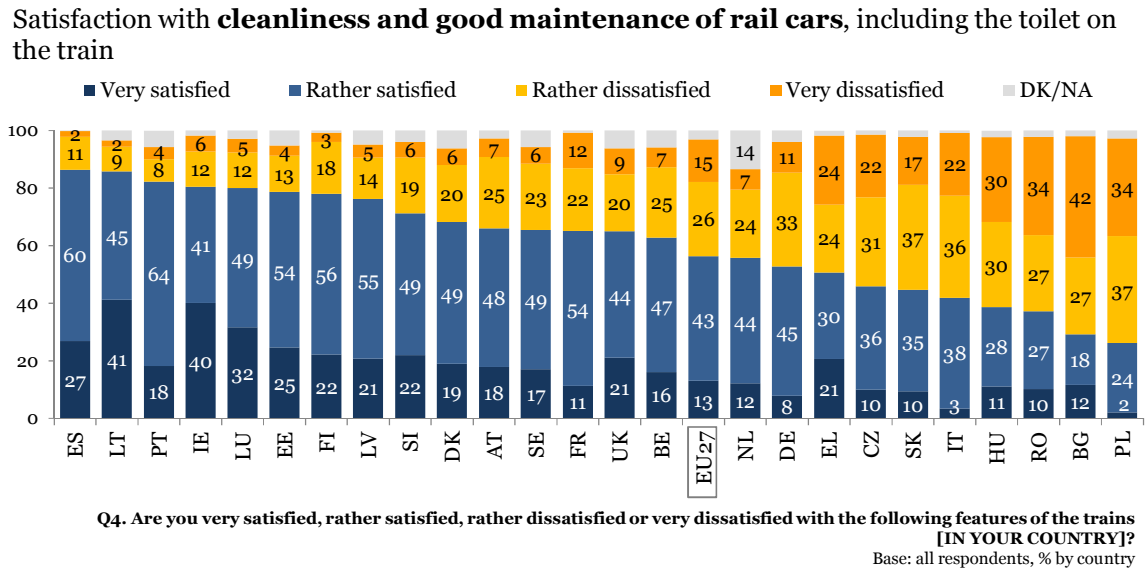
Source: Flash Eurobarometer survey on passengers' satisfaction with rail services, June 2011

Graph 9 - Satisfaction with the provision of information during the journey, in particular in case of delay



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.

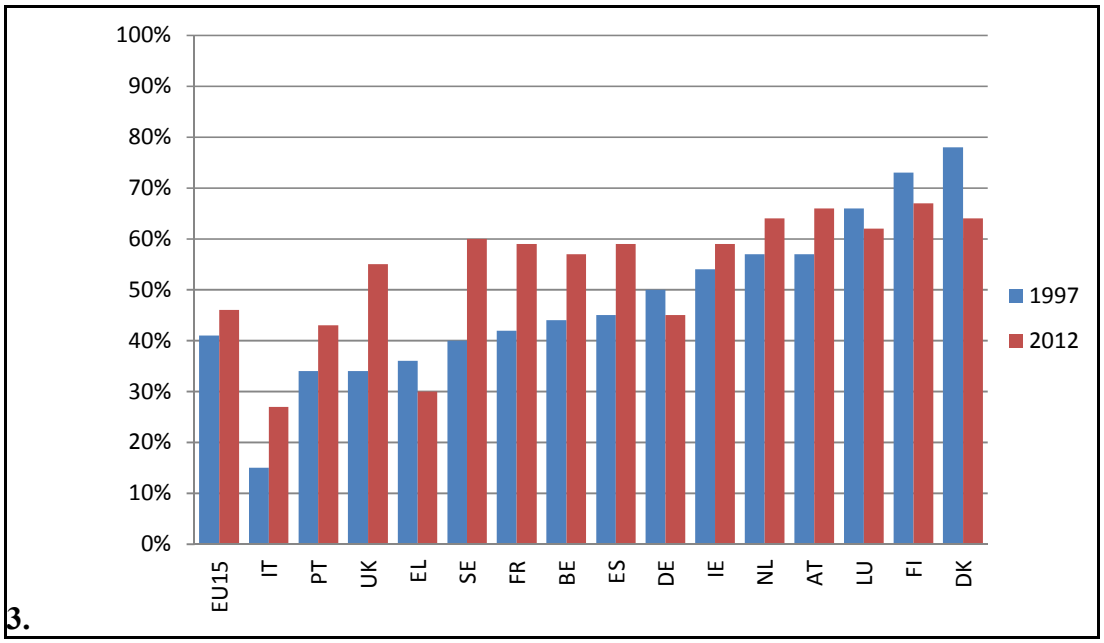
Similarly, while overall satisfaction appears to be relatively high in Sweden, France, Belgium and Netherlands in the Eurobarometer 2012, these countries do not appear well ranked in the Eurobarometer 2011. A series of delays resulting from snow in 2010-2011 and leading to important service disruption 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[2]). 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.

[2] 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 countries	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 Berg
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

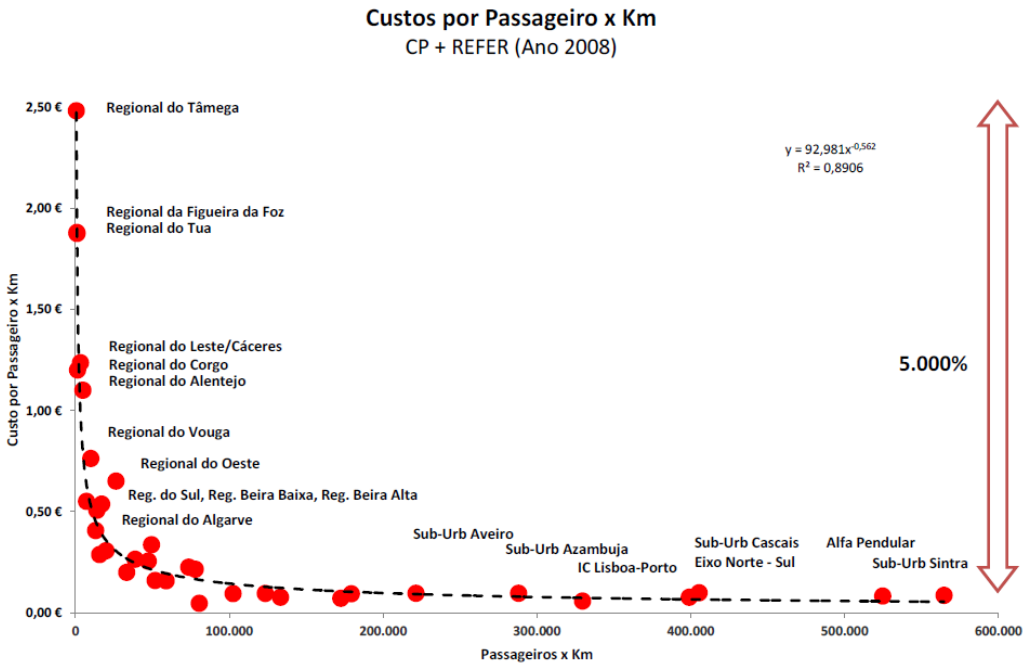
These inputs are transformed into train-kilometres.

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[3] 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.

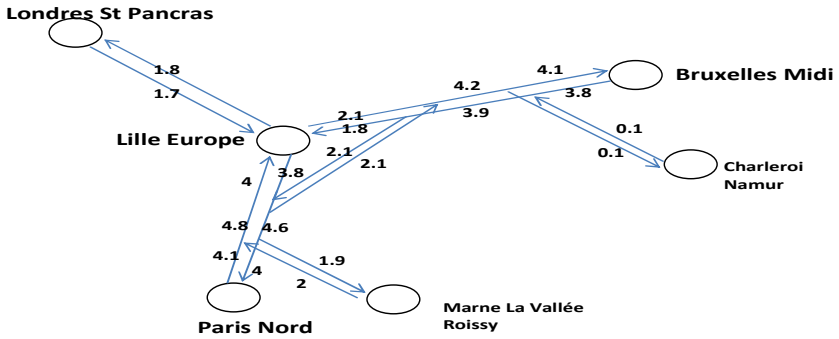
Table 7d – Usage of main domestic high-speed lines

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] 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

Lignes Paris – Bruxelles – Londres – Lille:



3.1.4 – EMPLOYMENT AND PRODUCTIVITY OF LABOUR

3.1.4.1 – Employment in railways

Table 8a – Employment in rail (as annual FTEs)

	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

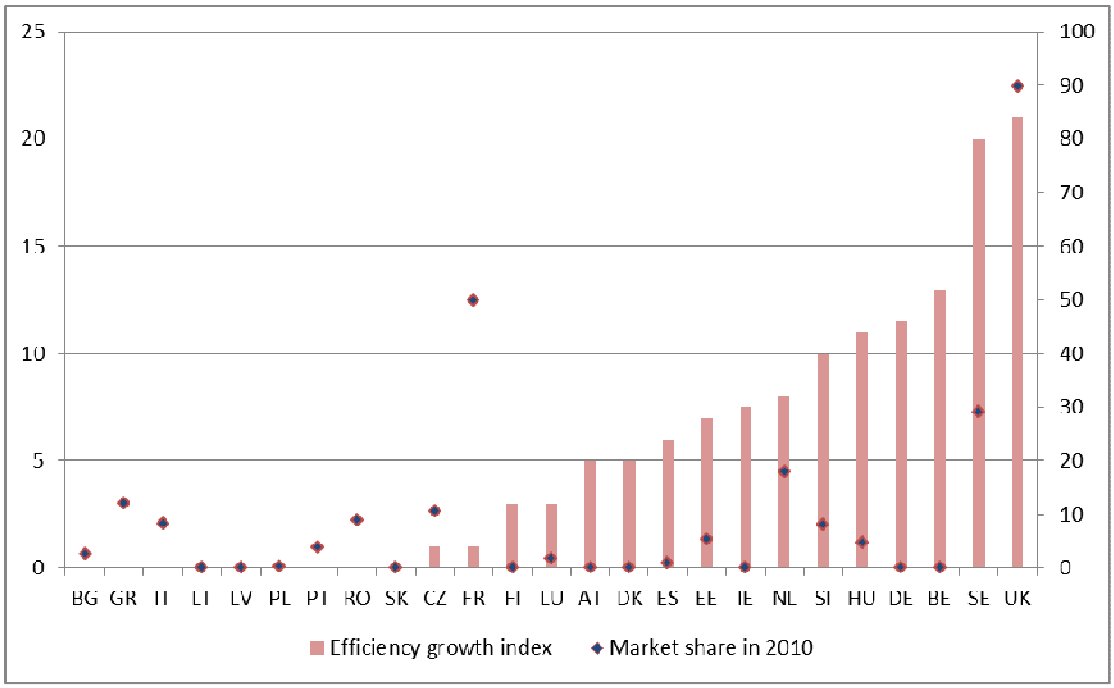
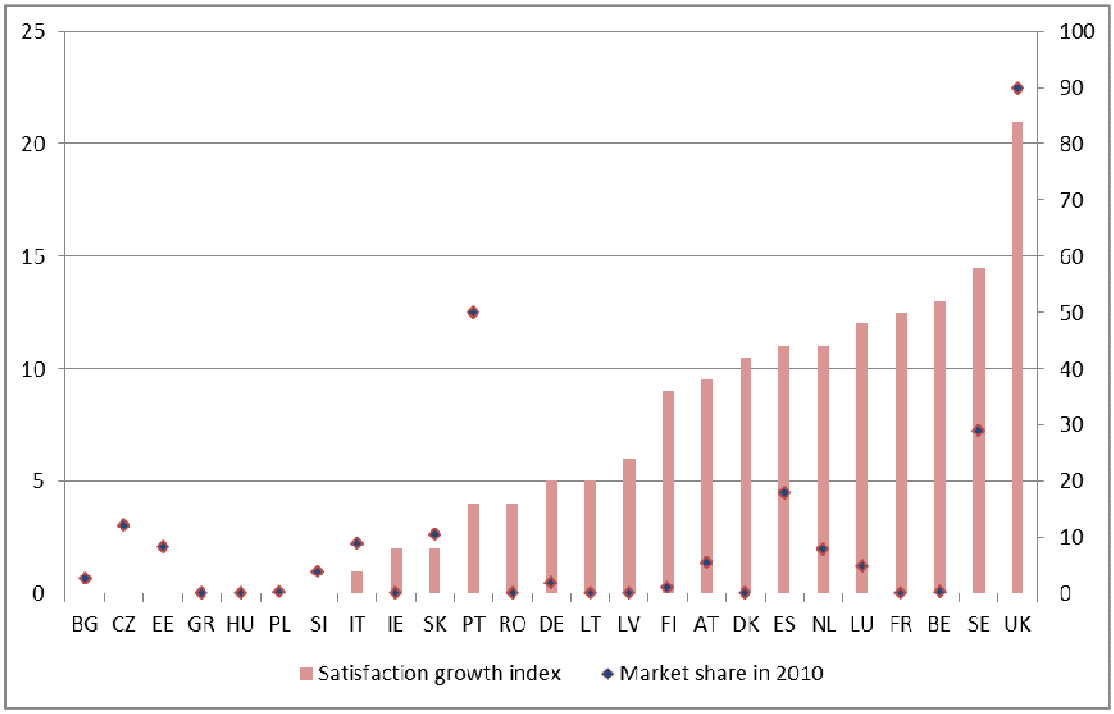


Table 10e- Evolution of satisfaction indicators

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