

Chapter One

Alleviating Human Misery

The Role of Economic Reasoning



© Digital Vision/PunchStock

Chapter outline

World Poverty and Economics

Our Insatiable Wants

Our Limited Means

The Capacity of the Economy to Produce

Assessing Well-Being Using GDP

Causes of Poverty and Requisites of Economic Growth

Can Governments Help?

Governments of LDCs

Governments of DCs

Summary

Checklist of economic concepts

- Labor resources
- Capital resources
- Technology
- Production possibilities curve
- Opportunity costs
- Opportunity cost principle
- Increasing opportunity costs
- Marginal social cost
- Marginal social benefit
- Cost-benefit analysis
- Gross domestic product, current dollar
- Gross domestic product, real
- Gross domestic product, real per capita
- Gross domestic product, per capita

Along a road in Matabeleland, barefoot children stuff their pockets with corn kernels that have blown off a truck as if the brownish bits, good only for animal feed in normal times, were gold coins.

In the dirt lanes of Chitungwiza, the Mugarwes, a family of firewood hawkers, bake a loaf of bread, their only meal, with 11 slices for the six of them. All devour two slices except the youngest age two. He gets just one.

And on the tiny farms here in the region of Mashonaland, once a breadbasket for all of southern Africa, destitute villagers pull the shells off wriggling crickets and beetles, then toss what is left in a hot pan. "If you get that, you have a meal," said Stanford Nhira, a spectrally thin farmer whose rib cage is etched on his chest and whose socks have collapsed around his sticklike ankles.

The half-starved haunt the once bountiful landscape of Zimbabwe, where a recent United Nations survey found that 7 in 10 people have eaten either nothing or only a single meal the day before.

Still dominated after nearly three decades by their authoritarian president, Robert Mugabe, Zimbabweans are now enduring their seventh straight year of hunger. This largely man-made crisis, occasionally worsened by drought and erratic rains, has been brought on by catastrophic agricultural policies, sweeping economic collapse and a ruling party that has used farmland and food as weapons in its ruthless—and so far successful—quest to hang on to power.

But this year is different. This year, the hunger is much worse.

The survey conducted by the United Nations World Food Program in October found a shocking deterioration in the past year alone. The survey, recently

provided to international donors, found that the share of people who had eaten nothing the previous day had risen to 12 percent from 0, while those who had consumed only one meal had soared to 60 percent from only 13 percent last year.

Source: Celia W. Dugger, "In Zimbabwe, Survival Lies in Scavenging," from *The New York Times*, December 22 © 2008. *The New York Times* All rights reserved. Used by permission and protected by the Copyright Laws of the United States. The printing, copying, redistribution, or retransmission of the Material without express written permission is prohibited. www.nytimes.com

WORLD POVERTY AND ECONOMICS

Some two-thirds of the world's population go to sleep hungry at night. The World Bank estimates that perhaps as much as one-fifth of the world survives on no more than \$1 per day. Outright famine regularly occurs in various parts of the world—recent examples being the mass starvation of an estimated 1 million people in Ethiopia during the drought of 1984–1985; the estimated 3 million who died, mostly from disease and malnutrition, in Congo between 1998 and 2003; the ongoing catastrophe in North Korea that has caused many to rely on grass and tree bark as part of their daily diets; the 6 million Sudanese fleeing to the Darfur region from the country's ongoing civil war that the United Nations says are all currently at risk of starvation; and, of course, the miserable plight of Zimbabweans discussed in this chapter's opening vignette. Most of the hungry have no protection from the summer's heat or the winter's cold. They receive little or no medical care and live in unsanitary surroundings. Infant mortality is high, and life expectancy is low. While in the United States 8 infants out of each 1,000 live births die before reaching their fifth birthday, the rate explodes to more than 1 in 10 in places such as Pakistan and Tanzania. At the opposite end of life, the typical Ethiopian can expect to die about 30 years earlier than his or her contemporary in the United States. At the same time, the economic turmoil brought on by the ongoing financial deterioration in the United States shows that no economy is immune from the ravages of poverty. Recognition of the misery of poverty leads us to ask the questions: Why is it so? What are the causes? How can it be alleviated? This in turn leads us directly into the province of economics. An assessment and an analysis of poverty problems require an explicit understanding of the very foundations of economic activity. In this section, we sketch out these foundations.

Our Insatiable Wants

Economic activity springs from human wants and desires. Human beings want the things necessary to keep them alive—food and protection from the elements of nature. We usually want a great many other things, too, and the fulfillment of these wants and desires is the end toward which economic activity is directed.

As nearly as we can tell, human wants in the aggregate are unlimited, or insatiable. This is true because once our basic needs are met, we desire variety in the

way they are met—variety in foods, in housing, in clothing, and in entertainment. Additionally, as we look around, we see other people enjoying things that we do not have, and we think that our level of well-being would be higher if we had those things, too. But perhaps most important, want-satisfying activity itself generates new wants. A new house generates wants for new furnishings—the old ones look shabby in the new setting. A college or university education opens the doors to wants that would never have existed if we had stayed on the farm or in the machine shop. To be sure, any one of us can saturate ourselves—temporarily, at least—with any one kind of good or service (like ice cream or beer), but almost all of us would like to have more than we have of almost everything and higher qualities of purchases than we now can obtain.

Our Limited Means

The fundamental economic problem is that the means available for satisfying wants are *scarce* or limited relative to the extent of the wants. The amounts and qualities of goods and services per year that an economic system can produce are limited because (1) the resources available to produce them cannot be increased by any great amount in any given year and (2) the technology available for production is subject to a limited degree of annual improvement.

An economy's *resources* are the ingredients that go into the making of goods (like automobiles) and services (like physical examinations). Production is similar to cooking. Resources (ingredients) are brought together; technology is used to process these resources in certain ways (mixing and cooking them); and finally a good or service results (a cake, perhaps). Some outputs of production processes are used directly to satisfy wants. Others become inputs for additional production processes. The resources available in an economy are usually divided into two broad classifications: (1) labor and (2) capital.

Labor resources consist of all the efforts of mind and muscle that can be used in production processes. Included are the ditchdigger's effort along with that of the heart surgeon and the university professor. There are many kinds and grades of labor resources; their main common characteristic is that they are human.

Capital resources consist of all the nonhuman ingredients that go into the production of goods and services. They include both natural and man-made ingredients of production. Ingredients such as land that is usable for agriculture or as space for production facilities, rivers, forests, and mineral deposits are all examples of natural capital resources. Man-made capital resources include factories and tools and machinery built up over time as well as semifinished materials such as sheets of steel and business inventories.

Resources are always scarce relative to the sum total of human wants. Consider the U.S. economy. The U.S. population is about 300 million. Most U.S. citizens want more things than they now have. Can the economy increase next year's production enough to fulfill all these wants? Obviously not. The labor force available from the present population cannot be increased substantially in either quantity or quality very quickly. Both may be increased over time by increasing the size of the

labor resources

The physical and mental efforts of an economy's people that are available to produce goods and services.

capital resources

All nonhuman ingredients of production. Capital resources can be further divided into natural and man-made categories.

population and through improving the education and training of the general population, but this increases total wants, too. The stocks of buildings, machines, tools, raw and semifinished materials, and usable land are not susceptible to rapid increases either; instead they are accumulated slowly over time.

technology

The know-how and the means and methods of production available within an economy.

Technology refers to the known means and methods available for combining resources to produce goods and services. Given the quantities of an economy's labor and capital resources, the better its technology, the greater the annual volume of goods and services it can turn out. Usually improvements in technology in an economic system result from increasing the scope and depth of its educational processes and from an ample supply of capital that provides a laboratory for experimentation, practice, and the generation of new ideas.

The Capacity of the Economy to Produce

Gross Domestic Product

The fundamental economic problem facing any society is scarcity: That is, in no society does there exist the resources and technology necessary to produce enough goods and services to fully satisfy all wants and desires. In much of the world, scarcity translates directly into the type of grinding poverty that was described in the introduction to this chapter. And even in relatively wealthy countries like the United States and Canada, while scarcity results in abject poverty for comparatively small minorities of the overall populations, even those at the top of the income spectrums, no doubt, feel that their overall level of well-being could be enhanced by higher quantities and qualities of existing goods and services or by greater invention and innovation of new products. It is scarcity that forces each society to make economic choices as to how its resources can be best used. As a guiding principle, most economists define the best use of resources as that use which most fully satisfies the wants and desires of an economy's people. Put slightly differently, throughout our analysis, we assume that the goal of an economic system is to minimize the effects of scarcity or, more positively, to maximize social well-being. A first step in determining how well an economy is doing relative to this goal is to ascertain how effectively the economy is translating its labor and capital resources into goods and services. To this end, we wish to quantify, in dollar terms, the production of goods and services within an economy. Our primary measure of production is **gross domestic product (GDP)**, which measures the total market value of all final goods and services produced within an economy during a specific time period.

gross domestic product (GDP)

The market value of all final goods and services produced within an economy during a specific time period. GDP ignores the issue of whether ownership of the resources used for the production is domestic or foreign.

As is true with any type of accounting, the measurement of national production using GDP can be quite misleading unless we have a clear understanding of what is, and what is not, measured by GDP. First, it is essential to bear in mind that GDP is measured in terms of market values or market prices. As such, increases in GDP can come about either through increases in the production of goods and services or simply through increases in average prices. The impacts of the two clearly have different effects on social well-being. Second, it is important to remember that GDP measures the total value of production taking place within a country,

regardless of who might own the resources used in production. For example, even though Toyota Camrys are produced with capital resources owned by a Japanese company, the fact that the cars are built in Kentucky causes them to be considered part of U.S. GDP. From the opposite perspective, Chevrolet Impalas, being built in Canada, are not considered part of U.S. GDP even though Chevrolet is a division of an American firm. Finally, since we hope to use GDP as a first approximation of how well an economy is doing in fulfilling the goal of maximizing well-being, it is important to note that GDP is a measure of the dollar value of production only, which indicates nothing about who actually benefits from that production. Sometimes in the popular press GDP is referred to as the “economic pie.” And if one wishes to assess how well an economy is doing in satisfying wants and desires, it is essential to know the size of the pie that is available for consumption. Equally important, however, is the number of people the pie must be distributed among and how evenly the pie is distributed. We take up each of these issues in detail later in this chapter.

Production Possibilities

Given an economy’s available stocks of resources and level of technology, the combinations of goods and services that can compose its GDP are practically limitless. For simplicity, suppose that it produces only two items—food and education—and that all of its resources are devoted to producing these two items. The curve *AE* in Figure 1.1, called the **production possibilities curve**, represents all the maximum possible combinations of food and education that can be produced during one year. Thus, GDP might consist of 100 million tons of food per year if no education is produced as shown by point *A*, or 100 million student-years of education if no food is produced as shown by point *E*. Of course, there is no reason to devote all resources to producing one or the other of the two items, and thus a combination such as 90 million tons of food and 40 million student-years of education, as shown by point *B*, or any other combination along *AE* is possible. Equally possible is a combination like *F*, which yields a GDP of 50 million tons of food and 40 million student-years of education. This combination is clearly inefficient, however, because with the same stocks of resources and level of technology, the economy could produce up to 90 million tons of food without having to cut production of education below the 40 million student-year level. To be operating below the production possibilities curve indicates that either some of the economy’s resources are not being used (called unemployment) or not being used to their fullest extent (called underemployment), or the economy is not using the best available technology. Operating below the curve would be of little consequence were it not for the fundamental economic problem of scarcity. That is, operating below the production possibilities curve makes the already difficult problem of scarcity worse. Ideally, of course, given scarcity the economy would like to operate at a point like *Z* or any other point lying outside the production possibilities curve. Such combinations are not possible, however, without either an increase in the quantity or quality of resources available or an improvement in technology.

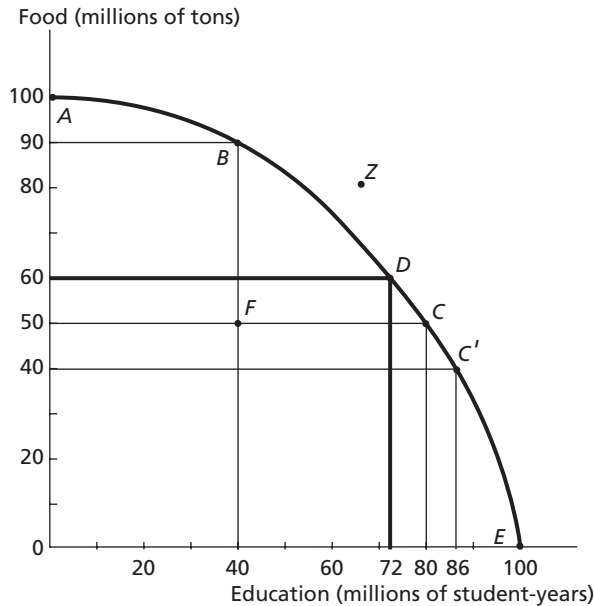
production possibilities curve

Graphical representation of the maximum quantities of two goods and/or services that an economy can produce when its resources are used in the most efficient way possible.

FIGURE 1.1 Production Possibilities Curve for an Economy

Curve *AE* shows the maximum combinations of food and education that the economy's available resources and existing techniques of production can produce annually. Combinations such as *F* imply either unemployment or underemployment of resources or inefficiency in production. Those such as *Z* are not attainable without increases in the quantity or quality of the economy's resources or an improvement in its production technology.

If the economy is originally producing combination *D* and then moves to combination *C*, the opportunity cost of the additional 8 million student-years of education is the 10 million tons of food that must be given up to produce it.

**The Opportunity Cost Principle**

Have you heard the expression “There is no such thing as a free lunch”? Actually, this is a simple way of expressing one of the most important concepts in economics, the **opportunity cost principle**. Suppose the economy is producing combination *D*, containing 60 million tons of food and 72 million student-years of education. Now let the output of education be increased to 80 million student-years. What is the cost to society of the additional 8 million student-years of education? The opportunity cost principle embodies an often overlooked but obvious point: If society's resources are initially fully and efficiently used as is true at *D*, an increase in the production of one good or service can come about only if the production of another good or service is reduced. In this sense, the true cost or opportunity cost to society of the additional 8 million student-years of education is the 10 million tons of food that must be forgone. An economy's ability to produce is limited by its resources and technology, and so more of one product necessarily means less of another or others.

The downward slope of the production possibilities curve shows the opportunity cost principle, or trade-off in production, that exists when an economy is operating at maximum efficiency. A quick glance at the production possibilities curve

opportunity cost principle

The true cost of producing an additional unit of a good or service is the value of other goods or services that must be given up to obtain it.

further indicates that this trade-off of food for education is not constant, however. That is, while the move from D to C requires society to give up 10 million tons of food for the additional 8 million student-years of education, the next 10 million tons of food given up releases only enough resources to produce an additional 6 million student-years of education (shown as the move from C to C'). In opportunity cost terms, it is becoming more costly for the economy to shift production from food to education. It is this **increasing opportunity cost** of production that gives the production possibilities curve its convex, or bow, shape.

increasing opportunity cost

As more of a particular good or service is produced, the cost in terms of other goods or services given up grows. This gives the production possibilities curve its bow shape.

The increase in opportunity costs as the economy concentrates more of its resources on producing education is due to the fact that all resources are not perfectly substitutable for one another. Suppose the economy is initially at point A on the production possibilities curve, producing only food, but then decides to produce some education as well. The cost in terms of forgone food is likely to be relatively low initially since the first resources to be taken out of production of food tend to be those resources that are least effective in producing food. That is, the first labor resources taken from food production will likely be those farmers and farm laborers who are not very good at farm life; the first land to be converted to school yards and university campuses is likely to be least fit for agricultural pursuits, and so on. As production of education is expanded further, resources of greater value in food production are increasingly drawn into educational pursuits, and thus relatively more food must be given up. The same would be true with all resources—not simply labor and land. This is especially true in a modern and quite complex economy in which there is a high degree of specialization among many, if not most, productive resources. The more specialized and less easily substituted an economy's resources are, the more extreme will be the bow in its production possibilities curve.

The Optimal Combination of Goods and Services

All combinations of food and education along the production possibilities curve AE in Figure 1.1 imply that the economy is producing as much of the two goods as possible, given its technology and scarce resources. But which of these combinations is best, or optimal? To answer this, recall that the primary goal we established for an economy was to maximize social well-being. Thus, the best combination is that which increases social well-being as much as possible. To see how we might, at least abstractly, arrive at this optimal combination, suppose that the economy is initially at combination A on the production possibilities curve, producing only food. What happens to well-being as the economy begins to move down the production possibilities curve toward point B and starts producing some education as well? For the shift to be consistent with the goal of maximizing social well-being, the public must be better off after the shift than it had been before. To make this determination, first consider the negative side of the shift. With each successive student-year of education produced, a certain amount of food must be given up. We call this the opportunity cost of the additional unit of education or, in slightly different terms, the **marginal social cost (MSC)** of the education. On the positive side, however, the shift in production gives society access to newly produced education, and the enhanced social well-being from each successive student-year of education is called the **marginal social benefit (MSB)** of the new schooling.

marginal social cost (MSC)

The true cost (opportunity cost) borne by society when the production of a good or service is increased by one unit.

marginal social benefit (MSB)

The true benefit to society of a one-unit increase in the production of a good or service.

cost-benefit analysis

A technique for determining the optimal level of an economic activity. In general, an activity should be expanded so long as the expansion leads to greater benefits than costs.

To determine whether each successive student-year of education between A and B should be produced, **cost-benefit analysis** can be applied. In general terms, cost-benefit analysis indicates that expansion of an activity serves to enhance well-being when it yields greater benefits than costs. Applying cost-benefit analysis in this context, we can conclude that each additional student-year of education should be produced as long as its marginal social benefit is at least as great as its marginal social cost.

Movements along the production possibilities curve then can be evaluated based on a comparison of marginal social benefits and costs. Any movement for which $MSB > MSC$ of necessity improves social well-being, while the reverse would lead to falling well-being. With these tools we can get a better handle on the question of the optimal combination of goods and services. Suppose that for each successive student-year of education from A to B , social well-being is, in fact, enhanced since $MSB > MSC$. What about further movements down the curve? If these first increments in the production of education yielded greater benefits than costs, why would this not continue to be true as even more of the economy's resources are devoted to education? Unfortunately, this will not be the case indefinitely because with each increase in the production of education and the corresponding fall in the production of food, the benefits of further shifts to education decline while the costs rise. From society's perspective, the greatest marginal benefit from education no doubt comes as the public moves from illiteracy to basic, functional literacy. Especially in modern society, anyone who is unable to read and do simple arithmetic will have great difficulty making a significant contribution to GDP. Beyond basic literacy, while additional years of education clearly add to well-being, their addition is likely to be, on average, of declining value. Thus, as production is shifted from food to education, the greatest marginal value is found for the early increments in education. In other words, as more education is produced and consumed, the MSB from additional education falls.

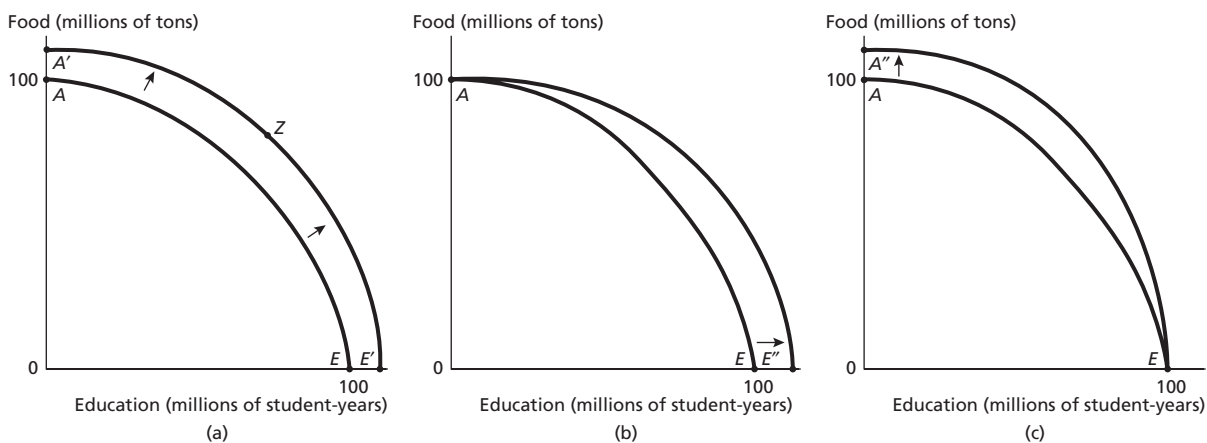
On the cost side, recall that the production possibilities curve is bow-shaped due to the concept of increasing opportunity cost of production. In this context, as we expand the production of education, the value of the food that we must give up rises—that is, the MSC of education—increases. As we move down the production possibilities curve, then, any gap between MSB and MSC that might initially exist tends to narrow. Once we reach the combination at which $MSB = MSC$, no further shifts in production will lead to increasing well-being. To go beyond this point would imply that we produced and consumed an increment in education which was not worth what it cost. Consequently, the optimal combination of goods and services is defined as that combination where the marginal social benefit of production just equals marginal social cost. How does a complex modern economy arrive at this combination of goods and services and the allocation of resources embodied in it? This question is the basis for Chapter 2.

Economic Growth

Thus far we have only considered combinations either on or below the production possibilities curve. What about a combination such as Z in Figure 1.1, or any other

FIGURE 1.2 General and Specific Economic Growth

The outward shift in the production possibilities curve from AE to $A'E'$ in (a) indicates that, due to either an increase in the quantity or quality of resources or an improvement in technology, the economy can produce more of both food and education. This is referred to as general economic growth. When the increased quantity or quality of resources or improvement in technology applies only to the production of education as in (b) or food as in (c), the economy is experiencing specific economic growth.



combination lying outside the production possibilities curve AE ? As noted above, these combinations are not attainable given the economy's current stock of resources and level of technology. Over time, however, combinations lying outside AE can become attainable if the economy is able to either increase its quantity or quality of resources or improve its level of technology. Figure 1.2 shows three such possibilities with the original curve AE as a reference point. In (a) the economy is able to enjoy an increase in the output of both food and education as the production possibilities curve shifts outward from its original level of AE to the higher $A'E'$. Note that now combination Z is attainable. This type of outward shift in production possibilities, suggesting the ability to produce and consume more of each good, is called general economic growth. General economic growth comes about when the underlying increase in the quality or quantity of resources or improvement in technology is roughly equally applicable to the production of both food and education.

While general economic growth is quite common, often an increase in the quality or quantity of resources or an improvement in technology proves useful only in the production of one of the two goods depicted on an economy's production possibilities curve. In these cases, the economy enjoys specific economic growth. In (b) of Figure 1.2, the production possibilities curve pivots outward from AE to AE'' indicating that while the maximum production of food is not affected, an increase in the production of education is possible. This could come about, for example, through improvements in technology applied to education such as online learning, which allows a much larger segment of society access to educational opportunities.

On the contrary, in (c) the production possibilities curve pivots in reverse fashion to $A'E$ indicating an enhanced ability to produce food only. Development of improved fertilizers, pest control measures, seed stocks, and irrigation techniques and equipment are each examples of improved capital resources and technology that might lead to specific growth of this sort. We address the concept of economic growth more fully in Chapter 13.

Assessing Well-Being Using GDP

Adjusting GDP for Inflation

GDP was not created to be used as a measure of overall well-being; rather, its primary use is simply as a gauge of the value of production that takes place within an economy. Before it can be used to even roughly assess the overall well-being of a county's inhabitants, a number of adjustments must be made. First, when we are evaluating an economy's performance over time, we must take into account that an increase in GDP, far from indicating a general improvement in well-being, may simply result from an increase in the average level of prices—inflation. In an economy that produces only food and education, calculating GDP requires that the quantity of food produced be multiplied by the average price of food, making the same calculation for education and adding the total values together. Consequently, if we look at data for a series of years and find that GDP in dollar terms is rising, we cannot be certain whether the economy's production is increasing or whether average prices are rising. If the increase in GDP is due to increasing production, overall well-being may be increasing, but if the increase in GDP is due either entirely or predominately to inflation, overall well-being may be declining.

To see the effect of inflation on GDP, consider a very simplistic economy in which only one good, bread, is produced. Suppose that during 2009, the economy produces 1,000 loaves which are sold for \$1 each. GDP for this economy in 2009 is simply \$1,000 (1,000 times \$1). Now suppose that during 2010 the economy continues to produce 1,000 loaves, but due to inflation each loaf sells for \$2. GDP for 2010 is \$2,000. Thus, between 2009 and 2010, GDP doubles even though the production of bread remains unchanged. The entire increase in GDP is due to inflation.

To correct for inflation, the entire series of GDP numbers at price levels for each year must be converted to a "base" year price level. Suppose we use 2009 as the base year and want to convert 2010 GDP to 2009 prices. The relationship between 2009 and 2010 can be depicted with price index numbers. In percentage terms, the price index for each year is calculated by dividing each year's price level (or average price level if more than one item is produced) by the price level that existed in the base year, then multiplying by 100, as in Table 1.1. Thus, the price index for 2009 is 100 (2009 price of \$1 divided by the base year price, also 2009, of \$1, then multiplying by 100). Likewise the price index for 2010 is 200, indicating that the average price in 2010 is 200 percent of the average for 2009. Once price index numbers are created for each year, the GDP data can be corrected for inflation by dividing each year's GDP in current dollars by that year's price index, after converting the index to decimal form. That is, 2009's inflation-corrected GDP is

TABLE 1.1 Calculating Real GDP Using a Price Index

Year	(1) Production of Bread (Loaves)	(2) Price of Bread	(3) GDP in Current Dollars (1) × (2)	(4) Price Index Percentage and Decimal Forms	(5) Real GDP (2009 Dollars) (3)/(4) (in Decimals)
2009	1,000	\$1.00	\$1,000	$(\$1/\$1) \times 100 = 100$, or 1.00	\$1,000
2010	1,000	2.00	2,000	$(\$2/\$1) \times 100 = 200$, or 2.00	1,000

real GDP

GDP in current dollars corrected for inflation. The correction requires dividing each year's GDP in current dollars by that year's price index, in decimal form.

equal to its current dollar GDP of \$1,000 divided by the 2009 price index of 1, in decimals, or simply \$1,000. Inflation-corrected GDP for 2010 is found in the same way and is also \$1,000 since current-dollar GDP in 2010 is \$2,000 but the price index for the year is 2. When current-dollar GDP is corrected for inflation, the result is **real GDP**. In this example, while current-dollar GDP doubles between 2009 and 2010, real GDP remains constant, reflecting the fact that production is unchanged. In this way, real GDP shows us what is happening over time to the economy's real production of goods and services.

Adjusting GDP for Population

When we look at a series of GDP data, we must correct the series for the misleading effects of inflation. A second adjustment that must be made, regardless of whether we are considering a series of GDP data or simply one year's GDP, concerns the number of people that GDP must be spread among. That is, GDP in China is many times that of Switzerland, but since China's GDP must be spread among so many more people, the average level of well-being of the Swiss population is many times that of the Chinese population.

Adjusting GDP for differences in population requires that GDP be divided by the population of the country in question. But which GDP value, GDP in current prices or real GDP, should we use in the calculation? This depends on the data that we are analyzing. If we are looking at the performance of a single economy over time, the appropriate measure would be inflation-adjusted (real) GDP divided by the population, since prices are not likely to remain constant over time. This would be called **per capita real GDP**. Alternatively, if we are analyzing a country's GDP data for only one year, the appropriate measure would be GDP in current prices divided by the population, known simply as **per capita GDP**. For any one country, per capita real GDP for a series of years indicates whether the performance of the economy, in terms of the average well-being of its inhabitants, is improving.

In Table 1.2 we track the performance of the U.S. economy for the period 1980 through 2008 as an example of how per capita real GDP is calculated and used to shed light on changes in potential well-being. Current-dollar GDP is listed in column (2). The price index is found in column (3), in percentage terms, and uses 2000 as its base. Column (4) gives real GDP and is obtained by dividing column (2) by column (3), after converting the price index to decimals.

per capita real GDP

Real GDP divided by population.

per capita GDP

GDP in current dollars divided by population.

TABLE 1.2 U.S. Gross Domestic Product in Current and Real Dollars, 1980–2008Source: <http://bea.gov/newsreleases/national/gdp/gdpnewsrelease.htm>.

(1) Year	(2), GDP Current Dollars (Billions)	(3) Price Index	(4) GDP, Real 2000 Dollars (Billions)	(5) Population (Millions)	(6) GDP, Real per Capita (2000 Dollars)
1980	2,789.5	54.06	5,161.7	227.7	22,668.86
1981	3,128.4	59.13	5,291.7	230.0	23,007.39
1982	3,255.0	62.74	5,189.3	232.2	22,348.41
1983	3,536.7	65.21	5,423.8	234.3	23,148.95
1984	3,933.2	67.67	5,813.6	236.3	24,602.62
1985	4,220.3	69.72	6,053.7	238.5	25,382.39
1986	4,462.8	71.27	6,263.6	240.7	26,022.43
1987	4,739.5	73.20	6,475.1	242.8	26,668.45
1988	5,103.8	75.71	6,742.7	245.0	27,521.22
1989	5,484.4	78.57	6,981.4	247.3	28,230.49
1990	5,803.1	81.61	7,112.5	250.1	28,438.62
1991	5,995.9	84.46	7,100.5	253.5	28,009.86
1992	6,337.7	86.40	7,336.6	256.9	28,558.19
1993	6,657.4	88.39	7,532.7	260.3	28,938.53
1994	7,072.2	90.27	7,835.5	263.4	29,747.53
1995	7,397.7	92.12	8,031.7	266.6	30,126.41
1996	7,816.9	93.86	8,328.9	269.7	30,882.09
1997	8,304.3	95.42	8,703.9	272.9	31,894.10
1998	8,747.0	96.48	9,066.9	276.1	32,839.19
1999	9,268.4	97.87	9,470.3	279.3	33,907.27
2000	9,817.0	100.00	9,817.0	282.4	34,762.75
2001	10,128.0	102.40	9,890.7	285.5	34,643.43
2002	10,469.6	104.19	10,048.8	288.4	34,843.27
2003	10,960.8	106.41	10,301.0	291.3	35,362.17
2004	11,685.9	109.46	10,675.8	294.1	36,299.89
2005	12,421.9	113.34	10,959.5	296.9	36,913.10
2006	13,178.4	116.67	11,294.8	299.8	37,674.45
2007	13,807.5	119.82	11,523.5	301.6	38,207.89
2008	14,264.6	122.46	11,648.4	304.5	38,254.19

The first item of interest in Table 1.2 is the fact that real GDP declined during 1982 and 1991, even though current-dollar GDP increased during each of these years. This indicates that while actual production was falling in these years, the falls in production were more than offset by price increases, reinforcing the need to adjust current-dollar GDP for the effects of inflation. In each of these years, fewer goods and services were available for consumption than had been available in the preceding year. When the nation's output of goods and services declines in this way, we say that the economy is in *recession*. Sometimes, however, the economy is in recession even though this may not be immediately obvious when looking at

annual data on GDP. We are currently in the midst of such a period. While both current-dollar and real GDP rose during 2008, a rather severe recession began during that year. How could this be if both measures of GDP rose for the entire year? The answer is quite simple: The modest increases in both measures of GDP that took place in the early part of 2008, cumulatively, more than offset the rather dramatic declines in production that occurred near the end of that year—and for that matter continued on into 2009. This will be addressed in more detail in Chapter 11.

Graphically, during the recessionary years of 1982, 1991, 2001, and 2008, the U.S. economy operated below the production possibilities curve, indicating that the average well-being of the population was lower than its potential. A rough estimate of average well-being can be found by dividing real GDP by population, giving real per capita GDP, as in column (6). Here again we find declines during the recessionary years of 1982 and 1991. More interestingly, even though both current-dollar and real GDP increased during 2001, per capita real GDP does show a decline, additional confirmation of that year's recession.

Table 1.3 reports data on population and real GDP for selected countries in 2006 (ignore the other data in the table for now). To maintain consistency, GDP for all countries is converted to constant (2000) U.S. dollar values. We arbitrarily classify a country as lesser developed (LDC) if its per capita real GDP is less than \$6,500 per year and as developed (DC) if its per capita real GDP is greater than this level. Data of this sort provide direct insight into the economic problem of scarcity and allow for a rough international comparison of average well-being.

Real GDP in the United States during 2006 was roughly \$11.3 trillion. That is, during 2006 there was about \$11.3 trillion in goods and services available for consumption by the country's nearly 300 million citizens. Dividing GDP by the population yields a per capita real GDP of \$37,674. Thus, if U.S. national production were equally divided in 2006, each member of the public would have had about \$38,000 of goods and services at his or her disposal. Compare this with the plight of the average citizen in an LDC. In Zambia, for example, the per capita real GDP is only \$321 per year. And poverty of this nature is not simply an isolated problem, but rather commonplace in much of the world. Whereas scarcity in DCs is primarily a problem of not having all wants and desires satisfied, in much—or even most—of the world, scarcity translates into the type of grinding poverty noted in the introduction to this chapter. Finally, bear in mind that the problem of poverty that plagues much of the world is not simply an academic abstraction. Rather, as is pointed out in Table 1.3, it translates directly into early death. While an individual fortunate enough to be born in a DC in 2006 could count on an average life of 80 years, his or her counterpart born in an LDC would likely leave this life 15 years earlier.

Adjusting GDP for Distribution

The data in Table 1.3 indicate that much of the world's population suffers from a degree of misery that is probably unintelligible to those of us living in DCs. Yet, even the dire circumstances reflected by the data understate the true extent of human misery that afflicts so many, because average measures of well-being such as per capita GDP fail to take into account the unequal distribution of GDP within

TABLE 1.3 Per Capita Real GDP and Population, Actual and Growth Rates, Population Density, Annual Growth Rate of Real GDP, and Life Expectancy in Selected CountriesSource: World Bank, *World Development Indicators Online*, available at <https://publications.worldbank.org/commerce>.

Country	Population Estimate 2006 (Millions)	Annual Rate of Population Increase	Population Density per Square Kilometer (2006)	Per Capita Real GDP* (2006)	Percentage Annual Growth Rate of Real GDP (2006)	Life Expectancy at Birth, Latest Available Dates
Lesser Developed						
Chile	16	0.8	22	5,912	4.3	78
China	1,311	0.6	140	1,610	11.6	72
Colombia	46	1.4	45	2,317	6.8	73
Egypt	74	1.8	75	1,615	6.8	71
El Salvador	7	1.4	326	2,262	4.2	72
Ethiopia	77	2.6	77	161	10.9	52
India	1,109	1.4	373	637	9.7	64
Indonesia	223	1.1	123	983	5.5	68
Kenya	37	2.6	64	439	6.1	53
Mexico	104	1.1	54	6,389	4.8	74
Nigeria	144	2.4	159	454	6.2	47
Peru	28	1.1	22	2,552	7.6	71
Philippines	86	2.0	289	1,154	5.4	71
South Africa	47	1.0	39	3,562	5.0	51
Thailand	63	0.2	124	2,605	5.1	70
Venezuela	27	1.7	31	5,426	10.3	74
Zambia	12	<u>1.9</u>	16	321	<u>6.2</u>	<u>42</u>
Average		1.5			6.6	65
Developed						
Canada	32	1.0	3.6	25,894	2.8	80
France	61	0.8	111	23,992	2.0	81
Germany	82	-0.1	236	24,474	2.8	79
Italy	59	0.6	200	19,630	1.9	81
Japan	128	0.0	350	39,824	2.2	82
Singapore	4	3.1	6,388	28,833	9.4	80
Sweden	9	0.6	22	31,189	4.2	81
Switzerland	7	0.6	187	35,794	3.2	82
United Kingdom	61	0.6	250	27,611	2.8	79
United States	299	<u>1.0</u>	33	37,674	<u>2.9</u>	<u>78</u>
Average		0.8			3.4	80

*In constant (2000) U.S. dollars.

a country. Consider again Zambia with its per capita GDP of \$321. Clearly, life would seem to amount to mere subsistence for a Zambian earning only \$321 per year. Yet, most Zambians would dearly love to earn this “average” amount of income. In Zambia, with its very limited GDP, the problem of human misery is greatly complicated by the very uneven distribution of GDP. While a fortunate few earn many times more than \$321 per year, the majority of Zambians have annual incomes far below this average figure.

What is meant by the distribution of GDP, or the distribution of income as it is more commonly known, may be best understood by considering a simple example. Suppose that there are two economies, Alpha and Omega, each composed of five families, A through E. Further, suppose that in Alpha each of the families earns \$2,000 per year, while in Omega families A through D have no income and family E earns \$10,000 per year, as presented in Table 1.4. In each economy, then, the annual income for all families, or GDP, is \$10,000 and the average income is \$2,000. Do these facts suggest that the people of each economy are equally well off? Obviously not. Simply looking at averages is quite misleading in this case since, although GDP levels are the same, the distribution of GDP differs so markedly between the two countries.

In the real world, of course, it is unlikely that either the perfectly equal distribution of Alpha or the perfectly unequal distribution of Omega will exist. But with a little reflection on Table 1.4, a way of evaluating actual distributions of GDP becomes apparent. That is, why is the distribution of income in Alpha considered to be perfectly equal? The answer is straightforward: Each of the five families controls the same share of Alpha’s income (\$2,000). Put differently, each of the five families represents one-fifth, or 20 percent, of Alpha’s population, and at the same time, each of the five controls one-fifth, or 20 percent, of Alpha’s GDP (\$2,000/\$10,000). Thus, perfect equality exists when each 20 percent “chunk” of an economy’s families controls 20 percent of the economy’s income.

How closely do existing economies come to perfect equality? Are there systematic differences in income distribution between LDCs and DCs? Answers to these questions are found in Table 1.5, which reports data on income distribution for selected LDCs and DCs. (You will note that, as is customary, Table 1.5 ranks each economy’s families from poorest to richest rather than in randomly chosen 20 percent groups.)

To see the impact of the distribution of GDP on individual well-being, again consider Zambia. Recall that Zambia has a per capita GDP of \$321, which was

TABLE 1.4 The Distribution of Income within an Economy

	Annual Income Family A	Annual Income Family B	Annual Income Family C	Annual Income Family D	Annual Income Family E	Annual Income of All Families	Average Annual Family Income
Alpha	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$10,000	\$2,000
Omega	0	0	0	0	10,000	10,000	2,000

TABLE 1.5 The Distribution of Income in Selected CountriesSource: World Bank. *World Development Indicators Online*, available at <https://publications.worldbank.org/commerce>.

Total Income or GDP Controlled by Each Group of Families					
Country (Year of Study)	Poorest 20 Percent	Second 20 Percent	Third 20 Percent	Fourth 20 Percent	Richest 20 Percent
Lesser Developed					
Chile (2003)	3.8%	7.3%	11.1%	17.8%	60.0%
China (2004)	4.2	8.5	13.7	21.7	51.9
Colombia (2004)	2.9	6.9	11.0	18.3	60.9
Egypt (2004)	8.9	12.7	16.0	20.8	41.5
El Salvador (2002)	2.7	7.5	12.8	21.2	55.9
Ethiopia (2000)	9.1	13.2	16.8	21.5	39.4
India (2004)	8.1	11.3	14.9	20.4	45.3
Indonesia (2005)	7.1	10.7	14.4	20.5	42.5
Kenya (1997)	6.0	9.8	14.3	20.8	49.1
Mexico (2004)	4.3	8.3	12.6	19.7	55.1
Nigeria (2003)	5.0	9.6	14.5	21.7	49.2
Peru (2003)	3.7	7.7	12.2	19.7	56.7
Philippines (2003)	5.4	9.1	13.6	21.3	50.6
South Africa (2000)	3.5	6.3	10.0	18.0	62.2
Thailand (2002)	6.3	9.7	14.0	20.8	49.0
Zambia (2004)	<u>3.6</u>	<u>7.9</u>	<u>12.6</u>	<u>20.8</u>	<u>55.1</u>
Average	5.3	9.2	13.4	20.3	51.8
Developed					
Canada (2000)	7.2	12.7	17.2	23.0	39.9
France (1995)	7.2	12.6	17.2	22.8	40.2
Germany (2000)	8.5	13.7	17.9	23.0	36.8
Italy (2000)	6.5	12.0	16.7	22.8	42.0
Japan (1993)	10.6	14.2	17.6	22.0	35.7
Singapore (1998)	5.0	9.4	14.6	22.0	49.0
Sweden (2000)	9.2	14.0	17.6	22.7	36.6
Switzerland (2000)	7.6	12.2	16.3	22.6	41.3
United Kingdom (1999)	6.1	11.4	16.0	22.5	44.0
United States (2000)	<u>5.4</u>	<u>10.7</u>	<u>15.7</u>	<u>22.4</u>	<u>45.8</u>
Average	7.3	12.3	16.7	22.6	41.1

suggested to understate the degree of poverty felt by Zambians. If GDP were equally distributed, that is, if all Zambians earned \$321 per year, then each 20 percent chunk of Zambian families would control approximately 20 percent of Zambian GDP. Yet, as Table 1.5 points out, this is not the case. As miserable as their plight would be with a perfectly equal distribution of income yielding a 20 percent share of GDP for the “poorest” families, in reality these families control only

3.6 percent of Zambian GDP. Thus, if the meager Zambian GDP were equally distributed, giving meaning to the per capita GDP value of \$321, the families making up the poorest 20 percent grouping would find their income increasing by about a factor of a bit more than 5 (rising from 3.6 to 20 percent).

This is not to suggest that all Zambians earn less than the average of \$321. Such cannot be the case if the average is properly calculated. Table 1.5 indicates that while a majority of Zambian families are truly impoverished, some families are relatively rich. Note the share of Zambian GDP controlled by the richest 20 percent of families. The 55.1 percent share of national income controlled by this group indicates that the degree of human misery brought on by Zambia's extremely limited GDP is greatly worsened by the fact that this limited GDP is very unequally distributed.

Is this situation unique to Zambia? Unfortunately not. As the averages for the shares of GDP controlled by each group of families for the different countries indicate, the degree of income inequality in LDCs is much greater than in DCs. This is not to suggest that the DCs have distributions that approximate perfect equality. In fact, some may feel that the degree of income inequality that exists in DCs is unacceptably high. The importance of Table 1.5 is that the data indicate that the degree of inequality that exists appears to be significantly greater in LDCs than in DCs. Given this, it may be concluded that the degree of human misery reflected by average measures of well-being such as per capita GDP fails to describe accurately the misery suffered by much of the world's population.

Finally, you may be wondering why we focus such attention on the distribution of income within countries. Clearly, one answer is that it points to the inaccurate conclusions that one might draw if only average measures of income or GDP are considered. But a more fundamental point is that experience has shown that social unrest and income inequality are positively related. To prove this to yourself, return to Table 1.5 and consider your perceived relationship between these two factors—isn't it the case that countries with relatively unequal distributions of income are also the countries that you regularly read about in the popular press as suffering from riots, work stoppages, unusually high rates of crime, and other forms of social unrest?

CAUSES OF POVERTY AND REQUISITES OF ECONOMIC GROWTH

The economic roots of world poverty become reasonably clear from an examination of the foundations of economic analysis. In some cases, an economy may be operating to its potential, that is, operating on its production possibilities curve, and yet pervasive poverty is still the rule. Often mentioned as problems in this regard are pressures from the size and growth of an economy's population. Whether population pressures are the primary problem, when an economy's production possibilities are such that even achieving maximum output results in excessive poverty, remedial action must be directed toward economic growth. Pushing the production possibilities curve outward requires improvement in either the quality and quantity

of a nation's labor and capital resources or an improvement in the overall level of technology—and occasionally an improvement in both. In other cases, poverty results from relatively inefficient production methods. Here remedies should be targeted toward returning the economy to its production possibilities curve. These topics are the focus for the rest of this book; we briefly introduce them here.

Quality of the Labor Force Almost without exception, LDCs have labor forces that are not very well educated and thus not very productive relative to DCs. For example, whereas the adult illiteracy rate in the United States is only about 1 percent, the rate rises above 50 percent in countries like Haiti and Ethiopia. Education is the key to improvement in the quality of a country's labor force. As literacy rates increase, so do the possibilities for upgrading the skills of the labor force. A broad-based primary education system is a prerequisite for literacy, and literacy is, in turn, a basic foundation for economic growth. Beyond the primary level, secondary and higher education are important in improving labor force quality in that they develop workers who are more capable of problem solving and innovation. Clearly, development of a comprehensive educational system is essential to providing rising living standards. Equally clearly, developing such a system is difficult in a society whose population lives close to, or at, a subsistence level.

Stock of Capital and Capital Accumulation Small amounts of available capital resources and, thus, low capital-to-labor ratios translate directly into low labor productivity and poverty. Countries with limited mineral deposits, meager supplies of tools and machinery, and poorly developed transportation and communications networks usually have low per capita GDPs. Capital accumulation is necessary if a country is to break out of a poverty prison. But capital accumulation requires that some of a country's annual output of consumer goods and services be sacrificed in favor of production of capital goods and development of resources. As is true with the development of an educational system, this is particularly difficult when many of a country's citizens suffer from malnutrition or even starvation.

Technology A trip through the countryside and a visit to the industrial production sites in a poor country typically reveal very primitive techniques of production. Failure or inability to adapt to modern production techniques translates directly into low productivity and poverty. Unfortunately for LDCs, to some extent, technological development goes hand in hand with capital accumulation and the development of educational systems. High levels of technology are seldom developed in poor countries.

Efficiency In many poor countries, available resources are neither fully nor efficiently used. Often, traditional ways of doing things block adaptation of new and efficient production techniques. For example, it is easy to find poor countries naturally endowed with potentially productive agricultural land but which, based on traditional tenure systems, hold the land in units too small to allow for maximum efficiency. In other countries, rigid wage systems make it uneconomical for potential employers to hire the entire labor force, leading to unemployment.

Population Are population pressures serious threats to living standards? Evidence on this issue is presented in Table 1.3. Consider first the issue of population

and the density of population. Does the absolute level of a country's population or its density preclude a high level of well-being? The answer is no on both counts. While India and China are examples of LDCs with very large populations, the United States and Japan are examples of DCs with both high levels of well-being and relatively large populations. In addition, many of the LDCs listed in Table 1.3 have relatively small populations. As for the concentration of population, known as *population density*, consider Ethiopia and Singapore. Ethiopia, truly one of the most impoverished countries on earth, has a low 77 persons per square kilometer, while Singapore, with a per capita GDP many times that of Ethiopia, is home to about 6,400 people per square kilometer. Similar outcomes exist for the relatively wealthy and densely populated United States and Japan and for the relatively poor, less densely populated Zambia, Chile, and Argentina. Finally, what of pressures from population growth? The evidence here is mixed. Whereas some LDCs have both relatively high rates of population growth and economies that have been recently stagnant, Venezuela and Nigeria each recorded relatively high GDP and population growth rates recently.

What may we then conclude with respect to the impact of population pressures on poverty? Perhaps the most defensible conclusion would be that while population pressures are not the fundamental cause of world poverty, excessive population growth does tend to complicate the problem of scarcity. At the very least, we know that if overall well-being is to increase, real GDP must grow more rapidly than population.

CAN GOVERNMENTS HELP?

What, if anything, can governments do to help solve world poverty problems? Over the last few decades, populations have looked increasingly to their governments to solve their problems for them. Governments, in turn, have accepted more responsibility for solving the economic problems of their populations. Unfortunately, people often expect more of their governments than those governments can provide. And governments often promise more than they are able to deliver.

Governments of LDCs

The single most important decision that government must make with respect to economic development concerns the extent to which economic decision making will be influenced by government. The options range from little or no government involvement to decision making based entirely on government dictate. As will be discussed in Chapter 2, the ongoing movement away from extreme government interference in economic decision making that is sweeping through eastern Europe, China, and Vietnam indicates that economic development may be enhanced by reducing the economic role of government. To see this, return to Table 1.3 and note China's remarkable average annual rate of growth in real GDP of 11.6 percent. Although it may seem paradoxical, the governments of many LDCs, rather than being vehicles for economic improvement, are burdens to development. In general,

economic development tends to reach its potential when private parties, rather than government, are allowed to own economic resources and decide the use for those resources. Economists refer to this as *private property rights*. Equally important, resource owners must be allowed to reap the benefits of well-made decisions on resource use, and they must also be allowed to suffer the penalty of poorly made decisions. Governments of LDCs, then, would well serve the development interests of their people by making sure that their involvement in economic activity is limited to those areas where the economy, left to its own devices, clearly fails to achieve desired development goals. In this regard, the governments of LDCs should pursue policies that improve the quality of the labor force, enhance capital accumulation, raise levels of technology, increase efficiency, and, perhaps, slow population growth. This is a tall order—more easily said than done.

In most countries where literacy rates are high, governments have assumed responsibilities for primary education. In many countries this responsibility has been extended to secondary and even to higher education. Insofar as it can, the government of an LDC would be well advised to emulate these countries. But universal education does not come easily or without cost. The establishment of an educational system is a slow, expensive task. Physical facilities must be built, and a corps of teachers must be trained. LDCs find it very difficult to divert resources from the provision of subsistence goods to the provision of education. The immediate opportunity cost of additional education is high for a hungry population.

Most government help in the capital accumulation process will be indirect rather than direct. Governments cannot create new capital resources directly, but they can establish an economic climate favorable to capital accumulation. They can pursue monetary and fiscal policies conducive to economic stability. They can enact tax laws that provide special incentives for capital accumulation. It is also important that those who engage in saving and investing in new capital equipment be allowed to reap the rewards for doing so. In many instances, capital accumulation is discouraged because revenue-hungry governments tax away the returns that accrue from it.

Government officials in LDCs often speak glibly about such things as raising the levels of technology and increasing the operating efficiencies of their economies. One of the most positive things they can do in this respect is to press development of social infrastructure to the maximum extent that their resources will allow. For example, transportation networks and communications networks contribute greatly to efficiency. So do energy and power systems.

Sparked by governmental activities, some positive action appears to be under way in certain parts of the world concerning population control. For example, in India, Thailand, and China, massive government educational efforts for birth control and family planning have been made. In any case, during the past couple of decades trends in world population growth appear to have turned downward.

Governments of DCs

Since World War II, the economically advanced countries of the world have provided some economic assistance to LDCs, partly for humanitarian reasons and

partly in hopes of obtaining ideological allegiance from the LDCs. In this regard, there has been much rivalry between communist countries and those of the Western world. Some aid to LDCs has been channeled through international agencies such as the World Bank. At the same time, individual countries have conducted aid programs of their own. Basically, aid takes two forms: (1) loans and grants and (2) technical assistance.

Loans and grants generally are expected to help the recipient countries improve their labor forces, accumulate capital, improve their technological capabilities, and increase the efficiencies of their production processes. They are used to build educational facilities and for sanitary engineering purposes. They help construct power plants, cement plants, communications and transportation facilities, agricultural facilities, and the like. They are also used to import such things as fertilizer, raw and semifinished materials, industrial equipment, agricultural equipment, and spare parts.

Technical assistance helps in upgrading labor force skills and in advancing the technologies of the recipient countries. Much technical assistance is turned toward increasing the productivity of agricultural resources, improving educational systems, and raising standards of public health. In addition, advisors from the DCs often assist in getting industrial projects under way.

The World Bank is an organization through which DCs can jointly assist LDCs. It provides both low-interest loans from funds supplied by the DCs and technical assistance to low-income countries. Loans are made for a variety of projects, large and small, public and private. Bank officials require that the projects for which loans are made show every promise of paying off both the principal and the interest. The World Bank has been quite successful in this respect but has often been criticized as being too stingy with its loans.

Summary

Abject poverty is without question the major economic problem of the world. This has always been so, but it has become the focus of great concern for nations and for large numbers of persons in recent years. To understand its causes and achieve its possible alleviation, an understanding of the nature of economics and economic activity is necessary.

Economic activity is generated by the wants of human beings, which seem to be insatiable in the aggregate. The means available in any economy for satisfying the wants of its population are scarce. They consist of the economy's resources—its labor and its capital—along with its available technology. The supplies of resources, together with the level of technology available, determine the maximum GDP that the country can produce to satisfy wants. Dividing a country's GDP by its population yields its per capita GDP, which is a rough measure of its citizens' average well-being. Further insight into actual well-being is achieved when the distribution of GDP is taken into account, as well.

The basic elements of economic activity and economic analysis provide insight into the causes of poverty. Poverty stems from low labor force qualities, little capital for labor to work with, low levels of technology, inefficiencies in the use of

resources, and, in some instances, excessive rates of population growth. To break out of the poverty trap, a country must make progress in attacking some or all of the causes. But it is unlikely to make much progress unless it achieves a marked degree of political and economic stability.

Developed countries can and do assist LDCs as they strive to improve their economic lots. Aid takes two basic forms: (1) loans or grants and (2) technical assistance. Individual DCs have independent aid programs. They also engage in joint aid programs through such organizations as the World Bank.

Discussion Questions

1. GDP measures the total value of production within an economy during a specific time period. What adjustments must be made to GDP before it can be used as a rough measure of social well-being?
2. Explain how GDP and real GDP differ.
3. Using a production possibilities curve, explain the opportunity cost principle.
4. Using a production possibilities curve, explain the concept of increasing opportunity costs.
5. What would a linear (straight-line) production possibilities curve imply?
6. Often it is blithely stated that “a country should pull itself up by its own bootstraps.” From the standpoint of shifting the production possibilities curve outward, improving educational systems is an example of this. Referring to the data for LDCs in Table 1.3, discuss the practical problems of such a recommendation for a very poor country.
7. Production possibilities curves are typically assumed to be convex, or bow-shaped. Explain the economic implications of this shape.
8. Cost-benefit analysis is one of the most versatile tools in economic analysis. Suppose the end of the semester is approaching and you have to begin preparing for exams. Explain how you might use cost-benefit analysis to maximize your grade point average.
9. Make up an example that shows that GDP can increase even though real production is falling within an economy between two years.
10. If the goal of public spending is to shift the production possibilities curve of an economy outward, which of the following proposals would seem most likely to succeed: the purchase of a nuclear-powered aircraft carrier; a “hot meals” program for the elderly; a job training program for unemployed workers?
11. Suppose an economy produces only food and housing. Draw and explain the characteristics of its production possibilities curve. Show and explain the impact on the curve of (a) a new technology that improves food production only; (b) a new invention that improves both food and housing production.
12. Using the concepts of marginal social benefit and marginal social cost, explain how the optimal combination of goods can be determined in an economy that produces only two goods.

13. From a standpoint of evaluating a country's economic performance over time, does it matter what year one chooses as the base year in calculating a price index?
14. Using the data of Table 1.3, calculate the real GDP (not per capita real GDP) of both the United States and China. If both economies continue to grow at their current rates, as listed in Table 1.3, when would the Chinese economy overtake the U.S. economy in terms of GDP?
15. Use production possibilities curves to explain the distinction between general and specific economic growth.
16. Relying on the data in Table 1.5, does there seem to be a relationship between a country's distribution of income and social stability?
17. Relying on the data in Table 1.3, can we conclude that population or population growth is a primary cause of poverty within a country?
18. Define and distinguish graphically between general and specific economic growth. Give examples that might lead to each.

Additional Readings

Collier, Paul, and David Dollar. *Globalization, Growth, and Poverty: Building an Inclusive World Economy*. Policy Research Report. Washington, DC: World Bank; New York: Oxford University Press, 2002.

This World Bank report includes charts on world poverty, worldwide household inequality, wage growth by country group, GDP, and population density.

Fernandez Jilberto, A. E., and Andre Mommen, eds. *Regionalization and Globalization in the Modern World Economy*. New York: Routledge, 2002.

Series of articles discussing globalization versus regionalization. Chapters include economic reform in Russia, regional economic integration in Sub-Saharan Africa, Turkey's role in Europe and Asia, and the regional integration of Latin America.

Malhotra, Kamal, and Palathingal, Anita. *Making Globalization Work for the Least Developed Countries*. United Nations Ministerial Conference on "Making Globalization Work for the Least Developed Countries." Istanbul, Turkey: United Nations Development Programme, 2007.

This publication draws attention to issues and challenges facing lesser developed countries (LDCs) and provides policy makers, practitioners, and academics in LDCs with important guidance on the way forward.

Meier, Gerald M., and James E. Rauch, eds. *Leading Issues in Economic Development*. 8th ed. Oxford, England: Oxford University Press, 2005.

Provides a thorough treatment of the major issues in economic development.

Motamen-Samadian, Sima, and Garrido Celso, *Emerging Markets: Past and Present Experiences and Future Prospects*. New York: St. Martin's, 2000.

Discusses issues and experiences of several emerging markets, including Mexico, India, and the Asia-Pacific region.

Van De Walle, Dominique, and Kimberly Nead, eds. *Public Spending and the Poor: Theory and Evidence*. 2nd ed. Baltimore: Johns Hopkins University Press, 2000.

This book is an excellent analysis of the relations between public spending programs and the plight of the poor from an international perspective.

Weibe, Keith, Nicole Ballenger, and Per Pinstrup-Andersen, eds. *Who Will Be Fed in the 21st Century? Challenges for Science and Policy*. Baltimore: The Johns Hopkins University Press, 2001.

Contributors discuss how technological advances could affect the supply of food and how poverty could affect the demand for food.

World Development Report. New York: Oxford University Press, annual.

Outstanding source for data on development issues. Includes data on income, population, life expectancy, health status, and educational attainment (as well as other topics) for well over 100 countries.

World Wide Web Resources

Food and Agriculture Organization of the United Nations (FAO)

www.fao.org

The FAO is mandated to raise international nutritional levels and to improve the living conditions of the world's poor. Provides links to nutrition, sustainable development, economics, and other issues.

Global Poverty—Brookings Institution

www.brookings.edu/topics/global-poverty.aspx

The Brookings Institution, a nonprofit public policy organization, is committed to several issues, including “securing a more open, safe, prosperous, and cooperative international system.” Their “Global Poverty” site provides analyses from experts in this field, and access to related topics and related initiatives.

The Hunger Project

www.thp.org/home

The Hunger Project is a strategic organization committed to ending world hunger. Includes links to their programs, coming events, reports, and newsletters.

The Hunger Site

www.thehungersite.com/clickToGive/home.faces?siteId=1

The Hunger Site is the “world’s first ‘click to donate’ site.” Users click on a button, and donations of food, paid for by sponsors, are distributed around the world.

InterAction: American Council for Voluntary International Action

www.interaction.org/

InterAction is a coalition of over 160 nonprofit organizations, based in the United States, working to help the world's poor. The Web page includes a mission statement, a search engine, a library, a calendar of events, and other topics.

United Nations Capital Development Fund (UNCDF)

www.uncdf.org/english/index.php

The UNCDF offers a unique combination of investment capital, capacity building, and technical advisory services to promote microfinance and local development in the lesser developed countries. The Web page includes links to local development, microfinance, the countries and regions UNCDF serves, publications and reports, and news and events.

United Nations Children's Fund (UNICEF)

www.unicef.org/

UNICEF works in 191 countries to help protect the health and well-being of the world's children through its many programs, efforts, and shared work with other groups. Major areas on the Web page include From the Press Centre, UNICEF in Emergencies, Millennium Development Goals, UNICEF Special Reports, and Unite for Children, Unite Against AIDS.

World Bank

www.worldbank.org/

The World Bank is a vital source of financial and technical assistance to developing countries around the world. Their Web site provides links to resources for different interest groups, blogs on many issues, upcoming events, and news and multimedia.