5 STATES & MARKETS

Country policies and governance matter for development

Governance matters for economic development. Capable governments and high-quality institutions promote growth, raise incomes, and reduce poverty. Governance indicators are tools for assessing the performance of governments and the strengths and weaknesses of public institutions. Donors and governments use them to identify weaknesses and improve the management of development programs. And by providing feedback to policymakers and citizens, governance indicators can help to improve the quality of governance over time. This section—on states and markets—includes a broad range of indicators showing how effective and accountable government, together with energetic private initiative, help to create opportunities for growth and development.

The World Bank defines governance as the way public officials and public institutions acquire and exercise authority to provide public goods and services, including basic services, infrastructure, and a sound investment climate. Measuring governance and measuring corruption are not the same thing. While governance encompasses all of the state institutions and arrangements that shape the relations between the state and society, corruption is one aspect of poor governance—an outcome and a consequence of the failure of public accountability. Measuring the quality of policies, institutions, and governance—and corruption—is difficult and often subject to margins of error, whether based on objective or subjective information.

The World Bank has used assessments of government performance in allocating concessional resources since the mid-1970s. Focusing at first on macroeconomic management, the assessment criteria have expanded to include trade and financial policies, business regulation, social sector policies, the effectiveness of the public sector, and transparency, accountability, and corruption. Now called the Country Performance and Institutional Assessment (CPIA), the criteria are assessed annually for all World Bank borrowers.

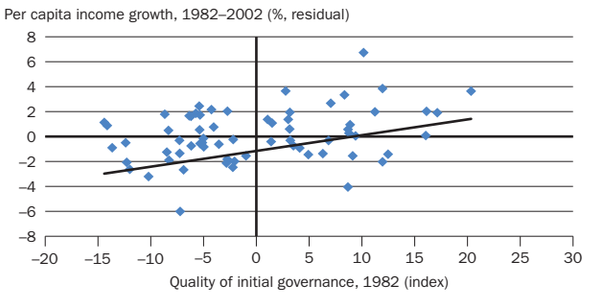
This edition of *World Development Indicators* includes a new indicator table—Table 5.8, Public policies and institutions—showing the most recent CPIA data for 76 countries eligible to receive grants or credits from the International Development Association (IDA), the World Bank's concessional lending arm. Indicator tables 5.2 and 5.3 continue to report on government policies and regulations affecting the investment climate. Improved infrastructure such as roads, ports, and rails (indicator table 5.9), power and telecommunications (indicator tables 5.10 and 5.11), and water supply and sanitation (indicator table 2.15) are crucial for citizens' health, economic growth, and competitiveness. And effective, accountable governments are needed to complement an energetic private sector to deliver these services.

Governance and growth

The first major World Bank discussion of the role of governance was the 1991 World Bank Discussion Paper *Managing Development: The Governance Dimension* (World Bank 1991). A few years later *World Development Report 1997: The State in a Changing World* (World Bank 1997d) argued that a determining factor in development was the effectiveness of the state. The report noted that "an effective state is vital for the provision of the goods and services—and the rules and institutions—that allow markets to flourish and people to lead healthier, happier lives. . . ." The 1997 report presented systematic assessments of the reliability of governmental institutions (predictability of rulemaking, perceptions of political stability, crime against persons and property, and reliability of judicial enforcement) and of corruption from a 1996 World Bank–sponsored survey. Subsequent research suggests that the causality between growth and governance is two-way—that improvements in either income or governance can give momentum to development—but that causation is stronger from governance to growth in income.

Although the links are complex, there is ample evidence of the connection between governance and long-term growth. Figure 5a shows the statistical relationship (controlling for initial income and schooling levels) between the quality of governance measured by an International Country Risk Guide (ICRG) index in 1982 and the growth of per capita income through 2002. The ICRG index comprises five elements of governance: corruption in government, rule of law, risk of expropriation, repudiation of contracts by government, and quality of the bureaucracy in 71 developing countries.

Governance and growth go together **5a**



Source: Knack 2006.

Country Policy and Institutional Assessment

The CPIA indicators measure the extent to which a country's policy and institutional framework supports sustainable growth and poverty reduction and, consequently, the effective use of development assistance. Country performance is assessed against 16 criteria grouped in four clusters: economic management, structural policies, policies for social inclusion and equity, and public sector management and institutions (box 5b).

The overall score for each country, known as the IDA Resource Allocation Index (IRAI), is a key element of a country's IDA country performance rating. IDA resources are allocated in per capita terms on the basis of the country performance rating and, to a limited extent, per capita gross national income. This ensures that good performers receive a higher IDA allocation, in per capita terms. The individual CPIA criteria are also used to inform the World Bank's country policy dialogue with member governments and for other operational and research purposes. Reflecting the IDA14 funding agreement, the numerical IRAI scores and separate CPIA criteria were first publicly disclosed for IDA recipient countries in June 2006 to enhance transparency and external scrutiny of these scores (see indicator table 5.8 and figure 5c).

The scores depend on actual policies and performance, rather than on promises or intentions. In some cases the passage of specific legislation can represent an important action that deserves consideration. But it is implementation of legislation that determines its impact. The average

Criteria for measuring economic and sector policies and governance system **Box 5b**

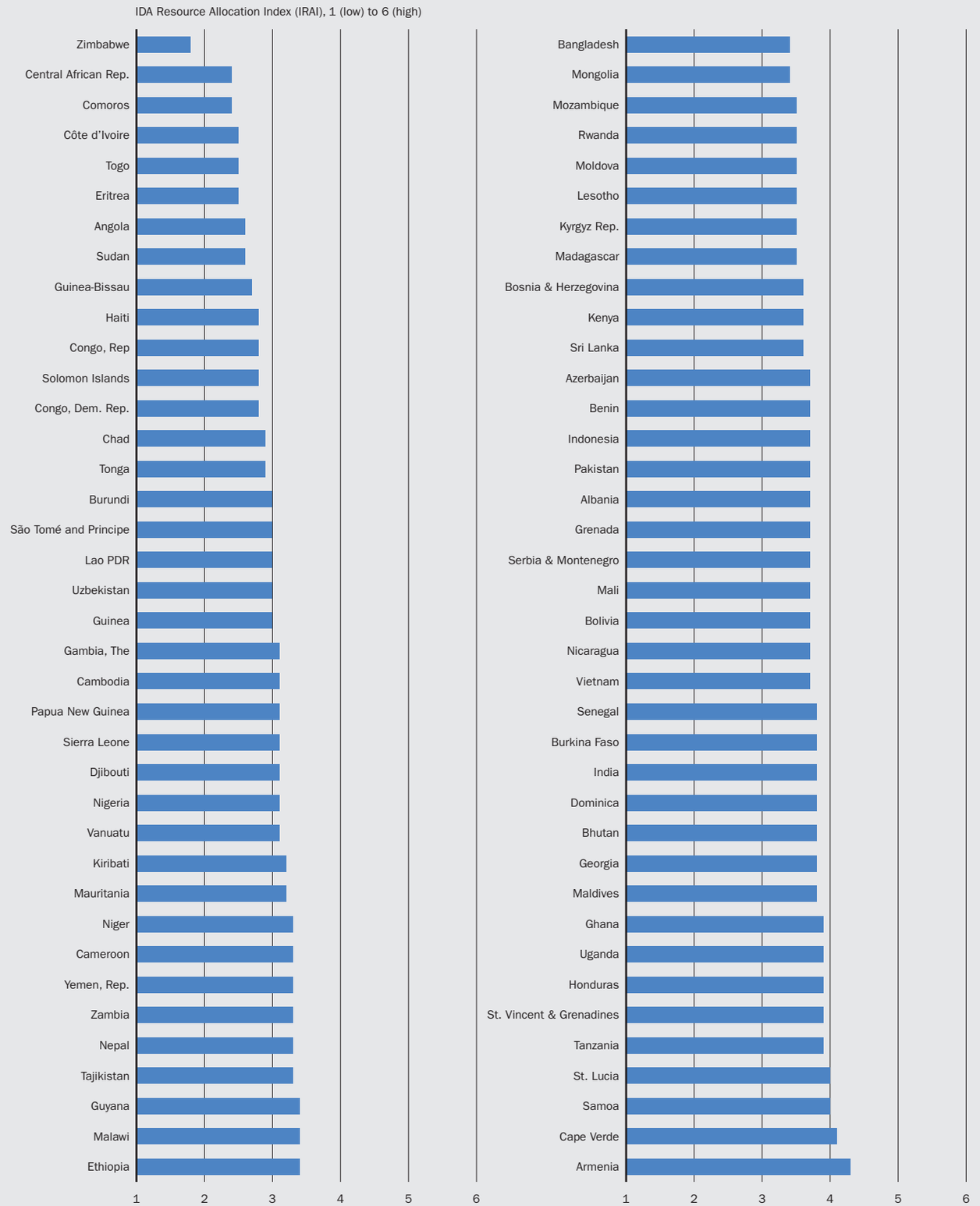
Cluster A: Economic management
Macroeconomic management
Fiscal policy
Debt policy

Cluster B: Structural policies
Trade
Financial sector
Business regulatory environment

Cluster C: Policies for social inclusion and equity
Gender equality
Equity of public resource use
Building human resources
Social protection and labor
Policies and institutions for environmental sustainability

Cluster D: Public sector management and institutions
Property rights and rule-based governance
Quality of budgetary and financial management
Efficiency of revenue mobilization
Quality of public administration
Transparency, accountability, and corruption in the public sector

The IDA Resource Allocation Index is a key element of a country's IDA performance rating 5c



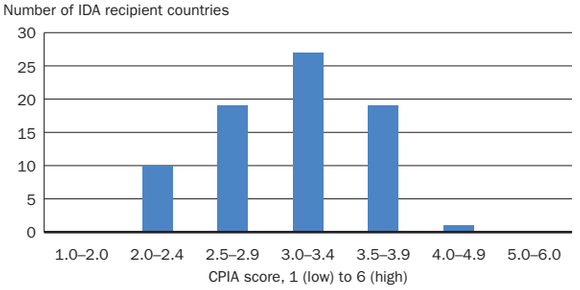
Source: World Bank.

score on public sector management and institutions can be used as an aggregate indicator of the country's governance system (focused primarily on economic governance). It is a part of the "governance factor" that is given extra weight in the IDA country performance rating for determining IDA resource allocations. (For more information see www.worldbank.org/ida.)

Scores on the CPIA public sector management and institutions cluster are bunched around the mid-range, with no countries scoring in either the lowest or highest ranges, and only one country in the 4.0–4.9 range (figure 5d). Although these measures give some indication of the quality of public sector management and institutions, for some countries they do not always match the strong performance on economic management policies (macroeconomic management, fiscal policy, and debt policy). Armenia, Bangladesh, Kyrgyz Republic, Tajikistan, and Uganda score relatively well on CPIA cluster A, economic management, but not so well on cluster D, public sector management and institutions (figure 5e). These patterns reveal the complexity of the relationships between measures of the quality of public sector management and institutions and economic outcomes, requiring better diagnostics and understanding of each country's situation to develop workable approaches to governance reform.

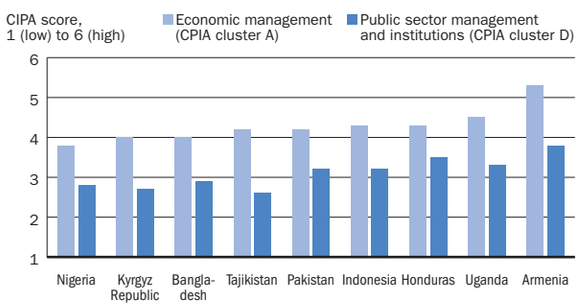
On public sector management, countries bunch around the middle **5d**

Distribution of IDA recipient scores for CPIA cluster D, public sector management and institutions, 2005



Source: World Bank.

Strong performance on economic management, weaker on public sector management **5e**



Source: World Bank.

Other World Bank sources of data for monitoring governance

The growing recognition of the link between good governance and successful development has stimulated efforts to monitor the performance of governments and other public institutions by private commercial rating agencies, multilateral development institutions, and nongovernmental agencies. In addition to the CPIA policy and governance measures, the World Bank has several other governance and governance-related measurement programs and indicators that are used in monitoring governance. (See box 5g at the end of this introduction for other selected organizations' governance measurement initiatives.)

- **Worldwide Governance Indicators** are the most comprehensive publicly available governance indicators and among the most widely used by the media, academia, and international organizations for assessing governance. Compiled since 1996, these data measure the quality of six dimensions of governance for 213 countries, based on 31 data sources produced by 25 organizations (box 5f). The underlying data are based on hundreds of variables and reflect the perceptions and views of experts, firm survey respondents, and citizens worldwide on various dimensions of governance. The measures, also known as Kaufmann-Kraay, include the margins of error associated with each estimate, allowing users to identify a range of statistically likely ratings for each country, not just a

Worldwide Governance Indicators—Six key dimensions of governance **Box 5f**

The Worldwide Governance Indicators measure the quality of six dimensions of governance:

- *Voice and accountability,* the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and free media
- *Political stability and absence of violence,* perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including political violence and terrorism
- *Government effectiveness,* the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies
- *Regulatory quality,* the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development
- *Rule of law,* the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, the police, and the courts, as well as the likelihood of crime and violence
- *Control of corruption,* the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.

single rating. Margins of error are present in all efforts to measure governance; some sources explicitly report them, while others do not. See www.govindicators.org.

- **Enterprise Surveys and the Business Environment and Enterprise Performance Surveys** capture business perceptions of the biggest obstacles to enterprise growth, the relative importance of various constraints to increasing employment and productivity, and the effects of a country's investment climate on its international competitiveness. Surveys cover almost 58,000 firms in 97 countries. Although designed to monitor the investment climate, which is a product of a number of governance-related factors, these surveys include measures, such as a business managers' perception of corruption as a constraint to doing business, that can be directly linked to governance and are therefore useful for governance monitoring at the country level. See indicator table 5.2 and www.enterprisesurveys.org and http://info.worldbank.org/governance/beeps.
- **Doing Business** surveys cover key indicators on the environment for doing business for 175 economies. The indicators identify regulations that enhance or constrain business investment, productivity, and growth. Some indicators, such as enforcing contracts, are useful in monitoring governance. See indicator table 5.3 and www.doingbusiness.org.
- **Anticorruption Diagnostic Surveys** are designed to facilitate governance monitoring by providing inputs to policymakers and civil society. The World Bank Institute's Governance Diagnostic Capacity Building program aims to strengthen the capacity of countries to conduct governance diagnostic surveys through technical assistance for the design of surveys and governance action plans, training, and partnerships between the government and civil society organizations. Agencies in several countries have undertaken governance and anticorruption diagnostic surveys. See www.worldbank.org/wbi/governance and click on Diagnostics.
- **HIPC (Highly Indebted Poor Countries) Public Expenditure Management Assessment and Action Plans** use expenditure tracking tools developed by the World Bank and the International Monetary Fund to monitor poverty-reducing public expenditures in HIPCs. Data are collected on 15 indicators on budget formulation, execution, and reporting, and 1 indicator on government procurement. A new program to measure public expenditure and management has been developed and will be used for monitoring in HIPCs. See www.worldbank.org/hipc.
- **Public Expenditure and Financial Accountability Program**, started by the World Bank in 2001, is now a partnership with several multilateral and bilateral development institutions that support an integrated and harmonized approach to assessment and reform in public expenditure, procurement, and financial accountability. The public expenditure and financial accountability framework includes 28 indicators on budget credibility, transparency, auditing, and procurement, and three indicators on donor practices that affect the country public financial management system. The program is being implemented in 70 countries; 8 countries have completed reviews and made them available publicly (in addition, one country has published data for the indicators). See www.pefa.org.
- **The Joint Venture on Procurement of the World Bank and the Organisation for Economic Co-operation and Development's Development Assistance Committee** has selected 22 pilot developing countries to test the Common Benchmarking and Assessment Tool for Public Procurement, which developing countries and donors can use to assess the quality and effectiveness of national procurement systems. See www.oecd.org and search for Joint Venture on Procurement.

For an overview of the World Bank's framework for global monitoring of governance and in-depth discussion of the uses and limitations of governance measures, see the World Bank and International Monetary Fund's (2006a) *Global Monitoring Report 2006*.

Other selected sources of data for monitoring governance **Box 5g**

- **Freedom House,** a private nonprofit advocacy organization founded in 1941, was among the earliest to systematically measure and publish governance ratings. Freedom House has published *Freedom in the World* since 1972; it now includes ratings of political rights and civil liberties in 192 countries and territories. See www.freedomhouse.org.
- **International Country Risk Guide** is privately owned and has been assessing financial, economic, and political risks since 1980 for about 140 countries. See www.prsgroup.com.
- **Transparency International (TI),** a newer entrant, has attracted media attention since 1995 with its Corruption Perceptions Index. The index is a compilation of surveys of perceptions of resident and nonresident business people and expert assessments of the degree of corruption in a country. See www.transparency.org.
- **Global Integrity,** a Washington, D.C.–based nonprofit organization funded by private foundations and the World Bank, assesses the existence and effectiveness of anticorruption mechanisms that promote public integrity. More than 290 indicators are used to generate the Global Integrity Index for more than 40 countries. See www.globalintegrity.org.
- **The Open Budget Initiative,** sponsored by the International Budget Project, tracks 122 indicators of budget transparency for almost 60 countries. The country reports give citizens, legislators, and civil society advocates comprehensive and practical information that can be used to assess a government's commitment to budget transparency and accountability. The initiative is funded by private foundations and bilateral aid agencies such as the U.K. Department for International Development and the Swedish International Development Cooperation Agency. See www.openbudgetindex.org.

5.1 Private sector in the economy

	Investment in infrastructure projects with private participation[a]								Domestic credit to private sector		New business registered	Micro, small, and medium-size enterprises	
	$ millions												
	Telecommunications		Energy		Transport		Water and sanitation		% of GDP		% of total businesses registered	Total	per 1,000 people
	1995–99	2000–05	1995–99	2000–05	1995–99	2000–05	1995–99	2000–05	1990	2005	2003	2000–05[b]	2000–05[b]
Afghanistan	..	284.1	..	..	..	..	..	..	..	..	..	..	..
Albania	..	443.2	0.0	789.0	..	308.0	..	8.0	..	14.9	6	38,331	12.3
Algeria	..	3,422.5	..	962.0	..	..	..	510.0	44.4	11.8	15	580,000	18.8
Angola	..	278.7	..	45.0	..	55.0	..	..	..	4.8	..	..	..
Argentina	10,498.6	5,925.6	12,931.9	3,830.0	6,892.1	200.2	3,307.1	791.6	15.6	11.7	11	..	..
Armenia	1,680.5	243.4	0.0	47.0	..	50.0	..	0.0	*40.4*	8.0	7	99,805	33.1
Australia	..	..	..	..	..	..	..	..	59.9	104.6	11	1,269,000	63.2
Austria	..	..	..	..	..	..	..	..	89.7	112.9	7	252,399	30.9
Azerbaijan	122.0	355.6	..	375.2	..	..	..	0.0	*10.8*	10.0	7	49,527	6.0
Bangladesh	438.1	1,527.3	554.9	501.5	0.0	0.0	..	..	16.7	31.5	..	177,000	1.3
Belarus	20.0	735.4	500.0	..	..	..	..	..	..	16.2	..	25,108	2.5
Belgium	..	..	..	..	..	..	..	..	35.9	75.1	7	686,533	66.2
Benin	..	116.9	..	..	..	..	..	..	20.3	16.6	..	..	..
Bolivia	528.0	520.5	2,777.3	886.0	168.7	16.6	682.0	..	24.0	40.7	8	..	..
Bosnia and Herzegovina	0.0	0.0	..	277.9	..	..	..	..	..	47.9	6	14,986	3.8
Botswana	97.0	104.0	..	..	..	..	..	..	9.4	19.0	..	13,137	7.4
Brazil	45,135.2	41,018.7	34,196.8	28,204.0	17,195.0	4,271.3	2,137.0	1,587.6	39.0	34.8	..	4,903,268	27.4
Bulgaria	202.5	2,179.1	..	2,646.0	..	..	..	152.0	*82.8*	44.5	..	216,489	27.7
Burkina Faso	..	41.9	5.6	..	63.3	..	..	..	16.8	17.3	..	..	..
Burundi	..	53.6	..	..	..	..	..	..	13.7	20.8	..	..	..
Cambodia	102.4	148.1	143.0	88.1	120.0	125.3	..	..	..	9.4	..	..	..
Cameroon	12.7	394.4	..	91.9	90.0	0.0	..	..	26.7	9.4	..	..	..
Canada	..	..	..	..	..	..	..	..	92.2	181.4	*14*	2,245,245	69.5
Central African Republic	1.1	..	..	..	..	..	..	..	7.2	6.7	..	..	..
Chad	2.0	11.0	..	0.0	..	..	..	..	7.3	3.1	..	..	..
Chile	3,489.0	3,714.6	6,808.6	1,528.3	3,104.1	4,768.6	4,190.3	1,495.2	50.6	82.3	..	700,000	43.4
China	5,970.0	8,548.0	17,166.6	6,365.7	10,852.5	7,948.0	985.9	3,131.5	87.7	114.4	9	8,000,000	6.3
Hong Kong, China	..	..	..	..	..	..	..	..	160.6	146.2	13	263,959	38.4
Colombia	1,384.3	1,570.9	6,964.8	4,483.2	995.5	1,331.4	233.0	250.0	30.8	23.9	..	664,000	15.0
Congo, Dem. Rep.	68.0	453.4	..	..	0.0	..	..	..	1.8	1.9	10	..	..
Congo, Rep.	12.2	61.8	325.0	..	..	..	..	..	15.7	2.9	..	..	..
Costa Rica	..	..	301.2	80.0	..	465.2	..	..	12.2	35.8	..	40,921	9.6
Côte d'Ivoire	752.3	134.9	260.6	0.0	241.3	140.0	..	..	36.5	13.8	..	..	..
Croatia	978.0	1,181.9	368.5	7.1	672.2	451.0	..	298.7	..	61.2	..	94,088	21.2
Cuba	..	60.0	165.0	..	..	0.0	..	600.0	..	..	..	..	..
Czech Republic	6,178.5	8,348.0	944.1	3,865.3	283.7	106.7	135.5	263.7	..	37.0	4	..	..
Denmark	..	..	..	..	..	..	..	..	51.2	171.1	10	257,950	47.8
Dominican Republic	163.0	393.0	979.0	1,306.6	..	898.9	..	..	27.5	27.7	..	..	..
Ecuador	696.4	357.8	30.0	302.0	686.8	685.0	..	550.0	13.6	23.0	14	1,043,440	83.6
Egypt, Arab Rep.	1,914.5	3,360.9	700.0	678.0	123.9	821.5	..	..	30.6	52.4	..	..	..
El Salvador	610.5	821.2	900.2	85.0	..	..	..	..	16.9	43.4	7	461,642	72.1
Eritrea	..	40.0	..	..	..	..	..	..	..	31.0	..	..	..
Estonia	628.2	287.1	26.5	..	1.0	298.4	..	115.0	*20.2*	60.0	10	65,194	48.4
Ethiopia	..	..	..	300.0	..	..	..	..	13.9	25.3	..	..	..
Finland	..	..	..	..	..	..	..	..	85.8	76.1	10	221,000	42.4
France	..	..	..	..	..	..	..	..	94.3	93.1	8	2,612,960	43.2
Gabon	8.4	26.6	294.0	0.0	46.7	177.4	..	..	12.9	8.9	..	..	..
Gambia, The	..	6.6	..	..	..	..	..	..	11.0	13.0	..	..	..
Georgia	61.0	168.8	159.0	13.0	..	..	..	..	..	14.8	10	33,860	7.6
Germany	..	..	..	..	..	..	..	..	88.7	111.4	23	3,162,111	38.3
Ghana	491.1	156.5	376.0	184.0	..	10.0	..	0.0	4.9	15.5	..	25,679	1.2
Greece	..	..	..	..	..	..	..	..	35.5	84.8	7	771,000	69.9
Guatemala	1,366.3	560.1	1,223.2	110.0	33.8	..	..	..	14.2	25.2	..	..	..
Guinea	120.3	18.0	36.4	..	..	..	0.0	..	*3.5*	5.1	..	..	..
Guinea-Bissau	..	21.9	..	..	..	..	..	..	22.0	2.1	..	..	..
Haiti	1.5	18.0	4.7	..	..	..	..	..	12.6	15.4	..	..	..

Private sector in the economy

	Investment in infrastructure projects with private participation[a]								Domestic credit to private sector		New businesses registered	Micro, small, and medium-size enterprises	
	$ millions												
	Telecommunications		Energy		Transport		Water and sanitation		% of GDP		% of total businesses registered	Total	per 1,000 people
	1995–99	2000–05	1995–99	2000–05	1995–99	2000–05	1995–99	2000–05	1990	2005	2003	2000–05[b]	2000–05[b]
Honduras	51.3	135.0	112.1	358.8	10.5	120.0	..	220.0	31.1	42.7	..	257,953	40.2
Hungary	6,430.2	5,234.8	3,812.1	260.6	135.0	3,297.5	205.8	0.0	46.6	51.7	8	..	..
India	7,456.8	20,642.0	7,182.7	8,882.1	1,275.1	3,941.1	..	2.1	25.2	40.8	..	..	..
Indonesia	8,852.5	6,494.6	9,942.1	1,575.6	1,530.8	3.7	955.2	36.7	48.1	26.9	..	41,362,315	195.3
Iran, Islamic Rep.	28.0	695.0	..	650.0	..	..	..	..	33.8	40.9	..	..	..
Iraq	..	984.0	..	..	..	..	..	..	..	..	..	..	..
Ireland	..	..	..	..	..	..	..	..	47.1	160.7	10	97,000	24.3
Israel	..	..	..	..	..	..	..	..	57.6	97.5	..	468,338	67.6
Italy	..	..	..	..	..	..	..	..	54.9	90.2	7	4,486,000	77.9
Jamaica	235.5	700.3	43.0	201.0	0.0	565.0	..	..	31.6	17.9	4	..	..
Japan	..	..	..	..	..	..	..	..	197.4	186.9	..	5,712,191	44.7
Jordan	39.9	1,589.0	..	..	182.0	0.0	0.0	169.0	72.3	87.2	..	141,327	26.4
Kazakhstan	1,633.5	1,078.2	1,825.0	300.0	..	..	..	100.0	..	35.7	12	..	..
Kenya	193.0	1,434.0	189.0	..	53.4	..	..	..	32.7	25.9	..	2,800,000	87.4
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	..	..	..	..	..	..	..	..	62.8	102.1	..	2,998,223	62.4
Kuwait	..	..	..	..	..	..	..	..	*52.1*	63.1	..	..	..
Kyrgyz Republic	100.0	9.1	..	..	..	..	..	..	..	8.0	..	142,475	28.3
Lao PDR	157.1	87.8	535.5	1,250.0	0.0	0.0	..	..	1.0	7.0	..	..	..
Latvia	600.9	708.9	106.0	71.1	75.0	..	..	..	..	59.9	6	32,571	13.8
Lebanon	485.7	138.1	..	..	..	153.0	..	0.0	79.4	76.3	..	..	..
Lesotho	15.7	88.4	..	0.0	..	..	..	..	15.1	8.4	..	..	..
Liberia	..	61.3	..	..	..	..	..	..	*30.9*	6.6	..	..	..
Libya	..	..	..	..	..	..	..	..	31.0	9.0	..	..	..
Lithuania	832.7	993.0	10.0	399.3	..	..	..	..	..	34.9	3	56,428	16.5
Macedonia, FYR	..	706.6	..	..	..	..	..	..	..	25.9	7	55,742	27.5
Madagascar	30.0	12.6	..	0.0	..	48.5	..	..	16.9	9.9	4	..	..
Malawi	23.1	36.3	..	0.0	6.0	..	..	..	10.9	10.5	13	747,396	64.9
Malaysia	4,187.6	3,756.9	1,610.2	6,637.6	8,200.1	4,276.4	10.0	6,502.2	69.4	128.3	..	518,996	20.5
Mali	..	82.6	..	365.9	..	55.4	..	..	12.8	18.4	..	..	..
Mauritania	..	92.1	..	..	..	..	..	..	43.5	*27.0*	..	..	..
Mauritius	..	413.0	109.3	0.0	42.6	..	..	..	35.6	76.7	..	75,267	62.2
Mexico	10,757.5	18,131.4	2,095.8	6,614.3	4,706.1	3,135.4	276.5	520.7	17.5	18.2	..	2,891,300	28.3
Moldova	84.6	46.1	60.0	25.3	..	..	..	..	*5.9*	24.2	5	25,667	6.1
Mongolia	21.9	22.1	..	..	..	..	..	..	*17.7*	37.5	18	..	..
Morocco	1,240.0	5,993.5	5,978.0	1,049.0	..	..	1,000.0	..	34.0	62.2	46	450,000	15.8
Mozambique	29.0	123.0	..	1,205.8	441.0	334.6	25.5	0.0	18.3	*11.2*	7	..	..
Myanmar	4.0	..	394.0	..	50.0	..	..	..	4.7	5.6	..	..	..
Namibia	55.2	35.2	4.0	1.0	..	450.0	..	0.0	22.6	61.4	..	..	..
Nepal	..	97.3	98.2	39.0	..	..	..	..	12.8	..	..	3,040	0.1
Netherlands	..	..	..	..	..	..	..	..	76.6	173.4	6	735,160	45.0
New Zealand	..	..	..	..	..	..	..	..	75.5	133.8	*18*	334,031	82.2
Nicaragua	24.5	278.5	232.4	115.0	..	104.0	..	..	112.6	29.1	..	..	..
Niger	..	85.5	..	..	..	..	..	3.4	12.3	6.8	..	..	..
Nigeria	69.0	6,950.7	..	1,248.0	..	22.8	..	..	9.4	14.9	8	..	..
Norway	..	..	..	..	..	..	..	..	81.7	9.0	7	316,243	68.4
Oman	..	1,047.0	183.0	1,364.3	77.5	473.8	..	..	20.6	*34.9*	5	7,373	2.9
Pakistan	75.5	5,572.2	4,298.3	598.6	421.3	71.0	..	..	24.2	28.4	4	2,956,704	19.0
Panama	1,429.2	183.4	669.2	445.7	994.6	51.4	25.0	..	46.7	91.7	..	..	..
Papua New Guinea	..	..	65.0	..	..	..	71.0	..	28.6	13.9	..	..	..
Paraguay	259.3	194.6	..	..	58.0	..	..	..	15.8	18.0	..	548,000	95.5
Peru	4,774.5	2,238.0	3,004.9	2,478.3	86.3	561.5	..	128.0	11.8	19.4	1	658,837	23.9
Philippines	5,358.3	4,570.9	6,998.0	3,783.4	1,364.0	1,060.5	7,567.2	0.0	22.3	30.5	..	808,634	10.1
Poland	6,403.1	16,800.0	628.1	2,341.5	169.4	1,672.0	6.1	64.3	21.1	27.4	7	1,654,822	43.3
Portugal	..	..	..	..	..	..	..	..	46.6	147.3	3	693,000	66.4
Puerto Rico	..	..	..	..	..	..	..	..	..	..	..	2,069	0.5

5.1 Private sector in the economy

	Investment in infrastructure projects with private participation[a]								Domestic credit to private sector		New businesses registered	Micro, small, and medium-size enterprises	
	$ millions												
	Telecommunications		Energy		Transport		Water and sanitation		% of GDP		% of total businesses registered	Total	per 1,000 people
	1995–99	2000–05	1995–99	2000–05	1995–99	2000–05	1995–99	2000–05	1990	2005	2003	2000–05[b]	2000–05[b]
Romania	2,072.8	3,073.9	100.0	1,240.8	23.4	..	..	1,022.0	..	20.0	11	392,544	18.1
Russian Federation	5,643.1	19,583.8	2,281.3	1,714.0	406.0	109.4	108.0	660.5	..	25.7	..	6,891,300	48.2
Rwanda	8.0	52.3	..	0.0	..	..	..	..	6.9	13.5	..	..	..
Saudi Arabia	..	8,537.0	..	..	55.0	190.0	..	52.0	54.7	53.9	..	..	..
Senegal	273.9	345.1	124.0	87.0	..	55.4	20.0	..	26.5	23.8	..	..	..
Serbia and Montenegro	1,590.0	830.6	..	..	..	..	..	0.0	..	..	9	68,220	8.4
Sierra Leone	7.0	48.8	..	..	..	..	..	..	3.2	4.5	29	..	..
Singapore	..	..	..	..	..	..	..	..	97.0	101.7	13	136,363	32.2
Slovak Republic	488.5	2,709.9	..	4,459.6	..	..	0.0	..	..	36.2	14	70,553	13.1
Slovenia	..	..	..	..	..	..	..	..	34.9	53.3	7	91,066	45.6
Somalia	0.0	13.4	..	..	..	..	..	..	..	..	..	..	..
South Africa	2,975.3	5,499.5	3.0	1,251.3	1,386.4	504.7	56.9	31.3	81.0	143.5	8	..	..
Spain	..	..	..	..	..	..	..	..	78.5	146.1	10	3,168,735	73.0
Sri Lanka	601.9	679.9	192.3	254.0	240.0	..	..	..	19.6	32.9	8	121,426	6.3
Sudan	18.3	621.2	..	..	..	..	..	..	4.8	10.0	..	22,460	0.7
Swaziland	21.2	27.7	..	..	..	..	..	..	20.7	20.0	..	..	..
Sweden	..	..	..	..	..	..	..	..	126.4	111.7	5	898,454	99.6
Switzerland	..	..	..	..	..	..	..	..	162.6	166.8	7	344,000	46.9
Syrian Arab Republic	..	583.2	..	..	..	..	..	..	7.5	*11.8*	..	..	..
Tajikistan	1.2	8.5	..	16.0	..	..	..	..	..	17.2	..	92,964	14.8
Tanzania	100.2	487.3	150.0	372.0	16.5	6.5	..	8.5	13.9	10.4	..	2,700,000	74.6
Thailand	2,735.2	5,470.7	6,550.4	4,693.3	2,001.1	939.0	246.3	245.6	83.4	93.1	10	842,360	13.5
Togo	5.0	0.0	0.0	67.7	0.0	..	..	..	22.6	16.8	6	..	..
Trinidad and Tobago	146.7	..	207.0	..	..	..	0.0	120.0	44.7	38.5	..	19,150	14.7
Tunisia	..	751.0	265.0	30.0	..	..	..	..	55.1	65.6	..	..	..
Turkey	3,269.7	12,515.9	2,992.2	6,569.8	610.0	3,943.6	942.0	..	16.7	26.1	..	210,134	3.1
Turkmenistan	..	..	..	..	..	..	..	..	..	..	..	..	..
Uganda	119.3	387.6	..	142.1	..	..	0.0	0.0	*4.0*	6.7	..	160,453	6.2
Ukraine	1,094.6	3,162.8	..	160.0	..	..	..	..	*2.6*	33.5	..	343,786	7.3
United Arab Emirates	..	..	..	..	..	..	..	..	38.0	60.9	..	..	..
United Kingdom	..	..	..	..	..	..	..	..	115.8	165.5	19	4,415,260	73.8
United States	..	..	..	..	..	..	..	..	118.9	194.8	..	5,868,737	20.0
Uruguay	63.7	114.2	86.0	330.0	20.0	196.1	..	351.0	32.4	27.0	..	143,035	42.8
Uzbekistan	513.8	277.6	..	..	..	..	..	0.0	..	..	..	212,424	8.3
Venezuela, RB	4,877.9	3,337.0	103.0	30.0	268.0	34.0	29.0	15.0	26.2	13.6	..	11,314	0.5
Vietnam	256.0	430.0	435.5	2,279.0	85.0	30.0	38.8	174.0	*2.5*	66.0	..	90,935	1.1
West Bank and Gaza	265.0	279.8	..	150.0	..	..	0.0	0.0	..	..	..	97,194	27.7
Yemen, Rep.	..	376.8	..	..	190.0	..	..	..	6.1	7.7	7	310,000	16.2
Zambia	64.2	208.3	277.0	12.4	..	15.6	..	..	8.9	7.6	10	..	..
Zimbabwe	46.0	59.0	600.0	..	85.0	..	..	..	23.0	26.9	0	..	..
World	**.. s**	**.. s**	**.. s**	**.. s**	**.. s**	**.. s**	**.. s**	**.. s**	**104.3 w**	**133.8 w**	**9 u**	**139,432,731 s**	
Low income	11,549.1	41,659.1	15,730.4	17,689.2	3,047.9	4,856.7	155.3	188.0	21.3	33.8	10	4,222,837	
Middle income	161,868.2	217,654.4	138,174.3	106,539.8	63,732.8	44,614.8	23,098.8	20,026.7	43.1	58.3	9	94,515,052	
Lower middle income	88,980.5	103,357.9	101,392.0	63,499.2	35,618.9	20,239.4	13,806.6	7,688.4	51.3	73.1	10	78,159,635	
Upper middle income	72,887.7	114,296.5	36,782.3	43,040.6	28,113.9	24,375.4	9,292.2	12,338.3	*38.4*	38.8	8	16,355,417	
Low & middle income	173,417.3	259,313.5	153,904.7	124,229.0	66,780.7	49,471.5	23,254.1	20,214.7	39.2	54.9	9	98,737,889	
East Asia & Pacific	27,681.5	29,637.6	43,840.3	26,679.7	24,203.5	14,382.9	9,874.4	10,090.0	73.9	101.1	12	68,387,110	
Europe & Central Asia	40,629.4	81,682.2	13,812.8	25,578.5	2,375.7	10,236.6	1,397.4	2,684.2	..	29.7	8	13,753,937	
Latin America & Carib.	86,847.8	80,778.2	73,997.4	51,388.2	35,219.5	17,442.2	10,879.9	6,716.2	28.6	27.8	7	9,077,990	
Middle East & N. Africa	3,973.1	19,220.8	7,126.0	4,883.3	573.4	1,498.3	1,000.0	679.0	35.0	39.9	18	3,669,844	
South Asia	8,604.5	28,856.1	12,326.4	10,275.2	1,936.4	4,012.1	..	2.1	24.2	38.7	6	177,000	
Sub-Saharan Africa	5,681.0	19,138.6	2,801.8	5,424.1	2,472.2	1,899.4	102.4	43.2	41.0	64.8	10	3,672,008	
High income	..	..	..	..	..	..	..	..	115.4	156.3	10	40,694,842	
Europe EMU	..	..	..	..	..	..	..	..	77.9	110.5	9	16,589,542	

a. Data refer to total for the period shown. Includes projects that became privatized during financial closure years 1990–2005. b. Data are for the most recent year available.

5.1 Private sector in the economy

About the data

Private sector development and investment—that is, tapping private sector initiative and investment for socially useful purposes—are critical for poverty reduction. In parallel with public sector efforts, private investment, especially in competitive markets, has tremendous potential to contribute to growth. Private markets are the engine of productivity growth, creating productive jobs and higher incomes. And with government playing a complementary role of regulation, funding, and service provision, private initiative and investment can help provide the basic services and conditions that empower poor people—by improving health, education, and infrastructure.

Investment in infrastructure projects with private participation has made important contributions to easing fiscal constraints, improving the efficiency of infrastructure services, and extending delivery to poor people. The privatization trend in infrastructure that began in the 1970s and 1980s took off in the 1990s, peaking in 1997. Developing countries have been at the head of this wave, pioneering better approaches to providing infrastructure services and reaping the benefits of greater competition and customer focus. Between 1990 and 2005 more than 3,200 projects in more than 139 developing countries introduced private participation in at least one infrastructure sector, with $964 billion in investments.

In 2005, investments in 160 new infrastructure projects with private participation valued at $40 billion were implemented. In addition, $56 billion in investment projects reached financial closure between 1990 and 2005. Telecommunications attracted $59 billion in investment in 2005, mostly in standalone mobile operations. Transport also saw an increase, from $7 billion in 2004 to $16 billion in 2005. Energy experienced some recovery, from $16 billion to $19 billion. Water, down from about $4.8 billion in 2004 to about $1.5 billion in 2005, was the only sector in which investment in infrastructure projects with private participation declined.

The data on investment in infrastructure projects with private participation refer to all investment (public and private) in projects in which a private company assumes operating risk during the operating period or assumes development and operating risk during the contract period. Investment refers to commitments not disbursements. Foreign state-owned companies are considered private entities for the purposes of this measure. The data are from the World Bank's Private Participation in Infrastructure (PPI) Project Database, which tracks more than 3,300 projects, newly owned or managed by private companies, that reached financial closure in low- and middle-income economies in 1990–2005. Aggregates for geographic regions and income groups are calculated by the World Bank's Development Data Group. For more information, see http://ppi.worldbank.org/.

Credit is an important link in the money transmission process; it finances production, consumption, and capital formation, which in turn affect the level of economic activity. The data on domestic credit to the private sector are taken from the banking survey of the International Monetary Fund's (IMF) *International Financial Statistics* or, when data are unavailable, from its monetary survey. The monetary survey includes monetary authorities (the central bank), deposit money banks, and other banking institutions, such as finance companies, development banks, and savings and loan institutions. In some cases credit to the private sector may include credit to state-owned or partially state-owned enterprises.

Entrepreneurship, the effort by individuals or groups to makes to initiate economic activity in the formal sector under a legal form of business, lends dynamism to an economy. Greater entry of new firms can foster competition and economic growth. This edition of *World Development Indicators* introduces a new indicator measuring entrepreneurship, new businesses registered as a percentage of total businesses.

Formal and informal micro, small, and medium-size enterprises employ more than half the working population in many market economies and account for about 90 percent of all firms. And they contribute significantly to innovation. If small businesses are allowed to compete on an equal playing field, the good ones can become larger, workers can earn higher wages, and productivity will increase. A good investment climate—one that provides opportunities and incentives for firms, reduces legal and regulatory costs, lowers the costs of financial institutions in providing financial services, and facilitates the transfer of technology and knowledge and the upgrading of capabilities in small and medium-size firms—is important for economic progress, better jobs, and a more inclusive society.

Data on the business registration of micro, small, and medium-size enterprises are collected by governments, international organizations, foundations, and small business organizations. These data have been collated by the International Finance Corporation (IFC) and are available in two databases: Entrepreneurship Data and Micro, Small, and Medium Enterprises: A Collection of Published Data. This IFC initiative is a work in progress, improved and updated as new data become available. Because the concepts and definitions of micro, small, and medium-size enterprises vary by source, using these data for precise country rankings may be inappropriate. See www.ifc.org/ifcext/sme.nsf/Content/Resources for additional information on sources and precise firm size.

Definitions

• **Investment in infrastructure projects with private participation** refers to infrastructure projects in telecommunications, energy (electricity and natural gas transmission and distribution), transport, and water and sanitation that have reached financial closure and directly or indirectly serve the public. Incinerators, movable assets, stand-alone solid waste projects, and small projects such as windmills are excluded. Included are operation and management contracts, operation and management contracts with major capital expenditure, greenfield projects (in which a private entity or a public-private joint venture builds and operates a new facility), and divestitures. Investment commitments are the sum of investments in facilities and investments in government assets. Investments in facilities are the resources the project company commits to invest during the contract period either in new facilities or in expansion and modernization of existing facilities. Investments in government assets are the resources the project company spends on acquiring government assets such as state-owned enterprises, rights to provide services in a specific area, or the use of specific radio spectrums. • **Domestic credit to private sector** refers to financial resources provided to the private sector—such as through loans, purchases of nonequity securities, and trade credits and other accounts receivable—that establish a claim for repayment. For some countries these claims include credit to public enterprises. •**New businesses registered** are the number of new firms, defined as firms registered in the current year of reporting, expressed as a percentage of total registered firms. Data are collected on firm entry and exit and total firms. Because of underreporting of firms that have closed or exited, especially in developing countries, the data on total registered firms may be biased upward. • **Micro, small, and medium-size enterprises** are business that may be defined by the number of employees. There is no international standard definition of firm size; however, many institutions that collect information use the following size categories: micro enterprises have 0–9 employees, small enterprises have 10–49 employees, and medium-size enterprises have 50–249 employees.

Data sources

Data on investment in infrastructure projects with private participation are from the World Bank's PPI Project database (http://ppi.worldbank. org). Data on domestic credit are from the IMF's *International Financial Statistics.* Data on business registration and micro, small, and medium-size enterprises are from the IFC's Micro, Small, and Medium Enterprises database (www.ifc.org/ifcext/sme.nsf/Content/Resources).

5.2 Investment climate: enterprise surveys

	Survey year	Policy uncertainty	Corruption	Courts		Crime	Regulation and tax administration			Finance	Electricity	Labor	
		Major constraint %	Major constraint %	Major constraint %	Lack confidence courts uphold property rights %	Major constraint %	Tax rates as major constraint %	Time dealing with officials % of management time	Average time to clear customs days	Major constraint %	Major constraint %	Major constraint % Skills	Major constraint % Regulation
Afghanistan		..	..	..	..	..	..	..	..	..	..	..	..
Albania	2005	18.7	31.0	23.2	43.6	8.4	40.9	10.4	1.4	27.1	34.5	10.3	2.5
Algeria	2002	38.8	34.3	..	27.3	..	44.6	..	8.6	62.3	11.4	25.4	12.7
Angola	2006	1.6	12.5	..	51.0	6.2	3.0	7.1	16.5	11.6	34.5	1.1	..
Argentina	2006	16.5	4.3	2.8	64.0	1.6	14.5	12.3	4.5	15.7	2.5	6.0	15.4
Armenia	2005	14.0	14.5	9.0	46.2	5.5	21.0	2.3	5.5	28.0	3.0	2.0	1.5
Australia		..	..	..	..	..	..	..	..	..	..	..	..
Austria		..	..	..	..	..	..	..	..	..	..	..	..
Azerbaijan	2005	2.5	19.5	6.5	34.7	4.0	24.5	5.2	1.7	12.5	6.0	1.0	1.5
Bangladesh	2002	44.3	57.6	..	83.0	39.1	35.3	3.7	8.3	56.7	72.9	19.2	8.3
Belarus	2005	23.3	6.2	2.5	33.4	2.8	20.2	3.6	2.8	29.5	0.9	6.5	3.4
Belgium		..	..	..	..	..	..	..	..	..	..	..	..
Benin	2004	61.4	81.7	48.7	65.3	47.2	86.8	6.5	6.3	82.7	68.5	25.4	35.0
Bolivia	2006	30.3	8.0	0.1	63.8	2.3	3.6	12.8	10.4	7.3	4.5	2.0	3.2
Bosnia and Herzegovina	2005	33.3	23.1	20.5	41.6	19.0	15.4	4.3	2.0	34.9	8.2	3.6	3.1
Botswana	2006	0.7	7.9	1.4	31.4	10.9	7.3	5.0	1.2	24.3	1.7	9.4	1.5
Brazil	2003	75.8	66.9	32.5	39.6	52.0	84.5	7.2	7.8	84.0	20.3	39.6	56.7
Bulgaria	2005	27.4	18.4	16.7	56.7	11.4	20.4	2.8	1.7	31.1	6.4	10.4	7.7
Burkina Faso	2006	..	5.1	0.7	29.9	1.4	18.8	9.5	3.1	37.0	19.6	..	..
Burundi	2006	14.3	2.2	0.2	36.9	2.9	3.7	5.7	4.4	16.0	40.7	0.1	..
Cambodia	2003	37.9	55.1	28.9	61.0	41.3	17.8	8.6	6.2	12.2	12.6	6.4	5.6
Cameroon	2006	..	5.2	1.2	37.3	2.9	32.6	12.8	4.3	13.4	15.1	..	1.2
Canada		..	..	..	..	..	..	..	..	..	..	..	..
Central African Republic		..	..	..	..	..	..	..	..	..	..	..	..
Chad		..	..	..	..	..	..	..	..	..	..	..	..
Chile	2004	15.3	12.9	11.9	22.9	14.7	22.8	5.8	4.0	27.1	17.8	23.8	25.4
China	2003	32.9	27.3	24.9	17.5	20.0	36.8	18.5	6.2	29.1	29.7	30.7	20.7
Hong Kong, China		..	..	..	..	..	..	..	..	..	..	..	..
Colombia	2006	3.3	2.6	1.6	37.8	13.0	12.5	14.2	6.5	7.6	4.3	9.3	1.8
Congo, Dem. Rep.	2006	5.3	0.5	..	56.5	1.8	9.6	6.3	3.6	14.5	45.5	1.0	..
Congo, Rep.		..	..	..	..	..	..	..	..	..	..	..	..
Costa Rica	2005	28.3	39.9	21.9	28.1	28.0	38.2	9.6	2.8	60.1	16.6	13.4	24.2
Côte d'Ivoire		..	..	..	..	..	..	..	..	..	..	..	..
Croatia	2005	17.4	17.4	28.9	26.0	3.8	11.9	2.7	2.0	17.9	2.1	7.2	3.0
Cuba		..	..	..	..	..	..	..	..	..	..	..	..
Czech Republic	2005	21.7	20.2	24.9	53.1	15.5	58.9	2.1	2.7	25.2	15.5	12.3	15.5
Denmark		..	..	..	..	..	..	..	..	..	..	..	..
Dominican Republic		..	..	..	..	..	..	..	..	..	..	..	..
Ecuador	2003	60.7	49.2	34.0	70.8	27.8	38.0	13.4	5.9	46.8	28.3	22.3	14.1
Egypt, Arab Rep.	2004	63.8	50.3	24.7	..	9.4	80.0	2.1	4.8	36.7	26.5	29.7	28.1
El Salvador	2003	28.4	35.1	16.3	46.6	49.0	22.6	7.2	1.5	37.6	21.5	20.0	3.9
Eritrea	2002	29.1	2.5	11.6	29.0	1.3	29.1	3.8	3.2	57.0	36.7	40.5	5.1
Estonia	2005	5.1	4.2	1.9	29.6	1.9	2.8	2.3	1.7	8.8	3.3	7.0	18.6
Ethiopia	2002	38.2	38.4	4.6	18.2	9.4	72.2	2.1	4.2	50.0	42.5	17.7	4.5
Finland		..	..	..	..	..	..	..	..	..	..	..	..
France		..	..	..	..	..	..	..	..	..	..	..	..
Gabon		..	..	..	..	..	..	..	..	..	..	..	..
Gambia, The	2006	2.1	0.6	2.3	28.4	2.3	6.5	7.3	5.0	11.6	53.7	1.7	..
Georgia	2005	44.7	19.6	11.6	29.0	23.6	35.7	3.0	3.4	31.2	33.2	14.1	7.0
Germany	2005	5.8	3.8	2.3	10.3	1.9	29.4	4.5	4.0	23.2	1.0	6.9	9.5
Ghana		..	..	..	..	..	..	..	..	..	..	..	..
Greece	2005	9.1	9.8	4.6	18.2	5.2	27.5	3.7	4.9	23.3	4.6	8.5	7.6
Guatemala	2003	66.4	80.9	31.2	71.3	80.4	56.5	12.4	1.9	47.5	26.6	31.4	16.7
Guinea	2006	1.4	2.7	0.4	59.0	1.7	3.1	2.6	4.1	8.3	61.0	..	..
Guinea-Bissau	2006	5.0	6.1	1.4	70.3	0.7	5.3	2.9	5.6	19.6	41.4	..	..
Haiti		..	..	..	..	..	..	..	..	..	..	..	..

Investment climate: enterprise surveys

5.2

	Survey year	Policy uncertainty	Corruption	Courts		Crime	Regulation and tax administration			Finance	Electricity	Labor	
		Major constraint %	Major constraint %	Major constraint %	Lack confidence courts uphold property rights %	Major constraint %	Tax rates as major constraint %	Time dealing with officials % of management time	Average time to clear customs days	Major constraint %	Major constraint %	Major constraint % Skills	Major constraint % Regulation
Honduras	2003	46.7	62.7	21.6	56.1	60.9	34.4	10.2	1.6	62.4	36.4	26.4	14.2
Hungary	2005	25.5	10.3	24.5	49.7	7.1	49.7	5.3	3.3	32.9	2.3	13.5	9.7
India	2006	9.2	25.0	2.7	25.3	11.8	27.5	6.7	13.6	19.4	32.0	7.9	8.6
Indonesia	2003	48.2	41.5	24.7	40.8	22.0	29.5	4.0	3.4	30.7	22.3	18.9	25.9
Iran, Islamic Rep.		..	..	..	..	..	..	..	..	..	..	..	..
Iraq		..	..	..	..	..	..	..	..	..	..	..	..
Ireland	2005	5.6	3.0	2.8	28.3	4.8	17.4	2.3	2.6	13.8	6.4	15.6	9.6
Israel		..	..	..	..	..	..	..	..	..	..	..	..
Italy		..	..	..	..	..	..	..	..	..	..	..	..
Jamaica	2005	41.1	45.6	20.0	26.7	54.4	60.0	6.3	4.3	72.2	45.6	41.1	18.9
Japan		..	..	..	..	..	..	..	..	..	..	..	..
Jordan		..	..	..	..	..	..	..	..	..	..	..	..
Kazakhstan	2005	9.7	11.3	14.3	42.0	6.7	16.0	3.2	6.0	20.0	3.7	7.7	2.3
Kenya	2003	49.6	72.5	..	51.3	69.6	67.8	11.7	4.3	72.5	47.1	27.5	22.5
Korea, Dem. Rep.		..	..	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	2005	40.4	8.3	3.4	37.2	3.4	14.9	3.2	6.0	15.7	8.3	6.8	4.1
Kuwait		..	..	..	..	..	..	..	..	..	..	..	..
Kyrgyz Republic	2005	32.2	32.2	16.3	50.8	19.3	31.2	6.1	4.1	32.7	4.0	18.8	2.5
Lao PDR		..	..	..	..	..	..	..	..	..	..	..	..
Latvia	2005	21.8	8.9	5.4	51.3	3.0	29.2	2.9	1.7	9.9	4.5	17.8	3.5
Lebanon	2006	54.1	64.9	56.1	69.8	22.9	61.2	12.0	6.4	65.4	61.2	38.0	38.2
Lesotho	2003	31.1	35.1	24.3	38.2	45.9	41.9	19.8	2.3	54.1	35.1	29.7	17.6
Liberia		..	..	..	..	..	..	..	..	..	..	..	..
Libya		..	..	..	..	..	..	..	..	..	..	..	..
Lithuania	2005	22.1	13.2	14.2	49.7	9.3	40.7	5.1	1.8	15.2	3.9	15.2	8.8
Macedonia, FYR	2005	25.5	32.4	28.7	55.4	12.2	19.7	8.2	1.9	41.0	11.7	5.9	8.5
Madagascar	2005	41.0	46.1	33.4	44.6	37.2	44.7	20.8	2.9	68.3	41.3	30.4	14.7
Malawi	2005	5.8	3.2	1.3	28.9	5.1	9.6	5.8	3.5	27.6	19.2	5.8	0.6
Malaysia		..	..	..	..	..	..	..	..	..	..	..	..
Mali	2003	20.8	48.7	16.9	33.1	22.1	36.4	7.5	5.8	63.6	24.0	20.8	3.9
Mauritania	2006	0.7	1.5	0.8	35.6	1.2	12.8	5.8	3.9	21.6	13.0	3.8	0.4
Mauritius	2005	23.9	36.1	22.9	29.4	25.4	27.8	9.6	3.3	52.7	12.7	42.9	27.8
Mexico	2006	8.5	17.8	0.1	63.6	7.3	10.6	20.2	4.5	8.7	8.2	3.1	1.1
Moldova	2005	32.2	19.6	23.6	64.7	17.6	44.2	3.5	2.6	40.7	3.5	12.1	9.5
Mongolia	2004	39.2	48.5	24.7	37.1	27.8	64.9	5.7	3.5	64.4	25.8	28.9	10.3
Morocco	2004	39.2	16.9	29.1	23.5	7.6	62.6	7.5	2.0	84.4	8.9	21.1	16.2
Mozambique		..	..	..	..	..	..	..	..	..	..	..	..
Myanmar		..	..	..	..	..	..	..	..	..	..	..	..
Namibia	2006	0.8	9.3	0.6	24.9	20.6	17.2	2.9	1.3	11.8	3.1	9.4	4.4
Nepal		..	..	..	..	..	..	..	..	..	..	..	..
Netherlands		..	..	..	..	..	..	..	..	..	..	..	..
New Zealand		..	..	..	..	..	..	..	..	..	..	..	..
Nicaragua	2003	58.2	65.7	33.2	60.4	39.2	34.7	13.0	1.5	65.9	34.7	17.0	6.9
Niger	2005	..	11.2	1.6	50.0	..	32.8	11.5	4.0	12.0	1.6	..	0.8
Nigeria		..	..	..	..	..	..	..	..	..	..	..	..
Norway		..	..	..	..	..	..	..	..	..	..	..	..
Oman	2003	20.5	11.9	14.8	12.9	8.6	20.5	6.9	3.4	38.0	10.1	34.4	34.7
Pakistan	2002	40.1	40.3	20.0	62.6	21.5	45.6	8.7	8.9	47.5	39.2	12.7	15.0
Panama	2006	4.2	10.8	1.1	51.6	7.3	14.6	10.2	5.0	6.6	30.6	3.8	4.4
Papua New Guinea		..	..	..	..	..	..	..	..	..	..	..	..
Paraguay	2006	11.5	14.8	3.0	74.1	3.1	1.4	10.4	4.4	21.0	1.9	6.2	5.4
Peru	2006	17.0	4.3	0.6	75.2	5.5	7.7	8.2	4.1	9.3	2.2	2.4	4.0
Philippines	2003	29.5	35.2	13.0	33.8	26.5	30.4	6.9	5.4	25.0	33.4	11.9	24.7
Poland	2005	39.9	15.0	30.6	45.4	15.4	55.4	3.8	3.1	46.3	4.0	13.8	16.9
Portugal	2005	21.5	14.3	17.0	47.7	14.9	19.6	3.2	6.6	25.6	7.8	12.1	17.6
Puerto Rico		..	..	..	..	..	..	..	..	..	..	..	..

5.2 Investment climate: enterprise surveys

	Survey year	Policy uncertainty	Corruption	Courts		Crime	Regulation and tax administration			Finance	Electricity	Labor	
		Major constraint %	Major constraint %	Major constraint %	Lack confidence courts uphold property rights %	Major constraint %	Tax rates as major constraint %	Time dealing with officials % of management time	Average time to clear customs days	Major constraint %	Major constraint %	Major constraint % Skills	Major constraint % Regulation
Romania	2005	35.3	27.6	31.1	44.0	15.1	34.0	1.5	2.6	31.7	6.4	12.5	15.1
Russian Federation	2005	25.8	15.4	8.6	63.9	9.0	21.6	6.3	7.2	21.8	5.1	12.8	3.0
Rwanda	2006	0.9	0.8	..	34.6	..	26.9	5.9	6.7	13.6	31.8	2.8	..
Saudi Arabia		..	..	..	..	..	..	..	..	..	..	..	..
Senegal	2003	30.5	39.3	13.0	40.5	14.9	50.0	3.2	5.9	71.0	30.5	18.3	16.0
Serbia and Montenegro		..	..	..	..	..	..	..	..	..	..	..	..
Sierra Leone		..	..	..	..	..	..	..	..	..	..	..	..
Singapore		..	..	..	..	..	..	..	..	..	..	..	..
Slovak Republic	2005	12.7	10.0	12.3	44.4	5.0	8.2	3.0	5.8	10.9	2.7	8.2	4.5
Slovenia	2005	11.3	3.6	8.1	34.4	0.9	12.6	3.7	2.9	14.9	2.7	5.4	4.5
Somalia		..	..	..	..	..	..	..	..	..	..	..	..
South Africa	2003	17.9	16.1	8.8	20.8	29.0	18.6	9.2	4.3	22.6	9.0	35.5	32.8
Spain	2005	10.1	7.6	7.8	16.6	9.6	18.7	0.8	3.7	19.7	8.3	13.8	11.8
Sri Lanka	2004	34.0	16.9	..	31.2	14.0	19.1	3.5	3.1	28.0	41.3	21.3	25.6
Sudan		..	..	..	..	..	..	..	..	..	..	..	..
Swaziland	2006	0.6	5.2	1.0	56.7	18.5	15.4	4.4	1.9	10.3	6.8	2.3	0.4
Sweden		..	..	..	..	..	..	..	..	..	..	..	..
Switzerland		..	..	..	..	..	..	..	..	..	..	..	..
Syrian Arab Republic	2003	26.4	57.1	8.6	..	29.6	62.3	10.3	5.6	30.0	57.5	36.1	33.0
Tajikistan	2005	5.5	14.5	4.5	35.9	4.0	22.0	3.3	4.8	10.0	10.0	4.5	1.5
Tanzania	2006	0.5	0.5	..	35.4	1.9	3.9	4.0	4.8	9.3	72.9	1.4	..
Thailand	2004	29.1	18.3	38.6	25.8	10.3	24.4	1.3	1.3	20.6	25.6	30.0	11.4
Togo		..	..	..	..	..	..	..	..	..	..	..	..
Trinidad and Tobago		..	..	..	..	..	..	..	..	..	..	..	..
Tunisia		..	..	..	..	..	..	..	..	..	..	..	..
Turkey	2005	31.1	16.7	25.5	28.5	18.2	37.6	..	4.5	25.0	9.2	9.7	12.1
Turkmenistan		..	..	..	..	..	..	..	..	..	..	..	..
Uganda	2006	0.3	2.4	0.1	35.6	0.2	11.0	5.2	2.9	6.7	63.3	0.4	..
Ukraine	2005	31.0	21.2	13.7	48.2	11.9	45.6	8.1	3.9	40.5	4.9	19.8	6.4
United Arab Emirates		..	..	..	..	..	..	..	..	..	..	..	..
United Kingdom		..	..	..	..	..	..	..	..	..	..	..	..
United States		..	..	..	..	..	..	..	..	..	..	..	..
Uruguay	2006	5.8	2.4	1.5	37.9	5.3	20.8	6.8	1.7	11.8	5.2	1.8	7.2
Uzbekistan	2005	10.6	6.5	5.1	41.7	6.8	18.1	2.5	4.7	16.0	7.2	4.1	2.7
Venezuela, RB		..	..	..	..	..	..	..	..	..	..	..	..
Vietnam	2005	14.0	11.2	4.9	23.1	3.7	13.6	5.8	2.5	40.5	15.7	22.2	10.8
West Bank and Gaza		..	..	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.		..	..	..	..	..	..	..	..	..	..	..	..
Zambia	2002	56.5	45.9	38.6	36.1	48.8	57.5	13.0	1.6	84.5	39.6	35.7	16.9
Zimbabwe		..	..	..	..	..	..	..	..	..	..	..	..

Note: Data are based on enterprise surveys conducted by the World Bank and its partners during 2002–06. While averages are reported, there are significant variations across firms. Surveys of Eastern Europe and Central Asia were conducted under the joint World Bank–European Bank for Reconstruction and Development Business Environment and Enterprise Performance Surveys Initiative.

Investment climate: enterprise surveys 5.2

About the data

The World Bank Group's Enterprise Surveys capture business perceptions on the biggest obstacles to enterprise growth, the relative importance of constraints to increasing employment and productivity, and the effects of a country's investment climate on its international competitiveness. These surveys cover almost 58,000 firms in 97 countries for 2002–06. In addition to these surveys, data from the Doing Business project, which benchmarks regulatory regimes in 175 countries, are presented in table 5.3.

Improving government policies and behaviors is key to shaping the investment climate because they are influential in driving growth and poverty reduction. Firms evaluating alternative investment options, governments interested in improving their investment climate, and economists seeking to understand the role of different factors in explaining economic performance have all grappled with defining and measuring the investment climate.

The indicators in the table cover eight dimensions of the investment climate: policy uncertainty, corruption, courts, crime, regulation and tax administration, finance, infrastructure (electricity), and labor.

Firms in developing countries rate access to and cost of finance as their dominant concern among investment climate constraints. Another highly ranked constraint is policy uncertainty, which measures the credibility of governments and their policies and the ability to deliver on promises. Corruption—the exploitation of public office for private gain—can harm the investment climate in several ways. It can distort policymaking, undermine government credibility, tax entrepreneurial activities, and divert resources from public coffers. Better courts reduce the risks firms face, so that firms are willing to invest more. And the importance of courts grows as the number of large and complex long-term transactions increases. Robbery, fraud, and other crimes against property and against the person undermine the investment climate.

Most countries have room to improve regulation and taxation without compromising broader social interests. The investment climate is harmed when governments impose unnecessary costs, by increasing uncertainty and risk and by erecting unjustified barriers to competition. Improvements in the tax system may include broadening the tax base, simplifying tax structures, increasing the autonomy of tax agencies, and improving compliance through computerization. When financial markets work well, they connect firms to lenders and investors, which allow firms to seize business opportunities and grow their businesses. But too often government distortions introduced by state ownership or directed credit undermine financial sector development, productivity, and economic growth. Firms that have access to modern infrastructure—telecommunications, reliable electricity supplies, and efficient transportation—are more productive, and improvements in infrastructure services also benefit households. Ill-considered labor regulations can discourage firms from creating more jobs, and while some employees may benefit, the unemployed, the low skilled, and those working in the informal economy will not.

Data in this table for 27 countries in the Europe and Central Asia region plus 7 comparators in Europe and Asia (Germany, Greece, Ireland, Republic of Korea, Portugal, Spain, and Vietnam) are based on the joint European Bank for Reconstruction and Development–World Bank Business Environment and Enterprise Performance Surveys (BEEPS). All other data are from the World Bank Group's Enterprise Surveys. Both surveys sample the universe of registered businesses and follow either a simple random sample or a stratified random sample methodology, drawing from registered establishments. BEEPS use a simple random sample methodology based on population proportions and can be compared across countries. In the Enterprise Surveys a random sample across sectors is supplemented by an emphasis on firms from the same few selected manufacturing industries plus the retail sector as a means of providing measures of productivity that can be compared across economies. Because the distribution of establishments in most countries is overwhelmingly populated by small and medium-size enterprises, Enterprise Surveys generally oversample large establishments. Other differences include the question related to "problems doing business," which offers a similar but slightly different response scale between the two surveys. As a result, the data are not strictly comparable. In the two countries where the two surveys overlapped (Turkey and Vietnam), BEEPS survey data were used for Turkey and Enterprise Survey data were used for Vietnam (a BEEPS comparator country). Sample sizes for recent surveys range from 200 to 1,500 businesses.

For the 2006 Enterprise Surveys in Africa and Latin America and for the 2005 surveys for Malawi and Niger the indicators for severity of constraints reflect the percentage of managers who identified a particular constraint as their biggest. In any given country some constraints may not be identified by any firms as the biggest constraint even if they would be considered major or severe. The 2006 Enterprise Surveys in Latin America and Africa, except those for Burkina Faso, Cameroon, and Cape Verde, have weights for the estimates of the aggregate indicators in order to account for the random stratified sample design.

For more information on the investment climate and Enterprise Surveys, see www.worldbank.org/eca/econ and www.enterprisesurveys.org/.

Definitions

• **Survey year** is the year in which the underlying data were collected. • **Policy uncertainty** measures the percentage of senior managers who ranked economic and regulatory policy uncertainty as a major or very severe constraint. • **Corruption** measures the percentage of senior managers who ranked corruption as a major or very severe constraint. • **Courts** measure the percentage of senior managers who ranked courts and dispute resolution systems as a major or very severe constraint. • **Lack confidence courts uphold property rights** measures the percentage of managers who do not agree with the statement: "I am confident that the judicial system will enforce my contractual and property rights in business disputes." • **Crime** measures the percentage of senior managers who ranked crime, theft, and disorder as a major or very severe constraint. • **Tax rates as major constraint** measure the percentage of senior managers who ranked tax rates as a major or very severe constraint. • **Time dealing with officials** is the percentage of management time in a given week spent on requirements imposed by government regulations (taxes, customs, labor regulations, licensing, and registration). • **Average time to clear customs** is the number of days to clear an imported good through customs. • **Finance** measures percentage of senior managers who ranked access to finance or cost of finance as a major or very severe constraint. • **Electricity** measures the percentage of senior managers who ranked electricity as a major or severe constraint. • **Labor skills** measure the percentage of senior managers who ranked skills of available workers as a major or severe constraint. • **Labor regulations** measure the percentage of senior managers who ranked labor regulations as a major or severe constraint.

Data sources

Data on the investment climate are from the World Bank Group's Enterprise Surveys website (www.enterprisesurveys.org/), which compiles data from surveys undertaken by the World Bank and other development partners.

5.3 Business environment: Doing Business indicators

	Starting a business			Registering property		Dealing with licenses		Employing workers	Enforcing contracts		Protecting investors	Closing a business
	Number of procedures **April 2006**	Time required days **April 2006**	Cost % of per capita income **April 2006**	Number of procedures **April 2006**	Time required days **April 2006**	Number of procedures to build a warehouse **April 2006**	Time required to build a warehouse days **April 2006**	Rigidity of employment index 0 (less rigid) to 100 (more rigid) **April 2006**	Number of procedures **April 2006**	Time required days **April 2006**	Disclosure index 0 (less disclosure) to 10 (more disclosure) **April 2006**	Time to resolve insolvency years **April 2006**
Afghanistan	3	8	67.4	11	252	..	..	46	..	1,642	0	..
Albania	11	39	22.4	7	47	22	344	38	39	390	0	4.0
Algeria	14	24	21.5	15	51	25	244	45	49	397	6	2.5
Angola	13	124	486.7	7	334	15	326	64	47	1,011	5	6.2
Argentina	15	32	12.1	5	44	23	288	41	33	520	6	2.8
Armenia	9	24	5.1	3	4	18	112	31	24	185	5	1.9
Australia	2	2	1.8	5	5	17	140	3	19	181	8	1.0
Austria	9	29	5.6	3	32	14	195	37	23	342	2	1.1
Azerbaijan	15	53	9.5	7	61	28	212	38	27	267	4	2.7
Bangladesh	8	37	87.6	8	425	13	185	30	50	1,442	6	4.0
Belarus	16	69	26.1	7	231	18	354	27	28	225	1	5.8
Belgium	4	27	5.8	7	132	15	184	20	27	328	8	0.9
Benin	7	31	173.3	3	50	16	333	46	49	720	5	4.0
Bolivia	15	50	140.6	7	92	14	183	74	47	591	1	1.8
Bosnia and Herzegovina	12	54	37.0	7	331	16	467	42	36	595	3	3.3
Botswana	11	108	10.6	4	30	24	169	20	26	501	8	1.3
Brazil	17	152	9.9	14	47	19	460	42	42	616	5	4.0
Bulgaria	9	32	7.9	9	19	22	226	47	34	440	10	3.3
Burkina Faso	8	34	120.8	8	107	32	226	64	41	446	6	4.0
Burundi	11	43	222.4	5	94	18	302	59	47	403	..	4.0
Cambodia	10	86	236.4	7	56	28	181	49	31	401	5	..
Cameroon	12	37	152.2	5	93	15	444	56	58	800	8	3.2
Canada	2	3	0.9	6	10	15	77	4	17	346	8	0.8
Central African Republic	10	14	209.3	3	69	21	245	73	45	660	4	4.8
Chad	19	75	226.1	6	44	16	199	60	52	743	3	10.0
Chile	9	27	9.8	6	31	12	171	24	33	480	8	5.6
China	13	35	9.3	3	32	29	367	24	31	292	10	2.4
Hong Kong, China	5	11	3.3	5	54	22	160	0	16	211	10	1.1
Colombia	13	44	19.8	7	23	12	150	27	37	1,346	7	3.0
Congo, Dem. Rep.	13	155	481.1	8	57	14	306	78	51	685	3	5.2
Congo, Rep.	8	71	214.8	7	137	15	175	69	47	560	4	3.0
Costa Rica	11	77	23.5	6	21	19	119	32	34	615	2	3.5
Côte d'Ivoire	11	45	134.1	6	32	22	569	45	25	525	6	2.2
Croatia	10	45	12.2	5	399	28	278	50	22	561	2	3.1
Cuba	..	..	..	..	..	..	..	..	..	..	..	..
Czech Republic	10	24	8.9	4	123	31	271	28	21	820	2	9.2
Denmark	3	5	0.0	6	42	7	70	17	15	190	7	3.0
Dominican Republic	10	73	30.2	7	107	17	165	42	29	460	5	3.5
Ecuador	14	65	31.8	10	20	19	149	51	41	498	1	8.0
Egypt, Arab Rep.	10	19	68.8	7	193	30	263	53	55	1,010	5	4.2
El Salvador	10	26	75.6	6	33	22	144	24	41	626	6	4.0
Eritrea	13	76	115.9	12	101	..	..	20	35	305	4	1.7
Estonia	6	35	5.1	3	51	13	117	58	25	275	8	3.0
Ethiopia	7	16	45.9	13	43	12	133	34	30	690	4	2.4
Finland	3	14	1.1	3	14	17	56	48	27	228	6	0.9
France	7	8	1.1	9	183	10	155	56	21	331	10	1.9
Gabon	10	60	162.8	8	60	13	268	59	32	880	5	5.0
Gambia, The	8	27	292.1	5	371	17	145	27	26	247	2	3.0
Georgia	7	16	10.9	6	9	17	137	7	24	285	4	3.3
Germany	9	24	5.1	4	40	11	133	44	30	394	5	1.2
Ghana	12	81	49.6	7	382	16	127	34	29	552	7	1.9
Greece	15	38	24.2	12	23	17	176	58	22	730	1	2.0
Guatemala	13	30	52.1	5	37	23	390	34	36	1,459	3	3.0
Guinea	13	49	186.5	6	104	29	278	41	44	276	5	3.8
Guinea-Bissau	17	233	261.2	9	211	11	161	77	40	1,140	0	..
Haiti	12	203	127.7	5	683	12	141	24	35	368	4	5.7

Business environment: Doing Business indicators

5.3

	Starting a business			Registering property		Dealing with licenses		Employing workers	Enforcing contracts		Protecting investors	Closing a business
	Number of procedures **April 2006**	Time required days **April 2006**	Cost % of per capita income **April 2006**	Number of procedures **April 2006**	Time required days **April 2006**	Number of procedures to build a warehouse **April 2006**	Time required to build a warehouse days **April 2006**	Rigidity of employment index 0 (less rigid) to 100 (more rigid) **April 2006**	Number of procedures **April 2006**	Time required days **April 2006**	Disclosure index 0 (less disclosure) to 10 (more disclosure) **April 2006**	Time to resolve insolvency years **April 2006**
Honduras	13	44	60.6	7	36	14	199	36	36	480	1	3.8
Hungary	6	38	20.9	4	78	25	212	34	21	335	2	2.0
India	11	35	73.7	6	62	20	270	41	56	1,420	7	10.0
Indonesia	12	97	86.7	7	42	19	224	44	34	570	8	5.5
Iran, Islamic Rep.	8	47	5.4	9	36	21	668	49	23	520	5	4.5
Iraq	11	77	67.6	5	8	14	216	59	65	520	4	..
Ireland	4	19	0.3	5	38	10	181	33	18	217	10	0.4
Israel	5	34	5.1	7	144	21	215	27	31	585	7	4.0
Italy	9	13	15.2	8	27	17	284	54	40	1,210	7	1.2
Jamaica	6	8	9.4	5	54	14	242	4	18	415	4	1.1
Japan	8	23	7.5	6	14	11	96	29	20	242	7	0.6
Jordan	11	18	73.0	8	22	16	122	27	43	342	5	4.3
Kazakhstan	7	20	7.0	8	52	32	248	23	37	183	7	3.3
Kenya	13	54	46.3	8	73	11	170	28	25	360	4	4.5
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	12	22	15.2	7	11	14	52	34	29	230	7	1.5
Kuwait	13	35	1.6	8	55	26	149	13	52	390	7	4.2
Kyrgyz Republic	8	21	9.8	7	8	20	218	38	44	140	8	4.0
Lao PDR	8	163	17.3	9	135	24	192	37	53	443	0	5.0
Latvia	5	16	3.5	8	54	22	152	59	21	240	5	3.0
Lebanon	6	46	105.4	8	25	16	275	24	39	721	9	4.0
Lesotho	8	73	39.9	6	101	14	265	35	58	695	2	2.6
Liberia	..	..	..	..	..	..	..	..	..	..	..	..
Libya	..	..	..	..	..	..	..	..	..	..	..	..
Lithuania	7	26	2.8	3	3	14	151	48	24	166	6	1.7
Macedonia, FYR	10	18	7.4	6	98	18	222	54	27	385	5	3.7
Madagascar	10	21	35.0	8	134	19	297	57	29	591	5	..
Malawi	10	37	134.7	6	118	22	185	21	40	337	4	2.6
Malaysia	9	30	19.7	5	144	25	281	10	31	450	10	2.3
Mali	13	42	201.9	5	33	15	209	51	28	860	6	3.6
Mauritania	11	82	121.6	4	49	19	152	59	40	400	0	8.0
Mauritius	6	46	8.0	6	210	21	145	30	37	630	6	1.7
Mexico	8	27	14.2	5	74	12	142	38	37	415	8	1.8
Moldova	10	30	13.3	6	48	34	158	54	37	310	7	2.8
Mongolia	8	20	5.1	5	11	18	96	34	29	314	5	4.0
Morocco	6	12	12.7	4	46	21	217	63	42	615	6	1.8
Mozambique	13	113	85.7	8	42	13	364	54	38	1,010	7	5.0
Myanmar	..	..	..	..	..	..	..	..	..	..	..	..
Namibia	10	95	18.0	9	23	11	105	27	31	270	5	1.5
Nepal	7	31	78.5	3	5	15	424	52	28	590	6	5.0
Netherlands	6	10	7.2	2	5	18	184	42	22	408	4	1.7
New Zealand	2	12	0.2	2	2	7	184	7	28	109	10	2.0
Nicaragua	6	39	131.6	8	124	12	192	24	20	486	4	2.2
Niger	11	24	416.8	5	49	19	148	77	33	360	4	5.0
Nigeria	9	43	54.4	16	80	16	465	21	23	457	6	1.5
Norway	4	13	2.5	1	1	13	104	54	14	277	7	0.9
Oman	9	34	4.5	2	16	16	242	35	41	598	8	4.0
Pakistan	11	24	21.3	6	50	12	218	43	55	880	6	2.8
Panama	7	19	23.9	7	44	22	121	56	45	686	3	2.5
Papua New Guinea	8	56	28.2	4	72	20	218	10	22	440	5	3.0
Paraguay	17	74	136.8	6	46	15	273	59	46	478	6	3.9
Peru	10	72	32.5	5	33	19	201	61	35	300	8	3.1
Philippines	11	48	18.7	8	33	23	197	39	25	600	1	5.7
Poland	10	31	21.4	6	197	25	322	33	41	980	7	3.0
Portugal	8	8	4.3	5	81	20	327	51	24	495	6	2.0
Puerto Rico	7	7	0.8	8	15	20	212	32	43	620	7	3.8

5.3 Business environment: Doing Business indicators

	Starting a business			Registering property		Dealing with licenses		Employing workers	Enforcing contracts		Protecting investors	Closing a business
	Number of procedures **April 2006**	Time required days **April 2006**	Cost % of per capita income **April 2006**	Number of procedures **April 2006**	Time required days **April 2006**	Number of procedures to build a warehouse **April 2006**	Time required to build a warehouse days **April 2006**	Rigidity of employment index 0 (less rigid) to 100 (more rigid) **April 2006**	Number of procedures **April 2006**	Time required days **April 2006**	Disclosure index 0 (less disclosure) to 10 (more disclosure) **April 2006**	Time to resolve insolvency years **April 2006**
Romania	5	11	4.4	8	150	17	242	51	43	335	9	4.6
Russian Federation	7	28	2.7	6	52	22	531	44	31	178	7	3.8
Rwanda	9	16	188.3	5	371	17	252	49	27	310	2	..
Saudi Arabia	13	39	58.6	4	4	18	125	7	44	360	8	2.8
Senegal	10	58	112.6	6	114	15	185	61	33	780	4	3.0
Serbia and Montenegro[a]	10	18	10.2	6	111	20	211	38	33	635	7	2.7
Sierra Leone	9	26	1,194.5	8	235	48	236	63	58	515	3	2.6
Singapore	6	6	0.8	3	9	11	129	0	29	120	10	0.8
Slovak Republic	9	25	4.8	3	17	13	272	39	27	565	2	4.0
Slovenia	9	60	9.4	6	391	14	207	57	25	1,350	3	2.0
Somalia	..	..	..	..	..	..	..	..	..	..	..	..
South Africa	9	35	6.9	6	23	17	174	41	26	600	8	2.0
Spain	10	47	16.2	3	17	11	277	63	23	515	5	1.0
Sri Lanka	8	50	9.2	8	63	17	167	27	20	837	4	2.2
Sudan	10	39	58.6	6	9	17	172	55	67	770	0	..
Swaziland	13	61	41.1	11	46	11	114	17	31	972	1	2.0
Sweden	3	16	0.7	1	2	8	116	43	19	208	6	2.0
Switzerland	6	20	2.2	4	16	15	152	23	22	215	0	3.0
Syrian Arab Republic	12	43	21.1	4	34	20	134	30	47	872	6	4.1
Tajikistan	14	67	75.1	6	37	18	187	31	46	257	0	3.0
Tanzania	13	30	91.6	10	123	26	313	67	21	393	3	3.0
Thailand	8	33	5.8	2	2	9	127	18	26	425	10	2.7
Togo	13	53	252.7	7	242	14	273	58	37	535	4	3.0
Trinidad and Tobago	9	43	1.1	8	162	19	292	7	37	1,340	4	..
Tunisia	10	11	9.3	5	57	24	79	46	21	481	0	1.3
Turkey	8	9	26.8	8	9	32	232	49	34	420	8	5.9
Turkmenistan	..	..	..	..	..	..	..	..	..	..	..	..
Uganda	17	30	114.0	13	227	19	156	7	19	484	7	2.2
Ukraine	10	33	9.2	10	93	18	242	55	28	183	1	2.9
United Arab Emirates	12	63	36.4	3	6	21	125	20	34	607	4	5.1
United Kingdom	6	18	0.7	2	21	19	115	14	19	229	10	1.0
United States	5	5	0.7	4	12	18	69	0	17	300	7	1.5
Uruguay	10	43	44.2	8	66	17	156	31	39	655	3	2.1
Uzbekistan	8	29	14.1	12	97	19	287	34	35	195	4	4.0
Venezuela, RB	16	141	25.4	8	47	13	276	76	41	435	3	4.0
Vietnam	11	50	44.5	4	67	14	133	37	37	295	4	5.0
West Bank and Gaza	12	93	324.7	10	72	21	134	31	26	700	7	..
Yemen, Rep.	12	63	228.0	6	21	13	107	33	37	360	6	3.0
Zambia	6	35	29.9	6	70	16	196	23	21	404	3	3.1
Zimbabwe	10	96	35.6	4	30	21	481	34	33	410	8	3.3
World	**9 u**	**48 u**	**69.0 u**	**6 u**	**86 u**	**18 u**	**205 u**	**37 u**	**35 u**	**540 u**	**5 u**	**2.9 u**
Low income	10	59	146.3	7	125	18	231	44	39	572	4	3.1
Middle income	10	51	48.6	6	80	18	210	35	35	575	5	3.2
Lower middle income	10	57	62.9	7	85	18	215	35	35	576	4	3.2
Upper middle income	9	42	26.0	6	72	18	201	35	36	573	5	3.2
Low & middle income	10	54	83.5	7	96	18	217	38	37	574	5	3.2
East Asia & Pacific	9	50	48.8	5	112	18	152	24	33	507	5	2.6
Europe & Central Asia	9	31	14.7	6	91	22	248	40	31	357	5	3.7
Latin America & Carib.	10	77	51.0	7	81	15	200	32	39	655	4	3.3
Middle East & N. Africa	10	40	89.5	7	48	19	223	42	42	643	6	2.8
South Asia	8	33	46.6	7	136	16	227	35	39	969	4	3.6
Sub-Saharan Africa	11	62	162.9	7	110	18	236	47	38	581	4	3.0
High income	7	21	7.7	5	44	16	155	30	26	398	6	1.8
Europe EMU	8	22	7.8	6	54	15	196	46	25	473	6	1.3

a. Data are for Serbia only.

Business environment: Doing Business indicators

5.3

About the data

The table presents key indicators on the environment for doing business. The indicators identify regulations that enhance or constrain business investment, productivity, and growth. The data are from the World Bank's Doing Business database, which now includes data on 175 economies.

A vibrant private sector is central to promoting growth and expanding opportunities for poor people. But encouraging firms to invest, improve productivity, and create jobs requires a legal and regulatory environment that fosters access to credit, protects property rights, and supports efficient judicial, taxation, and customs systems. The indicators in the table point to the administrative and regulatory reforms and institutions needed to create a favorable environment for doing business.

When entrepreneurs start a business, the first obstacles they face are the administrative and legal procedures required to register the new firm. Countries differ widely in how they regulate the entry of new businesses. In some countries the process is straightforward and affordable. But in others the procedures are so burdensome that entrepreneurs may opt to run their business informally. The data on starting a business cover the number of start-up procedures, the time required, and cost to complete them.

Property registries were first developed to help raise tax revenue, but they have benefited entrepreneurs as well. Securing rights to land and buildings, a major source of wealth in most countries, strengthens incentives to invest and facilitates trade. More complex procedures to register property are associated with less perceived security of property rights, more informality, and more corruption. The data cover the number procedures required and time required to secure rights to property.

Lack of access to credit is one of the biggest barriers entrepreneurs face in starting and operating a business. Indicators covering access to credit and financial information are presented in table 5.5.

There are many types of business licenses required, and striking the right balance between the ease of doing business and consumer safety requires continuous reform. Since construction is a large sector in most economies, the procedures required for a business in the construction industry to build a standardized warehouse are recorded. These include obtaining all necessary licenses and permits, completing all required notifications and inspections, and submitting the relevant documents to the authorities. The data cover the number of procedures and time needed by the construction firm to complete all procedures.

Every economy has a complex system of laws and institutions to protect the interests of workers and guarantee a minimum standard of living for its population. The rigidity of employment index focuses on the regulation of employment, specifically employing workers and the rigidity of working hours. This index is the average of three subindexes: a difficulty of hiring index, a rigidity of hours index, and a difficulty of firing index. All subindexes have several components and take values between 0 and 100, with higher values indicating more rigid regulation.

Contract enforcement is critical to enable businesses to engage with new borrowers or customers. Without good contract enforcement, trade and credit will be restricted to a small community of people who have developed relationships through repeated dealings or the security of assets. The institution that enforces contracts between debtors and creditors, and suppliers and customers, is the court. The efficiency of contract enforcement is reflected in two indicators: the number of judicial procedures to resolve a dispute and the time it takes to enforce a commercial contract.

What companies disclose to the public has a large impact on investor protection. Both investors and entrepreneurs benefit greatly from such legal protection. The disclosure index is based on several measures that cover ownership disclosure measures that reduce expropriation, and disclosures to help investors.

Unviable businesses prevent assets and human capital from being allocated to more productive uses in new companies or in viable companies that are financially distressed. The time to close a business (resolve an insolvency) captures the average time to complete a procedure, as estimated by insolvency lawyers. Information is collected on the sequence of bankruptcy procedures, and on whether any procedures can be carried out simultaneously. Delays due to legal derailment tactics that parties to the insolvency may use, in particular extension of response periods or appeals, are taken into account.

To ensure cross-country comparability, several standard characteristics of a company are defined in all surveys, such as size, ownership, location, legal status, and type of activities undertaken. For example, for the starting a business data, these standard characteristics include that the business is a limited liability company; operates in the country's most populous city; is 100 percent domestically owned and has five owners, none of whom is a legal entity; has start-up capital of 10 times income per capita at the end of 2005, has paid in cash; performs general industrial or commercial activities, such as production or sale of products or services to the public; does not perform foreign trade activities or handle products subject to a special tax regime; does not use heavily polluting production processes; leases the commercial plant and offices and is not a proprietor of real estate; does not qualify for investment incentives or any special benefits; has up to 50 employees within one month of commencement of operations, all of them nationals; has turnover at least 100 times income per capita; and has a company deed at least 10 pages long. The data were collected through a study of laws and regulations in each country, surveys of regulators or private sector professionals on each topic, and cooperative arrangements with private consulting firms and business and law associations.

For more information on the methodology, see www.doingbusiness.org/.

Definitions

• **Number of procedures for starting a business** is the number of procedures required to start a business, including interactions required to obtain necessary permits and licenses and to complete all inscriptions, verifications, and notifications to start operations. Data are for businesses with specific characteristics of ownership, size, and type of production. • **Time required for starting a business** is the number of calendar days needed to complete the required procedures for legally operating a business. If a procedure can be speeded up at additional cost, the fastest procedure, independent of cost, is chosen. • **Cost for starting a business** is normalized by presenting it as a percentage of gross national income (GNI) per capita. • **Number of procedures for registering property** is the number of procedures required for a business to secure rights to property • **Time required for registering property** is the number of calendar days needed for a business to secure rights to property • **Number of procedures to build a warehouse** is the number of interactions of a company's employees or managers with external parties, including government agency staff, public inspectors, notaries, land registry and cadastre staff, and technical experts apart from architects and engineers • **Time required to build a warehouse** is the number of calendar days needed to complete the required procedures for building a warehouse. If a procedure can be speeded up at additional cost, the fastest procedure, independent of cost, is chosen. • **Rigidity of employment index** measures the regulation of employment, specifically the employing of workers and the rigidity of working hours. This index is the average of three subindexes: a difficulty of hiring index, a rigidity of hours index, and a difficulty of firing index. The index ranges from 0 and 100, with higher values indicating more rigid regulations. • **Number of procedures for enforcing contracts** is the number of independent actions, mandated by law or court regulation, that demand interaction between the parties to a contract or between them and the judge or court officer. • **Time required for enforcing contracts** is the number of calendar days from the time of the filing of the lawsuit in court to the final determination and payment. • **Disclosure index** measures the degree to which investors are protected through disclosure of ownership and financial information. The index ranges from 0 to 10, with higher values indicating more disclosure. • **Time to resolve insolvency** is the number of years from the time of filing for insolvency in court until resolution of distressed assets.

Data sources

Data on the business environment are from the World Bank's Doing Business project (www.doingbusiness.org).

5.4 Stock markets

	Market capitalization				Market liquidity		Turnover ratio		Listed domestic companies		S&P/EMDB indexes	
	$ millions		% of GDP		Value traded % of GDP		Value of shares traded % of market capitalization		number		% change	
	2000	2006	2000	2005	2000	2005	2000	2006	2000	2006	2005	2006
Afghanistan	..	..	..	..	..	..	..	..	..	..	..	..
Albania	..	..	..	..	..	..	..	..	..	..	..	..
Algeria	..	..	..	..	..	..	..	..	..	..	..	..
Angola	..	..	..	..	..	..	..	..	..	..	..	..
Argentina	166,068	79,730	58.4	33.6	2.1	9.0	4.8	6.6	127	103	45.4[a]	57.6[a]
Armenia	*2*	*43*	*0.1*	0.9	*0.0*	0.0	*4.6*	*3.7*	*105*	*198*	..	..
Australia	372,794	*804,074*	93.3	109.8	56.6	84.1	56.5	*78.0*	1,330	*1,643*	..	..
Austria	29,935	*126,324*	15.4	41.3	4.8	15.0	29.8	*43.3*	97	*92*	..	..
Azerbaijan	*4*	..	*0.1*	..	..	..	..	..	*2*	..	..	..
Bangladesh	1,186	3,610	2.5	5.1	1.6	1.7	74.4	31.7	221	269	–27.7[b]	12.9[b]
Belarus	..	..	..	..	..	..	..	..	..	..	..	..
Belgium	182,481	*327,065*	78.7	88.2	16.4	30.7	20.7	*20.8*	174	*145*	..	..
Benin	..	..	..	..	..	..	..	..	..	..	..	..
Bolivia	1,742	*2,200*	20.7	23.6	0.8	0.0	*0.1*	*0.1*	26	*36*	..	..
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..	..	..	..
Botswana	978	3,947	15.8	23.6	0.8	0.4	4.8	2.4	16	18	–3.2[b]	53.0[b]
Brazil	226,152	711,100	37.6	59.6	16.8	19.4	43.5	42.5	459	392	47.6[a]	43.1[a]
Bulgaria	617	10,325	4.9	19.1	0.5	5.2	9.2	25.0	503	347	16.4[b]	31.4[b]
Burkina Faso	..	..	..	..	..	..	..	..	..	..	..	..
Burundi	..	..	..	..	..	..	..	..	..	..	..	..
Cambodia	..	..	..	..	..	..	..	..	..	..	..	..
Cameroon	..	..	..	..	..	..	..	..	..	..	..	..
Canada	841,385	*1,480,891*	117.8	133.0	88.8	75.9	77.3	*63.6*	1,418	*3,721*	..	..
Central African Republic	..	..	..	..	..	..	..	..	..	..	..	..
Chad	..	..	..	..	..	..	..	..	..	..	..	..
Chile	60,401	174,556	80.3	118.4	8.1	16.4	9.4	19.2	258	244	14.7[a]	28.6[a]
China	580,991	2,426,326	48.5	34.9	60.2	26.2	158.3	136.4	1,086	1,440	13.3[a]	80.7[a]
Hong Kong, China	623,398	*1,006,228*	369.4	566.2	223.9	258.9	61.3	*49.3*	779	*1,126*	..	..
Colombia	9,560	56,204	11.4	37.6	0.5	5.2	3.8	22.3	126	114	108.1[b]	12.7[b]
Congo, Dem. Rep.	..	..	..	..	..	..	..	..	..	..	..	..
Congo, Rep.	..	..	..	..	..	..	..	..	..	..	..	..
Costa Rica	2,924	*1,478*	18.3	7.4	*0.7*	0.8	*12.0*	*7.7*	21	*19*	..	..
Côte d'Ivoire	1,185	4,155	11.4	14.2	0.3	0.2	2.6	3.7	41	40	16.9[b]	35.6[b]
Croatia	2,742	29,006	14.9	33.5	1.0	2.1	7.4	9.8	64	183	7.4[b]	85.2[b]
Cuba	..	..	..	..	..	..	..	..	..	..	..	..
Czech Republic	11,002	48,604	19.4	30.8	11.6	33.0	60.3	77.5	131	29	43.5[a]	30.9[a]
Denmark	107,666	*178,038*	67.3	68.8	57.2	58.8	86.0	*92.3*	225	*168*	..	..
Dominican Republic	*141*	..	*0.8*	..	..	..	..	..	6	..	..	..
Ecuador	704	4,040	4.4	8.8	0.1	0.4	5.5	9.0	30	34	26.0[b]	32.0[b]
Egypt, Arab Rep.	28,741	93,477	28.8	89.1	11.1	28.4	34.7	55.2	1,076	603	158.0[a]	10.2[a]
El Salvador	2,041	*3,623*	15.5	21.3	0.2	0.4	*1.3*	*2.3*	40	*35*	..	..
Eritrea	..	..	..	..	..	..	..	..	..	..	..	..
Estonia	1,846	5,963	33.7	26.7	6.0	18.9	18.9	27.5	23	16	22.8[b]	30.3[b]
Ethiopia	..	..	..	..	..	..	..	..	..	..	..	..
Finland	293,635	*209,504*	243.6	108.5	171.4	141.6	64.3	*139.1*	154	*134*	..	..
France	1,446,634	*1,710,029*	108.9	80.4	81.6	69.4	74.1	*82.7*	808	*664*	..	..
Gabon	..	..	..	..	..	..	..	..	..	..	..	..
Gambia, The	..	..	..	..	..	..	..	..	..	..	..	..
Georgia	24	*355*	0.8	5.5	0.1	0.6	..	*13.6*	269	*257*	..	..
Germany	1,270,243	*1,221,250*	66.8	43.7	56.3	63.1	79.1	*146.0*	1,022	*648*	..	..
Ghana	502	1,729	10.1	12.8	0.2	0.4	1.5	3.4	22	32	–33.9[b]	9.7[b]
Greece	110,839	*145,013*	96.7	64.4	83.0	29.0	63.7	*48.3*	329	*307*	..	..
Guatemala	240	..	1.2	..	0.0	..	*0.0*	..	44	..	..	..
Guinea	..	..	..	..	..	..	..	..	..	..	..	..
Guinea-Bissau	..	..	..	..	..	..	..	..	..	..	..	..
Haiti	..	..	..	..	..	..	..	..	..	..	..	..

5.4 Stock markets

	Market capitalization				Market liquidity		Turnover ratio		Listed domestic companies		S&P/EMDB indexes	
	$ millions		% of GDP		Value traded % of GDP		Value of shares traded % of market capitalization		number		% change	
	2000	2006	2000	2005	2000	2005	2000	2006	2000	2006	2005	2006
Honduras	*458*	..	*8.8*	..	..	..	..	..	46	..	..	..
Hungary	12,021	41,935	25.6	29.8	25.8	21.9	90.7	88.2	60	41	16.1[a]	31.4[a]
India	148,064	818,879	32.2	68.6	110.8	55.0	133.6	96.4	5,937	4,796	33.6[a]	46.7[a]
Indonesia	26,834	138,886	16.3	28.4	8.7	14.6	32.9	45.5	290	344	9.1[a]	67.9[a]
Iran, Islamic Rep.	7,350	*38,724*	7.3	20.4	1.1	4.3	*12.7*	*19.1*	304	*420*	..	..
Iraq	..	..	..	..	..	..	..	..	..	..	..	..
Ireland	81,882	*114,134*	85.1	56.6	15.0	32.1	19.2	*56.7*	76	*53*	..	..
Israel	64,081	173,306	55.5	97.3	20.3	48.5	36.3	60.7	654	612	24.1[a]	–6.3[a]
Italy	768,364	*798,167*	70.0	45.3	70.9	63.3	104.0	*140.5*	291	*275*	..	..
Jamaica	3,582	12,277	44.6	136.1	0.9	4.5	2.5	3.0	46	41	–14.1[b]	–1.5[b]
Japan	3,157,222	*4,736,513*	67.9	104.5	57.9	110.2	69.9	*118.8*	2,561	*3,279*	21.7[c]	5.9[c]
Jordan	4,943	29,729	58.4	296.1	4.9	187.3	7.7	59.0	163	227	117.8[b]	–36.0[b]
Kazakhstan	1,342	*10,521*	7.3	18.4	0.5	1.9	*25.1*	*14.9*	23	*83*	..	..
Kenya	1,283	11,378	10.1	34.1	0.4	2.7	3.6	15.8	57	51	60.0[b]	60.3[b]
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	171,587	835,188	33.5	91.2	208.7	152.7	233.2	173.7	1,308	1,694	58.8[a]	13.3[a]
Kuwait	20,772	128,940	55.1	161.0	11.2	116.4	21.3	45.1	77	163	..	–4.6[b]
Kyrgyz Republic	4	*42*	0.3	1.7	1.7	0.5	..	*34.1*	80	*8*	..	..
Lao PDR	..	..	..	..	..	..	..	..	..	..	..	..
Latvia	563	2,705	7.2	16.0	2.9	0.6	48.6	4.9	64	40	32.8[b]	1.5[b]
Lebanon	1,583	8,279	9.4	22.5	0.7	4.2	6.7	38.1	12	11	111.8[b]	–9.2[b]
Lesotho	..	..	..	..	..	..	..	..	..	..	..	..
Liberia	..	..	..	..	..	..	..	..	..	..	..	..
Libya	..	..	..	..	..	..	..	..	..	..	..	..
Lithuania	1,588	10,191	13.9	31.9	1.8	2.9	14.8	23.5	54	44	6.2[b]	9.7[b]
Macedonia, FYR	7	*646*	0.2	11.2	3.3	1.7	*6.6*	*18.3*	1	*57*	..	..
Madagascar	..	..	..	..	..	..	..	..	..	..	..	..
Malawi	126	..	7.2	..	0.5	..	*13.8*	..	7	..	..	..
Malaysia	116,935	235,356	129.5	139.1	64.8	38.3	44.6	33.2	795	1,027	–2.9[a]	34.6[a]
Mali	..	..	..	..	..	..	..	..	..	..	..	..
Mauritania	*1,090*	..	*97.2*	..	..	..	..	..	*40*	..	..	..
Mauritius	1,331	3,598	29.8	41.6	1.7	2.4	5.0	6.0	40	41	10.5[b]	44.3[b]
Mexico	125,204	348,345	21.5	31.1	7.8	6.9	32.3	29.7	179	131	43.9[a]	41.1[a]
Moldova	392	*574*	30.4	*22.1*	1.9	0.6	*5.8*	*5.9*	36	*23*	..	..
Mongolia	37	*46*	3.9	2.4	0.8	0.1	*7.3*	*6.1*	410	*392*	..	..
Morocco	10,899	49,360	32.7	52.7	3.3	8.0	9.2	32.9	53	65	8.4[a]	78.5[a]
Mozambique	..	..	..	..	..	..	..	..	..	..	..	..
Myanmar	..	..	..	..	..	..	..	..	..	..	..	..
Namibia	311	542	9.1	6.8	0.6	0.1	4.5	4.6	13	9	–1.1[b]	12.8[b]
Nepal	790	*963*	14.4	13.0	0.6	0.3	6.9	*2.4*	110	*105*	..	..
Netherlands	640,456	*727,515*	165.7	116.6	175.2	121.3	101.4	*112.2*	234	*170*	..	..
New Zealand	18,866	*40,620*	35.8	37.2	20.5	15.9	45.9	*41.3*	142	*154*	..	..
Nicaragua	..	..	..	..	..	..	..	..	..	..	..	..
Niger	..	..	..	..	..	..	..	..	..	..	..	..
Nigeria	4,237	32,819	9.2	19.6	0.6	2.0	7.3	13.8	195	202	20.7[b]	34.0[b]
Norway	65,034	*190,952*	39.0	64.6	36.0	65.9	93.4	*117.2*	191	*202*	..	..
Oman	3,463	16,158	17.4	*26.0*	2.8	*7.4*	14.2	22.1	131	124	38.0[b]	7.9[b]
Pakistan	6,581	45,518	9.0	41.5	45.0	127.3	475.5	251.4	762	652	58.5[b]	1.3[b]
Panama	2,794	*5,074*	24.0	32.8	1.3	0.5	*1.7*	*1.8*	29	*24*	..	..
Papua New Guinea	*1,520*	*4,863*	*49.6*	98.3	*0.0*	0.3	..	*0.4*	*7*	*9*	..	..
Paraguay	*224*	*234*	*3.5*	3.2	*0.1*	0.0	*3.5*	*0.7*	56	*54*	..	..
Peru	10,562	59,658	19.8	45.3	2.9	2.5	12.6	9.2	230	193	29.8[a]	82.5[a]
Philippines	25,957	68,382	34.4	40.5	10.9	7.0	15.8	22.1	228	238	21.3[a]	50.3[a]
Poland	31,279	149,054	18.3	31.0	8.5	9.9	49.9	46.8	225	267	20.8[a]	38.1[a]
Portugal	60,681	*66,981*	53.9	36.5	48.3	21.2	85.5	*55.4*	109	*52*	..	..
Puerto Rico	..	..	..	..	..	..	..	..	..	..	..	..

5.4 Stock markets

	Market capitalization				Market liquidity		Turnover ratio		Listed domestic companies		S&P/EMDB indexes	
	$ millions		% of GDP		Value traded % of GDP		Value of shares traded % of market capitalization		number		% change	
	2000	2006	2000	2005	2000	2005	2000	2006	2000	2006	2005	2006
Romania	1,069	32,784	2.9	20.9	0.6	3.4	23.1	16.9	5,555	2,478	58.7[b]	54.2[b]
Russian Federation	38,922	1,321,833	15.0	71.8	7.8	20.9	36.9	65.7	249	309	64.9[a]	62.0[a]
Rwanda	..	..	..	..	..	..	..	..	..	..	..	..
Saudi Arabia	67,171	326,869	35.6	208.6	9.2	356.2	27.1	269.1	75	86	111.0[b]	–48.9[b]
Senegal	..	..	..	..	..	..	..	..	..	..	..	..
Serbia and Montenegro	*734*	*5,409*	*4.7*	20.6	0.1	2.5	*0.0*	*15.3*	6	*864*	..	..
Sierra Leone	..	..	..	..	..	..	..	..	..	..	..	..
Singapore	152,827	*208,300*	164.8	178.4	98.7	102.6	52.1	*63.1*	418	*557*	..	..
Slovak Republic	1,217	5,574	6.0	9.5	4.4	0.1	129.8	1.9	493	173	16.6[b]	24.0[b]
Slovenia	2,547	15,182	13.2	23.0	2.4	2.3	20.7	10.3	38	100	–6.9[b]	74.3[b]
Somalia	..	..	..	..	..	..	..	..	..	..	..	..
South Africa	204,952	715,025	154.2	236.0	58.3	83.8	33.9	49.5	616	401	24.8[a]	17.2[a]
Spain	504,219	*960,024*	86.8	85.4	169.8	138.5	210.7	*163.9*	1,019	*3,300*	..	..
Sri Lanka	1,074	7,769	6.6	24.4	0.9	4.8	11.0	14.8	239	237	29.3[b]	45.3[b]
Sudan	..	..	..	..	..	..	..	..	..	..	..	..
Swaziland	73	*197*	5.3	7.2	0.0	0.0	*9.8*	*0.0*	6	*6*	..	..
Sweden	328,339	*403,948*	135.7	112.9	161.2	129.7	111.2	*118.9*	292	*252*	..	..
Switzerland	792,316	*938,624*	322.0	255.7	247.6	240.7	82.0	*100.1*	252	*263*	..	..
Syrian Arab Republic	..	..	..	..	..	..	..	..	..	..	..	..
Tajikistan	..	..	..	..	..	..	..	..	..	..	..	..
Tanzania	233	*588*	2.6	4.9	0.4	0.1	*2.4*	*2.3*	4	*6*	..	..
Thailand	29,489	139,564	24.0	69.9	19.0	50.6	53.2	67.6	381	476	3.8[a]	6.2[a]
Togo	..	..	..	..	..	..	..	..	..	..	..	..
Trinidad and Tobago	4,330	15,571	53.1	118.2	1.7	4.4	3.1	3.0	27	37	–1.3[b]	–6.5[b]
Tunisia	2,828	4,446	14.5	10.0	3.2	1.6	23.3	15.2	44	48	11.1[b]	47.9[b]
Turkey	69,659	162,399	35.0	44.6	89.9	55.5	206.2	143.0	315	314	49.5[a]	–4.0[a]
Turkmenistan	..	..	..	..	..	..	..	..	..	..	..	..
Uganda	*35*	*103*	*0.6*	1.2	*0.0*	0.0	..	*3.1*	*2*	*5*	..	..
Ukraine	1,881	42,870	6.0	30.1	0.9	0.8	19.6	4.6	139	249	52.8[b]	48.6[b]
United Arab Emirates	5,727	138,531	8.1	173.9	0.2	110.4	*3.9*	65.9	54	81	..	–44.6[b]
United Kingdom	2,576,992	*3,058,182*	178.6	139.1	127.2	189.5	66.6	*141.9*	1,904	*2,759*	4.4[d]	26.2[d]
United States	15,104,037	*16,997,982*	154.7	136.9	326.3	173.2	200.8	*129.1*	7,524	*5,143*	3.0[e]	13.6[e]
Uruguay	161	*354*	0.8	2.1	*0.0*	0.0	*0.5*	*0.0*	16	*11*	..	..
Uzbekistan	32	*37*	0.2	0.3	0.1	0.3	..	*184.7*	5	*114*	..	..
Venezuela, RB	8,128	8,251	6.9	3.6	0.6	0.2	8.9	9.4	85	53	–22.0[b]	79.0[b]
Vietnam	..	..	..	..	..	..	..	..	..	..	..	..
West Bank and Gaza	765	*4,461*	18.6	111.1	4.6	61.7	*10.0*	*89.1*	24	*28*	..	..
Yemen, Rep.	..	..	..	..	..	..	..	..	..	..	..	..
Zambia	236	*989*	7.3	13.6	0.2	0.2	*20.8*	*2.0*	9	*12*	..	..
Zimbabwe	2,432	26,557	32.9	71.2	3.8	9.8	10.8	7.9	69	80	36.6[b]	912.3[b]
World	**32,187,882 s**	***43,642,048* s**	**103.0 w**	**99.6 w**	**153.4 w**	**108.1 w**	**122.4 w**	**78.2 w**	**47,884 s**	***49,946* s**	**..**	**..**
Low income	166,928	944,645	23.9	54.2	78.0	49.7	151.6	96.6	7,929	6,122	..	..
Middle income	1,852,197	7,273,817	37.4	49.5	26.8	21.8	71.5	75.3	15,533	11,141	..	..
Lower middle income	979,347	3,854,955	35.9	41.1	32.4	21.3	92.3	95.2	5,931	5,057	..	..
Upper middle income	872,850	3,418,862	39.3	60.1	19.7	22.4	47.0	50.4	9,602	6,084	..	..
Low & middle income	2,019,125	8,218,463	35.8	50.1	33.1	25.3	81.3	78.2	23,462	17,263	..	..
East Asia & Pacific	780,487	3,008,514	47.2	41.3	50.0	26.4	125.2	123.1	3,190	3,525	..	..
Europe & Central Asia	176,208	1,863,241	19.2	45.8	25.4	21.9	81.9	68.5	8,295	4,490	..	..
Latin America & Carib.	626,283	1,469,731	32.6	44.6	8.6	10.7	26.9	29.2	1,806	1,342	..	..
Middle East & N. Africa	60,573	201,450	20.0	49.1	5.0	16.4	*12.6*	*27.0*	1,807	1,078	..	..
South Asia	157,695	875,775	26.2	60.4	90.3	58.2	167.6	108.7	7,269	5,954	..	..
Sub-Saharan Africa	217,880	799,751	89.3	137.0	32.1	46.2	22.2	32.6	1,095	874	..	..
High income	30,168,757	*38,980,586*	117.9	112.9	179.7	130.3	131.0	*122.2*	24,422	*28,733*	..	..
Europe EMU	5,425,933	*6,465,158*	87.5	64.8	80.8	72.8	90.6	*116.8*	4,405	*5,995*	..	..

a. Data refer to the S&P/IFC Investable index. b. Data refer to the S&P/IFC Global index. c. Data refer to the Nikkei 225 index. d. Data refer to the FT 100 index. e. Data refer to the S&P 500 index.

Stock markets 5.4

About the data

The development of an economy's financial markets is closely related to its overall development. Well functioning financial systems provide good and easily accessible information. That lowers transaction costs, which in turn improves resource allocation and boosts economic growth. Both banking systems and stock markets enhance growth, the main factor in poverty reduction. At low levels of economic development commercial banks tend to dominate the financial system, while at higher levels domestic stock markets tend to become more active and efficient relative to domestic banks.

Open economies with sound macroeconomic policies, good legal systems, and shareholder protection attract capital and therefore have larger financial markets. Recent research on stock market development shows that new communications technology and increased financial integration have resulted in more cross-border capital flows, a stronger presence of financial firms around the world, and the migration of stock exchange activities to international exchanges. Many firms in emerging markets now cross-list on international exchanges, which provides them with lower cost capital and more liquidity-traded shares. However, this also means that exchanges in emerging markets may not have enough financial activity to sustain them, putting pressure on them to rethink their operations.

The stock market indicators in the table include measures of size (market capitalization, number of listed domestic companies) and liquidity (value traded as a percentage of gross domestic product, value of shares traded as a percentage of market capitalization). The comparability of such indicators between countries may be limited by conceptual and statistical weaknesses, such as inaccurate reporting and differences in accounting standards. The percentage change in stock market prices in U.S. dollars, from the Standard & Poor's Emerging Markets Data Base (S&P/EMDB) indexes, is an important measure of overall performance. Regulatory and institutional factors that can affect investor confidence, such as entry and exit restrictions, the existence of a securities and exchange commission, and the quality of laws to protect investors, may influence the functioning of stock markets but are not included in the table.

Stock market size can be measured in a number of ways, and each may produce a different ranking of countries. Market capitalization shows the overall size of the stock market in U.S. dollars and as a percentage of GDP. The number of listed domestic companies is another measure of market size. Market size is positively correlated with the ability to mobilize capital and diversify risk.

Market liquidity, the ability to easily buy and sell securities, is measured by dividing the total value traded by GDP. The turnover ratio—the value of shares traded as a percentage of market capitalization—is also a measure of liquidity as well as of transaction costs. (High turnover indicates low transaction costs.) The turnover ratio complements the ratio of value traded to GDP, because the turnover ratio is related to the size of the market and the value traded ratio to the size of the economy. A small, liquid market will have a high turnover ratio but a low value traded ratio. Liquidity is an important attribute of stock markets because, in theory, liquid markets improve the allocation of capital and enhance prospects for long-term economic growth. A more comprehensive measure of liquidity would include trading costs and the time and uncertainty in finding a counterpart in settling trades.

The S&P/EMDB, the source for all the data in the table, provides regular updates on 56 emerging stock markets encompassing more than 2,200 stocks. Standard & Poor's maintains a series of indexes for investors interested in investing in stock markets in developing countries. At the core of the S&P/EMDB indexes, the Global (S&P/IFCG) index is intended to represent the most active stocks in the markets it covers and to be the broadest possible indicator of market movements. The Investable (S&P/IFCI) index, which applies the same calculation methodology as the S&P/IFCG index, is designed to measure the returns that foreign portfolio investors might receive from investing in emerging market stocks that are legally and practically open to foreign portfolio investment. These indexes are widely used benchmarks for international portfolio management. See Standard & Poor's (2000) for further information on the indexes.

Because markets included in Standard & Poor's emerging markets category vary widely in level of development, it is best to look at the entire category to identify the most significant market trends. And it is useful to remember that stock market trends may be distorted by currency conversions, especially when a currency has registered a significant devaluation.

About the data is based on Demirgüç-Kunt and Levine (1996), Beck and Levine (2001), and Claessens, Klingebiel, and Schmukler (2002).

Definitions

• **Market capitalization** (also known as market value) is the share price times the number of shares outstanding. • **Market liquidity** is the total value traded divided by GDP. Value traded is the total value of shares traded during the period. This indicator complements the market capitalization ratio by showing whether market size is matched by trading. • **Turnover ratio** is the total value of shares traded during the period divided by the average market capitalization for the period. Average market capitalization is calculated as the average of the end-of-period values for the current period and the previous period. • **Listed domestic companies** are the domestically incorporated companies listed on the country's stock exchanges at the end of the year. This indicator does not include investment companies, mutual funds, or other collective investment vehicles. • **S&P/EMDB indexes** measure the U.S. dollar price change in the stock markets covered by the S&P/IFCI country index and S&P/IFCG indexes.

Data sources

Data on stock markets are from Standard & Poor's *Global Stock Markets Factbook 2006,* which draws on the Emerging Markets Data Base, supplemented by other data from Standard & Poor's. The firm collects data through an annual survey of the world's stock exchanges, supplemented by information provided by its network of correspondents and by Reuters. Data on GDP are from the World Bank's national accounts data files.

5.5 Financial access, stability, and efficiency

	Getting credit				Bank capital to asset ratio	Bank non-performing loans to total gross loans	Domestic credit provided by banking sector	Interest rate spread	Risk premium on lending
	Legal rights index 0 (weaker) to 10 (stronger) **April 2006**	Credit information index 0 (less) to 10 (more) **April 2006**	% of adults Public credit registry coverage **April 2006**	% of adults Private credit bureau coverage **April 2006**	% **2005**	% **2005**	% of GDP **2005**	Lending rate minus deposit rate percentage points **2005**	Prime lending rate minus treasury bill rate percentage points **2005**
Afghanistan	0	0	0.0	0.0	..	..	..	..	..
Albania	9	0	0.0	0.0	..	..	48.6	8.0	7.6
Algeria	3	2	0.2	0.0	..	..	11.1	6.3	6.7
Angola	3	4	2.9	0.0	*11.3*	*13.3*	2.1	54.3	..
Argentina	3	6	25.4	100.0	13.0	5.2	38.3	2.4	..
Armenia	5	3	1.5	0.0	21.5	6.9	8.8	12.2	13.9
Australia	9	5	0.0	100.0	5.9	0.2	109.8	5.4	..
Austria	5	6	1.2	39.9	7.4	*2.2*	127.6	..	..
Azerbaijan	7	4	1.1	0.0	14.2	7.2	11.8	8.5	9.5
Bangladesh	7	2	0.6	0.0	3.8	15.3	43.9	5.9	..
Belarus	2	3	0.0	0.0	19.8	1.9	22.2	2.1	..
Belgium	5	4	56.2	0.0	2.7	2.0	105.2	*5.2*	4.7
Benin	4	1	10.3	0.0	..	..	13.2	..	..
Bolivia	3	5	11.5	32.3	11.3	11.2	50.1	11.7	11.7
Bosnia and Herzegovina	8	5	0.0	22.9	15.0	5.3	47.7	6.0	..
Botswana	7	5	0.0	43.2	*9.7*	*2.8*	–5.3	6.5	..
Brazil	2	5	9.2	43.0	9.2	4.4	82.5	37.8	36.6
Bulgaria	6	4	20.7	..	10.5	1.7	43.6	4.8	*6.1*
Burkina Faso	4	1	2.4	0.0	..	..	16.2	..	..
Burundi	2	1	0.1	0.0	..	..	35.1	..	..
Cambodia	0	0	0.0	0.0	..	..	7.6	15.4	..
Cameroon	3	2	3.4	0.0	..	..	12.4	12.8	..
Canada	7	6	0.0	100.0	4.5	0.5	206.1	3.6	1.7
Central African Republic	3	2	1.1	0.0	..	..	17.5	12.8	..
Chad	4	1	0.2	0.0	..	..	7.5	12.8	..
Chile	4	6	31.3	19.3	6.8	0.9	85.8	2.7	..
China	2	4	10.2	0.0	3.8	10.5	135.7	3.3	..
Hong Kong, China	10	5	0.0	64.5	12.2	1.5	142.8	6.5	4.1
Colombia	3	4	0.0	28.3	12.3	2.7	35.1	7.5	..
Congo, Dem. Rep.	3	0	0.0	0.0	..	..	2.7	..	..
Congo, Rep.	3	2	1.4	0.0	..	..	1.5	12.8	..
Costa Rica	4	6	2.5	39.2	12.2	1.5	43.4	14.5	..
Côte d'Ivoire	3	1	3.1	0.0	..	..	18.2	..	..
Croatia	5	0	0.0	0.0	8.7	4.0	74.1	9.5	..
Cuba	..	..	..	..	..	..	..	..	..
Czech Republic	6	5	3.5	51.0	5.8	4.3	43.6	4.6	3.8
Denmark	8	4	0.0	11.5	5.7	*0.7*	177.5	..	..
Dominican Republic	4	6	11.9	57.1	9.4	5.9	40.4	10.2	..
Ecuador	3	5	15.2	43.7	9.6	4.9	16.8	5.8	..
Egypt, Arab Rep.	1	2	1.5	0.0	..	25.0	105.5	5.9	4.6
El Salvador	4	6	30.5	79.6	7.6	12.0	47.5	..	..
Eritrea	3	0	0.0	0.0	..	..	141.2	..	..
Estonia	4	5	0.0	18.2	8.6	0.2	71.3	2.8	..
Ethiopia	5	2	0.1	0.0	..	..	54.9	3.5	6.8
Finland	6	5	0.0	14.9	8.8	0.3	78.5	*2.7*	..
France	5	4	12.3	0.0	4.4	3.5	109.5	*4.4*	*4.3*
Gabon	4	2	2.6	0.0	..	*15.8*	10.4	12.8	..
Gambia, The	4	0	0.0	0.0	..	..	23.8	17.6	..
Georgia	6	3	0.0	0.0	18.8	3.8	21.7	14.1	*12.1*
Germany	8	6	0.5	93.9	4.4	4.8	135.8	..	..
Ghana	5	0	0.0	0.0	12.0	13.9	29.7	..	..
Greece	3	4	0.0	37.5	5.0	5.5	110.9	*4.3*	*4.4*
Guatemala	4	5	16.1	9.2	..	..	31.4	8.7	..
Guinea	4	1	0.0	0.0	..	..	15.8	..	..
Guinea-Bissau	3	1	1.0	0.0	..	..	9.1	..	..
Haiti	3	2	0.7	0.0	..	..	29.3	24.0	19.1

Financial access, stability, and efficiency 5.5

	Getting credit				Bank capital to asset ratio	Bank non-performing loans to total gross loans	Domestic credit provided by banking sector	Interest rate spread	Risk premium on lending
	Legal rights index 0 (weaker) to 10 (stronger)	Credit information index 0 (less) to 10 (more)	% of adults Public credit registry coverage	% of adults Private credit bureau coverage	%	%	% of GDP	Lending rate minus deposit rate percentage points	Prime lending rate minus treasury bill rate percentage points
	April 2006	**April 2006**	**April 2006**	**April 2006**	**2005**	**2005**	**2005**	**2005**	**2005**
Honduras	6	5	8.3	18.7	8.4	6.6	34.2	7.9	..
Hungary	6	5	0.0	5.9	9.1	2.1	62.9	3.4	1.6
India	5	3	0.0	6.1	6.3	5.2	60.4	..	..
Indonesia	5	2	8.4	0.2	10.5	15.6	47.0	6.0	..
Iran, Islamic Rep.	5	3	13.7	0.0	..	..	46.2	4.2	..
Iraq	4	0	0.0	0.0	..	..	..	..	..
Ireland	8	5	0.0	100.0	4.7	0.7	160.2	2.6	..
Israel	8	5	0.0	100.0	6.7	10.3	84.8	3.2	2.1
Italy	3	5	7.0	67.8	7.3	6.3	108.9	*4.9*	3.1
Jamaica	6	0	0.0	0.0	8.7	2.9	53.2	9.9	4.0
Japan	6	6	0.0	..	*4.2*	1.8	318.7	1.4	..
Jordan	5	2	0.7	0.0	*7.2*	*13.6*	111.6	4.7	..
Kazakhstan	5	4	0.0	5.5	8.7	9.6	24.7	..	..
Kenya	8	2	0.0	0.1	..	5.2	38.4	7.8	4.5
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..
Korea, Rep.	6	5	0.0	76.6	5.8	1.2	106.6	1.9	..
Kuwait	4	3	0.0	16.1	12.6	4.5	71.7	4.0	..
Kyrgyz Republic	5	3	0.0	0.4	..	..	9.5	20.8	22.2
Lao PDR	2	0	0.0	0.0	..	..	8.8	22.1	8.2
Latvia	8	4	1.9	0.0	7.6	0.7	72.8	3.3	*2.1*
Lebanon	4	5	4.3	0.0	..	15.8	184.0	2.5	5.4
Lesotho	5	0	0.0	0.0	..	..	–1.1	7.8	4.5
Liberia	..	..	..	..	..	..	188.9	13.6	..
Libya	..	..	..	..	..	..	–50.7	4.0	*0.6*
Lithuania	4	6	4.2	7.2	7.3	2.5	42.3	*4.5*	*3.2*
Macedonia, FYR	6	3	2.1	0.0	..	..	20.9	5.6	..
Madagascar	2	1	0.3	0.0	*6.2*	10.1	12.9	8.3	8.2
Malawi	8	0	0.0	0.0	..	..	22.1	22.2	8.7
Malaysia	8	6	42.2	..	7.9	9.9	143.7	3.0	3.5
Mali	3	1	2.9	0.0	..	..	17.5	..	..
Mauritania	5	1	0.2	0.0	..	..	*–6.1*	15.1	11.2
Mauritius	6	1	10.2	0.0	..	..	108.8	13.8	..
Mexico	2	6	0.0	69.5	12.0	1.8	35.3	6.2	0.5
Moldova	6	0	0.0	0.0	17.0	4.3	32.3	6.0	15.6
Mongolia	5	3	10.2	0.0	..	..	37.1	10.6	..
Morocco	3	1	2.3	0.0	7.7	15.7	88.0	*7.9*	..
Mozambique	4	3	0.7	0.0	*6.5*	4.6	8.8	11.7	10.4
Myanmar	..	..	..	..	..	..	28.1	5.5	..
Namibia	5	5	0.0	35.2	7.8	2.0	65.9	4.4	3.5
Nepal	4	2	0.0	0.1	..	..	..	5.9	5.9
Netherlands	7	5	0.0	68.9	4.0	1.2	184.8	0.4	..
New Zealand	9	5	0.0	100.0	..	..	132.8	4.9	5.0
Nicaragua	4	5	12.5	3.4	8.8	8.0	79.4	8.1	..
Niger	3	1	1.2	0.0	..	..	10.7	..	..
Nigeria	7	0	0.0	0.0	9.9	21.9	9.0	7.4	10.3
Norway	6	4	0.0	100.0	5.1	0.7	10.0	2.2	..
Oman	3	1	17.5	0.0	..	..	*34.9*	3.7	..
Pakistan	4	4	0.3	1.1	7.7	10.6	43.6	..	..
Panama	6	6	0.0	59.8	12.8	1.8	88.2	6.0	..
Papua New Guinea	6	0	0.0	0.0	..	..	21.9	10.6	7.7
Paraguay	3	6	10.6	52.2	11.0	3.2	20.1	28.2	..
Peru	4	6	19.2	28.6	7.7	2.1	17.6	11.5	..
Philippines	3	3	0.0	4.8	12.3	20.0	50.9	4.6	4.1
Poland	4	4	0.0	38.1	7.8	7.7	32.6	4.0	..
Portugal	4	4	72.0	9.1	5.2	1.6	150.7	..	..
Puerto Rico	6	5	0.0	63.6	..	..	..	..	..

5.5 Financial access, stability, and efficiency

	Getting credit				Bank capital to asset ratio	Bank non-performing loans to total gross loans	Domestic credit provided by banking sector	Interest rate spread	Risk premium on lending
	Legal rights index 0 (weaker) to 10 (stronger) **April 2006**	Credit information index 0 (less) to 10 (more) **April 2006**	% of adults Public credit registry coverage **April 2006**	% of adults Private credit bureau coverage **April 2006**	% **2005**	% **2005**	% of GDP **2005**	Lending rate minus deposit rate percentage points **2005**	Prime lending rate minus treasury bill rate percentage points **2005**
Romania	4	5	2.6	5.5	8.8	8.3	20.8	..	..
Russian Federation	3	0	0.0	0.0	13.5	3.2	20.7	6.7	*7.6*
Rwanda	1	2	0.2	0.0	..	34.1	9.7	..	..
Saudi Arabia	3	5	0.2	12.5	8.8	*3.0*	46.9	..	..
Senegal	3	1	4.7	0.0	*8.4*	*14.2*	23.1	..	..
Serbia and Montenegro	5[a]	5[a]	0.1[a]	43.4[a]	17.2	*19.8*	..	..	..
Sierra Leone	5	0	0.0	0.0	*11.6*	*14.8*	24.9	13.5	1.6
Singapore	9	4	0.0	38.6	10.5	3.8	70.8	4.9	3.3
Slovak Republic	9	3	1.0	45.3	7.6	2.0	49.6	4.2	..
Slovenia	6	3	2.9	0.0	7.4	4.9	64.8	4.6	4.1
Somalia	..	..	..	..	..	..	..	..	..
South Africa	5	5	0.0	53.0	8.3	1.5	184.6	4.6	3.7
Spain	5	6	44.9	7.4	4.9	0.6	159.7	..	..
Sri Lanka	3	3	0.0	3.1	*6.7*	9.6	44.3	–3.2	–2.0
Sudan	4	0	0.0	0.0	..	..	12.7	..	..
Swaziland	6	5	0.0	39.0	..	..	16.3	6.6	3.6
Sweden	6	4	0.0	100.0	5.8	1.1	120.7	2.5	1.6
Switzerland	6	5	0.0	24.5	5.1	0.5	179.9	2.4	2.4
Syrian Arab Republic	5	0	0.0	0.0	..	..	*31.3*	7.0	..
Tajikistan	4	0	0.0	0.0	..	..	16.4	13.5	..
Tanzania	5	0	0.0	0.0	..	..	14.0	10.4	4.4
Thailand	5	5	0.0	21.7	9.8	11.1	111.1	3.9	..
Togo	3	1	3.6	0.0	..	..	17.2	..	..
Trinidad and Tobago	6	3	0.0	31.5	..	..	25.7	6.9	4.2
Tunisia	3	3	11.6	0.0	7.7	20.9	71.5	..	..
Turkey	3	5	6.7	..	13.5	4.8	56.6	..	..
Turkmenistan	..	..	..	..	..	..	..	..	..
Uganda	3	0	0.0	0.0	*10.3*	*2.2*	9.9	10.9	11.1
Ukraine	8	0	0.0	0.0	11.5	19.6	34.6	7.6	..
United Arab Emirates	3	2	1.7	0.0	8.3	8.3	*59.5*	..	..
United Kingdom	10	6	0.0	86.1	*8.5*	1.0	168.0	..	0.1
United States	7	6	0.0	100.0	10.3	0.7	224.3	..	3.0
Uruguay	4	6	13.2	85.3	8.6	2.7	40.5	10.8	9.5
Uzbekistan	3	0	0.0	0.0	..	..	..	..	..
Venezuela, RB	4	0	0.0	0.0	11.1	1.2	13.1	5.2	..
Vietnam	4	3	2.7	0.0	..	..	69.6	3.9	4.9
West Bank and Gaza	5	3	0.7	0.0	..	..	..	..	..
Yemen, Rep.	3	2	0.1	0.0	..	..	4.7	5.0	3.1
Zambia	7	0	0.0	0.0	..	10.8	22.0	17.0	11.9
Zimbabwe	6	0	0.0	0.0	*12.1*	*23.2*	94.0	144.6	50.6
World	**4.8 w**	**2.6 w**	**3.8 m**	**17.4 m**	**8.6 m**	**4.4 m**	**164.6 w**	**6.5 m**	**..**
Low income	3.9	1.0	0.9	0.2	..	..	48.1	11.7	..
Middle income	4.7	2.8	4.6	14.2	9.3	4.6	76.0	6.5	..
Lower middle income	4.6	2.7	4.4	10.4	10.2	7.2	95.5	7.5	..
Upper middle income	5.0	3.1	4.9	20.4	8.7	2.5	50.6	6.0	..
Low & middle income	4.5	2.2	3.3	9.1	9.7	*7.3*	72.2	7.4	..
East Asia & Pacific	4.7	1.5	3.7	3.2	..	..	121.4	5.5	..
Europe & Central Asia	5.4	3.0	1.8	8.7	10.5	4.2	35.5	6.0	..
Latin America & Carib.	4.4	3.4	7.5	27.6	9.5	3.1	52.0	7.8	..
Middle East & N. Africa	3.7	1.9	4.1	0.0	..	..	53.6	4.8	..
South Asia	3.8	1.8	0.1	1.3	6.3	10.1	57.2	5.9	..
Sub-Saharan Africa	4.2	1.3	1.5	3.8	..	..	81.8	12.2	..
High income	6.2	4.6	6.0	52.9	5.8	1.5	191.0	*4.3*	..
European Monetary Union	5.4	4.9	17.6	39.9	5.0	2.0	128.6	*4.3*	..

a. Data are for Serbia only.

Financial access, stability, and efficiency 5.5

About the data

This year's table has been revised to include data on getting credit from the World Bank Group's Doing Business database.

Financial sector development has positive impacts on economic growth and poverty. The size of the sector determines the amount of resources mobilized for investment. Access to finance can expand opportunities for all—not just the rich and well connected—with higher levels of access and use of banking services associated with lower financing obstacles for people and businesses. A stable financial system that promotes efficient savings and investment is also crucial for a thriving democracy and market economy. The banking system is the largest sector in the financial system in most countries, so most indicators in the table cover the banking system.

There are several aspects of access to financial services: availability, cost, and quality of services. The development and growth of credit markets depend on access to timely, reliable, and accurate data on borrowers' credit experiences. For secured transactions, such as mortgages or vehicle loans, having rapid access to information in property registries is also vital, and for small business loans, corporate registry data are needed. An effective way to improve access to credit is to increase information about potential borrowers' creditworthiness and make it easy to create and enforce collateral agreements. Lenders look at the borrower's credit history and collateral when extending loans. Where credit registries and effective collateral laws are absent—as in many developing countries—banks make fewer loans. Indicators that cover financial access, or getting credit, include legal rights index, credit information index, public registry coverage, and private bureau coverage. Other measures of access and use, such as number of bank branches per capita and number of bank deposits per capita are not presented in the table this year since they are not collected or updated regularly.

The size and mobility of international capital flows have made it increasingly important to monitor the strength of financial systems. Robust financial systems help to increase economic activity and welfare, but instability in the financial system can disrupt financial activity and impose huge and widespread costs on the economy. The ratio of bank capital to assets, a measure of bank solvency and resiliency, provides a measure of the extent to which banks can deal with unexpected losses. Capital includes tier 1 capital (paid-up shares and common stock), which is a common feature in all countries' banking systems, and total regulatory capital, which includes several specified types of subordinated debt instruments that need not be repaid if the funds are required to maintain minimum capital levels (these comprise tier 2 and tier 3 capital). Total assets include all nonfinancial and financial assets. Data are from internally consistent financial statements to enhance the quality and analytical usefulness of the indicators.

The ratio of bank nonperforming loans to total gross loans is a measure of bank health and efficiency. It helps to identify problems with asset quality in the loan portfolio. A high ratio may signal deterioration in the quality of the credit portfolio. International guidelines recommend that loans be classified as nonperforming when payments of principal and interest are past due by 90 days or more or when future payments are not expected to be received in full. See the International Monetary Fund's (IMF) *Global Financial Stability Report* for detailed background information.

Domestic credit provided by the banking sector as a share of GDP is a measure of banking sector depth and financial sector development in terms of size. In a few countries governments may hold international reserves as deposits in the banking system rather than in the central bank. Since the claims on the central government are a net item (claims on the central government minus central government deposits), this net figure may be negative, resulting in a negative figure of domestic credit provided by the banking sector.

The interest rate spread—the margin between the cost of mobilizing liabilities and the earnings on assets—is a measure of the efficiency by which the financial sector intermediates funds. A narrow interest rate spread means low transaction costs, which lowers the overall cost of funds for investment, crucial to economic growth. The risk premium on lending is the spread between the lending rate to the private sector and the "risk-free" government rate. A small spread indicates that the market considers its best corporate customers to be low risk. Interest rate spreads are expressed as annual averages. In some countries this spread may be negative, indicating that the market considers its best corporate clients to be lower risk than the government.

Definitions

• **Legal rights index** measures the degree to which collateral and bankruptcy laws protect the rights of borrowers and lenders and thus facilitate lending. The index ranges from 0 to 10, with higher scores indicating that these laws are better designed to expand access to credit. • **Credit information index** measures rules affecting the scope, accessibility, and quality of credit information available through public or private credit registries. The index ranges from 0 to 6, with higher values indicating the availability of more credit information, from either a public registry or a private bureau, to facilitate lending decisions. • **Public credit registry coverage** reports the number of individuals and firms listed in a public credit registry with current information on repayment history, unpaid debts, or credit outstanding. The number is expressed as a percentage of the adult population • **Private credit bureau coverage** reports the number of individuals or firms listed by a private credit bureau with current information on repayment history, unpaid debts, or credit outstanding. The number is expressed as a percentage of the adult population. • **Bank capital to asset ratio** is the ratio of bank capital and reserves to total assets. Capital and reserves include funds contributed by owners, retained earnings, general and special reserves, provisions, and valuation adjustments. • **Bank nonperforming loans to total gross loans** are the value of nonperforming loans divided by the total value of the loan portfolio (including nonperforming loans before the deduction of specific loan loss provisions). The loan amount recorded as nonperforming should be the gross value of the loan as recorded on the balance sheet, not just the amount that is overdue. • **Domestic credit provided by banking sector** includes all credit to various sectors on a gross basis, except credit to the central government, which is net. The banking sector includes monetary authorities, deposit money banks, and other banking institutions for which data are available (including institutions that do not accept transferable deposits but do incur such liabilities as time and savings deposits). • **Interest rate spread** is the interest rate charged by banks on loans to prime customers minus the interest rate paid by commercial or similar banks for demand, time, or savings deposits. • **Risk premium on lending** is the interest rate charged by banks on loans to prime private sector customers minus the "risk free" treasury bill interest rate at which short-term government securities are issued or traded in the market.

Data sources

Data on getting credit are from the World Bank's Doing Business project (www.doingbusiness.org). Data on bank capital and nonperforming loans are from the IMF's *Global Financial Stability Report.* Data on credit and interest rates are from the IMF's *International Financial Statistics.*

5.6 Tax policies

	Tax revenue collected by central government		Taxes payable by businesses			Highest marginal tax rate[a]		
	% of GDP		Number of payments	Time to prepare, file, and pay taxes hours	Total tax rate % of profit	Individual		Corporate
	2000	2005	Fiscal year 2006	Fiscal year 2006	Fiscal year 2006	% 2006	On income over $ 2006	% 2006
Afghanistan[b]	..	3.9	2	275	36.3	..	..	..
Albania[b]	*16.1*	17.3	42	240	55.8	20	2,003	20
Algeria[b]	36.9	..	61	504	76.4	..	..	..
Angola	..	..	42	272	64.4	..	..	..
Argentina	*9.8*	*14.2*	34	615	116.8	35	41,379	35
Armenia[b]	..	14.3	50	1,120	42.5	..	..	..
Australia	22.1	23.9	11	107	52.2	47	72,519	30
Austria	19.6	20.0	20	272	56.1	50	63,750	25
Azerbaijan[b]	*12.7*	..	36	1,000	44.9	35	12,632	22
Bangladesh[b]	*7.6*	*8.1*	17	400	40.3	..	..	..
Belarus[b]	16.6	20.6	125	1,188	186.1	..	..	..
Belgium	27.4	26.5	10	160	70.1	50	39,625	34
Benin[b]	..	14.6	72	270	68.5	35[c]	..	38[c]
Bolivia	*13.2*	16.6	41	1,080	80.3	..	..	25
Bosnia and Herzegovina	..	21.8	73	100	50.4	15	..	30
Botswana[b]	..	..	24	140	53.3	25	19,569	15
Brazil[b]	*12.2*	..	23	2,600	71.7	28	11,486	15
Bulgaria[b]	18.3	23.4	27	616	40.7	24	4,586	15
Burkina Faso	..	12.1	45	270	51.1	..	..	..
Burundi[b]	*13.6*	..	40	140	286.7	..	..	..
Cambodia	*8.2*	8.0	27	121	22.3	20	36,652	20
Cameroon[b]	12.3	..	39	1,300	46.2	..	..	..
Canada[b]	15.3	14.4	10	119	43.0	29	97,756	22
Central African Republic[b]	..	6.0	54	504	209.5	..	..	..
Chad	..	..	65	122	68.2	..	..	..
Chile	*16.6*	19.2	10	432	26.3	*40*	*6,127*	*17*
China[b]	6.8	8.8[c]	48	872	77.1	45	8,637	..
Hong Kong, China	..	..	4	80	28.8	20	11,568	18
Colombia	..	15.1	68	456	82.8	22	43,154	39
Congo, Dem. Rep.[b]	0.0	..	34	312	235.4	50	4,920	40
Congo, Rep.	*9.2*	*8.5*	94	576	57.3	..	..	..
Costa Rica[b]	12.1	13.7	41	402	83.0	25	19,414	30
Côte d'Ivoire[b]	14.6	14.5	71	270	45.7	10	4,550	35
Croatia[b]	26.2	23.3	39	196	37.1	45	3,765	20
Cuba	..	..	..	..	..	..	..	..
Czech Republic[b]	15.4	15.6	14	930	49.0	32	13,823	24
Denmark	31.0	*30.6*	18	135	31.5	59	53,117	28
Dominican Republic[b]	14.7	*15.1*	87	178	67.9	30	29,596	30
Ecuador[b]	..	..	8	600	34.9	25	61,440	25
Egypt, Arab Rep.[b]	14.6	..	41	536	50.4	20	6,920	..
El Salvador	*10.7*	12.6	66	224	27.4	..	..	..
Eritrea	..	..	18	216	86.3	..	..	..
Estonia	16.8	17.0	11	104	50.2	23	1,908	23
Ethiopia[b]	*10.8*	12.7[c]	20	212	32.8	35[c]	..	30[c]
Finland	24.9	22.9	19	264	47.9	33	72,750	26
France	23.4	22.7	33	128	68.2	*48*	*60,673*	33
Gabon	..	..	27	272	48.3	..	..	..
Gambia, The[b]	..	..	47	376	291.4	..	..	..
Georgia[b]	7.7	12.1	35	423	37.8	12	..	20
Germany	11.9	11.0	32	105	57.1	42	65,190	25
Ghana[b]	*17.2*	*22.4*	35	304	32.3	25	10,581	25
Greece	25.5	21.8	33	204	60.2	40	28,750	29
Guatemala[b]	10.1	9.6	50	294	40.9	31	38,663	31
Guinea[b]	11.1	..	55	416	49.4	..	..	..
Guinea-Bissau	..	..	47	208	47.5	..	..	..
Haiti	..	..	53	160	40.5	..	..	..

5.6 Tax policies

	Tax revenue collected by central government		Taxes payable by businesses			Highest marginal tax rate[a]		
	% of GDP		Number of payments	Time to prepare, file, and pay taxes hours	Total tax rate % of profit	Individual %	Individual On income over $	Corporate %
	2000	2005	Fiscal year 2006	Fiscal year 2006	Fiscal year 2006	2006	2006	2006
Honduras	..	..	48	424	51.4	25	26,553	*25*
Hungary	22.5	20.5	24	304	59.3	36	7,766	16
India[b]	9.0	*10.2*	59	264	81.1	30	5,669	34
Indonesia[b]	*11.3*	*12.5*	52	576	37.2	35	20,608	30
Iran, Islamic Rep.[b]	6.3	7.9	28	292	46.4	35	114,101	25
Iraq	..	..	13	312	38.7	..	..	..
Ireland	26.1	25.0	8	76	25.8	42	40,000	13
Israel	31.0	29.3	33	225	39.1	49	94,530	31
Italy	23.2	21.3	15	360	76.0	43	125,000	33
Jamaica[b]	24.7	27.3	72	414	52.3	*25*	*1,993*	*33*
Japan[b]	..	..	15	350	52.8	37	163,310	30
Jordan[b]	19.0	24.2	26	101	31.9	..	..	..
Kazakhstan[b]	10.2	20.6	34	156	45.0	20	55,810	30
Kenya[b]	16.8	16.9	17	432	74.2	*30*	*5,841*	*30*
Korea, Dem. Rep.	..	..	..	..	..	..	..	..
Korea, Rep.[b]	16.1	15.8	27	290	30.9	35	78,116	25
Kuwait	*1.0*	*1.0*	14	118	55.7	0	..	0
Kyrgyz Republic[b]	11.7	..	89	204	67.4	..	..	..
Lao PDR	..	..	31	180	32.5	..	..	..
Latvia[b]	14.2	15.3	8	320	42.6	25	..	15
Lebanon	12.2	*16.1*	21	208	37.3	..	..	..
Lesotho[b]	32.4	*41.7*	21	352	25.6	..	..	..
Liberia	..	..	..	..	..	..	..	..
Libya	..	..	..	..	..	..	..	..
Lithuania	14.5	17.5	13	162	48.4	33	..	15
Macedonia, FYR[b]	..	..	54	96	43.5	24	14,610	15
Madagascar	56.6	*54.4*	25	304	43.2	..	..	..
Malawi	..	..	29	878	32.6	..	..	..
Malaysia[b]	14.3	*17.6*	35	190	35.2	28	65,963	28
Mali	..	..	60	270	50.0	..	..	..
Mauritania	..	..	61	696	104.3	..	..	..
Mauritius[b]	18.2	18.1	7	158	24.8	30	16,949	25
Mexico[b]	11.7	..	49	552	37.1	29	9,470	29
Moldova[b]	14.7	18.9	44	250	48.8	20	1,667	15
Mongolia	..	*22.6*	42	204	32.2	..	..	..
Morocco	*22.3*	22.6	28	468	52.7	..	..	..
Mozambique	..	..	36	230	39.2	32	43,710	32
Myanmar[b]	3.0	..	..	..	..	..	..	..
Namibia[b]	30.0	*25.9*	34	..	25.6	35	31,447	35
Nepal[b]	8.7	10.1	35	408	32.8	..	..	..
Netherlands	22.2	23.2	22	250	48.1	52	65,285	30
New Zealand	*29.4*	31.8	9	70	36.5	39	42,254	33
Nicaragua[b]	13.8	16.6	64	240	66.4	30	29,886	30
Niger	..	..	44	270	46.0	..	..	..
Nigeria	..	..	35	1,120	31.4	..	..	..
Norway	27.7	30.4	3	87	46.1	..	..	28
Oman[b]	7.2	..	14	52	20.2	*0*	..	*12*
Pakistan[b]	10.2	9.5	47	560	43.4	35	11,763	37
Panama[b]	10.2	..	59	560	52.4	*30*	*200,000*	*30*
Papua New Guinea[b]	19.0	..	44	198	44.3	..	..	..
Paraguay[b]	..	12.1	33	328	43.2	10	..	..
Peru[b]	12.2	13.5	53	424	40.8	30	..	30
Philippines[b]	13.7	13.0	59	94	53.0	32	9,076	35
Poland	*16.0*	16.5	43	175	38.4	40	22,854	19
Portugal	21.5	21.6	7	328	47.0	42	75,000	25
Puerto Rico	..	..	17	140	40.9	*33*	*50,000*	*20*

5.6 Tax policies

	Tax revenue collected by central government		Taxes payable by businesses			Highest marginal tax rate[a]		
	% of GDP		Number of payments	Time to prepare, file, and pay taxes hours	Total tax rate % of profit	Individual		Corporate
	2000	2005	Fiscal year 2006	Fiscal year 2006	Fiscal year 2006	% 2006	On income over $ 2006	% 2006
Romania	*11.7*	..	89	198	48.9	16	..	16
Russian Federation	*13.6*	16.6	70	256	54.2	13	..	24
Rwanda[b]	..	..	43	168	41.1	..	..	..
Saudi Arabia	..	..	14	75	14.9	0	..	*0*
Senegal[b]	17.3	..	59	696	47.7	*0*	..	..
Serbia and Montenegro[b]	*23.0*	..	41[d]	168[d]	38.9[d]	10	..	10
Sierra Leone[b]	10.2	11.0	20	399	277	..	..	..
Singapore[b]	15.4	*12.4*	16	30	28.8	21	192,771	20
Slovak Republic	..	15.1	30	344	48.9	19	..	19
Slovenia[b]	21.2	21.4	34	272	39.4	50	..	25
Somalia	..	..	..	..	..	..	..	..
South Africa	24.0	27.5	23	350	38.3	40	47,170	29
Spain	16.2	12.6	7	602	59.1	29	58,524	35
Sri Lanka[b]	14.5	14.3	61	256	74.9	35	4,975	35
Sudan[b]	*6.4*	7.0[c]	66	180	37.1	..	..	..
Swaziland[b]	..	*26.0*	34	104	39.5	33	11,792	30
Sweden	19.7	20.8	5	122	57.0	25	61,673	28
Switzerland[b]	11.3	..	13	68	24.9	..	..	9
Syrian Arab Republic[b]	*17.4*	..	21	336	35.5	..	..	..
Tajikistan[b]	7.7	*9.8*	55	224	87.0	..	..	..
Tanzania	..	..	48	248	45.0	30	5,740	30
Thailand	..	17.1	46	104	40.2	37	99,453	30
Togo[b]	..	13.3	51	270	48.3	..	..	..
Trinidad and Tobago[b]	22.1	24.0	28	114	37.2	25	..	25
Tunisia[b]	21.3	21.3	45	268	58.8	..	..	..
Turkey[b]	*22.1*	..	18	254	46.3	35	..	30
Turkmenistan	..	..	..	..	..	..	..	..
Uganda[b]	10.9	*11.9*	31	237	32.2	30	2,763	30
Ukraine[b]	14.1	17.8	98	2,185	60.3	13	..	25
United Arab Emirates[b]	*1.7*	..	15	12	15.0	0	..	..
United Kingdom	29.0	28.3	7	105	35.4	40	60,545	30
United States	*12.7*	11.2	10	325	46.0	35	326,450	35
Uruguay[b]	16.7	18.5	41	300	27.6	0	..	30
Uzbekistan	..	..	130	152	122.3	29	960	12
Venezuela, RB[b]	13.3	16.1	68	864	51.9	34	93,767	34
Vietnam[b]	..	..	32	1,050	41.6	40	5,044	28
West Bank and Gaza	..	..	50	154	31.5	..	..	..
Yemen, Rep.[b]	*9.4*	..	32	248	48.0	..	..	..
Zambia[b]	*18.4*	..	37	131	22.2	*30*	*368*	*35*
Zimbabwe[b]	..	..	59	216	37.0	*45*	*26,249*	*30*
World	***15.8*** **w**	**16.1 w**	**35 u**	**334 u**	**54.0 u**			
Low income	9.8	*10.6*	43	331	70.5			
Middle income	*12.5*	*12.8*	38	378	48.6			
Lower middle income	*9.7*	*10.7*	43	442	50.0			
Upper middle income	..	..	30	280	46.5			
Low & middle income	*12.0*	*12.4*	40	361	56.4			
East Asia & Pacific	7.7	*9.8*	32	273	43.9			
Europe & Central Asia	*15.5*	17.3	48	448	58.2			
Latin America & Carib.	*11.8*	..	42	437	49.4			
Middle East & N. Africa	15.7	..	33	276	43.8			
South Asia	9.3	*10.1*	30	305	45.1			
Sub-Saharan Africa	..	..	41	336	71.2			
High income	*16.6*	16.0	17	220	43.8			
Europe EMU	19.2	18.1	19	250	56.0			

a. These data are from PriceWaterhouseCoopers' *Worldwide Tax Summaries* online b. Data on central government taxes were reported on a cash basis and have been adjusted to the accrual framework of the *Government Finance Statistics Manual 2001*. c. World Bank staff estimate. d. Data are for Serbia only.

Tax policies 5.6

About the data

Taxes are the main source of revenue for most governments. The sources of tax revenue and their relative contributions are determined by government policy choices about where and how to impose taxes and by changes in the structure of the economy. Tax policy may reflect concerns about distributional effects, economic efficiency (including corrections for externalities), and the practical problems of administering a tax system. There is no ideal level of taxation. But taxes influence incentives and thus the behavior of economic actors and the economy's competitiveness.

Taxes are compulsory transfers to governments from individuals, businesses, or institutions. Certain compulsory transfers, such as fines, penalties, and most social security contributions are excluded from tax revenue.

The level of taxation is typically measured by tax revenue as a share of gross domestic product (GDP). Comparing levels of taxation across countries provides a quick overview of the fiscal obligations and incentives facing the private sector. The table shows only central government data, which may significantly understate the total tax burden, particularly in countries where provincial and municipal governments are large or have considerable tax authority.

Low ratios of tax revenue to GDP may reflect weak administration and large-scale tax avoidance or evasion. Low ratios may also reflect a sizable parallel economy with unrecorded and undisclosed incomes. Tax revenue ratios tend to rise with income, with higher income countries relying on taxes to finance a much broader range of social services and social security than lower income countries are able to.

The new indicators covering taxes payable by businesses go beyond the usual measures of tax rates, which capture only part of the taxpayer burden. In some countries tax systems are so complex that businesses must make more than 100 payments and spend up to 2,600 hours a year to prepare and pay taxes.

Taxes are measured at all levels of government and include corporate income tax, personal income tax withheld by businesses, value-added or sales taxes, property transfer taxes, financial transactions taxes, dividend taxes, waste collection taxes, and vehicle and road taxes. To make the data comparable across countries, several assumptions are made about the business. The main assumptions are that they are limited liability companies, they operate in the country's most populous city, they are domestically owned, they perform general industrial or commercial activities, and they have a certain level of start-up capital, employees, and turnover. For details about the assumptions, see *Doing Business 2007*.

A potentially important influence on both domestic and international investors is a tax system's progressivity, as reflected in the highest marginal tax rate levied at the national level on individual and corporate income. Figures for individual marginal tax rates generally refer to employment income. In some countries the highest marginal tax rate is also the basic or flat rate, and other surtaxes, deductions, and the like may apply. And in many countries several different corporate tax rates may be levied, depending on the type of business (mining, banking, insurance, agriculture, manufacturing), ownership (domestic or foreign), volume of sales, or whether surtaxes or exemptions are included. The corporate tax rates in the table are mainly general rates applied to domestic companies. For more detailed information, see the country's laws, regulations, and tax treaties.

Definitions

• **Tax revenue collected by central government** refers to compulsory transfers to the central government for public purposes. Certain compulsory transfers such as fines, penalties, and most social security contributions are excluded. Refunds and corrections of erroneously collected tax revenue are treated as negative revenue. The analytic framework of the International Monetary Fund's (IMF) *Government Finance Statistics Manual 2001* (GFSM 2001) is based on accrual accounting and balance sheets. For countries still reporting government finance data on a cash basis, the IMF adjusts reported data to the GFSM 2001 accrual framework. These countries are footnoted in the table. • **Number of tax payments by businesses** is the total number of taxes paid by businesses during one year. When electronic filing is available, the tax is counted as paid once a year even if payments are more frequent. • **Time to prepare, file, and pay taxes** is the time, in hours per year, it takes to prepare, file, and pay (or withhold) three major types of taxes: the corporate income tax, the value-added or sales tax, and labor taxes, including payroll taxes and social security contributions. • **Total tax rate** is the total amount of taxes payable by businesses (except for labor taxes) after accounting for deductions and exemptions as a percentage of profit. For further details on the method used for assessing the total tax payable, see *Doing Business 2007*. • **Highest marginal tax rate** is the highest rate shown on the national level schedule of tax rates applied to the annual taxable income of individuals and corporations. Also presented are the income levels for individuals above which the highest marginal tax rates levied at the national level apply.

Data sources

Data on central government tax revenues are from print and electronic editions of the IMF's *Government Finance Statistics Yearbook*. Data on taxes payable by businesses are from *Doing Business 2007* (www.doingbusiness.org). Data on individual and corporate tax rates are from PricewaterhouseCoopers's *Worldwide Tax Summaries* online (www.pwc.com).

5.7 Defense expenditures and arms transfers

	Military expenditures				Armed forces personnel				Arms transfers			
	% of GDP		% of central government expenditure		thousands		% of labor force		$ millions 1990 prices Exports		Imports	
	1995	2005	1995	2005	1995	2005	1995	2005	1995	2005	1995	2005
Afghanistan	..	..	..	..	383	27	5.5	0.3	*0*	..	0	22
Albania	2.1	1.4	8.2	5.7	87	23	6.0	1.7	..	..	24	31
Algeria	3.0	2.8	12.2	..	163	319	1.8	2.4	..	..	346	149
Angola	8.1	5.0	..	..	122	118	2.3	1.7	0	0	1	22
Argentina	1.6	1.0	..	*5.9*	99	102	0.7	0.6	3	0	70	67
Armenia	4.1	2.7	..	15.0	61	49	4.2	3.8	..	..	49	0
Australia	1.9	1.8	..	7.2	57	53	0.6	0.5	28	50	147	396
Austria	0.9	0.7	2.0	1.7	56	40	1.4	1.0	0	3	23	21
Azerbaijan	2.3	2.1	11.7	..	127	82	3.8	2.0	..	..	0	0
Bangladesh	1.4	1.1	..	*13.6*	171	252	0.3	0.4	..	..	121	27
Belarus	1.6	1.2	5.5	4.2	106	183	2.1	3.8	8	0	0	0
Belgium	1.6	1.2	3.4	2.9	47	37	1.1	0.8	299	173	16	0
Benin	..	..	..	..	7	8	0.3	0.2	..	..	0	0
Bolivia	1.9	1.9	..	7.1	64	70	2.2	1.7	..	..	1	9
Bosnia and Herzegovina	..	1.8	..	4.8	92	12	5.2	0.6	0	0	0	0
Botswana	3.5	2.5	11.4	..	9	11	1.4	1.8	..	..	7	0
Brazil	2.1	1.6	*4.8*	..	681	673	0.9	0.7	28	62	237	142
Bulgaria	2.6	2.4	6.6	7.0	136	85	3.5	2.7	2	0	0	158
Burkina Faso	1.5	1.5	..	12.6	10	11	0.2	0.2	..	..	0	19
Burundi	4.2	0.0	17.8	..	15	82	0.5	2.1	..	..	0	0
Cambodia	5.4	1.8	..	23.1	309	191	6.2	2.8	0	0	0	0
Cameroon	1.4	1.3	11.8	..	24	23	0.5	0.4	..	..	0	0
Canada	1.6	1.1	6.4	6.3	76	71	0.5	0.4	369	365	339	112
CentralAfrican Republic	1.2	1.1	..	12.3	5	3	0.3	0.2	..	..	0	0
Chad	1.4	0.9	..	..	35	35	1.3	1.0	0	0	1	0
Chile	3.1	3.8	..	20.2	130	116	2.3	1.8	0	0	468	456
China	1.7[a]	2.0[a]	..[a]	*18.2*[a]	4,130	3,755	0.6	0.5	962	129	523	2,697
Hong Kong, China	..	..	..	..	..	..	..	..	..	..	..	..
Colombia	2.6	3.7	..	11.9	233	336	1.4	1.5	..	..	37	11
Congo, Dem. Rep.	*1.5*	2.1	*13.5*	..	65	65	0.4	0.3	..	..	0	14
Congo, Rep.	..	*1.4*	..	*6.9*	17	12	1.4	0.8	..	..	0	0
Costa Rica	..	..	..	..	16	0	1.2	0.0	..	..	0	0
Côte d'Ivoire	*0.8*	*1.6*	..	*8.9*	15	19	0.3	0.3	..	..	2	0
Croatia	9.4	1.6	22.2	4.0	150	31	7.2	1.6	0	0	22	0
Cuba	..	..	..	..	124	76	2.5	1.4	..	..	0	0
Czech Republic	1.7	1.8	5.2	5.0	92	28	1.8	0.5	122	10	0	630
Denmark	1.7	1.4	..	*4.2*	33	21	1.2	0.7	8	2	127	78
Dominican Republic	0.6	0.6	5.6	*3.3*	40	40	1.3	1.0	..	..	0	0
Ecuador	2.4	2.4	9.2	..	57	47	1.3	0.7	..	..	10	33
Egypt, Arab Rep.	3.5	2.8	14.7	..	610	799	3.5	3.5	7	0	1,700	596
El Salvador	1.0	0.6	..	3.5	39	16	1.8	0.6	*0*	..	3	0
Eritrea	20.8	*19.3*	..	..	55	202	4.4	11.3	0	0	3	276
Estonia	1.0	1.6	..	6.2	6	8	0.8	1.2	0	0	18	10
Ethiopia	1.6	3.1	..	..	120	183	0.5	0.6	0	0	0	0
Finland	1.5	1.2	..	3.3	35	31	1.4	1.2	20	22	159	77
France	3.0	2.5	6.2	5.4	502	359	2.0	1.3	681	2,399	43	3
Gabon	..	1.4	..	..	10	7	2.0	1.2	..	..	0	0
Gambia, The	0.8	0.3	..	..	1	1	0.2	0.1	..	..	0	0
Georgia	*2.2*	3.1	*8.2*	18.1	14	23	0.5	1.0	0	0	0	0
Germany	1.6	1.4	4.2	4.3	365	285	0.9	0.7	1,430	1,855	252	216
Ghana	0.8	0.7	..	*3.8*	13	7	0.2	0.1	..	..	0	0
Greece	4.2	4.5	8.8	10.1	202	168	4.5	3.3	0	0	870	1,114
Guatemala	1.0	0.4	13.1	3.8	57	48	1.8	1.2	..	..	3	0
Guinea	*1.4*	..	..	..	19	13	0.5	0.3	..	..	0	0
Guinea-Bissau	0.9	..	..	..	9	9	1.9	1.4	..	..	0	0
Haiti	0.1	..	..	..	7	0	0.2	0.0	..	..	..	..

Defense expenditures and arms transfers

	Military expenditures				Armed forces personnel				Arms transfers			
	% of GDP		% of central government expenditure		thousands		% of labor force		$ millions 1990 prices Exports		Imports	
	1995	2005	1995	2005	1995	2005	1995	2005	1995	2005	1995	2005
Honduras	..	0.6	..	..	24	20	1.2	0.6	..	..	0	0
Hungary	1.6	1.3	..	3.1	73	44	1.7	1.0	6	70	24	12
India	2.7	2.9	18.4	*18.6*	2,150	3,047	0.6	0.7	2	0	943	1,471
Indonesia	1.6	0.9	16.2	*6.5*	461	582	0.5	0.5	25	8	339	19
Iran, Islamic Rep.	2.4	4.5	15.2	21.7	763	585	4.4	2.1	1	0	373	403
Iraq	..	..	..	..	407	227	7.0	2.7	0	0	0	290
Ireland	1.0	0.6	2.7	1.9	13	10	0.9	0.5	*0*	..	0	4
Israel	9.0	7.9	..	17.0	178	176	8.5	6.4	110	160	265	1,422
Italy	1.7	1.8	3.6	4.5	585	445	2.6	1.8	340	827	315	224
Jamaica	0.6	0.7	1.7	2.1	4	3	0.3	0.3	..	..	0	0
Japan	1.0	1.0	..	..	252	272	0.4	0.4	16	0	877	250
Jordan	12.4	7.7	47.5	21.7	129	111	10.2	6.0	0	15	19	23
Kazakhstan	1.1	1.1	*5.7*	5.8	75	101	1.0	1.2	24	0	99	68
Kenya	1.6	1.5	6.4	7.6	29	29	0.2	0.2	..	..	0	25
Korea, Dem. Rep.	..	..	..	..	1,243	1,295	12.4	12.1	52	0	68	2
Korea, Rep.	2.8	2.6	19.4	12.1	641	693	3.0	2.8	21	38	1,674	544
Kuwait	13.6	5.7	..	21.9	22	23	2.5	1.7	0	0	631	55
Kyrgyz Republic	1.6	*2.8*	6.1	..	7	18	0.4	0.8	61	0	0	3
Lao PDR	*2.9*	..	..	..	137	129	7.7	5.5	..	..	0	0
Latvia	0.9	1.7	3.1	5.8	11	5	0.9	0.5	0	0	16	7
Lebanon	6.4	*3.8*	..	*14.4*	63	85	5.5	6.0	0	0	34	1
Lesotho	3.7	2.4	10.7	*6.8*	2	2	0.3	0.3	..	..	0	0
Liberia	*31.2*	..	..	..	21	15	2.7	1.3	..	..	0	0
Libya	*4.1*	*1.9*	..	..	81	76	5.2	3.3	0	0	0	0
Lithuania	0.5	1.8	..	6.4	9	29	0.5	1.8	0	0	4	9
Macedonia, FYR	*3.0*	2.2	..	..	18	19	2.2	2.2	0	*29*	0	0
Madagascar	0.9	..	..	..	29	22	0.5	0.3	..	..	0	0
Malawi	0.8	*0.7*	..	..	10	7	0.2	0.1	0	0	0	0
Malaysia	2.8	1.9	16.0	*13.8*	140	135	1.7	1.2	0	0	898	467
Mali	2.2	1.9	..	..	15	12	0.4	0.2	..	..	0	0
Mauritania	2.0	1.0	..	..	21	21	2.3	1.7	..	..	1	0
Mauritius	0.4	0.2	1.8	1.0	2	2	0.4	0.4	..	..	0	0
Mexico	0.6	0.4	3.8	..	189	204	0.5	0.5	..	..	45	35
Moldova	0.9	0.3	*2.4*	1.0	15	10	0.8	0.5	0	4	6	0
Mongolia	1.7	*1.7*	..	*6.2*	31	16	3.3	1.3	..	..	0	0
Morocco	4.6	4.3	..	13.7	238	251	2.7	2.3	..	..	30	32
Mozambique	1.5	1.4	..	..	12	11	0.2	0.1	..	..	0	0
Myanmar	3.7	..	..	..	371	483	1.7	1.8	..	..	216	20
Namibia	1.9	3.0	..	*8.5*	8	15	1.5	2.3	..	..	4	0
Nepal	0.9	2.0	..	11.8	63	131	0.8	1.2	..	..	1	0
Netherlands	1.9	1.6	3.8	4.0	78	60	1.0	0.7	383	840	46	129
New Zealand	1.4	1.0	..	3.1	10	9	0.6	0.4	0	0	7	8
Nicaragua	1.1	0.7	6.8	3.3	12	14	0.8	0.7	5	0	0	0
Niger	1.0	*1.1*	..	..	11	10	0.3	0.2	..	..	0	0
Nigeria	0.7	0.9	..	..	89	161	0.2	0.3	0	0	2	0
Norway	2.4	1.6	..	4.8	31	47	1.4	1.9	22	13	83	9
Oman	14.6	*12.2*	45.2	..	48	46	6.2	4.8	0	0	157	98
Pakistan	6.0	3.4	31.4	23.1	846	921	2.2	1.6	0	9	..	..
Panama	1.2	..	5.6	..	12	12	1.1	0.8	..	..	0	0
Papua New Guinea	1.0	0.5	3.9	..	4	3	0.2	0.1	..	..	0	0
Paraguay	1.4	0.8	..	4.5	28	25	1.4	0.9	..	..	0	1
Peru	1.9	1.2	10.7	7.2	178	157	1.8	1.2	0	0	32	368
Philippines	1.4	0.8	*8.5*	4.5	149	147	0.5	0.4	..	..	36	38
Poland	2.0	1.8	..	4.9	302	162	1.7	0.9	176	124	125	96
Portugal	2.4	2.1	*5.7*	5.1	104	93	2.1	1.7	0	0	18	406
Puerto Rico	..	..	..	..	..	..	..	..	..	..	..	..

5.7 Defense expenditures and arms transfers

	Military expenditures				Armed forces personnel				Arms transfers			
	% of GDP		% of central government expenditure		thousands		% of labor force		$ millions 1990 prices Exports		Imports	
	1995	2005	1995	2005	1995	2005	1995	2005	1995	2005	1995	2005
Romania	2.8	2.1	..	..	297	177	2.4	1.7	6	17	0	579
Russian Federation	4.4	3.7	..	18.8	1,800	1,452	2.5	2.0	3,273	5,771	40	0
Rwanda	4.4	2.2	..	..	47	53	2.0	1.3	..	..	0	0
Saudi Arabia	9.3	8.2	..	..	178	216	3.0	2.7	0	36	975	470
Senegal	1.8	1.5	..	..	17	19	0.5	0.4	..	..	2	0
Serbia and Montenegro	*5.3*	2.7	..	..	165	*110*	3.5	*2.8*	0	*0*	18	*0*
Sierra Leone	2.9	1.1	..	5.1	7	13	0.4	0.6	..	..	15	0
Singapore	4.4	4.7	35.1	*30.5*	66	167	3.7	7.5	0	3	237	423
Slovak Republic	3.2	1.8	..	5.1	51	20	2.1	0.7	91	0	220	0
Slovenia	1.6	1.7	4.7	4.0	13	12	1.3	1.2	..	..	19	2
Somalia	..	..	..	..	225	0	8.3	0.0	..	..	0	0
South Africa	2.2	1.4	..	4.8	277	56	1.7	0.3	15	39	38	606
Spain	1.4	1.0	3.9	4.2	282	220	1.7	1.1	82	113	363	281
Sri Lanka	5.3	2.7	20.3	12.7	236	200	3.3	2.4	..	..	49	8
Sudan	2.7	*2.3*	..	..	134	123	1.6	1.2	..	..	3	0
Swaziland	2.4	..	..	..	3	..	1.1	..	..	..	0	0
Sweden	2.3	1.6	..	4.3	100	29	2.2	0.6	184	592	95	104
Switzerland	1.3	1.0	5.2	..	31	109	0.8	2.6	38	74	93	144
Syrian Arab Republic	7.1	*6.2*	..	..	531	416	11.2	5.5	0	0	43	0
Tajikistan	1.0	*2.2*	..	*15.8*	18	13	0.9	0.6	..	..	0	0
Tanzania	1.5	1.1	..	..	36	28	0.2	0.1	..	..	0	0
Thailand	2.3	1.1	..	7.0	421	421	1.3	1.2	0	0	558	98
Togo	2.4	1.5	..	9.8	8	10	0.4	0.4	..	..	3	0
Trinidad and Tobago	0.5	..	1.8	..	7	3	1.3	0.5	..	..	0	0
Tunisia	1.9	1.5	6.7	5.1	59	47	2.1	1.2	..	..	42	156
Turkey	3.9	3.2	20.4	..	690	617	3.0	2.3	0	28	1,562	746
Turkmenistan	2.3	..	..	..	11	26	0.7	1.2	..	..	0	0
Uganda	2.2	*2.5*	..	*11.1*	52	47	0.6	0.4	..	..	38	0
Ukraine	2.8	2.4	..	6.5	519	273	2.0	1.2	242	188	0	29
United Arab Emirates	5.2	1.9	*49.2*	..	71	51	5.5	1.9	27	10	426	2,381
United Kingdom	3.0	2.6	..	6.3	233	217	0.8	0.7	1,206	791	633	94
United States	3.8	4.1	..	19.3	1,636	1,546	1.2	1.0	10,689	7,101	415	387
Uruguay	2.1	1.4	7.9	5.0	27	25	1.8	1.4	0	0	8	18
Uzbekistan	1.1	*0.5*	..	..	42	91	0.5	0.8	0	0	0	0
Venezuela, RB	1.6	1.1	8.7	4.4	80	82	0.9	0.6	0	0	0	7
Vietnam	*2.6*	..	..	..	622	495	1.8	1.1	..	..	270	291
West Bank and Gaza	..	..	..	..	..	56	..	7.3	..	..	1	0
Yemen, Rep.	6.4	5.6	33.4	..	70	138	1.8	2.3	..	..	124	289
Zambia	2.2	..	..	..	23	16	0.6	0.3	0	0	0	0
Zimbabwe	3.6	*3.4*	11.2	..	68	51	1.4	0.9	..	..	0	0
World	**2.5 w**	**2.5 w**	**.. w**	***11.1* w**	**30,182 s**	**30,898 s**	**1.2 w**	**0.9 w**	**21,064 s**	**21,941 s**	**20,951 s**	**21,804 s**
Low income	2.7	2.6	19.6	*18.5*	7,698	8,536	1.0	0.9	115	9	1,813	2,459
Middle income	2.3	2.0	..	*13.2*	16,128	16,527	1.2	0.9	4,996	6,465	8,354	9,196
Lower middle income	2.1	2.0	..	*15.4*	11,456	12,989	1.0	0.8	1,304	406	4,598	5,352
Upper middle income	2.7	2.0	..	..	4,672	3,538	1.9	1.3	3,692	6,059	3,756	3,844
Low & middle income	2.4	2.1	..	*13.8*	23,826	25,063	1.1	0.9	5,111	6,474	10,167	11,655
East Asia & Pacific	1.8	1.8	..	*16.5*	8,021	10,125	0.9	0.7	1,039	137	2,920	3,632
Europe & Central Asia	3.4	2.7	..	11.2	4,971	3,581	2.3	1.7	4,011	6,212	2,227	2,349
Latin America & Carib.	1.7	1.3	*5.1*	..	2,112	2,076	1.1	0.8	36	62	914	1,147
Middle East & N. Africa	4.1	3.7	18.1	..	3,172	3,169	4.2	2.9	8	15	2,872	2,037
South Asia	3.0	2.8	20.4	*19.0*	3,852	4,578	0.8	0.8	2	9	1,114	1,528
Sub-Saharan Africa	2.1	1.6	..	..	1,698	1,534	0.7	0.5	15	39	120	962
High income	2.5	2.6	..	*10.6*	6,356	5,836	1.3	1.1	15,953	15,467	10,584	10,149
Europe EMU	2.0	1.7	3.9	4.5	2,270	1,750	1.7	1.2	3,235	6,232	2,105	2,475

Note: For some countries data are partial or uncertain or based on rough estimates; see SIPRI (2006).

a. Estimates differ from official statistics of the govenment of China, which has published the following estimates: military expenditure as 1.1 percent of GDP in 1995 and 1.6 percent in 2004 and 9.3 percent of central government expenditure in 1995 and 7.7 percent in 2004 (see National Bureau of Statistics of China, www.stats.gov.cn).

Defense expenditures and arms transfers 5.7

About the data

Although national defense is an important function of government and security from external threats contributes to economic development, high levels of defense spending burden the economy and may impede growth. Data on military expenditures as a share of gross domestic product (GDP) are a rough indicator of the portion of national resources used for military activities and of the burden on the national economy. Comparisons of defense spending between countries should take into account the many factors that influence perceptions of vulnerability and risk, including historical and cultural traditions, the length of borders that need defending, the quality of relations with neighbors, and the role of the armed forces in the body politic. As an "input" measure, military spending is not directly related to the "output" of military activities, capabilities, or military security.

Data on defense spending reported by governments are not compiled using standard definitions. They are often incomplete and unreliable. Even in countries where the parliament vigilantly reviews budgets and spending, defense spending and arms transfers rarely receive close scrutiny and full, public disclosure (see Ball 1984 and Happe and Wakeman-Linn 1994). The data on military expenditures as a share of GDP and a share of central government expenditure are estimated by the Stockholm International Peace Research Institute (SIPRI). Central government expenditures are from the International Monetary Fund (IMF). Therefore the data shown in the table may differ from comparable data published by national governments.

SIPRI's primary source of military expenditure data is official data provided by national governments. These data are derived from national budget documents, defense white papers, and other public documents from official government agencies, including governments' responses to questionnaires sent by SIPRI, the United Nations, or the Organization for Security and Co-operation in Europe. Secondary sources include international statistics, such as those of the North Atlantic Treaty Organization (NATO) and the IMF's *Government Finance Statistics Yearbook.* Other secondary sources include country reports of the Economist Intelligence Unit, country reports by IMF staff, and specialist journals and newspapers.

Lack of sufficiently detailed data makes it difficult to apply a common definition of military expenditure globally, so SIPRI has adopted a definition (derived from the NATO definition) as a guideline (see *Definitions*). This definition cannot be applied for all countries, however, since that would require much more detailed information than is available about what is included in military budgets and off-budget military expenditure items. In the many cases where SIPRI cannot make independent estimates, it uses the national data provided. Because of the differences in definitions and the difficulty in verifying the accuracy and completeness of data, the data on military spending are not strictly comparable across countries.

The data on armed forces are from the International Institute for Strategic Studies' *The Military Balance 2007.* These data refer to military personnel on active duty, including paramilitary forces. Reserve forces, which are units that are not fully staffed or operational in peace time, are not included. These data also exclude civilians in the defense establishment and so are not consistent with the data on military spending on personnel. Moreover, because data exclude personnel not on active duty, they underestimate the share of the labor force working for the defense establishment. Because governments rarely report the size of their armed forces, such data typically come from intelligence sources.

The data on arms transfers are from SIPRI's Arms Transfers Project, which reports on international flows of conventional weapons. Data are collected from open sources, and since publicly available information is inadequate for tracking all weapons and other military equipment, SIPRI covers only what it terms *major conventional weapons.*

SIPRI's data on arms transfers cover sales of weapons, manufacturing licenses, aid, and gifts; therefore the term *arms transfers* rather than *arms trade* is used. The transferred weapons must be transferred voluntarily by the supplier, must have a military purpose, and must be destined for the armed forces, paramilitary forces, or intelligence agencies of another country. SIPRI data also cover weapons supplied to or from rebel forces in an armed conflict as well as arms deliveries for which neither the supplier nor the recipient can be identified with an acceptable degree of certainty; these data are available in SIPRI's database.

SIPRI's estimates of arms transfers, presented in 1990 constant price U.S. dollars, are designed as a trend-measuring device in which similar weapons have similar values, reflecting both the value and quality of weapons transferred. The trends presented in the tables are based on actual deliveries only. SIPRI cautions that these estimated values do not reflect financial value (payments for weapons transferred) for three reasons: reliable data on the value of the transfer are not available; even when the value of a transfer is known, it usually includes more than the actual conventional weapons such as spares, support systems, and training; and even when the value of the transfer is known, details of the financial arrangements such as credit and loan conditions and discounts are usually not known.

Given these measurement issues, SIPRI's method of estimating the transfer of military resources includes an evaluation of the technical parameters of the weapons. Weapons for which a price is not known are compared with the same weapons for which actual acquisition prices are available ("core weapons") or for the closest match. These weapons are assigned a value in an index that reflects their military resource value in relation to the core weapons. These matches are based on such characteristics as size, performance, and type of electronics, and adjustments are made for second-hand weapons. More information on SIPRI's arms transfers project is available at www.sipri.org/contents/armstrad/.

Definitions

• **Military expenditures** data from SIPRI are derived from the NATO definition, which includes all current and capital expenditures on the armed forces, including peacekeeping forces; defense ministries and other government agencies engaged in defense projects; paramilitary forces, if these are judged to be trained and equipped for military operations; and military space activities. Such expenditures include military and civil personnel, including retirement pensions of military personnel and social services for personnel; operation and maintenance; procurement; military research and development; and military aid (in the military expenditures of the donor country). Excluded are civil defense and current expenditures for previous military activities, such as for veterans' benefits, demobilization, conversion, and destruction of weapons. This definition cannot be applied for all countries, however, since that would require much more detailed information than is available about what is included in military budgets and off-budget military expenditure items. (For example, military budgets might or might not cover civil defense, reserves and auxiliary forces, police and paramilitary forces, dual-purpose forces such as military and civilian police, military grants in kind, pensions for military personnel, and social security contributions paid by one part of government to another.) • **Armed forces personnel** are active duty military personnel, including paramilitary forces if the training, organization, equipment, and control suggest they may be used to support or replace regular military forces. • **Arms transfers** cover the supply of military weapons through sales, aid, gifts, and those made through manufacturing licenses. Data cover major conventional weapons such as aircraft, armored vehicles, artillery, radar systems, missiles, and ships designed for military use. Excluded are transfers of other military equipment such as small arms and light weapons, trucks, small artillery, ammunition, support equipment, technology transfers, and other services. See *About the data* for more detail.

Data sources

Data on military expenditures and arms transfers are from SIPRI's *Yearbook 2006: Armaments, Disarmament, and International Security.* Data on armed forces personnel are from the International Institute for Strategic Studies' *The Military Balance 2007.*

5.8 Public policies and institutions

	IDA Resource Allocation Index 1 (low) to 6 (high)	Economic management 1 (low) to 6 (high)				Structural policies 1 (low) to 6 (high)			
		Macroeconomic management	Fiscal policy	Debt policy	Average	Trade	Financial sector	Business regulatory environment	Average
	2005	2005	2005	2005	2005	2005	2005	2005	2005
Albania	3.7	4.5	3.5	4.0	4.0	4.5	4.0	3.5	4.0
Angola	2.6	3.0	2.5	2.0	2.5	4.0	2.5	2.0	2.8
Armenia	4.3	5.5	5.0	5.5	5.3	4.5	3.5	4.0	4.0
Azerbaijan	3.7	4.5	4.5	4.5	4.5	4.0	3.0	3.5	3.5
Bangladesh	3.4	4.0	3.5	4.5	4.0	3.0	3.0	3.5	3.2
Benin	3.7	4.5	4.0	3.5	4.0	4.5	3.5	4.0	4.0
Bhutan	3.8	4.0	4.0	4.0	4.0	3.0	3.0	3.5	3.2
Bolivia	3.7	4.0	4.0	4.0	4.0	5.0	3.5	3.0	3.8
Bosnia and Herzegovina	3.6	4.0	3.5	4.0	3.8	4.0	4.0	3.5	3.8
Burkina Faso	3.8	4.5	4.5	4.5	4.5	4.0	3.0	3.0	3.3
Burundi	3.0	3.5	3.5	3.0	3.3	3.0	3.0	2.5	2.8
Cambodia	3.1	4.0	3.5	3.5	3.7	3.5	2.0	3.5	3.0
Cameroon	3.3	4.0	3.5	2.5	3.3	3.5	3.0	3.5	3.3
Cape Verde	4.1	4.5	4.0	4.0	4.2	4.0	4.0	4.0	4.0
Central African Republic	2.4	3.0	3.0	1.5	2.5	3.5	2.5	2.0	2.7
Chad	2.9	4.0	3.0	3.0	3.3	3.0	3.0	3.0	3.0
Comoros	2.4	3.0	2.5	1.5	2.3	2.0	2.5	2.5	2.3
Congo, Dem. Rep.	2.8	3.5	3.5	2.5	3.2	4.0	2.0	3.0	3.0
Congo, Rep.	2.8	3.5	3.0	2.5	3.0	3.0	2.5	2.5	2.7
Côte d'Ivoire	2.5	2.5	2.0	1.5	2.0	3.5	3.0	3.0	3.2
Djibouti	3.1	3.5	3.0	3.0	3.2	4.0	3.5	3.0	3.5
Dominica	3.8	4.0	4.0	3.0	3.7	4.0	4.0	4.5	4.2
Eritrea	2.5	2.0	2.0	2.5	2.2	1.5	2.0	2.0	1.8
Ethiopia	3.4	3.5	4.0	3.5	3.7	3.0	3.0	3.5	3.2
Gambia, The	3.1	3.5	3.0	2.5	3.0	4.0	3.0	3.0	3.3
Georgia	3.8	4.5	4.0	4.0	4.2	3.5	3.5	4.0	3.7
Ghana	3.9	4.0	4.5	4.0	4.2	4.0	3.5	4.0	3.8
Grenada	3.7	4.0	3.0	2.5	3.2	4.0	3.5	4.5	4.0
Guinea	3.0	2.5	3.0	2.5	2.7	4.5	3.0	3.0	3.5
Guinea-Bissau	2.7	2.5	2.5	2.0	2.3	3.5	2.5	3.0	3.0
Guyana	3.4	3.5	3.5	3.5	3.5	4.0	3.5	3.0	3.5
Haiti	2.8	3.5	3.0	2.5	3.0	4.0	3.0	2.5	3.2
Honduras	3.9	4.5	4.5	4.0	4.3	4.5	3.5	4.0	4.0
India	3.8	4.5	3.0	4.5	4.0	3.5	4.0	3.5	3.7
Indonesia	3.7	4.5	4.0	4.5	4.3	4.5	3.5	3.0	3.7
Kenya	3.6	4.5	4.0	4.0	4.2	4.0	3.5	4.0	3.8
Kiribati	3.2	2.5	2.5	5.0	3.3	3.0	3.0	3.0	3.0
Kyrgyz Republic	3.5	4.5	3.5	4.0	4.0	4.5	3.5	3.5	3.8

About the data

The International Development Association (IDA) is the part of the World Bank Group that helps the poorest countries reduce poverty by providing concessional loans and grants for programs aimed at boosting economic growth and improving living conditions. IDA funding helps these countries deal with the complex challenges they face in striving to meet the Millennium Development Goals.

The World Bank's IDA Resource Allocation Index (IRAI), which is presented in the table, is based on the results of the annual Country Policy and Institutional Assessment (CPIA) exercise, which covers the IDA-eligible countries. Country assessments have been carried out annually by World Bank staff since the mid-1970s. Over time the criteria have been revised from a largely macroeconomic focus to include governance aspects and a broader coverage of social and structural dimensions. Country performance is assessed against a set of 16 criteria grouped into four clusters: economic management, structural policies, policies for social inclusion and equity, and public sector management and institutions. IDA resources are allocated to a county on per capita terms on the basis of its IDA country performance rating and, to a limited extent, on the basis of its per capita gross national income. This ensures that good performers receive a higher IDA allocation in per capita terms. The IRAI is a key element in the country performance rating.

The CPIA exercise is intended to capture the quality of a country's policies and institutional arrangements, focusing on key elements that are within the country's control, rather than on outcomes (such as economic growth rates) that are influenced by events beyond the country's control. More specifically, the CPIA measures the extent to which a country's policy and institutional framework supports sustainable growth and poverty reduction and, consequently, the effective use of development assistance.

All criteria within each cluster receive equal weight, and each cluster has a 25 percent weight in the overall score, which is obtained by averaging the

5.8 Public policies and institutions

	IDA Resource Allocation Index 1 (low) to 6 (high)	Economic management 1 (low) to 6 (high)				Structural policies 1 (low) to 6 (high)			
		Macroeconomic management	Fiscal policy	Debt policy	Average	Trade	Financial sector	Business regulatory environment	Average
	2005	2005	2005	2005	2005	2005	2005	2005	2005
Lao PDR	3.0	4.0	3.5	3.5	3.7	3.5	1.5	3.0	2.7
Lesotho	3.5	4.0	4.0	4.0	4.0	3.5	3.5	3.0	3.3
Madagascar	3.5	3.5	3.0	3.5	3.3	4.0	3.5	4.0	3.8
Malawi	3.4	3.0	3.0	3.0	3.0	4.0	3.0	3.5	3.5
Maldives	3.8	3.5	3.5	4.5	3.8	4.0	4.0	4.0	4.0
Mali	3.7	4.5	4.0	4.5	4.3	4.0	3.0	3.5	3.5
Mauritania	3.2	2.0	2.5	4.0	2.8	4.5	2.5	3.5	3.5
Moldova	3.5	3.5	3.5	3.0	3.3	3.5	3.5	4.0	3.7
Mongolia	3.4	4.0	3.5	3.0	3.5	4.5	3.0	3.5	3.7
Mozambique	3.5	4.0	4.0	4.5	4.2	4.0	2.5	3.0	3.2
Nepal	3.3	4.5	3.5	3.5	3.8	4.0	3.0	3.0	3.3
Nicaragua	3.7	3.5	4.0	4.5	4.0	4.5	3.0	3.5	3.7
Niger	3.3	3.5	3.0	3.5	3.3	4.0	3.0	3.5	3.5
Nigeria	3.1	4.0	4.0	3.5	3.8	2.5	3.0	3.0	2.8
Pakistan	3.7	4.5	3.5	4.5	4.2	4.0	4.5	4.0	4.2
Papua New Guinea	3.1	4.0	3.0	3.5	3.5	4.0	3.0	3.0	3.3
Rwanda	3.5	4.0	3.5	3.0	3.5	3.5	3.5	3.5	3.5
Samoa	4.0	4.0	3.5	4.0	3.8	4.5	4.0	4.0	4.2
São Tomé and Principe	3.0	3.0	3.0	2.5	2.8	4.0	2.5	3.0	3.2
Senegal	3.8	4.5	4.0	4.0	4.2	4.5	3.5	3.5	3.8
Serbia and Montenegro	3.7	3.5	4.5	3.5	3.8	4.5	3.0	3.5	3.7
Sierra Leone	3.1	4.0	3.5	3.5	3.7	3.5	3.0	2.5	3.0
Solomon Islands	2.8	3.5	3.5	2.5	3.2	3.0	3.0	2.5	2.8
Sri Lanka	3.6	3.5	3.0	3.5	3.3	3.5	4.0	4.0	3.8
St. Lucia	4.0	4.5	3.5	4.0	4.0	4.0	4.0	4.5	4.2
St. Vincent & Grenadines	3.9	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.2
Sudan	2.6	3.5	3.5	1.5	2.8	3.0	2.5	3.0	2.8
Tajikistan	3.3	4.5	4.0	4.0	4.2	4.0	3.0	3.5	3.5
Tanzania	3.9	5.0	4.5	4.0	4.5	4.0	3.5	3.5	3.7
Togo	2.5	2.5	2.0	1.5	2.0	4.0	2.5	3.0	3.2
Tonga	2.9	3.0	2.0	3.5	2.8	3.0	3.0	3.0	3.0
Uganda	3.9	4.5	4.5	4.5	4.5	4.0	3.5	4.0	3.8
Uzbekistan	3.0	3.0	3.5	4.0	3.5	2.5	2.5	2.5	2.5
Vanuatu	3.1	3.0	3.0	4.0	3.3	4.0	3.0	3.0	3.3
Vietnam	3.7	5.0	4.0	4.0	4.3	3.5	3.0	3.5	3.3
Yemen, Rep.	3.3	4.0	3.0	4.5	3.8	4.5	2.5	3.0	3.3
Zambia	3.3	3.5	3.5	3.0	3.3	4.0	3.0	3.0	3.3
Zimbabwe	1.8	1.0	1.0	1.0	1.0	2.0	2.5	2.0	2.2

average scores of the four clusters. For each of the 16 criteria countries are rated on a scale of 1 (low) to 6 (high). The scores depend on the level of performance in a given year assessed against the criteria, rather than on changes in performance compared with the previous year. All 16 CPIA criteria contain a detailed description of each rating level. In assessing country performance World Bank staff evaluate the country's actual performance on each of the criteria and assign a rating. The ratings reflect a variety of indicators, observations, and judgments based on country knowledge and on relevant publicly available indicators. In interpreting the assessment scores, it should be noted that the criteria are designed in a developmentally neutral manner. Accordingly, higher scores can be attained by a country that, given its stage of development, has a policy and institutional framework that more strongly fosters growth and poverty reduction.

The country teams that prepare the ratings are very familiar with the country, and their assessments are based on country diagnostic studies prepared by the World Bank or other development organizations and on their own professional judgment. An early consultation is conducted with country authorities to make sure that the assessments are informed by up-to-date information. To ensure that scores are consistent across countries, the process involves two key phases. In the benchmarking phase a small representative sample of countries drawn from all regions is rated. Country teams prepare proposals that are reviewed first at the regional level and then in a Bankwide review process. A similar process is then followed to assess the performance of the remaining countries, using the benchmark countries' scores as guideposts. The final ratings are determined following a Bankwide review. The numerical IRAI overall score and the separate criteria scores were first publicly disclosed in June 2006.

See IDA's website at www.worldbank.org/ida for more information.

5.8 Public policies and institutions

	Policies for social inclusion and equity (1 (low) to 6 (high))						Public sector management and institutions (1 (low) to 6 (high))					
	Gender equality 2005	Equity of public resource use 2005	Building human resources 2005	Social protection and labor 2005	Policies and institutions for environmental sustainability 2005	Average 2005	Property rights and rule-based governance 2005	Quality of budgetary and financial management 2005	Efficiency of revenue mobilization 2005	Quality of public administration 2005	Transparency, accountability, and corruption in the public sector 2005	Average 2005
Albania	4.0	3.5	3.0	3.5	3.0	3.4	3.0	4.0	3.5	3.0	3.0	3.3
Angola	3.0	2.5	2.5	2.5	2.5	2.6	2.0	2.5	2.5	2.5	2.5	2.4
Armenia	4.5	4.5	4.0	4.5	3.5	4.2	3.5	4.0	4.0	4.0	3.5	3.8
Azerbaijan	4.0	3.5	3.0	3.5	3.0	3.4	3.0	4.0	3.5	3.0	2.5	3.2
Bangladesh	4.0	3.5	4.0	3.5	3.0	3.6	3.0	3.0	3.0	3.0	2.5	2.9
Benin	3.0	3.0	3.5	3.0	3.5	3.2	3.0	4.0	3.5	3.0	3.5	3.4
Bhutan	4.5	4.0	4.5	3.5	4.5	4.2	3.5	3.5	4.0	4.0	4.0	3.8
Bolivia	3.5	4.0	4.0	3.5	3.5	3.7	2.5	3.5	4.0	3.5	3.0	3.3
Bosnia and Herzegovina	4.0	3.0	3.5	3.5	3.0	3.4	3.0	3.5	4.0	3.0	3.0	3.3
Burkina Faso	3.5	4.0	3.5	3.5	3.5	3.6	3.5	4.0	3.5	3.5	3.5	3.6
Burundi	3.5	3.0	3.0	3.0	2.5	3.0	2.5	2.5	3.0	2.5	3.0	2.7
Cambodia	3.5	3.0	3.5	3.0	2.5	3.1	2.5	2.5	3.0	2.5	2.5	2.6
Cameroon	3.5	3.0	3.5	3.0	4.0	3.4	2.5	3.5	4.0	3.0	2.5	3.1
Cape Verde	4.5	4.5	4.0	4.5	4.0	4.3	4.0	3.5	3.5	4.0	4.5	3.9
Central African Republic	2.5	2.0	2.0	2.0	2.5	2.2	2.0	2.0	2.5	2.0	2.5	2.2
Chad	2.5	3.0	3.0	3.0	2.5	2.8	2.0	3.0	2.5	2.5	2.0	2.4
Comoros	3.0	3.0	3.0	2.5	2.0	2.7	2.5	2.0	2.5	2.0	2.5	2.3
Congo, Dem. Rep.	3.0	3.0	3.0	3.0	2.5	2.9	2.0	2.5	2.5	2.5	2.0	2.3
Congo, Rep.	3.0	3.0	3.0	2.5	3.0	2.9	2.0	3.0	3.0	2.5	2.5	2.6
Côte d'Ivoire	2.5	1.5	2.0	2.5	3.0	2.3	2.0	2.5	4.0	2.0	2.0	2.5
Djibouti	3.0	3.0	3.5	3.0	3.0	3.1	2.5	3.0	3.5	2.5	2.5	2.8
Dominica	4.5	3.5	4.0	3.5	3.0	3.7	4.0	3.0	3.5	3.5	4.0	3.6
Eritrea	3.5	3.0	3.5	3.0	3.0	3.2	2.5	2.5	3.5	3.0	2.5	2.8
Ethiopia	3.0	4.5	3.5	3.5	3.5	3.6	2.5	3.5	4.0	3.0	2.5	3.1
Gambia, The	3.5	3.0	3.5	2.5	3.0	3.1	3.5	2.5	3.5	3.0	2.0	2.9
Georgia	4.5	4.0	4.0	3.5	3.5	3.9	3.5	3.5	4.0	3.5	3.5	3.6
Ghana	4.0	4.0	3.5	3.5	3.5	3.7	3.5	3.5	4.5	3.5	3.5	3.7
Grenada	4.5	3.5	4.0	3.5	4.0	3.9	4.0	3.5	3.5	3.5	4.0	3.7
Guinea	4.0	3.0	3.0	3.5	2.5	3.2	2.0	3.0	3.0	3.0	2.5	2.7
Guinea-Bissau	3.0	3.0	2.5	2.5	3.0	2.8	2.5	2.5	3.0	2.5	2.5	2.6
Guyana	3.5	3.5	3.5	3.0	3.0	3.3	3.0	3.5	3.5	2.5	3.0	3.1
Haiti	3.0	2.5	2.5	2.5	2.5	2.6	2.0	2.5	2.5	2.5	2.0	2.3
Honduras	4.0	4.0	4.0	4.0	3.0	3.8	3.5	4.0	4.0	3.0	3.0	3.5
India	3.5	4.0	4.0	3.5	3.5	3.7	3.5	4.0	4.0	3.5	3.5	3.7
Indonesia	3.5	4.0	3.5	3.5	2.5	3.4	2.5	3.5	3.5	3.5	3.0	3.2
Kenya	3.0	3.0	3.5	3.0	3.0	3.1	3.0	3.5	4.0	3.0	3.0	3.3
Kiribati	3.0	3.5	2.5	3.0	3.0	3.0	3.5	3.5	3.0	3.0	3.5	3.3
Kyrgyz Republic	4.0	3.5	3.5	3.5	3.0	3.5	2.5	3.0	3.0	2.5	2.5	2.7

Definitions

• **IDA Resource Allocation Index** is obtained by calculating the average score for each cluster and then by averaging those scores. For each of 16 criteria countries are rated on a scale of 1 (low) to 6 (high) • **Economic management** cluster: **Macroeconomic management** assesses the monetary, exchange rate, and aggregate demand policy framework. • **Fiscal policy** assesses the short- and medium-term sustainability of fiscal policy (taking into account monetary and exchange rate policy and the sustainability of the public debt) and its impact on growth. • **Debt policy** assesses whether the debt management strategy is conducive to minimizing budgetary risks and ensuring long-term debt sustainability. • **Structural policies** cluster: **Trade** assesses how the policy framework fosters trade in goods. • **Financial sector** assesses the structure of the financial sector and the policies and regulations that affect it. • **Business regulatory environment** assesses the extent to which the legal, regulatory, and policy environments help or hinder private businesses in investing, creating jobs, and becoming more productive. • **Policies for social inclusion and equity** cluster: **Gender equality** assesses the extent to which the country has installed institutions and programs to enforce laws and policies that promote equal access for men and women in education, health, the economy, and protection under law. • **Equity of public resource use** assesses the extent to which the pattern of public expenditures and revenue collection affects the poor and is consistent with national poverty reduction priorities. • **Building human resources** assesses the national policies and public and private sector service delivery that affect the access to and quality of health and education services, including prevention and treatment of HIV/AIDS, tuberculosis, and malaria. • **Social protection and labor** assess government policies in social protection and labor market regulations that reduce the risk of becoming poor, assist those who are poor to better manage further risks, and ensure a minimal level of welfare to all people. • **Policies**

5.8 Public policies and institutions

	Policies for social inclusion and equity (1 (low) to 6 (high))						Public sector management and institutions (1 (low) to 6 (high))					
	Gender equality 2005	Equity of public resource use 2005	Building human resources 2005	Social protection and labor 2005	Policies and institutions for environmental sustainability 2005	Average 2005	Property rights and rule-based governance 2005	Quality of budgetary and financial management 2005	Efficiency of revenue mobilization 2005	Quality of public administration 2005	Transparency, accountability, and corruption in the public sector 2005	Average 2005
Lao PDR	3.5	3.5	3.0	2.0	3.5	3.1	3.0	2.5	2.5	2.5	2.0	2.5
Lesotho	4.0	3.0	3.5	3.0	3.0	3.3	3.5	3.0	4.0	3.0	3.5	3.4
Madagascar	3.5	3.5	3.5	3.5	4.0	3.6	3.5	3.0	3.5	3.5	3.5	3.4
Malawi	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.0	3.5	3.0	3.4
Maldives	4.0	4.0	4.0	3.5	4.0	3.9	4.0	3.0	4.0	4.0	3.0	3.6
Mali	3.5	3.5	3.5	3.5	3.0	3.4	3.5	4.0	4.0	3.0	3.5	3.6
Mauritania	3.5	3.0	3.5	3.5	3.5	3.4	3.0	2.0	4.0	3.0	2.5	2.9
Moldova	4.5	3.5	4.0	3.5	3.5	3.8	3.5	3.5	3.0	3.0	3.0	3.2
Mongolia	3.5	3.5	3.5	3.5	2.5	3.3	3.0	4.0	3.5	3.5	2.5	3.3
Mozambique	3.5	3.5	3.5	3.0	3.0	3.3	3.0	3.5	3.5	3.0	3.0	3.2
Nepal	3.0	3.5	3.5	3.0	3.0	3.2	2.5	3.5	3.5	3.0	2.5	3.0
Nicaragua	4.0	4.0	3.5	3.5	3.5	3.7	3.0	3.5	4.0	3.5	3.5	3.5
Niger	2.5	3.5	3.0	3.0	3.0	3.0	3.0	3.5	3.5	3.0	3.0	3.2
Nigeria	3.0	3.5	3.0	3.0	3.0	3.1	2.5	3.0	3.0	2.5	3.0	2.8
Pakistan	2.0	3.5	3.5	3.0	3.5	3.1	3.0	3.5	3.5	3.5	2.5	3.2
Papua New Guinea	2.5	3.0	2.5	3.0	1.5	2.5	2.5	3.5	3.5	3.0	3.0	3.1
Rwanda	3.5	4.0	4.0	3.5	3.0	3.6	3.0	3.5	3.5	3.5	3.0	3.3
Samoa	4.0	4.0	4.0	3.5	4.0	3.9	4.0	4.0	4.0	4.0	4.0	4.0
São Tomé and Principe	3.0	3.5	2.5	2.5	2.5	2.8	2.5	3.0	3.5	3.0	3.5	3.1
Senegal	3.5	3.5	3.5	3.0	3.5	3.4	3.5	3.5	4.5	3.5	3.0	3.6
Serbia and Montenegro	4.5	4.0	3.5	4.0	3.5	3.9	3.0	3.5	3.5	4.0	3.0	3.4
Sierra Leone	3.0	3.0	3.0	3.0	2.5	2.9	2.5	3.5	3.0	3.0	2.5	2.9
Solomon Islands	3.0	3.0	3.0	2.5	2.0	2.7	2.5	3.0	2.5	2.0	3.0	2.6
Sri Lanka	4.0	3.5	4.5	3.5	3.5	3.8	3.5	4.0	3.5	3.0	3.5	3.5
St. Lucia	4.5	3.5	4.0	3.5	3.5	3.8	4.0	4.0	3.5	3.5	4.5	3.9
St. Vincent & Grenadines	4.5	3.5	4.0	3.5	3.5	3.8	4.0	3.5	3.5	3.5	4.0	3.7
Sudan	2.0	2.5	2.5	2.0	2.5	2.3	2.0	2.5	3.0	2.5	2.0	2.4
Tajikistan	3.5	3.0	3.0	3.5	2.5	3.1	2.5	3.0	3.0	2.5	2.0	2.6
Tanzania	4.0	4.0	4.0	3.5	3.5	3.8	3.5	4.5	4.0	3.5	3.5	3.8
Togo	3.0	2.0	3.0	2.5	2.5	2.6	2.5	2.0	2.5	2.0	2.0	2.2
Tonga	2.5	3.5	4.0	3.0	3.0	3.2	3.5	2.5	3.0	2.5	2.0	2.7
Uganda	3.5	4.5	4.0	3.5	4.0	3.9	3.5	4.0	3.0	3.0	3.0	3.3
Uzbekistan	3.5	3.5	4.0	3.5	3.5	3.6	2.0	3.0	3.0	2.5	1.5	2.4
Vanuatu	3.0	3.5	2.5	2.0	3.0	2.8	3.0	3.5	3.5	2.5	3.0	3.1
Vietnam	4.5	4.0	4.0	3.0	3.5	3.8	3.5	4.0	3.5	3.5	3.0	3.5
Yemen, Rep.	2.5	3.5	3.0	3.5	3.0	3.1	2.5	3.0	3.0	3.0	3.0	2.9
Zambia	3.5	3.5	3.5	3.0	3.5	3.4	3.0	3.0	4.0	3.0	3.0	3.2
Zimbabwe	2.5	1.5	2.0	1.5	2.5	2.0	1.0	2.5	3.5	2.0	1.5	2.1

and institutions for environmental sustainability assess the extent to which environmental policies foster the protection and sustainable use of natural resources and the management of pollution. • **Public sector management and institutions** cluster: **Property rights and rule-based governance** assess the extent to which private economic activity is facilitated by an effective legal system and rule-based governance structure in which property and contract rights are reliably respected and enforced. • **Quality of budgetary and financial management** assesses the extent to which there is a comprehensive and credible budget linked to policy priorities, effective financial management systems, and timely and accurate accounting and fiscal reporting, including timely and audited public accounts. • **Efficiency of revenue mobilization** assesses the overall pattern of revenue mobilization—not only the de facto tax structure, but also revenue from all sources as actually collected. • **Quality of public administration** assesses the extent to which civilian central government staff is structured to design and implement government policy and deliver services effectively. • **Transparency, accountability, and corruption in the public sector** assess the extent to which the executive can be held accountable for its use of funds and for the results of its actions by the electorate and by the legislature and judiciary, and the extent to which public employees within the executive are required to account for administrative decisions, use of resources, and results obtained. The three main dimensions assessed here are the accountability of the executive to oversight institutions and of public employees for their performance, access of civil society to information on public affairs, and state capture by narrow vested interests.

Data sources

Data on public policies and institutions are from the World Bank Group's CPIA database available at www.worldbank.org/ida.

5.9 Transport services

	Roads				Railways			Ports	Air		
	Total road network km 2000–04[a]	Paved roads % 2000–04[a]	Passengers carried million passenger-km 2000–04[a]	Goods hauled million ton-km 2000–04[a]	Rail lines total route-km 2000–05[a]	Passengers carried million passenger-km 2000–05[a]	Goods hauled million ton-km 2000–05[a]	Port container traffic thousand TEU 2005	Registered carrier departures worldwide thousands 2005	Passengers carried thousands 2005	Air freight million ton-km 2005
Afghanistan	34,782	23.7	..	..	..	..	..	..	..	..	..
Albania	18,000	39.0	197	..	447	73	26	..	4	196	0
Algeria	108,302	70.2	..	..	3,572	929	1,471	..	46	3,037	32
Angola	51,429	10.4	166,045	4,709	2,761	..	..	..	5	240	68
Argentina	400,000	30.0	..	..	35,753	6,979	..	1,196	81	6,938	133
Armenia	7,633	100.0	1,867	280	732	30	678	..	6	556	7
Australia	810,200	..	..	152,777	9,528	1,290	46,164	4,830	343	44,657	2,445
Austria	133,928	100.0	69,000	26,411	5,781	8,586	17,060	..	142	8,038	537
Azerbaijan	59,141	49.4	10,279	6,965	2,122	789	7,551	..	12	1,134	12
Bangladesh	239,226	9.5	..	..	2,855	4,340	896	901	7	1,634	183
Belarus	93,310	87.0	9,382	13,969	5,498	13,568	43,559	..	5	282	1
Belgium	150,567	78.0	126,680	54,856	3,542	9,150	8,130	7,890	152	3,341	705
Benin	19,000	9.5	..	..	578	66	86	..	..	..	..
Bolivia	62,479	7.0	..	..	3,698	286	1,057	..	26	1,892	25
Bosnia and Herzegovina	..	..	..	..	1,000	53	1,173	..	*5*	*73*	*1*
Botswana	24,455	36.5	..	..	888	171	842	..	8	230	0
Brazil	1,751,868	5.5	..	..	29,314	..	221,600	5,598	515	37,662	1,531
Bulgaria	44,033	99.0	14,401	6,840	4,163	2,389	5,166	..	10	654	3
Burkina Faso	15,272	31.2	..	..	622	..	..	..	1	66	..
Burundi	12,322	10.4	..	..	..	..	..	..	..	..	..
Cambodia	38,257	6.3	..	..	650	45	92	..	3	169	1
Cameroon	50,000	10.0	..	..	974	324	1,119	..	11	384	24
Canada	1,408,900	..	..	184,774	57,671	2,790	338,661	4,163	1,018	45,230	1,527
Central African Republic	..	..	..	..	..	..	..	..	..	..	..
Chad	..	..	..	..	..	..	..	..	..	..	..
Chile	79,604	20.2	..	..	2,030	1,571	3,848	1,813	93	5,939	1,054
China	1,870,661	81.0	769,560	784,090	62,200	583,320	1,934,612	88,549[b]	1,349	136,722	7,579
Hong Kong, China	1,943	100.0	..	..	..	..	..	..	123	20,230	7,764
Colombia	..	..	..	..	2,137	..	7,751	1,165	162	9,984	1,092
Congo, Dem. Rep.	153,497	1.8	..	..	3,641	140	444	..	..	..	..
Congo, Rep.	17,289	5.0	..	..	795	135	231	..	*5*	*52*	..
Costa Rica	35,330	24.4	..	..	950	..	..	779	36	953	10
Côte d'Ivoire	80,000	8.1	..	..	639	10	675	710	..	..	..
Croatia	28,344	84.7	3,716	4,373	2,726	1,266	2,835	..	22	1,361	2
Cuba	..	..	..	..	4,382	..	..	..	11	813	31
Czech Republic	127,672	100.0	90,055	475	9,513	6,631	14,385	..	75	4,706	39
Denmark	71,847	100.0	61,258	17,766	2,212	5,459	1,888	1,321	160	10,340	190
Dominican Republic	..	..	..	..	1,743	..	..	*537*	..	..	..
Ecuador	43,197	15.0	10,641	5,453	966	..	..	633	30	2,011	5
Egypt, Arab Rep.	92,370	81.0	..	..	5,150	40,837	3,917	3,691	45	4,888	287
El Salvador	..	..	..	..	283	..	..	..	24	2,541	21
Eritrea	..	..	..	..	306	..	..	..	..	..	..
Estonia	56,856	23.5	2,465	6,722	959	248	10,311	..	8	578	1
Ethiopia	36,469	19.1	219,113	2,456	..	..	..	..	31	1,667	133
Finland	78,158	64.7	69,400	28,100	5,732	3,478	9,706	1,313	107	7,075	354
France	951,220	100.0	781,000	197,000	29,286	77,219	41,263	3,840	728	52,477	5,802
Gabon	9,170	10.2	..	..	810	95	2,219	..	9	465	66
Gambia, The	3,742	19.3	16	..	..	..	..	..	..	..	..
Georgia	20,247	39.4	5,200	570	1,336	720	6,127	..	5	249	3
Germany	..	100.0	1,062,700	232,296	34,228	72,568	88,022	13,507	1,024	90,789	7,722
Ghana	47,787	17.9	..	..	977	85	242	..	*1*	96	7
Greece	114,931	..	..	18,360	2,576	1,854	613	1,779	131	9,452	64
Guatemala	..	..	..	..	886	..	..	776	..	..	..
Guinea	44,348	9.8	..	..	1,115	..	..	..	..	..	..
Guinea-Bissau	3,455	27.9	..	..	..	..	..	..	..	..	..
Haiti	..	..	..	..	..	..	..	..	..	..	..

5.9 Transport services

	Roads				Railways			Ports	Air		
	Total road network km 2000–04[a]	Paved roads % 2000–04[a]	Passengers carried million passenger-km 2000–04[a]	Goods hauled million ton-km 2000–04[a]	Rail lines total route-km 2000–05[a]	Passengers carried million passenger-km 2000–05[a]	Goods hauled million ton-km 2000–05[a]	Port container traffic thousand TEU 2005	Registered carrier departures worldwide thousands 2005	Passengers carried thousands 2005	Air freight million ton-km 2005
Honduras	..	..	..	..	699	..	..	553	..	..	..
Hungary	159,568	43.9	13,300	12,505	7,950	7,135	9,005	..	47	2,735	21
India	3,383,344	47.4	..	..	63,465	575,702	407,398	4,938	327	27,528	773
Indonesia	368,360	58.0	..	..	..	25,535	4,698	5,503	321	26,836	440
Iran, Islamic Rep.	179,388	67.4	..	..	7,131	11,149	19,127	1,326	121	12,708	98
Iraq	..	..	..	..	1,963	570	1,682	..	..	..	..
Ireland	96,602	100.0	..	6,500	1,919	1,781	303	980	304	42,873	107
Israel	17,446	100.0	..	..	899	1,618	1,149	1,525	34	4,392	1,213
Italy	484,688	100.0	..	184,756	16,751	47,368	21,045	9,856	446	36,116	1,365
Jamaica	20,996	73.3	..	..	272	..	..	1,671	22	1,574	16
Japan	1,177,278	77.7	947,562	327,632	20,052	145,957	22,632	16,777	652	102,279	8,549
Jordan	7,500	100.0	..	..	293	..	1,024	..	20	1,737	224
Kazakhstan	90,018	93.4	85,240	43,910	14,204	12,129	171,855	..	17	1,160	16
Kenya	63,265	14.1	..	22	1,917	226	1,399	..	28	2,424	253
Korea, Dem. Rep.	..	..	..	..	5,214	..	..	..	2	101	2
Korea, Rep.	100,279	86.8	9,169	518	3,392	31,004	10,108	15,113	221	33,888	7,433
Kuwait	5,749	85.0	..	..	..	..	..	..	19	2,433	242
Kyrgyz Republic	*18,840*	..	5,624	847	424	50	561	..	5	226	2
Lao PDR	31,210	14.4	..	..	..	..	..	..	9	293	2
Latvia	69,532	100.0	2,779	2,330	2,375	894	17,921	..	23	1,032	2
Lebanon	..	..	..	..	401	..	..	..	12	1,076	87
Lesotho	..	..	..	..	..	..	..	..	..	..	..
Liberia	..	..	..	..	490	..	..	..	..	..	..
Libya	..	..	..	..	2,757	..	..	..	8	918	0
Lithuania	79,331	91.3	23,184	12,279	1,772	428	12,457	..	12	505	1
Macedonia, FYR	..	..	..	..	699	94	530	..	2	192	0
Madagascar	..	..	..	..	732	10	12	..	18	575	15
Malawi	15,451	45.0	..	..	710	25	88	..	5	132	1
Malaysia	98,721	81.3	..	..	1,667	1,181	1,178	12,027	176	20,369	2,578
Mali	18,709	18.0	..	..	733	196	189	..	..	..	..
Mauritania	..	..	..	..	717	..	..	..	2	139	0
Mauritius	2,015	100.0	..	..	..	..	..	*382*	15	1,146	212
Mexico	337,192	49.5	410,000	199,800	26,662	74	..	2,145	331	21,858	390
Moldova	12,733	86.2	1,640	1,577	1,075	355	2,980	..	4	232	1
Mongolia	49,250	3.5	381	1,889	1,810	1,128	8,857	..	5	295	6
Morocco	57,493	56.9	..	1,251	1,907	2,987	5,919	*561*	49	3,493	61
Mozambique	..	..	..	..	3,070	172	768	..	10	347	5
Myanmar	..	..	..	..	..	..	..	..	26	1,504	3
Namibia	42,237	12.8	47	591	..	..	..	..	6	306	60
Nepal	17,380	30.3	..	..	59	..	..	..	6	480	7
Netherlands	126,100	..	..	45,700	2,813	14,730	4,026	9,521	241	26,133	4,894
New Zealand	92,931	64.3	..	..	3,898	..	3,853	1,614	209	11,952	781
Nicaragua	18,669	11.4	..	..	6	..	..	..	..	..	..
Niger	14,565	25.0	..	..	..	..	..	..	..	..	..
Nigeria	193,200	15.0	..	..	3,528	174	77	*513*	8	584	10
Norway	91,916	77.5	56,573	13,614	4,087	2,440	9,568	..	234	11,568	182
Oman	34,965	27.7	..	..	..	..	..	2,727	31	3,369	237
Pakistan	258,340	64.7	209,959	..	7,791	23,045	4,796	1,391	49	5,364	408
Panama	11,643	..	..	..	355	..	..	3,068	30	1,796	37
Papua New Guinea	..	..	..	..	..	..	..	..	20	819	21
Paraguay	..	..	..	..	441	..	..	..	10	446	..
Peru	78,829	14.4	..	..	2,177	119	1,159	992	61	4,332	139
Philippines	200,037	21.6	..	..	..	..	..	3,634	59	8,057	323
Poland	423,997	69.7	29,996	85,989	19,599	16,742	46,060	*428*	79	3,554	71
Portugal	78,470	..	..	20,470	2,839	3,412	2,422	905	149	10,140	235
Puerto Rico	25,645	95.0	..	10	96	..	..	1,727	..	..	..

5.9 Transport services

	Roads				Railways			Ports	Air		
	Total road network km 2000–04[a]	Paved roads % 2000–04[a]	Passengers carried million passenger-km 2000–04[a]	Goods hauled million ton-km 2000–04[a]	Rail lines total route-km 2000–05[a]	Passengers carried million passenger-km 2000–05[a]	Goods hauled million ton-km 2000–05[a]	Port container traffic thousand TEU 2005	Registered carrier departures worldwide thousands 2005	Passengers carried thousands 2005	Air freight million ton-km 2005
Romania	198,817	50.7	5,283	267	10,781	7,960	16,032	771	39	1,708	5
Russian Federation	537,289	..	164	5,702	85,542	164,262	1,801,601	1,803	391	26,522	1,541
Rwanda	14,008	19.0	..	..	..	..	..	..	..	..	..
Saudi Arabia	152,044	29.9	..	..	1,020	393	1,192	897	116	15,933	1,021
Senegal	13,576	29.3	..	..	906	138	371	..	6	450	..
Serbia and Montenegro	45,290	62.0	..	452	3,809	..	..	..	*25*	*1,414*	*6*
Sierra Leone	11,300	8.0	..	..	..	..	..	..	0	17	8
Singapore	3,188	100.0	..	..	..	..	..	23,192	77	17,744	7,571
Slovak Republic	43,000	87.3	32,214	18,517	3,659	2,166	9,326	..	14	712	0
Slovenia	38,451	100.0	980	9,007	1,228	777	3,245	..	18	758	3
Somalia	..	..	..	..	..	..	..	..	..	..	..
South Africa	364,131	17.3	..	..	20,047	991	108,513	2,868	148	11,845	923
Spain	666,292	99.0	397,117	132,868	14,484	21,047	11,586	9,170	586	49,855	1,022
Sri Lanka	97,286	81.0	21,067	..	..	4,682	138	2,455	20	2,818	310
Sudan	..	..	..	..	5,478	40	766	..	9	511	43
Swaziland	3,594	..	..	..	301	..	11,394	..	..	..	..
Sweden	424,947	..	106,868	37,677	9,867	5,673	13,120	1,217	146	9,019	264
Switzerland	71,214	100.0	96,845	15,000	3,252	14,277	9,313	..	135	9,663	1,110
Syrian Arab Republic	94,890	20.1	..	..	2,702	571	2,075	..	17	1,240	22
Tajikistan	27,767	..	..	..	616	50	1,117	..	7	479	6
Tanzania	78,891	8.6	..	..	2,600[c]	628[c]	1,196[c]	..	7	263	2
Thailand	57,403	98.5	..	..	4,044	9,195	4,037	5,115	124	18,903	2,002
Togo	..	..	..	..	568	..	..	..	..	..	..
Trinidad and Tobago	..	..	..	..	..	..	..	*440*	14	1,055	48
Tunisia	19,232	65.8	..	16,611	1,909	1,294	2,082	..	21	1,997	18
Turkey	426,906	41.6	174,312	156,853	8,697	5,036	8,939	3,170	146	16,944	383
Turkmenistan	..	..	..	..	2,529	1,286	8,670	..	14	1,654	10
Uganda	70,746	23.0	..	..	259	..	218	..	0	49	29
Ukraine	169,447	97.2	58,308	28,847	22,001	52,655	223,980	580	42	2,513	39
United Arab Emirates	..	..	..	..	..	..	..	9,846	96	16,210	4,417
United Kingdom	387,674	100.0	736,000	160,000	16,208	44,036	22,110	8,599	1,018	93,603	5,998
United States	6,433,272	64.5	7,780,158	2,034,915	228,999	8,869	2,717,513[d]	38,519	9,970[e]	720,548[e]	37,358[e]
Uruguay	60,000	..	..	..	2,993	..	..	..	9	586	4
Uzbekistan	..	..	..	..	4,014	2,012	18,007	..	22	1,639	72
Venezuela, RB	..	..	..	..	682	..	32	1,121	136	5,043	2
Vietnam	222,179	..	..	..	2,671	4,558	2,928	2,694	54	5,454	230
West Bank and Gaza	4,996	100.0	..	..	..	..	..	..	..	..	..
Yemen, Rep.	..	..	..	..	..	..	..	..	17	1,083	67
Zambia	91,440	22.0	..	..	1,273	186	554	..	6	54	0
Zimbabwe	97,267	19.0	..	..	..	..	..	..	4	243	22
World		**.. m**	**.. m**	**.. m**	**.. s**	**2,278 m**	**5,543 m**	**369,847 s**	**24,878 s**	**2,020,604 s**	**142,571 s**
Low income		..	..	..	..	..	..	*9,772*	714	54,774	2,307
Middle income		..	..	..	..	1,290	5,919	155,727	5,297	440,245	22,500
Lower middle income		..	..	..	..	1,286	3,977	122,240	3,283	295,803	14,626
Upper middle income		50.5	..	..	..	1,571	10,311	33,487	2,014	144,442	7,875
Low & middle income		..	..	..	..	..	..	166,361	6,011	495,019	24,807
East Asia & Pacific		..	..	..	..	4,558	4,037	117,522	2,220	220,887	13,285
Europe & Central Asia		..	9,815	6,602	207,077	1,649	9,005	*5,530*	1,014	71,522	2,240
Latin America & Carib.		..	..	..	..	..	..	21,509	1,596	105,739	4,566
Middle East & N. Africa		..	..	..	..	1,265	2,082	..	387	35,547	1,132
South Asia		30.3	..	..	..	13,864	2,846	9,685	417	37,955	1,682
Sub-Saharan Africa		..	..	..	..	..	..	..	379	23,368	1,903
High income		100.0	..	29,960	..	8,586	10,847	203,486	18,866	1,525,585	117,763
Europe EMU		100.0	126,680	51,147	119,711	8,868	9,706	58,759	4,070	337,896	27,960

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 carriers designated by the U.S. Department of Transportation as major and national air carriers.

Transport services 5.9

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.• **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.

5.10 Power and communications

	Electric power		Telephones									
			Access				Quality	Affordability and efficiency				
	Consumption per capita kWh	Transmission and distribution losses % of output	per 1,000 people Fixed mainlines[a]	Mobile subscribers[a]	Population covered by mobile telephony[a] %	International voice traffic minutes per person[a]	Faults per 100 mainlines[a]	$ per month Price basket for residential fixed line[b]	Price basket for mobile[a]	Cost of call to U.S. $ per 3 minutes[a]	Total telecommunications revenue[a] % of GDP	Total telephone subscribers per employee[a]
	2004	2004	2005	2005	2005	2005	2005	2005	2005	2005	2005	2005
Afghanistan	..	..	3	40	..	..	25.0	11.3	10.8	0.39	5.1	1,576
Albania	1,200	36	*88*	*405*	*90*	..	..	*5.1*	22.7	*1.34*	*6.0*	*414*
Algeria	812	16	78	416	75	*52*	0.8	6.3	7.5	*2.08*	3.4	*302*
Angola	124	14	6	69	..	..	..	..	11.9	*3.23*	..	..
Argentina	2,301	15	227	570	..	..	..	6.8	7.8	..	3.1	969
Armenia	1,428	16	*192*	106	88	*29*	52.9	2.4	8.3	*2.42*	*3.0*	*146*
Australia	11,193	6	564	906	96	..	11.2	30.5	18.3	..	5.7	*506*
Austria	7,850	5	450	991	99	*293*	*5.0*	29.0	23.7	*0.71*	2.4	*592*
Azerbaijan	2,437	13	130	267	99	*33*	*45.2*	8.5	15.1	*4.18*	*1.7*	*139*
Bangladesh	140	9	8	63	80	*5*	..	6.9	2.5	*2.02*	*1.5*	..
Belarus	3,144	11	336	419	88	*64*	23.1	2.4	11.8	1.90	1.3	*203*
Belgium	8,576	5	*461*	903	99	..	5.9	33.1	18.9	*0.75*	*2.1*	*586*
Benin	67	..	9	89	*43*	*7*	*5.8*	*16.1*	13.2	*4.80*	*1.6*	*364*
Bolivia	435	12	70	264	..	*49*	..	8.5	5.6	..	5.8	*680*
Bosnia and Herzegovina	2,180	16	248	408	*95*	*190*	..	*4.9*	6.5	*3.62*	7.1	*337*
Botswana	1,325	10	75	466	99	*76*	..	10.4	8.6	*2.88*	3.0	*665*
Brazil	1,955	17	*230*	462	88	..	1.6	15.6	26.5	*0.71*	*3.7*	..
Bulgaria	3,939	12	321	807	100	*37*	4.2	8.9	16.6	*0.57*	6.7	*364*
Burkina Faso	..	..	7	43	*72*	*7*	*18.4*	16.9	13.1	*1.14*	3.1	*383*
Burundi	..	..	*4*	20	..	..	*6.0*	4.5	12.4	*2.45*	..	*234*
Cambodia	..	..	*3*	75	*88*	*2*	..	*5.2*	5.1	*2.94*	*0.4*	*539*
Cameroon	207	19	6	138	73	..	..	9.3	16.5	..	*5.3*	*420*
Canada	17,156	7	566	514	95	..	..	..	6.9	..	*2.7*	456
Central African Republic	..	..	2	25	..	..	56.0	..	12.6	*1.99*	1.1	*134*
Chad	..	..	*1*	22	..	*2*	..	16.9	13.3	..	..	*127*
Chile	3,084	8	211	649	*100*	48	..	9.7	11.4	..	..	..
China	1,585	6	269	302	..	*5*	..	..	2.9	*2.90*	3.2	*928*
Hong Kong, China	5,699	13	546	1,252	*100*	*1,049*	1.1	12.6	2.2	0.77	*3.8*	*623*
Colombia	866	19	168	479	*80*	*52*	30.6	8.0	10.2	..	5.2	..
Congo, Dem. Rep.	93	3	0	48	..	..	..	..	11.0	..	6.6	*513*
Congo, Rep.	131	74	*4*	123	80	..	..	..	11.0	*5.39*	*2.9*	..
Costa Rica	1,667	11	321	254	..	*82*	4.0	*6.0*	1.9	..	*2.5*	*388*
Côte d'Ivoire	176	16	*14*	121	55	*17*	*81.0*	28.2	22.2	*2.25*	*4.3*	*678*
Croatia	3,316	17	425	672	98	*170*	*14.0*	13.1	14.9	..	2.6	*407*
Cuba	1,177	15	75	12	*61*	*29*	*7.6*	13.1	22.6	7.49	*2.6*	..
Czech Republic	6,224	6	314	1,151	100	*73*	6.5	24.1	17.7	*1.06*	*4.1*	*699*
Denmark	6,631	4	619	1,010	..	*338*	9.0	30.7	6.1	*0.89*	*2.6*	*439*
Dominican Republic	1,071	32	101	407	..	..	..	23.3	8.6	*0.22*	0.5	..
Ecuador	687	42	129	472	..	..	..	9.0	18.9	..	*2.2*	*667*
Egypt, Arab Rep.	1,215	12	140	184	98	*23*	0.1	4.0	5.8	*1.45*	3.5	*312*
El Salvador	629	13	141	350	*95*	397	1.7	12.8	8.5	*2.40*	36.1	1,182
Eritrea	..	..	9	9	*0*	*10*	54.3	*6.2*	..	3.59	2.6	*71*
Estonia	5,484	11	328	1,074	99	*109*	..	15.6	8.8	*0.90*	5.8	*486*
Ethiopia	33	10	9	6	..	*2*	100.0	2.9	3.0	4.01	1.7	*81*
Finland	16,780	3	404	997	99	..	..	28.7	6.8	*1.80*	*3.0*	*420*
France	7,900	6	586	789	99	*177*	..	29.0	30.0	*0.84*	2.4	*585*
Gabon	928	18	28	470	78	*61*	45.0	32.4	14.7	2.77	1.8	*244*
Gambia, The	..	..	29	163	..	..	..	..	..	*1.81*	..	..
Georgia	1,577	16	*151*	326	95	*57*	..	*4.7*	44.1	..	*5.8*	..
Germany	7,029	6	667	960	*99*	..	..	26.5	17.3	*0.43*	3.0	*559*
Ghana	247	15	15	129	69	*15*	5.6	14.8	6.9	*0.39*	..	557
Greece	5,148	9	568	904	*100*	..	13.8	21.1	23.6	*1.09*	4.4	*612*
Guatemala	514	4	99	358	..	*129*	..	15.4	6.1	*1.21*	..	..
Guinea	..	..	*3*	20	..	..	..	..	7.7	..	..	..
Guinea-Bissau	..	..	7	42	..	..	..	..	21.9	..	..	..
Haiti	30	53	*17*	*48*	..	..	..	..	4.6	2.15	..	*92*

5.10 Power and communications

	Electric power		Telephones									
			Access				Quality	Affordability and efficiency				
	Consumption per capita kWh	Transmission and distribution losses % of output	per 1,000 people Fixed mainlines[a]	per 1,000 people Mobile subscribers[a]	Population covered by mobile telephony[a] %	International voice traffic minutes per person[a]	Faults per 100 mainlines[a]	$ per month Price basket for residential fixed line[b]	Price basket for mobile[a]	Cost of call to U.S. $ per 3 minutes[a]	Total telecommunications revenue[a] % of GDP	Total telephone subscribers per employee[a]
	2004	2004	2005	2005	2005	2005	2005	2005	2005	2005	2005	2005
Honduras	586	23	69	178	..	*82*	..	5.9	10.8	*2.52*	5.9	*186*
Hungary	3,680	12	333	924	99	*45*	*8.2*	28.5	11.7	*1.01*	4.7	*670*
India	457	26	45	82	..	..	..	3.3	2.4	*1.19*	1.9	..
Indonesia	478	13	58	213	90	*5*	..	5.8	4.3	*2.79*	*2.2*	*1,084*
Iran, Islamic Rep.	2,036	17	278	106	*90*	*8*	..	*2.4*	2.6	*0.55*	*1.3*	*407*
Iraq	1,126	6	*37*	*20*	..	..	..	..	2.6	..	..	..
Ireland	6,169	8	489	1,012	99	..	5.6	39.5	19.7	*0.71*	2.5	*401*
Israel	6,803	3	424	1,120	99	..	..	*10.5*	9.3	*0.59*	4.5	*692*
Italy	5,640	7	427	1,232	100	*236*	..	*26.6*	14.4	*0.79*	3.0	*948*
Jamaica	2,455	10	129	1,017	95	*233*	31.0	9.1	7.5	*0.87*	*4.1*	*686*
Japan	8,072	5	460	742	*99*	*43*	..	26.1	20.5	1.63	*3.9*	*1,283*
Jordan	1,602	13	*119*	*304*	99	*128*	10.0	10.0	6.7	*1.44*	*8.3*	*444*
Kazakhstan	3,621	16	*167*	327	..	..	..	..	11.5	..	..	*108*
Kenya	140	17	8	135	..	*5*	130.4	13.9	16.5	*3.00*	*4.1*	*141*
Korea, Dem. Rep.	827	16	*44*	..	..	..	..	..	..	..	..	..
Korea, Rep.	7,391	3	492	794	*99*	*81*	1.0	8.3	14.2	*0.76*	4.8	*567*
Kuwait	14,955	11	201	939	*100*	..	*4.0*	*10.5*	75.2	1.51	*3.4*	*338*
Kyrgyz Republic	1,421	30	85	105	90	*17*	..	5.9	6.4	5.40	4.5	*91*
Lao PDR	..	..	13	108	..	*3*	..	*5.6*	3.8	*1.11*	1.7	*130*
Latvia	2,549	19	318	814	98	*52*	20.3	13.3	9.5	*1.63*	1.5	*587*
Lebanon	2,499	15	277	277	100	..	..	15.0	20.1	*2.19*	7.2	..
Lesotho	..	..	27	137	*80*	..	75.0	18.4	14.2	*3.28*	..	..
Liberia	..	..	..	49	*16*	..	..	..	..	..	..	..
Libya	2,519	28	*133*	*41*	..	..	..	..	6.3	..	..	..
Lithuania	3,145	7	235	1,275	*100*	*37*	3.8	17.7	9.1	1.55	3.5	..
Macedonia, FYR	3,183	21	262	620	99	..	..	11.4	14.8	..	5.7	..
Madagascar	..	..	4	27	*30*	*1*	*59.6*	*18.5*	7.9	*0.59*	*12.8*	*148*
Malawi	..	..	8	33	..	..	..	5.8	10.2	..	4.5	..
Malaysia	3,166	5	172	771	..	..	7.3	8.7	5.0	*0.71*	*4.8*	*770*
Mali	..	..	6	64	..	..	..	16.1	13.8	..	7.6	..
Mauritania	..	..	13	243	..	*20*	..	11.6	..	..	19.5	*533*
Mauritius	..	..	289	574	*100*	*92*	..	7.9	4.2	1.59	*3.2*	*451*
Mexico	1,838	16	189	460	*100*	*119*	1.8	16.1	14.0	0.83	*2.7*	*617*
Moldova	1,228	38	221	259	97	*92*	*5.1*	4.5	17.1	1.46	9.9	*220*
Mongolia	..	..	61	218	..	*4*	20.6	*2.4*	5.5	..	4.4	*116*
Morocco	595	16	44	411	98	*55*	25.0	*23.0*	16.3	1.69	5.4	*821*
Mozambique	367	10	*4*	62	*95*	*17*	*66.0*	17.6	10.3	*1.17*	*1.8*	*392*
Myanmar	104	20	9	4	..	*3*	*125.0*	..	..	0.17	0.6	*66*
Namibia	1,389	18	*64*	244	88	..	*40.4*	12.3	14.0	..	*4.8*	..
Nepal	69	19	17	9	..	*6*	68.0	3.1	2.0	*2.04*	*1.2*	*110*
Netherlands	6,920	4	466	970	100	..	..	..	23.4	*0.32*	..	..
New Zealand	8,937	13	422	861	98	*363*	..	28.6	19.1	*1.30*	*3.9*	*962*
Nicaragua	417	24	43	217	*60*	*65*	4.8	9.2	15.1	3.15	*3.7*	*334*
Niger	..	..	2	21	15	..	..	*10.5*	16.9	..	2.2	..
Nigeria	104	34	9	141	58	..	20.6	..	10.6	*1.49*	3.5	*256*
Norway	24,645	8	460	1,028	..	*260*	..	37.9	20.2	..	*3.3*	*445*
Oman	3,836	15	103	519	..	*185*	89.7	12.1	5.5	*1.87*	*2.3*	*583*
Pakistan	425	25	34	82	..	..	..	5.1	2.4	*1.03*	2.5	213
Panama	1,466	17	136	418	89	..	13.9	10.3	16.7	..	3.9	273
Papua New Guinea	..	..	*11*	4	..	..	..	7.3	14.8	..	..	..
Paraguay	816	4	54	320	..	*28*	8.2	6.4	3.3	*0.90*	4.2	..
Peru	794	10	80	200	..	*64*	..	*19.6*	22.9	*1.80*	0.8	*472*
Philippines	597	13	41	419	*92*	*29*	..	11.6	5.3	*1.20*	*3.9*	*1,555*
Poland	3,418	9	309	764	*99*	*61*	..	*14.3*	7.8	1.35	3.8	*184*
Portugal	4,526	9	401	1,085	100	*137*	9.7	31.8	23.6	*1.04*	*5.1*	*988*
Puerto Rico	..	..	*285*	*689*	100	..	..	*33.5*	..	..	..	..

5.10 Power and communications

	Electric power		Telephones									
			Access				Quality	Affordability and efficiency				
	Consumption per capita kWh	Transmission and distribution losses % of output	per 1,000 people Fixed mainlines[a]	Mobile subscribers[a]	Population covered by mobile telephony[a] %	International voice traffic minutes per person[a]	Faults per 100 mainlines[a]	$ per month Price basket for residential fixed line[b]	Price basket for mobile[a]	Cost of call to U.S. $ per 3 minutes[a]	Total telecommunications revenue[a] % of GDP	Total telephone subscribers per employee[a]
	2004	2004	2005	2005	2005	2005	2005	2005	2005	2005	2005	2005
Romania	2,271	11	203	617	98	..	10.4	10.1	10.5	*0.82*	*3.8*	*263*
Russian Federation	5,642	12	280	838	..	..	..	..	6.0	*2.03*	2.9	*334*
Rwanda	..	..	*3*	32	75	..	..	*6.6*	12.3	*2.43*	*2.7*	..
Saudi Arabia	6,571	7	164	575	..	..	..	11.7	9.7	..	*3.2*	..
Senegal	176	15	23	148	*85*	*55*	..	15.4	9.6	*1.02*	6.9	*408*
Serbia and Montenegro	4,029	*16*	*332*	*585*	*95*	*113*	25.0	2.7	*6.4*	2.27	2.9	..
Sierra Leone	..	..	..	*22*	..	..	..	..	71.9	..	..	..
Singapore	8,170	6	425	1,010	*100*	..	0.3	6.7	6.1	*0.69*	*3.4*	..
Slovak Republic	5,088	4	222	843	*99*	*88*	*9.5*	*19.8*	12.3	*1.06*	3.8	*508*
Slovenia	6,835	6	408	879	*99*	..	*13.6*	*17.6*	10.3	*0.65*	3.2	*1,228*
Somalia	..	..	12	61	..	..	..	..	5.1	..	..	..
South Africa	4,885	6	101	724	96	..	..	22.7	13.3	*0.79*	5.7	*725*
Spain	5,924	9	422	952	*99*	*117*	14.2	25.8	22.1	*0.60*	3.0	*643*
Sri Lanka	344	17	63	171	85	..	*8.1*	8.2	1.2	*2.11*	*2.2*	*313*
Sudan	92	16	18	50	..	*11*	..	6.3	4.0	..	3.8	651
Swaziland	..	..	31	177	..	*47*	*70.0*	8.3	13.3	*2.97*	*2.0*	*279*
Sweden	15,424	7	*717*	935	*99*	..	..	26.7	6.2	*0.41*	2.8	*858*
Switzerland	8,204	6	689	921	*100*	..	..	29.5	28.4	0.32	3.5	*525*
Syrian Arab Republic	1,317	24	152	155	99	*44*	50.0	*2.7*	9.9	..	2.8	*221*
Tajikistan	2,240	15	*39*	41	..	*10*	*144.0*	*0.8*	23.3	7.84	*0.6*	*57*
Tanzania	53	23	*4*	*52*	*25*	..	..	14.0	9.5	*3.17*	..	..
Thailand	1,865	8	110	*430*	..	*12*	2.5	8.3	4.4	*0.67*	*3.2*	*1,271*
Togo	87	34	10	72	85	21	..	15.4	12.3	*3.98*	*5.7*	*363*
Trinidad and Tobago	4,658	6	248	613	..	*381*	..	*7.0*	6.7	*2.19*	*2.7*	..
Tunisia	1,157	12	125	566	98	84	30.0	3.7	5.4	..	4.4	740
Turkey	1,782	15	263	605	96	*31*	*30.4*	*14.7*	12.6	2.40	*3.6*	*883*
Turkmenistan	1,740	13	*80*	*11*	..	..	..	..	17.2	..	..	..
Uganda	..	..	3	53	85	*2*	..	16.8	9.3	3.21	4.2	*750*
Ukraine	3,152	15	*256*	366	96	*36*	..	..	9.3	*1.65*	5.9	..
United Arab Emirates	11,331	7	273	1,000	*100*	..	0.3	17.4	4.1	*1.73*	2.7	*485*
United Kingdom	6,206	8	528	1,088	99	..	..	31.3	14.0	*0.77*	*3.1*	..
United States	13,351	6	*606*	680	*99*	*279*	13.2	*25.0*	5.2	..	*2.7*	*346*
Uruguay	1,867	31	290	333	*100*	..	..	10.7	16.1	*0.52*	..	..
Uzbekistan	1,796	9	67	28	..	..	..	1.0	1.8	..	..	..
Venezuela, RB	2,760	27	136	470	..	..	..	..	1.2	*0.84*	*3.5*	..
Vietnam	501	10	191	115	..	..	..	3.7	6.2	*1.95*	0.0	*79*
West Bank and Gaza	..	..	96	302	*95*	*66*	69.4	7.5	9.8	1.17	*0.7*	*871*
Yemen, Rep.	165	23	*39*	95	68	..	..	*2.8*	4.3	*2.39*	*1.3*	..
Zambia	692	4	8	81	*51*	*7*	108.0	6.0	14.2	1.41	*2.7*	*175*
Zimbabwe	795	15	25	54	..	24	7.7	4.3	3.4	..	4.4	243
World	**2,606 w**	**9 w**	**180 w**	**342 w**	**.. w**	**.. w**	**.. m**	**11.7 m**	**10.5 m**	***1.44 m***	**3.6 w**	***479 m***
Low income	375	23	37	77	..	..	..	8.7	9.6	1.99	0.7	*141*
Middle income	1,840	11	211	379	..	*22*	..	9.7	10.1	*1.65*	*3.6*	*497*
Lower middle income	1,448	10	205	306	..	*14*	25.0	8.5	10.2	*2.08*	*1.9*	*444*
Upper middle income	3,454	12	230	671	..	..	..	12.1	9.5	*1.06*	*3.6*	*583*
Low & middle income	1,243	13	135	247	..	..	..	10.1	9.9	*1.81*	*3.6*	*279*
East Asia & Pacific	1,343	7	214	282	..	*6*	..	5.9	5.0	*1.16*	*2.7*	*1,006*
Europe & Central Asia	3,637	12	273	624	..	..	15.7	9.5	11.8	*1.51*	*3.6*	*364*
Latin America & Carib.	1,674	17	*177*	439	*90*	..	..	10.0	9.4	1.80	*4.3*	*390*
Middle East & N. Africa	1,289	16	160	229	*90*	*30*	25.0	7.3	6.3	*1.66*	*1.3*	*501*
South Asia	414	26	39	79	..	..	..	5.1	2.4	*2.02*	2.0	*125*
Sub-Saharan Africa	550	9	17	125	..	..	..	14.0	12.3	*2.43*	*3.3*	*248*
High income	9,609	6	503	835	*99*	*171*	5.8	27.6	17.8	*0.76*	*4.5*	*586*
European Monetary Union	6,869	6	531	980	99	..	7.8	29.0	20.9	*0.73*	3.0	*592*

a. Data are from the International Telecommunication Union's (ITU) World Telecommunication Development Report database. Please cite the ITU for third-party use of these data.
b. Calculated by the World Bank based on ITU data.

5.10 Power and communications

About the data

The quality of an economy's infrastructure, including power and communications, is an important element in investment decisions for both domestic and foreign investors. Government effort alone is not enough to meet the need for investments in modern infrastructure; public-private partnerships, especially those involving local providers and financiers, are critical for lowering costs and delivering value for money. In telecommunications, competition in the marketplace, along with sound regulation, is lowering costs and improving the quality of and access to services around the globe.

An economy's production and consumption of electricity is a basic indicator of its size and level of development. Although a few countries export electric power, most production is for domestic consumption. Expanding the supply of electricity to meet the growing demand of increasingly urbanized and industrialized economies without incurring unacceptable social, economic, and environmental costs is one of the great challenges facing developing countries.

Data on electric power production and consumption are collected from national energy agencies by the International Energy Agency (IEA) and adjusted by the IEA to meet international definitions (for data on electricity production, see table 3.9). Electricity consumption is equivalent to production less power plants' own use and transmission, distribution, and transformation losses less exports plus imports. It includes consumption by auxiliary stations, losses in transformers that are considered integral parts of those stations, and electricity produced by pumping installations. Where data are available, it covers electricity generated by primary sources of energy—coal, oil, gas, nuclear, hydro, geo-thermal, wind, tide and wave, and combustible renewables. Neither production nor consumption data capture the reliability of supplies, including breakdowns, load factors, and frequency of outages.

Over the past decade new financing and technology, along with privatization and liberalization, have spurred dramatic growth in telecommunications in many countries. With the rapid development of mobile telephony and the global expansion of the Internet, information and communication technologies are increasingly recognized as essential tools of development, contributing to global integration and enhancing public sector effectiveness, efficiency, and transparency. The table presents telecommunications indicators covering access, quality, and affordability and efficiency.

Operators are the main source of telecommunications data, so information on subscribers is widely available for most countries. This gives a general idea of access, but a more precise measure is the penetration rate—the share of households with access to telecommunications. Also important are data on actual use of the telecommunications equipment. Ideally, statistics on telecommunications (and other information and communications technologies) should be compiled for all three measures: subscription and possession, access, and use. The quality of data varies among reporting countries as a result of differences in regulations covering the provision of data.

Globally, there have been huge improvements in access to telecommunications, driven mainly by mobile telephony. By 2002 access to mobiles outpaced access to fixed-line telephones in developing countries, and rural areas are catching up with urban areas (although gaps are still large). By 2004 approximately 98 percent of the population in high income countries and about 64 percent of the population in developing countries were covered by mobile telephony (within range of a mobile cellular signal).

Telephone mainline faults are a measure of telecommunications quality. The definition varies among countries: some operators define faults as including malfunctioning customer equipment while others include only technical faults.

Although access is the key to delivering telecommunications services to people, if that service is not affordable to most people, then goals of universal usage will not be met. Three indicators of telecommunications affordability are presented in the table (price basket for fixed-line telephone service, price basket for mobile service, and the cost of an international call). Telecommunications efficiency is measured by total telecommunications revenue as percent of GDP and by total telephone subscribers per employee.

Definitions

• **Electric power consumption** measures the production of power plants and combined heat and power plants less transmission, distribution, and transformation losses and own use by heat and power plants. • **Electric power transmission and distribution losses** are losses in transmission between sources of supply and points of distribution and in distribution to consumers, including pilferage.• **Fixed telephone mainlines** are telephone lines connecting a subscriber to the telephone exchange equipment. • **Mobile telephone subscribers** are subscribers to a public mobile telephone service using cellular technology. • **Population covered by mobile telephony** is the percentage of people within range of a mobile cellular signal regardless of whether they are subscribers. • **International voice traffic** is the sum of international incoming and outgoing telephone traffic (in minutes) divided by total population. • **Telephone mainline faults** are the number of reported faults for the year divided by the number of telephone mainlines and multiplied by 100. • **Price basket for residential fixed line** is calculated as one-fifth of the installation charge, the monthly subscription charge, and the cost of local calls (15 peak and 15 off-peak calls of three minutes each). • **Price basket for mobile** is calculated as the pre-paid price for 25 calls per month spread over the same mobile network, other mobile networks, and mobile to fixed calls and during peak, off-peak, and weekend times. It also includes 30 text messages per month. • **Cost of call to U.S.** is the cost of a three-minute, peak rate, fixed-line call from the country to the United States. • **Total telecommunications revenue** is the revenue from the provision of telecommunications services such as fixed-line, mobile, and data divided by GDP. • **Total telephone subscribers per employee** are telephone subscribers (fixed-line plus mobile) divided by the total number of telecommunications employees.

Data sources

Data on electricity consumption and losses are from the IEA's *Energy Statistics and Balances of Non-OECD Countries 2003–2004,* the IEA's *Energy Statistics of OECD Countries 2003–2004,* and the United Nations Statistics Division's *Energy Statistics Yearbook.* Data on telecommunications are from the International Telecommunication Union's World Telecommunication Development Report database and World Bank estimates.

5.11 The information age

	Daily newspapers	Households with television[a]	Personal computers and the Internet							Information and communications technology expenditures	
			Access			Quality		Application	Affordability		
	per 1,000 people	%	per 1,000 people: Personal computers[a]	per 1,000 people: Internet users[a]	Schools connected to the Internet %	Broadband subscribers per 1,000 people[a]	International Internet bandwidth bits per capita[a]	Secure Internet servers per million people October	Price basket for Internet $ per month[a]	% of GDP	Per capita $
	2000	2005	2005	2005	2005	2005	2005	2006	2005	2005	2005
Afghanistan	..	..	..	1	..	0.0	0	0	..	..	..
Albania	..	90	..	60	..	*0.0*	*4*	2	16.3	..	..
Algeria	*27*	88	11	58	*53*	5.9	..	0	9.4	2.4	76
Angola	*11*	9	..	11	..	..	..	0	34.3	..	..
Argentina	40	..	*83*	177	..	21.7	316	12	14.4	7.1	337
Armenia	..	91	*66*	53	..	*0.3*	*12*	3	52.5	..	..
Australia	161	96	*683*	698	97	103.4	5,903	581	22.8	6.2	2,247
Austria	309	95	607	486	..	142.8	*6,681*	284	15.5	5.5	2,059
Azerbaijan	*10*	..	23	81	..	0.3	29	0	10.0	..	..
Bangladesh	..	23	*12*	3	..	*0.0*	*0*	0	24.0	2.4	10
Belarus	..	97	..	347	..	0.2	48	1	10.5	..	..
Belgium	153	98	*348*	458	..	191.3	*11,279*	146	37.2	5.8	2,061
Benin	*5*	20	4	50	..	0.0	5	0	20.7	..	..
Bolivia	99	..	*23*	52	..	1.2	*44*	3	12.3	5.5	56
Bosnia and Herzegovina	..	87	..	206	..	3.5	40	4	7.8	..	..
Botswana	*25*	..	*45*	34	4	..	..	1	21.3	..	..
Brazil	46	91	*105*	195	*50*	17.7	*149*	16	26.0	7.8	333
Bulgaria	173	97	*59*	206	*60*	*0.2*	318	11	7.3	3.8	130
Burkina Faso	*1*	7	2	5	..	0.0	6	0	90.6	..	..
Burundi	*2*	14	*5*	5	..	*0.0*	..	0	52.0	..	..
Cambodia	..	43	*3*	*3*	..	*0.0*	*1*	0	33.1	..	..
Cameroon	6	18	*10*	15	..	..	..	0	44.6	5.0	52
Canada	168	99	*700*	520	*98*	207.6	*6,800*	645	8.9	5.9	2,034
Central African Republic	*2*	2	3	3	..	0.0	0	0	147.8	..	..
Chad	*0*	2	*2*	4	..	..	*0*	..	86.3	..	..
Chile	..	87	141	172	*62*	43.5	*788*	22	25.6	6.1	430
China	59	89	*41*	85	..	28.7	104	0	9.8	5.3	90
Hong Kong, China	218	99	601	508	100	238.9	9,451	191	3.9	8.9	2,280
Colombia	*26*	92	41	104	..	7.0	488	6	7.8	8.5	227
Congo, Dem. Rep.	*3*	2	..	2	..	0.0	0	0	93.2	..	..
Congo, Rep.	*6*	6	*4*	13	..	*0.0*	*0*	0	84.5	..	..
Costa Rica	70	93	*219*	254	*15*	6.6	241	67	28.1	7.7	358
Côte d'Ivoire	*16*	35	*15*	11	..	*0.0*	*3*	0	67.1	..	..
Croatia	134	94	*190*	327	100	20.2	1,074	48	16.1	..	..
Cuba	54	..	33	17	..	*0.0*	8	0	30.0	..	..
Czech Republic	..	..	*240*	269	*95*	43.7	..	64	18.8	7.1	866
Denmark	283	97	*656*	527	100	249.3	*34,891*	614	23.2	6.0	2,849
Dominican Republic	28	76	..	169	..	7.4	..	6	18.8	..	..
Ecuador	98	89	39	47	..	2.0	48	5	37.0	3.2	87
Egypt, Arab Rep.	*31*	89	38	68	66	1.5	49	1	5.0	1.5	18
El Salvador	*29*	..	51	93	..	6.1	23	6	22.6	..	..
Eritrea	..	14	8	16	..	0.0	2	..	28.6	..	..
Estonia	192	93	483	513	*75*	133.1	3,566	163	10.8	..	..
Ethiopia	*0*	2	*3*	2	*1*	*0.0*	..	0	23.3	..	..
Finland	445	94	*481*	534	..	223.8	*4,326*	380	22.2	6.9	2,527
France	142	95	575	430	94	155.5	3,286	96	12.4	6.3	2,213
Gabon	*29*	54	33	48	..	1.1	145	5	40.1	..	..
Gambia, The	*2*	12	*16*	*33*	13	0.0	6	1	17.8	..	..
Georgia	5	89	*42*	*39*	..	*0.3*	..	5	9.9	..	..
Germany	291	95	*545*	455	..	129.7	*6,860*	349	7.4	6.1	2,059
Ghana	*14*	26	*5*	18	*1*	0.1	8	0	23.6	..	..
Greece	..	100	*89*	180	..	14.4	*589*	40	16.4	4.1	822
Guatemala	..	..	*19*	79	..	2.2	*57*	6	54.3	..	..
Guinea	..	9	*5*	5	..	*0.0*	..	..	24.7	..	..
Guinea-Bissau	*5*	26	..	20	..	..	..	..	75.0	..	..
Haiti	..	27	..	70	..	..	..	1	71.0	..	..

The information age 5.11

	Daily newspapers	Households with television[a]	Personal computers and the Internet							Information and communications technology expenditures	
			Access			Quality		Application	Affordability		
	per 1,000 people	%	per 1,000 people: Personal computers[a]	per 1,000 people: Internet users[a]	Schools connected to the Internet %	Broadband subscribers per 1,000 people[a]	International Internet bandwidth bits per capita[a]	Secure Internet servers per million people October	Price basket for Internet $ per month[a]	% of GDP	Per capita $
	2000	2005	2005	2005	2005	2005	2005	2006	2005	2005	2005
Honduras	..	58	*16*	36	..	*0.0*	..	4	33.4	4.6	53
Hungary	162	96	*146*	297	*85*	64.6	991	36	11.0	5.8	632
India	*60*	32	16	55	..	1.2	18	1	6.8	5.8	42
Indonesia	*23*	65	*14*	73	..	..	*7*	1	17.3	3.4	44
Iran, Islamic Rep.	..	77	*109*	103	..	*0.3*	*15*	0	2.3	2.5	69
Iraq	..	..	..	*1*	..	..	..	0	..	..	..
Ireland	148	95	*494*	276	..	65.1	*6,043*	416	31.1	4.4	2,127
Israel	..	93	*740*	*470*	*95*	177.6	*2,499*	182	22.0	8.3	1,475
Italy	109	96	367	478	..	115.7	*2,080*	53	24.8	4.3	1,308
Jamaica	..	70	*63*	*404*	..	..	..	17	34.3	10.6	381
Japan	566	99	*542*	668	99	175.0	*1,038*	331	13.8	7.5	2,678
Jordan	*74*	96	*56*	*118*	*18*	*1.9*	*58*	4	11.1	8.4	195
Kazakhstan	..	..	..	*27*	..	*0.1*	..	1	15.8	..	..
Kenya	*8*	17	*9*	32	..	*0.0*	*3*	0	75.9	2.8	15
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	..	..	*545*	684	100	252.4	1,030	22	32.6	6.9	1,127
Kuwait	..	95	237	276	..	*8.1*	348	35	22.2	1.4	437
Kyrgyz Republic	..	..	19	54	..	0.5	15	1	12.0	..	..
Lao PDR	..	30	17	4	..	0.0	3	0	27.6	..	..
Latvia	138	98	*217*	448	*97*	113.4	*972*	46	12.5	..	..
Lebanon	63	93	114	196	*20*	36.3	81	11	10.0	..	..
Lesotho	*9*	12	..	*24*	..	0.0	4	..	38.6	..	..
Liberia	*14*	..	..	..	..	*0.0*	..	..	..	..	..
Libya	*14*	..	..	*36*	..	..	..	0	22.0	..	..
Lithuania	31	98	*155*	358	*56*	68.6	1,460	26	7.2	..	..
Macedonia, FYR	54	95	222	79	100	6.1	17	2	25.3	..	..
Madagascar	*5*	8	*5*	5	..	*0.0*	*2*	0	45.9	..	..
Malawi	*2*	3	2	4	*1*	0.0	2	0	41.9	..	..
Malaysia	95	89	*197*	435	..	19.4	*128*	17	7.4	7.0	360
Mali	*1*	15	3	4	..	0.0	2	0	28.4	..	..
Mauritania	..	21	*14*	7	..	0.1	15	1	54.3	..	..
Mauritius	116	93	*162*	*146*	..	*2.2*	*50*	18	17.5	..	..
Mexico	94	93	136	181	*60*	22.4	*110*	10	20.0	3.3	246
Moldova	*153*	..	*27*	*96*	*50*	2.5	97	4	24.1	..	..
Mongolia	18	30	133	105	*19*	0.7	16	4	10.7	..	..
Morocco	29	76	25	152	..	8.3	235	1	26.8	6.3	108
Mozambique	*3*	6	*6*	*7*	*0*	..	*1*	0	32.9	..	..
Myanmar	*9*	3	8	2	..	0.0	2	0	48.9	..	..
Namibia	*17*	39	*109*	*37*	*13*	*0.0*	*4*	8	48.7	..	..
Nepal	..	..	*4*	4	..	..	2	1	8.1	..	..
Netherlands	279	99	*682*	739	..	251.2	*20,549*	413	12.4	6.3	2,402
New Zealand	202	98	*474*	672	100	80.8	*1,126*	594	11.9	9.8	2,611
Nicaragua	..	..	40	26	..	1.9	*1*	3	28.1	..	..
Niger	*0*	5	1	2	..	0.0	2	*0*	101.8	..	..
Nigeria	*25*	26	*7*	38	..	0.0	1	0	50.4	3.5	27
Norway	569	100	*573*	735	..	214.4	*9,368*	389	29.8	5.1	3,252
Oman	..	79	*47*	111	..	3.3	194	3	14.5	..	..
Pakistan	39	47	..	67	..	0.3	*5*	0	9.5	6.9	49
Panama	..	77	46	64	..	5.4	*292*	57	38.4	8.4	403
Papua New Guinea	..	9	*64*	23	..	..	..	1	25.0	..	..
Paraguay	..	76	75	32	..	0.9	42	1	11.7	..	..
Peru	*23*	69	100	164	..	12.5	358	6	23.6	6.6	187
Philippines	..	63	*45*	*54*	..	*0.7*	*39*	3	1.8	7.0	83
Poland	102	91	*193*	262	*90*	32.6	*560*	38	11.3	4.2	331
Portugal	102	99	*133*	279	..	114.9	*833*	65	37.8	4.4	758
Puerto Rico	..	97	..	*221*	..	..	..	33	..	..	..

5.11 The information age

	Daily newspapers	Households with television[a]	Personal computers and the Internet							Information and communications technology expenditures	
			Access			Quality		Application	Affordability		
	per 1,000 people	%	per 1,000 people: Personal computers[a]	per 1,000 people: Internet users[a]	Schools connected to the Internet %	Broadband subscribers per 1,000 people[a]	International Internet bandwidth bits per capita[a]	Secure Internet servers per million people October	Price basket for Internet $ per month[a]	% of GDP	Per capita $
	2000	2005	2005	2005	2005	2005	2005	2006	2005	2005	2005
Romania	..	94	*113*	*208*	*57*	34.7	623	7	17.0	3.6	164
Russian Federation	..	98	122	152	*43*	11.1	*100*	3	12.7	3.6	191
Rwanda	*0*	2	..	6	..	..	..	..	30.1	..	..
Saudi Arabia	..	99	*354*	66	..	*0.8*	*31*	4	21.3	2.3	285
Senegal	..	29	21	46	..	1.6	66	0	25.6	8.3	59
Serbia and Montenegro	..	92	*48*	*148*	*70*	..	*87*	*2*	*13.2*	..	..
Sierra Leone	..	7	..	*2*	..	..	..	0	10.6	..	..
Singapore	273	99	..	*571*	*100*	153.3	*5,826*	291	20.5	9.4	2,537
Slovak Republic	131	99	358	464	*65*	25.7	2,636	28	18.9	5.6	486
Slovenia	168	96	404	545	96	85.0	*1,258*	95	18.6	3.1	532
Somalia	..	8	*6*	11	..	*0.0*	*0*	..	..	..	..
South Africa	25	59	85	109	..	3.5	*19*	23	63.2	9.9	504
Spain	98	99	277	348	..	115.1	*2,822*	100	31.7	3.7	959
Sri Lanka	29	32	*27*	*14*	..	0.7	25	2	4.6	5.5	66
Sudan	..	49	90	77	..	0.0	6	..	65.5	..	..
Swaziland	..	18	*32*	*32*	..	*0.0*	..	4	51.7	..	..
Sweden	410	94	*763*	764	..	214.0	*17,531*	405	19.2	7.4	2,941
Switzerland	372	100	865	498	..	232.0	*9,671*	577	7.9	7.5	3,691
Syrian Arab Republic	..	80	42	58	..	*0.0*	..	0	14.0	..	..
Tajikistan	..	..	..	*1*	..	*0.0*	*0*	..	12.3	..	..
Tanzania	..	6	*7*	*9*	..	*0.0*	..	0	93.6	..	..
Thailand	*197*	92	*58*	110	..	*0.7*	106	6	6.9	4.1	112
Togo	2	51	30	49	..	0.0	7	0	44.7	..	..
Trinidad and Tobago	..	88	*79*	*123*	*15*	8.3	375	28	13.4	..	..
Tunisia	19	92	57	95	*25*	1.6	75	2	12.4	5.8	167
Turkey	..	92	*52*	222	*40*	22.1	405	25	11.6	7.9	396
Turkmenistan	7	..	..	*8*	..	..	..	..	69.5	..	..
Uganda	3	5	9	17	*1*	..	3	0	99.6	..	..
Ukraine	175	97	38	97	..	..	*17*	2	7.7	8.0	141
United Arab Emirates	..	86	*197*	308	..	28.3	923	54	13.1	3.6	1,027
United Kingdom	326	..	*600*	473	99	163.8	*13,062*	560	27.3	7.3	2,683
United States	196	98	*762*	*630*	100	166.6	*3,306*	870	15.0	8.8	3,690
Uruguay	..	93	*125*	193	*50*	17.7	462	29	23.9	7.9	385
Uzbekistan	..	..	..	*34*	..	*0.1*	*1*	0	5.7	..	..
Venezuela, RB	..	83	*82*	125	..	13.4	*51*	5	42.6	3.9	205
Vietnam	*6*	83	*13*	129	..	2.5	43	0	10.7	15.1	95
West Bank and Gaza	..	93	*48*	67	..	2.1	66	*1*	15.6	..	..
Yemen, Rep.	..	43	*15*	*9*	..	..	..	0	10.9	..	..
Zambia	22	26	*10*	*20*	..	0.0	2	0	68.4	..	..
Zimbabwe	..	26	92	77	..	0.8	4	0	24.6	7.7	33
World	**90 w**	**79 m**	**130 w**	**137 w**	**.. m**	**41.6 w**	**816 w**	**74 w**	**22.0 m**	**6.8 w**	**538 w**
Low income	*45*	15	*11*	44	..	0.9	15	0	30.1	5.9	41
Middle income	*55*	88	*58*	115	..	22.6	*92*	5	17.0	5.4	149
Lower middle income	61	84	*45*	95	..	23.1	116	2	16.8	5.5	108
Upper middle income	..	91	*113*	196	*60*	21.0	*218*	17	17.0	5.2	312
Low & middle income	*49*	48	*40*	84	..	13.4	*59*	3	23.4	5.4	109
East Asia & Pacific	60	36	*38*	89	..	25.9	97	1	10.7	5.3	89
Europe & Central Asia	..	92	*98*	190	..	20.9	*211*	13	12.2	5.1	274
Latin America & Carib.	61	87	*88*	156	..	16.4	*161*	12	25.8	5.9	278
Middle East & N. Africa	..	84	*48*	89	..	*0.5*	..	1	11.8	3.1	66
South Asia	*59*	32	16	49	..	1.0	18	1	8.1	5.7	40
Sub-Saharan Africa	*12*	14	*15*	29	..	..	..	2	45.3	*7.4*	..
High income	263	97	*579*	527	..	163.2	*4,530*	443	19.9	7.2	2,466
European Monetary Union	188	96	*421*	439	..	134.7	*5,784*	184	20.4	5.4	1,726

a. Data are from the International Telecommunication Union's (ITU) World Telecommunication Development Report database. Please cite the ITU for third-party use of these data.

The information age 5.11

About the data

The digital and information revolution has changed the way the world learns, communicates, does business, and treats illnesses. New information and communications technologies offer vast opportunities for progress in all walks of life in all countries—opportunities for economic growth, improved health, better service delivery, learning through distance education, and social and cultural advances. The table presents indicators of the penetration of the information economy (newspapers, televisions, personal computers, and Internet use), quality (broadband subscribers, international Internet bandwidth, and secure Internet servers), and some of the economics of the information age (Internet access charges and spending on information and communications technology).

The data on the number of daily newspapers in circulation are from surveys by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) Institute for Statistics. In some countries definitions, classifications, and methods of enumeration do not entirely conform to UNESCO standards. For example, newspaper circulation data should refer to the number of copies distributed, but in some cases the figures reported are the number of copies printed. The data for other electronic communications and information technology are from the International Telecommunication Union (ITU), the Internet Software Consortium, Netcraft, the World Information Technology and Services Alliance (WITSA), Global Insights, and World Bank staff estimates. Estimates of households with television are derived from household surveys; data presented in the table are from the ITU and World Bank staff estimates.

The estimates of personal computers are derived from an annual ITU questionnaire, supplemented by other sources. In many countries mainframe computers are used extensively. Since thousands of users can be connected to a single mainframe computer, the number of personal computers understates the total use of computers.

The data on Internet users and related Internet indicators are based on nationally reported data. Some countries derive these data from Internet surveys, but since survey questions and definitions differ across countries, the estimates may not be strictly comparable. For example, questions on the age of Internet users and frequency of use vary by country. Countries that do not have surveys generally derive their estimates from reported Internet service provider subscriber counts, calculated by multiplying the number of subscribers by a selected multiplier. This method may undercount the actual number of people using the Internet, particularly in developing countries, where many commercial subscribers rent out computers connected to the Internet or prepaid cards are used to access the Internet.

The number of secure Internet servers, from the Netcraft Secure Server Survey, gives an indication of how many companies are conducting encrypted transactions over the Internet.

The data on information and communications technology expenditures cover the world's 75 largest buyers of such technology among countries and regions.

Ensuring universal access to information and communication technology is a goal of many countries, but not all countries regularly track accessibility. There is no common set of information and communications technology indicators and definitions, and data are often drawn from administrative records rather than from specific surveys. Access needs to be accurately measured in three major areas: individual, household, and community access.

Definitions

• **Daily newspapers** refer to those published at least four times a week and calculated as average circulation (or copies printed) per 1,000 people. • **Households with television** are the percentage of households with a television set. Some countries report only the number of households with a color television set, and therefore the true number may be higher than reported. • **Personal computers** are self-contained computers designed for use by a single individual. • **Internet users** are people with access to the worldwide network. • **Schools connected to the Internet** are the share of primary and secondary schools in the country that have access to the Internet. • **Broadband subscribers** are the number of broadband subscribers with a digital subscriber line, cable modem, or other high-speed technologies. Reporting countries may have different definitions of broadband, so data are not strictly comparable across countries. • **International Internet bandwidth** is the contracted capacity of international connections between countries for transmitting Internet traffic. • **Secure Internet servers** are servers using encryption technology in Internet transactions.• **Price basket for Internet** is calculated based on the cheapest available tariff for accessing the Internet 20 hours a month (10 hours peak and 10 hours off-peak). The basket does not include the telephone line rental but does include telephone use charges if applicable. Data are compiled in the national currency and converted to U.S. dollars using the annual average exchange rate. • **Information and communications technology expenditures** include computer hardware (computers, storage devices, printers, and other peripherals); computer software (operating systems, programming tools, utilities, applications, and internal software development); computer services (information technology consulting, computer and network systems integration, Web hosting, data processing services, and other services); and communications services (voice and data communications services) and wired and wireless communications equipment.

Data sources

Data on newspapers are compiled by the UNESCO Institute for Statistics. Data on televisions, personal computers, Internet users, broadband subscribers, international Internet bandwidth, and price basket for Internet are from the ITU's World Telecommunication Development Report database. Data on schools connected to the Internet are World Bank staff estimates. Data on secure Internet servers are from Netcraft (www.netcraft.com/). Data on information and communications technology expenditures are from WITSA's *Digital Planet 2006: The Global Information Economy* and from Global Insight, Inc.

5.12 Science and technology

	Researchers in R&D	Technicians in R&D	Scientific and technical journal articles	Expenditures for R&D	High-technology exports		Royalty and license fees		Patent applications filed[a]		Trademark applications filed[b]	
	per million people	per million people		% of GDP	$ millions	% of manufactured exports	Receipts $ millions	Payments $ millions	Residents	Non-residents	Residents	Non-residents
	2000–04[c]	2000–04[c]	2003	2000–04[c]	2005	2005	2005	2005	2004	2004	2004	2004
Afghanistan	..	..	..	..	..	..	..	..	..	..	..	..
Albania	..	..	..	..	5	1	1	4	*0*	..	..	..
Algeria	..	..	285	..	*7*	*1*	..	..	58	334	*1,488*	*871*
Angola	..	..	..	..	..	..	49	3	..	..	..	..
Argentina	720	316	3,086	0.41	809	7	54	635	786	3,816	*61,953*	*19,139*
Armenia	..	..	175	0.25	5	1	..	..	*151*	6	1,598	256
Australia	3,759	..	15,809	1.70	3,276	13	508	1,645	8,555	21,651	37,202	16,007
Austria	2,968	1,254	4,906	2.26	11,623	13	177	1,334	1,965	549	7,336	1,049
Azerbaijan	..	..	107	0.30	5	1	0	0	..	..	*144*	*339*
Bangladesh	..	..	204	0.62	*3*	*0*	0	3	..	..	..	..
Belarus	..	..	532	0.62	216	3	3	20	1,065	382	2,410	1,027
Belgium	3,065	1,473	6,604	1.90	22,809	9	1,107	1,107	*519*	*188*	*21,010*[d]	*10,695*[d]
Benin	..	..	..	..	0	0	*0*	2	..	..	..	..
Bolivia	120	6	..	0.28	*28*	*9*	2	11	..	..	..	..
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	47	349	267	700
Botswana	..	..	76	..	..	..	0	12	*0*	..	..	..
Brazil	344	332	8,684	0.98	8,007	13	102	1,404	3,892	14,800	*81,036*	*13,218*
Bulgaria	1,263	477	829	0.51	326	5	5	79	263	133	5,978	1,086
Burkina Faso	..	..	..	..	*3*	*10*	..	..	..	..	..	..
Burundi	..	..	..	..	*0*	*6*	0	0	..	..	*20*	*132*
Cambodia	..	..	..	..	*4*	*0*	0	7	..	..	409	1,638
Cameroon	..	..	123	..	2	2	0	2	..	..	..	..
Canada	3,597	770	24,803	1.93	29,777	14	3,471	6,649	*3,929*	*33,298*	17,719	22,169
Central African Republic	..	..	..	..	0	0	..	..	..	..	..	..
Chad	..	..	..	..	..	..	..	..	..	..	..	..
Chile	444	303	1,500	0.61	*195*	*5*	54	322	..	..	..	..
China	708	..	29,186	1.44	214,246	31	157	5,321	65,586	64,798	527,591	52,788
Hong Kong, China	1,564	225	..	0.60	94,808	34	*218*	*1,111*	127	9,878	*7,374*	*11,208*
Colombia	109	77	337	0.17	362	5	10	118	*52*	*198*	..	..
Congo, Dem. Rep.	..	..	..	..	..	..	..	..	..	..	..	..
Congo, Rep.	30	32	..	..	..	..	..	..	..	..	..	..
Costa Rica	..	..	84	0.39	1,775	38	0	57	..	..	..	..
Côte d'Ivoire	..	..	..	..	*93*	*8*	*0*	*22*	..	..	..	..
Croatia	1,296	455	845	1.14	689	12	73	193	383	841	1,283	767
Cuba	..	..	264	0.65	..	..	..	..	..	..	379	1,937
Czech Republic	1,594	923	2,950	1.28	*7,662*	*13*	63	216	619	633	9,365	1,042
Denmark	5,016	2,713	5,291	2.63	11,733	22	..	..	1,843	172	4,185	944
Dominican Republic	..	..	..	..	..	..	0	31	..	..	..	..
Ecuador	50	..	..	0.07	64	8	*0*	42	*13*	489	5,571	4,822
Egypt, Arab Rep.	..	..	1,720	0.19	*15*	*1*	136	182	157	537	..	..
El Salvador	47	..	..	..	*37*	*4*	2	30	..	..	..	..
Eritrea	..	..	..	..	..	..	..	..	..	..	..	..
Estonia	2,523	427	368	0.91	931	18	5	25	27	97	1,241	583
Ethiopia	..	..	99	..	*0*	*0*	0	1	..	..	..	..
Finland	7,832	..	5,202	3.51	13,835	25	1,207	1,123	2,004	216	2,598	722
France	3,213	..	31,971	2.16	69,673	20	5,924	3,230	14,230	3,060	*57,784*	*2,935*
Gabon	..	..	..	..	*28*	*15*	..	..	..	..	..	..
Gambia, The	..	..	..	..	0	6	..	..	*0*	..	..	..
Georgia	..	..	117	0.29	76	23	9	5	248	210	148	132
Germany	3,261	1,089	44,305	2.49	137,547	17	6,828	6,589	48,329	10,905	62,576	3,342
Ghana	..	..	83	..	*19*	9	0	0	..	..	..	..
Greece	1,413	895	3,770	0.58	994	10	60	442	487	27	*5,290*	*1,143*
Guatemala	..	..	..	..	98	3	*0*	*0*	..	..	..	..
Guinea	..	..	..	..	..	..	*0*	*0*	..	..	..	..
Guinea-Bissau	..	..	..	..	..	..	..	*0*	..	..	..	..
Haiti	..	..	..	..	..	..	0	0	..	..	..	..

5.12 Science and technology

	Researchers in R&D	Technicians in R&D	Scientific and technical journal articles	Expenditures for R&D	High-technology exports		Royalty and license fees		Patent applications filed[a]		Trademark applications filed[b]	
	per million people	per million people		% of GDP	$ millions	% of manufactured exports	Receipts $ millions	Payments $ millions	Residents	Non-residents	Residents	Non-residents
	2000–04[c]	2000–04[c]	2003	2000–04[c]	2005	2005	2005	2005	2004	2004	2004	2004
Honduras	..	..	..	0.05	*6*	*2*	0	22	*7*	*161*	*1,149*	*3,388*
Hungary	1,472	466	2,503	0.88	13,045	25	834	1,068	738	1,919	4,293	1,047
India	..	..	12,774	0.85	*2,840*	*5*	*25*	*421*	6,795	10,671	..	..
Indonesia	207	..	178	0.05	6,571	16	263	961	226	3,441	..	..
Iran, Islamic Rep.	1,279	..	1,806	0.67	*98*	*3*	..	..	..	..	..	..
Iraq	..	..	..	..	..	..	..	..	..	..	..	..
Ireland	2,674	621	1,758	1.21	..	..	589	19,426	787	58	*1,285*	*1,142*
Israel	..	..	6,941	4.46	4,937	14	610	537	*1,329*	*8,929*	215	5,022
Italy	1,213	..	24,696	1.14	24,616	8	1,131	1,942	..	..	..	..
Jamaica	..	..	..	0.07	..	..	13	11	*15*	*54*	*663*	*1,433*
Japan	5,287	528	60,067	3.15	122,680	22	17,655	14,653	362,342	60,739	110,270	18,573
Jordan	..	..	263	..	160	5	..	..	..	..	..	..
Kazakhstan	629	92	128	0.22	*72*	*2*	0	31	*1,696*	*102*	2,908	1,070
Kenya	..	..	258	..	*18*	*3*	18	37	..	..	..	..
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	3,187	567	13,746	2.64	83,527	32	1,827	4,398	105,027	35,088	91,935	16,529
Kuwait	..	..	244	0.20	..	..	0	0	..	..	..	..
Kyrgyz Republic	..	..	..	0.20	4	2	2	2	*179*	*1*	133	345
Lao PDR	..	..	..	..	..	..	..	..	..	..	*25*	*656*
Latvia	1,434	318	153	0.42	159	5	10	14	107	44	1,290	595
Lebanon	..	..	223	..	*26*	*2*	*0*	*0*	..	..	..	..
Lesotho	..	0	..	0.01	..	..	18	..	..	..	..	..
Liberia	..	..	..	..	..	..	..	..	..	..	..	..
Libya	361	493	..	..	..	..	*0*	*0*	..	..	..	..
Lithuania	2,136	427	322	0.76	410	6	2	21	69	45	1,929	570
Macedonia, FYR	504	69	*74*	0.26	16	1	3	10	37	415	*478*	*515*
Madagascar	15	45	..	0.12	*1*	*1*	1	3	16	22	411	321
Malawi	..	..	..	..	6	7	..	..	..	..	*138*	*440*
Malaysia	299	58	520	0.69	57,376	55	27	1,370	..	..	..	..
Mali	..	..	..	..	..	..	*0*	*1*	..	..	..	..
Mauritania	..	..	..	..	..	..	..	..	..	..	..	..
Mauritius	..	..	..	0.35	298	21	0	5	..	..	..	..
Mexico	268	96	3,747	0.40	32,262	20	70	111	531	12,667	41,813	20,775
Moldova	..	..	78	..	11	3	2	2	297	9	1,574	372
Mongolia	..	..	..	0.28	0	0	..	..	143	86	423	1,321
Morocco	..	..	428	0.62	702	10	13	45	..	..	..	..
Mozambique	..	..	..	0.59	9	8	2	5	..	..	..	..
Myanmar	17	133	..	0.07	..	..	*0*	*0*	..	..	..	..
Namibia	..	..	..	..	*15*	*3*	*0*	*3*	..	..	..	..
Nepal	59	137	..	0.66	*1*	*0*	..	..	..	..	..	..
Netherlands	2,482	1,725	13,475	1.85	65,758	30	3,866	3,692	2,187	556	..	..
New Zealand	3,945	833	3,034	1.16	943	14	101	555	1,579	4,952	8,426	7,864
Nicaragua	..	..	..	0.05	4	5	0	0	..	..	..	..
Niger	..	..	..	..	*1*	*3*	..	*0*	..	..	..	..
Nigeria	..	..	384	..	*9*	*2*	..	45	..	..	..	..
Norway	4,587	1,754	3,339	1.75	3,010	17	364	546	..	..	..	*6,981*
Oman	..	..	114	..	25	2	..	..	*0*	..	..	..
Pakistan	..	..	368	0.22	211	2	15	110	..	1,081	8,319	4,455
Panama	97	387	..	0.34	1	1	0	42	..	..	..	..
Papua New Guinea	..	..	..	..	*47*	*39*	..	..	..	..	..	..
Paraguay	79	113	..	0.10	*14*	*7*	196	1	12	173	..	..
Peru	..	..	129	0.10	64	3	2	69	38	785	*8,227*	*5,661*
Philippines	48	8	179	0.11	26,077	71	6	265	157	2,539	6,861	5,253
Poland	1,581	282	6,770	0.58	2,688	4	61	1,036	2,381	5,359	13,776	1,153
Portugal	1,949	307	2,625	0.78	*2,639*	9	60	328	121	66	8,123	1,012
Puerto Rico	..	..	..	..	..	..	..	..	..	..	..	..

5.12 Science and technology

	Researchers in R&D	Technicians in R&D	Scientific and technical journal articles	Expenditures for R&D	High-technology exports		Royalty and license fees		Patent applications filed[a]		Trademark applications filed[b]	
	per million people	per million people		% of GDP	$ millions	% of manufactured exports	Receipts $ millions	Payments $ millions	Residents	Nonresidents	Residents	Nonresidents
	2000–04[c]	2000–04[c]	2003	2000–04[c]	2005	2005	2005	2005	2004	2004	2004	2004
Romania	976	249	988	0.40	758	3	48	173	937	163	10,298	1,193
Russian Federation	3,319	557	15,782	1.17	3,690	8	260	1,593	22,944	7,246	23,571	7,088
Rwanda	..	..	..	..	*1*	*25*	0	0	..	..	..	..
Saudi Arabia	..	..	573	..	215	1	0	0	*61*	*552*	..	..
Senegal	..	..	79	..	75	12	*0*	*7*	..	..	..	..
Serbia and Montenegro	..	..	600	1.17	..	..	..	..	*381*	..	*1,085*	*647*
Sierra Leone	..	..	..	..	..	..	*1*	0	..	..	..	..
Singapore	4,999	381	3,122	2.25	105,078	57	544	8,647	509	8,076	4,839	18,409
Slovak Republic	1,984	445	943	0.53	1,960	7	*50*	*91*	214	239	2,912	1,148
Slovenia	2,543	1,600	969	1.61	786	5	16	113	327	42	1,615	550
Somalia	..	..	..	..	..	..	..	..	..	..	..	..
South Africa	307	73	2,364	0.76	1,739	7	45	1,071	..	..	..	..
Spain	2,195	861	16,826	1.11	10,409	7	561	2,639	2,864	320	52,718	2,059
Sri Lanka	128	..	141	0.14	*60*	*1*	..	..	*95*	*189*	*3,989*	*1,773*
Sudan	..	..	..	0.34	*0*	*0*	0	0	..	..	..	..
Swaziland	..	..	..	..	..	..	0	88	..	..	..	..
Sweden	5,416	..	10,237	3.74	17,070	17	3,324	1,498	2,752	478	..	..
Switzerland	3,601	2,319	8,542	2.57	25,544	22	..	..	*1,827*	*466*	..	..
Syrian Arab Republic	..	..	67	..	6	*1*	..	12	..	..	..	..
Tajikistan	..	..	..	..	..	..	1	0	32	2	65	253
Tanzania	..	..	86	..	1	1	0	0	..	..	..	..
Thailand	287	208	1,072	0.26	22,480	27	17	1,674	*681*	*4,329*	*22,612*	*9,241*
Togo	..	..	..	..	0	0	*0*	*2*	..	..	..	..
Trinidad and Tobago	..	..	..	0.12	34	1	..	..	*2*	*205*	*340*	*1,317*
Tunisia	1,013	34	452	0.63	*370*	*5*	14	8	..	..	..	..
Turkey	341	37	6,224	0.66	906	2	*0*	439	*465*	*383*	*30,136*	*2,101*
Turkmenistan	..	..	..	..	..	..	..	..	..	..	..	..
Uganda	..	..	90	0.81	18	14	7	1	..	..	..	..
Ukraine	..	..	2,089	1.16	869	4	22	421	4,086	1,692	11,516	2,434
United Arab Emirates	..	..	193	..	..	..	..	..	..	..	..	..
United Kingdom	..	..	48,288	1.89	82,841	28	13,303	9,069	18,816	11,138	23,186	4,653
United States	4,605	..	211,233	2.68	233,079	32	57,410	24,501	185,008	171,935	213,495	26,988
Uruguay	366	50	194	0.26	*22*	*2*	0	4	37	514	*4,589*	*6,732*
Uzbekistan	..	..	192	..	..	..	..	..	273	205	438	494
Venezuela, RB	..	..	563	0.28	*118*	*3*	0	239	..	..	..	..
Vietnam	115	..	216	0.19	*594*	*6*	..	..	..	..	..	..
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	..	..	..	..	11	5	..	9	..	..	..	..
Zambia	..	..	..	..	2	1	..	..	..	..	..	..
Zimbabwe	..	..	96	..	*5*	*1*	..	..	..	..	..	..
World	**.. w**	**.. w**	**697,397 s**	**2.28 w**	***1,243,114* s**	**22 w**	**123,690 s**	**134,689 s**	**872,278 s**	**473,770 s**	**1,337,033 s**	**267,528 s**
Low income	..	..	14,929	0.73	..	*4*	47	224	7,259	12,067	10,198	8,827
Middle income	725	..	100,288	0.85	*332,483*	21	2,693	19,573	105,144	120,688	678,572	107,953
Lower middle income	504	..	49,969	1.12	..	26	1,083	10,892	76,157	90,921	566,801	71,992
Upper middle income	1,453	308	50,319	0.67	*120,551*	17	1,610	8,681	28,987	29,767	111,771	35,961
Low & middle income	..	..	115,217	0.83	*270,664*	21	2,740	19,797	112,403	132,755	688,770	116,780
East Asia & Pacific	708	..	31,351	1.44	..	34	471	9,599	66,112	70,866	535,284	61,115
Europe & Central Asia	1,993	384	42,695	0.94	26,767	8	1,405	5,353	34,767	19,989	96,993	23,355
Latin America & Carib.	256	..	18,588	0.56	*40,879*	15	542	3,204	4,498	29,255	47,763	27,534
Middle East & N. Africa	..	..	5,358	..	*1,405*	*3*	163	256	215	871	*1,488*	*871*
South Asia	..	..	13,487	0.73	..	*4*	18	113	6,795	11,752	8,319	4,455
Sub-Saharan Africa	..	..	3,738	..	..	*4*	141	1,272	16	22	411	321
High income	3,781	..	582,180	2.45	*1,156,714*	22	120,950	114,892	759,875	341,015	648,263	150,748
Europe EMU	2,607	..	156,184	1.92	358,491	16	21,814	42,096	72,974	15,757	133,351	8,184

Note: The original information on patent and trademark application was provided by the World Intellectual Property Organization (WIPO). The International Bureau of WIPO assumes no responsibility with respect to the transformation of these data.

a. Excludes applications filed under the auspices of the European Patent Office (32,178 by residents, 91,523 by nonresidents) and the Eurasian Patent Organization (1,630 by nonresidents). b. Excludes applications filed under the auspices of the EU Office for Harmonization in the Internal Market (40,305 by residents, 18,540 by nonresidents). c. Data are for the most recent year available. d. Includes Luxembourg and the Netherlands.

5.12 Science and technology

About the data

Technological innovation, often fueled by government-led research and development (R&D), has been the driving force for industrial growth around the world. The best opportunities to improve living standards, including new ways of reducing poverty, will come from science and technology. Science, advancing rapidly in virtually all fields—particularly in biotechnology—is playing a growing economic role: countries able to access, generate, and apply relevant scientific knowledge will have a competitive edge over those that cannot. And there is greater appreciation of the need for high-quality scientific input into public policy issues such as regional and global environmental concerns.

Science and technology cover a range of issues too complex and too broad to be quantified by any single set of indicators, but those in the table shed light on countries' "technology base"—the availability of skilled human resources, the number of scientific and technical articles published, the competitive edge countries enjoy in high-technology exports, sales and purchases of technology through royalties and licenses, and the number of patent and trademark applications filed.

The United Nations Educational, Scientific, and Cultural Organization (UNESCO) Institute for Statistics (UIS) collects data on researchers, technicians and expenditure in R&D from countries and territories around the World, through questionnaires and special surveys as well as from other international sources. Data on researchers and technicians are normally calculated in terms of full-time equivalents.

R&D expenditures include all expenditures for R&D performed within a country, including both capital expenditures and current costs (annual wages and salaries and all associated costs of researchers, technicians and supporting staff, and other current costs, such as noncapital purchases of materials, supplies and R&D equipment such as utilities, books, journals, reference materials, subscriptions to libraries and scientific societies, and materials for laboratories).

The information does not reflect the quality of training and education, which varies widely. Similarly, R&D expenditures are no guarantee of progress; governments need to pay close attention to the practices that make R&D expenditures effective.

Article counts are from a set of journals classified and covered by the Institute for Scientific Information's Science Citation Index (SCI) and Social Sciences Citation Index (SSCI). Article counts are based on fractional assignments; for example, an article with two authors from different countries is counted as one-half of an article for each country (see *Definitions* for the fields covered). The SCI and SSCI databases cover the core set of scientific journals but may exclude some of regional or local importance. They may also reflect some bias toward English-language journals.

The method used for determining a country's high technology exports was developed by the Organisation for Economic Co-operation and Development in collaboration with Eurostat. Termed the "product approach" to distinguish it from a "sectoral approach," the method is based on the calculation of R&D intensity (R&D expenditure divided by total sales) for groups of products from six countries (Germany, Italy, Japan, the Netherlands, Sweden, and the United States). Because industrial sectors characterized by a few high-technology products may also produce many low-technology products, the product approach is more appropriate for analyzing international trade than is the sectoral approach. To construct a list of high-technology manufactured products (services are excluded), the R&D intensity was calculated for products classified at the three-digit level of the Standard International Trade Classification revision 3. The final list was determined at the four- and five-digit levels. At these levels, since no R&D data were available, final selection was based on patent data and expert opinion. This method takes only R&D intensity into account. Other characteristics of high technology are also important, such as know-how, scientific and technical personnel, and technology embodied in patents; considering these characteristics would result in a different list. (See Hatzichronoglou 1997 for further details.) Moreover, the R&D for high-technology exports may not have occurred in the reporting country.

Most countries have adopted systems that protect patentable inventions. The Patent Cooperation Treaty provides an international system for filing patent applications. The procedure consists of an international phase followed by a national or regional phase. In the international phase an applicant files an international application and designates the countries in which patent protection is eventually to be sought (since 2004 all eligible countries are automatically designated in every application under the treaty). The application is searched, published, and, optionally, an international preliminary examination is conducted. In the national (or regional) phase the applicant requests national processing of the application, pays additional fees, and initiates the national search, examination, and granting procedure. International applications under the treaty provide only for a national patent grant—there is no international patent. The national phase filing represents an action on the part of the applicant to actively seek patent protection for a given territory, whereas international filings and designations, while they represent a legal right, do not accurately reflect where patent protection is eventually sought. Resident filings are those from applicants who are a resident of the country or region concerned. Nonresident filings are from applicants outside the relevant country or region. In the case of regional offices such as the European Patent Office, an application from a resident of any member state of the regional patent convention is considered a resident filing. Some offices (notably the U.S. Patent and Trademark Office) use the residence of the inventor rather than the applicant to classify resident and nonresident filings.

A trademark provides protection to its owner by ensuring the exclusive right to use it to identify goods or services or to authorize another to use it in return for payment. The period of protection varies, but a trademark can be renewed indefinitely by paying additional fees. The trademark system helps consumers identify and purchase a product or service whose nature and quality, indicated by its unique trademark, meet their needs.

Definitions

• **Researchers in R&D** are professionals engaged in conceiving of or creating new knowledge, products, processes, methods, and systems, and also in managing the projects concerned. Postgraduate students at the PhD level (International Standard Classification of Education 1997 level 6) engaged in R&D are considered researchers. • **Technicians in R&D** and equivalent staff are people whose main tasks require technical knowledge and experience in fields of engineering, physical and life sciences (technicians), and social sciences and humanities (equivalent staff). They participate in R&D by performing scientific and technical tasks involving the application of concepts and operational methods, normally under the supervision of researchers. • **Scientific and technical journal articles** refer to published scientific and engineering articles in physics, biology, chemistry, mathematics, clinical medicine, biomedical research, engineering and technology, and earth and space sciences. • **Expenditures for R&D** are current and capital expenditures on creative work undertaken systematically to increase the stock of knowledge, including knowledge of humanity, culture, and society, and the use of this knowledge to devise new applications. The term *R&D* covers basic research, applied research, and experimental development. • **High-technology exports** are products with high R&D intensity, such as in aerospace, computers, pharmaceuticals, scientific instruments, and electrical machinery. • **Royalty and license fees** are payments and receipts between residents and nonresidents for the authorized use of intangible, nonproduced, nonfinancial assets, and proprietary rights (such as patents, copyrights, trademarks, franchises, and industrial processes) and for the use, through licensing agreements, of produced originals of prototypes (such as films and manuscripts). • **Patent applications filed** are worldwide patent applications filed through the Patent Cooperation Treaty procedure or with a national patent office. A patent is an exclusive right to an invention (a product or process that provides a new way of doing something or offers a new technical solution to a problem). It must be of practical use and display a new characteristic unknown in the body of existing knowledge in its technical field. A patent grants protection to the owner of the patent for a specified period, generally 20 years. • **Trademark applications filed** are applications to register a trademark with a national or regional trademark office. Trademarks are distinctive signs identifying goods or services as produced or provided by a specific person or enterprise. Trademarks protect owners of the mark by ensuring exclusive right to use it to identify goods or services or to authorize its use in return for payment.

Data sources

Data on R&D are provided by UIS. Data on scientific and technical journal articles are from the U.S. National Science Foundation's *Science and Engineering Indicators 2006*. Data on high-technology exports are from the United Nations Statistics Division's Commodity Trade (Comtrade) database. Data on royalty and license fees are from the International Monetary Fund's *Balance of Payments Statistics Yearbook*. Data on patents and trademarks are from the World Intellectual Property Organization's *WIPO Patent Report: Statistics on Worldwide Patent Activity* (2006 edition).