



Appendix

International Statistics on Knowledge

Table A.1. Tertiary enrollments by field of study

Data on education are compiled by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) from official responses to surveys and from reports provided by education authorities in each country. The data in the table are based on both the International Standard Classification of Education (ISCED) level categories and field of study. Students enrolled in ISCED levels 5 through 7 programs are included in the table. Level 5 students are in programs leading to an award not equivalent to a first university degree, designed to prepare them for particular vocational fields in which they can qualify. Level 6 students are enrolled in programs leading to a first university degree or equivalent qualification, such as a Bachelor's degree. Level 7 students are enrolled in programs leading to a post-graduate degree or equivalent qualification.

ISECD *field of study* refers to the student's main area of specialization. *Natural science* includes biology, chemistry, geology, physics, astronomy, meteorology, and oceanography. *Mathematics and computer science* include general programs in mathematics, statistics, actuarial science, and computer science. *Engineering* includes chemical engineering and materials techniques, electrical, electronic, industrial, metallurgical, mining, and mechanical engineering, surveying, and agricultural, forestry and fishery engineering techniques. *Transport and communications* includes air crew and ships' officers programs, railway operating trades, road motor vehicle operation programs, and postal service programs.

Enrollment ratios are compiled by World Bank staff using UNESCO's electronic database corresponding to its *Statistical Yearbook, 1997*. Because classifications by field of study and data collection practices sometimes differ across countries and over time within countries, readers are encouraged to consult country-specific notes in UNESCO's *Statistical Yearbook, 1997* (Table 3.11).

Table A.2. Assessment of legal infrastructure

Values of the indexes in the table are from Levine forthcoming; the indexes are composites of indicators taken from La Porta and others 1998, who compiled their data from national sources and from the *International Country Risk Guide*. The data thus reflect con-

ditions prevailing at the time of their survey (1995–96). The index of creditors' rights is a combination of three indicators. The first, AUTOSTAY, equals one if a country's laws impose an automatic stay on the assets of a firm upon its filing a reorganization petition, and equals zero if no such restriction appears in the legal code. This restriction prevents bankers from gaining possession of collateral. MANAGES, the second indicator, equals one (and zero otherwise) if a firm continues to manage its property pending resolution of a reorganization, rather than being replaced by a team selected by the courts or the creditors. SECURED equals one (and zero otherwise) if secured creditors receive first priority in the distribution of proceeds from the disposition of a bankrupt firm's assets. MANAGES should thus be negatively correlated, and SECURED positively associated, with the activities of banks. The creditors' rights index is defined as SECURED minus AUTOSTAY minus MANAGES and ranges therefore from 1 (best) to -2 (worst).

Shareholders' rights is a similar amalgamation of five indicators whose values can equal zero or one. The indicator PROXY takes on a value of one if shareholders may vote in person or by mail. CUMULATIVE equals one if the law or code allows shareholders to cast all of their votes for one candidate. BLOCKED equals one if the law or code does not allow firms to require that shareholders deposit shares prior to a general shareholders' meeting (thus preventing them from selling those shares for a number of days). MINOR equals one if minority shareholders may challenge management decisions or the right to step out of the company by requiring it to purchase shares when they object to certain fundamental changes. MEETING equals one if the minimum percentage of share capital that a shareholder must own in order to call for an extraordinary shareholders' meeting is less than or equal to 10 percent.

Finally, enforcement is a combination of two variables whose values can range from 1 to 10. RULELAW is an assessment of the law and order tradition in the country over the period 1982–95. CONRISK is an assessment for the same period of the government's ability to modify a contract unilaterally after it has been signed. Data for both variables are from the *International Country Risk Guide*.

Table A.1. Tertiary enrollments by field of study

| | Natural science | | Mathematics and computer science | | Engineering | | Transport and communications | |
|--------------------------|---|-------------------------------|---|-------------------------------|---|-------------------------------|---|-------------------------------|
| | % of 20–24 age group 1990–95 ^a | % female 1990–95 ^a | % of 20–24 age group 1990–95 ^a | % female 1990–95 ^a | % of 20–24 age group 1990–95 ^a | % female 1990–95 ^a | % of 20–24 age group 1990–95 ^a | % female 1990–95 ^a |
| Economy | | | | | | | | |
| Albania | 0.3 | 55.8 | 0.0 | 45.5 | 0.9 | 26.2 | .. | .. |
| Algeria | 1.4 | 52.7 | 0.8 | 36.0 | 2.5 | 26.6 | 0.0 | 13.9 |
| Angola | 0.1 | 40.1 | .. | .. | 0.1 | 21.1 | .. | .. |
| Argentina | 2.8 | .. | .. | .. | 3.9 | .. | .. | .. |
| Australia | 5.2 | 45.4 | 1.8 | 25.6 | 7.5 | 10.0 | .. | .. |
| Austria | 2.5 | 39.5 | 2.8 | 21.5 | 4.5 | 10.4 | .. | .. |
| Belarus | 0.1 | .. | .. | .. | 9.1 | 30.6 | .. | .. |
| Belgium | 1.2 | 39.1 | 1.4 | 22.9 | 3.4 | 14.6 | 0.0 | 18.7 |
| Benin | 0.4 | 9.9 | 0.0 | .. | .. | .. | .. | .. |
| Bolivia | 0.5 | .. | 0.9 | .. | 2.9 | .. | .. | .. |
| Brazil | 0.3 | 52.0 | 0.7 | 40.4 | 1.1 | 19.2 | 0.0 | 21.0 |
| Bulgaria | 0.9 | 61.3 | 0.6 | 55.3 | 8.4 | 42.6 | 0.4 | 42.0 |
| Burkina Faso | 0.2 | 7.3 | 0.0 | 5.4 | .. | .. | .. | .. |
| Burundi | 0.1 | 24.0 | 0.0 | 17.6 | 0.0 | 3.6 | .. | .. |
| Cameroon | 0.8 | 16.8 | .. | .. | 0.1 | 0.8 | .. | .. |
| Canada | 2.2 | 46.4 | 2.5 | 30.0 | 4.9 | 14.3 | 0.2 | 6.7 |
| Central African Republic | 0.1 | 7.3 | 0.0 | .. | 0.1 | 3.4 | .. | .. |
| Chad | 0.0 | 3.5 | 0.0 | 3.3 | 0.0 | .. | .. | .. |
| Chile | 0.7 | 46.7 | 0.3 | .. | 6.9 | 19.1 | .. | .. |
| China | 0.1 | .. | 0.1 | .. | 0.8 | .. | 0.1 | .. |
| Hong Kong, China | 3.0 | 28.9 | 1.5 | 25.1 | 3.7 | 6.2 | 0.0 | 32.3 |
| Colombia | 0.3 | 46.4 | 0.3 | 43.9 | 4.9 | 30.7 | .. | .. |
| Congo, Rep. | 0.4 | 9.4 | 0.0 | 25.0 | .. | .. | .. | .. |
| Costa Rica | 0.4 | .. | 1.2 | .. | 2.5 | .. | 0.0 | .. |
| Côte d'Ivoire | 0.8 | 8.0 | 0.3 | 18.7 | 0.2 | 8.7 | 0.0 | 18.9 |
| Croatia | 0.3 | 58.9 | 0.2 | 29.6 | 6.6 | 19.3 | 0.9 | 13.8 |
| Czech Republic | 0.7 | 38.1 | 0.4 | 13.8 | 5.9 | 19.8 | 0.2 | 20.6 |
| Denmark | 1.6 | 40.3 | 1.7 | 26.1 | 4.6 | 20.2 | 0.1 | 7.5 |
| Ecuador | 0.7 | .. | 0.0 | .. | 2.6 | .. | .. | .. |
| Egypt, Arab Rep. | 0.5 | 37.1 | 0.1 | 23.8 | 1.0 | 19.8 | .. | .. |
| El Salvador | 0.0 | 57.6 | 0.4 | 50.0 | 2.6 | 24.0 | .. | .. |
| Estonia | 0.9 | 40.8 | 0.6 | 44.4 | 6.6 | 14.8 | 0.4 | 14.1 |
| Ethiopia | 0.0 | 16.0 | 0.0 | 19.1 | 0.1 | 8.1 | .. | .. |
| Finland | 2.9 | 50.9 | 3.5 | 18.4 | 12.7 | 14.1 | .. | .. |
| France | 7.1 | 36.4 | .. | .. | 1.2 | 21.2 | .. | .. |
| Georgia | 2.7 | 65.0 | 0.4 | 52.2 | 8.9 | 31.8 | 0.9 | 48.3 |
| Germany | 2.2 | 33.3 | 1.8 | 24.1 | 5.8 | 9.7 | 0.0 | 2.9 |
| Ghana | 0.1 | 17.3 | 0.0 | 11.5 | 0.1 | 2.8 | .. | .. |
| Greece | 2.0 | 37.4 | 1.8 | 32.5 | 6.1 | 19.6 | 0.3 | 9.0 |
| Guinea | 0.3 | 5.8 | .. | .. | 0.2 | 3.8 | .. | .. |
| Honduras | 0.0 | 48.7 | 0.6 | 6.6 | 1.8 | 31.3 | .. | .. |
| Hungary | 0.3 | 36.7 | 0.2 | 20.1 | 1.9 | 20.2 | 0.9 | 23.5 |
| India | 1.1 | 33.3 | .. | .. | 0.3 | 7.9 | .. | .. |
| Indonesia | 0.2 | 34.0 | 0.8 | 34.3 | 1.8 | 14.2 | 0.1 | 20.5 |
| Ireland | 5.4 | 51.1 | 1.2 | 32.3 | 3.9 | 11.6 | .. | .. |
| Israel | 2.1 | 52.4 | 1.6 | 34.7 | 6.2 | 23.9 | .. | .. |
| Italy | 2.2 | 51.9 | 1.0 | 43.1 | 4.2 | 13.1 | 0.1 | 43.1 |
| Jamaica | 0.5 | .. | 0.2 | .. | 0.4 | .. | .. | .. |
| Japan | 0.7 | 17.6 | 0.2 | 20.2 | 9.0 | 10.8 | 0.0 | 6.2 |
| Jordan | 1.4 | 57.1 | 2.5 | 41.3 | 3.1 | 17.7 | 0.0 | .. |
| Kazakhstan | 1.9 | 70.7 | 1.1 | 25.9 | 2.3 | 28.7 | 0.5 | 48.3 |
| Kenya | 0.2 | 12.6 | .. | .. | .. | .. | .. | .. |
| Korea, Rep. | 3.8 | 33.7 | 2.8 | 25.9 | 13.5 | 9.9 | 0.0 | 35.0 |
| Kyrgyz Republic | 1.1 | 65.3 | 0.5 | 72.4 | 0.4 | 38.0 | 0.3 | 3.9 |
| Lao PDR | 0.0 | 40.7 | 0.1 | 22.9 | 0.2 | 11.2 | 0.1 | 5.3 |
| Latvia | 0.6 | 49.5 | 1.2 | 31.2 | 2.8 | 19.6 | 0.5 | 9.0 |
| Lebanon | 1.3 | 52.0 | 0.6 | 37.6 | 1.1 | 20.0 | .. | .. |
| Lesotho | 0.2 | 33.0 | 0.0 | 28.3 | 0.1 | 13.7 | .. | .. |
| Macedonia, FYR | 0.8 | 70.7 | 0.5 | 65.8 | 4.2 | 26.4 | 0.1 | 21.8 |
| Madagascar | 0.7 | 36.0 | 0.1 | 20.9 | 0.1 | 12.4 | .. | .. |
| Malawi | 0.0 | 20.9 | .. | .. | 0.1 | 5.3 | .. | .. |
| Malaysia | 0.5 | 46.1 | 0.3 | 51.0 | 0.8 | 14.4 | .. | .. |
| Mali | 0.0 | 2.8 | 0.0 | 4.9 | 0.1 | 1.9 | 0.0 | 20.3 |
| Mauritania | 0.3 | 16.4 | 0.0 | 13.2 | 0.1 | 6.6 | .. | .. |
| Mauritius | 0.1 | 44.2 | 0.1 | 30.8 | 0.3 | 4.1 | .. | .. |
| Mexico | 0.5 | 54.6 | 1.2 | 41.2 | 2.7 | 14.0 | 0.0 | 9.9 |
| Moldova | 0.1 | .. | 0.0 | .. | 9.6 | 42.2 | 0.8 | 21.6 |
| Mongolia | 0.7 | 62.4 | 0.3 | 51.2 | 2.5 | 45.7 | 0.1 | 50.3 |
| Morocco | 2.8 | 29.0 | .. | .. | 0.1 | 13.7 | 0.0 | 1.7 |
| Mozambique | 0.1 | 28.8 | 0.0 | 25.5 | 0.1 | 6.8 | .. | .. |

Table A.1. (continued)

| Economy | Natural science | | Mathematics and computer science | | Engineering | | Transport and communications | |
|----------------------|---|-------------------------------|---|-------------------------------|---|-------------------------------|---|-------------------------------|
| | % of 20–24 age group 1990–95 ^a | % female 1990–95 ^a | % of 20–24 age group 1990–95 ^a | % female 1990–95 ^a | % of 20–24 age group 1990–95 ^a | % female 1990–95 ^a | % of 20–24 age group 1990–95 ^a | % female 1990–95 ^a |
| Namibia | 0.4 | 35.2 | .. | .. | .. | .. | .. | .. |
| Nepal | 0.8 | 12.9 | .. | .. | 0.1 | 8.6 | .. | .. |
| Netherlands | 1.4 | 32.4 | 0.7 | 10.2 | 4.8 | 12.8 | 0.1 | 5.7 |
| New Zealand | 4.8 | 42.3 | 0.4 | 30.3 | 3.0 | 13.3 | 0.2 | 11.6 |
| Nicaragua | 0.3 | 76.0 | 0.8 | 53.5 | 1.9 | 26.5 | .. | .. |
| Nigeria | 0.5 | .. | .. | .. | 0.3 | .. | .. | .. |
| Norway | 3.0 | 40.0 | 0.4 | 27.6 | 5.2 | 18.6 | 0.3 | 8.1 |
| Oman | 0.3 | 62.8 | 0.1 | 59.0 | 0.4 | 8.9 | .. | .. |
| Pakistan | 0.3 | 15.8 | .. | .. | 0.4 | 2.0 | .. | .. |
| Panama | 0.8 | 48.9 | 0.6 | 53.1 | 5.0 | 31.8 | .. | .. |
| Papua New Guinea | 0.1 | 20.6 | 0.0 | 32.5 | 0.2 | 6.3 | .. | .. |
| Paraguay | 0.3 | 80.2 | 0.7 | 46.0 | 0.5 | 17.2 | .. | .. |
| Peru | 0.7 | .. | .. | .. | 4.0 | .. | .. | .. |
| Philippines | 0.5 | 67.9 | 2.1 | 54.4 | 3.9 | 18.3 | 0.9 | 0.8 |
| Poland | 0.8 | 62.8 | 0.5 | 56.3 | 4.9 | 18.1 | 0.2 | 10.0 |
| Portugal | 1.0 | 59.8 | 1.7 | 46.2 | 6.0 | 28.3 | 0.0 | .. |
| Romania | 0.6 | 72.1 | 0.5 | 57.8 | 4.5 | 28.1 | 0.1 | 11.6 |
| Russian Federation | 1.6 | 51.8 | 1.6 | 55.0 | 14.8 | 24.2 | 0.5 | 36.0 |
| Saudi Arabia | 1.0 | 51.2 | 0.3 | 32.4 | 0.5 | 4.6 | 0.1 | .. |
| Senegal | 0.6 | 9.3 | 0.0 | 12.4 | 0.1 | 30.2 | .. | .. |
| Slovak Republic | 0.9 | 48.0 | 0.1 | 22.5 | 8.7 | 28.5 | .. | .. |
| Slovenia | 0.7 | 54.0 | 0.1 | 38.1 | 5.6 | 21.4 | 0.9 | 29.3 |
| South Africa | 0.7 | 45.9 | 0.9 | 34.9 | 0.6 | 5.8 | .. | .. |
| Spain | 2.9 | 50.4 | 2.5 | 31.8 | 6.2 | 22.3 | .. | .. |
| Sri Lanka | 0.5 | 44.0 | 0.0 | 33.4 | 0.4 | 12.4 | .. | .. |
| Sweden | 1.8 | 47.0 | 2.3 | 27.3 | 6.2 | 19.4 | 0.1 | 13.9 |
| Switzerland | 2.3 | 29.8 | 0.6 | 14.4 | 4.4 | 4.7 | 0.0 | 3.5 |
| Syrian Arab Republic | 1.4 | 41.9 | 0.1 | 30.7 | 1.0 | 32.5 | .. | .. |
| Tajikistan | .. | .. | .. | .. | 3.2 | 17.2 | .. | .. |
| Tanzania | 0.0 | 11.9 | 0.0 | 2.7 | 0.1 | 4.0 | 0.0 | 19.1 |
| Thailand | 1.3 | 41.7 | 0.0 | 50.5 | 1.7 | 5.9 | 0.0 | .. |
| Togo | 0.3 | 7.4 | .. | .. | 0.1 | 2.3 | .. | .. |
| Trinidad and Tobago | 0.7 | 51.3 | .. | .. | 0.9 | 20.9 | 0.0 | .. |
| Tunisia | 1.5 | 37.2 | 0.3 | 22.1 | 0.8 | 16.8 | 0.1 | 24.2 |
| Turkey | 0.7 | 45.2 | 0.5 | 33.0 | 2.5 | 16.8 | 0.0 | 14.2 |
| Uganda | 0.1 | 26.8 | 0.0 | 17.9 | 0.1 | 9.1 | .. | .. |
| Ukraine | .. | .. | .. | .. | 10.6 | .. | .. | .. |
| United Arab Emirates | 0.5 | 76.5 | 0.3 | 66.5 | 0.4 | 22.4 | .. | .. |
| United Kingdom | 2.6 | 44.4 | 2.2 | 25.2 | 4.7 | 12.3 | .. | .. |
| United States | 2.6 | .. | 2.7 | .. | 4.2 | .. | 0.6 | .. |
| Uruguay | 0.4 | .. | .. | .. | 3.6 | .. | .. | .. |
| Yemen, Rep. | 0.1 | 23.9 | 0.0 | 26.4 | 0.2 | 10.5 | .. | .. |
| Zimbabwe | 0.2 | 24.1 | 0.1 | 36.5 | 0.7 | 6.4 | .. | .. |

a. Data are for the most recent year available.

Table A.2. Assessment of legal infrastructure

| Economy | Creditors' rights | Shareholders' rights | Enforcement | Economy | Creditors' rights | Shareholders' rights | Enforcement |
|----------------------------------|-------------------|----------------------|-------------|---------------------------------------|-------------------|----------------------|-------------|
| <i>Systems of English origin</i> | | | | <i>Systems of French origin</i> | | | |
| Australia | -1 | 4 | 9.36 | Argentina | -1 | 4 | 5.13 |
| Canada | -1 | 4 | 9.48 | Belgium | 0 | 0 | 9.74 |
| Hong Kong, China | 1 | 4 | 8.52 | Brazil | -2 | 3 | 6.31 |
| India | 1 | 2 | 5.14 | Chile | -1 | 3 | 6.91 |
| Ireland | -1 | 3 | 8.38 | Colombia | -2 | 1 | 4.55 |
| Israel | 1 | 3 | 6.18 | Ecuador | 1 | 2 | 5.93 |
| Kenya | 1 | 3 | 5.54 | Egypt | 1 | 2 | 5.11 |
| Malaysia | 1 | 3 | 7.11 | France | -2 | 2 | 9.09 |
| New Zealand | 0 | 4 | 9.65 | Greece | -1 | 1 | 6.40 |
| Nigeria | 1 | 3 | 3.55 | Indonesia | 1 | 2 | 5.04 |
| Pakistan | 1 | 4 | 3.95 | Italy | -1 | 0 | 8.75 |
| Singapore | 1 | 3 | 8.72 | Jordan | — | 1 | 4.61 |
| South Africa | 0 | 4 | 5.85 | Mexico | -2 | 0 | 5.95 |
| Sri Lanka | — | 2 | 3.58 | Netherlands | -1 | 2 | 9.68 |
| Thailand | 1 | 3 | 6.91 | Peru | -2 | 2 | 3.59 |
| United Kingdom | 1 | 4 | 9.10 | Philippines | -2 | 4 | 3.77 |
| United States | -1 | 5 | 9.50 | Portugal | -1 | 2 | 8.63 |
| Zimbabwe | 1 | 3 | 4.36 | Spain | 0 | 2 | 8.10 |
| Average | 0.41 | 3.39 | 6.94 | Turkey | -1 | 2 | 5.57 |
| <i>Systems of German origin</i> | | | | Uruguay | 0 | 1 | 6.15 |
| Austria | 0 | 2 | 9.80 | Venezuela | — | 1 | 6.34 |
| Germany | 0 | 1 | 9.50 | Average | -0.84 | 1.76 | 6.44 |
| Japan | 0 | 3 | 9.34 | <i>Systems of Scandinavian origin</i> | | | |
| Korea | 1 | 2 | 6.97 | Denmark | 0 | 3 | 9.66 |
| Switzerland | -1 | 1 | 9.99 | Finland | -1 | 2 | 9.58 |
| Taiwan, China | 0 | 3 | 8.84 | Norway | -1 | 3 | 9.86 |
| Average | 0 | 2 | 9.07 | Sweden | -1 | 2 | 9.79 |
| | | | | Average | -0.75 | 2.50 | 9.72 |

— Not available.

Note: Scores for creditors' rights range from -2 to 1; scores for shareholders' rights range from 1 to 5; values for enforcement range from 1 to 10.

Source: La Porta and others 1998; Levine, Loayza, and Beck 1998.