

Inequality and Poverty

Bangladesh is one of the world's most heavily populated low-income nations. In 2010, per capita income among Bangladesh's 164 million people was \$1,486 (US\$, PPP). On a daily basis, this amounts to a bit more than \$4 per person per day, which would permit a meager standard of living at best. But \$4 per day refers only to the average, the income level that would prevail if all of GDP was available for consumption and then was divided equally among the entire population, which, of course, it is not. What income level is earned by those who fall below the average? How much do the poorest Bangladeshis depend on for their survival? Evidence from the World Bank suggests that 50 percent of Bangladeshis survive on \$1.25 a day or less, the standard international definition for absolute poverty.¹

The most recent estimates for global poverty are for 2005, although projections have been made for more recent years. In 2005, 1.4 billion people, or more than one out of every five people, were estimated to live below the \$1.25 a day poverty line; 2.6 billion people, about half the population of the developing world in 2005, survived on less than \$2 a day. For most readers of this book, who are enrolled in a college or

¹The World Bank's international poverty line originally referred to \$1 a day, in 1985 US\$ (PPP). It has been revised several times. The most recent estimates identify two poverty lines: \$1.25 a day in 2005 US\$ (PPP) is the mean of the national poverty lines for 15 of the world's poorest countries and is considered a measure of extreme poverty; \$2.00 a day is the mean national poverty line among all developing countries. The selection of these poverty lines is discussed in more detail later in the chapter. Global poverty estimates refer to 2005 and are from S. Chen and M. Ravallion, "The Developing World Is Poorer Than We Thought, but No Less Successful in the Fight Against Poverty," *Quarterly Journal of Economics* 125, no. 4 (2010). Estimates for Bangladesh and other countries referred to in this chapter are from World Bank, *World Development Indicators*, <http://databank.worldbank.org> unless otherwise indicated.

university, the idea of living on \$1 to \$2 a day is close to inconceivable. But these are the circumstances facing tens of millions of Bangladeshis and billions of people worldwide.

The major explanation for the degree of absolute poverty in Bangladesh and other low income nations is the low level of total production per capita. But this is not the only factor. Mexico is an upper-middle-income nation with a 2010 GDP per capita income of US\$15,224 (PPP), more than 10 times the level in Bangladesh. If GDP were distributed equally in Mexico, each Mexican would have about \$42 per day. But income is not equally shared in Mexico, or in Bangladesh, or for that matter, in any other country. The richest 20 percent of Mexicans receive over 50 percent of total household income, almost 15 times as much as the poorest 20 percent who receive only 3.5 percent of total income. The distribution of income in Mexico results in over 3.5 million Mexicans (about 3.4 percent of the population in 2008) living below the \$1.25 a day poverty line and 8.1 percent living below \$2 a day.

Raising people out of poverty requires economic growth. Increases in GDP per capita typically benefit those below the poverty line as well as those who live near or considerably above it. Without sustained economic growth, the most Bangladesh could achieve is the low level of income that \$4 a day permits. But the distribution of national income plays a vital role, too. Inequality affects the amount of poverty generated by a given level of income. It may affect growth just as growth may affect levels of inequality, and inequality *itself* is something people care about, independent of its effects on poverty and growth.

If both economic growth and distribution affect poverty levels, what does this suggest about policy? Toward the end of this chapter, we consider potential elements of a pro-poor development strategy. These elements include encouraging more rapid economic growth, improving opportunities for the poor via investments in basic education and healthcare, and designing social safety nets and other programs for especially vulnerable groups.

MEASURING INEQUALITY

Economists often are interested in the distribution of *income* among households within a nation. But these are not the only dimensions of inequality we might want to investigate. Instead of income, development economists often look at the distribution of household *consumption*, usually measured by household expenditures, whether in-kind or in money terms. In poor countries income can be hard to measure, especially for subsistence farm households who consume rather than market most of what they produce. Consumption also may be a more reliable indicator of welfare than is income, in part because consumption tends not to fluctuate as much as income from one period to the next.

One might also be interested in the distribution of *wealth*, which always is more unequal than the distribution of either income or consumption. Distributions of

assets, whether of land or education, are useful in understanding the opportunities individuals have to be productive and generate household income. The distribution of income depends on ownership of factors of production (including the value of the labor services that one "owns") and the role each factor plays in the production process. Ownership of land and capital often is highly concentrated, so anything that enhances the relative returns to these factors makes the distribution of income more unequal. Conversely, relatively higher wages for unskilled labor, the most widely distributed factor of production in developing nations, tend to lead to a more equal distribution.

In addition to deciding whether to look at the distribution of income, consumption, or wealth *within* one nation, one might want to look at how each is distributed *among* nations. We assess the level of global inequality at the end of the chapter. One can also look within the household at patterns of intrahousehold inequality, which are critical for understanding gender issues and the welfare of children.

No matter what dimension of distribution one is interested in, one needs a set of analytical tools for describing and understanding distributional outcomes. The simplest way of depicting any distribution is to display its **frequency distribution**, which tells us how many (or what percent of) families or individuals receive different amounts of income. Figure 6-1a presents the frequency distribution of household consumption per capita for Bangladesh. This distribution is based on a survey of about 7,000 Bangladeshi families, selected to represent the over 24 million households in Bangladesh. Surveyed households responded to detailed questionnaires about their sources of income and consumption of a wide variety of goods. Researchers used this information to derive an estimate of each household's per capita consumption.

Figure 6-1a tells us the percentage of individuals with different levels of annual consumption starting from the lowest reported level and rising in increments of 650 taka, the Bangladeshi currency. Almost 1 million people, less than 1 percent of Bangladesh's population, reported the lowest annual consumption expenditures in the survey, under 3,250 taka per year (less than \$270, PPP); 8.4 percent (the highest bar in the figure) had per capita consumption of between 5,850 and 6,500 taka (around \$500, PPP); and less than 0.5 percent had the top amounts reported in Figure 6-1a, over 22,750 taka (almost \$1,900, PPP). There are households with even higher consumption in Bangladesh, but Figure 6-1a reports the distribution for only 95 percent of individuals ranked by per capita consumption. Had the top 5 percent been included in the figure, the tail of the distribution would continue to extend much farther to the right of the diagram.²

Household income and expenditures surveys, like the one for Bangladesh, often fail to capture two groups of households. Both the poorest and richest families are likely to be underrepresented. The poorest families, including those who are homeless and live in places such as railway stations or river gullies, tend not to be adequately enumerated. Similarly, the most affluent, few in number, are unlikely to be part of the statistical sample. There also is a tendency for more affluent households not to respond to such surveys or to underreport their incomes. Thus even in the best of surveys, the degree of inequality may be underestimated.

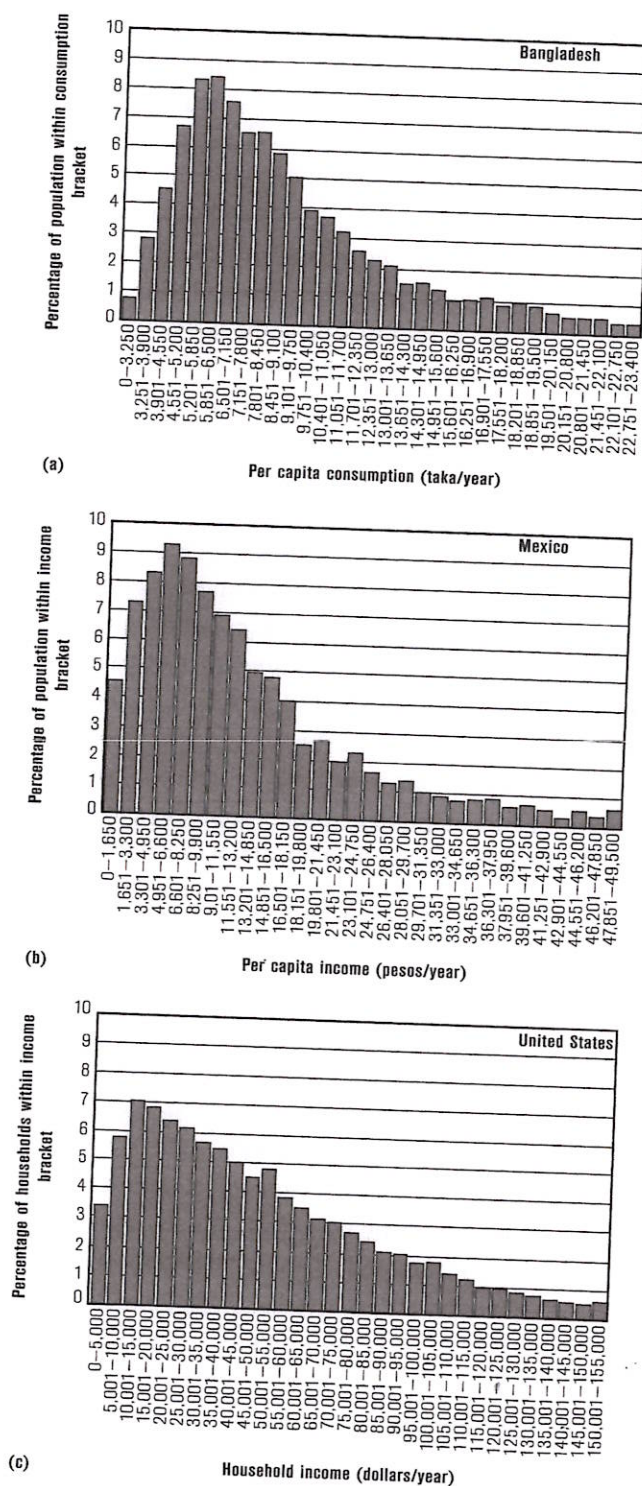


FIGURE 6-1 The Distribution of Income: Bangladesh, Mexico, and the United States, 2000s
 Sources: Collaboration with Claudio E. Montenegro, World Bank; U.S. Current Population Survey (March 2004).

Take a look at the shape of the frequency distribution for Bangladesh in Figure 6-1a. The distribution is not rectangular, with every level of consumption represented by the same percentage of individuals, nor was it expected to be. The height of the bars, each bar representing a different consumption level, initially rises and then grows progressively shorter. If distributions were very equal, there would be a small number of very tall bars in the middle of the diagram, indicating that just about everyone had nearly the same level of consumption. The distribution also is not a normal distribution, the so-called bell curve, with which you may be familiar from courses in statistics. If consumption or income were distributed normally, there would be an equal number of households on either side of the mean and symmetric tails to the distribution suggesting equal percentages of the population at both low and high consumption and incomes. IQs are distributed normally, but consumption and income are not. The distribution instead is described as lognormal, meaning that if you took the logarithms of household consumption or incomes and redrew the frequency distribution it would approximate the more familiar bell curve.

The lognormal distribution captures what you already know about incomes. In virtually all societies there are a relatively small number of rich households (captured in the long, flat tail to the right) and a much larger number of lower-income families who make up "the hump" of the distribution, which is located at the lower end of the income range. This particular shape of the distribution of income is not unique to Bangladesh. Similar distributional outcomes characterize low-, middle-, and high-income economies. Figure 6-1b-c illustrate this point. These income distributions are based on micro-level household surveys for Mexico and the United States. Note that all three nations exhibit similar lognormal distributions, each with its own long, flat tail to the right.

Bangladesh, Mexico, and the United States all have similarly shaped frequency distributions, but they are not identical. This means that the degree of inequality in the three nations varies. To get a sense of the differences we need to rearrange the data contained in the frequency distributions; these distributions have complex shapes and are difficult to compare across nations or within nations over time. Calculating the **size distribution** provides an easier way of identifying the degree of inequality present in the underlying distribution.

Size distributions tell us the share of total consumption or income received by different groups of households, ranked according to their consumption or income level. One can rank households or individuals by deciles or even percentiles, but the convention is to report on quintiles, ranking households from the poorest 20 percent, to the next 20 percent, all the way to the richest 20 percent of households. In the case of Bangladesh, each quintile represents about 30 million people. Summing all individual consumption expenditures in each quintile and dividing by the country's total consumption yields each quintile's share.

Table 6-1 contains World Bank estimates of the size distribution of consumption for Bangladesh and household income for Mexico and the United States. This way of

TABLE 6-1 Size Distributions of Consumption or Income within Quintiles in Bangladesh, Mexico, and the United States, 2000s

QUINTILE	SHARE OF TOTAL CONSUMPTION OR INCOME		
	BANGLADESH	MEXICO	UNITED STATES
Bottom 20%	9.0	3.5	3.4
Second 20%	12.5	8.2	8.7
Third 20%	16.0	13.3	14.8
Fourth 20%	21.5	21.2	23.4
Top 20%	41.0	53.7	49.8

Sources: Collaboration with Claudio E. Montenegro, World Bank; U.S. Current Population Survey (March 2004).

presenting the data makes it clear that, of the three nations, Bangladesh has the relatively most equal distribution because the quintile shares are closer to one another than is the case for either Mexico or the United States. (If the distribution were completely equal, each quintile would receive 20 percent of the total.) In Bangladesh, the top 20 percent receive 41 percent of total consumption, about 4.5 times the amount received by the poorest 20 percent. In Mexico and the United States, the ratio is much larger, roughly 15:1.³ Some of these differences are due to what precisely is being measured—consumption or income and whether on a per capita or household basis—but much of the difference is due to the underlying distribution within each nation.

The size distribution provides a means for introducing some other techniques commonly used to measure inequality, including some that reduce the entire distribution to a single number. Data from the size distribution can be used to draw a **Lorenz curve** (Figure 6-2), named after Max Lorenz, a statistician. Income recipients are arrayed from lowest to highest income along the horizontal axis. The curve itself shows the share of total income received by any cumulative percentage of recipients. Its shape indicates the degree of inequality in the income distribution. By definition, the curve must touch the 45-degree line at both the lower-left corner (0 percent of recipients must receive 0 percent of income) and the upper-right corner (100 percent of recipients must receive 100 percent of income). If everyone had the same income, the Lorenz curve would lie along the 45-degree line (perfect equality). If only one household received income and all other households had none, the curve

³Unlike most low- and middle-income nations, the United States has a comprehensive system of taxation of household incomes and government transfer payments (such as Social Security). The data reported here are for money incomes before taxes and after cash transfer payments. Noncash transfers, such as food stamps and Medicare, are not accounted for. Once taxes and all government transfer payments are included, the distribution becomes somewhat more equal. The ratio of the shares of the top 20 to the bottom 20 falls to closer to 10:1 than the 15:1 reported in Table 6-1.

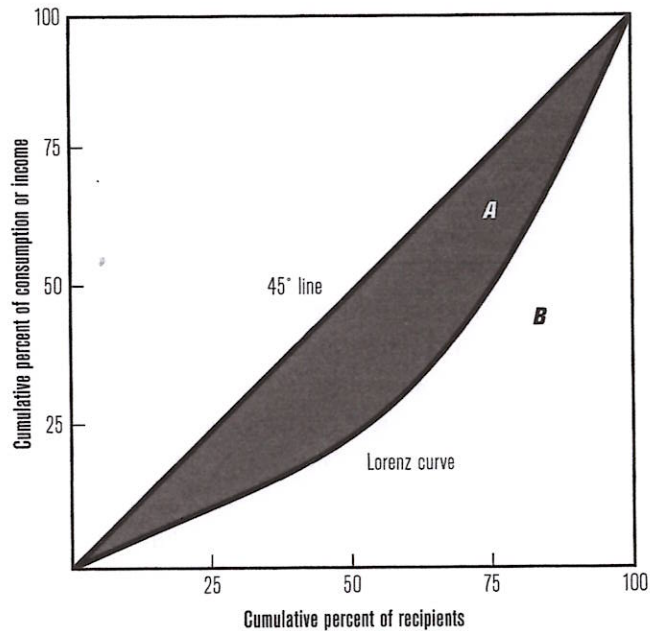


FIGURE 6-2 Lorenz Curve

would trace the bottom and right-hand borders of the diagram (perfect inequality). In all actual cases the Lorenz curve lies somewhere in between. The farther the Lorenz curve bends away from the 45-degree line of perfect equality (the larger the shaded area, *A*) the greater the inequality. When comparing Lorenz curves, either for the same country at different points of time or for different countries, it is possible for the separate curves to intersect. When this happens it is ambiguous if inequality has increased or decreased over time (or if one country has more inequality than the other).⁴

Single numbers can also be used to describe the distribution of income. One commonly used statistic is the ratio of the income share of the top 20 percent of households to the share received by the bottom 20 or 40 percent. The most frequently used statistic, the **Gini coefficient** (named after statistician Corrado Gini), can be derived from the Lorenz curve. This ratio is understood most easily as the value of area *A* divided by area *A* + *B* in Figure 6-2.⁵ The larger the share of the area between

⁴To see the reason for this ambiguity, draw two Lorenz curves and label the point of intersection *X*. Before point *X*, there is relatively more equality along the Lorenz curve closer to the 45-degree line; but after point *X*, there is relatively more equality along the other Lorenz curve. Because both Lorenz curves have sections of greater equality, there is no way to decide, overall, if one represents a more equal distribution than the other.

⁵The Gini coefficient can be calculated using a relatively complex formula based on the absolute income differences across all observations in a population, which are then normalized by both the size and mean income of the population.

the 45-degree line and the Lorenz curve, the higher the value of the Gini coefficient. The theoretical range of the Gini coefficient is from 0 (perfect equality) to 1 (perfect inequality). In practice, values measured in national income distributions have a much narrower range, ordinarily from about 0.25 to 0.65.

Collapsing all the information contained in the frequency distribution into a single number inevitably results in some loss of information about the underlying distribution. Argentina and Kenya both report similar Gini coefficients of around 0.48, but the underlying distributions are not identical. Both nations have considerable amounts of inequality, but the lowest quintile received 4.7 percent of income in Kenya, and only 3.6 percent in Argentina. From the perspective of the poor in these countries, a more than 1 percentage point difference in income shares is a significant amount. Another criticism of the Gini coefficient is that it is more sensitive to changes in some parts of the distribution than in others. Despite these shortcomings of the Gini, the desire among researchers to summarize inequality in a single number combined with some other attractive properties of the Gini, including its geometric interpretation using Lorenz curves, have encouraged its widespread use.⁶

PATTERNS OF INEQUALITY

Simon Kuznets, one of the early Nobel Prize winners in economics and a pioneer of empirical work on the processes of economic growth and development, was one of the first economists to investigate patterns of inequality. In his presidential address to the 1954 meeting of the American Economic Association, Kuznets reported on historical data on income shares for England, Germany, and the United States. He then introduced a few data points for the developing world: Ceylon (now Sri Lanka), India, and Puerto Rico. The data were so limited that Kuznets did not include them in a table or figure; he simply listed them in the text.⁷ Some 50 years later, researchers are far less constrained. Data on inequality are available for most nations of the world, although for most countries they are updated only once or twice a decade. The quality and comparability of these data also are sometimes a concern: The World Bank, one of the primary compilers of such information, offers more than the usual caveats about data comparability across countries and over time.

Figure 6-3 presents one set of estimates of Gini coefficients of the distribution of household consumption or income for countries by region. What is immediately

⁶There are other single-number measures of inequality in addition to the Gini coefficient and top 20 or bottom 20 or 40 ratios. Discussion of the alternatives and the desirable properties of measures of inequality can be found in Gary Fields, *Distribution and Development: A New Look at the Developing World* (Cambridge: MIT Press, 2001).

⁷Simon Kuznets, "Economic Growth and Income Inequality," *American Economic Review* 45, no. 1 (1955).

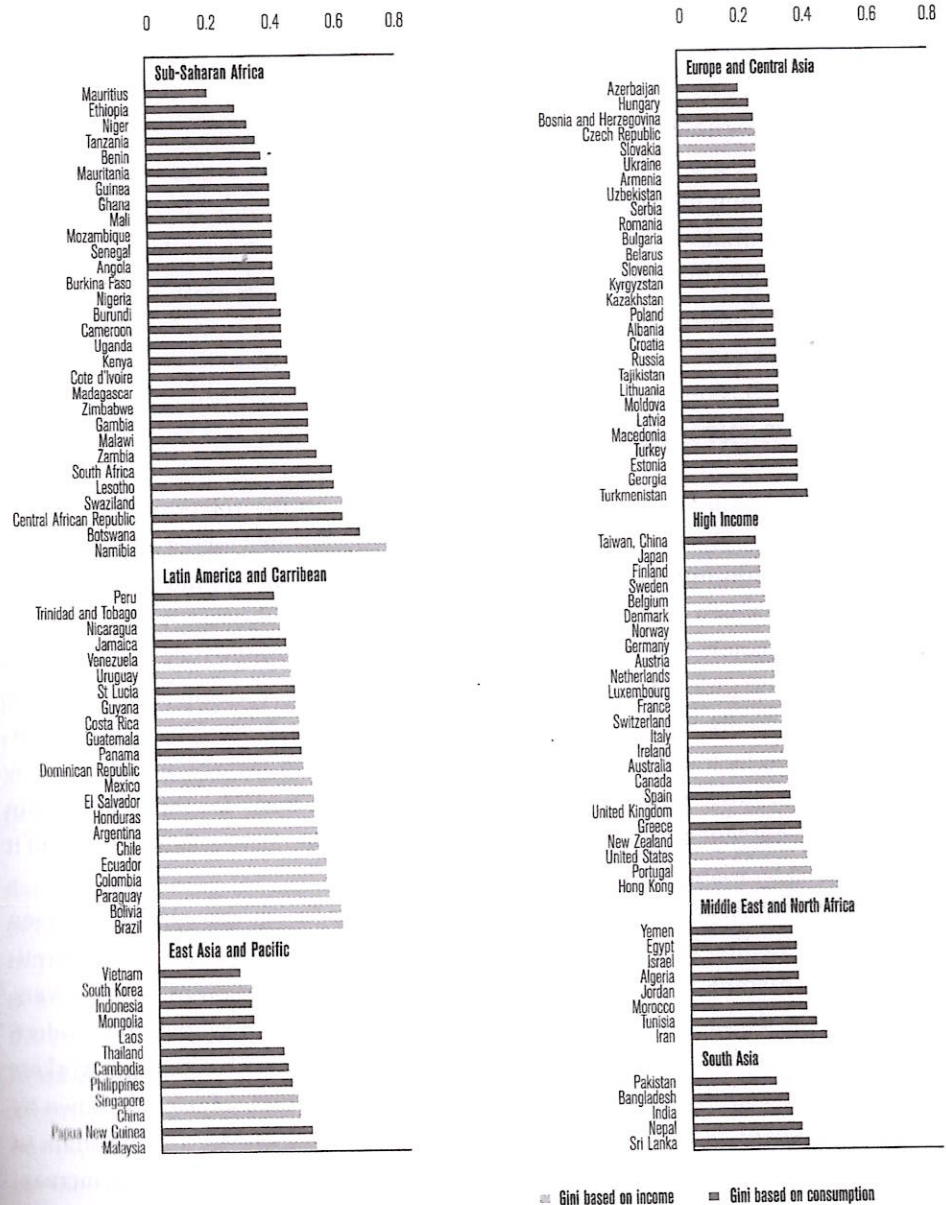


FIGURE 6-3 Gini Coefficients by Country and Region

Sources: Figure 2.9 from The International Bank for Reconstruction and Development. The World Bank: *World Development Report*, 2006. Reprinted with permission.

apparent is the variance in inequality both within and across regions. There is evidence of a tendency toward higher inequality, with the Gini coefficient generally above 0.40 and in some cases approaching 0.65, in Latin America and parts of Africa (especially southern Africa). Low inequality is characteristic of the transition economies of eastern Europe and central Asia, many of the high-income economies of the Organisation for Economic Co-Operation and Development

(OECD) economies, and much of South Asia. Nations in East Asia generally range from low to moderate levels of income inequality; the Middle East and North Africa report moderate levels.

What explains these differences? Are they related to specific characteristics of different regions or are regions a proxy for something else—income level, perhaps? One idea with a long history is that economic growth itself may be associated with the degree of inequality. The basic intuition is that growth is an inherently unbalanced process. Some individuals capture the benefits of growth early on, and it takes time for others to benefit and for returns to equalize.

GROWTH AND INEQUALITY

Kuznets was one of the first economists to speculate on the relationship between growth and inequality, suggesting that inequality might first increase as a nation makes the transition from a mostly agricultural economy to an industrial one. The underlying mechanism for this rise in income inequality is the result of differences in the returns to factors of production between agriculture (where they are lower and less dispersed) and industry. When everyone works in agriculture, income is distributed relatively equally, but as industrialization and urbanization progress, inequality rises. As more factors make the transition from farm to factory, inequality may then start to fall. Kuznets readily acknowledged that the basis for this relationship was “perhaps 5 percent empirical information and 95 percent speculation, some of it possibly tainted by wishful thinking.”

Other economists offered alternative explanations for an association between growth and inequality. W. Arthur Lewis, a Nobel Prize winner, developed a theoretical model that predicts rising inequality followed by a “turning point,” which eventually leads to a decline in inequality. Employing a two-sector model, the modern or industrial sector faces “unlimited supplies” of labor as it is able to draw workers with low or even zero marginal product from agriculture. With wages held down by the elastic supply of workers, industrial growth is accompanied by a rising share of profits. As average incomes rise, labor receives a smaller share of the total, increasing inequality. The turning point is reached when all the surplus labor has been absorbed and the supply of labor becomes more inelastic. Wages and labor’s share of income then start to rise and inequality falls.⁸

In Lewis’s **surplus labor model**, inequality is not just a necessary effect of economic growth; it is a cause of growth. A distribution of income that favors high-income groups contributes to growth because profit earners save to obtain funds

⁸W. Arthur Lewis, “Economic Development with Unlimited Supplies of Labor,” *Manchester School* 22 (1954). The Lewis model is more fully developed in Chapter 16.

for expanding their enterprises. The more income they receive, the more they invest. Their saving and investment increase the economy's productive capacity and thus bring about output growth. Not only does inequality contribute to growth according to Lewis, but attempts to redistribute income prematurely run the risk that economic growth will be slowed. These were powerful conclusions. Could they be maintained in light of the empirical evidence on economic growth and inequality?

The ideas of Kuznets, Lewis, and others about growth and inequality held considerable sway among development economists for several decades. During the 1960s, a period of strong growth in many regions, some economists wondered why growth was not yielding more rapid reductions in poverty. One idea was that the relationship that came to be known as Kuznets inverted-U, or the **Kuznets curve**, might be at work. Twenty years after Kuznets's original paper, researchers were armed with more data on inequality and reexamined the relationship using primarily cross-section analyses of countries, including many developing countries. A key assumption in this approach was that nations at different levels of per capita income could approximate what individual nations might experience over time as they achieved economic growth. Studies using this approach supported the existence of the Kuznets curve.⁹ The tendency for inequality to rise and then fall with rising levels of per capita income was maintained as a stylized fact about development until the late 1980s. Subsequent research has overturned this perspective.

Better and more abundant data on income inequality, especially time-series data on individual countries, coupled with more rigorous econometric methods, permitted researchers to identify patterns over time within individual nations. In India, a low-income nation with generally low-income inequality, there is evidence of some decline in inequality from 1950 until the mid-1960s, but at least into the 1990s there was no distinct trend in either direction.¹⁰ Figure 6-4 illustrates the trend in the Gini coefficient since 1980 for Chile and Taiwan. Chile, one of Latin America's most successful economies, has been a middle-income nation throughout this period; Taiwan has gone from middle- to high-income status. Chile's Gini coefficient fluctuates minimally from year to year but exhibits no particular pattern over time, except perhaps for a recent slight downward trend. What is most apparent in Chile's case is the persistence of a relatively high level of inequality. Taiwan also exhibits little fluctuation over time. The most notable feature of Taiwan's

⁹Montek S. Ahluwalia, "Inequality, Poverty and Development," *Journal of Development Economics* 3 (1980).

¹⁰Michael Bruno, Martin Ravallion, and Lyn Squire, "Equity and Growth in Developing Countries: Old and New Perspectives on the Policy Issues," in Vito Tanzi and Ke-young Chu, eds., *Income Distribution and High Quality Growth* (Cambridge: MIT Press, 1998).

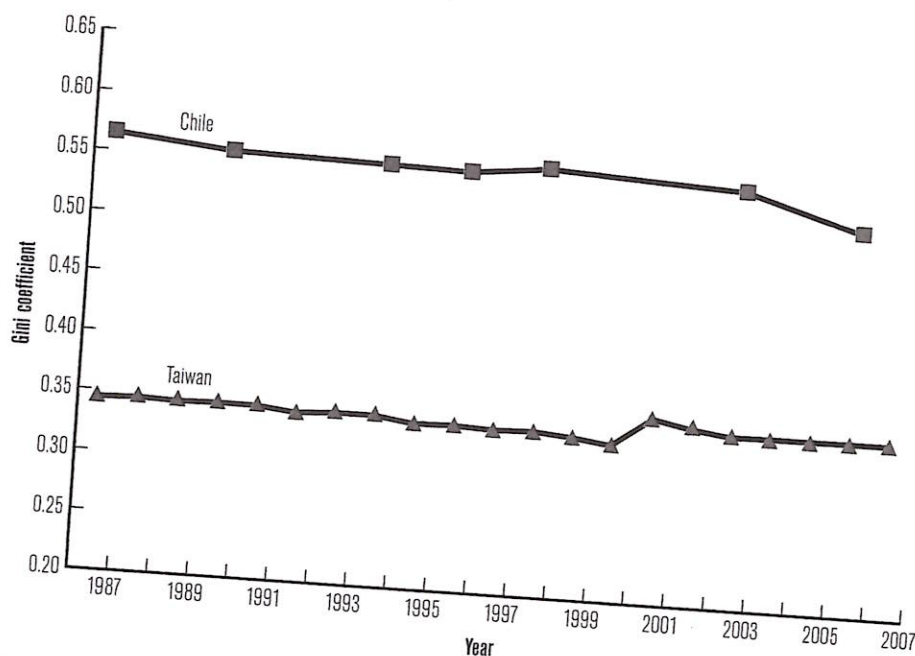


FIGURE 6-4 Trends in Inequality: Gini Coefficients in Chile and Taiwan

Sources: Data for Chile: World Bank, "World Development Indicators," <http://databank.worldbank.org>. Data for Taiwan: Statistical Bureau of the Republic of China (Taiwan), Report on the Survey of Family Income and Expenditure, "Percentage Share of Disposable Income by Percentile Groups of Income Recipients and Measures of Income Distribution," 2007, link available at <http://eng.stat.gov.tw/ct.asp?xItem=3417&CtNode=1596>, accessed June 2009.

experience is the persistence of a very low level of inequality.¹¹ There is no evidence of any inverted-U for India, Chile, or Taiwan.

One should not generalize from a few cases, so it is important to look at the experience of a larger number of nations. Researchers who have done so find little evidence of a general tendency for income inequality to first rise and then fall with economic growth. It is as common for Gini coefficients to rise as per capita income grows as it is for them to fall.¹² The persistence of a given level of inequality within nations may be the strongest trend. Support for the Kuznets curve in earlier cross-section analysis was driven by the higher inequality of a subset of middle-income nations. Better econometric tests reveal that the inverted-U was driven not by

¹¹Taiwan's record of rapid economic growth with low income inequality is somewhat unique. Some transition economies have similarly low or even lower levels of income inequality but none has yet achieved Taiwan's per capita income level. Among rapidly growing economies, China has achieved similar growth rates, although not yet for as many years, but China has done so with significantly higher inequality. The same is true for Malaysia, Thailand, and Singapore. Korea's record on growth and inequality comes closest to Taiwan's.

¹²Klaus Deininger and Lyn Squire, "New Ways of Looking at Old Issues: Inequality and Growth," *Journal of Development Economics* 57 (1998); Martin Ravallion and Shaohua Chen, "What Can New Survey Data Tell Us about Recent Changes in Distribution and Poverty?" *World Bank Economic Review* 11, no. 2 (1997).

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economic growth but by the coincidence of Latin America's high levels of inequality and middle-income ranking. Investigation of the Kuznets curve offers a cautionary tale for empirical work on developing nations. Patterns observed across nations may not always provide reliable insight into what ultimately are dynamic processes that occur within nations.¹³

Rejection of the Kuznets curve as an overall tendency does not imply that economic growth has no impact on inequality, nor does it deny that something like the Kuznets curve might occur in some countries. The lack of one general pattern simply confirms the complexity of the process that determines inequality. Research on the Kuznets curve identifies the large role played by country- or region-specific circumstances, which appear far more important in determining distributional outcomes than the level of per capita income. This is an encouraging finding. That all nations do not follow a similar distributional path suggests that there may be greater scope for government policy to influence the distributional outcomes that accompany economic growth.

WHAT ELSE MIGHT CAUSE INEQUALITY?

If inequality is not systematically associated with the level of income, what else accounts for the observed differences across countries and regions shown in Figure 6-3? There is little doubt that history and politics have played an important role. An obvious example is South Africa, which has one of the world's highest levels of income inequality. For decades, the apartheid government excluded blacks and other nonwhite South Africans from owning prime agricultural land, getting a decent education, and living in major urban areas. The legacy of these policies remains today, reflected in South Africa's highly unequal distribution of income. According to the World Bank's country brief on South Africa, the Gini coefficient in 2008 was 0.67—one of the highest in the world.

History and politics also played key roles in other parts of the world. At the end of World War II, the United States administered a land reform in South Korea as part of the dissolution of 50 years of Japanese colonial rule. These reforms redistributed land from Japanese to Korean households, providing millions of Korean families with a key asset from which they could earn a living, resulting in a relatively equal distribution of rural incomes. Low levels of inequality in eastern Europe and central Asia are, in part, the product of years of legislated wages and state ownership of the means of production. Citizens of these countries had limited opportunity to accumulate

Even the experience of the United States now rejects Kuznets's original hypothesis. Income inequality in the United States fell over the four decades after the great Depression. But, after 1975, during a period of continued growth in the U.S. economy, household incomes became increasingly *unequal*, the opposite of the predictions of the Kuznets curve. Economists believe technological change, immigration, increased international trade, and a slowdown in the growth of school attainment are some of the factors that explain the post-1975 shift.

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any productive assets other than an education. It is not surprising that, with the turn toward the market, inequality is now rising in many of these countries; in some of them this is happening alongside renewed economic growth.

Some of the high levels of inequality in Latin America may be traced to patterns of land ownership dating back centuries. Not only was the colonial legacy part of this process but the demands of specific crops, including the advantages of plantation-style agriculture, were also a factor. In East Asia, rice cultivation was better suited to family farming and established a basis for higher income equality in this region. Conversely, mineral wealth, whether in diamonds or oil, tends to produce higher inequality. Factor endowments shaped distributional outcomes in the past and continue to do so today.

Resource endowments and the "persistence of the past" play significant roles in shaping a nation's distribution of income, but policy choices made today also affect these outcomes. Government policy influences the accumulation of assets, including education. Policy decisions affect the diffusion of technology and access to markets, which condition productivity growth and the returns to factors of production. Taxes and government spending, including expenditures on social safety nets, directly influence how income is divided. The level of inequality in any nation is the result of complex interactions among history, politics, resource endowments, market forces, and government policies.

WHY INEQUALITY MATTERS

If economic development requires a reduction in the amount of poverty, then the simplest explanation for why income inequality matters is that the degree of inequality plus the level of income determines the extent of poverty. Even without a discussion of how to define poverty (which we will get to shortly), some examples of the relationship between economic growth, income inequality, and poverty should be clear. If an economy grows and inequality remains unchanged, the income of the poor has grown in line with everyone else's. The poorest quintiles have more income, which potentially helps raise some households out of poverty. If per capita income remains unchanged and inequality rises, the poorest quintiles have less income and some households probably have fallen into poverty. These propositions merely express the basic mathematics governing the relationship among poverty, growth, and inequality.

But inequality and growth are not determined independently of one another. There may not be one systematic tendency for how inequality changes as nations grow, but inequality often changes with rising per capita incomes. Similarly, inequality may affect the rate of growth an economy achieves. Do nations with more inequality tend to experience slower growth, thus doubly hurting the well-being of the poor?

Finally, income inequality also matters in its own right. Societies have preferences concerning inequality and may (or may not) wish for their governments to intervene to achieve distributional outcomes.¹⁴

Just as there has been a long debate over the impact of growth on inequality, there is ongoing debate over how inequality affects economic growth. As discussed previously in this chapter, some early theories of economic development concluded that inequality might raise growth rates. By concentrating income in fewer hands, there might be more savings available to finance investments critical for capital accumulation. But this simple view of distribution and growth fails to capture other channels in which income inequality can be a drag on economic growth. Contemporary discussion of the relationship between inequality and growth explores these channels.

When inequality is high, worthwhile investments may not be undertaken. Poor people may have promising investment opportunities. Buying a farm animal or improving irrigation, investing in a piece of equipment or building a store, or sending a child to school all may yield a good economic return. But the individuals or families may not undertake these investments because they cannot afford them. Credit market imperfections and the inability of the poor to offer lenders collateral lowers the amount of productive investment they engage in and leads to less economic growth. If the economy had a more equal income distribution, more of these productive investments could be financed and pursued.

Another channel that links inequality and growth is the political process. There are numerous "political economy" connections between distribution and growth. Some argue that, when inequality is high, the rich use their wealth to secure outcomes favorable to their interests, influencing everything from government spending (disproportionate amounts spent on public universities, which the children of the rich attend, as compared to primary schools) to trade policy (using tariffs and other forms of trade protection to maintain domestic monopolies). These policies can lead to inefficient outcomes that lower growth rates. Others argue the opposite political response occurs. When inequality is high, populist movements may arise that focus more on redistribution and less on growth, leading, for example, to higher taxes and less investment. High inequality also tends to be associated with more violence, both personal and political, which in turn can reallocate expenditures to less productive activities (more police and private security services) and discourage greater investment.

Given the multitude of connections between inequality and growth, the net effect is an empirical matter. Studies that attempt to sort out the relationship tend to rely on the cross-country growth regressions introduced in Chapter 3. Early studies found statistical support that high initial inequality, especially of landholdings, was

¹⁴ Evidence that people prefer fairness is presented in World Bank, "Equity and Well-Being," 2006 *World Development Report: Equity and Development* (Washington, DC: World Bank, 2005.)

associated with slower subsequent growth. But later studies, using larger data sets and different econometric techniques, either found no such effect or even an opposing one.¹⁵ The inconclusive nature of these results is not surprising, given both the complexity and potential circularity of the relationship. Inequality affects growth and growth affects inequality, complicating statistical identification. It also is unlikely that one systematic pattern describes the relationship between inequality and growth for all countries at all times. This does not imply that, in a specific-country context, inequality and growth are unrelated. High inequality may be a constraint on growth, but easing this constraint is always a daunting challenge for policy makers.

MEASURING POVERTY

People sometimes refer to inequality and poverty as if they were the same thing. They are not. Inequality is an important determinant of poverty, but the two concepts are distinct. To see why, consider the following. Assume your lot in life was to fall in the bottom quintile of the income distribution. If you could pick the nation you would live in, would it be one where the bottom 20 percent received 3.4, 3.5, or 9.0 percent of household income? If your answer is the nation where the poorest receive 9.0 percent, you are confusing inequality with poverty. You also probably are forgetting the results presented in Table 6-1. Recall from that table that the share of household income of the poorest quintile in Bangladesh was 9.0 percent; in Mexico, 3.5 percent; and in the United States, only 3.4 percent!

In the United States the bottom 20 percent refers to over 60 million people. Some of these people are destitute but the overwhelming majority is not. Almost all live in a permanent dwelling with electricity, a gas or electric stove, clean water, and indoor plumbing. Most have access to medical care (even if it means an emergency room at a local hospital) and, during childhood, receive a full regimen of vaccinations against many infectious diseases. The likelihood of contracting malaria or dying of a diarrheal disease is remote, although both were common in the United States in its earlier history. For those with children, the probability of an infant dying before its first birthday is low, and that child is likely to receive at least 12 years of education. Those in the bottom quintile in the United States are likely to own a television and a landline or cellular phone and perhaps a car, and have some access to a computer at a public library if not in their own homes.

¹⁵Two frequently cited papers that reach opposite conclusions relating inequality and growth are Alberto Alesina and Dani Rodrik, "Distributive Politics and Economic Growth," *Quarterly Journal of Economics* 109, no. 2 (1994); and Kristin Forbes, "A Reassessment of the Relationship between Inequality and Growth," *American Economic Review* 90, no. 4 (2000).

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The poorest 20 percent are poor relative to most other Americans and may find this demoralizing, but they have a substantially higher material standard of living than the poor in either Bangladesh or Mexico. No one in the bottom quintile in Bangladesh (or in most any quintile) is likely to receive the health or education benefits or the material goods consumed by America's poorest individuals. The 30 million individuals who make up the bottom quintile in Bangladesh are likely to live in the most rudimentary of dwellings, those that can be washed away in a bad storm. Food is often scarce and clean water unavailable. Living with intestinal parasites is a regular occurrence; infectious diseases take a regular toll on young and old and infant deaths are a common event. School enrollment rates are rising, but the educational attainment of poor Bangladeshis, especially females, is well below that of their American counterparts. Consumer goods consist of a few articles of clothing, some cooking utensils and little else. Most of those in the bottom 20 percent have never placed a phone call or clicked on a mouse.

The bottom quintile in the United States receives only 3.4 percent of household income, whereas the bottom quintile in Bangladesh consumes 9.0 percent of total consumption expenditures in Bangladesh. But America's bottom 20 percent commands a much larger amount of *total* income and, therefore, enjoys a higher standard of living even if its relative share is so much less. The Gini coefficient is thus a measure of relative equity; it describes the outcomes for one group relative to other groups but provides no information about absolute standards of living.

POVERTY LINES

Just as a set of analytical tools is needed for describing and understanding distributional outcomes, a similar set of tools is needed to define and measure poverty. We focus mostly on a consumption or income definition of **absolute poverty**, but it is important to recognize that poverty is multidimensional and encompasses deprivations not readily captured by income measures alone. This should be a familiar idea because it parallels the debate over how to define economic development. Both the human development index (HDI) and the millennium development goals (MDGs), discussed in Chapter 2, go well beyond GDP per capita as a measure of well-being and similar approaches are used in defining poverty.

Poverty lines, defined as having a certain amount of taka or pesos or dollars to spend per day, can capture the degree of material deprivation but may not reflect securing basic health and education. A family may have sufficient funds to purchase a minimal basket of food, but if they have no ready access to safe drinking water, food purchases are no guarantee of meeting nutritional needs because waterborne microbes may result in gastrointestinal illness and reduce the absorption of key nutrients. In this critical sense, access to safe drinking water joins money income as a determinant of absolute poverty. The availability of public services, including basic health and education, can also have an impact on poverty status today and the

transmission of poverty across generations, independent of current consumption levels. Another dimension of poverty is vulnerability to adverse shocks. Expenditures in one period may raise a family above the poverty line, but in a subsequent period, natural disasters, economywide downturns, or even the ill health or death of a family's breadwinner can push the family below the poverty line. Families often move in and out of poverty and reducing vulnerability is intrinsic to improving well-being.

Poverty is multidimensional, and it is possible to quantify many of its dimensions.¹⁶ A great deal of attention is paid to quantifying income or consumption poverty. Development economists often use a definition of absolute poverty by which a specific monetary value is defined as a dividing line between the poor and nonpoor. Most nations define their own poverty lines, usually basing the amount on the per capita cost of some minimal consumption basket of food and a few other necessities (Box 6-1). Food dominates these consumption bundles because it may account for two-thirds to three-quarters of poor people's total expenditures. In many low-income nations, poverty lines are based on a standard of obtaining 2000 or more calories per day. While these caloric requirements seem "scientific," the actual poverty line remains a social construct. The food purchased to achieve these calories depends on what individuals actually choose to buy. Expenditures even lower than the poverty line might achieve required calories but hardly anyone would actually purchase such a consumption basket.

Often governments specify more than one poverty line. Because of regional price differences, distinct poverty lines may be applied for urban versus rural areas or, as is the case in Bangladesh, for different regions of the country. Once a poverty line (or lines) is established and expressed in a nation's own currency, that level of consumption or income has to be adjusted on an annual basis to account for changes in the price of the underlying bundle of goods. The goal is to maintain a constant poverty line over time, holding constant the ability to purchase the core consumption basket of food and other necessities.¹⁷ This permits policy makers and researchers to chart the progress a country or region is making in lifting people out of absolute poverty.

¹⁶Multidimensional indices of poverty have been developed by scholars at the Oxford Poverty & Human Development Initiative (www.ophi.org.uk). With their assistance, the multidimensional poverty index (MPI) was introduced by the UN Development Programme (UNDP) in its 2010 human development report and serves as an alternative to measuring income poverty. The MPI defines someone as poor if he or she experiences deprivation in a number of areas, including education (for example, "if no household member has completed five years of schooling"), health (for example, "if any household member is malnourished"), and standard of living (for example, "if the household has no electricity" or "if the household has a dirt, sand, or dung floor").

¹⁷Poverty lines also can be expressed in relative terms. In the European Union, poverty is sometimes defined as living below 60 percent of median income. With this definition, the poverty line does not represent the ability to purchase a fixed bundle of goods but changes as median incomes change. Using this approach, absolute poverty declines only if incomes become more equally distributed, not if there is a general increase in per capita incomes.