

2. SECTORAL TRENDS OF ENVIRONMENTAL SIGNIFICANCE

Road traffic, vehicles and networks

Transport is a major component of economic activity in and of itself and as a factor input to most other economic activities. It has many effects on the environment: air pollution raises concern mainly in urban areas where road traffic and congestion are concentrated, though road transport also contributes to regional and global pollution problems such as acidification and climate change; vehicles present waste management issues; and transport infrastructure exerts pressures on the environment through use of space and physical transformation of the natural environment (e.g. fragmentation of natural habitats).

Road transport dominates compared to other transport modes. The volume of road traffic depends on the demand for transport (largely determined by economic activity and transport prices) and on transport supply (e.g. the development of road infrastructure).

Definitions

The indicators presented here relate to:

- Road traffic and vehicle intensities, i.e. traffic volumes per unit of GDP and per kilometre (km) of road, and vehicle numbers per capita and per kilometre of road.
- Traffic volumes are expressed in billions of km travelled by road vehicles. Data refer to total km travelled on all roads on national territory by national vehicles, with the exception of two- and three-wheeled vehicles, caravans and trailers. They are usually estimates: the average number of km travelled each year by road vehicles is multiplied by the number of motor vehicles in use.
- Road infrastructure densities, i.e. the length of road and motorway networks per km² of land area. The data describe the situation on 31 December of each year.
- The total road network includes all roads in a given area, i.e. motorways, main or national highways, secondary or regional roads, and others. Private roads are excluded.
- Motorways are a class of roads differing from main or national, secondary or regional, and other roads, and characterised by not serving properties bordering on them.

The indicators should be read in connection with information on the modal split of transport and on the structure of the vehicle fleet. They should further be complemented with information on congestion rates and air pollution from road traffic.

Overview

Since 1990, countries' efforts in introducing cleaner vehicles have been offset by growth in vehicle numbers and the increased scale of their use. This resulted in additional fuel consumption, CO₂ emissions and road building. Road traffic, both freight and passenger, is expected to increase further in a number of OECD countries.

- GHG emissions from the transport sector increased until the latest recession. After falling from 2007, they were at about the same level in 2009 as in 2000.
- In all OECD countries, private cars dominate the passenger transport mode, although there are notable differences in the modal shares. Since 1990, growth in private car use followed the same trend as GDP, but increased at a slightly lower rate.
- Overall, transport activities remained coupled to GDP growth. In more than one-third of OECD countries, road traffic growth rates exceeded economic growth.

Traffic intensities per unit of GDP and vehicle availability per capita show wide variations among OECD countries:

- Road density has progressed at a significantly slower pace than economic activity in most OECD countries, while the motorway density has rapidly increased, particularly in the last decade. Road density trends are similar for OECD Americas and OECD Europe, but the motorway density increased at a much higher rate in Europe, a fact perhaps related to the enlargement of the European Union (+17% between 2000 and 2008).

See Annex A for trends.

Comparability

Indicators on road traffic need to be interpreted carefully; many underlying statistics are estimates. Data on vehicle stocks and road networks should exhibit a reasonably good level of comparability among countries and over time, with a few exceptions due to differences in the definition of roads and of goods vehicles across countries.

OECD totals are based on Secretariat estimates.

For additional notes, see Annex B.

Sources

Eurostat, World Road Statistics, North American Transportation Statistics, UNECE and national sources.

OECD/International Transport Forum (2012a), *Trends in the Transport Sector 2012*, OECD Publishing, Paris/ITF, http://dx.doi.org/10.1787/trend_transp-2012-en.

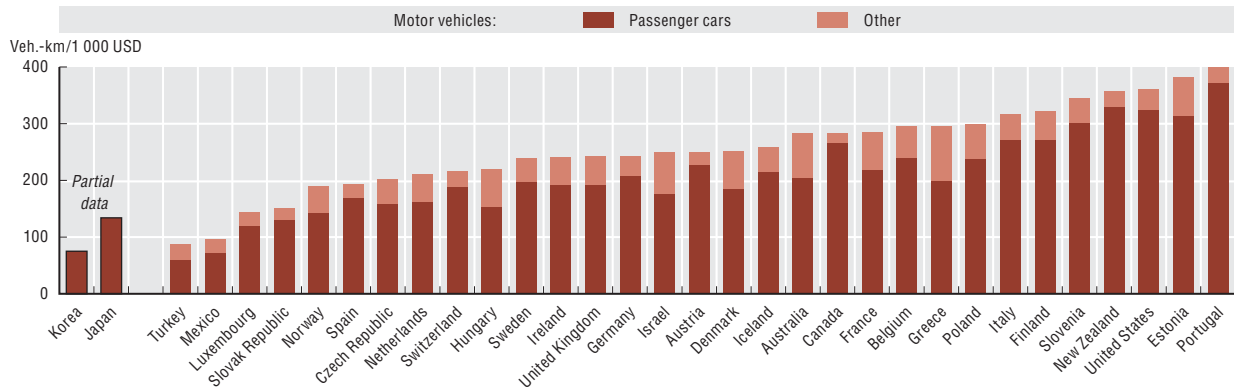
OECD/International Transport Forum (2012b), *Transport Outlook 2012: Seamless Transport for Greener Growth*, <http://internationaltransportforum.org/Pub/pdf/12Outlook.pdf>.

Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>.

2. SECTORAL TRENDS OF ENVIRONMENTAL SIGNIFICANCE

Road traffic, vehicles and networks

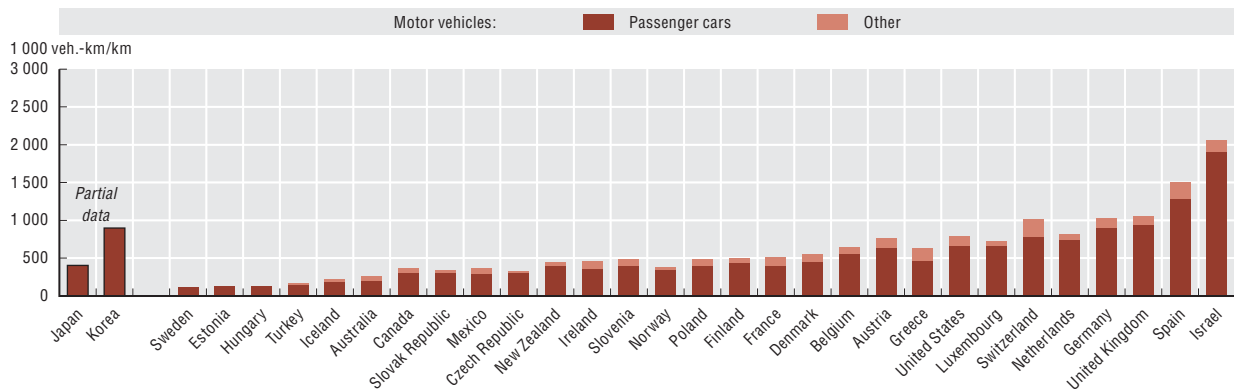
Figure 2.8. Road traffic intensity per unit of gross domestic product (GDP), 2011 or latest available



Source: Eurostat, World Road Statistics, UNECE and national sources.

StatLink <http://dx.doi.org/10.1787/888932977372>

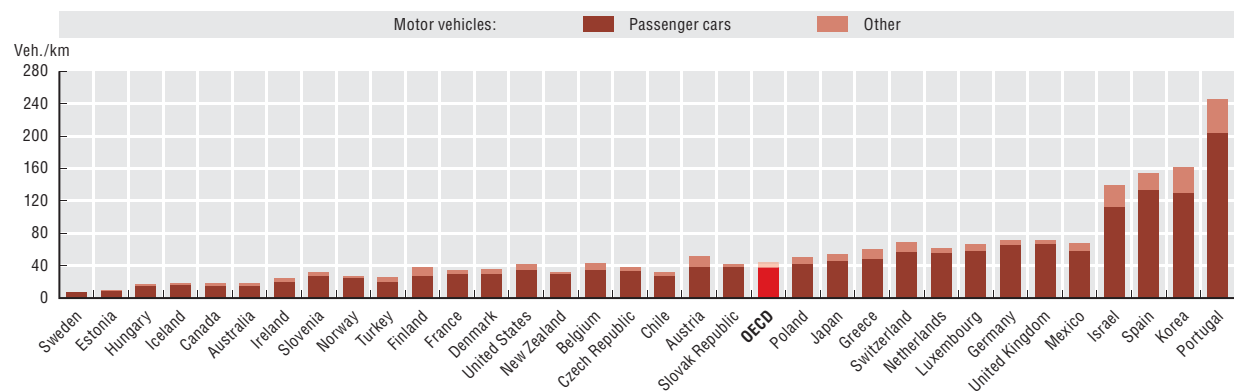
Figure 2.9. Road traffic intensity per network length, 2011 or latest available



Source: Eurostat, World Road Statistics, UNECE and national sources.

StatLink <http://dx.doi.org/10.1787/888932977391>

Figure 2.10. Motor vehicle density per network length, 2011 or latest available



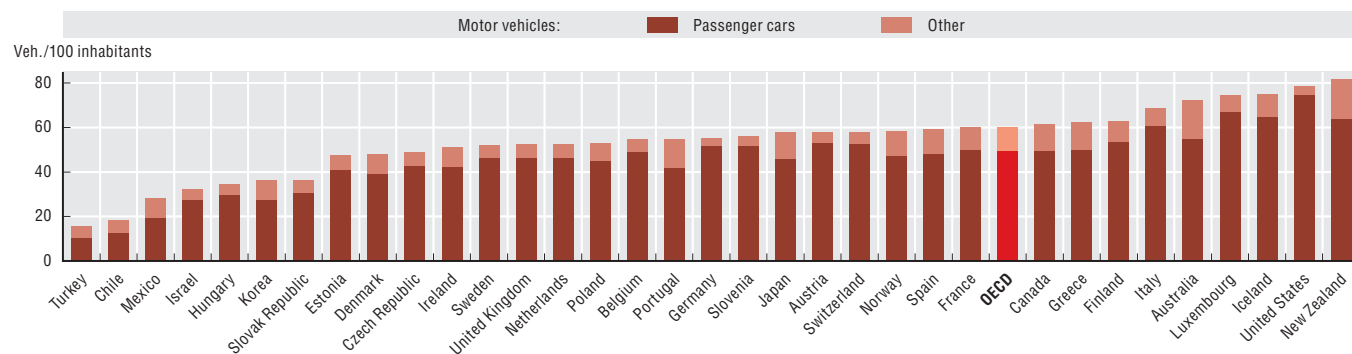
Source: Eurostat, International Transport Forum, World Road Statistics, North American Transportation Statistics, UNECE and national sources.

StatLink <http://dx.doi.org/10.1787/888932977410>

2. SECTORAL TRENDS OF ENVIRONMENTAL SIGNIFICANCE

Road traffic, vehicles and networks

Figure 2.11. Motor vehicle ownership, 2011 or latest available



Source: Eurostat, World Road Statistics, UNECE and national sources.

StatLink <http://dx.doi.org/10.1787/888932977429>

Table 2.3. Road traffic and vehicles in use

		Road traffic				Motor vehicles in use				GDP	
Total volume		Intensity		Goods vehicles		Total stock		Private car ownership			
Billions veh.-km	% change	Per unit of GDP	Per network length	Volume	Share in total traffic	1 000 vehicles	% change	Veh./100 inh.	% change	% change	
		Veh.-km/1 000 USD	1 000 veh.-km/km	% change	%						
2011 or latest	1990-2011 or latest	2011 or latest	2011 or latest	1990-2011 or latest	2011 or latest	2011 or latest	1990-2011 or latest	2011 or latest	1990-2011 or latest	1990-2011 or latest	
Australia ¹	231	63	286	281	132	26	16 368	67	55	23	93
Austria	76	70	252	697	83	7	4 847	31	53	37	53
Belgium	107	52	298	687	101	18	5 951	40	49	26	46
Canada ¹	333	40	286	320	-53	9	20 707	25	50	9	64
Chile ¹	..	..	..	..	..	..	3 155	..	13	..	199
Czech Republic	54	114	204	386	295	24	5 057	90	43	46	76
Denmark	45	33	254	614	59	24	2 663	40	39	26	38
Estonia	10	84	367	167	3	17	638	63	41	168	80
Finland	55	38	324	517	24	13	3 365	51	54	38	48
France	553	36	288	527	41	22	37 745	33	50	20	38
Germany ¹	682	40	246	1 059	94	11	44 998	38	52	34	32
Greece	82	114	298	698	..	19	7 062	182	50	190	44
Hungary ¹	38	..	223	189	47	19	3 453	56	30	59	44
Iceland ¹	3	74	261	230	-32	5	238	78	65	37	64
Ireland	44	79	244	454	79	19	2 283	140	43	87	147
Israel	50	..	252	2 700	..	24	2 453	151	27	57	153
Italy	551	57	320	..	49	13	41 093	37	61	26	22
Japan	..	..	..	..	-11	..	73 641	30	46	62	20
Korea	..	..	..	..	172	..	17 941	428	28	470	193
Luxembourg	5	43	145	784	81	15	375	78	67	34	117
Mexico	143	160	98	383	75	20	31 817	231	19	146	72
Netherlands	137	44	223	1 015	107	20	8 751	44	47	26	58
New Zealand	40	25	361	424	..	6	3 598	95	64	39	74
Norway	44	57	191	467	192	21	2 855	47	47	24	70
Poland	199	234	301	490	60	17	20 319	218	45	226	122
Portugal	95	193	404	..	-43	4	5 833	165	42	158	41
Slovak Republic	16	48	152	361	10	12	1 975	85	31	79	126
Slovenia	18	98	347	456	129	11	1 148	71	52	79	83
Spain	241	113	194	1 454	-5	10	27 314	89	48	56	63
Sweden	77	19	241	133	61	15	4 874	24	46	10	57
Switzerland	64	29	218	896	25	9	4 567	41	53	19	34
Turkey	72	168	87	200	94	27	11 266	377	10	245	127
United Kingdom ¹	496	21	245	1 182	6	5	32 270	36	46	28	54
United States ¹	4 776	39	365	742	96	10	242 264	28	74	2	66
OECD¹	10 953	55	289	673	49	13	745 718	60	49	30	57

1. See Annex B for country notes.

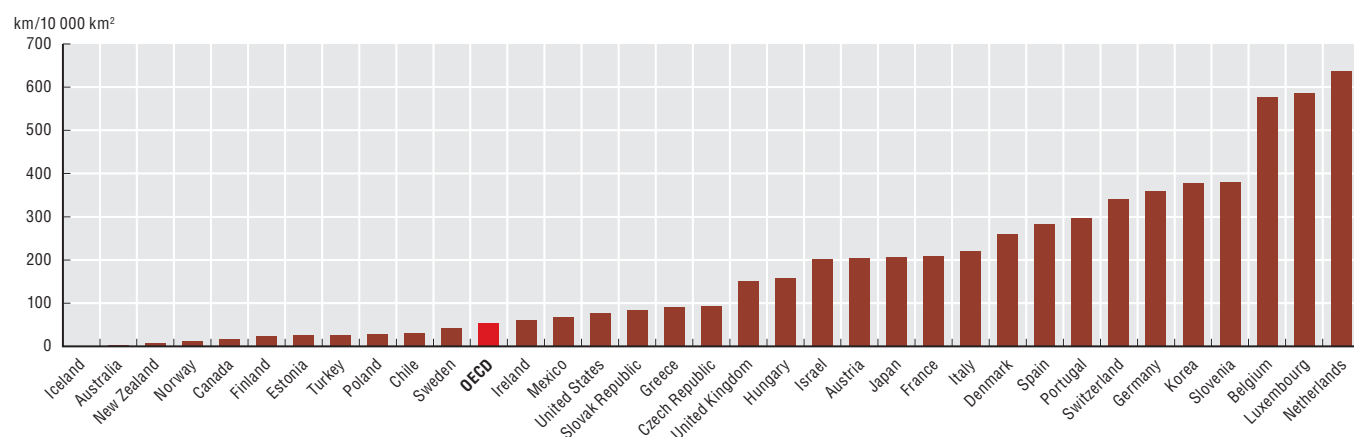
Source: Eurostat, World Road Statistics, UNECE and national sources.

StatLink <http://dx.doi.org/10.1787/888932978398>

2. SECTORAL TRENDS OF ENVIRONMENTAL SIGNIFICANCE

Road traffic, vehicles and networks

Figure 2.12. Motorway network density, 2011 or latest available



Source: FAO, Eurostat, World Road Statistics, North American Transportation Statistics, UNECE and national sources.

StatLink <http://dx.doi.org/10.1787/888932977448>

Table 2.4. Road and motorway networks

	All roads				Motorways				GDP
	Total length		Density		Total length		Density		% change
	1 000 km	% change	km/100 km ²		km	% change	km/10 000 km ²		
	2011 or latest	1990-2011	2000-11	2011 or latest	2011 or latest	1990-2011	2000-11	2011 or latest	1990-2011
Australia	823	1.4	2	11	1 509	26	0	2	93
Austria	115	8.1	7	137	1 719	19	4	205	53
Belgium	155	10.9	5	508	1 763	6	2	577	46
Canada ¹	1 042	17.9	16	10	17 000	13	2	17	64
Chile	78		-2	10	2 385		1	32	199
Czech Republic	131	4.8	2	166	734	106	42	93	76
Denmark	74	4.4	3	170	1 122	87	16	260	38
Estonia	58	33.2	12	129	115	180	24	25	80
Finland	106	37.3	3	31	779	246	32	23	48
France	1 050	30.4	5	191	11 466	68	14	209	38
Germany	644	1.2	0	180	12 819	18	9	359	32
Greece	117	188.1	2	89	1 197	530	61	91	44
Hungary	200	88.7	24	215	1 477	453	230	159	44
Iceland ¹	13	3.3	-1	13	0			0	64
Ireland	97	4.8	1	138	423	1 527	238	60	147
Israel	18	32.6	11	83	447		255	203	153
Italy				..	6 668	8	3	221	22
Japan	1 267	13.7	8	335	7 800	67	14	206	20
Korea	105	85.1	15	105	3 776	143	43	378	193
Luxembourg					152	95	32	587	117
Mexico ¹	374	56.4	13	19	13 041	641	26	66	72
Netherlands ¹	137	17.2	5	329	2 646	26	6	637	58
New Zealand	94	1.4	2	35	183	17	10	7	74
Norway	94	5.6	1	29	381	422	166	12	70
Poland	407	12.1	8	130	857	233	115	27	122
Portugal	22		0	90	2 737	766	65	297	41
Slovak Republic	43		1	88	416	117	40	85	126
Slovenia ¹	39		1	193	771	238	77	380	83
Spain ¹	166	6.3	1	33	14 262	204	49	282	63
Sweden ¹	578		-1	33	1 927	105	28	43	57
Switzerland ¹	71	0.7	0	173	1 406	22	8	341	34
Turkey	367	-3.6	-14	47	2 080	640	23	27	127
United Kingdom	420	9.8	0	172	3 673	15	2	151	54
United States ¹	6 435	4.6	1	67	75 479		0	77	66
OECD¹	16 272	9.5	4	44	197 023	38	13	55	57

1. See Annex B for country notes.

Source: FAO, Eurostat, World Road Statistics, North American Transportation Statistics, UNECE and national sources.

StatLink <http://dx.doi.org/10.1787/888932978417>



From:
Environment at a Glance 2013
OECD Indicators

Access the complete publication at:
<https://doi.org/10.1787/9789264185715-en>

Please cite this chapter as:

OECD (2013), "Road traffic, vehicles and networks", in *Environment at a Glance 2013: OECD Indicators*, OECD Publishing, Paris.

DOI: <https://doi.org/10.1787/9789264185715-20-en>

This work is published under the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein do not necessarily reflect the official views of OECD member countries.

This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

You can copy, download or print OECD content for your own use, and you can include excerpts from OECD publications, databases and multimedia products in your own documents, presentations, blogs, websites and teaching materials, provided that suitable acknowledgment of OECD as source and copyright owner is given. All requests for public or commercial use and translation rights should be submitted to rights@oecd.org. Requests for permission to photocopy portions of this material for public or commercial use shall be addressed directly to the Copyright Clearance Center (CCC) at info@copyright.com or the Centre français d'exploitation du droit de copie (CFC) at contact@cfcopies.com.