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# ECONOMIC DEVELOPMENT

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# 2 Comparative Economic Development

In this chapter, we introduce the study of comparative economic development.

## 2.1 An Introduction

The developing world is generally thought of as sub-Saharan Africa, most of Asia, North Africa and the Middle East, Latin America and the Caribbean, other islands, and "transition" countries of Eastern Europe. It is contrasted with the developed, high-income Organization for Economic Cooperation and Development (OECD) world, sometimes called "the North," although it includes Australia and New Zealand. The developing world is the subject of this text—while one of its central points is that the variation among developing countries is sometimes as great as the differences between the developing and developed worlds.

We often focus on groups of developing countries with distinct characteristics, such as the low-income countries or upper-middle-income countries, sub-Saharan African countries, or transition economies, depending on problems and policies addressed, as explained in this chapter.

A large majority of countries have made substantial economic development progress over the last few decades. At the same time, the global economy continues to present extreme contrasts. Output per worker in the United States is over eight times higher than it is in India and more than 50 times higher than in the Democratic Republic of Congo (DRC). In 2017, gross national income (GNI) per capita was $58,270 in the United States, $1,800 in India, and $460 in the DRC.[1] If we think of the world as a single economy, its income would be distributed more unequally than any country.

There are also enormous gaps in other measures of social welfare. Life expectancy is 78.7 years in the United States, 68.6 in India, and just 59.6 in the DRC. The percentage of children who are underweight is less than 2% in the United States but 36% in India and 23% in the DRC. Whereas almost all women are literate in the United States, only 63% are in India, and 67% in the DRC.[2]

How did such wide disparities come about? In today's world, with so much knowledge and with the movement of people, information, and goods and services so rapid and comparatively inexpensive, how have such large gaps managed to persist, and for many countries even widen? Why have some developing countries made striking progress in closing these gaps, while others have made so much less?

In this chapter, we examine how national levels of economic development are measured so as to allow for quantitative comparisons across countries. Average income is one, but only one, of the factors defining a country's level of economic development. This is to be expected, given the discussion of the meaning of development in Chapter 1. We examine how levels of development currently differ across regions of the world.

We begin in Section 2.2 by describing how national levels of economic development are conventionally classified according to average income. We then examine the significance of making adjustments for purchasing power parity in making realistic comparisons across country standards of living. Finally, we consider the significance of some other well-known classifications of countries that are sometimes used in defining the developing and developed worlds.

In Section 2.3, we go beyond income to consider indicators of average levels of education and health; we then introduce a widely followed composite measure, the Human Development Index, that combines all three. We find the wide range of all these indicators serves as an early warning for us not to overgeneralise. Indeed, the economic differences between low-income countries in sub-Saharan Africa and South Asia and upper-middle-income countries in East Asia and Latin America can be even more profound than those between high-income OECD and upper-middle-income **developing countries**.

**Developing countries** Countries primarily in Asia, Africa, the Middle East, Latin America, eastern Europe, and the former Soviet Union that are presently characterized by low levels of living and other development deficits. Used in the development literature as a synonym for less developed countries, or collectively low and middle income countries.

In Section 2.4, we consider ten important characteristics of countries that help identify economic development challenges. In each case, we find commonalities across developing countries, but also substantial differences depending upon the level of economic development they have already achieved, and other factors. These differences are as essential to appreciate as are similarities.

We examine, in turn, levels of income and productivity; **human capital** attainments; inequality and absolute poverty; population growth rate and age structure; social fractionalisation; rural population size and rural-to-urban migration; level of industrialisation; geography and natural resource endowments; extent of financial and other markets; and quality of institutions and extent of external dependence. The mix and severity of challenges among these characteristics help define the constraints and policy priorities for economic development.

**Human capital** Productive investments in people, such as skills, values, and health resulting from expenditures on education, on-the-job training programs, and medical care.

After reviewing commonalities and differences among developing countries, and between high-income and low- and middle-income economies, in Section 2.5 we study the extent to which developing and developed countries are converging in their levels of development. We examine the roots of how the world economy came to be so unequal, in what has been called the "Great Divergence." Then, we examine the extent to which countries are now converging in their levels of economic development.

For deeper perspective on causes of the Great Divergence, and the slow and erratic progress of developing countries catching up toward developed countries, in Section 2.6 we draw on recent scholarship on comparative economic development to further clarify how such an unequal world came about and remained so persistently unequal, and why some countries face steep challenges in achieving development. We see the major role played by colonialism in shaping economic institutions that set the "rules of the economic game," which can limit or facilitate opportunities for economic development. We examine other factors in comparative development, such as nations' levels of

inequality. We will come to appreciate why so many developing countries have experienced such difficulties in achieving economic development; but also will begin to see some of what can be done to overcome obstacles and encourage faster progress even among today's least-developed countries. We also shed light on some positive factors behind recent rapid progress in a significant portion of the developing world.

The chapter concludes with a comparative case study of Ghana and Côte d'Ivoire, which highlights the relationships between institutions, colonial legacies, and contemporary economic development.

## 2.2 What is the Developing World? Classifying Levels of National Economic Development

A traditional way to define levels of economic development level is by per capita income. We begin by examining standard measures based on income differences, though we find this metric to be very incomplete (if not misleading). We then extend country comparisons to education and health; and examine in detail the best-known composite measure of all three facets, the United Nations (HDI).

### 2.2.1 Conventional Comparisons of Average National Income

Probably the best-known system for income comparisons is used by the largest multilateral development bank, the **World Bank** Group. (The World Bank is examined in detail in Chapter 13, Box 13.2.) In the World Bank's classification system, briefly introduced in Chapter 1, 216 economies with a population of at least 30,000 are ranked by their levels of GNI per capita. These economies are then classified as **low-income countries (LICs)**, **lower-middle-income countries (LMCs)**, **upper middle-income countries (UMCs)**, high-income OECD countries, and other **high-income countries (HICs)**. The cutoffs are updated each year to adjust for inflation and other factors. For the 2018–19 period, the LICs were defined as having a per capita GNI of $996 or less; LMCs have incomes between $996 and $3,895; upper-middle-income countries have incomes between $3,896 and $12,055; and HICs have incomes above $12,055.[3]

With a number of important exceptions, when defined by income level the developing countries are widely considered those with low-, lower-middle, or upper-middle incomes, distinctions introduced in Chapter 1. These countries are grouped by their geographic region in Table 2.1, making them easier to identify on the map in Figure 2.1.

Each year, when the latest income data become available, the classifications are updated; some countries grow enough to move up a category, or, less often, a country's income falls enough to move down to a lower category. Over the last quarter century, countries as a whole have steadily moved from low to LMC income levels, so that by 2018 there were 34 countries classified as LICs; there were 47 LMCs and 56 UMCs. There were 81 HICs with at least $12,056 per person, ranging from small European microstates such as Andorra and Liechtenstein to large countries including the US and UK, and recent entrants, such as Panama, which joined the HIC group in 2018. Comparisons of incomes for

**World Bank** An organisation known as an "international financial institution" that provides development funds to developing countries in the form of interest-bearing loans, grants, and technical assistance.

**Low-income countries (LICs)** In the World Bank classification, countries with a GNI per capita of less than $996 in 2018.

**Lower-middle-income countries (LMCs)** In the World Bank classification, countries with a GNI per capita incomes between $994 and $3,895 in 2018.

**Upper middle-income countries (UMCs)** In the World Bank classification, countries with a GNI per capita between $3,896 and $12,055 in 2018.

**High-income countries (HICs)** In the World Bank classification, countries with a GNI per capita above $12,055 in 2018.

## TABLE 2.1 Classification of Economies by Country Code, Region, and Income, 2018

| Country | Code | Class |
|---|---|---|
| **East Asia and the Pacific** | | |
| American Samoa‡ | ASM | UMC |
| Cambodia* | KHM | LMC |
| China | CHN | UMC |
| Fiji‡ | FJI | UMC |
| Indonesia | IDN | LMC |
| Kiribati*‡ | KIR | LMC |
| (North) Korea, Dem. People's Rep | PRK | LIC |
| Lao PDR*† | LAO | LMC |
| Malaysia | MYS | UMC |
| Marshall Islands‡ | MHL | UMC |
| Micronesia, Fed. Sts.‡ | FSM | LMC |
| Mongolia† | MNG | LMC |
| Myanmar* | MMR | LMC |
| Nauru | NRU | UMC |
| Papua New Guinea | PNG | LMC |
| Philippines | PHL | LMC |
| Samoa‡ | WSM | UMC |
| Solomon Islands*‡ | SLB | LMC |
| Thailand | THA | UMC |
| Timor-Leste*‡ | TLS | LMC |
| Tonga‡ | TON | UMC |
| Tuvalu* | TUV | UMC |
| Vanuatu*‡ | VUT | LMC |
| Vietnam | VNM | LMC |
| **Europe and Central Asia** | | |
| Albania | ALB | UMC |
| Armenia† | ARM | UMC |
| Azerbaijan† | AZE | UMC |
| Belarus | BLR | UMC |
| Bosnia and Herzegovina | BIH | UMC |
| Bulgaria | BGR | UMC |
| Georgia | GEO | LMC |
| Kazakhstan† | KAZ | UMC |
| Kosovo | XKX | LMC |
| Kyrgyz Republic† | KGZ | LMC |
| Macedonia, FYR† | MKD | UMC |
| Moldova† | MDA | LMC |
| Montenegro | MNE | UMC |
| Romania | ROU | UMC |
| Russian Federation | RUS | UMC |
| Serbia | SRB | UMC |
| Tajikistant† | TJK | LIC |
| Turkey | TUR | UMC |
| Turkmenistan† | TKM | UMC |
| Ukraine | UKR | LMC |
| Uzbekistan† | UZB | LMC |
| **Latin America and the Caribbean** | | |
| Belize‡ | BLZ | UMC |
| Bollvia† | BOL | LMC |
| Brazil | BRA | UMC |
| Colombia | COL | UMC |
| Costa Rica | CRI | UMC |
| Cuba‡ | CUB | UMC |
| Dominica‡ | DMA | UMC |
| Dominican Republic‡ | DOM | UMC |
| Ecuador | ECU | UMC |
| El Salvador | SLV | LMC |
| Grenada‡ | GRD | UMC |
| Guatemala | GTM | UMC |
| Guyana‡ | GUY | UMC |
| Haiti*‡ | HTI | LIC |
| Honduras | HND | LMC |
| Jamaica‡ | JAM | UMC |
| Mexico | MEX | UMC |
| Nicaragua | NIC | LMC |
| Paraguay† | PRY | UMC |
| Peru | PER | UMC |
| St. Lucia‡ | LCA | UMC |
| St. Vincent and the Grenadines‡ | VCT | UMC |
| Suriname‡ | SUR | UMC |
| Venezuela, RB | VEN | UMC |
| **Middle East and North Africa** | | |
| Algeria | DZA | UMC |
| Djibouti* | DJI | LMC |
| Egypt, Arab Rep. | EGY | LMC |
| Iran, Islamic Rep. | IRN | UMC |
| Iraq | IRQ | UMC |
| Jordan | JOR | UMC |
| Lebanon | LBN | UMC |
| Libya | LBY | UMC |
| Morocco | MAR | LMC |
| Syrian Arab Republic | SYR | LIC |
| Tunisia | TUN | LMC |
| West Bank and Gaza | PSE | LMC |
| Yemen, Rep.* | YEM | LIC |
| **South Asia** | | |
| Afghanistan*† | AFG | LIC |
| Bangladesh* | BGD | LMC |
| Bhutan*† | BTN | LMC |
| India | IND | LMC |
| Maldives‡ | MDV | UMC |
| Nepal*† | NPL | LIC |
| Pakistan | PAK | LMC |
| Sri Lanka | LKA | LMC |
| **Sub-Saharan Africa** | | |
| Angola* | AGO | LMC |
| Benin* | BEN | LIC |
| Botswana† | BWA | UMC |
| Burkina Faso*† | BFA | LIC |
| Burundi*† | BDI | LIC |
| Cabo Verde‡ | CPV | LMC |
| Cameroon | CMR | LMC |
| Central African Republic*† | CAF | LIC |
| Chad*† | TCD | LIC |
| Comoros*‡ | COM | LIC |
| Congo, Dem. Rep.* | COD | LIC |
| Congo, Rep. | COG | LMC |
| Côte d'Ivoire | CIV | LMC |
| Equatorial Guinea | GNQ | UMC |
| Eritrea* | ERI | LIC |
| Ethiopia*† | ETH | LIC |
| Gabon | GAB | UMC |
| Gambia, The* | GMB | LIC |
| Ghana | GHA | LMC |
| Guinea* | GIN | LIC |
| Guinea-Bissau*‡ | GNB | LIC |
| Kenya | KEN | LMC |
| Lesotho*† | LSO | LMC |
| Liberia* | LBR | LIC |
| Madagascar* | MDG | LIC |
| Malawi*† | MWI | LIC |
| Mali*† | MLI | LIC |
| Mauritania* | MRT | LMC |
| Mauritius‡ | MUS | UMC |
| Mozambique* | MOZ | LIC |
| Namibia | NAM | UMC |
| Niger*† | NER | LIC |
| Nigeria | NGA | LMC |
| Rwanda*† | RWA | LIC |
| Sao Tome and Principe*‡ | STP | LMC |
| Senegal* | SEN | LIC |
| Sierra Leone* | SLE | LIC |
| Somalia* | SOM | LIC |
| South Africa | ZAP | UMC |
| South Sudan* | SSD | LIC |
| Sudan* | SDN | LLC |
| Swaziland† | SWZ | LMC |
| Tanzania* | TZA | LIC |
| Togo* | TGO | LIC |
| Uganda*† | UGA | LIC |
| Zambia*† | ZMB | LMC |
| Zimbabwe† | ZWE | LIC |
| **High-Income OECD Countries** | | |
| Australia | AUS | |
| Austria | AUT | |
| Belgium | BEL | |
| Canada | CAN | |
| Chile | CHL | |
| Czech Republic | CZE | |
| Denmark | DNK | |
| Estonia | EST | |
| Finland | FIN | |
| France | FRA | |
| Germany | DEU | |
| Greece | GRC | |
| Hungary | HUN | |
| Iceland | ISL | |
| Ireland | IRL | |
| Israel | ISR | |

**TABLE 2.1 Classification of Economies by Country Code, Region, and Income, 2018 (*Continued*)**

| Country | Code | Country | Code | Country | Code |
|---|---|---|---|---|---|
| Japan | JPN | Barbados‡ | BRB | New Caledonia‡ | NCL |
| Korea, Rep. | KOR | Bermuda | BMU | Northern Mariana Islands‡ | MNP |
| Latvia | LVA | British Virgin Islands | VGB | | |
| Luxembourg | LUX | Brunei Darussalam | BRN | Oman | OMN |
| Netherlands | NLD | Cayman Islands | CYM | Palau‡ | PLW |
| New Zealand | NZL | Channel Islands | CHI | Panama | PAN |
| Norway | NOR | Croatia | HRV | Puerto Rico‡ | PRI |
| Poland | POL | Curacao | CUW | Qatar | QAT |
| Portugal | PRT | Cyprus | CYP | San Marino | SMR |
| Slovak Republic | SVK | Faroe Islands | FRO | Saudi Arabia | SAU |
| Slovenia | SVN | French Polynesia‡ | PYF | Seychelles‡ | SYC |
| Spain | ESP | Gibraltar | GIB | Singapore‡ | SGP |
| Sweden | SWE | Greenland | GRL | Sint Maarten (Dutch part) | SXM |
| Switzerland | CHE | Guam‡ | GUM | | |
| United Kingdom | GBR | Hong Kong SAR, China | HKG | St.Kitts and Nevist‡ | KNA |
| United States | US | | | St. Martin (French part) | MAF |
| **Other High-Income Economies** | | Isle of Man | IMN | | |
| Andorra | AND | Italy | ITA | Taiwan, China | TWN |
| Antigua and Barbuda‡ | ATG | Kuwait | KWT | Trinidad and To bago‡ | TTO |
| Argentina | ARG | Liechtenstein | LIE | | |
| Aruba‡ | ABW | Lithuania | LTU | Turks and Caicos Islands | TCA |
| Bahamas, The‡ | BHS | Macao SAR, China | MAC | | |
| Bahrain‡ | BHR | Malta | MLT | United Arab Emirates | ARE |
| | | Monaco | MCO | Uruguay | URI |
| | | | | Virgin Islands (US) | VIR |

* least-developed countries
† landlocked developing countries
‡ small island developing countries

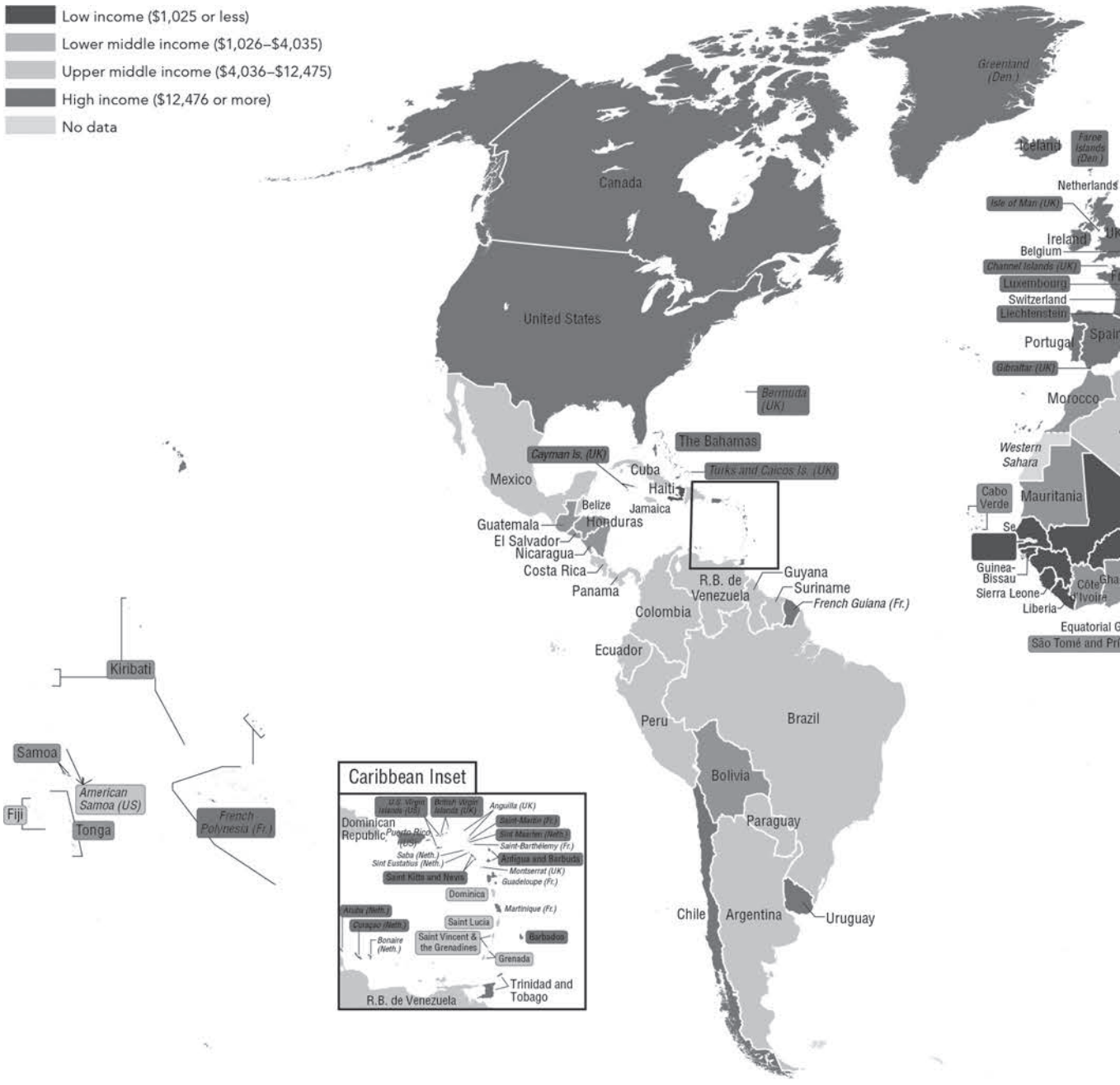
*Source:* Data from World Bank, World Development Indicators, 2018

several countries are shown graphically in Figure 2.2. The wide range of numbers shows that a simple grouping of the "more-developed" and "less-developed" worlds by incomes is inadequate for many purposes.

Note that a significant number of the countries grouped as "other high-income economies" in Table 2.1 again are sometimes considered developing countries, such as when this is the official position of their governments. Moreover, high-income countries that have one or two highly developed export sectors but in which significant parts of the population remain relatively uneducated or in poor health, or social development is viewed as low for the country's income level, may be viewed as still developing. Examples may include oil exporters such as Saudi Arabia. Upper-income economies also include some tourism-dependent islands with lingering development problems, which now face daunting climate change adaptation challenges, such as some Caribbean countries. A country may be viewed as still developing if it has passed the high-income line but is widely viewed as susceptible to an income decline, such as due to financial and debt instability. An example is Argentina, whose income finally crossed the line from UMC to HIC in 2017, only to experience a sharp downturn in 2018–2019, and find itself on the verge of a financial crisis.[4] Even a few of the high-income OECD member countries such as Portugal were classified as developing countries until comparatively recently.[5]

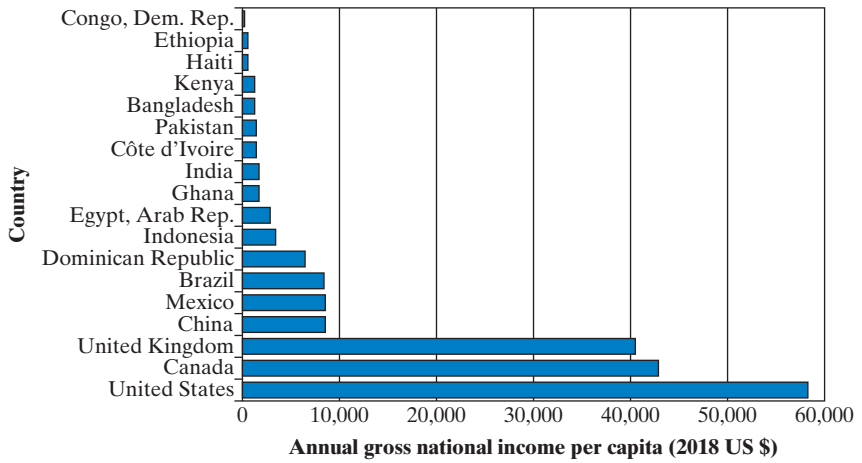
Nevertheless, low- and middle-income countries are concentrated in sub-Saharan Africa, North Africa and the Middle East, Asia (except Japan and,

## FIGURE 2.1 Nations of the World, Classified by GNI Per Capita




Russian Federation
Norway
Sweden
Finland
Estonia
Latvia
Lithuania
Belarus
Poland
Ukraine
Moldova
Romania
Bulgaria
Georgia
Armenia
Azer-baijan
Turkmenistan
Uzbekistan
Kyrgyz Rep.
Tajikistan
Kazakhstan
Mongolia
China
Dem.People's Rep.of Korea
Rep.of Korea
Japan
Turkey
Greece
Monaco
Andorra
Malta
Cyprus
Lebanon
Israel
Syrian Arab Rep.
Iraq
Jordan
West Bank and Gaza
Tunisia
Algeria
Libya
Arab Rep. of Egypt
Islamic Rep. of Iran
Kuwait
Bahrain
Qatar
Saudi Arabia
United Arab Emirates
Oman
Pakistan
Bhutan
Bangladesh
India
Myanmar
Lao PDR
Thailand
Vietnam
Cambodia
Philippines
Hong Kong SAR, China
Macao SAR, China
N. Mariana Islands (US)
Guam (US)
Marshall Islands
Federated States of Micronesia
Palau
Brunei Darussalam
Malaysia
Singapore
Maldives
Sri Lanka
Sudan
Eritrea
Rep. of Yemen
Djibouti
Somalia
Nigeria
Cameroon
Togo
Gabon
Kenya
Rep. of Congo
Angola
Zambia
Malawi
Namibia
Botswana
Swaziland
Lesotho
South Africa
Comoros
Seychelles
Mauritius
La Réunion (Fr.)
Indonesia
Papua New Guinea
Timor-Leste
Solomon Islands
Tuvalu
Nauru
Kiribati
Fiji
Vanuatu
New Caledonia (Fr.)
Australia
New Zealand
Europe Inset
Poland
Czech Republic
Slovak Republic
Ukraine
Belgrade
Austria
Hungary
Romania
Slovenia
Croatia
San Marino
Bosnia and Herzegovina
Serbia
Italy
Montenegro
Kosovo
FYR Macedonia
Albania
Bulgaria
Greece

**FIGURE 2.2 Income Comparisons for Selected Countries, 2017**




*Source:* World Development Indicators

more recently South Korea and perhaps a few other high-income economies), Latin America and the Caribbean, and among "transition" countries of Eastern Europe and Central Asia. Thinking of this as the developing world remains a useful generalisation for some purposes—always taking care not to overgeneralise! In contrast, the developed world constituting the core of the high-income OECD largely comprises the countries of Western Europe, North America, Japan, Australia, and New Zealand. (A handful of nations including South Korea and Singapore may be regarded as having recently joined the "club" of developed countries.)

On the other hand, if income is to be used as an index of economic development level, for some purposes it can be helpful to designate an additional category of "very high-income" countries, which would represent an income standard providing an approximate guide to economies that have mastered a majority of frontier technologies and skills and are advanced in productivity in most **sectors**. A "very high-income" line of approximately $40,000 per capita may be considered for this purpose. Although inherently imprecise, the higher line would, in many more cases, better proxy for the key non-income dimensions of development available at a given point in time.[6] Even so, here too there would be several notable exceptions, particularly among economies that are predominantly oil- and other resource-based, as people in even some of these **very high-income countries** often lack in important capabilities.[7] This is one of the reasons why, ultimately, there is no alternative to relying on other non-income indicators, whether single-dimensional such as years of healthy life, or multidimensional incorporating at least health and education along with wealth.

**Sector** A subset (part) of an economy, with four usages in economic development: technology (modern and traditional sectors); activity (industry or product sectors); trade (export sector); and sphere (private and public sectors)

**Very high-income country** An informal category for a per capita income standard indicative of economies that master frontier technologies, skills and productivity at a point in time, such as $40,000 in 2018.

In 2017, the total national income of all the nations of the world was valued at more than US $78 trillion, of which over $50 trillion originated in the high-income countries, with the rest originating in low- and middle-income countries. High-income countries received nearly two-thirds of world income, despite having only about one-sixth of world population.[8] In 2017, by this measure, Norway had more than 262 *times* the per capita income of Burundi, and more than 41 *times* that of India. Per capita GNI comparisons of real living standards between high-income

and low-income countries like those shown in Figure 2.2 are, however, exaggerated by the use of official foreign-exchange rates to convert national currency values into US dollars. For a clearer picture of comparative living standards, adjustments using Purchasing Power Parity are often used, which we turn to next.

### 2.2.2 Adjusting for Purchasing Power Parity

In accordance with the World Bank's income-based country classification scheme, GNI per capita, the most common measure of the overall level of economic activity, is often used as a summary index of the relative economic well-being of people in different nations. It is calculated as the total domestic and foreign **value added** claimed by a country's residents without making deductions for **depreciation** (or wearing out) of the domestic **capital stock**. **Gross domestic product (GDP)** measures the total value for final use of output produced by an economy, by both residents and nonresidents. Thus, GNI comprises GDP plus the difference between the income residents receive from abroad for factor services (labour and capital) less payments made to nonresidents who contribute to the domestic economy. Where there is a large nonresident population playing a major role in the domestic economy (such as foreign corporations), these differences can be significant (see Chapter 13).

**Value added** The portion of a product's final value that is added at each stage of production.

**Depreciation (or wearing out)** The wearing out of equipment, buildings, infrastructure, and other forms of capital, reflected in write-offs to the value of the capital stock.

**Capital stock** The total amount of physical goods existing at a particular time that have been produced for use in the production of other goods and services.

**Gross domestic product (GDP)** The total final output of goods and services produced by the country's economy, within the country's territory, by residents and nonresidents, regardless of its allocation between domestic and foreign claims

**Purchasing power parity (PPP)** Calculation of GNI using a common set of international prices for all goods and services, to provide more accurate comparisons of living standards.

Per capita GNI comparisons between developed and less-developed countries like those shown in Figure 2.2 do not measure the relative domestic purchasing power of different currencies. To address this problem, researchers have tried to compare relative GNIs and GDPs by using **Purchasing Power Parity (PPP)** instead of exchange rates as conversion factors. PPP is calculated using a common set of international prices for all goods and services. An intuitive although imprecise way to think about Purchasing Power Parity is the number of units of a foreign country's currency required to purchase the quantity of goods and services in the local developing country market as $1 would buy in the United States (in locations with an average cost of living). In practice, adjustments are made for differing relative prices across countries so that living standards may be measured more accurately.[9]

Generally, prices of nontraded services are much lower in developing countries because wages are so much lower. Clearly, if domestic prices are lower, PPP measures of GNI per capita will be higher than estimates using foreign exchange rates as the conversion factor. For example, India's 2017 GNI per capita was only about 3.1% of that of the United States using the exchange-rate conversion, but was 11.7% when estimated by the PPP method of conversion.[10] The amount is calculated on average prices in the country—for example, typically lower than a high-cost coastal city, but higher than an area where the cost of living is unusually low for the country. Income gaps between developed and developing nations tend to be less when PPP is used. The most important reason is that real wages are lower in developing countries, which makes the price of (low-skill) services cheaper in real terms. There are other limitations of GNI (including PPP) calculations as measures of economic performance and welfare, including the lack of accounting for environmental losses to the prevalence of nonmonetary transactions, distributional concerns, and other capabilities.[11]

Table 2.2 provides a comparison of exchange-rate and PPP GNI per capita for 30 countries, ten each from Africa, Asia, and Latin America, plus Canada, the United Kingdom and the United States (along with averages for three income levels). In

the first column of Table 2.2, incomes are measured at market or official exchange rates and suggest that income of a person in the United States is 127 times that of a person in the DRC. But this is unbelievable, as many services cost much less in the DRC than in the United States. The PPP rates give a better sense of the amount of goods and services that could be bought evaluated at US prices and suggest that real US incomes are closer to 69 times that of the DRC—still a level of inequality that stretches the imagination. Overall, the average real (PPP) income per capita in high-income countries is more than 22 times that in low-income countries and more than four times higher than in middle-income countries.

The simple division of the world into developed and developing countries is sometimes useful for analytical purposes. Many development models apply

**TABLE 2.2 Comparison of Per Capita GNI in Selected Developing Countries, Canada, the United Kingdom, and the United States, Using Official Exchange-Rate and Purchasing Power Parity Conversions, 2017**

| | GNI Per Capita (US $) | |
|---|---|---|
| Country | Exchange Rate | Purchising Power Parity |
| Bangladesh | 1470 | 4040 |
| Bolivia | 3130 | 7340 |
| Botswana | 6730 | 16420 |
| Brazil | 8600 | 15200 |
| Cambodia | 1230 | 3750 |
| Canada | 42870 | 46070 |
| Chile | 13610 | 23570 |
| China | 8690 | 16760 |
| Colombia | 5890 | 14090 |
| Congo, Dem. Rep. | 460 | 870 |
| Costa Rica | 11120 | 16200 |
| Côte d'Ivoire | 1580 | 3820 |
| Dominican Republic | 6630 | 15290 |
| Egypt, Arab Rep. | 3010 | 11360 |
| Ghana | 1880 | 4280 |
| Guatemala | 4060 | 8000 |
| Haiti | 760 | 1830 |
| India | 1800 | 6980 |
| Indonesia | 3540 | 11900 |
| Kenya | 1460 | 3250 |
| Korea, Rep. | 28380 | 38340 |
| Mexico | 8610 | 17840 |
| Niger | 360 | 990 |
| Nigeria | 2100 | 5700 |
| Pakistan | 1580 | 5830 |
| Peru | 5960 | 12880 |
| Philippines | 3660 | 10050 |
| Senegal | 1240 | 3360 |
| Thailand | 5950 | 17040 |
| Uganda | 600 | 1820 |
| United Kingdom | 40530 | 42560 |
| United States | 58270 | 60200 |
| Vietnam | 2160 | 6450 |
| | | |
| Low income | 775 | 2127 |
| Middle income | 4942 | 11993 |
| High income | 40142 | 47575 |

*Source:* World Bank World Development Indicators

across a wide range of developing country income levels. However, we emphasise again that the wide income ranges among low- and middle-income countries serve as an early warning not to overgeneralise.

### 2.2.3 Other Common Country Classifications

As mentioned in Chapter 1, there are a few other often-used official international designations.

- *The G7 and G20.* Two country groupings of geopolitical significance are the group of seven largest developed economies (G7); and an expanded group of 20 (G20) countries that also includes the large middle-income countries. The role and activities of these groups will be discussed in Chapters 12–14.[12]
- *Least-developed countries.* This is a widely used United Nations (UN) designation that included 47 countries as of the end of 2018; 33 are in Africa, 9 in Asia, 4 in (Pacific) Oceana, plus Haiti. For inclusion, a country has to meet each of three criteria: low income, low human capital (health and education), and high economic vulnerability. In 2019 just over one billion people lived in these countries. Initially, to be included, GNI per capita had to be less than US $1,026; countries can "graduate" after GNI reaches $1,230. As conditions are improving in most countries—even if slowly and unevenly in many cases—the "least-developed" list is getting shorter. Botswana, Cabo Verde, Equatorial Guinea, Maldives, and Samoa have graduated, and are not included in the list. Angola, Bhutan, Kiribati, São Tomé and Príncipe, Solomon Islands, and Vanuatu are in the UN process of official "graduation." We will refer to this group of countries later in the text.[13]
- *Landlocked and small island countries.* Two additional special UN classifications are also noteworthy: the landlocked developing countries (LLDCs, of which there are 30, with 15 of them in Africa); and the small island developing states (SIDS, of which there are 38).[14]
- *Heavily indebted poor countries (HIPCs).* This is another official classification, which from the early 2000s has received special consideration for assistance programmes according to international agreements. As of 2019 there are 39 HIPC countries.[15] (The problems of debt and development are addressed in detail in Chapter 13.)
- *Newly industrialising countries (NICs).* This is an informal term that was used to refer to economies at an early stage of export-led manufacture growth. For example, the NIC label was widely applied to South Korea and Taiwan, and subsequently to Thailand and Indonesia, from the 1970s to 1980s. The term may be applied today to a country such as Vietnam. We do not use NIC as a systematic term in this text, although it is used in the press.
- *Emerging market.* This is a more informal and less stably defined country label widely used in the financial press. The term was originally coined at the International Finance Corporation (IFC), the private sector arm of the World Bank Group; but it remains an unofficial designation. The IFC introduced the term to bring to mind a sense of progress, to avoid the then-standard term "Third World" that investors, at least in the view of the IFC, seemed to associate with stagnation. Investors sometimes use the term "frontier markets" to refer to countries they consider at a lower (riskier) level than emerging markets. In

this text we rarely use these terms for three reasons. First, an emerging market is widely used in the financial press to suggest the presence of active stock and bond markets; although financial deepening is important and helpful under the right conditions, it is only one aspect of economic development. Second, referring to nations as markets may lead to an under-emphasis on critical nonmarket priorities in development including education, health, and nutrition. Third, usage varies, and there is no established or generally accepted designation of which markets should be labelled as emerging, and which remaining on the "frontier," yet to emerge. Different rating agencies and investment groups classify countries differently; and countries may be moved depending upon year-to-year financial news. For example, in 2018 Argentina was demoted by some banks from emerging to frontier status in the wake of financial turbulence (see the case study at the end of Chapter 3).

- *Human development level.* The United Nations Development Programme (UNDP) classifies countries according to their level of human development, including health and education attainments, as low, medium, high, and very high. We examine the UNDP Human Development Indexes in detail in the next section.

## 2.3 Comparing Countries by Health and Education, and the Human Development Index

To measure the average level of economic development, it is necessary to go beyond average incomes to evaluate a nation's average health and educational attainments, which reflect core capabilities.

### 2.3.1 Comparing Health and Education Levels

Table 2.3 shows three basic indicators of average health—life expectancy at birth, the under-5 mortality rate, and the prevalence of undernourishment; and two indicators of average education—the gross enrolment ratio for secondary school, and the per cent of the population with at least some secondary education. (Each country's region and income grouping can be found in Table 2.1.) Life expectancy is the average number of years that newborn children would live if subjected to the mortality risks prevailing for their cohort at the time of their birth. Undernourishment means consuming too little food to maintain normal levels of activity; it is what is often called the problem of hunger. Gross enrolment in secondary school can be greater than 100%, because it includes students who have taken longer to graduate or returned to school later. Table 2.3 also presents the health indicators for the low-, lower-middle-, upper-middle-, and high-income country groups. Table 2.3 shows averages from 33 illustrative countries across regions.[16] In addition to big differences across the major income classifications, low-income countries and middle income countries are very diverse groups with greatly differing development challenges.

### 2.3.2 Introducing the Human Development Index

The most widely used measure of the comparative status of socioeconomic development is presented by the United Nations Development Programme (UNDP) in its annual series of Human Development Reports. The centrepiece

**TABLE 2.3 Commonality and Diversity: Some Basic Indicators of Health and Education**

| Country | Life expectancy at birth total (years) 2017 | Mortality rate, under-5 (per 1,000 live births) 2018 | Prevalence of undernourishment (% of population) 2016 | Gross Enrolment Ratio: Secondary (% of secondary school-age population) 2012–2017 | Population with at least some secondary education (% age 25 and other) 2006–2017 |
|---|---|---|---|---|---|
| Bangladesh | 72 | 30.2 | 15.2 | 69 | 45.5 |
| Bolivia | 71 | 26.8 | 17.3 | 86 | 58.2 |
| Botswana | 69 | 36.5 | 26.4 | - | 89.2 |
| Brazil | 75 | 14.4 | 2.5 | 100 | 60 |
| Cambodia | 69 | 28 | 17.2 | - | 21.3 |
| Canada | 82 | 5 | 2.5 | 113 | 100 |
| Chile | 80 | 7.2 | 2.9 | 100 | 80.6 |
| China | 76 | 8.6 | 8.7 | 95 | 77.4 |
| Colombia | 77 | 14.2 | 5.6 | 98 | 50.2 |
| Congo, Dem. Rep. | 60 | 88.1 | - | 46 | 50.7 |
| Costa Rica | 80 | 8.8 | 4.7 | 126 | 52.9 |
| Côte d'Ivoire | 57 | 80.9 | 19.6 | 46 | 26.1 |
| Dominican Republic | 74 | 28.8 | 9.9 | 77 | 56.6 |
| Egypt, Arab Rep. | 72 | 21.2 | 4.4 | 86 | 64.5 |
| Ghana | 63 | 47.9 | 5.9 | 60 | 62.1 |
| Guatemala | 74 | 26.2 | 15 | 64 | 37.8 |
| Haiti | 63 | 64.8 | 49 | - | 33.2 |
| India | 69 | 36.6 | 14.9 | 75 | 51.6 |
| Indonesia | 71 | 25 | 8.6 | 86 | 48.8 |
| Kenya | 66 | 41.1 | 27.4 | - | 34.6 |
| Korea, Rep. | 83 | 3.2 | 2.5 | 100 | 95.6 |
| Mexico | 75 | 12.7 | 3.7 | 97 | 59.3 |
| Niger | 62 | 83.7 | 14.1 | 24 | 6.6 |
| Nigeria | 54 | 119.9 | 11.5 | 56 | - |
| Pakistan | 67 | 69.3 | 20.6 | 46 | 37.3 |
| Peru | 76 | 14.3 | 9.7 | 98 | 62.2 |
| Philippines | 71 | 28.4 | 13.5 | 88 | 73.2 |
| Senegal | 67 | 43.6 | 12 | 48 | 17.1 |
| Thailand | 77 | 9.1 | 7.8 | 121 | 44.8 |
| Uganda | 63 | 46.4 | 39.7 | - | 31.7 |
| United Kingdom | 81 | 4.3 | 2.5 | 125 | 82.9 |
| United States | 79 | 6.5 | 2.5 | 97 | 95.3 |
| Vietnam | 75 | 20.7 | 9.4 | - | 69.4 |
| Low income | 63 | 68.1 | 68.1 | | |
| Lower middle income | 68 | 49.1 | 49.1 | | |
| Upper middle income | 76 | 12.6 | 12.6 | | |
| High income | 81 | 5 | 5 | | |

Source for health indicators: WDI. Source for education indicators: UNDP.

of these reports, which were initiated in 1990, is the construction and refinement of its informative **Human Development Index (HDI)**. This section examines the New HDI, initiated in 2010. (The well-known and still sometimes informally used traditional HDI—the UNDP centrepiece from 1990–2009—is examined in detail in Appendix 2.1.) Box 2.1 summarises "Differences Between the Current Human Development Index and the Traditional HDI" comparing its properties to those of its predecessor. The current HDI formulation ranks each country on

**Human Development Index (HDI)** An index measuring national socioeconomic development, based on combining measures of education, health, and adjusted real income per capita.

a scale of 0 (lowest human development) to 1 (highest human development) based on three goals or end products of development: a long and healthy life as measured by life expectancy at birth; knowledge as measured by a combination of average schooling attained by adults and expected years of schooling for school-age children; and a decent standard of living as measured by real per capita gross domestic income adjusted for the differing Purchasing Power Parity of each country's currency to reflect cost of living and for the assumption of **diminishing marginal utility** of income.

**Diminishing marginal utility** The concept that the subjective value of additional consumption (income) lessens as total consumption becomes higher.

There are two steps in calculating the New HDI: first, creating the three "dimension indices"; and second, aggregating the resulting indices to produce the overall New Human Development Index (NHDI). We will go through the steps, illustrating them with 2014 data for Costa Rica.

After defining the relevant minimum and maximum values (or lower and upper "goalposts"), each dimension index is calculated as a ratio that basically is given by the per cent of the distance above the minimum to the maximum levels that a country has attained.

$$\text{Dimension Index} = \frac{\text{Actual Value} - \text{Minimum Value}}{\text{Maximum Value} - \text{Minimum Value}} \tag{2.1}$$

The health (or "long and healthy life") dimension of the New HDI is calculated with a life-expectancy-at-birth index. We illustrate with the case of Costa Rica in 2014. The "goalposts" for life expectancy took a minimum value of 20 years and a maximum value of 85 years. No country has had a life expectancy of less than 20, at least since before the 20th century; a life expectancy of 85 is close to the highest of any country at present (for example, life expectancy in Japan is 84).

This resulting index for the health (life expectancy) dimension, for the case of Costa Rica was:

$$\text{Life Expectancy Index} = (79.93 - 20)/(85 - 20) = 0.922 \tag{2.2}$$

The education ("knowledge") component of the HDI is calculated with a combination of the average years of schooling for adults and expected years of schooling for a school-age child now entering school.

As explained by the UNDP, the education indicators are normalised using a minimum value of 0, because societies "can subsist without formal education." The maximum value was set to 15 years for average schooling because this was viewed as attainable by some countries in the medium term. For Costa Rica in the 2014 index, the average years of schooling among adults was 8.37 years; so the mean years of schooling sub-index was calculated as:

$$(8.37 - 0)/(15 - 0) = 0.558 \tag{2.3}$$

We can think of this as indicating that Costa Rica was about 56% of the way to a global long-term goal for average education.

In considering expected future education for any country, the highest value (cap, or "goalpost") is given as 18 years (which we may think of as approximately corresponding to attaining a master's degree in most countries).

For Costa Rica, the expected number of years of schooling for a child entering school was estimated at 13.5 years. The expected years of schooling sub-index was then calculated as:

$$(13.5 - 0)/(18.0 - 0) = 0.750 \tag{2.4}$$

The education index was then calculated as a simple arithmetic of the two sub-indexes.[17]

In the Costa Rica example, the combined education index was given by:

$$[0.558 + 0.750]/2 = 0.654 \tag{2.5}$$

The standard of living (income) component is calculated using purchasing power-adjusted per-capita GNI. The natural log of income is used to represent the idea of diminishing marginal utility of income; indeed the UNDP currently assumes an upper goalpost of $75,000 per capita, based on their interpretation of the evidence that "there is virtually no gain in human development and well-being from annual income beyond $75,000."[18]

For Costa Rica, the income index therefore is (where ln stands for the natural log):

$$\ln(13{,}011.7) - \ln(100)]/[\ln(75{,}000) - \ln(100)] = 0.735 \tag{2.6}$$

The UNDP then uses a geometric mean to construct the overall index, rather than an arithmetic mean (as had been done before 2010). The use of a geometric mean in computing the New HDI is very important. When using an arithmetic mean (adding up the component indexes and dividing by 3) in the HDI, the effect is to assume perfect substitutability across income, health, and education. For example, a higher value of the education index could compensate, one for one, for a lower value of the health index. In contrast, use of a geometric mean ensures that poor performance in any dimension directly affects the overall index.[19] As the UNDP puts it, the new calculation "captures how well rounded a country's performance is across the three dimensions." Moreover, the UNDP argues "that it is hard to compare these different dimensions of well-being and that we should not let changes in any of them go unnoticed." Thus by allowing for imperfect substitutability, the UNDP proposes that a geometric mean is the preferred way to construct the index.[20]

So, in the New HDI, instead of adding up the health, education, and income indexes and dividing by three, the HDI is calculated with the geometric mean, which is applied in the Costa Rica case as follows:

$$\text{HDI} = H^{1/3}E^{1/3}I^{1/3} = \sqrt[3]{(0.922*0.654*0.735)} = 0.763 \tag{2.7}$$

where $H$ stands for the health index; $E$ stands for the education index; and $I$ stands for the income index. This is equivalent to taking the cube root of the product of these three indexes.

Table 2.4 shows the 2016 values of the HDI for a set of 31 countries.

Using these indicators and applying the formula to data for all 187 countries for which data are available, in 2018 the HDI classified countries in four groups: low human development (0.0 to 0.549), medium human development (0.550 to 0.699), high human development (0.700 to 0.799), and very high human development (0.80 to 1.0).

### 2.3.3 Human Development Index Ranking: How Does it Differ from Income Rankings?

One reason for the importance of the HDI is that income predicts rather weakly how countries will perform on education and health, and on the HDI in particular. For example, countries such as Botswana, China, Egypt, Chad, Turkey,

**TABLE 2.4 2018 Human Development Index and its Components for Selected Countries**

| Country | HDI Rank | Life Expectancy at Birth | Mean Years of Schooling | Expected Years of Schooling (of children) | GNI per Capita | HDI Value | GNI Per Capita Rank Minus HDI Rank |
|---|---|---|---|---|---|---|---|
| Canada | 12 | 82.5 | 13.3 | 16.4 | 43,433 | 0.926 | 10 |
| United States | 13 | 79.5 | 13.4 | 16.5 | 54,941 | 0.924 | −2 |
| United Kingdom | 14 | 81.7 | 12.9 | 17.4 | 39,116 | 0.922 | 13 |
| South Korea | 22 | 82.4 | 12.1 | 16.5 | 35,945 | 0.903 | 8 |
| United Arab Emirates | 34 | 77.4 | 10.8 | 13.6 | 67,805 | 0.863 | −27 |
| Chile | 44 | 79.7 | 10.3 | 16.4 | 21,910 | 0.843 | 13 |
| Russian Federation | 49 | 71.2 | 12.0 | 15.5 | 24,233 | 0.816 | 3 |
| Costa Rica | 63 | 80.0 | 8.8 | 15.4 | 14,636 | 0.794 | 15 |
| Turkey | 64 | 76.0 | 8.0 | 15.2 | 24,804 | 0.791 | −14 |
| Cuba | 73 | 79.9 | 11.8 | 14.0 | 7,524 | 0.777 | 43 |
| Mexico | 74 | 77.3 | 8.6 | 14.1 | 16,944 | 0.774 | −6 |
| Sri Lanka | 76 | 75.5 | 10.9 | 13.9 | 11,326 | 0.770 | 19 |
| Brazil | 79 | 75.7 | 7.8 | 15.4 | 13,755 | 0.759 | 2 |
| China | 86 | 76.4 | 7.8 | 13.8 | 15,270 | 0.752 | −9 |
| Botswana | 101 | 67.6 | 9.3 | 12.6 | 15,534 | 0.717 | −26 |
| Gabon | 110 | 66.5 | 8.2 | 12.8 | 16,431 | 0.702 | −40 |
| South Africa | 113 | 63.4 | 10.1 | 13.3 | 11,923 | 0.699 | −23 |
| Egypt | 115 | 71.7 | 7.2 | 13.1 | 10,355 | 0.696 | −15 |
| Guatemala | 127 | 73.7 | 6.5 | 10.8 | 7,278 | 0.650 | −8 |
| India | 130 | 68.8 | 6.4 | 12.3 | 6,353 | 0.640 | −5 |
| Bangladesh | 136 | 72.8 | 5.8 | 11.4 | 3,677 | 0.608 | 9 |
| Ghana | 140 | 63.0 | 7.1 | 11.6 | 4,096 | 0.592 | 3 |
| Equitorial Guinea | 141 | 57.9 | 5.5 | 9.3 | 19,513 | 0.591 | −80 |
| Kenya | 142 | 67.3 | 6.5 | 12.1 | 2,961 | 0.590 | 16 |
| Pakistan | 150 | 66.6 | 5.2 | 8.6 | 5,311 | 0.562 | −14 |
| Papua New Guinea | 153 | 65.7 | 4.6 | 10.0 | 3,403 | 0.544 | −3 |
| Madagascar | 161 | 66.3 | 6.1 | 10.6 | 1,358 | 0.519 | 20 |
| Côte d'Ivoire | 170 | 54.1 | 5.2 | 9.0 | 3,481 | 0.492 | −22 |
| Burkina Faso | 183 | 60.8 | 1.5 | 8.5 | 1,650 | 0.423 | −7 |
| Chad | 186 | 53.2 | 2.3 | 8.0 | 1,750 | 0.404 | −15 |
| Niger | 189 | 60.4 | 2.0 | 5.4 | 906 | 0.354 | −2 |

*Source:* United Nations Development Program

Guatemala, South Africa, Gabon, Côte d'Ivoire, Equatorial Guinea, Pakistan, and the United Arab Emirates perform more poorly on the HDI than would be predicted from their income level, while the reverse is true of Chile, Bangladesh, Cuba, Sri Lanka, Kenya, and Madagascar. Finally, Brazil, Ghana, Papua New Guinea, and Niger are among those that currently perform on the HDI just about as predicted by their income levels.

For example, Cuba and Guyana are very close in real income per person, but Cuba ranks 73rd on the New HDI (43 points above where predicted by its income level) and Guyana ranks 125th (8 below where predicted by income). Per capita income is 44% higher in Pakistan than Bangladesh, but Bangladesh ranks 136th, nine places higher than predicted by income, while Pakistan ranks 150th, 14 places below; see the case study at the end of Chapter 1 for a detailed examination of diverging development in these two countries. Some additional comparative examples are provided in Table 2.5.

**TABLE 2.5 HDI for Countries with Similar Income Levels**

| | HDI value (2015) | Life expectancy at birth | Expected years of schooling | Average years of schooling | Gross National income (GNI) per capita | GNI per capita rank minus HDI rank |
|---|---|---|---|---|---|---|
| **Country GDP Per Capita Near PPP $1000** | | | | | | |
| 158-Madagascar | 0.512 | 65.5 | 10.3 | 6.1 | 1,320 | 25 |
| 166-Togo | 0.487 | 60.2 | 12.0 | 4.7 | 1,262 | 18 |
| 170-Malawi | 0.476 | 63.9 | 10.8 | 4.4 | 1,073 | 16 |
| 183-Guinea | 0.414 | 59.2 | 8.8 | 2.6 | 1,058 | 4 |
| 187-Niger | 0.353 | 61.9 | 5.4 | 1.7 | 889 | 1 |
| **Country GDP Per Capita Near PPP $3500** | | | | | | |
| 139-Bangladesh | 0.579 | 72.0 | 10.2 | 5.2 | 3,341 | 8 |
| 139-Zambia | 0.579 | 60.8 | 12.5 | 6.9 | 3,464 | 7 |
| 157-Mauritania | 0.513 | 63.2 | 8.5 | 4.3 | 3,527 | −12 |
| 160-Lesotho | 0.497 | 50.1 | 10.7 | 6.1 | 3,319 | −12 |
| 165-Sudan | 0.490 | 63.7 | 7.2 | 3.5 | 3,846 | −22 |
| **Country GDP Per Capita Near PPP $7500** | | | | | | |
| 68-Cuba | 0.775 | 79.6 | 13.9 | 11.8 | 7,455 | 48 |
| 84-Urkaine | 0.743 | 71.1 | 15.3 | 11.3 | 8,189 | 28 |
| 103-Belize | 0.706 | 70.1 | 12.8 | 10.5 | 7,375 | 14 |
| 117-El Salvador | 0.680 | 73.3 | 13.2 | 6.5 | 7,732 | −3 |
| 148-Eswatini (Swaziland) | 0.541 | 48.9 | 11.4 | 6.8 | 7,522 | −33 |
| **Country GDP Per Capita Near PPP $10,000** | | | | | | |
| 73-Sri Lanka | 0.766 | 75.0 | 14.0 | 10.9 | 10,789 | 21 |
| 86-Jorda | 0.741 | 74.2 | 13.1 | 10.1 | 10,111 | 15 |
| 111-Egypt | 0.691 | 71.3 | 13.1 | 7.1 | 10,064 | −7 |
| 113-Indonesia | 0.689 | 69.1 | 12.9 | 7.9 | 10,053 | −8 |
| 125-Namibia | 0.640 | 65.1 | 11.7 | 6.7 | 9,770 | −18 |
| **Country GDP Per Capita Near PPP $20,000** | | | | | | |
| 54-Uruguay | 0.795 | 77.4 | 15.5 | 8.6 | 19,148 | 8 |
| 60-Panama | 0.788 | 77.8 | 13.0 | 9.9 | 19,470 | 0 |
| 109-Gabon | 0.697 | 64.9 | 12.6 | 8.1 | 19,044 | −46 |
| 135-Equatorial Guinea | 0.592 | 57.9 | 9.2 | 5.5 | 21,517 | −79 |

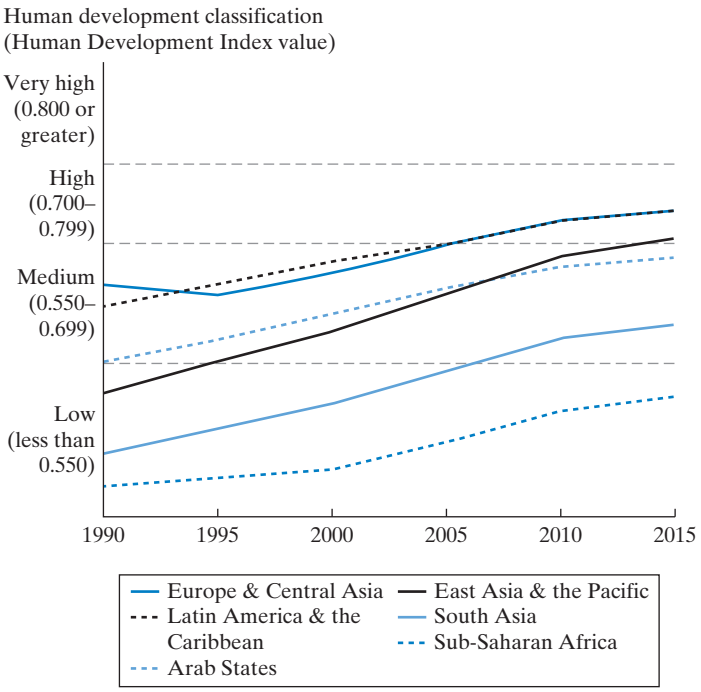
Data Source: 2016 Human Development Report 2016, Table 1, Pages 198-201 (New York: United Nations Development Program), 2015 data.

### 2.3.4 Human Development Index: Alternative Formulations

While the differences across countries remain stark, it is also important to keep in mind how much progress has been made. Most developing countries experienced dramatic improvements in human development in the quarter century since the HDI was introduced, reflected in increases in HDI levels. Figure 2.3 shows this progress, presenting the average trends in HDI by region.

The UNDP now also offers the Inequality-Adjusted Human Development Index (IHDI), which imposes a penalty on the HDI that increases as inequality

**FIGURE 2.3 Improvements in Human Development Since 1990, by Region**




*Source:* Human Development Report Office, UNDP – Human Development Report, 2016, p. 27

across people becomes greater, and the Gender Inequality Index (GII). The UNDP also features an important and highly influential innovation, the Multidimensional Poverty Index (MPI), which is examined in detail in Chapter 5.

Clearly, the HDI has made a major contribution to improving our understanding of what constitutes development, which countries are succeeding (as reflected by rises in their NHDI over time), and how different groups and regions within countries are faring. By combining social and economic data, the NHDI allows nations to take a broader measure of their development performance, both relatively and absolutely. In these ways, it focuses attention on the vital importance of improvements in health and education, rather than a potentially excessive focus on income alone.

There are some significant criticisms of the NDHI. For example, broadly, by adding some non-income indicators, but omitting others, it could lead to attention shifting from areas such as legal rights to education and health, or income. Thus some areas could receive even less attention than they would have otherwise. A specific criticism that has been raised is that expected educational attainment is difficult to forecast, particularly in low- and lower-middle-income countries, and could lead to an overly optimistic view, resulting in too little attention to education quality improvements. However, the fact remains that the HDI, when used in conjunction with other economic measures of development,

### BOX 2.1 Development Policy: Differences Between the Current Human Development Index and the Traditional HDI

In 2010, the UNDP introduced its (New) Human Development Index (NHDI), which had notable changes from its traditional HDI; the new version has clear strengths, but also a few potential drawbacks:

1. Possibly the most consequential change is that the NHDI is computed with a geometric mean rather than a simple arithmetic mean, as examined previously in the text.
2. GNI per capita replaces GDP per capita. This is an unambiguous improvement: GNI reflects what citizens can do with income they receive, whereas that is not true of value added in goods and services produced in a country, which may go to someone outside it; while income earned abroad benefits some of the nation's citizens. As trade and remittance flows have expanded rapidly, this distinction has become increasingly important.
3. The education index was completely revamped. Two new components were used: average actual educational attainment of the whole population, and expected attainment of today's children. Each has implications. Use of actual attainment—average years of schooling—as an indicator is unambiguously an improvement. Although it is only a rough guide to what is actually learned—on average, a year of schooling in Mali provides students with much less than a year of schooling in Norway—credible and comparable data on quality across countries are not available. Expected educational attainment, the other new component, is more ambiguous: it is a UN forecast subject to uncertainty, not an achievement (in the framework of the capabilities approach).
4. The two previous components of the education index, literacy and enrolment, were correspondingly dropped. In contrast to expected attainment, literacy is clearly an achievement, and even enrolment is at least a modest achievement. However, literacy has always been badly and too infrequently measured and is inevitably defined more modestly in a less-developed country. And enrolment is no guarantee that a grade will be completed or for that matter that anything is learned or that students (or teachers) even attend.
5. The upper goalposts (maximum values) in each dimension were increased to the observed maximum rather than given a predefined cutoff. In some ways, this returned the index to its original design, which was criticised for inadequately recognising small gains by countries starting at very low levels. But since 2014, the index has returned to the use of fixed upper goalposts.
6. The "lower goalpost" (maximum value) for income has been reduced. This was based on updated estimates for the historic low for recorded income for any country.[a]
7. A minor difference is that rather than using the common logarithm (log) to reflect diminishing marginal benefit of income, the NHDI now uses the natural log (ln). This reflects a more usual construction of economic indices.

[a]It is possible that low income is supplemented by tapping into savings (broadly defined), which would reflect the unsustainable nature of such a low income.

greatly increases our understanding of which countries are experiencing development and which are not. And by modifying a country's overall HDI to reflect income distribution, gender, regional, and ethnic differentials, as presented in recent Human Development Reports, we are now able to identify not only whether a country is developing but also whether various significant groups within that country are participating in that development.[21]

## 2.4 Key Similarities and Differences Among Developing Countries

Ten features help to define key similarities and differences among developing countries, and the mix and severity of the economic development challenges facing any one country. For each feature, we also discover that behind the averages are very substantial differences that are essential to appreciate and take into account in development policy.

These ten features of similarities and differences are:

1. Levels of income and productivity
2. Human capital attainments
3. Inequality and absolute poverty
4. Population growth and age structure
5. Rural population and rural-to-urban migration
6. Social fractionalisation
7. Level of industrialisation and manufactured exports
8. Geography and natural resource endowments
9. Extent of financial and other markets
10. Quality of institutions and external dependence

Clearly, the scope of comparative economic development goes far beyond income differences; this is to be expected, given the discussion of the meaning of development in Chapter 1. All of these features play a role in setting the development constraints and policy priorities of a developing nation. We address each in turn.

### 2.4.1 Levels of Income and Productivity

As we noted at the outset of the chapter, there is a vast gulf in productivity between advanced economies such as the United States and the developing nations, but also a very wide range among middle- and low-income developing countries, such as India and the DRC. (Economic development in India is considered in detail in the end-of-chapter case study for Chapter 5.) The lower average levels but wide ranges of income in developing areas are seen in Table 2.2 (earlier in this chapter).

Although resulting from a number of deeper causes, the wide disparity in income across countries largely corresponds to the large gaps in output per worker between developing and developed countries.[22] At very low income levels, a vicious circle may set in whereby low income leads to low investment in education and health as well as plant and equipment and infrastructure, which in turn leads to low productivity and economic stagnation. (This type of inferior equilibrium, sometimes referred to as a poverty trap, is discussed in Chapter 4.) However, it is important to stress that there are ways to escape from low income—which much of the world is doing—as you will see throughout this text. Further, the low-income, least-developed countries are themselves a very diverse group with differing development challenges.

Some star performers among now high-income economies, such as South Korea and Taiwan, were a few decades ago among the poorest countries in the world. Some middle-income countries are relatively stagnant, but others are growing rapidly—China most spectacularly, and India more recently (as considered in detail in the case studies at the end of Chapters 4 and 5, respectively). Indeed, income growth rates have varied greatly in different developing regions and countries, with rapid growth in East Asia, slow or in some cases even no growth in sub-Saharan Africa, and intermediate levels of growth in other regions. Problems of igniting and then sustaining economic growth are examined in Chapters 3 and 4.

One common misperception is that low incomes result from a country being too small to be self-sufficient (or, in what was previously a more common misperception, too large to overcome economic inertia). However, as seen in Table 2.6 there is no necessary correlation between country size in population or area and economic development (although each may have different advantages and disadvantages that can offset each other).[23]

The 12 most populous countries include representatives of all four categories: low-, lower-middle-, upper-middle-, and high-income countries (see Table 2.6). The 12 least-populous on the list include primarily lower-middle- and upper-middle-income countries, if high-income microstates are excluded.[24]

### 2.4.2 Human Capital Attainments

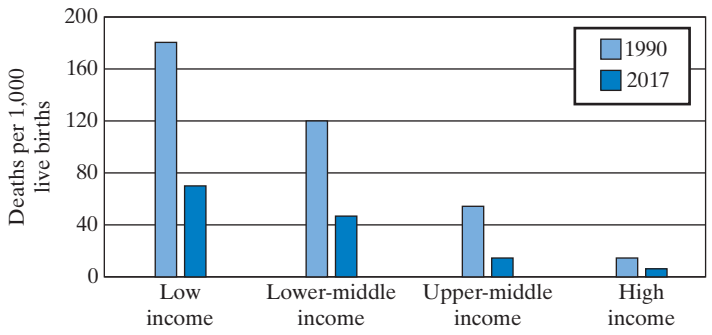
Human capital—including health, education, and skills—is vital to economic growth, as well as a key aspect of human development. There has been dramatic progress in health and education in most developing countries over the past quarter century. Despite this, there remain great disparities in human capital around the world, as we saw when considering the components of the Human Development Index. Compared with developed countries, many developing nations, particularly the least-developed countries, have lagged in their average levels of nutrition, health (as measured, for example, by life expectancy or undernourishment), and education (measured by literacy). By these measures, the upper-middle-income countries are significantly closer to the upper-income countries than to the

**TABLE 2.6 The 12 Most- and Least-Populated Countries and Their Per Capita Income, 2017**

| Most Populous | Population (millions) | GNI Per Capita (US $) | Least Populous | Population (thousands) | GNI Per Capita (US $) |
|---|---|---|---|---|---|
| 1. China | 1386 | 8690 | 1. Tuvalu | 11 | 4970 |
| 2. India | 1339 | 1800 | 2. Nauru | 14 | 10220 |
| 3. United States | 326 | 58270 | 3. Palau | 22 | 12700 |
| 4. Indonesia | 264 | 3540 | 4. Marshall Islands | 53 | 4840 |
| 5. Brazil | 209 | 8600 | 5. St. Kitts and Nevis | 55 | 16240 |
| 6. Pakistan | 197 | 1580 | 6. Dominica | 74 | 6590 |
| 7. Nigeria | 191 | 2100 | 7. Seychelles | 96 | 14170 |
| 8. Bangladesh | 165 | 1470 | 8. Antigua and Barbuda | 102 | 13810 |
| 9. Russian Federation | 144 | 9230 | 9. Micronesia | 106 | 3620 |
| 10. Mexico | 129 | 8610 | 10. Grenada | 108 | 9180 |
| 11. Japan | 127 | 38550 | 11. Tonga | 108 | 4010 |
| 12. Ethiopia | 105 | 740 | 12. St. Vincent and the Grenadines | 110 | 7390 |

*Source:* World Bank World Development Indicators

**FIGURE 2.4 Under-5 Mortality Rates, 1990 and 2017**




*Source:* World Development Indicators

lower-income countries. The under-5 mortality rate is about 15 times higher in low-income countries than in high-income countries; but enormous gains have been made across the income spectrum since 1990, as shown in Figure 2.4.

Table 2.7 shows primary school enrolment rates (percentage of students of primary age enrolled in school) and the primary pupil-to-teacher ratios for the four country income groups. Enrolments have strongly improved in recent years, especially for primary school. However, student attendance and completion, along with attainment of basic skills such as functional literacy, remain problems. The problem is moving from getting children into school to providing a quality education once they arrive. The pupil-to-teacher ratio is often used as an indicator of school quality, suggesting that the regions of South Asia and sub-Saharan Africa, and the low-income countries broadly, have a considerable distance to go. Indeed, teacher absenteeism from the classroom—ranging from taking long breaks while children are alone in the classroom to "teacher truancy" in which teachers simply stay away from the school—remains a serious problem in South Asia and sub-Saharan Africa (see Chapter 8).

**TABLE 2.7 Primary School Enrolment and Pupil–Teacher Ratios, 2017**

| Region or Group | Net Primary School Enrolment (%) | Primary Pupil–Teacher Ratio |
|---|---|---|
| **Income Group** | | |
| Low | 79 | 39 |
| Lower middle | 88 | 29 |
| Upper middle | 95 | 19 |
| High | 97 | 14 |
| **Region** | | |
| East Asia & Pacific | 96 | 17 |
| Europe & Central Asia | 96 | 15 |
| Latin America & Caribbean | 93 | 21 |
| Middle East & North Africa | 93 | 21 |
| South Asia | 90 | 35 |
| Sub-Saharan Africa | 78 | 38 |

*Source:* World Development Indicators

Upper-middle-income countries—and in some cases lower-middle-income countries, are much closer to the high-income, developed countries in health and education standards than they are to the lowest-income, least-developed countries. Although health conditions in East Asia are generally good, sub-Saharan Africa continues to be plagued by problems of malnourishment, malaria, tuberculosis, AIDS, and the neglected tropical diseases (see Chapter 8). Despite substantial progress, South Asia continues to have relatively high levels of illiteracy, low schooling attainment, and undernourishment.

### 2.4.3 Inequality and Absolute Poverty

Poverty and inequality are two of the subjects of Chapter 5. Very high levels of inequality—extremes in the relative incomes of higher- and lower-income citizens—are also found in many low-income and particularly middle-income countries, partly because Latin American countries historically tend to be both middle-income and highly unequal. Several African countries, including Sierra Leone, Lesotho, and South Africa, and Equatorial Guinea, also have among the highest levels of inequality in the world. Inequality is particularly high in many resource-rich developing countries, notably in the Middle East and sub-Saharan Africa. Indeed, in many of these cases, inequality is substantially higher than in most developed countries (where inequality has in many cases been rising in recent decades). Inequality varies greatly among developing countries, with generally much lower, though typically rising, inequality in Asia.

Corresponding to their low average-income levels, a large majority of the extreme poor live in the low-income countries of sub-Saharan Africa and the lower-middle-income countries of South Asia. Extreme poverty is due in part to low human capital but also to social and political exclusion and other deprivations. Great progress has already been made in reducing the fraction of the developing world's population living on less than $1.90 per day and raising the incomes of those still below that level, far more so than had been predicted prior to this century. However, with a billion people still extremely deprived, much remains to be done, as we examine in detail in Chapter 5.

**Absolute poverty** The situation of being unable or only barely able to meet the subsistence essentials of food, clothing, shelter, and basic health care.

Development economists use the concept of **absolute poverty** to represent a specific minimum level of income needed to satisfy the basic physical needs of food, clothing, and shelter in order to ensure continued survival. A problem, however, arises when one recognises that these minimum subsistence levels will vary from country to country and region to region, reflecting different physiological as well as social and economic requirements. Economists have therefore tended to make conservative estimates of world poverty in order to avoid unintended exaggeration of the problem.

The number living on less than $1.90 per day fell from about 1.9 billion (about 42%) in 1981 to about 750 million (about 10%) by 2017, despite the increase in the world's population of 3 billion people during that period. However, about 46% of the world's population still lived on less than $5.50 per day.[25] Extreme poverty represents great human misery, and so redressing it is a top priority of international development.

Development economists have also increasingly focused on ways in which poverty and inequality can lead to slower growth. That is, not only do absolute poverty and extreme inequality result from distorted growth, but they can also cause it. This relationship, along with measurements of inequality and poverty

and strategies to address these problems, is examined in depth in Chapter 5. The "last mile" in ending poverty will be difficult, as those still trapped are often living in particularly difficult conditions such as ongoing conflict. Because of their central importance in development, poverty reduction strategies are considered throughout the text.

### 2.4.4 Population Growth and Age Structure

Population and development is the subject of Chapter 6. Global population has skyrocketed since the beginning of the industrial era, from just under 1 billion in 1800 to 1.65 billion in 1900 and to over 6 billion by 2000. World population topped 7.6 billion by 2018. In 2018, the global rate of population growth was about 1.1%. Rapid population growth began in Europe and other developed countries. But in recent decades, most population growth has been centered in low-income and, to some extent, middle-income, countries. Compared with developed countries, which often have **crude birth rates** near or even below replacement (zero population growth) levels, low-income developing countries typically still have high crude birth rates.

**Crude birth rate** The number of children born alive each year per 1,000 population (often shortened to *birth rate*).

Population growth rates are determined by the difference between the birth rate and the death rate (net of migration). Population dynamics varies widely among regions. Populations of some developing countries, particularly in Africa, continue to grow rapidly. From 2000 through to 2017, population in sub-Saharan Africa grew at 2.7% per year, the same growth rate as for low-income countries as a group. This compares to a growth rate of 1.5% in South Asia, 1.2% in Latin America and the Caribbean, and 0.7% in East Asia and the Pacific. The high-income countries as a group also grew at an average rate of 0.7% in the 2000–2017 period.[26] The wide range of birth rates around the world is illustrated in Table 2.8.

**TABLE 2.8 Crude Birth Rates Around the World, 2018**

| | |
|---|---|
| 45+ | Angola, Chad, Mali, Niger |
| 40–44 | Burkina Faso, Burundi, Dem. Rep. of Congo, Somalia, Uganda |
| 35–39 | Afghanistan, Benin, Cameroon, Central African Republic, Côte d'Ivoire, Gambia, Guinea, Guinea-Bissau, Mayotte, Mozambique, Nigeria, South Suda, Tanzania, Zambia |
| 30–34 | Comoros, Congo, Equatorial Guinea, Eritrea, Ethiopia, Ghana, Iraq, Kenya, Liberia, Madagascar, Malawi, Mauritania, Nauru, Rwanda, São Tomé and Principe, Senegal, Sierra Leone, Sudan, Tajikistan, Timor-Leste, Togo, Yemen, Zimbabwe |
| 25–29 | Algeria, Egypt, Gabon, Haiti, Kiribati, Kyrgyzstan, Lesotho, Marshall Islands, Namibia, Pakistan, Papua New Guinea, Samoa, Solomon Islands, Turkmenistan, Tuvalu, Vanuatu |
| 20–24 | Belize, Bolivia, Botswana, Cambodia, Djibouti, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Honduras, India, Israel, Jordan, Kazakhstan, Laos, Libya, Maldives, Federated States of Micronesia, Mongolia, Nepal, Nicaragua, Oman, Paraguay, Philippines, South Africa, Syria, Tonga, Uzbekistan |
| 15–19 | Antigua and Barbuda, Argentina, Azerbaijan, Bangladesh, Bhutan, Brunei, Cape Verde, Colombia, Fiji, Grenada, Indonesia, Iran, Jamaica, Malaysia, Mexico, Morocco, Myanmar, Panama, Peru, Saudi Arabia, Seychelles, Sri Lanka, St. Vincent and the Grenadines, Suriname, Tunisia, Turkey, Venezuela, Vietnam |
| 10–14 | Albania, Armenia, Australia, Austria, Bahamas, Bahrain, Barbados, Belarus, Belgium, Brazil, Canada, Chile, China, Costa Rica, Cuba, Cyprus, Denmark, Dominica, Estonia, France, Georgia, Iceland, Ireland, North Korea, Kosovo, Kuwait, Latvia, Lebanon, Liechtenstein, Lithuania, Luxembourg, Macedonia, Malta, Mauritius, Moldova, Montenegro, Netherlands, New Zealand, Norway, Palau, Poland, Qatar, Romania, Russia, Saint Lucia, Slovakia, Slovenia, St. Kitts-Nevis, Sweden, Switzerland, Thailand, Trinidad and Tobago, United Aram Emirates, United Kingdom, United States, Uruguay |
| <10 | Bosnia-Herzegovina, Bulgaria, Croatia, Finland, Germany, Greece, Hungary, Italy, Japan, South Korea, Monaco, Portugal, San Marino, Serbia, Singapore, Spain, Taiwan, Ukraine |

*Source:* Population Reference Bureau: Births per 1,000 population

Comparisons are often made between fertility rates, which are the expected number of lifetime births per woman in a country. Fertility rates have fallen dramatically in most countries, as we examine in detail in Chapter 6. Globally, there was an average of five lifetime births per woman in 1965. By 2015, this had fallen by half, to about 2.5 lifetime births per woman—a historic change occurring over a half-century. While population continues to rise, the rate of increase has fallen steadily since the mid-1970s.

A major implication of high birth rates is that the active labour force has to support proportionally almost twice as many children as it does in richer countries. By contrast, the proportion of people over the age of 65 is much greater in the developed nations. Both older people and children are often referred to as an economic **dependency burden** in the sense that they are supported financially by the country's labour force (typically defined as citizens between the ages of 15 and 64).

**Dependency burden** The proportion of the total population aged 0 to 15 and 65+, which is considered economically unproductive and therefore not counted in the labour force.

Most middle-income countries (both LMCs and UMCs) are well into their demographic transition. Birth rates have fallen dramatically. As large numbers of children become adults and join the workforce, children are a smaller fraction of the population. And before these large generations retire, the fraction of the population older than working age remains small. The result is called a "demographic dividend," which provides a crucial opportunity for a country to grow rapidly and become a high-income country. But with relatively few children, eventually the retired cohort will become a high fraction of the population. For some countries such as China, the workforce is already shrinking, and total population will begin to fall soon. Countries in this position face a challenge dubbed "growing rich before growing old" (see Chapter 6, and the China case study at the end of Chapter 4).

### 2.4.5 Rural Economy and Rural-to-Urban Migration

One of the hallmarks of economic development is a shift from agriculture to manufacturing and services. In most low- and many middle-income countries, a relatively high share of the population lives in rural areas, and correspondingly fewer in urban areas.

Although modernising in many regions, rural areas are generally poorer and tend to suffer from missing markets, limited information, and social stratification. A massive population shift is well under way as hundreds of millions of people are moving from rural to urban areas, fuelling rapid urbanisation, with its own attendant problems. It is estimated that in about 2012, the world as a whole crossed the 50% threshold: for the first time in history, more people lived in cities than in rural areas. But sub-Saharan Africa and South and Southeast Asia remain majority rural. Urbanisation and rural-to-urban migration are analysed in Chapter 7. Agriculture and rural development is considered in Chapter 9.

### 2.4.6 Social Fractionalisation

Low-income countries more often have ethnic, linguistic, religious, and other forms of social divisions, sometimes termed "**fractionalisation**." This is sometimes associated with civil strife and even violent conflict, one of the most difficult governance challenges for economic development, as assessed in Chapter 14.

**Fractionalisation** Significant ethnic, linguistic, and other social divisions within a country.

Many countries function perfectly well with apparently high "fractionalisation." But there is some evidence that high ethnic fragmentation statistically explains part of the relatively lower economic growth, schooling, political stability, and infrastructure.[27]

The greater the ethnic, linguistic, and religious diversity of a country, the more likely it is that there will be internal strife and political instability, particularly if inequality falls along these identity group lines. Some of the most successful development experiences, such as South Korea, have occurred in culturally homogeneous societies.

In most cases, one or more ethnic groups face serious problems of discrimination, social exclusion, or other systematic disadvantages. Over half of the world's developing countries have experienced some form of interethnic conflict. Ethnic and religious conflicts leading to widespread death and destruction have taken place in many developing countries as diverse as Angola, Bosnia, Ethiopia, Guatemala, Kyrgyzstan, Sierra Leone, Sri Lanka, Myanmar (Burma), Rwanda, Sudan, and Mozambique. Conflict can derail what had otherwise been relatively positive development progress, as in Côte d'Ivoire from 2002 until 2013 (see the comparative case study at the end of this chapter). There has been a heartening trend since the mid-to-late 1990s toward more successful resolution of conflicts and fewer new conflicts; but more recently progress has levelled off, and by some measures conflicts are on the rise again. Conflict is one of the most important reasons why the development progress of many LICs has been held back in recent years, including Afghanistan, Congo, Liberia, Somalia, South Sudan, and Yemen. Conflict is sometimes initiated by the government and the elites that influence it. Recently, conflict sent Syria back from being a middle-income to a low-income country.

As development is about improving human lives and providing a widening range of choice to all peoples, then any form of racial, ethnic, caste, or religious discrimination is pernicious. For example, throughout Latin America, indigenous populations have significantly lagged behind other groups on almost every measure of economic and social progress. Whether in Bolivia, Brazil, Peru, Mexico, Guatemala, or Venezuela, indigenous groups have benefited far less from overall economic growth, and sometimes been subjected to systematic land expropriation, violence, and genocide (for example, see the case study comparing Costa Rica, Guatemala, and Honduras at the end of Chapter 14).

Being indigenous makes it much more likely that an individual will be less educated, in poorer health, and in a lower socioeconomic stratum than other citizens.[28] This is particularly true for indigenous women. Moreover, descendants of African slaves brought forcefully to the western hemisphere continue to suffer discrimination in countries such as Brazil. Ethnic and religious diversity need not necessarily lead to inequality, turmoil, or instability, and unqualified statements about their impact cannot be made. There have been numerous instances of successful economic and social integration of minority or indigenous ethnic populations in countries as diverse as Malaysia and Mauritius. In the United States, diversity is often cited as a source of creativity and innovation, although there is serious discrimination nonetheless. The broader point is that the ethnic and religious composition of a developing nation and whether or not fragmentation leads to conflict or cooperation can be important determinants of the success or failure of development efforts.[29]

### 2.4.7 Level of Industrialisation and Manufactured Exports

One of the most widely used terminologies for advanced economies is the "industrialised countries." Industrialisation is associated with high productivity and incomes and has been a hallmark of modernisation and national economic power. It is no accident that most developing-country governments make industrialisation a high national priority, with a number of prominent success stories in Asia. Many developing countries, particularly LMCs and UMCs, have dramatically increased their shares of manufacturing in national income. In many cases, however, manufacturing has remained concentrated in lower-skill (and lower-wage) activities.

Generally, developing countries have a far higher share of employment and output in agriculture than developed countries. In some low-income countries, more than two-thirds of the population works in agriculture. In contrast, in Canada, the United States and United Kingdom, agriculture accounts for between 1% to 2% of both employment and income—with productivity not below the average for these economies as a whole. This is in sharp contrast to a majority of developing nations, which have relatively low productivity in agriculture in comparison to other sectors of their own economies—particularly in industry, but also in services.

Madagascar is a dramatic example: while about 82% of both men and women worked in agriculture, it represented only a quarter of total output. In Indonesia, 41% of both men and women worked in agriculture, but it represented just 14% of output.

The proportion of women who work in the agricultural sector varies greatly across the world. Generally, in Latin America a significantly higher proportion of men work in agriculture than women; but in numerous countries in Africa and Asia, a larger proportion of women work in agriculture.

At the same time, the share of employment in industry in many developed countries is smaller now than in some developing countries, particularly among women, as developed countries continue their secular trend to switch from industry to service sector employment. However, many developed-country industrial jobs require high skills and pay high wages. The share of industrial employment in Africa remains low for both men and women in most countries. Export-oriented manufacturing jobs in SSA account for less than 2% of employment.

Along with lower industrialisation, developing nations have tended to have a higher dependence on primary exports. Most developing countries have diversified away from agricultural and mineral exports, at least to some extent. Many middle-income countries are rapidly catching up with, and in some cases passing, developed countries in the share of manufactured goods in their exports, even if these goods are typically less advanced in their skill and technology content. However, the low-income countries, particularly those in Africa, remain highly dependent on a relatively small number of agricultural and mineral exports. We consider this topic in Chapter 12.

### 2.4.8 Geography and Natural Resource Endowments

Many social scientists argue that geography must play some role in problems of agriculture, public health, and comparative development more generally. Landlocked economies, common in Africa, often have lower incomes than coastal

economies.[30] As can be observed on the map on the inside cover, developing countries are primarily tropical or subtropical, and this has meant that they suffer more from tropical pests and parasites, endemic diseases such as malaria, water resource constraints, and extremes of heat. Redoubled efforts are now under way to extend the benefits of the green revolution and tropical disease control to sub-Saharan Africa. Another reason for urgency is that climate change due to global warming is projected to have its greatest negative impact on Africa and South Asia (see Chapter 10).[31] Today, potentially the most challenging form of adverse geography is a large and growing climate change, effects for which a country has low resources in relation to large impacts.

**Resource endowment** A nation's supply of usable factors of production, including mineral deposits, raw materials, and labor.

Another dimension of geography is the extent of endowments of natural resources such as minerals. A clear case of a favourable physical **resource endowment** is the oil-rich Persian Gulf states. At the other extreme are countries such as Chad, Yemen, and Haiti, where endowments of raw materials and minerals and even fertile land are relatively minimal. However, as the case of the DRC shows vividly, high mineral wealth is far from a guarantee of development success. Conflict over the profits from these industries has all too often led to a focus on the distribution of wealth rather than its creation and to social strife, undemocratic governance, high inequality, and even armed conflict, in what is called the "natural resource curse."

Clearly, geography is not destiny; Singapore, among the highest-income countries in the world, lies almost directly on the equator, and parts of southern India have exhibited enormous economic dynamism in recent years. Prior to colonisation, some tropical and subtropical regions had higher incomes per capita than Europe.

In Section 2.6 later in this chapter, we add further perspectives on the possible indirect roles of geography in comparative development.

### 2.4.9 Extent of Financial and Other Market Development

Imperfect markets and incomplete information are far more prevalent in developing countries, with the result that domestic markets (notably, but not only, financial markets) have worked less efficiently, as examined in Chapters 4, 11, and 15. In many developing countries, legal and institutional foundations for markets are extremely weak. Following Nobel Laurate Douglass North, **economic institutions** are "humanly devised" constraints that shape interactions (or "rules of the game") in an economy; these include formal rules embodied in constitutions, laws, contracts, and market regulations, plus informal rules reflected in norms of behaviour and conduct, values, customs, and generally accepted ways of doing things. The manner and effectiveness of enforcement of rules is an important part of what makes a rule constraining, so formal and informal enforcement is an intrinsic aspect of an institution.[32]

**Economic institutions** "Humanly devised" constraints that shape interactions (or "rules of the game") in an economy, including formal rules embodied in constitutions, laws, contracts, and market regulations, plus informal rules reflected in norms of behaviour and conduct, values, customs, and generally accepted ways of doing things.

**Infrastructure** Facilities that enable economic activity and markets, such as transportation, communication and distribution networks, utilities, water, sewer, and energy supply systems.

Some aspects of market underdevelopment are that they often lack: (1) a legal system that enforces contracts and validates property rights; (2) a stable and trustworthy currency; (3) an **infrastructure** of roads and utilities that results in low transport and communication costs so as to facilitate interregional trade; (4) a well-developed and efficiently regulated system of banking and insurance, with broad access and with formal credit markets that select projects and allocate loanable funds on the basis of relative economic profitability and enforce rules

of repayment; (5) substantial market information for consumers and producers about prices, quantities, and qualities of products and resources as well as the creditworthiness of potential borrowers; and (6) social norms that facilitate successful long-term business relationships. These six factors, along with the existence of economies of scale in major sectors of the economy, thin markets for many products due to limited demand and few sellers, widespread externalities (costs or benefits that accrue to companies or individuals not doing the producing or consuming) in production and consumption, and poorly regulated common property resources (e.g., fisheries, grazing lands, water holes), mean that markets are often highly imperfect. Moreover, information is limited and costly to obtain, thereby often causing goods, finances, and resources to be misallocated. And we have come to understand that small externalities can interact in ways that add up to very large distortions in an economy and present the real possibility of an underdevelopment trap (see Chapter 4). The extent to which these **imperfect markets** and **incomplete information** systems justify a more active role for government (which is also subject to similar problems of incomplete and imperfect information) is an issue that we will address in later chapters (particularly Chapter 11). But the existence of imperfect markets remains a common characteristic of many developing nations and an important contributing factor to their state of underdevelopment.[33]

**Imperfect market** A market in which the theoretical assumptions of perfect competition are violated by the existence of, for example, a small number of buyers and sellers, barriers to entry, and incomplete information.

**Incomplete information** The absence of information that producers and consumers need to make efficient decisions resulting in underperforming markets.

## 2.4.10 Quality of Institutions and External Dependence

**Colonial Legacy** Most developing countries were once colonies of Europe or otherwise dominated by European or other foreign powers, and institutions created during the colonial period often had pernicious effects on development that in many cases have persisted to the present day. Despite important variations that proved consequential, colonial era institutions often favoured extractors of wealth rather than creators of wealth, harming development then and now. Both domestically and internationally, developing countries have more often lacked institutions and formal organisations of the type that have benefited the developed world. Domestically, **property rights** have been generally less secure, constraints on elites have been weak, and a smaller segment of society has been able to gain access to and take advantage of economic opportunities.[34] Problems with governance and public administration (see Chapter 11), as well as poorly performing markets, often stem from poor institutions.

**Property rights** The acknowledged right to use and benefit from a tangible (e.g., land) or intangible (e.g., intellectual) entity that may include owning, using, deriving income from, selling, and disposing.

Decolonisation was one of the most important historical and geopolitical events of the twentieth century. More than 80 former-European colonies have joined the United Nations. But many decades after independence, effects of the colonial era linger for many developing nations, particularly the least-developed ones. Colonial history matters for many reasons, including stolen resources. But some of its longest-lasting impacts resulted from choices the colonial powers made regarding whether the legal and other institutions in a colony would encourage investments by (and in) the broad population or would instead facilitate exploitation of human and other resources for the benefit of the colonising elite, creating or reinforcing extreme inequality. Development-facilitating or development-inhibiting institutions tend to have a very long life span. For example, when the conquered colonial lands were wealthier, there was more to steal. In these cases, colonial powers favoured extractive (or "kleptocratic")

institutions at the expense of ones that encouraged productive effort. When settlers came in large numbers to live permanently, incomes ultimately were relatively high, but the indigenous populations were largely annihilated by disease or conflict, and descendants of those who survived were exploited and blocked from advancement. A growing body of evidence demonstrates that practices such as forced labour had ongoing effects on human development even centuries after they were discontinued (see Box 2.2).

European colonisation often created or reinforced differing degrees of inequality, often correlated with ethnicity, which have also proved remarkably stable over the centuries. High inequality sometimes emerged as a result of slavery in regions where comparative advantage in crops such as sugarcane could be profitably produced on slave plantations. It also emerged where a large, settled indigenous population could be coerced into labour. This history had long-term consequences, particularly in Latin America.[35] In some respects, postcolonial elites in many developing countries largely took over the exploitative role formerly played by the colonial powers.

Where inequality was extreme, the result was generally less movement toward democratic institutions, less investment in public goods, and less widespread investment in education and health—deficiencies harmful to economic development. Thus, extreme inequality is also an important long-term determinant of comparative development. We return to these themes later in this chapter.

The European colonial powers also had a dramatic and long-lasting impact on the economies and political and institutional structures of their African and Asian colonies by their introduction of expanded forms of private property, and the requirement that taxes be paid in money rather than in kind. These innovations were introduced in ways that facilitated elite rule rather than broad-based opportunity.

The worst impact of colonisation was probably felt in Africa, especially if one also considers the earlier slave trade. Whereas in former colonies such as India local people played a role in colonial governance, in Africa most governance was administered by expatriates. Other well-documented impacts included lasting damage to social trust.[36]

In Latin America, a longer history of political independence plus a more shared colonial heritage (Spanish and Portuguese) has meant that in spite of geographic and demographic diversity, the countries possess relatively similar economic, social, and cultural institutions and face similar problems, albeit with particular hardships for indigenous peoples and descendants of slaves. Latin American countries have long been middle-income but rarely have advanced to high-income status—reflecting a situation now known as the "middle-income trap." In Asia, different colonial heritages and the diverse cultural traditions of the people have combined to create different institutional and social patterns in countries such as India (British), the Philippines (Spanish and American), Vietnam (French), Indonesia (Dutch), Korea (Japanese), and China (not formally colonised but dominated by a variety of foreign powers).[37] To a widely varying degree, newly independent nations continued to experience foreign domination by former colonial powers and the United States, and in a number of countries by the Soviet Union, particularly during the Cold War period. The diversity of colonial experiences is one of the important factors that help explain the wide spectrum of development outcomes in today's world.

**External Dependence and Unequal International Relations** Relatedly, developing countries have also been less well organised and influential in international relations, with sometimes adverse consequences for development. For example, agreements within the World Trade Organization (WTO) and its predecessors concerning matters such as agricultural subsidies in rich countries that harm developing-country farmers and one-sided regulation of intellectual property rights have often been relatively unfavourable to the developing world. The "Doha Development Round" of trade negotiations that began in 2001 was supposed to rectify some of these imbalances, but talks essentially stalled (see Chapter 12). During debt crises in the 1980s and 1990s, and in a different way in the global financial crisis of 2008, the interests of international banks often prevailed over those of desperately indebted nations (discussed in Chapter 13). More generally, most developing nations including almost all of the largest middle-income economies (the main exception now being China and, to a more limited extent, India) have weaker bargaining positions than developed nations in international economic relations. It remains to be seen how much the unprecedented disunity among high-income OECD countries, which began in 2017, and the continued rise of other large middle-income countries will dilute the historic imbalance. By itself, this is unlikely to alter the standing and circumstances of most other nations, especially the least-developed countries.

Developing nations often also voice great concern over various forms of cultural dependence, from news and entertainment to business practices, lifestyles, and social values. The potential importance of these concerns should not be underestimated, either in their direct effects on development in its broader meanings or indirect impacts on the quality of growth or the character of national development. Developing nations are also dependent on the developed world for environmental preservation, on which hopes for sustainable development depend. Of greatest concern, climate change brought about by global warming is projected to harm developing regions more than developed ones; yet both accumulated and current greenhouse gas emissions still largely originate in the high-income countries, despite the role of developing-country deforestation and growing emissions from middle-income countries, especially China but increasingly India. Thus, the developing world endures what may be called environmental dependence, in which it must rely on the developed world to cease aggravating the problem and to develop solutions, including mitigation at home and assistance in developing countries. This topic is considered as a dimension of dependency in Chapter 3 and examined closely in Chapter 10 regarding its environmental impact and policy responses.

Finally, many developing countries faced significantly more challenging starting positions for economic development, in contrast to those of currently developed countries, when they embarked on their era of modern economic growth. Eight differences have sometimes posed significant challenges for at least some later-developing countries: lower physical and human resource endowments; lower per capita incomes and levels of GDP in relation to the rest of the world; climatic features and more recently climate change; population size, distribution, and growth rates; historical role of international migration; international trade benefits; basic indigenous scientific and technological research and development capabilities; and efficacy of domestic institutions. These eight differences have for many countries, at least at some points in time,

## BOX 2.2 Findings: The Persistent Effects of Colonial Forced Labour on Poverty and Development

Melissa Dell used historical district-level data to assess the long-run impacts of the *mita* forced labour system in Peru and Bolivia, which "required over 200 indigenous communities to send one-seventh of their adult male population to work in the Potosi silver and Huancavelica mercury mines" for a 239-year period, from 1573 to 1812. Forced labour can severely harm subjected communities. But Dell finds even today—over two centuries later—districts covered by the *mita* system have lower household consumption and higher probability of stunting in children. Can development economists conclude with confidence that a colonial system ending over two centuries ago is the cause of worse performance in the districts it affected? In principle, such correlations could be due to observed or unobserved factors other than the *mita*. For example, households in *mita* districts may have been less well off to begin with. To address this question, Dell employed an important tool used by development economists to establish causal effects, known as regression discontinuity design (RD).

Regression discontinuity has many uses, including evaluation of development programmes. In evaluating a programme, if each individual is associated with an "assignment variable," $z$, and a "treatment" is assigned to individuals with a value of $z$ less than or equal to a cutoff level $z_0$, then the impact of the treatment on an outcome variable, $y$, can be identified by comparing observations of those who started just below the threshold $z_0$ with those who started just above it. For this group, any difference in the outcome variable between people on each side of the discontinuity would be caused by the treatment. The assignment $z$ can represent many types of threshold variables, including income, birth date, test scores, or a geographic boundary. And it turns out that a very wide range of impacts can be considered as a treatment—whatever impacts only people who are on one side of a threshold, provided that all relevant influences other than treatment vary smoothly across the threshold. Economists have learned that RD estimates have statistically reliable properties that in some circumstances can make these studies virtually as informative as a randomised trial. One basic assumption of RD is that individuals just below and just above the cutoff are otherwise similar and have the same potential outcomes in the absence of the treatment. This assumption means that individuals cannot "sort themselves" to be just under the cutoff (or over the cutoff, if that is relevant, in particular if that is where the incentive is found). For example, in a poverty programme study, people cannot pretend to be poorer in order to get into a poverty programme. Otherwise, the estimated effect can be compounded with the characteristics of those people who respond by sorting themselves (e.g., people with higher cognitive skills).

Dell's RD strategy was to use longitude–latitude, or simply distance to mines, as the assignment variable to predict the *mita* coverage. The effect of the *mita* system on social or economic outcomes can be estimated by comparing districts with and without the *mita* system among those close to the *mita* coverage boundary. These districts were considered likely to be similar in all respects except for the *mita*; and, indeed, Dell found that prior to the *mita* system, factors such as tax rates, steepness of terrain, and ethnic distribution were similar across the boundaries that she studied. Using this strategy, Dell concluded that the "*mita* effect" lowers household consumption by approximately 25% and that it increases child stunting "by around 6 percentage points." These are really striking findings: more than two centuries have passed since the *mita* boundary line carried any legal meaning whatsoever. Dell then asked, "Why would the *mita* affect economic prosperity nearly 200 years after its abolition?" While "there exist many potential channels," Dell proposed, "the *mita's* influence has persisted through its impacts on land tenure and public good provision." Outside the *mita*

district boundaries, the Spanish hacienda system emerged—it was a feudal system, not a market in which labour was free. While the measured impact of the *mita* likely would have been even worse in comparison with "secure, enfranchised smallholders," Dell contrasted the two actual historical experiences in this region. Some exploitive conditions are worse than land inequality. Dell pointed out that the land tenure system in non-*mita* districts was more stable compared to *mita* districts, where there was no system of enforceable peasant titling even after the *mita* ended. For example, Dell cites a judicial procedure used in *mita* districts to seize land from peasants by falsely claiming their land was abandoned. Large landowners also had a profit incentive and the political influence to get more roads built in their districts. Dell argued that in this region of Peru, "large landowners—while they did not aim to promote economic prosperity for the masses—did shield individuals from exploitation by a highly extractive state and did ensure public goods."

*Source:* Dell, Melissa (2010), 'The persistent effects of Peru's mining *mita*.' *Econometrica*, 78: 1,863–1,903.

counteracted "advantages of backwardness," particularly the opportunity to borrow already-existing technology and to attract international capital. The eight challenge areas and potential policy responses to them are discussed at different points in this and other chapters; but Appendix 2.2 addresses each of these traditional differences and challenges in detail.

## 2.5 Are Living Standards of Developing and Developed Nations Converging?

At the dawn of the industrial era, around the middle of the eighteenth century, average real living standards in the richest countries were no more than about three times as great as those of the poorest. Today, the ratio approaches 100 to 1. Be sure to take note: this is not 100% higher—it is 100 times higher. So, as noted by Lant Pritchett, there is no doubt that today's developed countries have enjoyed far higher rates of economic growth averaged over two centuries than today's developing countries, a process known as **divergence**.[38] Theories of economic growth are discussed in Chapters 3 and 4. But in comparing development performance across countries, it is appropriate to consider whether, with strenuous economic development efforts being made throughout the developing world, living standards of developing and developed nations are now exhibiting **convergence**.

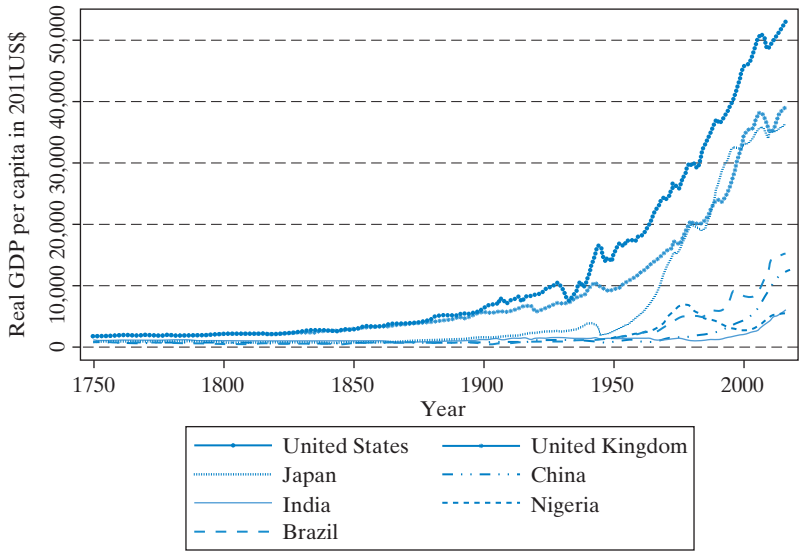
**Divergence** A tendency for per capita income (or output) to grow faster in higher-income countries than in lower-income countries so that the income gap widens across countries over time (as was seen in the two centuries after industrialisation began).

**Convergence** The tendency for per capita income (or output) to grow faster in lower-income countries than in higher-income countries so that lower-income countries are "catching up" over time. When countries are hypothesised to converge not in all cases but *other things being equal* (particularly savings rates, labour force growth, and production technologies), then the term *conditional convergence* is used.

### 2.5.1 The Great Divergence

The two centuries of exponential increase in productivity and incomes in early industrialising countries, and comparative stagnation in most other countries, led to the "Great Divergence." Figure 2.5 illustrates this divergence—followed by the apparent beginnings of a convergence—with the paths of real output per

**FIGURE 2.5 The growth of real output per person since 1750**




*Source:* Data from Maddison Project Database

person in selected countries and areas from 1750 to 2010. Some countries experienced almost no gains during this long period. Other countries were among those with the highest incomes throughout this period. Much later, incomes in many other countries where a majority of the world's people live began to rise; and then to start closing the gap, albeit often in fits and starts, and frustratingly slowly, by the turn of the twenty-first century. Yet many people, particularly in the least-developed countries, still have seen almost no improvements in living standards. Japan was the first non-Western country to begin to catch up. China and India, where more than one-third of the world's people live, began a steady catch-up process by the early 1990s.

How did the enormous change from the beginning of the great convergence happen? And why did the benefits go for so long only to people in a small part of the world? Why are some countries still making little progress? And how have many countries finally started to reconverge, in some cases dramatically?

Initially, some of these riches were gained through the predations of colonialism and the horrors of slavery and near-slavery. But as time went on an increasing majority of the gains resulted from the productivity advances of the Industrial Revolution.

About 250 years ago, the Industrial Revolution got underway in England. Production rose through the progressive application of steam power, water power, and other technical advances. Countries that industrialised early—in West Europe and North America—began a transformation that would lead to unprecedented gains in living standards.

The new machines were costly. Europe had been gaining wealth. Discovery of ocean shipping routes led to profitable trade. Some trade was voluntary and mutually beneficial, but much was one sided and even led to worsened conditions for non-Europeans. Prior to the Industrial Revolution, loot from civilisations including those of present-day Mexico, Peru, Indonesia, and India, brought capital to Europe. Exports to colonies replaced local production; but in most cases colonised people were forbidden to industrialise. In the United States, factories made profits by selling cheap, standardised clothes and shoes to be worn on plantations by slaves who previously made their own clothes but now had to concentrate more on hard plantation labour. In the early nineteenth century, conditions of workers in factories in the US, UK, and elsewhere were harsh, unsanitary, and led to early death, including among child labourers; but many of the factories generated enormous profits. The process of divergence was underway.

As mentioned earlier, the decolonisation wave from the years after World War II through to the mid-1970s was a massive historical and geopolitical change—probably a process second to none in its significance in reshaping the world to what we know today. Yet for decades following independence, many observers found it puzzling that most developing countries made disappointingly little progress on productivity and incomes.

### 2.5.2 Two Major Reasons to Expect Convergence

If the growth experience of developing and developed countries was similar, there are (at least) two important reasons to expect that developing countries would be "catching up" by growing faster on average than developed countries.

The first reason is due to technology transfer. Many companies and governments actively seek to absorb new technologies; in fact, development assistance often attempts to facilitate this goal, particularly in fields such as public health. Today's developing countries do not have to "reinvent the wheel"; for example, they do not have to use vacuum tubes before they can use semiconductors. (Even if royalties must be paid to industrial patent holders, it is typically more cost-effective to utilise existing technology than to undertake original R&D, partly because one does not have to pay for mistakes and dead ends along the way.) This should enable developing countries to "leapfrog" over some of the earlier stages of technological development, moving quickly to high-productivity techniques of production. As a result, they should be able to grow much faster than today's developed countries are growing now or were able to grow in the past, when they had to invent the technology as they went along and proceed step by step through the historical stages of innovation. (This is known as an "advantage of backwardness," a term coined by economic historian Alexander Gerschenkron.) In fact, if we confine our attention to cases of successful development, the later a country begins its modern economic growth, the shorter the time needed to double output per worker. For example, Britain doubled its output per person in the first 60 years of its industrial development, and the United States did so in 45 years. South Korea once doubled per capita output in less than 12 years, and China has done so in 8 years. Of course, this process does not happen, or happens very slowly, in many countries.[39]

The second reason to expect convergence if conditions are similar is based on diminishing returns to factor accumulation. Today's developed countries have

high levels of physical and human capital; in a production function analysis, this would explain their high levels of output per person. But in traditional neoclassical analysis, the marginal product of capital and the profitability of investments would be lower in developed countries where capital intensity is higher, provided that the law of diminishing returns applied. That is, the impact of additional capital on output would be expected to be smaller in a developed country that already had a lot of capital in relation to the size of its workforce than in a developing country where capital was scarce. As a result, we would expect higher investment rates in developing countries, either through domestic sources or through attracting foreign investment (see Chapter 14). With higher investment rates, capital would grow more quickly in developing countries until approximately equal levels of capital and (other things being equal) output per worker were achieved. Clearly, this does not always happen in practice, or happen quickly.[40]

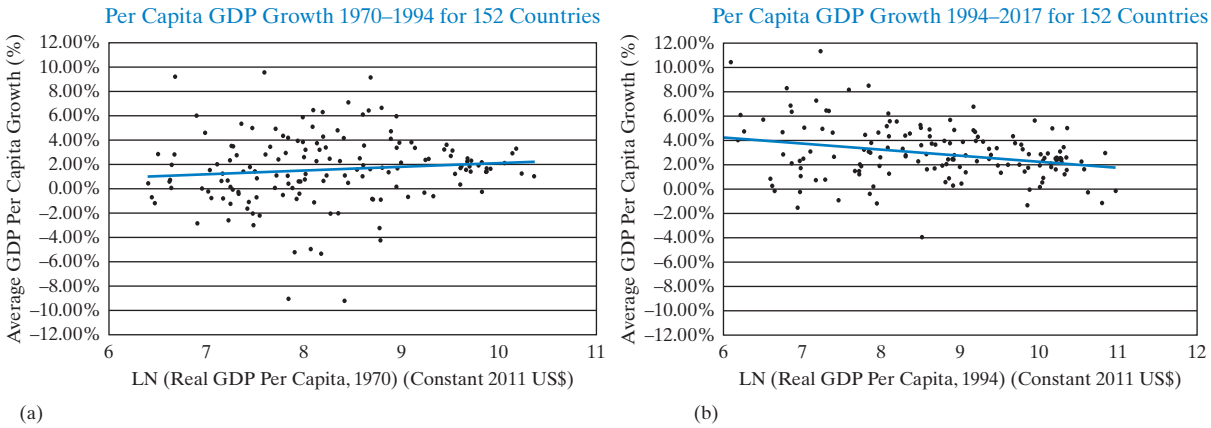
Given one or both of these conditions, technology transfer and more rapid capital accumulation, incomes would tend toward convergence in the long run as the faster-growing developing countries would be catching up with the slower-growing developed countries.[41] Although it is unlikely that incomes would eventually turn out to be identical, they would at least tend to converge, *conditional on* (that is, after also taking account of any systematic differences in) key variables such as population growth rates and savings rates (this argument is formalised in the neoclassical growth model in Chapter 3 and examined in additional detail in Appendix 3.2).

Given the huge differences in capital and technology across countries, if growth conditions were similar, or other impediments are not found, we should see tendencies for convergence in the data – with poorer countries growing faster than richer countries. Whether there is convergence in the world economy can depend upon how the question is framed: whether across average country incomes or across individuals (considering the world as if it were one country); whether focusing on relative gaps or absolute gaps; and whether we focus on the most recent data. For years the absence of evidence on income convergence was a great unsolved puzzle of development economics.[42] As we have just seen, the evidence shows that divergence occurred for two centuries from the start of the industrial revolution. However, the most recent data demonstrate that, on average, (re-)convergence is now underway.

### 2.5.3 Perspectives on Income Convergence

**Relative Income Convergence at the Country Level** Looking for per capita income convergence (or divergence) at the country level, the usual approach is to estimate growth rates as a function of initial income. If the poorer countries are growing faster, a plot of the data will be downward sloping, indicating convergence; but if the poorer countries are growing more slowly, the plot will be downward sloping, indicating divergence. Figure 2.6.a shows the time period 1970–1994; while Figure 2.6.b shows 1994–2017. For visual clarity, incomes per capita are expressed as natural logarithms (because rich country incomes are many multiples that of low income countries, many of the countries would otherwise be "bunched up" to the left of the diagram). For reference, in the first period only 63 out of 152 countries grew faster than the US; but in the second period 116 grew faster. The findings here are striking – a pattern of global

**FIGURE 2.6 Relative Country Convergence 1970–1994 and 1994–2017**




Data Source: Penn World Table

divergence, consistent with the very long run picture in Figure 2.5, has switched to one of convergence.[43]

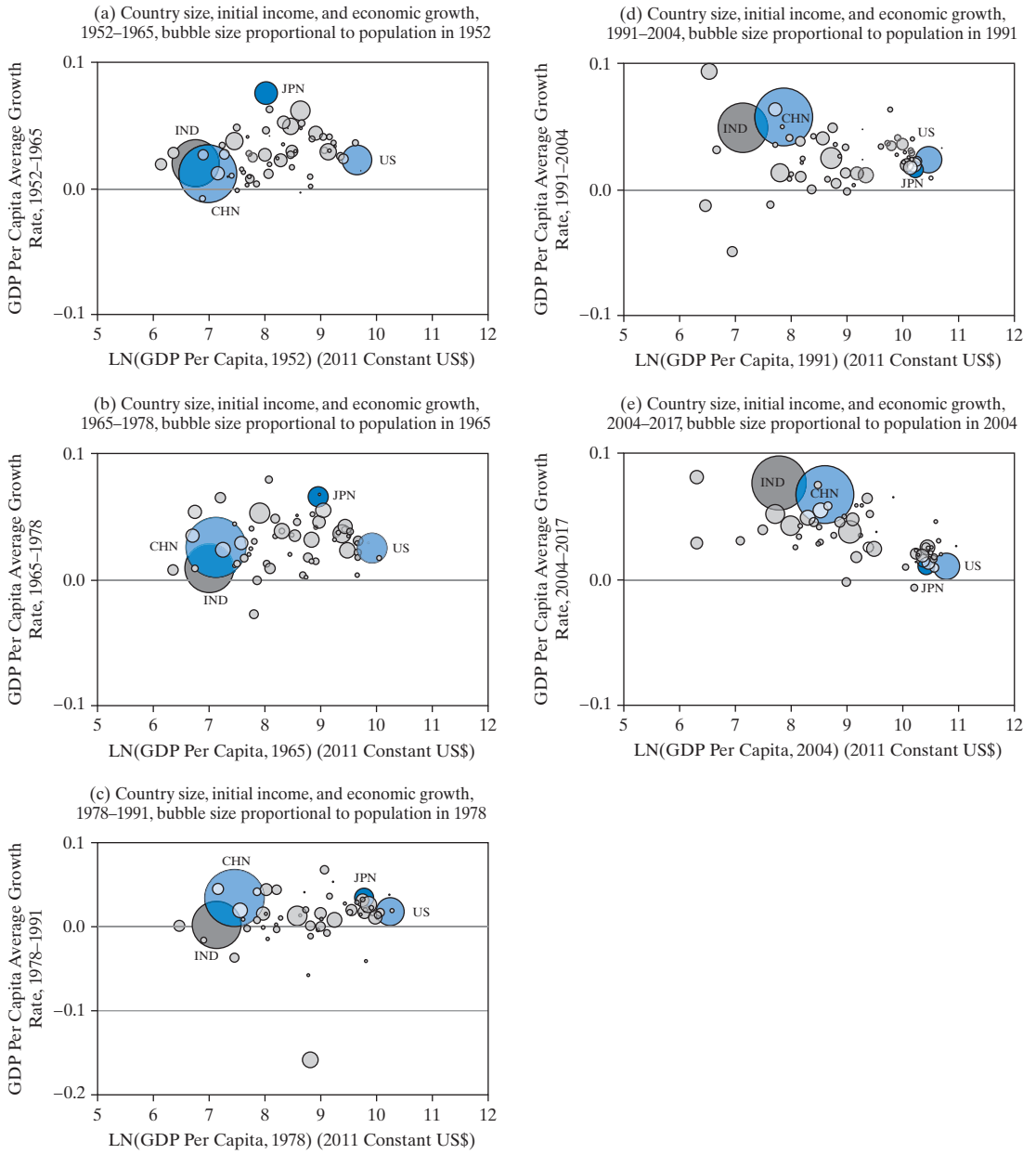
In research looking at periods extending into the first years of the 21st century, the evidence has supported the hypothesis at least of no convergence, and in most cases continued divergence. But in recent years, the pattern of growth across countries has changed so strongly that this is no longer the case. For the first time, we are in a historic period of (re-)convergence of average incomes across countries.[44]

**Conditional Convergence** Our main concern here is the direction toward or away from convergence, not whether full convergence can be projected. A weaker form of the convergence hypothesis proposes that economies will converge to the same income levels "conditionally," that is, other things equal, notably savings rates, labour force growth, and productivity; this is an implication of the Solow growth model (examined in Chapter 3, Appendix 3.2). We may find the world's economies are moving toward convergence, even if we cannot say they will reach full convergence.[45]

**The Importance of Avoiding Selection Bias.** It is of critical importance to be careful not to overgeneralise when using a restricted sample. The early research on convergence in the mid-1980s used data from developed OECD countries, in part because these data were viewed as more reliable and included more variables. These studies concluded that there was strong evidence of convergence. But that finding had to be true virtually by definition: if one only observes countries that are now rich, the data are confined to those that used to be rich and are still rich, plus those that used to be poorer but are now rich – the latter must have been growing faster, or otherwise they could not have joined the high-income "club." When developing countries were added to the data, divergence was found in periods such as 1965–1980 and 1980–2005. The broader point is that it matters a great deal which countries are to be selected at the beginning year of the period of study.

**Population-Weighted (Per Capita) Income Convergence** The picture becomes clearer when we weight average country incomes by population sizes. In Figures 2.7, each country is represented by a bubble, with sizes proportion to its population at the start of a period. (In contrast, each country is represented by a single point in Figures 2.6.) The analysis is broken into five successive periods. As can be perceived in the figures, in the first periods (1952–1978) there was clear

**FIGURE 2.7 Relative Country Convergence: World, Developing Countries, and OECD**



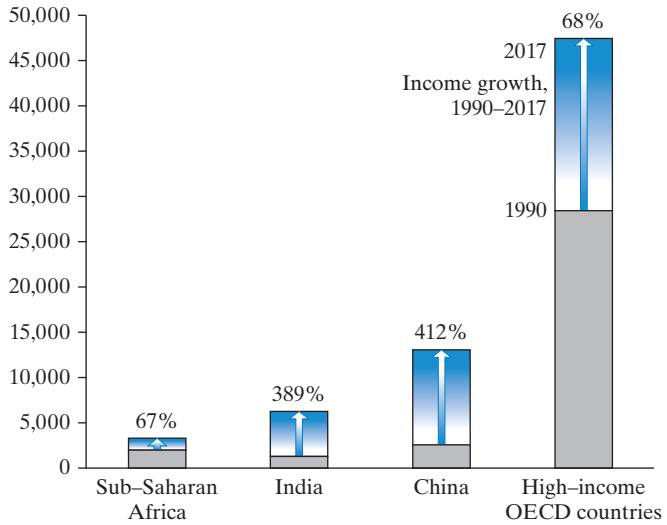

Data Source: Penn World Table

per capita divergence. By the middle period (1978–1991) divergence had become much less pronounced. In the latter periods, and especially in 2004–2017, there was strong per capita (re-)convergence, driven in significant part by historically rapid growth in the two largest countries. among the countries for which we have data.[46]

**Absolute Income Convergence.** With the rapid growth of China and India since 1990, these countries have been on a robust trajectory of relative country convergence. For example, in the 1990–2017 period, while per capita income cumulatively increased by an average 68% in high-income OECD countries, it grew by a far higher 412% in China and 389% in India. But due to their relatively low starting (base) income levels, despite much more rapid growth, income gains were generally smaller in absolute amount than in the OECD, as illustrated in Figure 2.8. In this period, Sub-Saharan Africa's average growth rate virtually matched that of the high-income OECD average growth rate, but the average absolute income gain in SSA was a small fraction of that in the high-income OECD. In sum, even when the average income of a developing country is becoming a larger fraction of developed country average incomes, the absolute differences in incomes can still continue to widen for some time before they finally begin to shrink. A process of absolute country convergence is a stronger standard than (and appears only with a lag after) a process of relative country income convergence.[47]

**World-As-One-Country Convergence.** An alternative approach to the study of convergence is to think of the world as if it were one country. In world-as-one-country convergence, we interpret a fall in inequality among individual people of the world (regardless of their countries) as convergence; a rise in inequality means divergence. In the first such study, Branko Milanovic "stitched together" household data sets from around the world and concluded that global inequality rose significantly during the period of his data set, 1988 to 1993.[48]

**FIGURE 2.8 Growth Convergence versus Absolute Income Convergence**




Data Source: Penn World Table

The most important difference from population-weighted country convergence is that a world-as-one-country convergence study can take into account changes in inequality within countries as well as between them. In particular, the widening gulf between incomes in rural and urban China had a major effect on the finding of global divergence using this method. However, so far in this century there has almost certainly been world-as-one-country convergence, with average individual incomes in China, India and several other large developing countries growing substantially faster than in the United States and other rich countries. At the same time, many nations including China, India, and the United States have continued to see strongly rising within-country inequality.

Most researchers and policymakers frame development as a process that occurs on the national level, something rather different from world-as-one-country (global) inequality; and country-based convergence studies remain standard.

**The Future of Convergence: Opportunities and Risks** The encouraging convergence trend is not inevitable. Potentially, the trend could be derailed by new technological divides, climate change impacts in Africa and other areas, policies that are self-defeating or serve narrow interest groups, and development-in-reverse disasters of widespread armed conflict. Least-developed countries could remain stuck for other reasons. Further, these numbers reflect country averages – they do not adjust for inequality or the presence of extreme poverty. We will explore such risks throughout the text. Nonetheless, it is quite possible that after more than two centuries of the Great Divergence, the world may be on a sustainable path toward a great re-convergence.

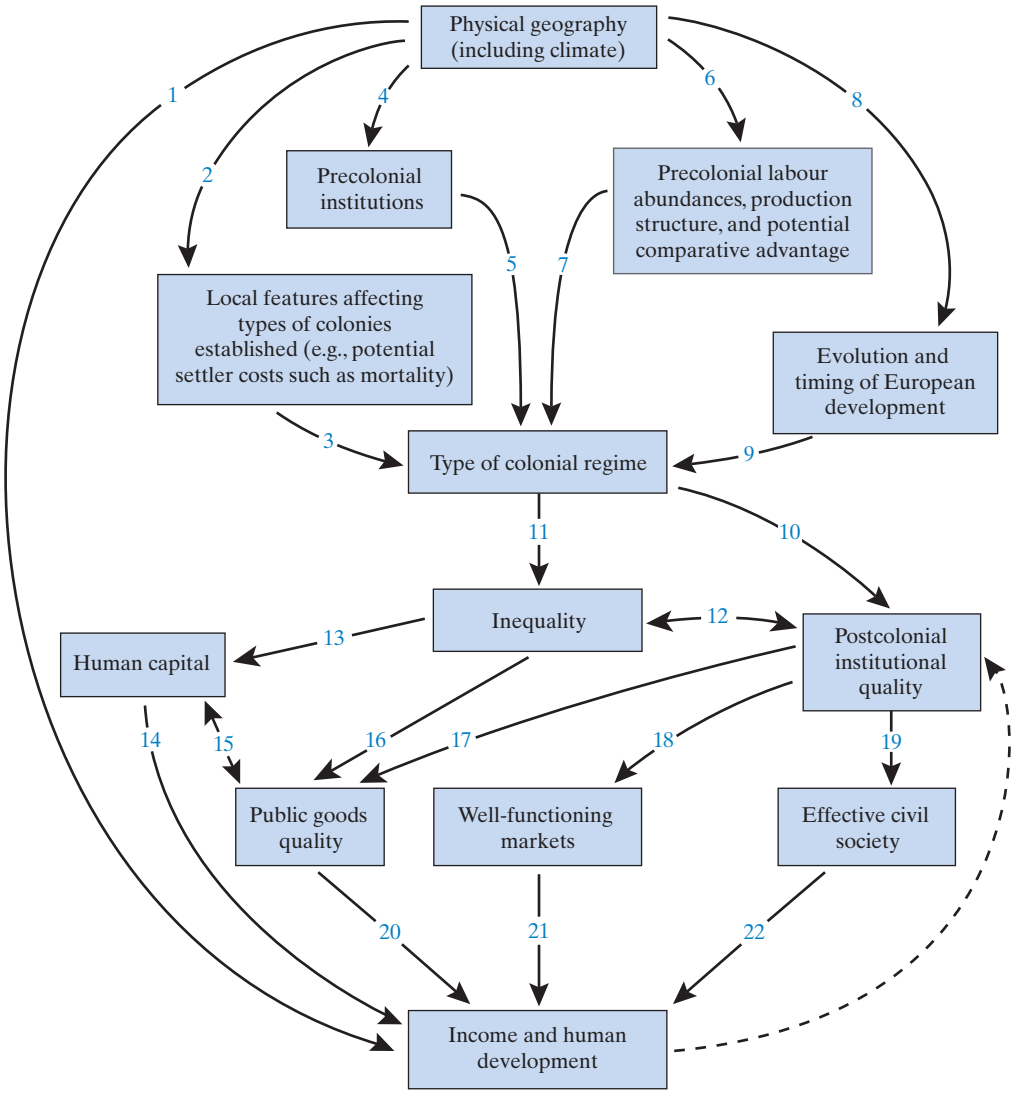
## 2.6 Long-Run Causes of Comparative Development

What explains the extreme variations in development achievement to date among developing and developed countries? The next two chapters examine theories of economic growth and development processes and policy challenges; here we present a schematic framework for appreciating the major long-run causes of comparative development[49] that have been argued in some of the most influential research literature of this century.[50]

First, in the very long run, few economists doubt that physical geography, including climate, has had an important impact on economic history. Geography was once truly exogenous, even if human activity can now alter it, for better or worse. But the economic role played by geography, such as tropical climate, today is less clear. Some research suggests that when other factors, notably inequality and institutions, are taken into account, physical geography adds little to our understanding of current development levels. However, some evidence is mixed. For example, there is some evidence of an independent impact of malaria and indications that, in some circumstances, landlocked status may be an impediment to economic growth. Indeed, a direct link from geography to development outcomes is argued by some economists, so this possible effect is represented with **Arrow 1** connecting geography to income and human development on the left side of Figure 2.9.[51]

Economic institutions, which play an important role in comparative development, are defined by Nobel laureate Douglass North as the "rules of the game"

**FIGURE 2.9 Schematic Representation of Leading Theories of Comparative Development**




of economic life. As such, institutions provide the underpinning of a market economy (and social cooperation more generally) by establishing the rules of property rights and contract enforcement; restricting coercive, fraudulent, and anticompetitive behaviour; addressing potential coordination failures (see Chapter 4); providing access to opportunities for a broad population; constraining the power of elites; and managing conflict more generally. In many cases, the manner and effectiveness with which such rules are or can be enforced is a key part of institutional quality.

Moreover, institutions include social insurance (which also serves to legitimise market competition) and the provision of predictable macroeconomic stability.[52] Most broadly, a country's constitution can operate as an overall

underpinning to other institutions. But "informal institutions" such as broadly shared norms of behaviour can be just as important. This is another reason why it is very difficult to change institutions rapidly. As Douglass North stresses, even if the formal rules "may be changed overnight, the informal rules usually change only ever so gradually."[53]

Countries with higher incomes can afford better institutions, so it is challenging to identify the impact of institutions on income. But recently, development economists have made influential contributions toward achieving this research goal. As noted earlier, most developing countries were once colonies. Geography affected the types of colonies established (**Arrow 2**), with one of the now best-known geographic features being settler mortality rates, whose impact[54] was analysed in work by Daron Acemoglu, Simon Johnson, and James Robin Robinson. In this argument, when potential settlers faced higher mortality rates (or perhaps other high costs), they more often ruled at arm's length and avoided large, long-term settlement. Their interest could be summarised as "steal fast and get out" or "get locals to steal for you." Unfavourable institutions were therefore established, preferring extraction over production incentives. But where mortality was low, populations were not dense, and exploitation of resources required substantial efforts by colonists, institutions broadly encouraging investments, notably constraints on executives and protection from expropriation, were established (sometimes as a result of agitation from settlers who had the bargaining power to demand better treatment). These effects are reflected by **Arrow 3**. Acemoglu and colleagues present evidence that, after accounting for institutional differences, geographic variables (e.g., closeness to the equator) have little influence on incomes today.[55] Their statistical estimates imply large effects of institutions on per capita income. The influence of geography on precolonial institutions is captured by **Arrow 4**.

Precolonial institutions also mattered to the extent that they had influence on the type of colonial regime established. This possible effect is reflected by **Arrow 5**. Precolonial comparative advantage and evolving labour abundances in the Americas and their relation to the institutions established have been studied in the pioneering work of Stanley Engerman and Kenneth Sokoloff.[56] When climate was suitable for a production structure featuring plantation agriculture (particularly sugarcane in the early history), slavery and other types of mass exploitation of indigenous labour were introduced. In other areas, when indigenous peoples survived contact in sufficient numbers and mineral wealth was available, vast land grants that included claims to labour were established (by Spain). Although resulting from different comparative advantage (sugarcane and minerals), economic and political inequality were high and remained high in all of these economies (even among freemen), which had long-lasting negative effects on development. These links are reflected by **Arrow 6** and **Arrow 7**.

Early inequities were perpetuated with limits on the non-elite population's access to land, education, finance, property protection, and voting rights, as well as labour markets; the effect was to reduce opportunities to take advantage of industrialisation when they emerged in the nineteenth century, a period when broad participation in commercial activity had high social returns. The contrast with North American potential production structure is striking. Its comparative (emerging) advantage in grain lacked at the time the scale economies of tropical agriculture and of mineral extraction seen elsewhere in the Americas. The combination of scarce labour with abundant land inhibited the concentration of

power (despite efforts of colonisers to do so). The need to attract more settlers and encourage them to engage the colonial economy led to the evolution of more egalitarian institutions in the North American colonies (albeit not before significant struggles). North Americans enjoyed greater egalitarianism in access to all of the factors so restricted elsewhere. This environment facilitated broad-based innovation, entrepreneurship, and investment and gave the United States and Canada a decisive advantage despite their starting out as much poorer societies, which they used to economically surpass societies whose populations were mostly illiterate, disenfranchised, and lacking collateral.[57] (We will examine further aspects of Engerman and Sokoloff's analysis shortly.)

When local populations were larger and denser and social organisation was more advanced, it was easier for colonists to take over existing social structures to gain tribute. In such cases, resulting institutional arrangements would tend to favour mechanisms of extraction of existing wealth over the creation of new wealth, often leading to declines in the relative fortunes of these regions. This is pointed out by Acemoglu, Johnson, and Robinson, whose influential research on this historical "reversal of fortune"[58] is also reflected by **Arrow 5**. These authors stress that if geography were fundamental to development prospects, the most prosperous areas prior to colonisation should continue to be relatively prosperous today. But the most prosperous formerly colonised areas today tend to have been least prosperous in the past. Past population density and past urbanisation, which are positively correlated with past income, are negatively correlated with current income, these authors show.[59] There is evidence that colonisers set up more extractive institutions (ones designed to extract more surplus from colonised populations) in prosperous areas and that these institutions have often persisted into the contemporary period.[60]

Geography undoubtedly influenced early economic history in Europe.[61] This is reflected by **Arrow 8**, leading to evolution and timing of European development. Early development in Europe gave it advantages over most other regions—advantages that were used to colonise much of the world. But the types of colonial regimes implemented varied considerably, depending on conditions prevailing at the time of colonisation both in the different parts of the world colonised and within the coloniser's home country. The timing of European development influenced the type of colonial regime established, reflected by **Arrow 9**. For example, it has been argued that for various reasons, earlier colonisation generally involved more plunder and less active production than later colonisation, although both occurred at the expense of the indigenous populations.[62]

Precolonial comparative advantage may also have interacted with the timing of European development in influencing institutions, in that settlers in later-colonised temperate zones arrived with more knowledge and more advanced technology. In particular, Europeans brought better agricultural techniques to the later-settled areas such as North America. As stressed by David Fielding and Sebastian Torres, by the eighteenth century, population growth in Europe and technical change had produced a large supply of people with temperate-zone agricultural skills in products such as wheat and dairy. They were able to gain higher incomes using these skills in temperate colonies and former colonies (the so-called neo-Europes).[63] Thus, precolonial (potential) comparative advantage again mattered. This link is reflected in the flow through **Arrow 6** and **Arrow 7**. The possible role played by specific skills also points up the importance of human capital investments for development, reflected by **Arrow 14**.

Thus, the types of colonial regimes established, while always designed for the benefit of the colonisers, were influenced by local and European supply-and-demand factors. The type of regime had enormous influence on postcolonial institutional quality, reflected by **Arrow 10**. For example, the depraved rule of Belgium's King Leopold II over the Congo (today's Democratic Republic of Congo) was arguably an ultimate cause of the oppressive Mobutu reign after independence. Of course, not all influences of colonialism were necessarily bad. Along with enslavement, subjugation, exploitation, loss of cultural heritage, and repression, colonists also brought modern scientific methods in fields such as medicine and agriculture. Note that this can be no apologia for colonialism, because these advances could have been gained without the societies becoming colonised. Still, there is some evidence that countries and territories that spent a longer time as colonies (at least in the case of islands) have higher incomes than those that experienced shorter colonial periods, with this effect greater for entities colonised later, perhaps because earlier colonial activity had more pernicious effects than later activity. (Even so, there are strong caveats to this finding.[64])

Besides creating specific institutions, European colonisation created or reinforced differing degrees of inequality (often correlated with ethnicity), ultimately leading to diminished prospects for growth and development, notably in Latin America and the Caribbean. This is reflected by **Arrow 11**. High inequality often emerged as a result of slavery in regions where crops could be "efficiently" produced on slave plantations. It also emerged where a large, settled indigenous population could be coerced into labour. Such histories had long-term consequences, particularly in Latin America. As Engerman and Sokoloff argued, the degree of inequality itself can shape the evolution of institutions as well as specific policies. Where inequality was extreme, there was less investment in human capital (**Arrow 13**) and other public goods (**Arrow 16**) and, as reflected by the bidirectional **Arrow 12**, a tendency of less movement toward democratic institutions (which could also have facilitated movement to other constructive institutions).[65]

Thus, extreme inequality is likely to be a long-term factor in explaining comparative development. This is raised in the striking historical contrast between the states of North America and the states of Central and South America. There was greater egalitarianism in North America, though the inhuman treatment of Native Americans and of slaves in the southern colonies (later part of the United States) reflects the fact that this is not because the English settlers were inherently "nicer masters" than the Spanish. Still, much of the North American experience contrasts strongly with the extreme inequality of Central and South America and the Caribbean. Engerman and Sokoloff argued that high inequality in Latin America led to low human capital investments, again in contrast to North America.[66] This mechanism is reflected by **Arrow 13**. Elites in Latin America then loosened their control only when their returns to increased immigration, and thus to creating more attractive conditions for immigrants, were high. Besides creating specific institutions, then, European colonisation created or reinforced different degrees of inequality, often correlated with ethnicity. This history had long-term consequences, particularly in Latin America. In the direction from inequality to postcolonial institutional quality, **Arrow 12** reflects what has been termed the social conflict theory of institutions. Box 2.3 reports findings that inequality does negatively affect per capita income much in the way predicted by Engerman and Sokoloff.

Cultural factors may also matter in influencing the degree of emphasis on education, postcolonial institutional quality, and the effectiveness of civil society,

### BOX 2.3 Findings: Instruments to Test Theories of Comparative Development: Inequality

William Easterly used cross-country data to test the Engerman and Sokoloff hypothesis. His research confirmed that "agricultural endowments predict inequality and inequality predicts development." Specifically, Easterly found that inequality negatively affects per capita income; it also negatively affects institutional quality and schooling, which are "mechanisms by which higher inequality lowers per capita income." That the negative relationship between income and inequality is present in the data is clear—but how do development economists take the step to prediction and assignment of causality when measurement error and many confounding factors are present, such as the possible link that underdevelopment itself is a cause of inequality?

Sometimes development economists run field experiments, of the type reported on in other findings boxes (including in Chapters 4, 8, and 9). But, obviously, we cannot randomly assign countries various levels of inequality to see what happens! In the many cases when field experiments are impossible, development economists frequently try to understand causality by searching for an instrumental variable (or "instrument"); in fact, many researchers in development economics invest a lot of their time in this search. This is a topic covered in classes in econometrics. But the basic idea is that to identify the effect of a potential causal variable *c* (such as inequality) on a development outcome variable *d* (such as income or educational attainment), the hunt is on for an instrumental variable *e* that affects *d* only through *e*'s effect on *c*. So, an instrument has no independent effect on the outcome variable of interest. You saw earlier that Acemoglu, Johnson, and Robinson used settler mortality as an instrument for early institutions. Easterly uses "the abundance of land suitable for growing wheat relative to that suitable for growing sugarcane" as an instrument for inequality. Using this strategy, Easterly concludes that high inequality of the Engerman and Sokoloff variety is independently "a large and statistically significant barrier to prosperity, good quality institutions, and high schooling." Schooling and institutional quality are precisely the mechanisms proposed by Engerman and Sokoloff by which higher inequality leads to lower incomes. Like a leprechaun, a good instrumental variable is hard to get hold of, but when caught can give the researcher's equivalent of a pot of gold. Though active debate on inequality and development continues, the interplay between the careful institutional analysis and economic history scholarship of Engerman and Sokoloff and the study of causality with larger data sets as used by Easterly gives a window into how the field of development economics continues to make progress.

*Sources:* Easterly, William (2007), 'Inequality does cause underdevelopment,' *Journal of Development Economics* 84: 755–76; Angrist, J.D. and Pischke, J-S. (2008), *Mostly Harmless Econometrics: An Empiricist's Companion*, Princeton, N.J.: Princeton University Press. For an important critique of the use and interpretation of instrumental variables (and also of randomisation) in development economics research see Deaton, Angus (2010), 'Instruments, randomization, and learning about developments,' *Journal of Economic Literature*, 48(2): 424–55.

though the precise roles of culture are not clearly established in relation to the economic factors surveyed in this section and so are not included in the diagram in Figure 2.9. In addition, institutional quality affects the amount and quality of investments in education and health, via the mediating impact of inequality. In countries with higher levels of education, institutions tend to be more democratic, with more constraints on elites. The causality between education and institutions could run in either direction, or both could be caused jointly by still other factors. Some scholars argue that some countries with bad institutions run by dictators have implemented good policies, including educational investments, and subsequently, after reaping the benefits in terms of growth, those

countries have changed their institutions. They argue that human capital is at least as fundamental a source of long-run development as institutions. In the diagram, this would suggest adding an arrow from human capital back to post-colonial institutional quality; this is intuitively plausible, although additional evidence for this link will be needed for it to become more fully established.[67] Clearly, however, in some cases extractive colonial institutions left a legacy that resulted in poor health and education decades after independence; an example from India is presented in Box 2.4.

For the relatively small number of developing countries never colonised, such as Thailand, type of colonial regime can be reinterpreted in the diagram as institutional quality at an early stage of development (or as cultural influences not shown)—but the evidence for causality patterns is not clear-cut in these cases. However, the diversity of development experiences of never-colonised countries cautions us not to place complete emphasis on the choices of colonisers of institutions; in particular, pre-existing social capital or surviving (informal) institutions may also play an important role.[68]

Never-colonised countries also show a dramatic range in performance: Ethiopia and Afghanistan remain very poor; Thailand and Turkey are in the upper-middle range; Japan (which became a coloniser itself) is among the very

### BOX 2.4 Findings: Legacy of Colonial Land Tenure and Governance Systems

Substantial evidence on the importance of institutions is provided in a study of the impact of land revenue institutions established by the British Raj in India, conducted by 2019 Nobel Laureate Abhijit Banerjee and Lakshmi Iyer. Because areas where land revenue collection was taken over by the British between 1820 and 1856 (but not before or after) were much more likely to have a non-landlord system, the authors used being conquered in this period as an instrumental variable for having a non-landlord system. (Instrumental variables are introduced in Box 2.3, on "Instruments to Test Theories of Comparative Development: Inequality.") They also used other statistical tests that showed their results to be robust.

The authors found that historical differences in property rights institutions led to sustained differences in economic outcomes, in that the regions in which property rights to land were given to landlords have had significantly lower agricultural investments and productivity in the post-independence period than regions in which property rights were given to cultivators. The authors concluded that the divergence occurred because historical differences in institutions led to different policy choices. Tellingly, the regions in which landlords received the proprietary rights also had significantly lower investments in health and education in the postcolonial period.

In subsequent research, Lakshmi Iyer compared economic outcomes across areas in India that experienced direct versus indirect British colonial rule, controlling for the apparent colonial preference to annex higher-quality lands, using another instrumental variable strategy. She found evidence that colonial governance quality had persistent effects on postcolonial outcomes: areas under direct rule received significantly less access to schools, health centres, and roads in the postcolonial period, with higher levels of poverty and infant mortality.

*Sources:* Banerjee, Abhijit and Iyer, Lakshmi (2005), 'History, institutions, and economic performance: The legacy of colonial land tenure systems in India,' *American Economic Review*, 95: 1,190–213; Iyer, Lakshmi (2010), 'Direct versus indirect colonial rule in India: Long-term consequences,' *Review of Economics and Statistics*, 92: 693–713; and Iyer, Lakshmi (2015), 'The long-run consequences of colonial institutions' in Latika Chaudhary, Bishnupriya Gupta, Tirthankar Roy, and Anand Swamy (eds), *A New Economic History of Colonial India*, Abingdon, UK: Routledge.

wealthiest countries; and China, starting among the poorest countries of the world in 1980, is rapidly ascending the income tables (see the case study at the end of Chapter 4). The quality of institutions (and inequality) undoubtedly mattered in noncolonised societies; it is just harder to conclude that institutions led to income for those countries.[69] (The general point, that institutions cause development performance, is unaffected.)

Clearly, human capital has a direct impact on income and on human development more broadly, as reflected by **Arrow 14**. The depth and breadth of education in the population will help determine the effectiveness of government as a force for development, reflected by **Arrow 15**. This is due not only to a better-qualified civil service but likely also to the understanding of citizens of poor government performance, and perhaps knowledge of how to work for a better outcome and capacity to organise.[70] Of course, education could also independently affect the organisation and functioning of markets *per se* (arrow omitted), but the literature to date has primarily viewed the productive impact of human capital on market outcomes as a direct one, reflected by **Arrow 14**. These types of impacts are explored further in Chapter 8.

The type and quality of global integration (particularly trade) have been stressed as a boon to long-run growth and development in many World Bank reports. Trade may be beneficial in that it provides various kinds of access to technology. And some economists argue that greater openness to trade beneficially affects the subsequent evolution of institutions. On the other hand, critics argue that the wrong kind of integration or the failure to complement integration with appropriate policies could be harmful to development. In fact, evidence suggests that once institutions are accounted for, trade itself explains very little, so for simplicity, integration is left out of the diagram in Figure 2.9.[71]

Postcolonial institutional quality has a strong impact on the effectiveness of the private, public, and civil society sectors. Democratic governance, rule of law, and constraints on elites will encourage more and better-quality public goods, reflected by **Arrow 17**. Better property rights protections and contract enforcement for ordinary citizens and broad access to economic opportunities will spur private investments, reflected by **Arrow 18**. And institutions will affect the ability of civil society to organise and act effectively as a force independent of state and market, reflected by **Arrow 19**. Clearly, the type and quality of activities of the three sectors will each have an influence on productivity and incomes, and on human development more generally, as reflected by **Arrows 20, 21, and 22**, respectively.[72] The roles of these three sectors in economic development are examined in Chapter 11.

It is not entirely clear which economic institutions are most important in facilitating development, or the degree to which strength in one institution can compensate for weakness in another.[73] Within broad limits, there are multiple paths to economic development. But a key finding of recent research is that forces that protect narrow elites in ways that limit access of the broader population to opportunities for advancement are major obstacles to successful economic development.

A fundamental implication of the research may be summarised: *institutions are highly resistant to attempts at reform; and this helps clarify why economic development is so challenging*. Nevertheless, in most countries with poor institutions, there is still much that can be done to improve human welfare and to encourage the development of better institutions. Indeed, economic institutions do change over time, even though political institutions such as voting rules sometimes change without altering the real distribution of power or without leading to

genuine reform of economic institutions. Although the evidence of the impact of democracy on growth in the short to medium term is not strong (see Chapter 11), in the long run democratic governance and genuine development do go hand in hand. To the extent that more genuinely democratic institutions spread sustainably in the developing world, this may be taken as a very encouraging sign for future inclusive economic development. However, history shows that national trends toward democratisation are not irreversible (governance trends are considered in Chapters 12 and 15).

As Dani Rodrik has expressed it, "Participatory and decentralised political systems are the most effective ones we have for processing and aggregating local knowledge. We can think of democracy as a meta-institution for building other good institutions."[74] In addition, development strategies that lead to greater human capital, improve access to new technologies, produce better-quality public goods, improve market functioning, address deep-rooted problems of poverty, improve access to finance, prevent environmental degradation, and foster a vibrant civil society all promote development.

## 2.7 Concluding Observations

History matters. We have learned that conditions prevailing in a society when European colonialism began had a large impact on the subsequent history of inequality and institutional development in the nation in ways that either facilitated or thwarted participation in modern economic growth after the Industrial Revolution arrived in the late eighteenth century. And poor institutions have generally proved very resistant to efforts at reform. But the new perspectives do not show that successful development is impossible for countries with poor institutions! Great progress in human development has been made in most countries. Instead, they serve to clarify the nature of the great challenges facing many developing nations. The phenomenon of underdevelopment is best viewed in both a national and an international context. Problems of poverty, inequality, low productivity, population growth, unemployment, primary-product export dependence, and international vulnerability have both domestic and global origins and potential solutions.

It should be remembered that most developing nations, including the least-developed countries, have succeeded in raising incomes significantly. And virtually all developing countries have had notable successes in lowering infant mortality, improving educational access, and narrowing gender disparities (see Chapter 8). By pursuing appropriate economic and social policies both at home and abroad, and with effective assistance from developed nations, even the least-developed countries do indeed have the means to realise their development aspirations, as you will see in detail throughout the text. But concomitant and complementary human capital, technological, social, and institutional changes must take place if long-term economic growth is to be realised. Such transformations must occur not only within individual developing countries but also in the international economy.[75]

There may be some "advantages of backwardness" in development, such as the ability to use existing, proven technologies rather than having to reinvent the wheel, and even leapfrogging over older technology standards that developed countries have become locked into. One can also learn valuable lessons from

economic policies that have been tried in various countries around the world. These advantages are especially helpful if an economy can successfully manage to get sustained modern economic growth under way, as described, for example, in the end-of-chapter case studies of Taiwan and South Korea (Chapter 12), and China (Chapter 4). However, for most poor countries, backwardness comes with severe disadvantages, many of which have been compounded by legacies of colonialism, slavery, and Cold War dictatorships. In general, countries will have to do more than simply emulate policies followed by today's developed countries while they were in the early stages of their own development.

Economic and social development will often be impossible without corresponding changes in the social, political, legal, and economic institutions of a nation, such as land tenure systems, forms of governance, educational structures, labour-market relationships, property rights, contract law, civic freedoms, the distribution and control of physical and financial assets, laws of taxation and inheritance, and provision of credit. Fundamentally, every developing country confronts its own constraints on feasible policy options and other special circumstances, and each will have to find its own path to effective economic and social institutions. Examples offered by developed countries' earlier experiences and current institutions, as well as those of other countries in the developing world, provide important insights for policy formulation. Specific policies will depend upon correctly identifying the constraints to inclusive growth that are binding for a country at that stage (see Chapter 4, Section 4.7).

Although economic institutions of Europe and North America are in most cases closer to efficient than those of many developing countries, all countries have room for further efficiency-enhancing institutional innovations. And developing countries cannot assume without additional investigation that patterning their policies and institutions on those of developed countries will always provide the fastest route to successful economic development; transitional institutions are likely to be the most effective route to rapid economic growth for an initial period, for at least some developing countries (see the case study of China at the end of Chapter 4).

This chapter has pointed out some important similarities across many if not most developing countries; it has also shown that developing nations are very heterogeneous, differing in many critical respects including their extent of economic development progress. Looming large in explaining the root causes in the levels of income and human development are the higher inequality, weaker institutions, and lower levels of education and health. But even starting with these weaknesses, there is much that even low-income developing countries have achieved, and can undertake further, through appropriate policy strategies and at least incremental but steady improvements in institutions to speed economic and social progress.

Indeed, the experience of the past half century shows that while development is not inevitable and poverty traps are quite real, it is possible to escape from poverty and initiate sustainable development. Before exploring specific policies for doing so, in the next chapters we will set the context further by presenting important theories and models of development and underdevelopment.

In Chapter 3, we examine classic theories that remain influential and useful in many respects, and in Chapter 4, we consider models of coordination failures and other constraints, and conceptual strategies for escaping from them; and conclude with a *growth diagnostics* framework for policy analysis that puts into practice some of the major theories presented in Chapters 2–4.

Case Study 2

# Institutions, Colonial Legacies, and Economic Development: Ghana and Côte d'Ivoire

Ghana's development has exceeded expectations—at least after many disappointments. Côte d'Ivoire (CIV) started with many apparent advantages, but on many economic measures, Ghana has closed the large development gaps that existed between itself and CIV at independence.

## A Natural Comparative Case Study

Ghana and CIV border each other in West Africa. Their land area is similar in size at 239,450 $km^2$ (92,456 square miles) and 322,458 $km^2$ (124,502 $mi^2$), respectively. Their populations are also similar, with 28.8 million people in Ghana and 24.3 million in CIV in 2017. Becoming independent within three years of each other and also sharing similar geographies, these adjoining countries make for a natural comparison.

One of the differences is that Ghana was part of the British Empire from 1821 to 1957, and CIV was a French colony from 1842 until 1960. (Note, however, that full colonial rule took a long time to become established throughout the territories of these countries; the French were still fighting to extend their presence into the early years of the twentieth century.)

Did these colonial histories matter, and if so, in what ways? Did their influences extend after independence, affecting later development policies for good or ill? Or have other, internal factors been more decisive? Can this help us to better understand why it is so challenging to sustain high growth, to eliminate poverty and hunger, and to achieve other Sustainable Development Goals? The experiences of six decades following independence illustrate some of the opportunities for and threats to development.

**Poverty and Human Development** In recent years both CIV and Ghana crossed the threshold to become classified as lower-middle income countries. This reflects significant growth in both countries since independence, notable achievements for these once desperately poor countries. Ghana has had faster income growth, though average incomes remain somewhat higher in CIV. Ghana has lower inequality than CIV.

Going beyond income, as reported in the UNDP's 2018 Human Development Report, Ghana is classified as a medium human development country, and CIV a low human development country, according to the (New) Human Development Index (HDI), introduced in Chapter 2. Ghana's HDI value, at 0.592, is three positions higher than predicted by income, whereas CIV's HDI, at 0.492, is 22 positions lower. In the 1990 Human Development Report, when the original HDI was introduced, the numbers were 0.393 for CIV and 0.360 for Ghana. Both have made substantial progress, but Ghana much more so.

The HDI measures a country's overall average performance; what has happened to extreme (absolute) poverty? Highly precise and credible information on the extent of extreme poverty in these countries is difficult to find, but it is not doubted that at the time of independence, poverty was far higher in Ghana. Using some of the earliest available data from 1987, the World Bank put extreme poverty (equivalent to the international $1.90 per day poverty line) at just 3.28% in CIV that year but 46.51% in Ghana; a comparable figure for Ghana (from a 1998 study) was 36% and for CIV (2002) was 16%. The most recent available estimates are 12.0% below $1.90 per day in Ghana (2012 data); and 28.2% (2015 data) in CIV (2018 World Development Indicators). It appears clear that, over time, poverty has fallen significantly in Ghana and risen significantly in CIV. (A percentage below the poverty line is a relatively uninformative poverty measure; but more incisive

income poverty indicators such as $P_2$—which is explained in detail in Chapter 5—reveal a similar pattern.)

Going beyond income poverty measures, the UN Development Programme's Multidimensional Poverty Index (MPI)—also explained in detail in Chapter 5—similarly shows significantly lower poverty for Ghana than CIV. Ghana's MPI as reported in the 2018 Human Development Report is 0.132, with 9.6% of the population in severe multidimensional poverty; CIV's MPI is significantly higher at 0.236, with 24.5% in severe multidimensional poverty.

These outcomes would have surprised many who wrote at the time of independence. In 1960, Ghana had a real GDP per capita of just $594, far behind CIV's $1,675 (Penn World Table). In 2017, Ghana's estimated income per capita PPP of $4,490 surpassed CIV's level of $3,820 (2018 World Development Indicators).

Both Ghana and CIV have seen dramatic increases in life expectancy since independence. But in 2017, Ghana's life expectancy was 63, whereas that of CIV was 55. In 2017, under-5 mortality was 89 in CIV, and 49 in Ghana. Estimates of mortality at the time of independence vary, with some recent estimates showing worse mortality in CIV. Ghana is also performing much better on education. The youth (ages 15–24) literacy rate is 85.7% in Ghana (2010 data), but only 53.0% in CIV (2014 data). Thus, although both countries have made notable progress, the differences between these countries are substantial. How can we begin to understand such differences? Sometimes even recent changes in the patterns of development can have long historical roots, and we consider this first.

## Long-Run Factors in Comparative Development: Colonial Impact

**Extractive Institutions** The Portuguese built a fortress on the coast of Ghana in 1482 and named it Elmina ("The Mine"). Later, the British named this area the Gold Coast, as it was known until independence in 1957. Côte d'Ivoire (Ivory Coast) received its name from the French. These names apparently reflect how the colonial powers viewed the territories: as "coasts" rather than nations; as commodities for trade rather than people, or simply as a mine. The colonialists' priority of resources over people could not have been more obvious. Ghana suffered earlier and more from the impact of the slave trade. But CIV also suffered ill treatment, including a brutal campaign by the French to subdue the "interior" in the late nineteenth and early twentieth centuries and impose forced labour. How do we understand this terrible colonial experience and its possible aftermath? Settler mortality rates, which are correlated with the establishment of extractive institutions by the colonial power with long-term pernicious effects (see Chapter 2, Section 2.6), were stunningly high in CIV and Ghana, each with an estimated 668 deaths per 1,000 per year, among the highest in the study by Acemoglu, Johnson, and Robinson (AJR); for comparison, the rate was just 15.5 in South Africa. This measure predicts poor current institutions as a legacy of colonialism; of course, that is an overall average, and these are only two countries.[a]

**Common Law Versus Civil Law?** As a former British colony, Ghana's legal system is based on common law, whereas the legal system in CIV is based on French civil law. Since the late 1990s, the view that common law legal systems provide a better foundation than civil law systems for the development of the financial system has been very influential, if also controversial. Authors in this literature such as Rafael La Porta and his colleagues argue either that common law better protects property rights, better enforces contracts, offers more predictability, or that it is better able to adapt to changes in economic conditions. Investment is generally necessary for economic growth (see Chapters 3 and 4), and the development of an effective financial system encourages investment (see Chapter 14). Some evidence supports the prediction that civil law countries will experience less financial development and lower rates of investment. But differences between French and British institutions besides the legal system may be important.

**Other Characteristics of British Versus French Rule** The British Empire is commonly considered to have preferred indirect rule, relying on its ability to dominate local traditional political systems rather than to create new ones (possibly related to common law tradition). In contrast, the French are

[a]According to the AJR dataset, which is based on work of historian Philip Curtin, the only colonies with higher mortality were Gambia, Mali, and Nigeria. By contrast, the death rate was just 14.9 in Hong Kong, and 17.7 in Malaysia and Singapore. (We examine two countries with identical settler mortalities, but in this way giving attention to additional elements.)

said to have tended to employ direct rule of their colonies, introducing their own centralised administrative structures, perhaps related to their own legal and historical traditions. Tactics might well have been similar regardless of the coloniser if conditions strongly favoured central rule or indirect rule. But where starting conditions were similar in both colonies and when local advantages of either centralisation or decentralisation were not strong, a centralised French strategy and a decentralised British strategy might plausibly have been expected.

The evidence does reflect a more decentralised rule in British Ghana and more centralised rule in French Côte d'Ivoire. Of course, this is not enough to conclude that French rule was worse in all respects; for example, French city planning apparently led to more compact and efficient cities today, on average. But if centralised rule is then transmitted to the postcolonial regime, the result can be a state with too few checks and balances. Decentralised rule, in contrast, provides better incentives and checks against large-scale government corruption (see Chapter 11 on the role of the state). The postcolonial record is complex but shows continued strong tendencies toward centralisation in CIV, although the aftermath of civil strife increases uncertainty about the future course. (With its two civil wars this century, there was concern that CIV could face a prolonged period as a failed state; but fortunately conditions have been fairly stable since 2012.) As Catherine Boone notes in her richly detailed study of both countries, the case of Ghana is subtle with initial but far from fully successful postcolonial government attempts at more centralisation, probably in part to wrest a larger share of agricultural revenues, but in 1992 there was a reinstatement of at least a ceremonial role—and unofficially a much larger role—for chiefs and other traditional village governance. This built on long traditions that were not systematically undermined under the British the way they were under the French.

Finally, some observers view post-independence CIV as having a more dependent relationship with France. Besides colonial rule having negative effects in general, close CIV dependence on its former co-ruler may have been a hindrance to its economic and political growth and development over the long run. In contrast, Ghana diversified more of its international relations, perhaps giving it somewhat higher bargaining power in pursuing its national development interests.

**Ethnolinguistic Fractionalisation** Another feature associated in the economics literature with low incomes and growth is ethnolinguistic fractionalisation, with some social scientists also pointing out the potential dangers of religious fractionalisation. Colonies were often organised without regard for traditional boundaries. In fact, both countries are fairly highly fractionalised, but CIV more so. Both countries have an Akan majority (45% in Ghana and 42% in CIV) and many smaller groups. In Ghana, the population is 69% Christian and 16% Muslim, but in CIV, adherents are much more evenly divided, with 39% Muslim and 33% Christian. CIV was torn by civil war in 2002–7, which split the country, and then again in 2010–11; and the opportunistic use of fractionalisation by political figures is an important factor.

Although scholars debate the proper way to measure fractionalisation, seven main measures are used, with CIV higher on six, in some cases substantially higher.[b]

## Long-Run Factors in Comparative Development: Postcolonial Development

**Extreme Inequality** As discussed in this chapter (and examined in detail in Chapter 5), extreme inequality can retard the development process. The most recent estimates show CIV has only slightly higher inequality than Ghana (measured by the Gini coefficient, explained in Chapter 5). Arnim Langer points out that the combination of high inequality in CIV, coupled with rising ethnic tensions that political actors had deliberately made worse, led to the conflict that broke out there in the early 2000s. The ability of CIV to prevent inequality from rising sharply again is likely to be important for its future stability. (Inequalities along ethnic lines as a factor in conflict is examined in Chapter 14, Section 14.5. As we have seen, extreme inequality also often has roots in colonial practices.)

[b]For example, according to the 1997 basic Easterly-Levine (ELF) measure, CIV was rated 0.86 and Ghana 0.71, with the range in Africa from 0.04 for Burundi to 0.9 for Congo and Uganda. On the widely cited 2003 Alesina *et al*. alternative measure, CIV is 0.82 and Ghana 0.67 in a range from 0 to 0.93. These are the usual baseline measures, but one measure of the seven points in the other direction: the 1999 measure of Fearon, on which CIV is 0.78 and Ghana 0.85.

**Current Institutional Quality** The expectation is that inherited institutions should be particularly bad in these two countries because colonialists would have had little incentive to protect property rights, encourage investment, or allow broad access to economic opportunities or political participation; instead, in stark terms, the incentive was to steal or have others steal for you. A range of recent country rankings give higher marks for Ghana, but with remarkable gains for CIV. Although all rankings of country institutional quality should be used with caution, as they can contain subjective elements that are subject to bias, when a set of independently produced indicators with different focuses all point in the same direction, they may be considered more informative taken as a group (though still never substituting for careful country-specific appraisal).

Ghana has been a democracy for over a quarter of a century, following the 1993 "return to the barracks" when the military ceased involvement in politics; it has enjoyed regular peaceful transfers of power after competitive elections. As John Mukum Mbaku of the Brookings Institution put it, "since 2000, Ghanaians have three times voted out of office an incumbent government in highly contested, but fair, peaceful, and credible elections." In CIV, governance has apparently improved significantly since the second civil war in 2012.

Regarding corruption perceptions, according to Transparency International, neither performed well, although Ghana ranked higher. For the 2017 data, Ghana tied for 81st place with a score of 40, while CIV tied for 103rd place with a score of 36, out of 179 countries ranked. Regarding "ease of doing business," the World Bank–International Finance Corporation 2017 rankings of 183 countries listed Ghana as 120th and CIV as 139th. Regarding democracy, the Economist 2017 Democracy Index listed Ghana (ranked 52nd of 167) as a "flawed democracy" and CIV (ranked 116th), as authoritarian. Finally, while some numbers for CIV remain low, it should be noted that they have shown significant improvement since about 2012.

**Population** Patterns of population growth are often considered an important aspect of development (discussed in Chapter 6). At independence in 1960, the population of CIV was just 3.6 million, so it grew by close to seven times (675%) by 2017, when it reached 24.3 million. In contrast, Ghana's population was already nearly 7 million in 1960, so it grew by a little less than four times (411%), reaching 28.8 million in 2017. Moreover, in 2016, although the total fertility rate was a high 4.0 in Ghana, it was significantly higher in CIV at 4.9, with nearly one extra lifetime birth per woman. The population of CIV will surpass that of Ghana, challenging opportunities for per capita income growth. And only 14.3% of women of childbearing age use modern contraceptives in CIV; 25.6% do in Ghana—still a small fraction but nearly twice the incidence of CIV (2018 World Development Indicators, Tables WV.1 and 2.14). High birth rates generally hinder economic development. Faster population growth is associated with slower per capita income growth and slower improvement in other development indicators; lower fertility increases family incentives and resources for education. But the geographic distribution of population does not seem to have particularly strong political implications. For example, Jeffrey Herbst classifies both Ghana and CIV as among just 7 of 40 sub-Saharan African countries with a "neutral political geography."

**Education** Some scholars consider education of central importance in explaining economic growth; Edward Glaeser and co-authors even argue that improved education can result in improved institutions. Educational attainment was abysmal in both nations at the time of independence. One of the most striking postcolonial differences between the countries is the higher level of educational attainment in Ghana, where there have been greater investments in education. In the early years after independence, there was strong policy attention to providing basic education in some of the poorer areas in Ghana. In 2017, according to the 2018 Human Development Report data tables, the mean years of schooling was almost two years higher in Ghana (at 7.1) than in CIV (at 5.2). Moreover, expected schooling is now 11.6 years in Ghana, compared with only 9.0 years in CIV. However, these education gaps were significantly wider only a few years ago, as CIV has managed to broaden educational coverage in the last few years—a good sign for the future. Education is intrinsically valuable, as reflected in the HDI; it has apparently been a factor in faster growth and may even figure in later institutional improvements. Ghana has also had recent success scaling-up basic health insurance.

**Development Policies** Development policies are often framed by a country's underlying economic institutions; this can place constraints on the types of beneficial reforms and policies that a country can successfully implement. The failure of a country to implement otherwise obvious policies (such as investing in quality primary education) may not reflect failures of understanding as much as the realities of political constraints. But when achieved, well-designed and implemented policies can have very positive effects on development outcomes; bad policies can have disastrous consequences.

**Policies in Ghana** Both nations started as (and still are) largely agrarian economies, with over half of the labour force working in rural areas. But the two countries have had somewhat different policy trajectories. The general scholarly view is that in the first quarter century after independence, Ghana chose many poorly conceived and often corrupt interventionist policies. Early policies have been described as oriented toward urban industry, with inefficiently implemented import substitution to replace manufactured imports with locally produced ones (see Chapter 12). But one policy associated with the early rule of Kwame Nkrumah through to 1966 was an emphasis on basic education, which may have left an enduring legacy through difficult subsequent swings. After disastrous policies and extreme instability, including coups in the mid-1960s to early 1980s, Ghana underwent a policy transformation to become a favourite country of liberalisation promoters in the World Bank and elsewhere in the 1980s. The development process is complex and rarely proceeds linearly. In Ghana, there was relative deterioration from independence until the early 1980s; much of its economic growth took place from the mid-1980s to the present. For example, cocoa had long been an important part of Ghana's economy, but it went into decline when state marketing boards (described in Chapter 9) limited the price farmers received for cocoa, so as to subsidise industrialisation. After farmers were allowed to receive a much higher price and technical assistance was offered, output greatly increased, particularly in two spurts in the late 1980s and early 2000s. Fertilizer use and improved varieties have diffused among farmers (diffusion in Ghana for the case of pineapples is examined in Findings Box 9.1 in Chapter 9). Cocoa growing now provides a basic livelihood for over 700,000 farmers in Ghana. By the early 1990s, World Bank analysts such as Ishrat Husain were pointing to Ghana as a country that had been doing a better job at following and implementing more of its recommended market-friendly policies than countries such as CIV. A reason given for large-scale reform in Ghana (and in explaining other countries as well) is that things got so bad that there became no choice but to embrace reform. Naturally, when according to local conditions things become so bad something "has to change"—though perhaps not always for the better. Ghana became a classic example for proponents of the controversial view that duress "causes" reform. A criticism, to paraphrase Dani Rodrik, is that it is not clear how much duress is enough to "cause" reform; and as a result, it is not very convincing when analysts simply claim that a reform did not happen because the situation must not have been bad enough.

**Policies in Côte d'Ivoire** In contrast, CIV experienced relatively faster growth in the 1960s and 1970s and then slower growth from 1980 to the present, in part due to civil conflict. Institutions that appear to perform serviceably for two decades can have underlying weaknesses that later emerge—for example, politicians treat weaknesses as a political opportunity or the system proves to have too little flexibility as new challenges emerge.

CIV is widely viewed as having started down a more market-based, export-oriented path in a way that should have helped the rural agricultural sector, where most of the population and most people living in poverty were located. But this did not prevent elites from extracting what they could from the rural areas. In fact, there were a number of policy lurches. An apparently favourable tactic might have been an early policy of effectively trying to keep all the ethnic groups engaged in and benefiting from growth in the national economy. There were large migrations into CIV, for example, including the forced labour brought into CIV from Burkina Faso (known then as Upper Volta) by the French in the early 1940s. A more ethnically based politics in the late 1990s is viewed by specialists in the politics of CIV as a factor precipitating the disaster of regional and ethnic conflict in the 2000s.

**Enduring Questions** By 1990, Ghana was already being deemed a "success story" by the World Bank

and others. Is it because the nation followed the right policies? And if so, what explains why Ghana chose good policies and CIV did not? How much benefit can be attributed to the volume of aid itself?

CIV fell into a period of severe conflict in 2002–2007, and again in 2011; many lives were lost, and resources had to be diverted into managing the problems, with perceptions of prospects still damaged, despite a stretch of stability. French military involvement reflected France's ongoing unique relationship with CIV. In contrast, Ghana remained stable throughout this period. Why? And can it continue to remain stable? It remains to be seen how well Ghana comes through its recent discovery and production of oil, though initial indications were relatively favourable. In principle, new resources can help reduce poverty, directly and indirectly. But for many countries, a "resource curse" has resulted from political conflict over resource revenues and an overspecialised and otherwise even "hollowed out" economy (see Chapter 14).

Have leadership differences mattered for development of these countries? Socialist Kwame Nkrumah constructively supported education but diverted resources from cocoa exports to inefficient local industry, leading to economic disaster; under duress, socialist Jerry Rawlings embraced market-oriented policy reforms that led to short-term pain but long-term gain. Subsequent leaders have been pragmatic and at least have done relatively little harm and perhaps some good. CIV's capitalist President Félix Houphouët-Boigny, backed by France ("Françafrique"), seemed early on to be leading his country to economic success but stole billions from the public purse and led the country to ruin while clinging to power for 33 years until his death in 1993. Of course, extraordinary leadership in government or civil society can play a strongly positive role in the course of development—think of Nelson Mandela in South Africa or Muhammad Yunus in Bangladesh. But in ordinary experience, is leadership the key, or is it underlying institutions? Or popular movements? Education? Imported ideas and technology? These remain enduring questions, and answers may depend on local circumstances.

As an examination of just two countries to illustrate more general evidence in the literature, it cannot be concluded beyond doubt that institutions set up by Great Britain in Ghana and France in CIV had a dominant effect on the successes and failures of these nations in subsequent poverty reduction and economic growth. But there is support for factors identified in the large-sample statistical studies introduced in Chapter 2, notably institutions, inequality, and, at least indirectly, education. Colonial institutions apparently had negative effects, and within colonisation, the degree of decentralisation under colonial rule apparently also mattered. The re-emergence of more decentralised governance in Ghana since 1992 may be related to less damaging British governance practices in this respect. At the same time, history is not destiny; Ghana has made notable progress. Nor are things necessarily bleak for CIV. Institutions and inequality are highly resistant to change. But the global trend is toward continued progress in human development, and other African nations such as Rwanda have made enormous economic strides that were very difficult to imagine just a few years earlier. But in CIV, the standoff following contaminated presidential elections in 2010 led to what is called the Second Ivorian Civil War in 2011. Rather than simply blame CIV, it may be possible to trace the shape of policymaking to underlying institutions—doing so may be a way to help address deeper constraints. Perhaps benefiting from the international community, between 2012 and 2018 CIV has shown signs of significant improvements in underlying institutions by several measures, hopeful signs for peace and development; it has greatly improved in most governance indices. In recent years, economic growth rates have accelerated significantly in both countries, with real per capita growth in 2017 at 5% in Ghana and 4% in CIV.

The good news is that great improvements have taken place in most countries. Comparative institutions research has done much to explain relative performance of economies over long periods of time. But in the modern period, most places in the world have access to many good productive ideas through many channels, including the market and international aid. Even failed states can be revived, and development resume. In most countries the challenge is not to initiate growth and development but to accelerate progress. Development economics research has provided many insights into how to achieve this universal goal. ■

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## Concepts for Review

Absolute poverty
Capital stock
Convergence
Crude birth rate
Dependency burden
Depreciation (of the capital stock)
Diminishing marginal utility
Divergence
Economic institutions
Fractionalisation
Gross domestic product (GDP)
Gross national income (GNI)
Human capital
Human Development Index (HDI)
Imperfect market
Incomplete information
Infrastructure
Least-developed countries
Lower-middle income countries
Low-income countries (LICs)
Multilateral development banks (such as the World Bank)
Property rights
Purchasing Power Parity (PPP)
Resource endowment
Upper-middle income countries
Value added
Very high-income countries

## Questions for Discussion

1. In many cases, the term "developing countries" can be an overgeneralisation. Why?
2. For all of their diversity, many developing countries are still linked by common problems. What are these problems, and how does their extent vary across countries? Which do you think are the most important? Why?
3. Can you think of other relatively common characteristics of developing countries not mentioned in the text? See if you can state and briefly justify one or more candidate.

4. What are some dimensions in which developing countries show notably wide variations? Consider some of the most important ways in which developing countries may differ in their economic, social, and political structures. Discuss the extent of diversity within the developing world on these characteristics, and in relation to the developed world.
5. What are the potential relationships among health, labour productivity, and income levels? Explain your answer.
6. What are some strengths and weaknesses of the Human Development Index as a comparative measure of human welfare? Can you think of one or two not mentioned in the chapter? If you were designing the HDI, what might you do differently, and why?
7. Consider the statement, "Social and institutional innovations are as important for economic growth as technological and scientific inventions and innovations." What do you think is meant by this statement? Explain your answer.
8. Why do many economists expect income convergence between developed and developing countries, and what factors would you look to for an explanation of why this has occurred to such a limited degree thus far?
9. Analyse economic institutions as formal and informal rules; consider their roles and provide examples.
10. What are considered good economic institutions? What are some of the impacts of the lack of good institutions? For what key reasons do many developing countries lack them? What steps do you think countries could potentially take to get them? Justify your answers.
11. Which measure shows more equality among countries around the world—GNI calculated at exchange rates or GNI calculated at Purchasing Power Parity? Explain the main reasons for this difference.
12. "South Asia has a lower income per capita than sub-Saharan Africa." Comment on the validity of this statement.
13. What is the meaning of a "colonial legacy"? Discuss any disadvantages and possible advantages.
14. Evaluate and discuss the evidence on per capita income convergence (or the lack of convergence) across countries.
15. Discuss the roles of institutions, structural inequality, and geography in explaining the historical gaps between developed and developing countries.
16. Explain in general terms how development economists approach problems of identifying causality, key approaches, and examples (such as those found in the main text and findings boxes); and give reasons for why this is important.
17. Consider the differences between the HDI formulation presented in detail in this chapter and the earlier "traditional" HDI formulation (mentioned briefly and examined in detail in Appendix 2.1). Do you think either one is a better measure of human development? If so, why? In your answer, consider the significance of computing with a geometric mean, instead of an arithmetic mean.
18. What were the central findings of Melissa Dell's research on the *mita* system, and what is their significance for the study of economic development?

## Notes

1. Source: WDI. Figures in the text are in unadjusted incomes, Atlas method. Using PPP incomes, as explained later in the chapter, the corresponding values are higher at $60,200, $7,060, and $870, respectively. PPP adjustments make a particularly large difference for India.
2. 2016 life expectancy at birth (years). Prevalence of underweight, weight for age, available data vary by country, at 5% in 2012 in the United States, but 35.7% in India in 2015 and 23.4% in the DRC in 2013. Literacy rate, adult female, 59.3% in 2011 in India, with the estimate raised to 63% in 2012; the Congo figure of 67% is from 2016.
3. See https://blogs.worldbank.org/opendata/new-country-classifications-income-level-2018-2019. Each country's income level classification is presented at: https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-

country-and-lending-groups. Some frequently-referred-to data is summarised in a subset of the WDI, the quick reference Little Data Book: https://databank.worldbank.org/data/views/reports/reportwidget.aspx?Report_Name=CountryProfile&Id=b450fd57&tbar=y&dd=y&inf=n&zm=n.

4. See the Chapter 3 case study, and Chapter 14.
5. More recently, in the aftermath of the Great Recession, in 2013 S&P Dow Jones reclassified Greece from "developed market" to "emerging market," and Greece remains on S&P and some other emerging market lists.
6. Note that unlike the low- and middle-income lines, the "very-high-income" line represents a relative standard that changes over time, which has the advantage of being realistic about improving technology, but a disadvantage in making it more difficult to judge progress over time.
7. The "very high" $40,000 per capita level is meant to be suggestive; there is no universal threshold for these purposes, let alone one that could be fixed for a significant length of time, such as the line between low- and lower-middle-income countries.
8. 2018 World Development Indicators. Calculated in 2011 US dollars using the Atlas method.
9. Adjustments are made because otherwise the resulting PPP measure would essentially assume that the relative prices prevailing in the United States (i.e., the numeraire currency) also prevailed elsewhere (which would mean that the resulting total incomes would not be "base-country invariant"; that is, they would differ if, for example, the conversions were made to the UK pound sterling). Accounting for relative price differences recognises the substitutions people make toward lower-priced goods in their market basket and thus gives a more accurate comparison of living standards. For details on calculations of PPP incomes, see the International Comparison Programme site at http://siteresources.worldbank.org/ICPEXT/Resources/ICP_2011.html; the UN Statistics Division at http://unstats.un.org/unsd/methods/icp/ipc7_htm.htm; and the Penn World Table site at http://pwt.econ.upenn.edu/aboutpwt2.html. Unadjusted figures do provide a useful indicator of the ability of a nation to buy goods and services in dollars abroad, but they are misleading regarding the ability to buy domestically.
10. Source: World Bank World Development Indicators, accessed 4 March 2019. India has a relatively large adjustment factor of almost four times, from a per capita income of 1,820 to a PPP adjusted income of 7,060 in 2017.
11. Briefly at this point, GNI does not take account of the depletion or degradation of natural resources; it assigns positive values to expenditures resulting from repair and cleanup costs following natural disasters (e.g., earthquakes, hurricanes, floods), to polluting activities, and to the costs of environmental cleanups (see Chapter 10). It frequently ignores nonmonetary transactions, household unpaid labour, and subsistence consumption (see Chapter 9). People living in poverty frequently pay higher than the non-poor. GNI figures take no account of income distribution (Chapter 5), or other capabilities to function (Chapter 1).
12. The United States, United Kingdom, Japan, Germany, France, Italy, and Canada formed the original Group of Seven (G7) industrial countries, traditionally considered the world's leading economies, to meet annually to deliberate global economic policy. The G20 includes G7 members plus a broader group of large middle-income countries, that grew in prominence during the 2007–8 global economic crisis (see Chapter 13). The Group of 77—which actually had 134 members as of 2019—is an association of countries and representatives at the UN that seeks to provide "the means for the countries of the South to articulate and promote their collective economic interests and enhance their joint negotiating capacity on all major international economic issues within the United Nations system, and promote South–South cooperation for development" (see http://www.g77.org/doc/).
13. East Timor is included as part of the Asia region, not the Oceana region. For further details, see the UN website at https://www.un.org/development/desa/dpad/least-developed-country-category.html.
14. For information on LLDCs and SIDCs, see the UNCTAD websites at https://unctad.org/en/Pages/ALDC/Landlocked%20Developing%20Countries/UN-recognition-of-the-problems-

of-land-locked-developing-countries.aspx and https://unctad.org/en/Pages/ALDC/Small%20Island%20Developing%20States/UN-recognition-of-the-problems-of-small-island-developing-States.aspx, respectively. For more information on country classification systems and other key comparative data, see the World Bank website at http://www.worldbank.org/data, the OECD website at http://www.oecd.org, and the United Nations Development Programme website at http://www.undp.org. See http://www.unohrlls.org/en/home/; and http://www.unohrlls.org/en/ldc/related/59/.

15. These include Afghanistan, Benin, Bolivia, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Comoros, Congo Rep., Dem. Rep. of Congo, Côte d'Ivoire, Ethiopia, Gambia, Ghana, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Nicaragua, Niger, Rwanda, São Tomé and Principe, Senegal, Sierra Leone, Tanzania, Togo, Uganda, and Zambia; Eretria, Somalia, and Sudan are classified as "pre-decision-point" (not fully admitted) countries.
16. These are similar to those in Table 2.2, but some substitutions were made due to data availability.
17. From 2010 to 2013, the UNDP used an approach in which the equivalent of "a geometric mean of the resulting indexes is created and, finally, Equation 2.1 is reapplied to the geometric mean of the indexes using 0 as the minimum and the highest geometric mean of the resulting indexes for the time period under consideration as the maximum. This is equivalent to applying Equation 2.1 directly to the geometric mean of the two subcomponents." For full details on that approach, and a Ghana illustration, see http://hdr.undp.org/sites/default/files/hdr_2013_en_technotes.pdf.
18. The UNDP authors apparently have in mind something more general than diminishing marginal utility of income—perhaps what could be called diminishing marginal functioning value.
19. There is still substitutability across the three components in the New HDI, but not perfect substitutability as in the earlier, traditional HDI. Regarding the calculation, recall that a geometric mean for the case of three variables is equivalent to the cube root of the product (by the properties of exponents).
20. For an interesting critique of the use of a geometric mean rather than a different functional form that also allows for imperfect substitutability, and specific concerns that the New HDI formulation reduced its weight on life expectancy in LICs, relative to UIC and may have overvalued additional schooling, see Martin Ravallion, "Troubling tradeoffs in the Human Development Index," *Journal of Development Economics*, vol. 99, issue 2 (2012), 201–209.
21. The UNDP measures can be found at http://hdr.undp.org. It is possible that low income is supplemented by tapping into savings (broadly defined), which would reflect the unsustainable nature of such a low income.
22. World Bank World Development Indicators.
23. For a discussion of the relative benefits and costs of country size, see Alberto Alesina and Enrico Spolaore, "On the number and size of nations," *Quarterly Journal of Economics* 112 (1997): 1027–1056.
24. However, São Tomé and Príncipe, which had been the 12th least-populous country before further population growth, has a per capita income of just $1,770 (PPP $3,370), still not far above the LIC group. And the table excludes the European microstates of Andorra, Monaco, Liechtenstein, and San Marino, which are all in the high-income group.
25. Source: PovCalNet.
26. Source: World Development Indicators.
27. See William Easterly and Ross Levine, "Africa's growth tragedy: Policies and ethnic divisions," *Quarterly Journal of Economics* 112 (1997): 1203–1250, and Alberto Alesina et al., "Fractionalization," *Journal of Economic Growth* 8 (2003): 155–194. Note that high inequality may be a significant factor when it is stratified by identity groups (see Chapter 14, Section 14.5).
28. For a discussion of these issues and an attempt to generate the needed data, see Gillette Hall and Harry Anthony Patrinos, eds., I*ndigenous Peoples, Poverty and Human Development in Latin America: 1994–2004* (New York: Palgrave Macmillan, 2006); Haeduck Lee, *The Ethnic Dimension of Poverty and Income Distribution in Latin America* (Washington, D.C.: World Bank, 1993); and Paul Collier, "The political economy of ethnicity," Annual World Bank Conference on Development Economics, 1998 (Washington, D.C.: World Bank, 1999).

29. For a review of the complex statistical issues in sorting out the possible impact of ethnic, religious, and linguistic fractionalisation, see Alesina et al., "Fractionalisation." An earlier paper drawing somewhat different conclusions using less comprehensive measures is Easterly and Levine, "Africa's growth tragedy."
30. See David Landes, *The Wealth and Poverty of Nations: Why Some Are So Rich and Some So Poor* (New York: Norton, 1998); Jared Diamond, *Guns, Germs, and Steel: The Fates of Human Societies* (New York: Norton, 1997); John Luke Gallup, Jeffrey D. Sachs, and Andrew D. Mellinger, "Geography and economic development," Annual World Bank Conference on Development Economics, 1998 (Washington, D.C.: World Bank, 1999), pp. 127–178; and Paul Collier, *The Bottom Billion* (Oxford: Oxford University Press, 2007), who emphasises the combination of being landlocked with "bad neighbours."
31. See the ongoing reports of the Intergovernmental Panel on Climate Change, for example, AR5 Synthesis Report: Climate Change 2014, https://www.ipcc.ch/report/ar5/syr/. For updates see https://www.ipcc.ch/reports/. The IPCC was established by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP) to "assess available scientific, technical, and socioeconomic information relevant for the understanding of climate change, its potential impacts, and options for adaptation and mitigation." The group won the Nobel Peace Prize in 2007. For details, see Chapter 10.
32. Avner Greif offers a somewhat different and more general definition of an institution as "a system of rules, beliefs, norms, and organizations that together generate a regularity of (social) behavior." This provides a helpful perspective, albeit harder to pin down than narrower definitions. See Avner Greif, *Institutions and The Path to The Modern Economy: Lessons from Medieval Trade* (New York: Cambridge University Press, 2006, p. 30).
33. The significance of imperfect markets for economic development is examined in Chapters 4 and 11.
34. These three factors are identified as critically important in the research by Daron Acemoglu and James A. Robinson; see their *Economic Origins of Dictatorship and Democracy* (New York: Cambridge University Press, 2005). As Dani Rodrik noted, a caveat is that the institutions generally viewed as favourable are correlated with each other; it is unclear which of these institutions matter most or how specific in form these institutions have to be to fulfil their main functions. These and related points are examined in detail in Section 2.7 later in this chapter.
35. See Kenneth L. Sokoloff and Stanley L. Engerman, "Factor endowments, institutions, and differential paths of growth among New World economies: A view from economic historians of the United States," in *How Latin America Fell Behind: Essays on the Economic Histories of Brazil and Mexico* ed. Stephen Haber, (Stanford, Calif.: Stanford University Press, 1997); see also additional works by these authors cited below.
36. See Nathan Nunn and Leonard Wantchekon, "The slave trade and the origins of mistrust in Africa," *American Economic Review* 101, No. 7 (December 2011): 3221–3252.
37. Of course having avoided formal colonisation is also no guarantee of development success; Afghanistan and Ethiopia are frequently cited examples. However, it should also be noted that although it was not successfully colonised, Afghanistan was subjected to extensive indirect control with British and Russian invasions from the early nineteenth to the early twentieth century, and Ethiopia was subject to invasions and intrigue by Italy and Britain.
38. Lant Pritchett, "Divergence, big time," *Journal of Economic Perspectives*, 11, No. 3 (1997): 3–17.
39. Clearly, technological catch-up does not always happen, or happens very slowly; many of the least-developed countries have made little progress in using newer technology in industrial production over the last several decades. Progress may be limited if there are strong barriers to flow of ideas across regions; this can include the public goods nature of productive ideas (if one investor pays to import a technology it may be relatively inexpensive for local competitors to copy from that investor); or the efforts by firms to control productive knowledge including but not limited to patents. We consider these problems further in Chapters 4 and 12.

40. In Chapters 3 and 4, we examine economic growth more after including the contending views about whether such diminishing returns apply to aggregate growth experience. The impact of diminishing returns may be limited if i) technological progress "stretches out" the production function relationship between capital per worker and output per worker, so that the relationship resembles constant returns in the long run (viewing data over a long time horizon; and ii) poor institutions limit the appropriability of returns in developing countries, in comparison to developed countries. There may be additional differences across countries. If there is not absolute convergence, there may be conditional convergence (as predicted by the Solow model, for example in the comparison of equilibria in economies with higher and lower savings rates). However, other factors such as institutional quality may be at least as important as capital per worker in explaining income per capita, as you will see later in this chapter and in Chapters 3 and 4.
41. An intuitive discussion of these two effects is found in Eli Berman, "Does factor-biased technological change stifle international convergence? Evidence from manufacturing," NBER Working Paper, rev. September 2000. On the long-term divergence between developed and developing nations, see Pritchett, "Divergence, big time."
42. On the other hand, there was clear evidence that since the 1970s convergence was taking place in health and education: low and middle income countries were starting to catch up with high income developed countries in life expectancy, infant mortality, years of schooling, and other human capital indicators. To the extent investment in education and health raises future incomes, this also predicted future convergence. See e.g. Randa Sab and Stephen C. Smith, "Human Capital Convergence: A Joint Estimation Approach," IMF Economic Review, 49, 2, 200–211, 2002. Moreover, there was evidence of convergence in manufacturing productivity, also suggesting that foundations were being constructed for later income convergence.
43. It is important to look at periods of at least a decade and preferably longer, to avoid the possibility that conclusions will be affected by short and medium run forces including recessions or growth slowdowns, commodity price cycles, and debt booms and crises. The estimated simple OLS equation is included in the diagram only for clarity; the latter period slope coefficient is statistically significant, while that for the first period is not. The sample criteria for the diagrams in Figure 2.6 were as follows. The same countries are included in each diagram. All data are constructed from the Penn World Table using PPP values (which extended through 2017 when the graphs were constructed in 2019). To be included, a country had to have data available in the PWT database for the sample period. There is a tradeoff in determining a starting year (having a longer time span to evaluate versus more countries with reliable data). By starting in 1970, a relatively small number of countries that had not yet gained independence had to be omitted. Three small oil exporting countries were excluded as 1970 base-period outliers that had very high revenues in that year (Brunei, Qatar, and UAE).
44. This has been especially pronounced since the 2007-2009 Great Recession, but apparently began before the turn of the century.
45. More specifically, the Solow neoclassical model predicts that economies will conditionally converge to the same level of income per worker if they have the same rates of savings, depreciation, labour force growth, and productivity growth. More expansively, many researchers have extended the set of variables on which growth rates are conditioned (held constant) to include institutional factors such as rule of law, access to opportunity, and constraints on executive authority as examined later in this chapter.
46. The initial year is 1952, the earliest currently available annual (PWT) data that let us include both China and India. A cost of starting earlier is losing more than half the countries in the sample, with many countries in Africa and elsewhere still colonies, or otherwise lacking reliable data; but the main point of the exercise remains accurate: through the 1980s, there was strong per capita divergence, but since the 1990s there has been per capita (re-)convergence.

47. Similar figures for South Asia, China, and the OECD for the years 1990-2003 is presented in the UNDP Human Development Report, 2005, ch. 1.

48. See Branko Milanovic, "True world income distribution, 1988 and 1993: First calculation based on household surveys alone," Economic Journal 112, (2002) 51–92.

49. We thank Daron Acemoglu, Shahe Emran, Stanley Engerman, and Karla Hoff for their helpful comments on this section. Not all of the causal links described here are supported by the same type of evidence. Some are underpinned by widely (if not universally) accepted statistical (econometric) evidence. Other causal links emerge from historical studies. All links discussed are argued in the development economics literature to be underlying factors leading to divergent development outcomes. The discussion follows the numbering of the arrows in Figure 2.9, which is arranged for concise display.

50. For very readable introductions to this research, see Daron Acemoglu and James A. Robinson, *Why Nations Fail*, 2012. For a more rigorous treatment, see Acemoglu and Robinson, *Economic Origins of Dictatorship and Democracy*. See also Stanley L. Engerman and Kenneth L. Sokoloff, "Colonialism, inequality, and long-run paths of development," in *Understanding Poverty,* pp. 37–62. See also Daron Acemoglu, Simon Johnson, and James A. Robinson, "The colonial origins of comparative development: An empirical investigation," *American Economic Review* 91 (2001): 1369–1401, and Kenneth L. Sokoloff and Stanley L. Engerman, "History lessons: Institutions, factor endowments, and paths of development in the New World," *Journal of Economic Perspectives* 14 (2000): 217–232. For an excellent review of the work of these authors, see Karla Hoff, "Paths of institutional development: A view from economic history," *World Bank Research Observer* 18 (2003): 205–226. See also Dani Rodrik, Arvind Subramanian, and Francesco Trebbi, "Institutions rule: The primacy of institutions over geography and integration in economic development," *Journal of Economic Growth* 9 (2004): 135–165, and Dani Rodrik and Arvind Subramanian, "The primacy of institutions (and what this does and does not mean)," *Finance and Development* (June 2003), http://www.imf.org/external/pubs/ft/fandd/2003/06/pdf/rodrik.pdf. Bear in mind that research on this important subject is still ongoing; scholars have legitimate disagreements about emphasis and substance, and new findings are being reported regularly.

51. On the role of geography, see Diamond, Guns, Germs, and Steel; Gallup, Sachs, and Mellinger, "Geography and economic development"; Jeffrey D. Sachs, "Institutions don't rule: Direct effects of geography on per capita income," NBER Working Paper No. 9490, 2003; and Jeffrey D. Sachs, "Institutions matter, but not for everything," *Finance and Development* (June 2003), http://www.imf.org/external/pubs/ft/fandd/2003/06/pdf/sachs.pdf. On the impact of malaria, see John Luke Gallup and Jeffrey D. Sachs, "The intolerable burden of malaria: A new look at the numbers," supplement to Volume 64 (1) of the *American Journal of Tropical Medicine and Hygiene,* Jan. 2001. For a discussion on landlocked status as it affects poor African economies, see Paul Collier, *The Bottom Billion: Why the Poorest Countries Are Failing and What Can Be Done About It* (Oxford: Oxford University Press, 2007), pp. 53–63, 165–166, and 179–180. Other arguments are found in Douglas A. Hibbs and Ola Olsson, "Geography, biogeography and why some countries are rich and others poor," *Proceedings of the National Academy of Sciences* (2004): 3715–3740. A general critique from the primacy of institutions perspective is found in Daron Acemoglu, Simon Johnson, and James A. Robinson, "Understanding prosperity and poverty: Geography, institutions, and the reversal of fortune," in *Understanding Poverty*, eds. Abhijit Banerjee, Roland Benabou, and Dilip Mookherjee (New York: Oxford University Press, 2006), pp. 19–36. The debate on comparative economic development has been widened further with some evidence that an intermediate degree of genetic diversity (heterozygosity) of human populations is most conducive to long-run economic development. See Quamrul Ashraf and Oded Galor, "The 'Out of Africa' hypothesis, human genetic diversity, and comparative economic development," *American Economic Review* 103 (2013): 1–46; however, it is doubtful whether there could be any practical policy implications.

52. See Douglass North, *Institutions, Institutional Change and Economic Performance*; Justin Lin and Jeffrey Nugent, "Institutions and economic development," *Handbook of Economic Development*, vol. 3A (Amsterdam: North Holland, 1995); Dani Rodrik, "Institutions for high-quality growth: What they are and how to acquire them," *Studies in Comparative International Development* 35, No. 3 (September 2000): 3–31; and Acemoglu, Johnson, and Robinson, "Understanding prosperity and poverty." Note that the quality of many of the institutions described in this paragraph of the text is correlated, and it is disputed which ones matter most and the degree to which they are substitutes or complements for each other in spurring growth.
53. Douglass C. North, *Institutions, Institutional Change and Economic Performance* (New York: Cambridge University Press, 1990). See also North, "Economic performance through time," *American Economic Review* 84 (1994): 359–368. As we will consider later in this chapter, institutions are also difficult to change because they usually benefit entrenched, powerful interest groups.
54. As an instrument for the types of institutions established (scholars have widely debated this instrument). For a discussion, with some important caveats, see Rodrik, Subramanian, and Trebbi, "Institutions rule," and references in the next endnote.
55. This is after the problem of simultaneity between income and institutions is controlled for by taking advantage of the exogeneity of initial settler mortality risk (other approaches using different data still find some role for geography; see the papers by Gallup, Sachs, and Mellinger, and Gallup and Sachs, above). See Acemoglu, Johnson, and Robinson, "Colonial origins of comparative development." The schema on page 1370 in their paper corresponds to links 3-10-18-21 or 3-10-19-22 in Figure 2.9 in this text. See also Daron Acemoglu, Simon Johnson, James A. Robinson, and Yunyong Thaicharoen, "Institutional causes, macroeconomic symptoms: Volatility, crises and growth," *Journal of Monetary Economics* 50 (2003): 49–123. For a summary, see Daron Acemoglu, "Root causes: A historical approach to assessing the role of institutions in economic development," *Finance and Development* (June 2003), http://www.imf.org/external/pubs/ft/fandd/2003/06/pdf/Acemoglu.pdf. It is also worth noting, however, that in the early colonial period, potential settlers who did wish to emigrate to Latin America and the Caribbean (and perhaps to some other colonies in later times) were sometimes restricted by immigration rules. See Stanley L. Engerman and Kenneth L. Sokoloff, "Factor endowments, inequality, and paths of development among New World economies," *Journal of LACEA Economia* 3, No. 1 (Fall) (2002): 41–109. There is also some question about the use of largely eighteenth-century mortality data, which may possibly differ from earlier (but unavailable) mortality rates. These points may suggest some possible limitations to the mortality data-based research, although the results show considerable robustness. For a debate, see David Y. Albouy, "The colonial origins of comparative development: An empirical investigation: Comment." *American Economic Review*, 102, No. 6 (2012): 3059–-3076, and Acemoglu, Johnson, and Robinson, "The colonial origins of comparative development: An empirical investigation: Reply." *American Economic Review*, 102, No. 6 (2012): 3077–3110. See also Rodrik et al., "Institutions rule," and Pranab Bardhan, "Institutions matter, but which ones?" *Economics of Transition* 13 (2005): 499–532.
56. Sokoloff and Engerman, "History lessons"; Engerman and Sokoloff, "Colonialism, inequality, and long-run paths of development."
57. Engerman and Sokoloff, "Colonialism, inequality, and long-run paths of development." On the role of labour scarcity in the development of institutions in North America, see David Galenson, "The settlement and growth of the colonies: Population, labour and economic development," in *The Cambridge Economic History of the United States*, vol. 1, eds. Stanley L. Engerman and Robert Gallman (New York: Cambridge University Press, 1996).
58. See Daron Acemoglu, Simon Johnson, and James A. Robinson, "Reversal of fortune: Geography and institutions in the making of the modern world income distribution," *Quarterly Journal of Economics* 118 (2002): 1231–1294. Although the reversal is now associated with this article,

similar historical observations were a theme of the dependency theory literature, described in Chapter 3.

59. Proxies for income like estimated extent of urbanisation are necessary because no income data is available. Curiously, the Acemoglu-Johnson-Robinson theory could be said to turn dependency theory on its head. The neo-Marxist dependency theory (see Chapter 3) views development constraints as coming from foreign nationals, but in the Acemoglu et al. theory, the underlying development problem is the presence of extractive institutions, whether the extractors are nationals or foreigners, and the corrective is investment-encouraging institutions, whoever implements them. The preferred institutions include some that are clearly non-Marxist, such as broader respect for private property rights. The implication of their argument is that it is at best no more important to get today's rich countries to change their current behaviour toward developing countries than it is to achieve reforms in local institutions, although former colonial powers might reasonably be asked to pay for costs of changing over to better domestic institutions, assuming that such change is possible. Inequality makes reform difficult to achieve.

60. This evidence is presented in Acemoglu, Johnson, and Robinson, "Reversal of fortune." The evidence has been criticised by some economists on the grounds that measures of modern institutions actually show great variability rather than persistence and may follow rather than lead growth; see, for example, Edward L. Glaeser, Rafael La Porta, Florencio Lopez de Silanes, and Andrei Shleifer, "Do institutions cause growth?" *Journal of Economic Growth* 91 (2004): 271–303, who argue that human capital is a more fundamental factor. But for a theoretical analysis of how change in specific political institutions is consistent with stability in economic institutions, see Daron Acemoglu and James A. Robinson, "De facto political power and institutional persistence, *American Economic Review* 96 (2006): 326–330. For an empirical analysis providing evidence that education does not, in fact, lead to democracy within countries over time, see Daron Acemoglu, Simon Johnson, James A. Robinson, and Pierre Yared, "From education to democracy?" *American Economic Review* 95 (2005): 44–49. Other critical commentary is found in Pranab K. Bardhan, "Institutions matter, but which ones?" *Economics of Transition* 13 (2005): 499–532.

61. The primary evidence for this is historical. See Landes, *Wealth and Poverty of Nations*. For example, the fragmentation of a continent divided by mountains, sea lanes, and rivers facilitated political competition that fuelled institutional development. See also Diamond, Guns, Germs, and Steel.

62. See David Fielding and Sebastian Torres, "Cows and conquistadors: A contribution on the colonial origins of comparative development," *Journal of Development Studies* 44 (2008): 1081–1099, and James Feyrer and Bruce Sacerdote, "Colonialism and modern income: Islands as natural experiments," *Review of Economics and Statistics* 91 (2009): 245–262. Both build on the pioneering research of Acemoglu, Johnson, and Robinson.

63. Fielding and Torres, "Cows and conquistadors." The "neo-Europes" are primarily the United States, Canada, Australia, and New Zealand.

64. See Feyrer and Sacerdote, "Colonialism and modern income." The authors use wind direction and wind speed as instruments for length and type of colonial experience of islands. They identify a positive relationship between colonisation length and both income and child survival rates. They also use their evidence to argue that "time spent as a colony after 1700 is more beneficial to modern income than years before 1700, consistent with a change in the nature of colonial relationships over time." However, some islands included in this research are still colonies, such as overseas French departments with large European populations, and in other independent former colonies with high incomes, the original inhabitants were largely wiped out—these facts weaken the case for benefits of longer colonisation from the viewpoint of those who were colonised. But on one positive historical note, Stanley Engerman pointed out that in the later colonial period, Europeans were often responsible for ending slavery in Africa (personal communication with the authors).

65. Engerman and Sokoloff, "Colonialism, inequality, and long-run paths of development." For supporting econometric evidence on the negative effects of inequality using an identification strategy

inspired by the Engerman and Sokoloff hypothesis, see Box 2.3. See also William Easterly and Ross Levine, "Tropics, germs, and crops: The role of endowments in economic development," *Journal of Monetary Economics* 50 (2003): 3–39. For a different argument, see Edward L Glaeser, Giacomo AM Ponzetto, and Andrei Shleifer, 2007, "Why does democracy need education?" *Journal of Economic Growth* 12 (2): 77–99; however, see also Acemoglu et al., "From education to democracy?." For additional alternative perspectives, see Acemoglu and Robinson, *Economic Origins of Dictatorship and Democracy*. It remains unclear whether economic or political inequality is more fundamental, as politicians often amass wealth when their power is secure. For an interesting study suggesting that the latter is important, see Daron Acemoglu, Maria Angelica Bautista, Pablo Querubín, and James A Robinson, "Economic and political inequality in development: The case of Cundinamarca, Colombia." *Institutions and Economic Performance*, 1st ed. (Cambridge: Harvard University Press, 2008), pp. 181–245.

66. Although in this century so far inequality has been rising in North America and falling somewhat in some Latin American countries, the contrast remains extreme. For analyses of trends, see Luis F. López-Calva and Nora Lustig, eds., *Declining Inequality in Latin America: A Decade of Progress?* (Washington, D.C.: Brookings Institution, 2010). See also Engerman and Sokoloff, "Colonialism, inequality, and long-run paths of development," and Edward L. Glaeser, "Inequality," in *The Oxford Handbook of Political Economy,* eds. Barry R. Weingast and Donald Wittman (New York: Oxford University Press, 2006), pp. 624–641.

67. See Glaeser et al., "Do institutions cause growth?." For a critical response see Acemoglu et al., "From education to democracy?" esp. pp. 47–48. Evidence for the intuitive idea that migrants to the "neo-Europes" settled by Britain embodied not just better institutions but also higher human capital levels is not well established; see Acemoglu, Johnson, and Robinson, "Colonial origins of comparative development." The effects of institutions held even when excluding these countries. Another possible channel, argued by Gregory Clark, is that institutions affect preferences, which in turn directly or indirectly affect the quality of the workforce. For his provocative and controversial assessment, see *A Farewell to Alms: A Brief Economic History of the World* (Princeton, N.J.: Princeton University Press, 2007).

68. See, for example, Bardhan, "Institutions matter," which also argues some limitations of the empirical methods of Acemoglu and colleagues. (Recall also that in the statistical analysis, colonisation is a way to indirectly study the causal effect of institutions.)

69. For historical clarity, although not formally colonised, most of these countries including Afghanistan, China and Ethiopia, and others characterised as having not been colonised, notably Liberia, were subject to extensive interference if not intervention by colonial powers.

70. Glaeser et al., "Do institutions cause growth?."

71. On potential trade benefits, see Jeffrey Frankel and David Romer, "Does trade cause growth?" *American Economic Review* 89 (1999): 379–399. Not surprisingly, trade effects are complex. Geography can influence the pattern and amount of trade. And as countries develop and incomes rise, countries trade in greater amounts and in a wider range of goods. See Rodrik, Subramanian, and Trebbi, "Institutions rule." They provide a diagram of the effects outlined in this paragraph in their Figure 1.

72. Note that the effectiveness of each individual sector may also impact the effectiveness of the other sectors. This is not shown in the diagram.

73. Bardhan, "Institutions matter"; Rodrik, "Getting institutions right." For a provocative analysis of the historical links between economic development and political development, including democratisation and the extension of human and legal rights, drawing on economic theory and 500 years of the global historical record, see Daron Acemoglu and James A. Robinson, *Economic Origins of Dictatorship and Democracy*. For an insightful analysis of diverging development paths, see again Kenneth L. Sokoloff and Stanley L. Engerman, "History lessons: Institutions, factor endowments, and paths of development in the New World," *Journal of Economic Perspectives* 14 (2000): 217–232.

74. Dani Rodrik, "Institutions for high-quality growth: What they are and how to acquire them," *Studies in Comparative International Development* 35, No. 3 (2000), 3–31, DOI: 10.1007/BF02699764, p. 5.
75. For a discussion see Irma Adelman and Cynthia Taft Morris, "Development history and its implications for development theory," *World Development* 25 (1997): 831–840. In other words, unless there is some major structural, attitudinal, and institutional reform in the world economy, one that accommodates the rising aspirations and rewards the outstanding performances of individual developing nations, particularly the least-developed countries, internal economic and social transformation within the developing world may be insufficient.

# Appendix 2.1

## The Traditional Human Development Index (HDI)

Like the New HDI, the traditional HDI ranks all countries on a scale of 0 (lowest human development) to 1 (highest human development). The traditional HDI, the UNDP centrepiece until 2010, is still widely referenced, and in this appendix we present it in detail with calculations and comparative examples. The traditional HDI is based on three goals or end products of development, corresponding to health, education, and income: *longevity* as measured by life expectancy at birth, *knowledge* as measured by a weighted average of adult literacy (two-thirds) and gross school enrolment ratio (one-third), and *standard of living* as measured by real per capita gross domestic product adjusted for the differing Purchasing Power Parity of each country's currency to reflect cost of living and for the assumption of diminishing marginal utility of income. Using these three measures of development and applying a formula to data for 177 countries, the HDI ranks countries into four groups: low human development (0.0 to 0.499), medium human development (0.50 to 0.799), high human development (0.80 to 0.90), and very high human development (0.90 to 1.0).

Adjusted income is found by taking the log of current income. Then, to find the income index, one subtracts the log of 100 from the log of current income, on the assumption that real per capita income cannot possibly be less than $100 PPP.[1] The difference gives the amount by which the country has exceeded this "lower goalpost." To put this achievement in perspective, consider it in relation to the maximum that a developing country might reasonably aspire to over the coming generation. The UNDP sets this maximum at $40,000 PPP. So we then divide by the difference between the log of $40,000 and the log of $100 to find the country's relative income achievement. This gives each country an index number that ranges between 0 and 1. For example, for the case of Bangladesh, whose 2007 PPP GDP per capita was estimated by the UNDP to be $1,241, the income index for that year is calculated as follows:

$$\text{Income index} = \frac{[\log(1{,}241) - \log(100)]}{[\log(40{,}000) - \log(100)]} = 0.420 \qquad \text{(A2.1)}$$

The effect of diminishing marginal utility is clear. An income of $1,241, which is just 3% of the maximum goalpost of $40,000, is already enough to reach more than two-fifths of the maximum value that the index can take. Note that a few countries have already exceeded the $40,000 PPP income target; in such cases, the UNDP assigned the maximum value of $40,000 PPP income, and so the country gets the maximum income index of 1.

To find the life expectancy (health proxy) index, the UNDP starts with a country's current life expectancy at birth and subtracts 25 years. The latter is the lower goalpost, the lowest that life expectancy could have been in any country over the previous generation. Then the UNDP divides the result by 85 years minus 25 years, or 60 years, which represents the range of life expectancies expected over the previous and next generations. That is, it is anticipated that 85 years is

a maximum reasonable life expectancy for a country to try to achieve over the coming generation. For example, for the case of Bangladesh, whose population life expectancy in 2007 was 65.7 years, the life expectancy index is calculated as follows:

$$\text{Life expectancy index} = \frac{65.7 - 25}{85 - 25} = 0.678 \tag{A2.2}$$

Notice that no diminishing marginal utility of years of life are assumed; the same holds for the education index. The education index is made up of two parts, with two-thirds weight on literacy and one-third weight on school enrolment. Because gross school enrolments can exceed 100% (because of older students going back to school), this index is also capped at 100%. For the case of Bangladesh, adult literacy is estimated (rather uncertainly) at 53.5%, so

$$\text{Adult literacy index} = \frac{53.5 - 0}{100 - 0} = 0.535 \tag{A2.3}$$

For the gross enrolment index, for Bangladesh it is estimated that 52.1% of its primary, secondary, and tertiary age population are enrolled in school, so the country receives the following value:

$$\text{Gross enrolment index} = \frac{52.1 - 0}{100 - 0} = 0.521 \tag{A2.4}$$

Then, to get the overall education index, the adult literacy index is multiplied by two-thirds and the gross enrolment index is multiplied by one-third. This choice reflects the view that literacy is the fundamental characteristic of an educated person. In the case of Bangladesh, this gives us

$$\text{Education index} = \frac{2}{3}(\text{adult literacy index}) + \frac{1}{3}(\text{gross enrolment index})$$

$$= \frac{2}{3}(0.535) + \frac{1}{3}(0.521) = 0.530 \tag{A2.5}$$

In the final index, each of the three components receives equal, or one-third, weight. Thus,

$$\text{HDI} = \frac{1}{3}(\text{income index}) + \frac{1}{3}(\text{life expectancy index}) + \frac{1}{3}(\text{education index}) \tag{A2.6}$$

For the case of Bangladesh,

$$\text{HDI} = \frac{1}{3}(0.420) + \frac{1}{3}(0.678) + \frac{1}{3}(0.530) = 0.543 \tag{A2.7}$$

One major advantage of the HDI is that it does reveal that a country can do much better than might be expected at a low level of income and that substantial income gains can still accomplish relatively little in human development.

Moreover, the HDI reminds us that by *development*, we clearly mean broad human development, not just higher income. Many countries, such as some of the higher-income oil producers, have been said to have experienced "growth without development." Health and education are inputs into the national production function in their role as components of human capital, meaning productive investments embodied in persons. Improvements in health and education

are also intrinsically important development goals (see Chapter 8). We cannot easily argue that a nation of high-income individuals who are not well educated and suffer from significant health problems that lead to their living much shorter lives than others around the globe has achieved a higher level of development than a low-income country with high life expectancy and widespread literacy. A better indicator of development disparities and rankings might be found by including health and education variables in a weighted welfare measure rather than by simply looking at income levels, and the HDI offers one very useful way to do this.

There are other criticisms and possible drawbacks of the HDI. One is that gross enrolment in many cases overstates the amount of schooling, because in many countries, a student who begins primary school is counted as enrolled without considering whether the student drops out at some stage. Equal (one-third) weight is given to each of the three components, which clearly has some value judgement behind it, but it is difficult to determine what this is. Note that because the variables are measured in very different types of units, it is difficult even to say precisely what equal weights mean. Finally, there is no attention to the role of quality. For example, there is a big difference between an extra year of life as a healthy, well-functioning individual and an extra year with a sharply limited range of capabilities (such as being confined to bed). Moreover, the quality of schooling counts, not just the number of years of enrolment. Finally, it should be noted that while one could imagine better proxies for health and education, measures for these variables were chosen partly on the criterion that sufficient data must be available to include as many countries as possible.

Table A2.1.1 shows the 2009 Traditional Human Development Index (using 2007 data) for a sample of 24 developed and developing nations ranked from low to very high human development (column 3), along with their respective real GDP per capita (column 4) and a measure of the differential between the GDP per capita rank and the HDI rank (column 5). A positive number shows by how much a country's relative ranking rises when HDI is used instead of GDP per capita, and a negative number shows the opposite. We see from Table A2.1.1 that the country with the lowest HDI (0.340) in 2007 was Niger, and the one with the highest (0.971) was Norway.

The HDI has a strong tendency to rise with per capita income, as wealthier countries can invest more in health and education, and this added human capital raises productivity. But what is so striking is that despite this expected pattern, there is still such great variation between income and broader measures of well-being, as seen in Tables A2.1.1 and A2.1.2. For example, Senegal and Rwanda have essentially the same average HDI despite the fact that real income is 92% higher in Senegal. And Costa Rica has a higher HDI than Saudi Arabia, despite the fact that Saudi Arabia has more than double the real per capita income of Costa Rica. Many countries have an HDI significantly different from that predicted by their income. South Africa has an HDI of 0.683, but it ranks just 129th, 51 places lower than to be expected from its middle-income ranking. But similarly ranked São Tomé and Príncipe (number 131) ranks 17 places higher than expected from its income level.

For the countries listed in Table A2.1.2 with GDP per capita near $1,000, the HDI ranges dramatically from 0.371 to 0.543. Correspondingly, literacy rates range from just 26% to 71%. Life expectancy ranges from only 44 to 61. Among countries with GDP per capita near $1,500, literacy ranges from 32% to 74% and enrolment from 37%

**TABLE A2.1.1 2009 Traditional Human Development Index for 24 Selected Countries (2007 Data)**

| Country | HDI Ranking | Human Development Index (HDI) | GDP Per Capita (PPP, US $) | GDP Per Capita Rank Minus HDI Rank |
|---|---|---|---|---|
| **Low Human Development** | | | | |
| Niger | 182 | 0.340 | 627 | −6 |
| Afghanistan | 181 | 0.352 | 1,054 | −17 |
| Dem. Rep. Congo | 176 | 0.389 | 298 | 5 |
| Ethiopia | 171 | 0.414 | 779 | 0 |
| Rwanda | 167 | 0.460 | 866 | 1 |
| Côte d'Ivoire | 163 | 0.484 | 1,690 | −17 |
| Malawi | 160 | 0.493 | 761 | 12 |
| **Medium Human Development** | | | | |
| Bangladesh | 146 | 0.543 | 1,241 | 9 |
| Pakistan | 141 | 0.572 | 2,496 | −9 |
| India | 134 | 0.612 | 2,753 | −6 |
| South Africa | 129 | 0.683 | 9,757 | −51 |
| Nicaragua | 124 | 0.699 | 2,570 | 6 |
| Gabon | 103 | 0.755 | 15,167 | −49 |
| China | 92 | 0.772 | 5,383 | 10 |
| Iran | 88 | 0.782 | 10,955 | −17 |
| Thailand | 87 | 0.783 | 8,135 | −5 |
| **High Human Development** | | | | |
| Saudi Arabia | 59 | 0.843 | 22,935 | −19 |
| Costa Rica | 54 | 0.854 | 10,842 | 19 |
| Cuba | 51 | 0.863 | 6,876 | 44 |
| Chile | 44 | 0.878 | 13,880 | 15 |
| **Very High Human Development** | | | | |
| United Kingdom | 21 | 0.947 | 35,130 | −1 |
| United States | 13 | 0.956 | 45,592 | −4 |
| Canada | 4 | 0.966 | 35,812 | 14 |
| Norway | 1 | 0.971 | 53,433 | 4 |

*Source:* Data from United Nations Development Programme, *Human Development Report, 2009*, tab. 1.

to 60%, with corresponding variations in the HDI. For the countries in Table A2.1.1 with GDP per capita near $2,000, the HDI ranges from 0.511 to 0.710. Life expectancy ranges from 48 to 68. The literacy rate ranges from 56% to 99%. For countries listed in Table A2.1.1 with GDP per capita near $4,000, the HDI index ranges from 0.654 to 0.768. Life expectancy ranges from 65 to 74, and literacy rates range strikingly from 56% in Morocco to essentially universal literacy in Tonga. These dramatic differences show that the Human Development Index project is worthwhile. Ranking countries only by income—or for that matter only by health or education—causes us to miss important differences in countries' development levels.

Average income is one thing, but sometimes even in a middle-income country many people live in poverty. When the aggregate HDI for various countries was adjusted for income distribution, the relative rankings of many developing nations also changed significantly.[2] For example, Brazil had such a highly unequal distribution that its ranking slipped, while Sri Lanka saw its HDI ranking rise due to its more egalitarian distribution.

The HDI also ranges greatly for groups within countries. The impact of social exclusion can be seen vividly in Guatemala, where the Q'eqchi ethnic group had an HDI rank similar to Cameroon, and the Poqomchi ranked below

**TABLE A2.1.2 2009 Human Development Index Variations for Similar Incomes (2007 Data)**

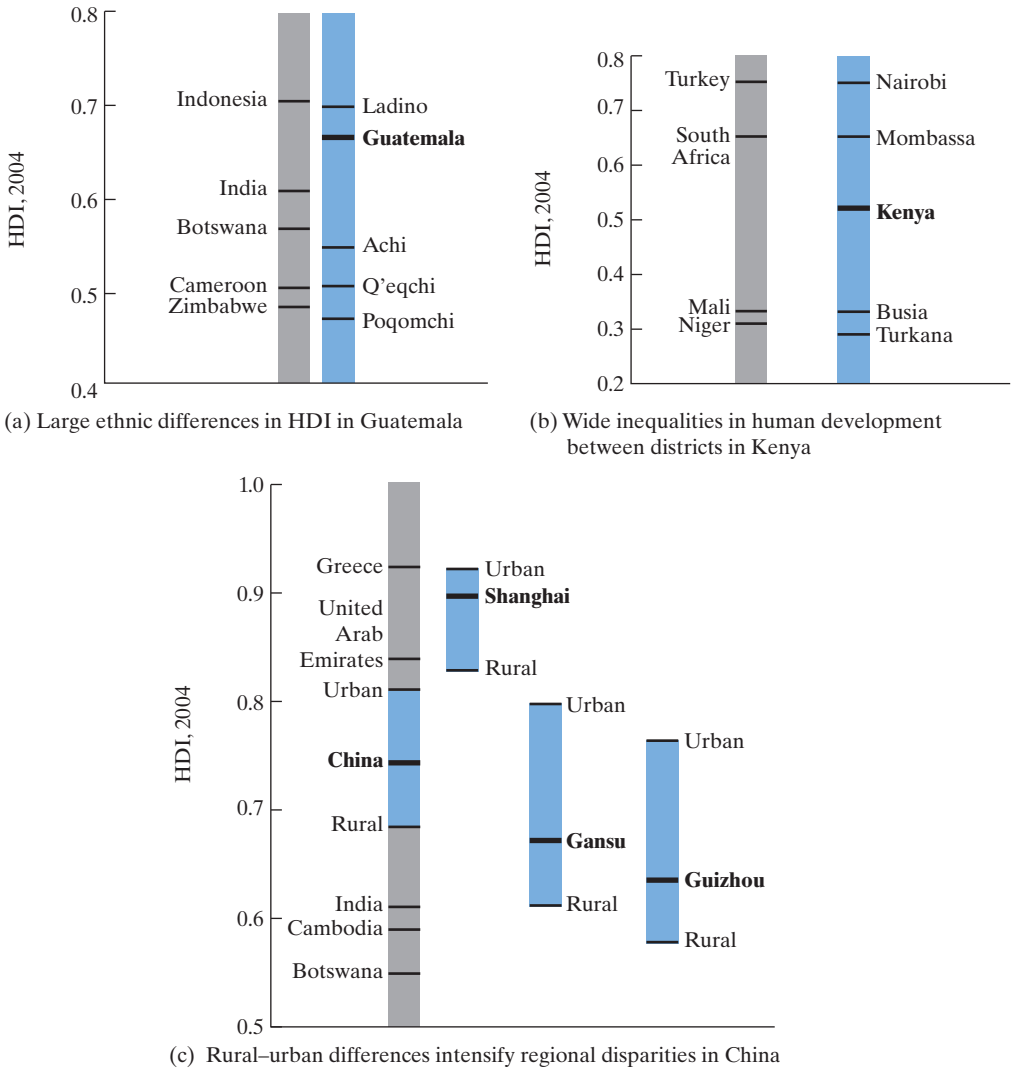
| Country | GDP Per Capita (US $) | HDI | HDI Rank | Life Expectancy (years) | Adult Literacy (%) | Combined Gross Enrolment Ratio |
|---|---|---|---|---|---|---|
| **GDP Per Capita near PPP $1,000** | | | | | | |
| Madagascar | 932 | 0.543 | 145 | 59.9 | 70.7 | 61.3 |
| Haiti | 1,140 | 0.532 | 149 | 61.0 | 62.1 | 52.1 |
| Rwanda | 866 | 0.460 | 167 | 49.7 | 64.9 | 52.2 |
| Mali | 1,083 | 0.371 | 178 | 48.1 | 26.2 | 46.9 |
| Afghanistan | 1,054 | 0.352 | 181 | 43.6 | 28.0 | 50.1 |
| **GDP Per Capita near PPP $1,500** | | | | | | |
| Kenya | 1,542 | 0.541 | 147 | 53.6 | 73.6 | 59.6 |
| Ghana | 1,334 | 0.526 | 152 | 56.5 | 65.0 | 56.5 |
| Côte d'Ivoire | 1,690 | 0.484 | 163 | 56.8 | 48.7 | 37.5 |
| Senegal | 1,666 | 0.464 | 166 | 55.4 | 41.9 | 41.2 |
| Chad | 1,477 | 0.392 | 175 | 48.6 | 31.8 | 36.5 |
| **GDP Per Capita near PPP $2,000** | | | | | | |
| Kyrgyzstan | 2,006 | 0.710 | 120 | 67.6 | 99.3 | 77.3 |
| Laos | 2,165 | 0.619 | 133 | 64.6 | 72.7 | 59.6 |
| Cambodia | 1,802 | 0.593 | 137 | 60.6 | 76.3 | 58.5 |
| Sudan | 2,086 | 0.531 | 150 | 57.9 | 60.9 | 39.9 |
| Cameroon | 2,128 | 0.523 | 153 | 50.9 | 67.9 | 52.3 |
| Mauritania | 1,927 | 0.520 | 154 | 56.6 | 55.8 | 50.6 |
| Nigeria | 1,969 | 0.511 | 158 | 47.7 | 72.0 | 53.0 |
| **GDP Per Capita near PPP $4,000** | | | | | | |
| Tonga | 3,748 | 0.768 | 99 | 71.7 | 99.2 | 78.0 |
| Sri Lanka | 4,243 | 0.759 | 102 | 74.0 | 90.8 | 68.7 |
| Honduras | 3,796 | 0.732 | 112 | 72.0 | 83.6 | 74.8 |
| Bolivia | 4,206 | 0.729 | 113 | 65.4 | 90.7 | 86.0 |
| Guatemala | 4,562 | 0.704 | 122 | 70.1 | 73.2 | 70.5 |
| Morocco | 4,108 | 0.654 | 130 | 71.0 | 55.6 | 61.0 |

*Source:* Data from United Nations Development Programme, *Human Development Report, 2009,* tab. 1.

Zimbabwe, as seen in Figure A2.1.1a. Regional differences across districts can be seen in Kenya, where the HDI of the capital area of Nairobi ranks as high as Turkey, but Kenya's Turkana district's HDI is lower than that of any country average, as shown in Figure A2.1.1b. Rural–urban differences are illustrated in China, where, as Figure A2.1.1c shows, urban Shanghai's HDI is nearly as high as that of Greece, while rural Gansu has an HDI on a par with India, and the HDI of rural Guizhou is below that of Cambodia. An earlier UN study found, similarly, that in South Africa whites enjoy a high HDI level, while that for blacks is much lower.[3]

Among other things, the traditional HDI had a large impact on encouraging conceptualisation of development in a holistic way, elevating health and education to the same rank as income as development indicators, and broadening the types of measures, both individual and composite, that were calculated and reported on a regular basis.

**FIGURE A2.1.1 Human Development Disparities Within Selected Countries**




(a) Large ethnic differences in HDI in Guatemala

(b) Wide inequalities in human development between districts in Kenya

(c) Rural–urban differences intensify regional disparities in China

*Source:* From *Human Development Report, 2005,* figs. 10–12. Reprinted with permission from the United Nations Development Programme.

## Notes for Appendix 2.1

1. In fact, Lant Pritchett argues persuasively, considering available country data and the cost of minimum nutrients, that $250 is a more realistic lower bound for per capita income. See Lant Pritchett, "Divergence, big time," *Journal of Economic Perspectives* 11, No. 3 (1997): 3–17. The logarithms used in the traditional HDI income index formula are common (base 10) logs rather than natural logs.
2. UNDP, *Human Development Report, 1994* (New York: Oxford University Press, 1994).
3. All but the South Africa example are drawn from *Human Development Report, 2006* (New York: Oxford University Press, 2006). An earlier *Human Development Report* gave South Africa an overall ranking of 0.666, with whites at 0.876 and blacks at 0.462.

# Appendix 2.2

## How Low-Income Countries Today Differ from Developed Countries in Their Earlier Stages

The position of developing countries today is in many important ways significantly different from that of the currently developed countries when they embarked on their era of modern economic growth. We can identify eight significant differences in initial conditions that require a special analysis of the growth prospects and requirements of modern economic development:

1. Physical and human resource endowments
2. Per capita incomes and levels of GDP in relation to the rest of the world
3. Climate
4. Population size, distribution, and growth
5. Historical role of international migration
6. International trade benefits
7. Basic scientific and technological research and development capabilities
8. Efficacy of domestic institutions

We will discuss each of these conditions with a view toward formulating requirements and priorities for generating and sustaining economic growth in developing countries.

### Physical and Human Resource Endowments

Contemporary developing countries are often less well endowed with natural resources than the currently developed nations were at the time when the latter nations began their modern growth. Some developing nations are blessed with abundant supplies of petroleum, minerals, and raw materials for which world demand is growing; most less-developed countries, however—especially in Asia, where more than half of the world's population resides—are poorly endowed with natural resources. Moreover, in parts of Africa, where natural resources are more plentiful, and geologists anticipate that there is far more yet to be discovered, heavy investments of capital are needed to exploit them, which until very recently has been strongly inhibited by domestic conflict and perhaps Western attitudes. A new wave of investments from China and other "nontraditional investors" has begun to change the picture, though critics are raising concerns about the process and foreign appropriation of gains.

The difference in skilled human resource endowments is even more pronounced. The ability of a country to exploit its natural resources and to initiate and sustain long-term economic growth is dependent on, among other things, the ingenuity and the managerial and technical skills of its people and its access to critical market and product information at minimal cost.[1] Paul Romer

argues that today's developing nations "are poor because their citizens do not have access to the ideas that are used in industrial nations to generate economic value."[2] For Romer, the technology gap between rich and poor nations can be divided into two components: a physical object gap, involving factories, roads, and modern machinery; and an idea gap, including knowledge about marketing, distribution, inventory control, transactions processing, and worker motivation. This idea gap, and what Thomas Homer-Dixon calls the ingenuity gap (the ability to apply innovative ideas to solve practical social and technical problems) between rich and poor nations lies at the core of the development divide. There were no comparative human resource gaps for the now-developed countries on the eve of their industrialisation.

## Relative Levels of Per Capita Income and GDP

The people living in low-income countries have, on average, a lower level of real per capita income than their developed-country counterparts had in the nineteenth century. First of all, nearly 40% of the population of developing countries is attempting to subsist at bare-minimum levels. Obviously, the average standard of living in, say, early-nineteenth-century England was nothing to envy or boast about, but it was not as economically debilitating or precarious as it is today for a large fraction of people in the 40 or so least-developed countries, the people now often referred to as the "bottom billion."

Second, at the beginning of their modern growth era, today's developed nations were economically in advance of the rest of the world. They could therefore take advantage of their relatively strong financial position to widen the income gaps between themselves and less fortunate countries in a long period of income divergence. By contrast, today's developing countries began their growth process at the low end of the international per capita income scale.

## Climatic Differences

Almost all developing countries are situated in tropical or subtropical climatic zones. It has been observed that the economically most successful countries are located in the temperate zone. Although social inequality and institutional factors are widely believed to be of greater importance, the dichotomy is more than coincidence. Colonialists apparently created unhelpful "extractive" institutions where they found it uncomfortable to settle. But also, the extremes of heat and humidity in most poor countries contribute to deteriorating soil quality and the rapid depreciation of many natural goods. They also contribute to the low productivity of certain crops, the weakened regenerative growth of forests, and the poor health of animals. Extremes of heat and humidity not only cause discomfort to workers but can also weaken their health, reduce their desire to engage in strenuous physical work, and generally lower their levels of productivity and efficiency. As you will see in Chapter 8, malaria and other serious parasitic diseases are often concentrated in tropical areas. There is evidence that tropical geography does pose significant problems for economic development and that special attention in development assistance must be given to these problems, such as a concerted international effort to develop a malaria vaccine.[3]

## Population Size, Distribution, and Growth

In Chapter 6, we will examine in detail some of the development problems and issues associated with rapid population growth. At this point, it is sufficient to note that population size, density, and growth constitute another important difference between less-developed and developed countries. Before and during their early growth years, Western nations experienced a very slow rise in population growth. As industrialisation proceeded, population growth rates increased primarily as a result of falling death rates but also because of slowly rising birth rates. However, at no time did European and North American countries have natural population growth rates in excess of 2% per annum, and they generally averaged much less.

By contrast, the populations of many developing countries have been increasing at annual rates in excess of 2.5% in recent decades, and some are still rising that fast today. Moreover, the concentration of these large and growing populations in a few areas means that many developing countries have considerably higher person-to-land ratios than the European countries did in their early growth years. Finally, in terms of comparative absolute size, no country that embarked on a long-term period of successful economic growth approached the present-day population size of India, Egypt, Pakistan, Indonesia, Nigeria, or Brazil. Nor were their rates of natural increase anything like that of present-day Kenya, the Philippines, Bangladesh, Malawi, or Guatemala. In fact, many observers doubt whether the Industrial Revolution and the high long-term growth rates of contemporary developed countries could have been achieved or proceeded so fast and with so few setbacks and disturbances, especially for the very poor, had their populations been expanding so rapidly.

## The Historical Role of International Migration

In the nineteenth and early twentieth centuries, a major outlet for rural populations was international migration, which was both widespread and large scale. More than 60 million people migrated to the Americas between 1850 and 1914, a time when world population averaged less than a quarter of its current levels. In countries such as Italy, Germany, and Ireland, periods of famine or pressure on the land often combined with limited economic opportunities in urban industry to push unskilled rural workers toward the labour-scarce nations of North America and Australia. In Brinley Thomas's famous description, the "three outstanding contributions of European labour to the American economy—1,187,000 Irish and 919,000 Germans between 1847 and 1855, 418,000 Scandinavians and 1,045,000 Germans between 1880 and 1885, and 1,754,000 Italians between 1898 and 1907—had the character of evacuations."[4]

Whereas the main thrust of international migration up to World War I was both distant and permanent, the period since World War II witnessed a resurgence of international migration within Europe itself, which is essentially over short distances and to a large degree temporary. However, the economic forces giving rise to this migration are basically the same; that is, during the 1960s, surplus rural workers from southern Italy, Greece, and Turkey flocked into areas of labour shortages, most notably western Germany and Switzerland. Similar trends have been observed following the expansion of the European Union. The fact that

this later migration from regions of surplus labour in southern and southeastern Europe was initially of both a permanent and a nonpermanent nature provided a valuable dual benefit to the relatively poor areas from which these unskilled workers migrated. The home governments were relieved of the costs of providing for people who in all probability would remain unemployed, and because a large percentage of the workers' earnings were sent home, these governments received a valuable and not insignificant source of foreign exchange.[5]

Historically, at least in the case of Africa, migrant labour both within and between countries was rather common and did provide some relief for locally depressed areas. Until recently, considerable benefits accrued and numerous potential problems were avoided by the fact that thousands of unskilled labourers in Burkina Faso were able to find temporary work in neighboring Côte d'Ivoire. The same was true for Egyptians, Pakistanis, and Indians in Kuwait and Saudi Arabia; Tunisians, Moroccans, and Algerians in southern Europe; Colombians in Venezuela; and Haitians in the Dominican Republic. However, there is far less scope for reducing the pressures of growing populations in developing countries today through massive international migration, largely due to the very restrictive nature of immigration laws in modern developed countries.

Despite these restrictions, well over 50 million people from the developing world have managed to migrate to the developed world since 1960. The pace of migration from developing to developed countries—particularly to the United States, Canada, and Australia—has picked up since the mid-1980s to between 2 and 3 million people per year. And the numbers of undocumented or illegal migrants have increased dramatically since 1980. Some people in recipient industrialised nations feel that these migrants are taking jobs away from poor, unskilled citizen workers. Moreover, illegal migrants and their families are often believed to be taking unfair advantage of free local health, educational, and social services, causing upward pressure on local taxes to support these services—despite emerging evidence that legalising immigration actually provides a net positive effect on reducing deficits as well as to overall economic activity.[6] As a result, major debates are now under way in both the United States and Europe regarding the treatment of illegal migrants. Many citizens want severe restrictions on the number of immigrants that are permitted to enter or reside in developed countries.[7] The anti-immigration law passed in Arizona in 2010 reinforced the deterrent effect of the Mexico–US border fence and also led many legal immigrants to feel vulnerable; a vociferous political debate surrounded proposed immigration reform legislation in the United States in 2013. In Europe, anti-immigrant parties have scored major gains, as in the Netherlands and Sweden in 2010.

The irony of international migration today, however, is not merely that this traditional outlet for surplus people has effectively been closed off but that many of the people who migrate from poor to richer lands are the very ones that developing countries can least afford to lose: the highly educated and skilled. Since the great majority of these migrants move on a permanent basis, this perverse **brain drain** not only represents a loss of valuable human resources but could also prove to be a serious constraint on the future economic progress of developing nations. For example, between 1960 and 1990, more than a million high-level professional and technical workers from the developing countries migrated to the United States, Canada, and the United Kingdom. By the late 1980s, Africa had lost nearly one-third of its skilled workers, with up to 60,000 middle- and

**Brain drain** The emigration of highly educated and skilled professionals and technicians from the developing countries to the developed world.

high-level managers migrating to Europe and North America between 1985 and 1990. Sudan, for example, lost 17% of its doctors and dentists, 20% of its university teachers, 30% of its engineers, and 45% of its surveyors. The Philippines lost 12% of its professional workers to the United States, and 60% of Ghanaian doctors left to practise abroad.[8] India has been concerned that it may be unable to meet its burgeoning requirements for information technology workers in its growing high-tech enclaves if emigration to the United States, Canada, and the United Kingdom continues at its current pace.[9] Globally, remittances from illegal and legal migrants have been topping $100 million annually in this century and approached $200 billion in 2006.[10] Migration, when it is permitted, reduces poverty for migrants and their families, and most of the poverty-reducing benefits of migration for those remaining in the origin countries come through remittances.[11] This is an extremely important resource (see Chapter 14).

Paradoxically, a *potential* benefit is that the mere possibility of skilled emigration may encourage many more workers to acquire information technology or other skills than are ultimately able to leave, leading to a net *increase* in labour force skills. At least in theory, the result could actually be a "brain gain."[12] The fundamental point remains, however, that the possibility of international migration of unskilled workers on a scale proportional to that of the nineteenth and early twentieth centuries no longer exists to provide an equivalent safety valve for the unskilled contemporary populations of Africa, Asia, and Latin America.

## The Growth Stimulus of International Trade

**Free trade** Trade in which goods can be imported and exported without any barriers in the forms of tariffs, quotas, or other restrictions.

International **free trade** has been called the "engine of growth" that propelled the development of today's economically advanced nations during the nineteenth and early twentieth centuries. Rapidly expanding export markets provided an additional stimulus to growing local demands that led to the establishment of large-scale manufacturing industries. Together with a relatively stable political structure and flexible social institutions, these increased export earnings enabled the developing countries of the nineteenth century to borrow funds in the international capital market at very low interest rates. This capital accumulation in turn stimulated further production, made increased imports possible, and led to a more diversified industrial structure. In the nineteenth century, European and North American countries were able to participate in this dynamic growth of international exchange largely on the basis of relatively free trade, free capital movements, and the unfettered international migration of unskilled surplus labour.

In the twentieth century, the situation for many developing countries was very different. With the exception of a few very successful Asian countries, the non-oil-exporting (and even some oil-exporting) developing countries faced formidable difficulties in trying to generate rapid economic growth on the basis of world trade. For much of the past century, many developing countries experienced a deteriorating trade position. Their exports expanded, but usually not as fast as the exports of developed nations. Their **terms of trade** (the price they receive for their exports relative to the price they have to pay for imports) declined over several decades. Export volume therefore had to grow faster just to earn the same amount of foreign currency as in previous years. Moreover, it is unclear whether the commodity price boom of the early twenty-first century,

**Terms of trade** The ratio of a country's average export price to its average import price.

which reversed only a portion of the long-term price declines, and fuelled by the spectacular growth in China, can be maintained. Commodity prices are also subject to large, potentially destabilising price fluctuations (see Chapter 13).

Where developing countries are successful at becoming lower-cost producers of competitive products with the developed countries (e.g., textiles, clothing, shoes, some light manufactures), the latter have often resorted to various forms of tariff and nontariff barriers to trade, including "voluntary" import quotas, excessive sanitary requirements, intellectual property claims, antidumping "investigations," and special licensing arrangements. But in recent years, an increasing number of developing countries, particularly China and others in East and Southeast Asia, have benefited from expanded manufactures exports to developed countries. We will discuss the economics of international trade and finance in the development context in detail in Part Three.

## Basic Scientific and Technological Research and Development Capabilities

Basic scientific research and technological development have played a crucial role in the modern economic growth experience of contemporary developed countries. Their high rates of growth have been sustained by the interplay between mass applications of many new technological innovations based on a rapid advancement in the stock of scientific knowledge and further additions to that stock of knowledge made possible by growing surplus wealth. And even today, the process of scientific and technological advance in all its stages, from basic research to product development, is heavily concentrated in the rich nations, despite the emergence of China and India as destinations for **research and development (R&D)** activities of multinational corporations. Moreover, research funds are spent on solving the economic and technological problems of concern to rich countries in accordance with their own economic priorities and resource endowments.[13]

**Research and development (R&D)** Scientific investigation with a view toward improving the existing quality of human life, products, profits, factors of production, or knowledge.

In the important area of scientific and technological research, low-income developing nations in particular are in an extremely disadvantageous position *vis-à-vis* the developed nations. In contrast, when the latter countries were embarking on their early growth process, they were scientifically and technologically greatly in advance of the rest of the world. They could consequently focus on staying ahead by designing and developing new technology at a pace dictated by their long-term economic growth requirements.

## Efficacy of Domestic Institutions

Another difference between most developing countries and most developed countries at the time of their early stages of economic development lies in the efficacy of domestic economic, political, and social institutions. By the time of their early industrialisation, many developed countries, notably the United Kingdom, the United States, and Canada, had economic rules in place that provided relatively broad access to opportunity for individuals with entrepreneurial drive. Earlier in the chapter, we noted that high inequality and poor institutions facilitating extraction rather than providing incentives for productivity were often established by colonial powers. Today, such extraction may be carried out by powerful local interests as well as foreign ones. But it is very difficult to change institutions rapidly. As Douglass North stresses, even if the formal rules "may be changed overnight,

the informal rules usually change only ever so gradually."[14] We will return to the question of economic institutions later in the chapter.

The developed countries also typically enjoyed relatively stronger political stability and more flexible social institutions with broader access to mobility. States typically emerged more organically over a longer period of time in the developed regions, and consolidation as nation states generally occurred before the industrial era. In contrast, particularly in Africa, national boundaries were more arbitrarily dictated by colonial powers. The "failed state," and states in danger of becoming so, is a phenomenon of the postcolonial period, with roots in imperial and colonial practices. Although many developing nations have roots in ancient civilisations, a long hiatus often existed between autonomous regimes.

## Concepts for Review for Appendix 2.2

Brain drain
Free trade
Terms of trade
Research and development (R&D)

## Notes for Appendix 2.2

1. For an interesting and provocative analysis of the critical role of "ideas" and "ingenuity" in long-term economic growth, see Paul M. Romer, "Idea gaps and object gaps in economic development," *Journal of Monetary Economics* 32 (1993): 543–573, and Thomas Homer-Dixon, "The ingenuity gap: Can poor countries adapt to resource scarcity?" *Population and Development Review* 21 (1995): 587–612.
2. Romer, "Idea gaps," p. 543.
3. See, for example, Gallup, Sachs, and Mellinger, "Geography and economic development," pp. 127–178; Desmond McCarthy, Holger Wolf, and Yi Wu, "The growth costs of malaria," NBER Working Paper No. W7541, February 2000; and John Luke Gallup and Jeffrey D. Sachs, "The economic burden of malaria," Harvard University CID Working Paper No. 52, July 2000.
4. Brinley Thomas, *Migration and Economic Growth* (London: Cambridge University Press, 1954), p. viii.
5. For an interesting contemporaneous description of the process and implications of international migration from the Mediterranean area to western Europe, see W. R. Böhnung, "Some thoughts on emigration from the Mediterranean basin," *International Labour Review* 14 (1975): 251–277.
6. Congressional Budget Office study, June 18, 2013, http://www.cbo.gov/publication/44225.
7. For an analysis of this issue, see Douglas Massey, "The new immigration and ethnicity in the United States," *Population and Development Review* 21 (1995): 631–652.
8. UNDP, *Human Development Report, 1992* (New York: Oxford University Press, 1992), p. 57.
9. On the emigration of Indian information technology workers, see "India's plan to plug the brain drain," *Financial Times*, April 24, 2000, p.17.
10. World Bank, "Migration and development briefs," http://go.worldbank.org/R88ONI2MQ0.
11. For an excellent overview of these issues, see UNDP, *Human Development Report, 2009*, http://hdr.undp.org/en.
12. For a discussion, see Simon Commander, Mari Kangasniemi, and L. Alan Winters, "The brain drain: Curse or boon? A survey of the literature," in *Challenges to Globalization: Analyzing the Economics* (Chicago: University of Chicago Press, 2004), pp. 235–272. See also C. Simon Fan and Oded Stark, "International migration and 'educated unemployment,'" *Journal of Development Economics* 83 (2007): 76–87.

13. A theoretical contribution to the literature on historical growth and its relevance to contemporary developing countries can be found in Marvin Goodfriend and John McDermott, "Early development," *American Economic Review* 85 (1995): 116–133. Goodfriend and McDermott argue that long-term economic development involves four fundamental processes: the exploitation of increasing returns to specialisation, the transition from household to market production, knowledge and human capital accumulation, and industrialisation. With regard to developing countries, they argue that "the continuing widespread use of primitive production processes alongside relatively modern techniques is the most striking feature of less-developed countries" (p. 129).

14. Douglass C. North, "Economic performance through time," *American Economic Review* 84 (1994): 359–368, and Douglass C. North, *Institutions, Institutional Change and Economic Performance* (New York: Cambridge University Press, 1990). For a provocative analysis of the historical links between economic development and political development, including democratisation and the extension of human and legal rights, drawing on economic theory and 500 years of the global historical record, see Acemoglu and Robinson, *Economic Origins of Dictatorship and Democracy*, and Acemoglu and Robinson, *Why Nations Fail*, 2012.