

stock and bond markets; although financial deepening is important, it is only one aspect of economic development. Second, referring to nations as *markets* may lead to an underemphasis on some non-market priorities in development. Third, usage varies, and there is no established or generally accepted designation of which markets should be labeled as *emerging* and which as yet to emerge (the latter now sometimes dubbed *frontier markets* in the financial press).

The simple division of the world into developed and developing countries is sometimes useful for analytical purposes. Many development models apply across a wide range of developing country income levels. However, the wide income range of the latter serves as an early warning for us not to overgeneralize. 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.

## 2.2 Basic Indicators of Development: Real Income, Health, and Education

In this section, we examine basic indicators of three facets of development: real income per capita adjusted for purchasing power; health as measured by life expectancy, undernourishment, and child mortality; and educational attainments as measured by literacy and schooling.

### Purchasing Power Parity

In accordance with the World Bank's income-based country classification scheme, **gross national income (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 (labor 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 12). In 2011, the total national income of all the nations of the world was valued at more than U.S. \$66 trillion, of which about \$47 trillion originated in the economically developed high-income regions and about \$19 trillion was generated in the less developed nations, despite their representing about five-sixths of the world's population. In 2011, Norway had 240 times the per capita income of Ethiopia and 63 times that of India.

Per capita GNI comparisons between developed and less developed countries like those shown in Figure 2.2 are, however, exaggerated by the use of official foreign-exchange rates to convert national currency figures into U.S. dollars. This conversion does not measure the relative domestic purchasing

#### Gross national income

**(GNI)** The total domestic and foreign output claimed by residents of a country, consisting of gross domestic product (GDP) plus factor incomes earned by foreign residents, minus income earned in the domestic economy by non-residents.

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

**Depreciation (of the capital stock)** 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

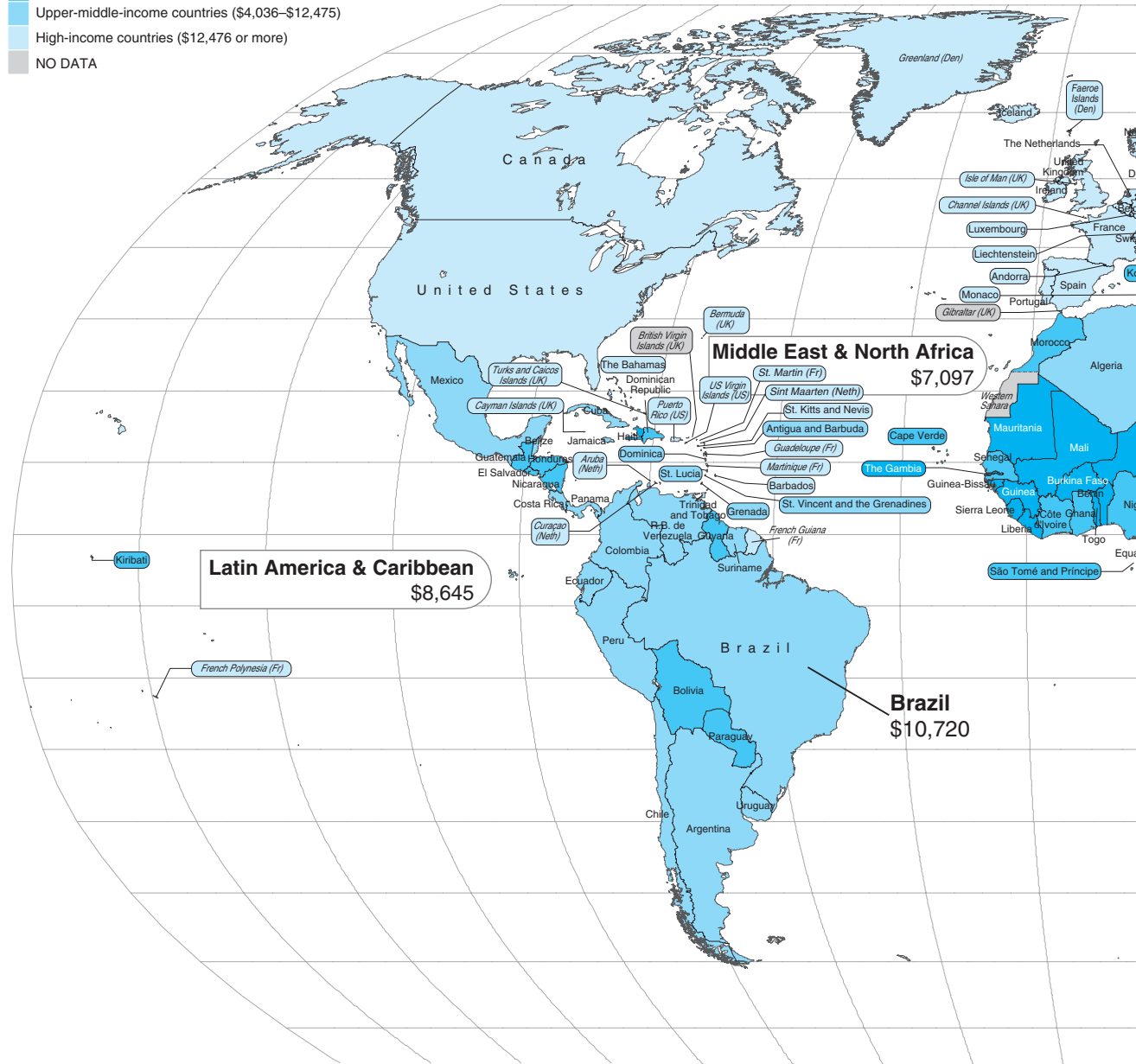
**(GDP)** The total final output of goods and services produced by the country's economy within the country's territory by residents and nonresidents, regardless of its allocation between domestic and foreign claims.

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

## Income

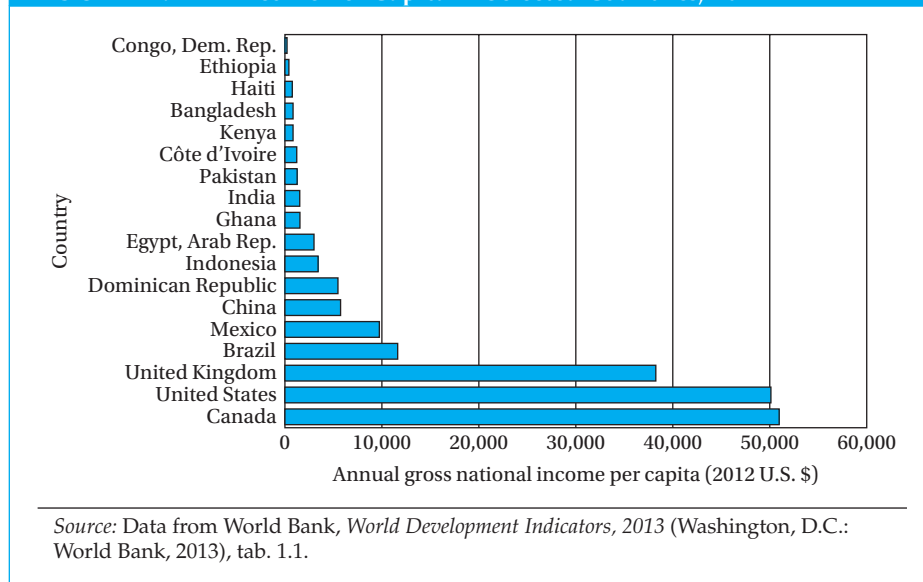
GNI per capita, World Bank Atlas method, 2011

- Lower-income-countries (\$1,025 or less)
- Lower-middle-income countries (\$1,026–\$4,035)
- Upper-middle-income countries (\$4,036–\$12,475)
- High-income countries (\$12,476 or more)
- NO DATA



Source: Data from *Atlas of Global Development*, 4th ed., pp. 16-17: World Bank and Collins. 2013. *ATLAS OF GLOBAL DEVELOPMENT: A VISUAL GUIDE TO THE WORLD'S GREATEST CHALLENGES, FOURTH EDITION*. Washington, DC and Glasgow: World Bank and Collins. doi: 10.1596/978-0-8213-9757-2. License: Creative Commons Attribution CC BY 3.0



**FIGURE 2.2** Income Per Capita in Selected Countries, 2011**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.

power of different currencies. In an attempt to rectify 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. In a simple version, *purchasing power parity* is defined as the number of units of a foreign country's currency required to purchase the identical quantity of goods and services in the local developing country market as \$1 would buy in the United States. In practice, adjustments are made for differing relative prices across countries so that living standards may be measured more accurately.<sup>6</sup> 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, China's 2011 GNI per capita was only 10% of that of the United States using the exchange-rate conversion but rises to 17% when estimated by the PPP method of conversion. Income gaps between developed and developing nations thus tend to be less when PPP is used.

Table 2.2 provides a comparison of exchange rate and PPP GNI per capita for 30 countries, 10 each from Africa, Asia, and Latin America, plus Canada, the United Kingdom and the United States. 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 242 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 U.S. prices and suggest that real U.S. incomes are closer to 135 *times* that of the DRC—still a level of inequality that stretches the imagination. Overall, the average real (PPP) income per capita in

**TABLE 2.2** A Comparison of Per Capita GNI in Selected Developing Countries, the United Kingdom, and the United States, Using Official Exchange-Rate and Purchasing Power Parity Conversions, 2011

Country	GNI Per Capita (U.S. \$)	
	Exchange Rate	Purchasing Power Parity
Bangladesh	770	1,910
Bolivia	2,020	4,890
Botswana	7,070	15,550
Brazil	10,700	11,410
Cambodia	800	2,180
Canada	46,730	41,390
Chile	12,270	19,820
China	4,940	8,390
Colombia	6,090	9,600
Congo, Dem. Rep.	200	360
Costa Rica	7,660	11,910
Côte d'Ivoire	1,140	1,780
Dominican Republic	5,190	9,350
Egypt, Arab Rep.	2,760	6,440
Ghana	1,420	1,830
Guatemala	2,870	4,760
Haiti	700	1,190
India	1,450	3,680
Indonesia	2,930	4,480
Kenya	810	1,690
Korea, Rep.	20,870	29,860
Mexico	8,970	15,930
Niger	330	600
Nigeria	1,260	2,270
Pakistan	1,120	2,880
Peru	5,120	9,390
Philippines	2,200	4,120
Senegal	1,070	1,940
Thailand	4,620	8,710
Uganda	470	1,230
United Kingdom	37,840	35,950
United States	48,550	48,820
Vietnam	1,270	3,250
<b>Low income</b>	554	1,310
<b>Middle income</b>	3,923	6,802
<b>High income</b>	36,390	36,472

Source: Data from World Bank, *World Development Indicators, 2013* (Washington, D.C.: World Bank, 2013), tab. 1.1.

high-income countries is more than 28 times that in low-income countries and more than 5 times higher than in middle-income countries.

### Indicators of Health and Education

Besides average incomes, it is necessary to evaluate a nation's average health and educational attainments, which reflect core capabilities. Table 2.3 shows some basic indicators of income, health (the under-5 mortality rate for 1990 and 2011, plus the rate of malnutrition and life expectancy), and education

TABLE 2.3 Commonality and Diversity: Some Basic Indicators

	Prevalence of Malnutrition Underweight	Primary Completion Rate Total		Under-5 Mortality Rate Total		Life Expectancy
	% of Children Under Age 5	% of Relevant Age Group		per 1,000 Live Births		
	2005-11	1991	2011	1990	2011	
Bangladesh	41.3	46	..	139	46	69
Bolivia	4.5	71	95	120	51	67
Botswana	11.2	89	97	53	26	53
Brazil	2.2	92	..	58	16	73
Cambodia	29	38	90	117	43	63
Central African Republic	28	28	43	169	164	48
Chile	0.5	..	95	19	9	79
China	3.4	109	..	49	15	73
Colombia	3.4	73	112	34	18	74
Congo, Dem. Rep.	28.2	49	61	181	168	48
Costa Rica	1.1	80	99	17	10	79
Côte d'Ivoire	29.4	43	59	151	115	55
Cuba	1.3	94	99	13	6	79
Dominican Republic	3.4	63	92	58	25	73
Egypt, Arab Rep.	6.8	..	98	86	21	73
Ethiopia	29.2	23	58	198	77	59
Ghana	14.3	65	94	121	78	64
Guatemala	13	..	86	78	30	71
India	43.5	63	97	114	61	65
Indonesia	18.6	89	108	82	32	69
Mexico	3.4	88	104	49	16	77
Mozambique	18.3	27	56	226	103	50
Niger	39.9	18	46	314	125	55
Nigeria	26.7	..	74	214	124	52
Pakistan	30.9	..	67	122	72	65
Peru	4.5	..	97	75	18	74
Philippines	20.7	89	92	57	25	69
Senegal	19.2	41	63	136	65	59
Uganda	16.4	..	55	178	90	54
Vietnam	20.2	..	104	50	22	75
<b>Low income</b>	22.6	46	67	164	95	59
<b>Middle income</b>	16	83	94	82	46	69
<b>High income</b>	1.7	97	101	12	6	79
East Asia & Pacific	5.5	84	..	..	21	72
Latin America & Caribbean	3.1	84	102	53	19	74
Middle East & North Africa	6.3	77	91	70	32	72
South Asia	33.2	63	88	119	62	66
Sub-Saharan Africa	21.4	52	69	178	109	55

Note: Some of the specific countries listed in Table 2.3 differ from those listed in Table 2.2 due to differing availability of the most recent comparable data by topic; for example, primary completion rate was not available for Haiti; and income was not available for Cuba.

Source: World Bank, *World Development Indicators 2013*, and World Bank WDI online, accessed 1 August 2013.

(the primary completion rate for 1991 and 2011). (Each country's region and income grouping can be found in Table 2.1). Life expectancy is the average number of years 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. High fertility can be both a cause and a consequence of underdevelopment, so the birth rate is reported as another basic indicator. Literacy is the fraction of adult males and females reported or estimated to have basic abilities to read and write; functional literacy is generally lower than the reported numbers.

Table 2.3 shows these data for the low-, lower-middle-, upper-middle-, and high-income country groups. The table also shows averages from five developing regions (East Asia and the Pacific, Latin America and the Caribbean, the Middle East and North Africa, South Asia, and sub-Saharan Africa) and from 30 illustrative countries balanced across developing regions similar to those in Table 2.2 (with a few substitutions due to data availability).

Note that in addition to big differences across these income groupings, the low-income countries are themselves a very diverse group with greatly differing development challenges.

For example, even Bangladesh has a real income that is now more than five times greater than the DRC; and India's income is more than 10 times greater. Under-5 malnutrition (underweight) is higher in Bangladesh, at 41.3%, than DRC (a still very high 28.2%). The under-5 mortality rate in Bangladesh is 46, while that of the DRC is nearly quadruple that number at 168. Life expectancy in Congo is just 48, compared with 69 in Bangladesh. But while India and Bangladesh clearly do better overall than countries like the DRC, most low- and lower-middle-income countries still face enormous development challenges as seen by comparing these statistics even to Botswana, Peru, or Thailand

## 2.3 Holistic Measures of Living Levels and Capabilities

### The New 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 centerpiece 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 traditional HDI—the UNDP centerpiece from 1990–2009—is examined in detail in Appendix 2.1). Box 2.2 summarizes “What Is New in the New HDI.”

The New HDI, like its predecessor, ranks each country on 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

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

**Diminishing marginal utility**

The concept that the subjective value of additional consumption lessens as total consumption becomes higher.

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.

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).

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 percent of the distance above the minimum to the maximum levels that a country has attained.

$$\text{Dimension index} = \frac{\text{Actual Value} - \text{Minimum Value}}{\text{Maximum Value} - \text{Minimum Value}} \quad (2.1)$$

The health (or "long and healthy life") dimension of the New HDI is calculated with a life expectancy at birth index, which takes a minimum value of 20 years and a maximum value of 83.57 years (the observed maximum value for any country). For example, for the case of Ghana this is:

$$\text{Life expectancy index} = (64.6 - 20) / (83.6 - 20) = 0.701 \quad (2.2)$$

The education ("knowledge") component of the HDI is calculated with a combination of the average years of schooling for adults aged 25 and older and expected years of schooling for a school-age child now entering school. As explained by the UNDP, these indicators are normalized using a minimum value of 0, and maximum values are set to the actual observed maximum value of mean years of schooling from the countries in the time series, 1980–2012, which is 13.3 years estimated for the United States in 2010. For Ghana, the average years of schooling among adults is 7 years, so the mean years of schooling subindex is calculated as:

$$(7.0 - 0) / (13.3 - 0) = 0.527 \quad (2.3)$$

We can think of this as saying that Ghana is about 53% of the way to the global standard of average education.

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

For Ghana, the expected number of years of schooling for a child entering school now is estimated at 11.4 years. The expected years of schooling subindex is then calculated as:

$$(11.4 - 0) / (18.0 - 0) = 0.634 \quad (2.4)$$

The education index is then calculated as a version of the geometric mean of the two subindexes.<sup>7</sup>

The standard of living (income) component is calculated using purchasing-power-adjusted per-capita gross national income (GNI). For Ghana, the income index then is (where ln stands for natural log):

$$\text{Income index} = [\ln(1,684) - \ln(100)] / [\ln(87,478) - \ln(100)] = 0.417 \quad (2.5)$$



Using these three measures of development and applying the formula to data for all 187 countries for which data is available, the HDI currently ranks countries into four groups: low human development (0.0 to 0.535), medium human development (0.536 to 0.711), high human development (0.712 to 0.799), and very high human development (0.80 to 1.0).

The component indexes of the NHDI are computed by taking the difference between the country's actual achievement and the minimum goalpost value, and then dividing the result by the difference between the overall maximum goalpost and minimum goalpost values. But in calculating the overall index, in place of the arithmetic mean, a geometric mean of the three indexes is used (a geometric mean is also used to build up the overall education index from its two components).

Let's look at why this change is important and how the calculations are done.

**Computing the NHDI** 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. Thus, allowing for imperfect substitutability is a beneficial change; but there is active debate about whether using the geometric mean is the most appropriate way to accomplish this.<sup>8</sup>

Thus, as the UNDP notes, 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."

So in the New HDI, instead of adding up the health, education, and income indexes and dividing by 3, the New HDI is calculated with the geometric mean:

$$\text{NHDI} = H^{1/3}E^{1/3}I^{1/3} \quad (2.6)$$

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. The calculations of the NHDI are illustrated for Ghana in Box 2.1.

Table 2.4 shows the 2013 values of the New HDI for a set of 31 countries. South Korea has achieved the status of a fully developed country, ranking below Canada but above the United Kingdom. Countries such as the United Arab Emirates, Turkey, Guatemala, Gabon, Côte d'Ivoire, Pakistan, Papua New Guinea, and South Africa perform more poorly on the New HDI than would be predicted from their income level, while the reverse is true of South Korea, Chile, Bangladesh, Cuba, Madagascar, and Ghana. Countries such as Russia, Mexico, India, and Niger perform on the New HDI just about as predicted by their income levels.

Income predicts rather weakly how countries will perform on education and health, or on the NHDI in particular. For example, Cuba and Egypt have nearly the same real income per person, but Cuba ranks 59th on the New HDI (44 points



### BOX 2.1 Computing the New HDI: Ghana

#### Example: Ghana

Indicator	Value
Life expectancy at birth (years)	64.6
Mean years of schooling	7.0
Expected years of schooling	11.4
GNI per capita (PPP \$)	1,684
Indexes	

Note: Values are rounded.

$$\text{Life expectancy index} = \frac{64.6 - 20}{83.6 - 20} = 0.701$$

$$\text{Mean years of schooling index} = \frac{7.0 - 0}{13.3 - 0} = 0.527$$

$$\text{Expected years of schooling index} = \frac{11.4 - 0}{18.0 - 0} = 0.634$$

$$\text{Education index} = \frac{\sqrt{0.527 \times 0.634} - 0}{0.971 - 0} = 0.596$$

$$\text{Income index} = \frac{\ln(1,684) - \ln(100)}{\ln(87,478) - \ln(100)} = 0.417$$

Human Development Index

$$= \sqrt[3]{0.701 \times 0.558 \times 0.417} = 0.596$$

UN income estimate will differ somewhat from World Bank estimate.

Source: UNDP, *Human Development Report, 2013*, Technical Notes (online); <http://hdr.undp.org/en/media/HDR%202013%20technical%20notes%20EN.pdf>.

above where predicted by its income level) and Egypt ranks 112th (6 below where predicted by income). Mexico and Gabon have a very similar income, but Mexico is 4 places above what would be predicted by its income and Gabon is 40 points below. Bangladesh and Pakistan have an identical New HDI ranking, but Pakistan has a much higher income, and Bangladesh is 9 places higher than expected while Pakistan is 9 places below; see the case study at the end of this chapter for a detailed examination of diverging development in these two countries.

The UNDP now also offers the Inequality-Adjusted Human Development Index (IHDI)—which imposes a penalty on the HDI that increases as inequality across people becomes greater—and the Gender Inequality Index (GII), as well as an important innovation, the Multidimensional Poverty Index (MPI), which is examined in detail in Chapter 5.

Clearly, the Human Development Index, in its Traditional as well as New forms, 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.

Although there are some valid criticisms, the fact remains that the New HDI and its Traditional version considered in Appendix 2.1, when used in

TABLE 2.4 2013 New Human Development Index and its Components for Selected Countries

Country	NHDI Rank	Life Expectancy at Birth	Mean Yrs Schooling (of Adults)	Expected Years Schooling (of children)	GNI Per Capita	New HDI value	GNI Per Capita Rank Minus HDI Rank
United States	3	78.7	13.3	16.8	43,480	0.937	6
Canada	11	81.1	12.3	15.1	35,369	0.911	5
South Korea	12	80.7	11.6	17.2	28,231	0.909	15
United Kingdom	26	80.3	9.4	16.4	32,538	0.875	5
Chile	40	79.3	9.7	14.7	14,987	0.819	13
United Arab Emirates	41	76.7	8.9	12	42,716	0.818	-31
Russian Federation	55	69.1	11.7	14.3	14,461	0.788	0
Cuba	59	79.3	10.2	16.2	5,539	0.78	44
Mexico	61	77.1	8.5	13.7	12,947	0.775	4
Costa Rica	62	79.4	8.4	13.7	10,863	0.773	12
Brazil	85	73.8	7.2	14.2	10,152	0.73	-8
Turkey	90	74.2	6.5	12.9	13,710	0.722	-32
Sri Lanka	92	75.1	9.3	12.7	5,170	0.715	18
China	101	73.7	7.5	11.7	7,945	0.699	-11
Gabon	106	63.1	7.5	13	12,521	0.683	-40
Egypt	112	73.5	6.4	12.1	5,401	0.662	-6
Botswana	119	53	8.9	11.8	13,102	0.634	-55
South Africa	121	53.4	6.7	10.6	9,594	0.629	-42
Guatemala	133	71.4	4.1	10.7	4,235	0.581	-14
Ghana	135	64.6	7	11.4	1,684	0.558	22
Equatorial Guinea	136	51.4	5.4	7.9	21,715	0.554	-97
India	136	65.8	4.4	10.7	3,285	0.554	-3
Kenya	145	57.7	7	11.1	1,541	0.519	15
Bangladesh	146	69.2	4.8	8.1	1,785	0.515	9
Pakistan	146	65.7	4.9	7.3	2,566	0.515	-9
Madagascar	151	66.9	5.2	10.4	828	0.483	28
Papua New Guinea	156	63.1	3.9	5.8	2,386	0.466	-15
Côte d'Ivoire	168	56	4.2	6.5	1,593	0.432	-9
Burkina Faso	183	55.9	1.3	6.9	1,202	0.343	-18
Chad	184	49.9	1.5	7.4	1,258	0.34	-20
Niger	186	55.1	1.4	4.9	701	0.304	-4

Source: 2013 Human Development Report 2013, Table 1, pages 144-147 (New York: United Nations Development Programme, 2013)

conjunction with other economic measures of development, greatly increase our understanding of which countries are experiencing development and which are not. And by modifying a country's overall NHDI 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.<sup>9</sup>

## 2.4 Characteristics of the Developing World: Diversity within Commonality

As noted earlier, there are important historical and economic commonalities among developing countries that have led to their economic development



## BOX 2.2 What Is New in the New Human Development Index

In November 2010, the UNDP introduced its New Human Development Index (NHDI), which has eight notable changes, each with strengths but also a few potential drawbacks.

1. Gross national income (GNI) per capita replaces gross domestic product (GDP) per capita. This should be 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 that go to someone outside it, and income earned abroad still benefits some of the nation's citizens. As trade and remittance flows have been expanding rapidly, and as aid has been better targeted to very low-income countries, this distinction has become increasingly important.
2. The education index has been completely revamped. Two new components have been added: the average actual educational attainment of the whole population and the expected attainment of today's children. Each of these changes to the index has implications. Use of actual attainment—average years of schooling—as an indicator is unambiguously an improvement. Estimates are regularly updated, and the statistic is easily compared quantitatively across countries. And even though it is at best a very 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—this is the best measure we have at present because more detailed data on quality that are credible and comparable are simply not available.
3. Expected educational attainment, the other new component, is somewhat more ambiguous: It is not an achievement but a UN forecast. History shows that much can go wrong to derail development plans. Nevertheless, there have also been many development upside surprises, such as rapid improvements in educational attainment in some countries; there is a risk that low expectations will prove discouraging. Note that life expectancy, which remains the indicator for health, is also a projection based on prevailing conditions.
4. The two previous components of the education index, literacy and enrollment, have been correspondingly dropped. In contrast to expected attainment, literacy is clearly an achievement, and even enrollment 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 enrollment 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 have been increased to the observed maximum rather than given a predefined cutoff. In some ways, this returns the index to its original design, which was criticized for inadequately recognizing small gains by countries starting at very low levels.
6. The lower goalpost for income has been reduced. This is based on updated estimates for the historic low for recorded income for any country.<sup>10</sup>
7. Another 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), as used in the fifth equation in Box 2.1. This reflects a more usual construction of indexes.
8. Possibly the most consequential change is that the NHDI is computed with a geometric mean rather than a simple arithmetic mean, as examined previously.

problems being studied within a common analytical framework in development economics. These widely shared problems are examined here in detail on an issue-by-issue basis. At the same time, however, it is important to bear in mind that there is a great deal of diversity throughout the developing world, even within these areas of broad commonality. The wide range of income, health, education, and HDI indicators already reviewed is sometimes called a “ladder of development.”<sup>11</sup> Different development problems call for different specific policy responses and general development strategies. This section examines the 10 major areas of “diversity within commonality” in the developing world.

### Lower Levels of Living and Productivity

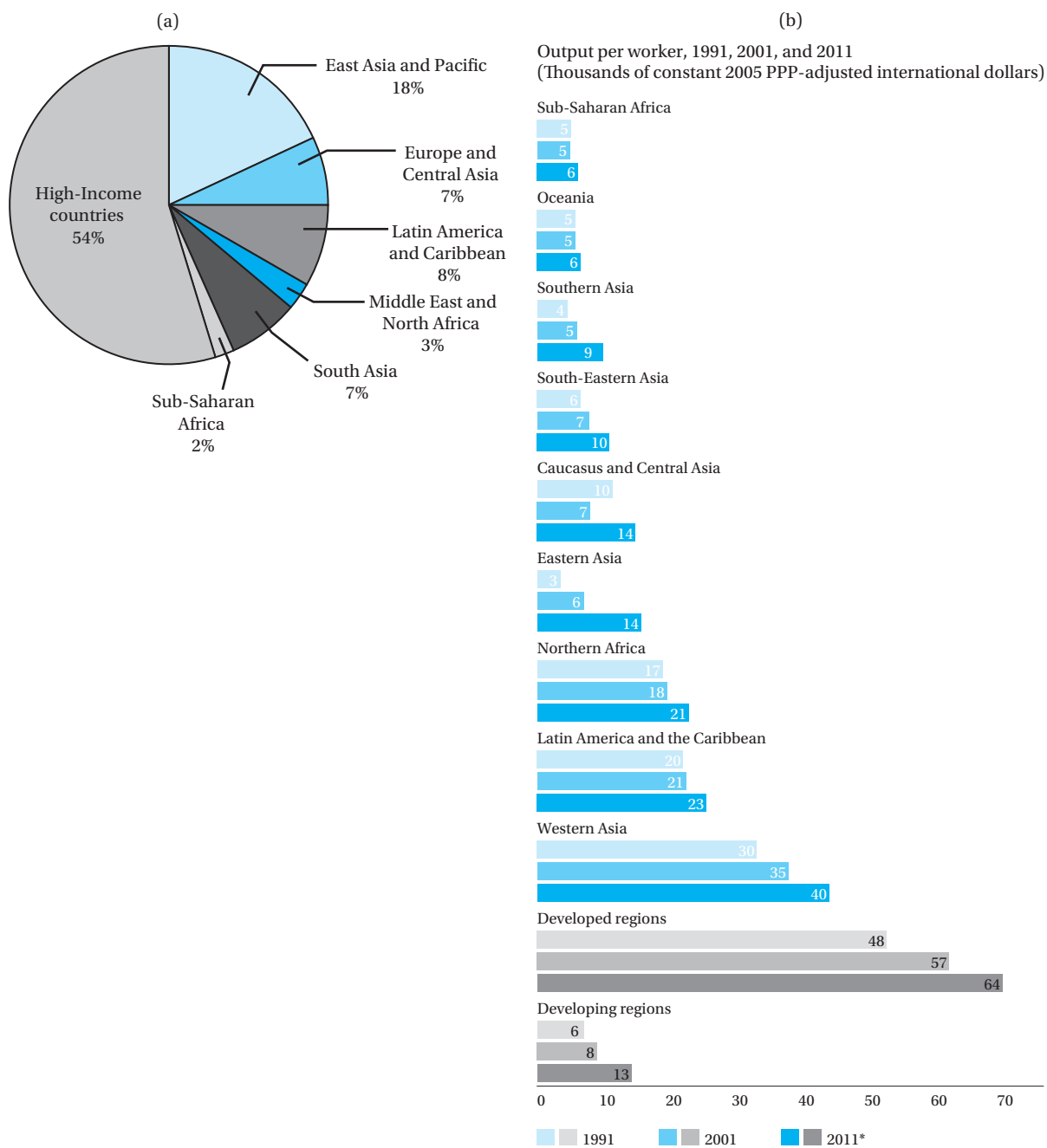
As we noted at the outset of the chapter, there is a vast gulf in productivity between advanced economies such as the United States and developing nations, including India and the DRC, but also a wide range among these and other developing countries. And as we have seen, all countries with averages below what is defined as high income are considered developing in most taxonomies (and some in the high-income range as defined by the World Bank are still considered developing). The lower average levels but wide ranges of income in developing areas are seen in Table 2.3. Even when adjusted for purchasing power parity and despite extraordinary recent growth in China and India, the low- and middle-income developing nations, with more than five-sixths (84%) of the world’s people, received only about 46% of the world’s income in 2011, as seen in Figure 2.3a. Though resulting from a number of deeper causes, the wide disparity in income largely corresponds to the large gaps in output per worker between developing and developed countries as seen in Figure 2.3b.<sup>12</sup>

At very low income levels, in fact, 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 is known as a *poverty trap* or what Nobel laureate Gunnar Myrdal called “circular and cumulative causation.”<sup>13</sup> However, it is important to stress that there are ways to escape from low income, as you will see throughout this book. Further, the low-income countries are themselves a very diverse group with greatly differing development challenges.<sup>14</sup>

Some star performers among now high-income economies such as South Korea and Taiwan were once among the poorest in the world. Some middle-income countries are also relatively stagnant, but others are growing rapidly—China most spectacularly, as reviewed in the case study at the end of Chapter 4. Indeed, income growth rates have varied greatly in different developing regions and countries, with rapid growth in East Asia, slow or 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 depth in Chapters 3 and 4.

One common misperception is that low incomes result from a country’s being too small to be self-sufficient or too large to overcome economic inertia. However, there is no necessary correlation between country size in population or area and economic development (in part because each has different advantages and disadvantages that can offset each other).<sup>15</sup>

**FIGURE 2.3** (a) Shares of Global Income, 2008. (b) Developing regions lag far behind the developed world in productivity measured as output per worker.



Source: Figure 2.3a, Data from World Bank, *World Development Indicators 2013* (Washington, D. C.: World Bank, 2013), p.24. Figure 2.3b, United Nations, *Millennium Development Goals Report 2012*, p.9.

TABLE 2.5 The 12 Most and Least Populated Countries and Their Per Capita Income, 2008

Most Populous	Population (millions)	GNI Per Capita (U.S. \$)	Least Populous <sup>a</sup>	Population (thousands)	GNI Per Capita (U.S. \$)
1. China	1,325	2,940	1. Palau	20	8,630
2. India	1,140	1,040	2. St. Kitts and Nevis	49	10,870
3. United States	304	47,930	3. Marshall Islands	60	3,270
4. Indonesia	227	1,880	4. Dominica	73	4,750
5. Brazil	192	7,300	5. Antigua and Barbuda	87	13,200
6. Pakistan	166	950	6. Seychelles	87	10,220
7. Bangladesh	160	520	7. Kiribati	97	2,040
8. Nigeria	151	1,170	8. Tonga	104	2,690
9. Russian Federation	142	9,660	9. Grenada	104	5,880
10. Japan	128	38,130	10. St. Vincent and the Grenadines	109	5,050
11. Mexico	106	9,990	11. Micronesia	110	2,460
12. Philippines	90	1,890	12. São Tomé and Príncipe	160	1,030

<sup>a</sup>Criteria for inclusion in the least-populous rankings: United Nations member as of mid-2010, with 2008 comparable population and GNI per capita data in tab. 1.6 in the source.

Source: The World Bank, *World Development Indicators, 2010* (Washington, D.C.: World Bank, 2010), tabs 1.1 and 1.6.

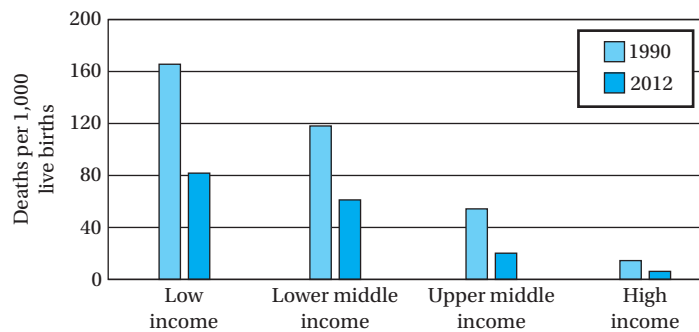
The 12 most populous countries include representatives of all four categories: low-, lower-middle-, upper-middle-, and high-income countries (see Table 2.5). The 12 least populous on the list include primarily lower-middle- and upper-middle-income countries, although the 12th least populous country, São Tomé and Príncipe, has a per capita income of just \$1,030. And four very small but high-income European countries that are UN members (Andorra, Monaco, Liechtenstein, and San Marino) would appear on the list if comparable World Bank income data were available.

### Lower Levels of Human Capital

Human capital—health, education, and skills—is vital to economic growth and human development. We have already noted the great disparities in human capital around the world while discussing the Human Development Index. Compared with developed countries, much of the developing world has lagged in its average levels of nutrition, health (as measured, for example, by life expectancy or undernourishment), and education (measured by literacy), as seen in Table 2.3. The under-5 mortality is 17 times higher in low-income countries than in high-income countries, although great progress has been made since 1990, as shown graphically in Figure 2.4.

Table 2.6 shows primary school enrollment rates (percentage of students of primary age enrolled in school) and the primary school pupil-to-teacher ratio for the four country income groups and for six major developing regions. Enrollments have strongly improved in recent years, but student attendance and completion, along with attainment of basic skills such as functional literacy, remain problems. Indeed, *teacher* truancy remains a serious problem in South Asia and sub-Saharan Africa.<sup>16</sup>

Moreover, there are strong synergies (complementarities) between progress in health and education (examined in greater depth in Chapter 8). For

**FIGURE 2.4** Under-5 Mortality Rates, 1990 and 2012

Source: Data drawn from World Bank, World Development Indicators, accessed 22 Sept. 2013. Reprinted with permission.

example, under-5 mortality rates improve as mothers' education levels rise, as seen in the country examples in Figure 2.5.

The well-performing developing countries are much closer to the developed world in health and education standards than they are to the lowest-income world countries.<sup>17</sup> Although health conditions in East Asia are relatively good, sub-Saharan Africa continues to be plagued by problems of malnourishment, malaria, tuberculosis, AIDS, and parasitic infections. Despite progress, South Asia continues to have high levels of illiteracy, low schooling attainment, and undernourishment. Still, in fields such as primary school completion, low-income countries are also making great progress; for example, enrollments in India are up from 68% in the early 1990s to a reported 94% by 2008.

### Higher Levels of Inequality and Absolute Poverty

Globally, the poorest 20% of people receive just 1.5% of world income. The lowest 20% now roughly corresponds to the approximately 1.2 billion people

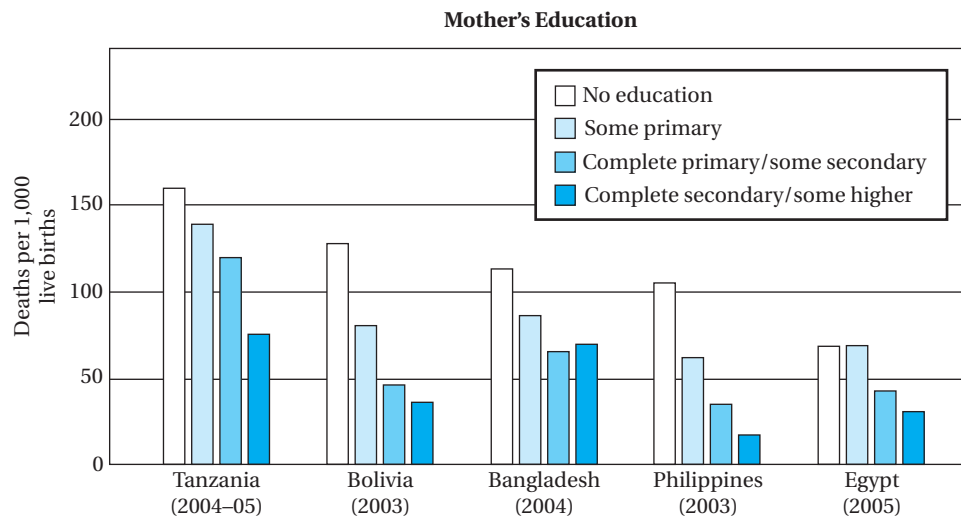
**TABLE 2.6** Primary School Enrollment and Pupil-Teacher Ratios, 2010

Region or Group	Net Primary School Enrollment (%)	Primary Pupil-Teacher Ratio
<b>Income Group</b>		
Low	80	45
Lower Middle	87	23 <sup>a</sup>
Upper Middle	94	22
High	95	15
<b>Region</b>		
East Asia and Pacific	93 <sup>a</sup>	19
Latin America and the Caribbean	94	25
Middle East and North Africa	91	24
South Asia	86	40 <sup>a</sup>
Sub-Saharan Africa	73	49
Europe and Central Asia	92	16

<sup>a</sup>Data for 2009.

Source: Data from World Bank, *World Development Indicators, 2010* (Washington, D.C.: World Bank, 2010), tabs 2.11 and 2.12.



**FIGURE 2.5** Correlation between Under-5 Mortality and Mother's Education

Source: International Bank for Reconstruction and Development/World Bank, *World Development Indicators*, 2007 (Washington, D.C.: World Bank, 2007), p. 119. Reprinted with permission.

living in extreme poverty on less than \$1.25 per day at purchasing power parity.<sup>18</sup> Bringing the incomes of those living on less than \$1.25 per day up to this minimal poverty line would require less than 2% of the incomes of the world's wealthiest 10%.<sup>19</sup> Thus, the scale of global inequality is also immense.

But the enormous gap in per capita incomes between rich and poor nations is not the only manifestation of the huge global economic disparities. To appreciate the breadth and depth of deprivation in developing countries, it is also necessary to look at the gap between rich and poor *within* individual developing countries. Very high levels of inequality—extremes in the relative incomes of higher- and lower-income citizens—are found in many 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, also have among the highest levels of inequality in the world.<sup>20</sup> 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). But inequality varies greatly among developing countries, with generally much lower inequality in Asia. Consequently, we cannot confine our attention to averages; we must look within nations at how income is distributed to ask who benefits from economic development and why.

Corresponding to their low average income levels, a large majority of the extreme poor live in the low-income developing countries of sub-Saharan Africa and 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 \$1.25 per day and raising the incomes of those still below that level, but much remains to be done, as we examine in detail in Chapter 5.

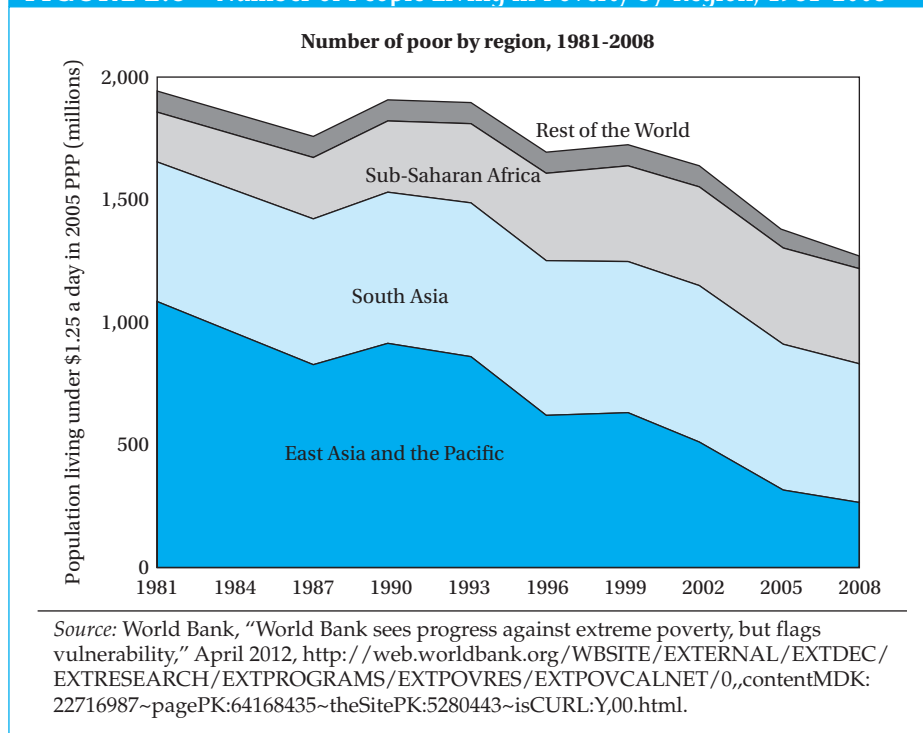
**Absolute poverty** The situation of being unable or only barely able to meet the subsistence essentials of food, clothing, shelter, and basic health care.

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 recognizes 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 incidence of extreme poverty varies widely around the developing world. The World Bank estimates that the share of the population living on less than \$1.25 per day is 9.1% in East Asia and the Pacific, 8.6% in Latin America and the Caribbean, 1.5% in the Middle East and North Africa, 31.7% in South Asia, and 41.1% in sub-Saharan Africa.<sup>21</sup> The share of the world population living below this level had fallen encouragingly to an estimated 21% by 2010, though there are concerns that the pace of poverty reduction may have slowed recently.<sup>22</sup> But as Figure 2.6 shows, the number living on less than \$1.25 per day fell from about 1.9 billion in 1981 to about 1.2 billion by 2008, despite a 59% increase in the developing world's population.

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 poverty and inequality result from distorted growth, but they can also cause it. This relationship, along with

**FIGURE 2.6** Number of People Living in Poverty by Region, 1981–2008



measurements of inequality and poverty and strategies to address these problems, is examined in depth in Chapter 5; because of their central importance in development, poverty reduction strategies are examined throughout the text.

## Higher Population Growth Rates

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 billion by 2012. Rapid population growth began in Europe and other now developed countries. But in recent decades, most population growth has been centered in the developing world. Compared with the developed countries, which often have birth rates near or even below replacement (zero population growth) levels, the low-income developing countries have very high birth rates. More than five-sixths of all the people in the world now live in developing countries; and some 97% of net population growth (births minus deaths) in 2012 took place in developing regions.

But population dynamics varies widely among developing countries. Populations of some developing countries, particularly in Africa, continue to grow rapidly. From 1990 to 2008, population in the low-income countries grew at 2.2% per year, compared to 1.3% in the middle-income countries (the high-income countries grew at 0.7% per year, reflecting both births and immigration).<sup>23</sup>

Middle-income developing countries show greater variance, with some having achieved lower birth rates closer to those prevailing in rich countries. The birth rate is about three times as high in the low-income countries as in the high-income countries. In sub-Saharan Africa, the annual birth rate is 39 per 1,000—four times the rate in high-income countries. Intermediate but still relatively high birth rates are found in South Asia (24), the Middle East and North Africa (24), and Latin America and the Caribbean (19). East Asia and the Pacific have a moderate birth rate of 14 per 1,000, partly the result of birth control policies in China. The very wide range of **crude birth rates** around the world is illustrated in Table 2.7. As of 2010, the average rate of population growth was about 1.4% in the developing countries.

A major implication of high birth rates is that the active labor 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

**Crude birth rate** The number of children born alive each year per 1,000 population.

TABLE 2.7 Crude Birth Rates Around the World, 2012

45+	Chad, Dem. Rep. of Congo, Mali, Niger, Uganda, Zambia
40–44	Afghanistan, Angola, Benin, Burkina Faso, Liberia, Malawi, Mozambique, Nigeria, Somalia, South Sudan, Tanzania
35–39	Central African Republic, Côte d'Ivoire, Eritrea, Iraq, Jordan, Kenya, Madagascar, Senegal, Sierra Leone, Yemen
30–34	Ethiopia, Ghana, Papua New Guinea, Sudan, Timor-Leste, Vanatu, Zimbabwe
25–29	Algeria, Bolivia, Cambodia, Egypt, Guatemala, Haiti, Honduras, Kyrgyzstan, Pakistan, Philippines, Samoa, Tonga
20–24	Dominican Republic, El Salvador, India, Libya, Mexico, Peru, Saudi Arabia, South Africa, Venezuela
15–19	Argentina, Brazil, Colombia, Costa Rica, Indonesia, Jamaica, Sri Lanka, Turkey, Vietnam
10–14	Australia, Canada, China, France, Russia, United Kingdom, United States
<10	Austria, Croatia, Germany, Hungary, Italy, Japan, South Korea, Serbia, Portugal, Taiwan

Source: Population Reference Bureau, *Population Data Sheet*, 2012.

**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 labor force.

greater in the developed nations. Both older people and children are often referred to as an economic **dependency burden** in the sense that they must be supported financially by the country's labor force (usually defined as citizens between the ages of 15 and 64). In low-income countries, there are 66 children under 15 for each 100 working-age (15–65) adults, while in middle-income countries, there are 41 and in high-income countries just 26. In contrast, low-income countries have just 6 people over 65 per 100 working-age adults, compared with 10 in middle-income countries and 23 in high-income countries. Thus, the total dependency ratio is 72 per 100 in low-income countries and 49 per 100 in high-income countries.<sup>24</sup> But in rich countries, older citizens are supported by their lifetime savings and by public and private pensions. In contrast, in developing countries, public support for children is very limited. So dependency has a further magnified impact in developing countries.

We may conclude, therefore, that not only are developing countries characterized by higher rates of population growth, but they must also contend with greater dependency burdens than rich nations, though with a wide gulf between low- and middle-income developing countries. The circumstances and conditions under which population growth becomes a deterrent to economic development is a critical issue and is examined in Chapter 6.

### Greater Social Fractionalization

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

Low-income countries often have ethnic, linguistic, and other forms of social divisions, sometimes known as **fractionalization**. This is sometimes associated with civil strife and even violent conflict, which can lead developing societies to divert considerable energies to working for political accommodations if not national consolidation. It is one of a variety of governance challenges many developing nations face. There is some evidence that many of the factors associated with poor economic growth performance in sub-Saharan Africa, such as low schooling, political instability, underdeveloped financial systems, and insufficient infrastructure, can be statistically explained by high ethnic fragmentation.<sup>25</sup>

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. Some of the most successful development experiences—South Korea, Taiwan, Singapore, and Hong Kong—have occurred in culturally homogeneous societies.

But today, more than 40% of the world's nations have more than five significant ethnic populations. In most cases, one or more of these 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 countries as diverse as Afghanistan, Rwanda, Mozambique, Guatemala, Mexico, Sri Lanka, Iraq, India, Kyrgyzstan, Azerbaijan, Somalia, Ethiopia, Liberia, Sierra Leone, Angola, Myanmar, Sudan, the former Yugoslavia, Indonesia, and the DRC.

Conflict can derail what had otherwise been relatively positive development progress, as in Côte d'Ivoire since 2002 (see Chapter 14 and the case study for Chapter 5). There is, however, a heartening trend since the late 1990s toward more successful resolution of conflicts and fewer new conflicts.

If development is about improving human lives and providing a widening range of choice to all peoples, 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 little from overall economic growth. 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.<sup>26</sup> 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. And in the United States, diversity is often cited as a source of creativity and innovation. The broader point is that the ethnic and religious composition of a developing nation and whether or not that diversity leads to conflict or cooperation can be important determinants of the success or failure of development efforts.<sup>27</sup>

### Larger Rural Populations but Rapid Rural-to-Urban Migration

One of the hallmarks of economic development is a shift from agriculture to manufacturing and services. In developing countries, a much higher share of the population lives in rural areas, and correspondingly fewer in urban areas, as seen in Table 2.8. Although modernizing in many regions, rural areas are poorer and tend to suffer from missing markets, limited information, and social stratification. A massive population shift is also under way as hundreds of millions of people are moving from rural to urban areas, fueling rapid urbanization, with its own attendant problems. The world as a whole has just crossed the 50% threshold: For the first time in history, more people live in cities than

**TABLE 2.8** The Urban Population in Developed Countries and Developing Regions

Region	Population (millions, 2009)	Urban Share (%)
World	6,810	50
More developed countries	1,232	75
Less developed countries	5,578	44
Sub-Saharan Africa	836	35
Northern Africa	205	50
Latin America and the Caribbean	580	77
Western Asia	231	64
South-central Asia	1,726	31
Southeast Asia	597	43
East Asia	1,564	51
Eastern Europe	295	69

Source: Population Reference Bureau, 2009 World Data Sheet.

in rural areas. But sub-Saharan Africa and most of Asia remain predominantly rural. Migration and agriculture issues are examined in Chapters 7 and 9.

### Lower Levels of Industrialization and Manufactured Exports

One of the most widely used terminologies for the original Group of Seven (G7) countries<sup>28</sup> and other advanced economies such as smaller European countries and Australia is the “industrial countries.” Industrialization is associated with high productivity and incomes and has been a hallmark of modernization and national economic power. It is no accident that most developing-country governments have made industrialization a high national priority, with a number of prominent success stories in Asia.

Table 2.9 shows the relationship between employment and share of GDP in agriculture, industry, and services in selected developing and developed countries, in the 2004 to 2008 period. Generally, developing countries have a far higher share of employment in agriculture than developed countries. Moreover, in developed countries, agriculture represents a very small share of both employment and output—about 1% to 2% in Canada, the United States and United Kingdom—although productivity is 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

**TABLE 2.9** Share of the Population Employed in the Agricultural, Industrial, and Service Sectors in Selected Countries, 2004–2008 (%)

	Agriculture			Industry			Services		
	Males	Females	Share of GDP (2008)	Males	Females	Share of GDP (2008)	Males	Females	Share of GDP (2008)
<b>Africa</b>									
Egypt	28	43	13	26	6	38	46	51	49
Ethiopia	12	6	44	27	17	13	61	77	42
Madagascar	82	83	25	5	2	17	13	16	57
Mauritius	10	8	4	36	26	29	54	66	67
South Africa	11	7	3	35	14	34	54	80	63
<b>Asia</b>									
Bangladesh	42	68	19	15	13	29	43	19	52
Indonesia	41	41	14	21	15	48	38	44	37
Malaysia	18	10	10	32	23	48	51	67	42
Pakistan	36	72	20	23	13	27	41	15	53
Philippines	44	24	15	18	11	32	39	65	53
South Korea	7	8	3	33	16	37	60	74	60
Thailand	43	40	12	22	19	44	35	41	44
Vietnam	56	60	22	21	14	40	23	26	38
<b>Latin America</b>									
Colombia	27	6	9	22	16	36	51	78	55
Costa Rica	18	5	7	28	13	29	54	82	64
Mexico	19	4	4	31	18	37	50	77	59
Nicaragua	42	8	19	20	18	30	38	73	51
<b>Developed Countries</b>									
United Kingdom	2	1	1	32	9	24	66	90	76
United States	2	1	1	30	9	22	68	90	77

Note: Ethiopia agricultural employment reflects limited coverage.

Source: World Bank, *World Development Indicators, 2010* (Washington, D.C.: World Bank, 2010), tabs. 2.3 and 4.2.

to other sectors of their own economies—particularly industry. 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 developing 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.

Table 2.10 reveals the structural transformation of employment that has been occurring in developing countries. Where available, the table shows employment shares in both 1990–1992 and 2008–2011 periods. There have been substantial declines over this two-decade period in the share in employment in agriculture in most developing countries for which comparable data is available. For example, in Indonesia the proportion of men who work in agriculture fell from 54% to 37%; and the proportion of women who work in agriculture fell from 57% to 35%. Partial exceptions include Pakistan and Honduras, for which the share of women’s agricultural employment rose by approximately as much as that of men fell.

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 to from industry to service sector employment. However, many developed-country industrial jobs require high skills and pay high wages.

Relatively few countries managed a substantial gain of the fraction in manufacturing in this period; Indonesia, Turkey, and Mexico showed modest gains, particularly for men. (Other evidence indicates that a large fraction of global manufacturing jobs were gained in one country—China—during this period; but comparable data for China were unavailable for comparison.) The share of industrial employment in Africa remains low for both men and women in most countries.

Along with lower industrialization, developing nations tended to have a higher dependence on primary exports. Most developing countries have diversified away from agricultural and mineral exports to some degree. The middle-income countries are rapidly catching up with the developed world 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. Africa will need to continue its efforts to diversify its exports. We examine this topic in Chapter 12.

## Adverse Geography

Many analysts argue that geography must play some role in problems of agriculture, public health, and comparative development more generally. Land-locked economies, common in Africa, often have lower incomes than coastal economies.<sup>29</sup> 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. A great concern

**TABLE 2.10** Share of the Population Employed in the Agricultural, Industrial, and Service Sectors in Selected Countries, 1990–92 and 2008–2011 (%)

	Agriculture				Industry				Services				Region
	Males		Females		Males		Females		Males		Females		
	% of Male Employment		% of Female Employment		% of Male Employment		% of Female Employment		% of Male Employment		% of Female Employment		
	1990–92	2008–11	1990–92	2008–11	1990–92	2008–11	1990–92	2008–11	1990–92	2008–11	1990–92	2008–11	
Cameroon	..	49	..	58	..	13	..	12	..	38	..	30	Africa
Egypt, Arab Rep.	35	28	52	46	25	27	10	6	41	44	37	49	Africa
Liberia	..	50	..	48	..	14	..	5	..	37	..	47	Africa
Mauritius	15	9	13	7	36	32	48	21	48	59	39	73	Africa
Namibia	45	23	52	8	21	24	8	9	34	53	40	83	Africa
Indonesia	54	37	57	35	15	24	13	15	31	40	31	50	Asia
Malaysia	23	16	20	9	31	31	32	21	46	53	48	71	Asia
Pakistan	45	37	69	75	20	22	15	12	35	41	16	13	Asia
Philippines	53	41	32	23	17	18	14	10	29	41	55	68	Asia
Thailand	60	41	62	37	18	23	13	18	22	37	25	45	Asia
Turkey	33	18	72	39	26	31	11	15	41	51	17	45	Asia
Chile	24	14	6	5	32	31	15	10	45	55	79	85	Latin America
Costa Rica	32	20	5	4	27	25	25	11	41	55	69	84	Latin America
Dominican Republic	26	19	3	2	23	21	21	7	52	47	76	60	Latin America
Honduras	53	50	6	12	18	19	25	21	29	31	69	67	Latin America
Mexico	34	19	11	4	25	30	19	18	41	51	70	78	Latin America
Canada	6	3	2	1	31	32	11	10	64	65	87	89	Developed
Japan	6	4	7	4	40	33	27	15	54	62	65	80	Developed
United Kingdom	3	2	1	1	41	29	16	8	55	69	82	91	Developed
United States	4	2	1	1	34	25	14	7	62	72	85	92	Developed

Note: Country selection reflects that only a limited number of countries are covered or have data over time. Data represent most recent in timeframe if average for the period is not available.

Source: World Bank, *World Development Indicators, 2013* (Washington, D.C.: World Bank, 2013), tab. 2.3.



going forward is that global warming is projected to have its greatest negative impact on Africa and South Asia (see Chapter 10).<sup>30</sup>

The extreme case of favorable physical **resource endowment** is the oil-rich Persian Gulf states. At the other extreme are countries like Chad, Yemen, Haiti, and Bangladesh, 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 no guarantee of development success. Conflict over the profits from these industries has 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 “curse of natural resources.”

Clearly, geography is not destiny; high-income Singapore lies almost directly on the equator, and parts of southern India have exhibited enormous economic dynamism in recent years. Prior to colonization, some tropical and subtropical regions had higher incomes per capita than Europe. However, the presence of common and often adverse geographic features in comparison to temperate zone countries means it is beneficial to study tropical and subtropical developing countries together for some purposes. Redoubled efforts are now under way to extend the benefits of the green revolution and tropical disease control to sub-Saharan Africa. In section 2.7 of this chapter, we add further perspectives on the possible indirect roles of geography in comparative development.

## Underdeveloped Markets

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.

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

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

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

**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.

**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.

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 be dealing with in later chapters. But their existence remains a common characteristic of many developing nations and an important contributing factor to their state of underdevelopment.<sup>31</sup>

## Lingering Colonial Impacts and Unequal International Relations

**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 favored 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 organizations of the type that have benefited the developed world: Domestically, on average, **property rights** have been 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.<sup>32</sup> Problems with governance and public administration (see Chapter 11), as well as poorly performing markets, often stem from poor institutions.

Decolonization was one of the most important historical and geopolitical events of the post–World War II era. More than 80 former European colonies have joined the United Nations. But several decades after independence, the effects of the colonial era linger for many developing nations, particularly the least developed ones.

Colonial history matters not only or even primarily because of stolen resources but also because the colonial powers determined whether the legal and other institutions in their colonies would encourage investments by (and in) the broad population or would instead facilitate exploitation of human and other resources for the benefit of the colonizing elite and create or reinforce 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 favored 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 labor had pernicious effects on human development even centuries after they were discontinued (see Box 2.3).

In a related point of great importance, European colonization often created or reinforced differing degrees of inequality, often correlated with ethnicity, which have also proved remarkably stable over the centuries. In some respects, postcolonial elites in many developing countries largely took over the exploitative role formerly played by the colonial powers. High inequality sometimes emerged as a result of slavery in regions where comparative advantage in crops