

Statistical methods

Country groups and aggregation

The tables in this *Yearbook* contain country group composites for all indicators for which aggregates can be calculated. To facilitate comparison between Asia-Pacific region and the rest of the world, aggregates are also included for Africa, Latin America and the Caribbean, North America, Europe and the World. In addition, aggregates appear for countries within Asia and the Pacific included in several classifications. These classifications comprise countries with special needs, i.e. the least developed countries (LDC), landlocked developing countries (LLDC) and Pacific island developing economies (PIDE); regional associations: Association of Southeast Asian Nations (ASEAN), Economic Cooperation Organization (ECO), South Asian Association for Regional Cooperation (SAARC), and the Central Asian subregion; and the three levels (low, middle and high) of the World Bank income classification of countries.

For a large number of indicators, some values are missing from country time series. Aggregates should therefore be treated as approximations of actual, unknown totals or averages. In the calculation of aggregates, missing values have been dealt with in the following ways.

First, aggregates are not reported for a given year if the population (for social and environmental indicators) or the GDP (for economic indicators) of countries with available values for that year covers less than two-thirds of the total population or GDP of the country group under consideration.

Second, missing country values have been imputed by applying the following methodology. If values are available for both an earlier and a later year than the year for which the aggregate is calculated, the missing value has been imputed using linear interpolation. A missing country value for a year preceding the earliest year for which a value is available has been imputed using the value from the earliest year. Similarly, a missing country value for a year following the latest year for which a value is available has been imputed by using the value of

the latest year. For countries with only one data point for the whole period, this value has been used for all missing years. No information is used from other countries for imputing the missing values. If imputation has been used to derive aggregates, information is given as part of the metadata at the end of each chapter.

Some aggregates have been calculated by agencies responsible for the compilation and production of indicator under their area of expertise. These include some education indicators (aggregates calculated by UIS/UNESCO) and employment indicators (aggregates calculated by ILO). In these cases, the methodology for the imputation of missing data might differ from the methods described above. Interested readers might refer to the respective agencies for more detailed information on aggregation methodology. When aggregates have been calculated by an external agency, this is indicated in footnotes.

There are two types of aggregates. The first type is a straight sum of actual country values and, in some cases, imputed country values where actual values are missing for that particular year. The second type uses weighted averages of actual country values and again, in some cases, imputed country values. The weights are chosen for each indicator separately and are mentioned in the metadata description for each indicator. For ratios, for example, denominators are used as weights. In the case of growth rates, either the weighted average of country growth rates or the growth rate from the time series of group totals is calculated.

Growth rates

Growth rates are presented as percentages. Rates of change from one period to the next are calculated as proportional changes from the earlier period. Rates of change over several periods are calculated as annual averages using the geometric growth model. The geometric growth rate uses discrete compounding. Although continuous growth, as modelled by the exponential growth rate,

may be more realistic, many economic phenomena are measured only on an annual basis, in which case the annual compound model is appropriate. If the underlying data are measured as indicator levels, the formula for the average annual percentage change in indicator P over n periods is

$$r = [(P_n/P_1)^{1/n} - 1] \cdot 100.$$

Note that this does not take into account the intermediate values of the series. However, if the underlying data are measured as annual changes, the formula becomes

$$r = \left\{ [(1 + g_0)(1 + g_1) \dots (1 + g_n)]^{1/n} - 1 \right\} \cdot 100,$$

where g_0, g_1, \dots, g_n denote the annual changes from the year 1 to n .

List of countries and groupings

Asia and the Pacific in this *Yearbook* refers to the 58 regional members and associate members of the Economic and Social Commission for Asia and the Pacific. Time series data are presented according to geographical classification, with the exception of developed economies, which are grouped separately. Throughout the *Yearbook*, countries and territories are referred to by a shortened version of their official name or, for some of the graphs presented, their ISO code.

By geographic subregion the countries and areas of Asia and the Pacific are:

East and North-East Asia (E-NEA): China; Democratic People's Republic of Korea (DPR Korea); Hong Kong, China; Japan; Macao, China; Mongolia; Republic of Korea.

South-East Asia (SEA): Brunei Darussalam; Cambodia; Indonesia; Lao People's Democratic Republic (Lao PDR); Malaysia; Myanmar; Philippines; Singapore; Thailand; Timor-Leste; Viet Nam.

South and South-West Asia (S-SWA): Afghanistan; Bangladesh; Bhutan; India; the Islamic Republic of Iran (Iran (Islamic Rep. of)); Maldives; Nepal; Pakistan; Sri Lanka; Turkey.

North and Central Asia (NCA): Armenia; Azerbaijan; Georgia; Kazakhstan; Kyrgyzstan; The Russian Federation; Tajikistan; Turkmenistan; Uzbekistan.

Pacific: American Samoa; Australia; Cook Islands; Fiji; French Polynesia; Guam; Kiribati; Marshall Islands; Micronesia (Federated States of) (Micronesia (F.S.)); Nauru; New Caledonia; New

Zealand; Niue; Northern Mariana Islands (Northern Mariana Is.); Palau; Papua New Guinea; Samoa; Solomon Islands; Tonga; Tuvalu; Vanuatu.

Within Asia and the Pacific, also the following groupings are used:

Landlocked developing countries (LLDC): Afghanistan; Armenia; Azerbaijan; Bhutan; Kazakhstan; Kyrgyzstan; Lao PDR; Mongolia; Nepal; Tajikistan; Turkmenistan; Uzbekistan.

Least developed countries (LDC): Afghanistan; Bangladesh; Bhutan; Cambodia; Kiribati; Lao PDR; Maldives; Myanmar; Nepal; Samoa; Solomon Islands; Timor-Leste; Tuvalu; Vanuatu.

Pacific island developing economies (PIDE): American Samoa; Cook Islands; Fiji; French Polynesia; Guam; Kiribati; Marshall Islands; Micronesia (Federated States of); Nauru; New Caledonia; Niue; Northern Mariana Islands; Palau; Papua New Guinea; Samoa; Solomon Islands; Tonga; Tuvalu; Vanuatu.

Association of Southeast Asian Nations (ASEAN): Brunei Darussalam; Cambodia; Indonesia; Lao People's Democratic Republic; Malaysia; Myanmar; Philippines; Singapore; Thailand; Viet Nam.

Economic Cooperation Organization (ECO): Afghanistan; Azerbaijan; the Islamic Republic of Iran; Kazakhstan; Kyrgyzstan; Pakistan; Tajikistan; Turkey; Turkmenistan; Uzbekistan.

South Asian Association for Regional Cooperation (SAARC): Afghanistan; Bangladesh; Bhutan; India; Maldives; Nepal; Pakistan; Sri Lanka.

Central Asia (C Asia): Armenia; Azerbaijan; Georgia; Kazakhstan; Kyrgyzstan; Tajikistan; Turkmenistan; Uzbekistan.

The classification by income group follows the definition of the World Bank: Economies are divided according to 2007 GNI per capita, calculated using the World Bank Atlas method. The groups are: low-income: \$935 or less; middle-income: \$936 - \$11,455; and high-income: \$11,456 or more. Aggregates are calculated for ESCAP countries for the three income groups. As economies grow, the threshold incomes and group are changing every year. This time, many of the averages for the low- and middle-income economies look significantly different from the previous issue. That is mainly due to the "graduation" of India from the low to the middle-income group.

Low-income economies (Low-inc): Afghanistan; Bangladesh; Cambodia; Democratic People's Republic of Korea; Kyrgyzstan; Lao People's Democratic Republic; Myanmar; Nepal; Pakistan;

Papua New Guinea; Solomon Islands; Tajikistan; Uzbekistan; Viet Nam.

Middle-income economies (Middle-inc):

American Samoa; Armenia; Azerbaijan; Bhutan; China; Fiji; Georgia; India; Indonesia; the Islamic Republic of Iran; Kazakhstan; Kiribati; Malaysia; Maldives; Marshall Islands; Micronesia (Federated States of); Mongolia; Palau; the Philippines; The Russian Federation; Samoa; Sri Lanka; Thailand; Timor-Leste; Tonga; Turkey; Turkmenistan; Vanuatu.

High-income economies (High-inc): Australia; Brunei Darussalam; French Polynesia; Guam; Hong Kong, China; Japan; Macao, China; New Caledonia; New Zealand; Northern Mariana Islands; Republic of Korea; Singapore.

For comparative purposes, aggregates are also presented for the world major regions as follows:

Africa: Algeria; Angola; Benin; Botswana; Burkina Faso; Burundi; Cameroon; Cape Verde; Central African Republic; Chad; Comoros; Congo; Côte d'Ivoire; Democratic Republic of the Congo; Djibouti; Egypt; Equatorial Guinea; Eritrea; Ethiopia; Former Ethiopia; Gabon, Gambia; Ghana; Guinea; Guinea-Bissau; Kenya; Lesotho; Liberia; Libyan Arab Jamahiriya; Madagascar; Malawi; Mali; Mauritania; Mauritius; Mayotte; Morocco; Mozambique; Namibia; Niger; Nigeria; Réunion; Rwanda; Saint Helena; São Tomé and Príncipe; Senegal; Seychelles; Sierra Leone; Somalia; South Africa; Sudan; Swaziland; Tanzania (United Republic of); Togo; Tunisia; Uganda; Western Sahara; Zambia; Zimbabwe.

Latin America and the Caribbean (LAC): Anguilla; Antigua and Barbuda; Argentina; Aruba; Bahamas; Barbados; Belize; Bolivia; Brazil; British

Virgin Islands; Cayman Islands; Chile; Colombia; Costa Rica; Cuba; Dominica; Dominican Republic; Ecuador; El Salvador; Falkland Islands (Malvinas); French Guiana; Grenada; Guadeloupe; Guatemala; Guyana; Haiti; Honduras; Jamaica; Martinique; Mexico; Montserrat; Netherlands Antilles; Nicaragua; Panama; Paraguay; Peru; Puerto Rico; Saint Kitts and Nevis; Saint Lucia; Saint Vincent and the Grenadines; Suriname; Trinidad and Tobago; Turks and Caicos Islands; United States Virgin Islands; Uruguay; Venezuela (Bolivarian Republic of).

North America (N Am): Bermuda; Canada; Greenland; Saint Pierre and Miquelon; the United States.

Europe: Albania; Andorra; Austria; Belarus; Belgium; Bosnia and Herzegovina; Bulgaria; Channel Islands; Croatia; Czech Republic; Denmark; Estonia; Faeroe Islands; Finland; France; Germany; Gibraltar; Greece; Guernsey; Holy See; Hungary; Iceland; Ireland; Isle of Man; Italy; Jersey; Kosovo; Latvia; Liechtenstein; Lithuania; Luxembourg; Malta; Monaco; Montenegro; the Netherlands; Norway; Poland; Portugal; Republic of Moldova; Romania; San Marino; Serbia; Slovakia; Slovenia; Spain; Svalbard and Jan Mayen Islands; Sweden; Switzerland; The former Yugoslav Republic of Macedonia; Ukraine; the United Kingdom of Great Britain and Northern Ireland.

Other countries/areas: Bahrain; Cyprus; Iraq; Israel; Jordan; Kuwait; Lebanon; Norfolk Island; Occupied Palestinian Territories; Oman; Pitcairn; Qatar; Saudi Arabia; Syrian Arab Republic; Taiwan Province of China; Tokelau; United Arab Emirates; Wallis and Futuna Islands; Yemen.