



# 5.9

## Transport services

	Roads				Railways			Ports	Air		
	Total road network km	Paved roads %	Passengers carried million passenger-km	Goods hauled million ton-km	Rail lines total route-km	Passengers carried million passenger-km	Goods hauled million ton-km	Port container traffic thousand TEU	Registered carrier departures worldwide thousands	Passengers carried thousands	Air freight million ton-km
	2000-06 <sup>a</sup>	2000-06 <sup>a</sup>	2000-06 <sup>a</sup>	2000-06 <sup>a</sup>	2000-07 <sup>a</sup>	2000-07 <sup>a</sup>	2000-07 <sup>a</sup>	2007	2007	2007	2007
Afghanistan	42,150	29.3	..	..	..	..	..	..	..	..	..
Albania	18,000	39.0	197	2,200	423	51	53	..	4	213	0
Algeria	108,302	70.2	..	..	3,572	821	1,429	..	44	2,813	17
Angola	51,429	10.4	166,045	4,709	..	..	..	..	5	277	73
Argentina	231,374	30.0	..	..	35,753	..	12,871	1,874	79	7,037	133
Armenia	7,504	89.0	2,344	432	711	27	678	..	6	606	7
Australia	812,972	..	290,280	168,630	9,639	1,309	46,036	6,229	354	48,729	2,348
Austria	107,262	100.0	69,000	26,411	5,818	9,051	18,996	..	151	9,141	454
Azerbaijan	59,141	49.4	10,892	7,536	2,122	1,109	10,374	..	13	1,441	12
Bangladesh	239,226	9.5	..	..	2,855	4,164	817	978	11	1,243	89
Belarus	94,797	88.6	9,343	15,779	5,494	9,366	47,933	..	6	344	1
Belgium	152,256	78.2	130,868	51,572	3,374	9,932	8,149	10,258	158	3,641	740
Benin	19,000	9.5	..	..	..	..	..	..	..	..	..
Bolivia	62,479	7.0	..	..	..	..	..	..	24	1,745	9
Bosnia and Herzegovina	21,846	52.3	..	300	1,103	88	1,138	..	..	..	..
Botswana	25,798	32.6	..	..	..	..	..	..	7	228	0
Brazil	1,751,868	5.5	..	..	29,487	..	232,297	6,454	650	45,287	1,478
Bulgaria	40,231	98.4	13,688	11,843	4,027	2,424	5,242	..	12	855	3
Burkina Faso	92,495	4.2	..	..	..	..	..	..	2	78	0
Burundi	12,322	10.4	..	..	..	..	..	..	..	..	..
Cambodia	38,257	6.3	201	3	650	45	92	..	4	308	2
Cameroon	51,346	8.4	..	..	974	370	1,055	..	12	453	26
Canada	1,408,900	39.9	493,814	184,774	57,042	2,858	353,227	4,605	1,189	52,104	1,430
Central African Republic	24,307	..	..	..	..	..	..	..	..	..	..
Chad	40,000	0.8	..	..	..	..	..	..	..	..	..
Chile	79,604	20.2	..	..	6,008	732	3,957	2,681	101	7,191	1,295
China	3,456,999	70.7	1,013,085	975,420	63,637	689,616	2,211,246	104,559	1,754	183,613	11,190
Hong Kong, China	1,983	100.0	..	..	..	..	..	23,998	130	21,796	8,326
Colombia	164,278	..	157	39,726	2,137	..	7,751	1,897	186	11,631	1,070
Congo, Dem. Rep.	153,497	1.8	..	..	3,641	79	331	..	..	..	..
Congo, Rep.	17,289	5.0	..	..	795	211	234	..	..	..	..
Costa Rica	35,983	25.2	..	..	..	..	..	977	37	1,017	10
Côte d'Ivoire	80,000	8.1	..	..	639	10	675	710	..	..	..
Croatia	28,788	89.0	3,537	10,502	2,722	1,611	3,574	175	22	2,288	3
Cuba	60,856	49.0	5,121	2,133	..	..	..	..	12	857	31
Czech Republic	128,512	100.0	90,055	46,600	9,491	6,855	16,972	..	76	4,870	33
Denmark	72,361	100.0	70,635	11,058	2,133	5,724	2,030	775	14	582	1
Dominican Republic	12,600	49.4	..	..	..	..	..	884	..	..	..
Ecuador	43,670	14.8	11,410	5,453	..	..	..	671	45	2,631	6
Egypt, Arab Rep.	92,370	81.0	..	..	5,195	40,837	3,917	5,311	51	5,829	207
El Salvador	10,029	19.8	..	..	..	..	..	..	22	2,537	22
Eritrea	4,010	21.8	..	..	..	..	..	..	..	..	..
Estonia	57,016	22.7	3,190	7,641	962	273	8,153	..	9	651	1
Ethiopia	39,477	12.7	219,113	2,456	..	..	..	..	38	2,290	160
Finland	78,941	65.3	70,900	26,400	5,899	3,778	10,434	1,564	119	8,289	490
France	951,500	100.0	724,000	197,000	29,488	83,299	40,635	4,928	825	61,551	6,425
Gabon	9,170	10.2	..	..	810	76	2,202	..	9	535	70
Gambia, The	3,742	19.3	16	..	..	..	..	..	..	..	..
Georgia	20,329	38.6	5,200	570	1,513	809	7,379	..	5	272	3
Germany	644,480	100.0	1,062,700	251,372	33,897	74,740	91,013	16,713	1,127	106,102	8,529
Ghana	57,614	14.9	..	..	977	85	242	..	..	..	..
Greece	117,533	91.8	..	18,360	2,551	1,954	835	1,820	138	10,206	72
Guatemala	14,095	34.5	..	..	..	..	..	853	..	..	..
Guinea	44,348	9.8	..	..	..	..	..	..	..	..	..
Guinea-Bissau	3,455	27.9	..	..	..	..	..	..	..	..	..
Haiti	4,160	24.3	..	..	..	..	..	..	..	..	..

	Roads				Railways			Ports	Air		
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	2000-06 <sup>a</sup>	2000-06 <sup>a</sup>	2000-06 <sup>a</sup>	2000-06 <sup>a</sup>	2000-07 <sup>a</sup>	2000-07 <sup>a</sup>	2000-07 <sup>a</sup>	2007	2007	2007	2007
Honduras	13,600	20.4	..	..	..	..	..	553	..	..	..
Hungary	159,600	43.9	13,300	9,090	7,730	6,953	8,537	..	46	2,592	20
India	3,316,452	47.4	..	..	63,327	694,764	480,993	7,372	569	51,897	968
Indonesia	391,009	55.4	..	..	..	25,535	4,698	4,481	358	30,406	485
Iran, Islamic Rep.	172,927	72.8	..	..	7,265	12,549	20,542	1,723	138	13,916	95
Iraq	45,550	84.3	..	..	..	..	..	..	..	..	..
Ireland	96,602	100.0	..	15,900	1,919	2,007	129	1,175	350	50,738	131
Israel	17,719	100.0	..	..	958	1,831	1,175	1,957	47	4,663	1,133
Italy	487,700	100.0	97,560	192,700	16,668	47,113	22,340	10,435	432	37,831	1,550
Jamaica	22,056	73.3	..	..	..	..	..	2,017	21	1,527	15
Japan	1,196,999	79.3	947,562	327,632	20,050	252,579	23,145	19,008	657	99,842	8,435
Jordan	7,694	100.0	..	..	293	..	517	..	29	2,246	277
Kazakhstan	91,563	91.4	100,865	53,816	14,205	13,613	191,189	..	19	1,295	17
Kenya	63,265	14.1	..	22	1,917	226	1,399	..	32	2,857	298
Korea, Dem. Rep.	25,554	2.8	..	..	..	..	..	..	2	105	2
Korea, Rep.	102,062	88.6	97,854	12,545	3,399	31,596	10,927	16,640	243	36,655	9,040
Kuwait	5,749	85.0	..	..	..	..	..	750	21	2,628	239
Kyrgyz Republic	18,500	91.1	5,874	1,336	..	..	..	..	5	275	1
Lao PDR	29,811	13.4	..	..	..	..	..	..	10	328	3
Latvia	69,675	100.0	2,780	2,729	2,269	983	16,735	..	29	1,410	13
Lebanon	6,970	..	..	..	..	..	..	948	11	969	74
Lesotho	5,940	18.3	..	..	..	..	..	..	..	..	..
Liberia	10,600	6.2	..	..	..	..	..	..	..	..	..
Libya	83,200	57.2	..	..	..	..	..	..	13	1,204	0
Lithuania	79,987	28.3	43,167	18,134	1,766	409	14,373	..	11	424	1
Macedonia, FYR	13,182	..	842	4,100	947	109	961	..	2	209	0
Madagascar	49,827	11.6	..	..	..	..	..	..	37	616	24
Malawi	15,451	45.0	..	..	710	26	38	..	6	155	1
Malaysia	93,109	79.8	..	..	1,667	2,193	1,355	14,873	185	21,326	2,662
Mali	18,709	18.0	..	..	733	196	189	..	..	..	..
Mauritania	11,066	26.8	..	..	..	..	..	..	2	155	0
Mauritius	2,021	100.0	..	..	..	..	..	..	12	1,278	203
Mexico	356,945	50.0	436,999	209,392	26,662	84	75,600	3,071	310	20,953	482
Moldova	12,838	85.5	1,640	1,577	..	..	..	..	4	274	1
Mongolia	49,250	3.5	557	242	1,810	1,289	9,219	..	6	381	5
Morocco	57,625	61.9	..	1,256	1,907	3,659	5,837	..	69	4,624	45
Mozambique	30,400	18.7	..	..	..	..	..	..	11	443	6
Myanmar	27,000	11.9	..	..	..	..	..	..	29	1,663	3
Namibia	42,237	12.8	47	591	..	..	..	..	7	431	0
Nepal	17,280	56.9	..	..	..	..	..	..	7	528	8
Netherlands	126,100	90.0	..	77,100	2,776	15,546	4,331	11,287	260	28,857	5,006
New Zealand	93,576	65.6	..	..	..	..	4,078	2,029	219	12,546	868
Nicaragua	18,669	11.4	..	..	..	..	..	..	..	..	..
Niger	18,550	20.5	..	..	..	..	..	..	..	..	..
Nigeria	193,200	15.0	..	..	3,528	174	77	..	17	1,363	10
Norway	92,864	77.5	58,247	14,966	..	..	..	..	..	..	..
Oman	34,965	27.7	..	..	..	..	..	2,877	..	..	..
Pakistan	260,420	65.4	263,788	129,249	7,791	25,621	5,907	1,936	51	5,439	314
Panama	11,643	34.6	..	..	..	..	..	4,070	33	2,029	36
Papua New Guinea	19,600	3.5	..	..	..	..	..	..	22	919	23
Paraguay	29,500	50.8	..	..	..	..	..	..	10	459	0
Peru	78,986	13.9	..	..	..	119	1,159	1,178	62	5,273	162
Philippines	200,037	9.9	..	..	491	144	1	3,835	65	8,818	286
Poland	423,997	69.7	247,388	136,490	19,419	17,081	43,548	..	89	4,270	83
Portugal	82,900	86.0	..	23,187	2,838	3,610	2,585	1,138	138	10,320	323
Puerto Rico	25,645	95.0	..	10	..	..	..	1,695	..	..	..



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Romania	198,817	30.2	7,985	51,531	10,646	7,417	13,471	1,411	51	3,004	6
Russian Federation	933,000	80.9	..	25,200	84,158	173,411	2,090,337	2,657	468	33,188	1,224
Rwanda	14,008	19.0	..	..	..	..	..	..	..	..	..
Saudi Arabia	221,372	21.5	..	..	1,412	345	1,630	4,209	151	17,141	1,230
Senegal	13,576	29.3	..	..	906	88	384	..	0	539	0
Serbia	38,799	62.7	3,865	452	3,819	762	4,234	..	20	1,042	4
Sierra Leone	11,300	8.0	..	..	..	..	..	..	0	19	10
Singapore	3,262	100.0	..	..	..	..	..	27,932	85	19,566	7,981
Slovak Republic	43,761	87.0	32,214	22,114	3,629	2,148	9,331	..	24	2,679	45
Slovenia	38,562	100.0	850	12,112	1,228	812	3,603	..	20	861	2
Somalia	22,100	11.8	..	..	..	..	..	..	..	..	..
South Africa	364,131	17.3	..	434	24,487	14,856	108,513	3,734	153	12,870	939
Spain	666,292	99.0	397,117	132,868	14,832	21,225	11,064	11,148	658	60,665	1,204
Sri Lanka	97,286	81.0	21,067	..	1,200	4,682	135	3,382	21	3,101	325
Sudan	11,900	36.3	..	..	5,478	40	766	..	9	598	46
Swaziland	3,594	30.0	..	..	..	..	..	..	..	..	..
Sweden	697,794	58.2	106,583	40,123	9,821	6,467	11,500	1,439	..	..	..
Switzerland	71,298	100.0	93,480	16,337	3,619	15,771	16,736	..	139	12,298	1,105
Syrian Arab Republic	38,923	100.0	589	..	2,043	744	2,552	..	19	1,371	18
Tajikistan	27,767	..	414	25,604	..	..	14,529	..	8	581	2
Tanzania	78,891	8.6	..	..	4,460 <sup>b</sup>	433 <sup>b</sup>	728 <sup>b</sup>	..	5	251	1
Thailand	180,053	98.5	..	..	4,044	9,195	4,037	6,200	130	21,192	2,455
Timor-Leste	..	..	..	..	..	..	..	..	..	..	..
Togo	7,520	31.6	..	..	..	..	..	..	..	..	..
Trinidad and Tobago	8,320	51.1	..	..	..	..	..	..	15	1,086	47
Tunisia	19,232	65.8	..	16,611	2,218	1,407	2,197	..	22	2,055	19
Turkey	426,951	..	187,592	177,399	8,697	5,553	9,680	4,488	197	22,895	466
Turkmenistan	24,000	81.2	..	..	..	..	..	..	16	1,851	11
Uganda	70,746	23.0	..	..	259	..	218	..	0	55	34
Ukraine	169,323	97.4	51,820	23,895	21,891	53,230	240,810	979	30	1,736	18
United Arab Emirates	4,030	100.0	..	..	..	..	..	13,160	..	..	..
United Kingdom	398,351	100.0	736,000	163,000	16,208	48,511	22,110	9,383	1,045	101,623	6,154
United States	6,544,257	65.3	7,814,575	2,116,532	191,771	..	2,820,061 <sup>c</sup>	41,625	9,816 <sup>d</sup>	744,302 <sup>d</sup>	40,618 <sup>d</sup>
Uruguay	77,732	10.0	..	..	3,003	12	331	..	9	569	4
Uzbekistan	81,600	87.3	..	1,200	4,005	2,339	19,281	..	22	1,940	66
Venezuela, RB	96,155	33.6	..	..	336	..	81	1,332	141	5,495	2
Vietnam	222,179	..	..	..	3,147	4,659	3,881	3,937	60	7,194	258
West Bank and Gaza	5,147	100.0	..	..	..	..	..	..	..	..	..
Yemen, Rep.	71,300	8.7	..	..	..	..	..	..	14	1,073	41
Zambia	91,440	22.0	..	..	1,273	183	..	..	6	62	0
Zimbabwe	97,267	19.0	..	..	..	..	..	..	7	255	8
<b>World</b>		<b>35.9 m</b>	<b>.. m</b>	<b>.. m</b>	<b>.. s</b>	<b>.. m</b>	<b>.. m</b>	<b>465,594 s</b>	<b>24,654 s</b>	<b>2,058,936 s</b>	<b>124,628 s</b>
<b>Low income</b>		12.1	..	..	..	..	..	..	422	30,709	1,320
<b>Middle income</b>		47.7	..	..	..	1,295	6,608	193,415	6,368	554,986	26,769
Lower middle income		39.0	..	..	..	1,025	3,046	142,654	3,711	359,286	17,503
Upper middle income		41.8	..	..	..	2,309	13,471	50,761	2,658	195,701	9,266
<b>Low &amp; middle income</b>		23.1	..	..	..	..	..	200,266	6,791	585,695	28,088
East Asia & Pacific		11.4	..	..	..	2,893	1,902	137,886	2,699	277,535	17,475
Europe & Central Asia		..	10,062	15,477	187,104	1,975	13,471	..	970	76,387	1,916
Latin America & Carib.		22.0	..	..	..	..	..	27,286	1,684	112,436	4,726
Middle East & N. Africa		81.0	..	..	..	2,533	2,552	..	378	33,077	699
South Asia		56.9	..	..	..	25,621	5,907	13,668	638	59,108	1,378
Sub-Saharan Africa		11.9	..	..	..	..	..	..	421	27,153	1,895
<b>High income</b>		87.0	..	46,600	..	6,467	11,064	265,328	17,864	1,473,241	96,540
Euro area		100.0	97,840	39,474	124,917	9,051	9,883	72,409	3,871	335,641	24,098

a. Data are for the latest year available in the period shown. b. Includes Tazara railway. c. Refers to class 1 railways only. d. Covers only carriers designated by the U.S. Department of Transportation as major and national air carriers.

## About the data

Transport infrastructure—highways, railways, ports and waterways, and airports and air traffic control systems—and the services that flow from it are crucial to the activities of households, producers, and governments. Because performance indicators vary widely by transport mode and focus (whether physical infrastructure or the services flowing from that infrastructure), highly specialized and carefully specified indicators are required. The table provides selected indicators of the size, extent, and productivity of roads, railways, and air transport systems and of the volume of traffic in these modes as well as in ports.

Data for transport sectors are not always internationally comparable. Unlike for demographic statistics, national income accounts, and international trade data, the collection of infrastructure data has not been “internationalized.” But data on roads are collected by the International Road Federation (IRF), and data on air transport by the International Civil Aviation Organization (ICAO).

National road associations are the primary source of IRF data. In countries where a national road association is lacking or does not respond, other agencies are contacted, such as road directorates, ministries of transport or public works, or central statistical offices. As a result, definitions and data collection methods and quality differ, and the compiled data are of uneven quality. Moreover, the quality of transport service (reliability, transit time, and condition of goods delivered) is rarely measured, though it may be as important as quantity in assessing an economy’s transport system.

Unlike the road sector, where numerous qualified motor vehicle operators can operate anywhere on the road network, railways are a restricted transport system with vehicles confined to a fixed guideway. Considering the cost and service characteristics, railways generally are best suited to carry—and can effectively compete for—bulk commodities and containerized freight for distances of 500–5,000 kilometers, and passengers for distances of 50–1,000 kilometers. Below these limits road transport tends to be more competitive, while above these limits air transport for passengers and freight and sea transport for freight tend to be more competitive. The railways indicators in the table focus on scale and output measures: total route-kilometers, passenger-kilometers, and goods (freight) hauled in ton-kilometers.

Measures of port container traffic, much of it commodities of medium to high value added, give

some indication of economic growth in a country. But when traffic is merely transshipment, much of the economic benefit goes to the terminal operator and ancillary services for ships and containers rather than to the country more broadly. In transshipment centers empty containers may account for as much as 40 percent of traffic.

The air transport data represent the total (international and domestic) scheduled traffic carried by the air carriers registered in a country. Countries submit air transport data to ICAO on the basis of standard instructions and definitions issued by ICAO. In many cases, however, the data include estimates by ICAO for nonreporting carriers. Where possible, these estimates are based on previous submissions supplemented by information published by the air carriers, such as flight schedules.

The data cover the air traffic carried on scheduled services, but changes in air transport regulations in Europe have made it more difficult to classify traffic as scheduled or nonscheduled. Thus recent increases shown for some European countries may be due to changes in the classification of air traffic rather than actual growth. For countries with few air carriers or only one, the addition or discontinuation of a home-based air carrier may cause significant changes in air traffic.

## Definitions

- **Total road network** covers motorways, highways, main or national roads, secondary or regional roads, and all other roads in a country.
- **Paved roads** are roads surfaced with crushed stone (macadam) and hydrocarbon binder or bituminized agents, with concrete, or with cobblestones.
- **Passengers carried by road** are the number of passengers transported by road times kilometers traveled.
- **Goods hauled by road** are the volume of goods transported by road vehicles, measured in millions of metric tons times kilometers traveled.
- **Rail lines** are the length of railway route available for train service, irrespective of the number of parallel tracks.
- **Passengers carried by railway** are the number of passengers transported by rail times kilometers traveled.
- **Goods hauled by railway** are the volume of goods transported by railway, measured in metric tons times kilometers traveled.
- **Port container traffic** measures the flow of containers from land to sea transport modes and vice versa in twenty-foot-equivalent units (TEUs), a standard-size container. Data cover coastal shipping as well as international journeys. Transshipment traffic is counted as two lifts at the intermediate port (once to off-load and again as an outbound lift) and includes empty units.
- **Registered carrier departures worldwide** are domestic takeoffs and takeoffs abroad of air carriers registered in the country.
- **Passengers carried by air** include both domestic and international passengers of air carriers registered in the country.
- **Air freight** is the volume of freight, express, and diplomatic bags carried on each flight stage (operation of an aircraft from takeoff to its next landing), measured in metric tons times kilometers traveled.

## Data sources

Data on roads are from the IRF’s *World Road Statistics*, supplemented by World Bank staff estimates. Data on railways are from a database maintained by the World Bank’s Transport and Urban Development Department, Transport Division, based on data from the International Union of Railways. Data on port container traffic are from Containerisation International’s *Containerisation International Yearbook*. Data on air transport are from the ICAO’s *Civil Aviation Statistics of the World* and ICAO staff estimates.