

Passenger transport by rail 1995 - 2002

Statistics in focus

TRANSPORT

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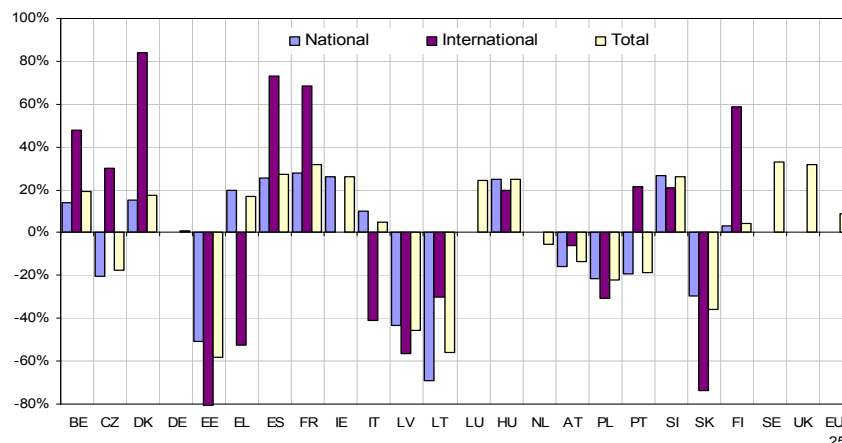
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The data presented in this publication were mainly collected via the Common Questionnaire on transport statistics of Eurostat, ECMT and UNECE. The Common Questionnaire proposes a large coverage of transport statistics by collecting aggregated data covering several modes of transport. As regards railways, a specific chapter is devoted to passenger transport. Data from the Structural Indicators, also based on the Common Questionnaire, have been used to complete the passenger-kilometre datasets. The same type of information will become available from the Regulation n°91/2003 of the European Parliament and of the Council and will be used from 2005 onwards. The publication presents data available for the period 1995-2002 from 23 countries (Cyprus and Malta are not considered as they have no railways) by type of rail transport (national and international) and offers indications on the network density, the utilisation rate as well as certain aspects on passengers' mobility.

Highlights

- Rail passenger transport reached a total performance of 351 billion passenger-kilometres at EU-25 level in 2002.
- In absolute terms, France recorded the highest number of passenger-kilometres followed by Germany, Italy and the United Kingdom.
- Between 1995 and 2002, Sweden (+33%), the United Kingdom and France (both +32%) experienced the highest increase in rail passenger transport whereas Estonia registered the biggest decline (-58%).
- The Czech Republic featured the highest rail network density with 122 km of network per 1 000 km² of national territory, followed by Belgium (115 km/1000 km²) and Luxembourg (106 km/1000 km²). The lowest density within the EU-25 can be found in Finland (17 km/1000 km²) and in Greece (18 km/ 1000 km²).
- The utilisation of the rail network for passenger transport was highest in the Netherlands with more than 5500 passenger-kilometres per kilometre of railway network in 2002.
- France and Denmark appear to be the countries where the population travels most by rail, with an average of 1 236 km and 1 070 km per inhabitant per year respectively.

Graph 1 : The development of rail passengers transport: 2002 compared to 1995 (%).



Source: Eurostat: Structural indicators and Eurostat/UNECE/ECMT Common Questionnaire on transport statistics. Note: DK: Including S-tog (commuter trains).



Total passenger transport performance

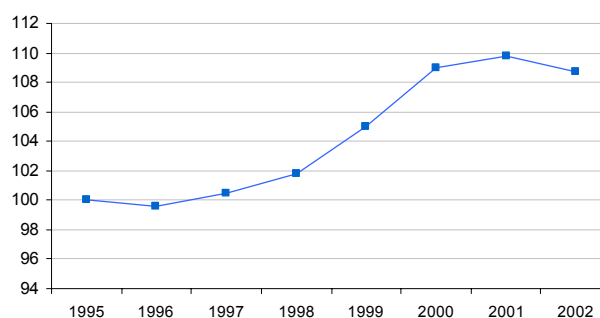
Passenger transport performance declined slightly from 354 billion passenger-kilometres in 2001 to 351 billion passenger-kilometres in 2002. The 2002 number represents an increase of 8.8% compared to 1995 (see Graph 2). Total passenger transport performance increased relatively fast between 1998 and 2000. In 2002, the amount of passenger-kilometres presented roughly the same value as in 2000.

The overall growth of rail transport at EU-level hides the disparities between the various Member States. Fourteen countries recorded an increase of passenger transport during the period observed, ranging from +0.5% (Germany) to +33.1% (Sweden) (see Table 1). The decreases registered ranged from -58% (Estonia) to -5.2% (the Netherlands). Noticeable declines were also reported for Lithuania and Latvia, where passenger transport was roughly reduced by half between 1995 and 2002 (-55.9% and -45.8% respectively).

In absolute terms, France recorded in 2002 the highest amount of passenger-kilometres performed, followed by Germany, Italy and the United-Kingdom. These four

countries together accounted for 66% of the total rail passenger transport performance. It should be noted that country data are not fully harmonised and mostly refer to declarations of the main railway companies, taking into account national and international transport. Nevertheless in some countries, transit transport is also included (DE, FI, SE, HU, LT, SI).

Graph 2: Evolution of rail passenger transport – EU-25 (1995=100).



Source: Eurostat: Structural indicators data.

Table 1: Total passenger transport – in million passenger-kilometres (pkm).

COUNTRY	1990	1995	1996	1997	1998	1999	2000	2001	2002	95-02 (%)
Belgium	6 539	6 757	6 788	6 980	7 097	7 354	7 755	8 038	8 259	22.2%
Czech Republic	13 313	8 005	8 111	7 721	7 018	6 954	7 266	7 299	6 597	-17.6%
Denmark (1)	:	4 888	4 821	5 173	5 365	5 310	5 537	5 721	5 754	17.7%
Germany	43 560 (2)	70 977	71 730	72 403	72 666	73 796	75 404	75 754	71 366	0.5%
Estonia	1 510	421	309	262	236	238	263	182	177	-58.0%
Greece	1 977	1 568	1 751	1 884	1 552	1 583	1 886	1 747	1 836	17.1%
Spain	15 476	15 313	15 605	16 579	17 478	18 143	18 571	19 191	19 480	27.2%
France	63 961	55 563	59 773	61 573	64 186	66 298	69 571	71 209	73 227	31.8%
Ireland	1 226	1 291	1 295	1 387	1 421	1 458	1 389	1 515	1 628	26.1%
Italy	44 709	43 859	44 782	43 591	41 392	43 424	47 133	46 752	45 957	4.8%
Cyprus	-	-	-	-	-	-	-	-	-	-
Latvia	5 366	1 373	1 149	1 154	1 059	984	715	706	744	-45.8%
Lithuania	3 640	1 130	953	842	800	745	611	533	498	-55.9%
Luxembourg	208	287	284	295	300	310	332	346	357	24.4%
Hungary	11 403	8 441	8 582	8 669	8 884	9 514	9 693	10 005	10 531	24.8%
Malta	-	-	-	-	-	-	-	-	-	-
Netherlands	:	16 350	14 092	13 875	14 900	15 000	15 400	15 500	15 500	-5.2%
Austria	8 575	9 628	9 689	8 140	7 971	7 997	8 206	8 240	8 301	-13.8%
Poland	50 373	26 635	19 807	19 928	20 553	21 518	24 093	22 469	20 749	-22.1%
Portugal	5 664	4 840	4 503	4 563	4 602	4 380	3 834	3 899	3 926	-18.9%
Slovenia	1 429	595	613	616	645	623	817	715	749	25.9%
Slovakia	6 381	4 200	3 752	3 057	3 092	2 968	2 870	2 805	2 682	-36.1%
Finland	3 331	3 184	3 254	3 376	3 377	3 415	3 405	3 282	3 318	4.2%
Sweden	6 600	6 839	6 970	7 039	7 230	7 720	8 301	8 792	9 100	33.1%
United Kingdom	:	30 251	32 366	34 950	36 517	38 738	38 420	39 327	39 900	31.9%
EU-25	:	322 395	320 979	324 057	328 341	338 470	351 472	354 027	350 636	8.8%

Source: Eurostat: Structural indicators data, UIC and national sources.

Note: (1) Including S-tog (commuter trains); (2) Excluding ex-GDR.

National rail transport

Globally, national rail transport represents more than 80% of total passenger transport in the Member States, except in Lithuania where the share of national and international passenger transport is equal.

On the basis of available data, it appears that national rail passenger transport has increased in nine countries during the 1995-2002 period and decreased in eight. The largest increase was registered in France (+27.7%) followed by Slovenia (+26.7%) and Spain (+25.7%). The most noticeable declines were recorded in Lithuania (-69.3%), in Estonia (-50.8%) and in Latvia (-43.6%).

In Italy and Finland, national rail transport remained fairly stable. In Hungary, a constant increase was recorded for the 1995-2002.

It is recalled that reported figures refer to the main companies only. In many countries, national passenger transport performance by rail is in reality higher than the presented figures, because the performance of small rail operators and transport on metropolitan rail networks (like S-Bahn in Germany, RER in Paris) are not covered in all countries. Urban rail networks (tram and underground/metro) are not included.

Table 2: National passenger transport – in million passenger-kilometres (pkm).

COUNTRY	1990	1995	1996	1997	1998	1999	2000	2001	2002	95-02 (%)
Belgium	:	5 785	5 679	5 834	5 830	6 033	6 317	6 599	6 790	17.4
Czech Republic	:	7 602	7 597	6 949	6 379	6 364	6 648	6 683	6 072	-20.1
Denmark	:	4 700	4 642	4 998	5 188	5 153	5 331	5 451	5 408	15.1
Germany	:	:	:	:	:	:	:	:	:	:
Estonia	:	319	231	189	188	206	237	160	157	-50.8
Greece	:	1 513	1 699	1 847	1 524	1 565	1 862	1 726	1 810	19.6
Spain	:	14 834	15 029	15 905	16 671	17 338	17 755	18 362	18 652	25.7
France	:	49 945	53 459	53 846	55 733	57 447	59 971	61 509	63 776	27.7
Ireland	:	:	:	:	:	:	:	:	:	:
Italy	40 512	39 247	40 178	38 930	36 940	39 220	:	43 857	43 234	10.2
Cyprus	-	-	-	-	-	-	-	-	-	-
Latvia	:	1 140	923	925	876	831	568	589	643	-43.6
Lithuania	:	746	613	521	533	501	335	263	229	-69.3
Luxembourg	169	:	:	:	:	:	:	:	:	:
Hungary	:	8 106	8 210	8 334	8 453	9 219	9 306	9 588	10 129	25.0
Malta	-	-	-	-	-	-	-	-	-	-
Netherlands	10 432	:	13 499	:	:	:	:	:	:	:
Austria	:	7 842	7 950	6 894	:	6 958	6 897	6 568	6 620	-15.6
Poland	46 839	25 769	18 960	19 148	19 920	20 834	23 347	21 701	20 151	-21.8
Portugal	5 560	4 764	4 434	4 488	4 521	4 141	3 727	3 754	3 835	-19.5
Slovenia	1 166	491	510	511	520	523	705	594	622	26.7
Slovakia	5 347	3 586	3 007	2 667	2 844	2 795	2 691	2 626	2 521	-29.7
Finland	3 253	3 133	3 199	3 311	3 314	3 364	3 345	3 217	3 237	3.3
Sweden	:	:	:	6 619	6 825	7 323	7 739	8 011	:	:
United Kingdom	:	30 227	32 337	34 919	36 490	38 708	38 393	39 299	:	:
EU-25	:	:	:	:	:	:	:	:	:	:

Source: Eurostat/UNECE/ECMT Common Questionnaire on transport statistics and Structural Indicators.

International rail transport

On the basis of data available for the 1995-2002 period, international passenger rail transport increased in nine countries and decreased in eight. The largest increases were registered in Denmark (+84.0%), followed by Spain (+72.9%) and France (+68.2%). The most noticeable declines were recorded in Estonia (-80.4%) and in Slovakia (-73.8%).

Heavily influenced by the Balkan conflict, figures for Greece show a considerable decrease during the 1995-2002 period.

In absolute terms, it is France that offered the highest transport performance. The steady increase of the French figures can partly be attributed to the introduction of new high-speed lines to destinations abroad.

Spain's transport performance figures globally show an increase but remain low in absolute terms. Reporting anomalies cannot be excluded here: due to a different rail gauge used by the Spanish railways, passengers often have to change trains at the Spanish/French border.

Table 3: International passenger transport – in million passenger-kilometres (pkm).

COUNTRY	1990	1995	1996	1997	1998	1999	2000	2001	2002	95-02 (%)
Belgium	:	972	1 109	1 146	1 267	1 321	1 438	1 439	1 470	51.2
Czech Republic	:	403	514	772	639	590	618	616	524	30.0
Denmark	:	188	179	175	177	157	206	270	346	84.0
Germany	:	:	:	:	3 365	3 378	3 084	3 367	2 344	:
Estonia	:	102	78	73	48	32	26	22	20	-80.4
Greece	:	55	52	37	28	18	24	21	26	-52.7
Spain	:	479	576	674	807	805	816	829	828	72.9
France	:	5 618	6 314	7 727	8 453	8 851	9 600	9 700	9 451	68.2
Ireland	:	:	:	:	:	:	:	:	:	:
Italy	:	4 612	4 604	4 660	4 452	4 204	4 235	2 895	2 723	-41.0
Cyprus	-	-	-	-	-	-	-	-	-	-
Latvia	:	233	226	229	183	153	147	117	101	-56.7
Lithuania	:	384	340	321	267	245	276	270	269	-29.9
Luxembourg	39	:	:	:	:	:	:	:	:	:
Hungary	:	335	372	335	431	295	387	417	402	20.0
Malta	-	-	-	-	-	-	-	-	-	:
Netherlands	628	569	593	647	:	:	:	:	:	:
Austria	:	1 786	1 739	1 246	1 059	1 039	1 309	1 672	1 680	-5.9
Poland	3 534	866	847	780	633	684	746	768	598	-30.9
Portugal	104	75	69	75	81	239	107	145	91	21.3
Slovenia	263	105	103	105	125	100	112	121	127	21.0
Slovakia	1 034	614	745	390	248	173	179	179	161	-73.8
Finland	78	51	55	65	63	51	60	65	81	58.8
Sweden	:	:	:	420	405	397	562	781	:	:
United Kingdom	:	24	29	31	27	30	27	28	:	:
EU-25	:	:	:	:	:	:	:	:	:	:

Source: Eurostat/UNECE/ECMT Common Questionnaire on transport statistics and Structural Indicators.

Network density and utilisation

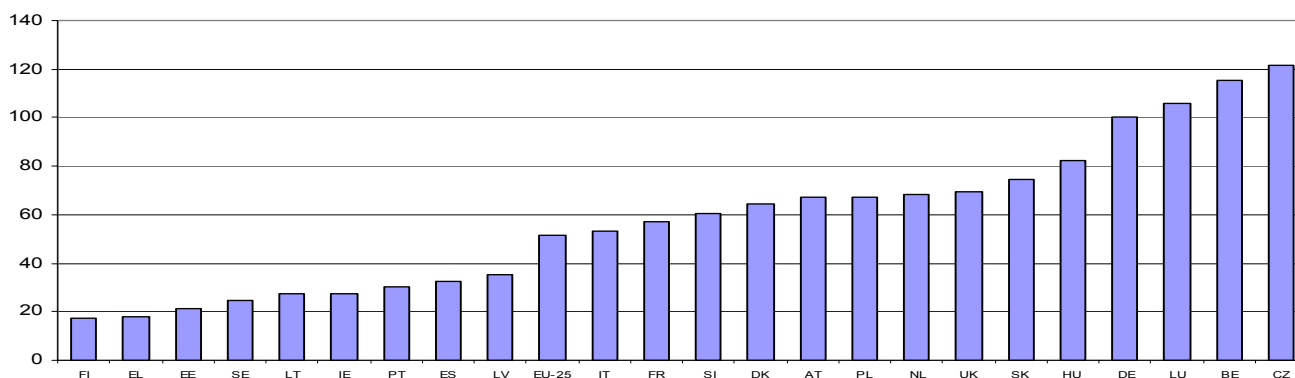
Between 1995 and 2002, the total length of the railway network decreased by 4.3% at EU-level to reach 203 946 km. The network density and the utilisation rate depend, among other things, on the topographic characteristics of the individual countries and their population densities. The following analysis by country aims at discovering relevant characteristics on the basis of the available data.

Germany, Luxembourg, Belgium and the Czech Republic offer the highest rail network densities, all above 100 km of network per 1000 km² of national

territory. The lowest density within the EU can be found in Finland (17 km/1000 km²) and in Greece (18 km/1000 km²).

Finland's low density can be explained by a very uneven population distribution. Greece's low density is mainly due to the geographical features of the country: numerous islands and extensive mountainous regions. In general, network density seems to be lower than average in the periphery of the European Union, including also Sweden, the Baltic countries, Ireland and the Iberian peninsula.

Graph 3: Network density in 2002 - in km/1000 km².



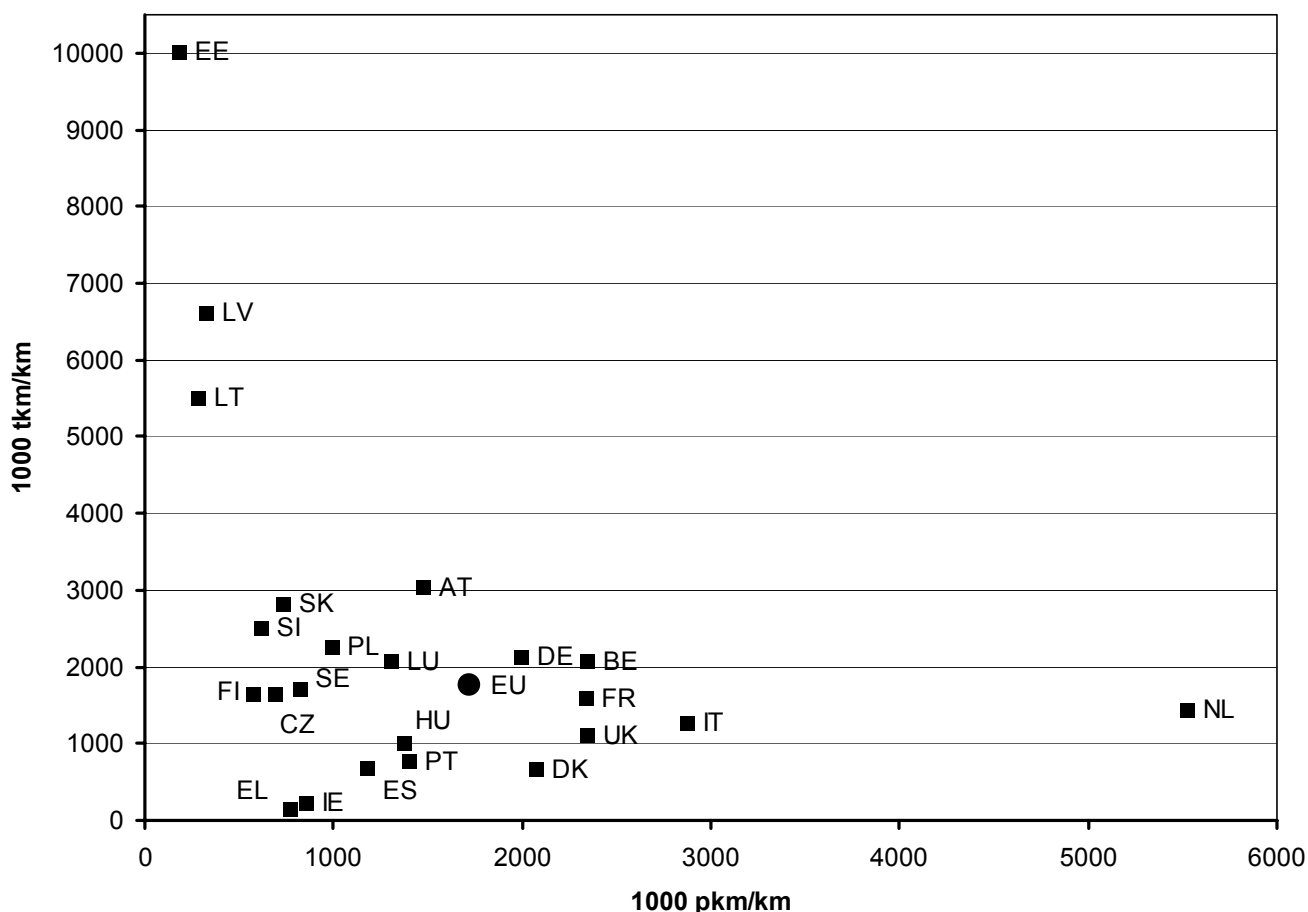
Note: Length of lines not always 2002 data.

The utilisation of the railway network is allocated to passenger and freight transport. Traffic performance (in train-kilometres) of freight and passenger trains could be an interesting indicator on the allocation of the railway network to passenger and freight transport, but such data are currently not available. The following analysis is therefore based on the tonne-km and passenger-km performance on each national railway network. It is, however, worth noting that passenger-km and tonne-km are not fully comparable units, even if on average, the passenger-km and tonne-km performances are equal at EU level (1703 pkm and 1759 tkm per kilometre of railways).

The Graph 4 shows that the passenger transport performance was very high in the Netherlands,

whereas the Estonian, Latvian and Lithuanian railways were dominated by extremely high freight transport performance. There is an interesting difference between the new and the old Member States: Germany, Belgium, France, Italy and the United Kingdom are clearly on the “passenger side” of the Graph 4 whereas the newer Member States, including Finland, Sweden and Austria, use railway network more intensively for freight transport. Irish and Greek railway networks seem to be less utilised than networks in other countries, with focus on passenger transport. On the basis of this comparison, the rail network seems to be very heavily utilised for both freight and passenger transport in Austria, Germany, Belgium, France and Italy.

Graph 4: Network utilisation for freight and passenger transport (in 1000 pkm and tkm per kilometre of railways).



Source: Total passenger and freight rail transport performance come from Structural Indicators and network length from the Common Questionnaire.

Average distance travelled per inhabitant

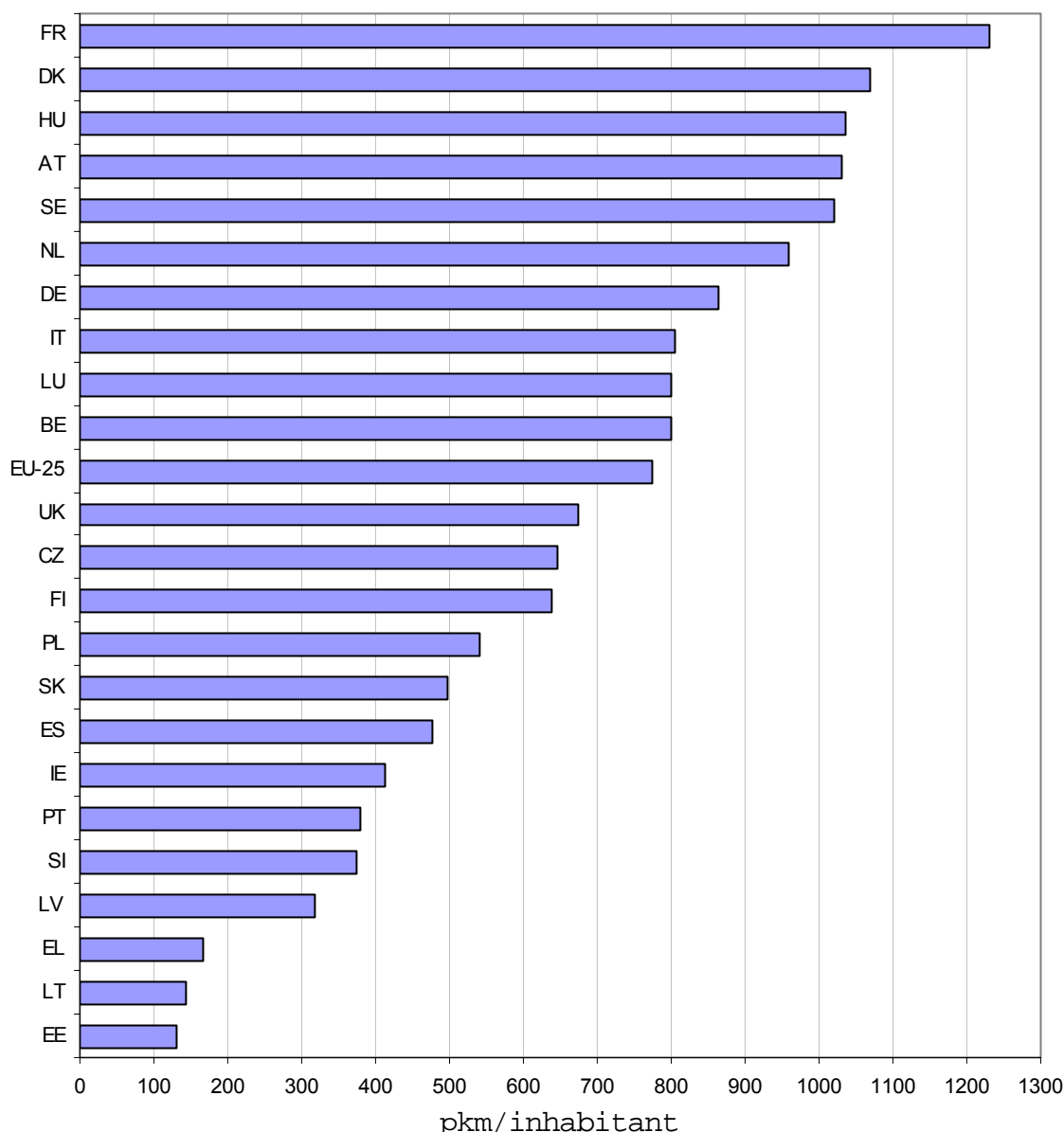
The average distance travelled per inhabitant allows completing the analysis of the rail network (see Graph 5). This indicator has been established by dividing the total number of passenger-kilometres by the population of the country in 2002.

France appears as the country where the inhabitants travelled most by rail with an average 1 236 km per inhabitant per year, almost twice the EU average (766

km). Denmark, Hungary, Austria and Sweden followed with more than 1000 km per inhabitant.

Compared to the network density, it is trivial that the average distance travelled by rail is lower in those countries where the rail network is less dense. Sweden is the only country where the network density is below the EU average but the average distance travelled per person exceeds the EU average.

Graph 5: Average distance travelled per inhabitant in 2002.



Source: Structural indicators based on Eurostat/UNECE/ECMT Common Questionnaire on transport statistics.

➤ ESSENTIAL INFORMATION – METHODOLOGICAL NOTES

Data availability

The figures presented in this publication have been extracted from the Eurostat/UNECE¹/ECMT² Common Questionnaire for transport statistics: especially, national and international transport of passenger-km and length of network. Most of data are included in Eurostat's New Cronos database, except the latest data received for the year 2002. Data provided by the Member States for the Structural Indicators and the Modal Split Indicators project have also been used. Additionally, some gaps have been filled in with the data of the UIC (Union internationale des chemins de fer).

Definitions of various kinds of rail transport

All the definitions used are taken from the Eurostat/UNECE/ECMT Glossary for transport statistics.

These definitions can be found on the Eurostat website www.europa.eu.int/comm/eurostat

At the ECMT homepage:

<http://www.oecd.org/cem/online/glossaries/index.htm>

Or at the UNECE homepage:

<http://www.unece.org/trans/main/wp6/transstatglossmain.html>

Rail passenger

Any person, excluding members of train crew, who makes a journey by railway vehicle.

Passengers making a journey by railway-operated ferry or bus services are excluded.

Rail network

All railways in a given area.

This does not include stretches of road or water even if rolling stock should be conveyed over such routes, e.g. by wagon-carrying trailers or ferries. Lines solely used for tourism purposes during the season are excluded, as are railways constructed solely to serve mines, forests or other industrial or agricultural undertakings and which are not open to public traffic.

National rail transport

Rail transport between two places (a place of embarkation and place of disembarkation) located in the same country irrespective of the country in which the railway vehicles were registered. It may involve transit

through a second country.

However, it should be noted that figures on national transport are only partially comparable. For some countries, the figures are liable to include passengers carried by secondary railway enterprises, whereas other countries take only the ridership of principal railway enterprises into account. Unfortunately, details about data sources are not always available. Another problem relates to urban journeys: in some countries, these are included in national transport figures, whereas other Member States take no account of them in their statistics.

International transport

Rail transport between two places (a place of embarkation and a place of disembarkation) in two different countries. It may involve transit through one or more additional countries.

Methodology

Network density

Network density is determined by dividing the length of the network by the area of the country. It is expressed in kilometres per 1000 km².

Network utilisation

The tonne-km and passenger-km performances were divided by the length of the network. Using this rate, network utilisation can be compared between the various Member States in 2002.

Average distance travelled per inhabitant

The passenger-km performance of 2002 was divided by the population of the Member State concerned. It is expressed in kilometres per inhabitant.

Notations:

- : not available
- not applicable

This publication was prepared with the assistance of Ms Sandrine Engel.

¹: United Nations – Economic Commission for Europe

²: European Conference of Ministers of Transport

Further Information:

➤ **Reference publications**

Title Everything on transport statistics - Data 1970-2002 (DVD)

Catalogue No KS-DX-04-001-3A-Z Price 20 EUR

➤ **Databases**

[EUROSTAT website/Transport/Data/Railway transport](http://europa.eu.int/comm/eurostat)

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