



	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
	1999-2003 ^a	1999-2003 ^a	1999-2003 ^a	1999-2003 ^a	2000-04 ^a	2000-04 ^a	2000-04 ^a	2004	2004	2004	2004
Afghanistan	34,789	23.7	..	..	..	..	..	..	3	150	8
Albania	18,000	39.0	197	..	447	89	32	..	5	189	0
Algeria	104,000	68.9	..	..	3,572	950	1,945	311.1	49	3,236	21
Angola	51,429	10.4	166,045	4,709	2,761	..	..	..	5	223	64
Argentina	215,471	29.4	..	..	35,754	..	..	1,251.9	100	6,851	115
Armenia	7,633	..	1,867	280	711	48	452	..	6	510	7
Australia	811,601	..	..	..	9,474	1,347	41,314	5,129.8	325	41,597	1,898
Austria	133,718	100.0	82,330	26,411	5,801	8,375	19,047	..	137	7,619	502
Azerbaijan	27,016	47.0	9,862	53,738	2,122	584	6,980	..	11	1,007	34
Bangladesh	239,226	9.5	..	..	2,745	..	..	625.2	7	1,647	180
Belarus	93,055	100.0	10,739	12,710	5,498	13,893	40,331	..	6	274	1
Belgium	149,757	78.2	118,340	32,450	3,536	8,676	8,725	7,292.9	154	3,265	713
Benin	6,787	20.0	..	..	438	66	86	..	1	46	7
Bolivia	60,762	7.1	..	..	3,698	..	..	..	29	1,853	24
Bosnia and Herzegovina	21,846	52.3	..	332	1,032	53	293	..	5	73	0
Botswana	25,233	35.1	..	..	888	171	842	..	8	214	0
Brazil	1,724,929	5.5	..	..	30,403	..	..	5,058.6	486	35,264	1,499
Bulgaria	102,016	92.0	8,596	..	4,259	2,628	5,212	..	8	476	3
Burkina Faso	12,506	16.0	..	..	622	..	..	..	1	62	0
Burundi	14,480	7.1	..	..	..	..	..	..	..	..	..
Cambodia	12,323	16.2	201	308	650	45	92	..	4	163	4
Cameroon	80,932	6.7	..	..	974	308	1,115	..	10	358	23
Canada	1,408,900	..	..	184,774	49,422	3,122	323,600	3,926.1	989	40,701	1,657
Central African Republic	23,810	..	..	..	..	..	..	..	1	46	7
Chad	33,400	0.8	..	..	..	..	..	..	1	46	7
Chile	79,604	20.2	..	..	2,035	820	1,935	1,473.5	86	5,464	1,094
China	1,809,829	79.5	769,560	709,950	61,015	551,196	1,828,548	74,540.1 ^b	1,216	119,789	8,188
Hong Kong, China	1,831	100.0	..	..	..	..	..	..	111	17,893	6,932
Colombia	112,988	14.4	..	..	3,154	..	..	1,073.1	156	8,965	1,079
Congo, Dem. Rep.	157,000	..	..	..	4,499	140	491	..	5	95	7
Congo, Rep.	12,800	9.7	..	..	1,026	76	307	..	5	52	0
Costa Rica	35,889	22.5	..	..	848	..	..	734.1	34	884	10
Côte d'Ivoire	50,400	9.7	..	..	639	148	129	670.0	1	46	7
Croatia	28,588	84.6	3,716	8,241	2,726	1,213	2,733	..	20	1,336	2
Cuba	60,856	49.0	..	..	4,382	..	..	..	11	773	33
Czech Republic	127,672	100.0	90,055	475	9,511	6,553	16,214	..	66	4,219	41
Denmark	71,847	100.0	61,258	17,766	2,141	5,390	1,888	997.5	100	6,429	175
Dominican Republic	12,600	49.4	..	..	1,743	..	..	537.3	..	..	..
Ecuador	43,197	16.9	10,276	5,170	966	..	..	564.1	12	478	1
Egypt, Arab Rep.	64,000	78.1	..	..	5,150	40,837	4,188	1,422.2	42	4,584	248
El Salvador	10,029	19.8	..	..	283	..	..	..	26	2,535	25
Eritrea	4,010	21.8	..	..	306	..	..	..	..	..	..
Estonia	56,849	23.4	2,299	6,364	959	192	9,567	..	8	510	1
Ethiopia	33,856	12.9	219,113	2,456	..	..	..	..	30	1,403	117
Finland	78,216	61.0	67,300	27,800	5,741	3,352	10,105	1,308.1	112	7,201	325
France	891,290	100.0	744,900	266,500	29,246	74,014	45,121	3,947.0	685	48,583	5,584
Gabon	32,333	3.7	..	..	650	92	1,949	..	8	433	62
Gambia, The	3,742	19.3	16	..	..	..	..	..	..	..	..
Georgia	20,247	39.4	4,987	22,500	1,565	401	5,065	..	4	203	3
Germany	231,581	100.0	1,062,700	227,197	34,729	70,286	77,640	12,457.7	942	82,156	8,064
Ghana	47,787	17.9	..	..	977	85	242	..	1	96	7
Greece	116,470	91.8	5,889	18,360	2,449	1,668	588	1,877.7	138	9,277	58
Guatemala	14,095	34.5	..	..	886	..	..	817.3	..	..	..
Guinea	44,348	9.8	..	..	837	..	..	..	..	..	..
Guinea-Bissau	4,400	10.3	..	..	..	..	..	..	..	..	..
Haiti	4,160	24.3	..	..	..	..	..	..	..	..	..

Transport services

5.8

	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
	1999–2003 ^a	1999–2003 ^a	1999–2003 ^a	1999–2003 ^a	2000–04 ^a	2000–04 ^a	2000–04 ^a	2004	2004	2004	2004
Honduras	13,600	20.4	..	..	699	..	..	555.5	..	..	..
Hungary	159,568	43.9	13,300	12,505	8,000	7,380	8,713	..	47	2,546	24
India	3,851,440	62.6	..	..	63,221	541,208	381,241	4,266.9	302	23,797	689
Indonesia	368,360	58.0	..	..	..	..	..	5,566.6	319	26,785	434
Iran, Islamic Rep.	178,152	66.3	..	..	6,405	10,012	18,182	1,220.7	104	12,234	98
Iraq	45,550	84.3	..	..	2,339	570	1,682	..	..	..	..
Ireland	95,736	100.0	39,440	6,500	1,919	1,582	399	924.9	262	34,783	124
Israel	17,237	100.0	..	..	493	1,423	1,173	1,607.9	34	4,954	1,355
Italy	479,688	100.0	759,200	184,756	16,235	46,768	21,581	8,473.2	384	35,932	1,393
Jamaica	18,700	70.1	..	..	272	..	..	1,360.6	23	2,008	38
Japan	1,177,278	77.7	955,412	312,028	20,060	242,300	22,200	15,937.5	646	103,116	8,938
Jordan	7,364	100.0	..	..	291	..	522	..	18	1,660	254
Kazakhstan	258,029	95.9	55,676	382	13,770	11,816	163,420	..	12	843	13
Kenya	63,942	12.1	..	22	1,917	226	1,399	..	26	2,005	193
Korea, Dem. Rep.	31,200	6.4	..	..	5,214	..	..	..	2	95	2
Korea, Rep.	97,252	76.8	9,404	565	3,129	28,641	10,641	14,299.4	233	33,390	7,969
Kuwait	4,450	80.6	..	..	..	..	..	..	19	2,317	224
Kyrgyz Republic	18,500	91.1	5,274	797	424	50	561	..	6	246	5
Lao PDR	32,620	14.1	1,290	121	..	..	..	..	9	276	2
Latvia	69,919	100.0	2,550	2,324	2,270	810	16,877	..	16	594	1
Lebanon	7,300	84.9	..	..	401	..	..	299.4	12	1,087	85
Lesotho	5,940	18.3	..	..	..	..	..	..	..	..	..
Liberia	10,600	6.2	..	..	490	..	..	..	..	..	..
Libya	83,200	57.2	..	..	2,757	..	..	..	8	850	0
Lithuania	78,893	27.4	20,982	11,462	1,782	443	11,637	..	11	448	1
Macedonia, FYR	8,684	63.8	..	..	699	94	426	..	2	211	0
Madagascar	49,827	11.6	..	..	883	10	12	..	18	514	13
Malawi	28,400	18.5	..	..	710	25	88	..	6	114	1
Malaysia	71,814	77.9	..	..	1,667	1,931	1,224	11,264.4	171	19,268	2,599
Mali	15,100	12.1	..	..	733	196	189	..	1	46	7
Mauritania	7,660	11.3	..	..	717	..	..	..	2	128	0
Mauritius	2,015	100.0	..	..	..	..	..	381.5	15	1,089	220
Mexico	349,038	33.5	399,000	195,200	26,656	..	..	1,905.9	333	21,240	403
Moldova	12,730	86.2	1,640	1,577	1,120	355	2,715	..	5	201	1
Mongolia	49,250	3.5	761	1,889	1,810	1,073	6,452	..	7	318	6
Morocco	57,694	56.4	..	18	1,907	2,614	5,535	560.7	42	3,004	62
Mozambique	30,400	18.7	..	..	2,072	137	808	..	9	299	5
Myanmar	27,966	78.0	2,028	9,493	..	..	..	..	25	1,408	3
Namibia	42,237	12.8	47	591	..	..	..	..	7	281	56
Nepal	15,905	53.9	..	..	59	..	..	..	6	449	7
Netherlands	116,500	90.0	193,900	481	2,811	14,097	4,026	8,482.4	250	25,304	4,773
New Zealand	92,662	63.8	..	..	3,898	..	3,853	1,614.9	197	11,305	749
Nicaragua	18,658	11.4	..	..	6	..	..	..	1	61	1
Niger	10,100	7.9	..	..	..	..	..	..	1	46	7
Nigeria	194,394	30.9	..	..	3,505	973	39	512.6	10	682	10
Norway	91,916	77.5	56,573	13,614	4,077	2,477	2,668	..	260	13,230	177
Oman	32,800	30.0	..	..	..	..	..	2,515.5	32	3,267	235
Pakistan	254,410	60.0	209,959	..	7,791	23,911	5,004	1,101.5	50	5,097	402
Panama	11,643	34.6	..	..	355	..	..	2,428.8	27	1,501	34
Papua New Guinea	19,600	3.5	..	..	..	..	..	..	19	759	23
Paraguay	29,500	50.8	..	..	441	..	..	..	9	373	0
Peru	78,672	13.1	..	72	2,123	..	..	695.6	43	2,666	200
Philippines	200,037	9.9	..	..	..	..	..	3,673.3	57	7,406	301
Poland	423,997	69.7	29,996	85,989	19,576	18,626	47,847	428.4	78	3,493	77
Portugal	72,600	86.0	98,328	20,470	2,849	3,415	2,675	865.7	127	9,052	237
Puerto Rico	24,023	94.0	..	10	96	..	..	1,671.3	..	..	..



5.8

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
	1999-2003 ^a	1999-2003 ^a	1999-2003 ^a	1999-2003 ^a	2000-04 ^a	2000-04 ^a	2000-04 ^a	2004	2004	2004	2004
Romania	198,817	50.4	5,283	25,350	10,844	8,633	14,262	..	30	1,338	5
Russian Federation	537,289	67.4	164	5,702	85,542	157,100	1,664,300	1,368.0	399	25,949	1,416
Rwanda	12,000	8.3	..	..	..	..	..	..	..	..	..
Saudi Arabia	152,044	29.9	..	..	1,390	364	1,173	3,185.7	113	14,943	957
Senegal	13,576	29.3	..	..	906	138	371	..	6	421	0
Serbia and Montenegro	45,290	62.0	..	..	3,809	..	..	..	25	1,414	6
Sierra Leone	11,300	8.0	..	..	..	..	..	..	0	16	8
Singapore	3,165	100.0	..	..	..	..	..	21,311.0	75	17,718	7,193
Slovak Republic	42,993	87.3	32,981	16,859	3,660	2,227	9,675	..	16	825	0
Slovenia	38,400	100.0	1,065	6,305	1,229	764	3,462	..	17	765	3
Somalia	22,100	11.8	..	..	..	..	..	..	..	..	..
South Africa	362,099	20.3	..	434	20,047	10,001	106,549	2,675.3	134	9,876	930
Spain	666,292	99.0	397,117	132,868	14,395	20,237	14,117	7,809.6	550	45,529	1,043
Sri Lanka	97,286	81.0	21,067	..	..	..	..	2,220.6	16	2,416	300
Sudan	11,900	36.3	..	..	5,478	32	889	..	8	476	41
Swaziland	3,594	..	..	..	301	..	..	..	2	90	0
Sweden	424,981	31.1	105,834	37,048	9,895	5,544	13,122	933.8	192	11,539	257
Switzerland	71,220	..	94,622	26,100	3,378	12,869	9,313	..	144	9,279	1,090
Syrian Arab Republic	91,795	20.1	589	..	2,798	635	1,924	..	16	1,141	20
Tajikistan	27,767	..	..	..	617	41	1,087	..	8	498	6
Tanzania	78,891	8.6	..	..	2,600 ^c	471 ^c	1,351 ^c	..	6	248	2
Thailand	57,403	98.5	..	..	4,044	10,092	3,422	4,855.8	129	20,625	1,869
Togo	7,520	31.6	..	..	568	..	..	..	1	46	7
Trinidad and Tobago	8,320	51.1	..	..	..	..	..	440.4	17	1,132	42
Tunisia	18,997	65.4	..	16,611	1,909	1,242	2,173	..	21	1,940	20
Turkey	354,421	41.6	163,327	152,163	8,697	5,237	9,332	2,942.4	110	12,516	369
Turkmenistan	24,000	81.2	..	..	2,523	1,118	6,437	..	29	1,779	17
Uganda	70,746	23.0	..	..	259	..	218	..	0	46	27
Ukraine	169,739	97.0	40,131	24,387	22,011	51,726	233,961	..	34	1,924	23
United Arab Emirates	1,088	100.0	..	..	..	..	..	8,661.6	87	14,314	3,734
United Kingdom	392,342	100.0	666,000	159,000	16,514	42,626	20,700	7,480.9	970	86,055	5,698
United States	6,378,154	58.8	..	1,599,754	141,961	..	2,200,123 ^d	35,612.7	9,566 ^e	678,111 ^e	37,450 ^e
Uruguay	8,983	90.0	..	..	2,993	..	..	301.6	8	564	0
Uzbekistan	81,600	87.3	..	..	4,126	2,163	18,428	..	23	1,588	83
Venezuela, RB	96,155	33.6	..	..	433	..	32	920.9	129	4,592	2
Vietnam	215,628	..	18,116	4,772	2,600	4,376	2,682	2,138.8	51	5,050	217
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	67,000	11.5	..	..	..	..	..	377.4	16	995	60
Zambia	91,440	22.0	..	..	1,273 ^c	186 ^c	554 ^c	..	5	49	0
Zimbabwe	97,267	19.0	..	..	..	..	..	..	4	238	17
World		36.3 m	.. m	.. m	.. s	.. m	.. m	326,382.9 s	23,754 s	1,886,515 s	140,242 s
Low income		13.3	..	..	..	..	..	8,435.5	696	49,908	2,157
Middle income		50.8	..	..	..	1,230	..	134,631.2	5,021	404,182	22,844
Lower middle income		50.1	..	..	..	..	..	104,722.1	3,087	272,310	15,055
Upper middle income		51.1	..	..	..	2,079	9,621	29,909.1	1,934	131,872	7,788
Low & middle income		29.5	..	..	..	..	..	143,321.1	5,718	454,090	25,001
East Asia & Pacific		32.3	1,659	..	..	..	2,662	102,039.0	2,079	203,261	13,730
Europe & Central Asia		74.0	9,603	11,400	216,994	2,227	9,675	..	985	65,135	2,139
Latin America & Carib.		26.8	..	..	..	..	..	19,377.2	1,561	98,165	4,629
Middle East & N. Africa		66.4	..	..	..	1,265	..	..	358	33,999	1,103
South Asia		53.9	..	..	..	..	..	7,589.0	389	33,527	1,579
Sub-Saharan Africa		12.5	..	..	..	..	..	..	347	20,003	1,821
High income		91.8	..	..	..	8,375	10,105	183,061.8	18,037	1,432,425	115,241
Europe EMU		99.5	108,334	26,460	120,432	8,676	10,105	44,966.0	3,783	309,557	27,487

a. Data are for the latest year available in the period shown. b. Includes Hong Kong, China. c. Excludes Tazara railway. d. Refers to Class 1 railways only. e. Data cover only those 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 significantly 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 such an 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, due to differing definitions and data collections methods and quality, 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. Several new initiatives are under way to improve data availability and consistency. The IRF is collaborating with national and international development agencies to improve the quality and coverage of road statistics. To improve measures of progress and performance, the World Bank is also working on better measures of access, affordability, efficiency, quality, and fiscal and institutional aspects of infrastructure.

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 their 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

either air transport for passengers and freight or 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.
- **Air passengers carried** 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. Data on port container traffic are from Containerisation International’s *Containerisation International Yearbook*. And the data on air transport are from the ICAO’s *Civil Aviation Statistics of the World* and ICAO staff estimates.