

	Motor vehicles				Passenger cars		Two-wheelers		Road traffic		Fuel prices	
	per 1,000 people		per kilometer of road		per 1,000 people		per 1,000 people		million vehicle kilometers		\$ per liter	
	1990	2002 <sup>a</sup>	1990	2002	1990	2002	1990	2002	1990	2002	Super 2004	Diesel 2004
Afghanistan	..	..	..	..	..	..	..	..	..	..	0.53	0.58
Albania	11	66	3	11	2	43	3	1	..	29	1.23	1.02
Algeria	..	..	..	..	..	..	..	..	..	..	0.32	0.15
Angola	19	..	..	..	14	..	..	..	..	..	0.39	0.29
Argentina	181	181	27	37	134	140	1	..	43,119	27,458	0.63	0.49
Armenia	5	..	2	..	1	..	..	..	..	258	0.68	0.56
Australia	530	..	11	..	450	..	18	18	138,501	..	0.85	0.83
Austria	421	534	30	22	387	494	71	74	..	..	1.32	1.19
Azerbaijan	52	52	7	17	36	43	5	1	..	..	0.41	0.18
Bangladesh	1	1	0	..	0	0	1	1	..	..	0.59	0.34
Belarus	61	..	13	..	59	156	..	53	10,026	4,046	0.62	0.44
Belgium	423	518	30	36	385	464	14	30	..	156,633	1.50	1.07
Benin	3	..	2	..	2	..	34	..	..	..	0.77	0.72
Bolivia	41	..	6	..	25	..	9	0	1,139	..	0.54	0.40
Bosnia and Herzegovina	114	..	24	..	101	..	..	..	..	..	0.97	0.97
Botswana	18	69	3	11	10	30	..	1	..	..	0.66	0.61
Brazil	88	..	8	..	..	..	..	28	..	..	0.84	0.49
Bulgaria	163	326	39	69	146	287	55	0	..	213	0.92	0.89
Burkina Faso	4	..	3	..	2	..	9	..	..	..	1.18	0.94
Burundi	..	..	..	..	..	..	..	..	..	..	1.04	1.08
Cambodia	1	380	0	49	0	312	9	134	314	7,210	0.79	0.61
Cameroon	10	..	3	..	6	..	..	..	..	..	0.95	0.83
Canada	605	582	20	20	468	559	12	0	..	73,500	0.68	0.68
Central African Republic	1	..	0	..	1	..	0	..	1,494	..	1.29	1.14
Chad	2	..	0	..	1	..	0	..	..	..	1.17	1.01
Chile	81	133	13	25	52	87	2	2	..	..	0.85	0.64
China	5	12	4	11	1	7	3	26	..	840,960	0.48	0.43
Hong Kong, China	66	77	253	279	42	57	4	5	8,192	10,781	1.54	1.00
Colombia	..	51	..	19	..	43	8	12	50,945	41,587	0.72	0.36
Congo, Dem. Rep.	..	..	..	..	..	..	..	..	..	..	0.92	0.81
Congo, Rep.	18	..	3	..	12	..	..	..	..	..	0.87	0.59
Costa Rica	87	..	7	..	55	..	14	22	..	572,038	0.78	0.56
Côte d'Ivoire	24	..	6	..	15	..	..	..	..	..	1.14	0.95
Croatia	..	311	..	49	..	280	..	19	..	16,609	1.24	1.13
Cuba	37	..	16	..	18	..	19	..	..	..	0.95	0.55
Czech Republic	246	325	46	26	228	356	113	74	..	7,753	1.08	1.07
Denmark	368	425	27	32	320	360	9	15	36,304	46,302	1.51	1.35
Dominican Republic	75	..	48	..	21	..	..	..	..	..	0.85	0.61
Ecuador	35	49	8	14	31	44	2	2	10,306	17,528	0.54	0.27
Egypt, Arab Rep.	29	..	33	..	21	..	6	..	..	..	0.28	0.10
El Salvador	33	..	14	..	17	..	0	..	2,002	4,244	0.65	0.58
Eritrea	1	..	1	..	1	..	..	..	..	..	0.80	0.40
Estonia	211	359	22	9	154	296	66	5	..	6,843	0.94	0.94
Ethiopia	1	2	2	4	1	1	0	0	..	1,642	0.60	0.42
Finland	441	481	29	32	386	419	12	43	39,750	48,750	1.54	1.21
France	494	592	32	39	405	491	55	..	422,000	544,400	1.42	1.25
Gabon	32	..	4	..	19	..	..	..	..	..	0.90	0.69
Gambia, The	13	..	5	..	6	..	..	..	..	..	0.75	0.73
Georgia	107	72	27	16	89	56	5	1	4,620	..	0.73	0.67
Germany	405	..	53	..	386	516	18	56	446,000	589,500	1.46	1.29
Ghana	..	..	..	..	..	..	..	..	..	15,320	0.49	0.43
Greece	248	..	22	..	171	254	120	220	..	79,377	1.14	1.23
Guatemala	..	52	..	119	..	1	..	12	..	4,547	0.68	0.63
Guinea	4	..	1	..	2	..	..	..	..	..	0.75	0.69
Guinea-Bissau	7	..	2	..	4	..	..	..	..	..	0.00	0.00
Haiti	..	..	..	..	..	..	..	..	..	..	0.88	0.60

# Traffic and congestion

	Motor vehicles				Passenger cars		Two-wheelers		Road traffic		Fuel prices	
	per 1,000 people		per kilometer of road		per 1,000 people		per 1,000 people		million vehicle kilometers		\$ per liter	
	1990	2002 <sup>a</sup>	1990	2002	1990	2002	1990	2002	1990	2002	Super 2004	Diesel 2004
Honduras	22	60	10	28	..	51	..	14	3,288	..	0.81	0.66
Hungary	212	302	21	19	188	259	16	0	22,898	23,260	1.30	1.22
India	4	9	2	..	2	6	15	0	..	..	0.87	0.62
Indonesia	16	..	10	..	7	..	34	59	..	..	0.27	0.18
Iran, Islamic Rep.	34	..	14	..	25	..	36	..	..	..	0.09	0.02
Iraq	14	..	6	..	1	..	..	..	..	..	0.03	0.01
Ireland	270	408	10	..	227	349	6	8	24,205	33,915	1.29	1.29
Israel	210	283	74	111	174	230	8	12	18,212	37,293	1.05	0.80
Italy	529	606	99	74	476	542	45	125	344,726	67,916	1.53	1.31
Jamaica	..	..	..	..	..	..	..	..	..	..	0.63	0.57
Japan	469	581	52	63	283	428	146	106	628,581	790,820	1.26	0.95
Jordan	60	..	26	..	..	..	0	..	1,098	526,677	0.61	0.19
Kazakhstan	76	89	8	16	50	72	..	5	18,248	3,824	0.52	0.38
Kenya	12	11	5	4	10	8	1	1	5,170	..	0.92	0.76
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..	0.78	0.61
Korea, Rep.	79	292	60	120	48	205	32	59	30,464	67,266	1.35	0.95
Kuwait	..	..	..	..	..	..	..	..	..	4,450	0.24	0.24
Kyrgyz Republic	44	..	10	..	44	38	..	4	5,220	1,917	0.48	0.43
Lao PDR	9	..	3	..	6	..	18	..	..	..	0.71	0.63
Latvia	135	314	6	12	106	266	76	10	3,932	..	0.94	0.90
Lebanon	321	..	183	..	300	..	13	..	..	..	0.71	0.43
Lesotho	11	..	4	..	3	..	..	..	..	..	0.73	0.68
Liberia	14	..	4	..	7	..	..	..	..	..	0.75	0.77
Libya	..	..	..	..	..	..	..	..	..	..	0.09	0.08
Lithuania	160	373	12	17	133	346	52	6	..	1,345	1.03	1.02
Macedonia, FYR	132	..	30	..	121	..	1	..	3,102	..	1.17	0.92
Madagascar	6	..	2	..	4	..	..	..	41,500	..	1.05	0.79
Malawi	4	..	4	..	2	..	..	..	..	..	0.95	0.88
Malaysia	124	..	26	79	101	..	167	238	..	..	0.37	0.22
Mali	3	..	2	..	2	..	..	..	..	..	1.16	0.90
Mauritania	10	..	3	..	7	..	..	..	..	..	0.80	0.59
Mauritius	59	117	35	69	44	86	54	104	..	78	0.74	0.56
Mexico	119	159	41	44	82	107	3	..	55,095	..	0.59	0.45
Moldova	53	92	17	26	48	74	45	22	..	691	0.45	0.31
Mongolia	21	41	1	2	6	26	22	10	340	2,093	0.61	0.67
Morocco	37	54	15	27	28	44	1	1	..	17,370	1.10	0.70
Mozambique	4	..	2	..	3	..	..	..	1,889	..	0.88	0.79
Myanmar	..	..	..	..	..	..	..	..	..	..	0.12	0.10
Namibia	71	82	1	2	39	38	1	1,877	1,896	2,317	0.68	0.65
Nepal	..	..	..	..	..	..	..	..	..	..	0.72	0.49
Netherlands	405	428	58	58	368	384	44	25	90,150	109,955	1.62	1.23
New Zealand	524	731	19	..	436	613	24	21	..	35,200	0.77	0.41
Nicaragua	19	37	5	10	10	16	3	5	108	441	0.69	0.64
Niger	6	..	4	..	5	..	..	..	178	..	1.02	0.91
Nigeria	30	..	21	..	12	..	5	..	..	..	0.39	0.45
Norway	458	520	22	26	380	417	48	61	..	33,482	1.61	1.44
Oman	130	..	9	..	83	..	3	..	..	..	0.31	0.26
Pakistan	6	8	4	..	4	7	8	11	..	234,515	0.62	0.41
Panama	75	..	18	..	60	..	2	..	..	..	0.54	0.48
Papua New Guinea	..	..	..	..	..	..	..	..	..	..	0.94	0.64
Paraguay	..	..	..	..	..	..	..	..	..	..	0.62	0.51
Peru	..	46	..	15	..	30	..	9	..	64	1.12	0.76
Philippines	10	34	4	13	7	9	6	18	6,189	9,548	0.52	0.34
Poland	168	307	18	32	138	259	36	21	59,608	138,100	1.20	1.09
Portugal	222	459	34	..	162	426	5	55	28,623	47,943	1.38	1.08
Puerto Rico	..	..	..	..	..	..	..	..	..	278,699	0.51	0.52



	Motor vehicles				Passenger cars		Two-wheelers		Road traffic		Fuel prices	
	per 1,000 people		per kilometer of road		per 1,000 people		per 1,000 people		million vehicle kilometers		\$ per liter	
	1990	2002 <sup>a</sup>	1990	2002	1990	2002	1990	2002	1990	2002	Super 2004	Diesel 2004
Romania	72	168	11	19	56	144	13	12	23,907	42,684	0.96	0.91
Russian Federation	87	176	14	48	65	132	..	43	..	59,522	0.55	0.45
Rwanda	2	..	1	..	1	..	..	..	..	..	0.98	0.99
Saudi Arabia	165	..	19	..	98	..	0	..	..	..	0.24	0.10
Senegal	11	14	6	2	8	11	0	0	..	4,013	1.10	0.90
Serbia and Montenegro	137	..	31	..	133	..	3	..	..	1,428	0.74	0.66
Sierra Leone	10	..	4	..	7	..	2	0	996	..	0.76	0.89
Singapore	130	..	142	..	89	..	40	..	..	..	0.89	0.55
Slovak Republic	194	279	57	35	163	247	61	9	..	534	1.17	1.19
Slovenia	306	481	42	47	289	438	8	25	5,620	9,744	1.12	1.11
Somalia	2	..	1	..	1	..	..	..	..	..	0.35	0.29
South Africa	139	..	26	..	97	94	8	4	..	..	0.81	0.80
Spain	360	539	43	33	309	441	79	80	100,981	224,370	1.21	1.10
Sri Lanka	21	34	4	..	7	..	24	49	3,468	15,630	0.72	0.41
Sudan	9	..	22	..	8	..	..	..	..	..	0.47	0.29
Swaziland	66	86	18	21	35	41	3	0	..	..	0.76	0.73
Sweden	464	500	29	21	426	452	11	34	61,040	72,000	1.51	1.37
Switzerland	491	549	46	56	449	507	114	102	48,660	59,007	1.29	1.37
Syrian Arab Republic	26	29	10	..	10	9	..	6	..	..	0.46	0.13
Tajikistan	3	..	1	..	0	..	..	..	..	1,730	0.67	0.59
Tanzania	5	..	2	..	1	..	..	..	..	..	0.93	0.87
Thailand	46	..	36	..	14	..	86	..	45,769	..	0.54	0.37
Togo	24	..	11	..	16	..	8	..	..	..	0.85	0.83
Trinidad and Tobago	..	..	..	..	..	..	..	..	..	..	0.35	0.24
Tunisia	48	79	19	..	23	53	..	1	..	19,231	0.68	0.39
Turkey	50	90	8	18	34	66	10	15	27,041	51,664	1.44	1.12
Turkmenistan	..	..	..	..	..	..	..	..	..	..	0.02	0.01
Uganda	2	..	..	..	1	..	0	3	..	..	1.02	0.88
Ukraine	63	135	20	..	63	108	..	0	59,500	12,190	0.55	0.44
United Arab Emirates	121	..	52	..	97	..	..	..	..	..	0.28	0.28
United Kingdom	400	391	64	62	341	384	14	3	399,000	462,400	1.56	1.60
United States	758	779	30	34	573	..	17	0	2,527,441	4,462,811	0.54	0.57
Uruguay	138	..	45	..	122	..	74	..	..	..	1.13	0.71
Uzbekistan	..	..	..	..	..	..	..	..	..	..	0.35	0.30
Venezuela, RB	..	..	..	..	..	..	..	..	..	..	0.04	0.02
Vietnam	..	..	..	..	..	..	45	..	..	..	0.48	0.32
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..	1.17	0.70
Yemen, Rep.	34	..	8	..	14	..	..	..	8,681	..	0.19	0.09
Zambia	14	..	3	..	8	..	..	..	..	..	1.10	0.98
Zimbabwe	..	..	..	..	..	..	..	..	..	..	0.61	0.65
<b>World</b>	<b>118 w</b>	<b>135 w</b>			<b>91 w</b>	<b>105 w</b>					<b>0.78 m</b>	<b>0.64 m</b>
Low income	5	..			3	..					0.78	0.65
Middle income	38	56			25	42					0.68	0.55
Lower middle income	25	39			13	28					0.68	0.49
Upper middle income	149	196			114	153					0.76	0.58
Low & middle income	26	36			16	27					0.74	0.61
East Asia & Pacific	9	17			4	10					0.53	0.40
Europe & Central Asia	97	172			79	138					0.94	0.90
Latin America & Carib.	100	..			..	..					0.69	0.56
Middle East & N. Africa	48	..			31	..					0.31	0.14
South Asia	4	10			2	6					0.67	0.45
Sub-Saharan Africa	21	..			14	..					0.85	0.77
High income	505	601			396	436					1.29	1.10
Europe EMU	429	..			379	483					1.42	1.23

a. Data are for 2002 or most recent year available.

## About the data

Traffic congestion in urban areas constrains economic productivity, damages people's health, and degrades the quality of their lives. The particulate air pollution emitted by motor vehicles—the dust and soot in exhaust—is proving to be far more damaging to human health than was once believed. (For information on particulate matter and other air pollutants, see table 3.13.)

In recent years ownership of passenger cars has increased, and the expansion of economic activity has led to the transport by road of more goods and services over greater distances (see table 5.9). These developments have increased demand for roads and vehicles, adding to urban congestion, air pollution, health hazards, traffic accidents, and injuries.

Congestion, the most visible cost of expanding vehicle ownership, is reflected in the indicators in the table. Other relevant indicators—such as average vehicle speed in major cities or the cost of traffic congestion, which takes a heavy toll on economic productivity—are not included because data are incomplete or difficult to compare. The data in the table—except for those on fuel prices—are compiled by the International Road Federation (IRF) through questionnaires sent to national organizations. The IRF uses a hierarchy of sources to gather as much information as possible. The primary sources are national road associations. Where such an association lacks data or does not respond, other agencies are contacted, including road directorates, ministries of transport or public works, and central statistical offices. As a result, the compiled data are of uneven quality. The coverage of each indicator may differ across countries because of differences in definitions. Comparability also is limited when time-series data are reported. Moreover, the data do not capture

the quality or age of vehicles or the condition or width of roads. Thus comparisons over time and between countries should be made with caution.

The data on fuel prices are compiled by the German Agency for Technical Cooperation (GTZ) from its global network of regional offices and representatives as well as other sources, including the Allgemeiner Deutscher Automobil Club (for Europe) and a project of the Latin American Energy Organization (OLADE, for Latin America). Local prices have been converted to U.S. dollars using the exchange rate on the survey date as listed in the international monetary table of the Financial Times. For countries with multiple exchange rates the market, parallel, or black market rate was used rather than the official exchange rate.

## Definitions

- Motor vehicles include cars, buses, and freight vehicles but not two-wheelers. Population figures refer to the midyear population in the year for which data are available. Roads refer to motorways, highways, main or national roads, and secondary or regional roads. A motorway is a road specially designed and built for motor traffic that separates the traffic flowing in opposite directions.
- Passenger cars refer to road motor vehicles, other than two-wheelers, intended for the carriage of passengers and designed to seat no more than nine people (including the driver).
- Two-wheelers refer to mopeds and motorcycles.
- Road traffic is the number of vehicles multiplied by the average distances they travel.
- Fuel prices refer to the pump prices of the most widely sold grade of gasoline and of diesel fuel. Prices have been converted from the local currency to U.S. dollars (see About the data).

## 3.12a

High-income countries have many more passenger cars per 1,000 people than developing countries do



Source: Table 3.12.

## Data sources

The data on vehicles and traffic are from the IRF's electronic files and its annual World Road Statistics. The data on fuel prices are from the GTZ's electronic files.