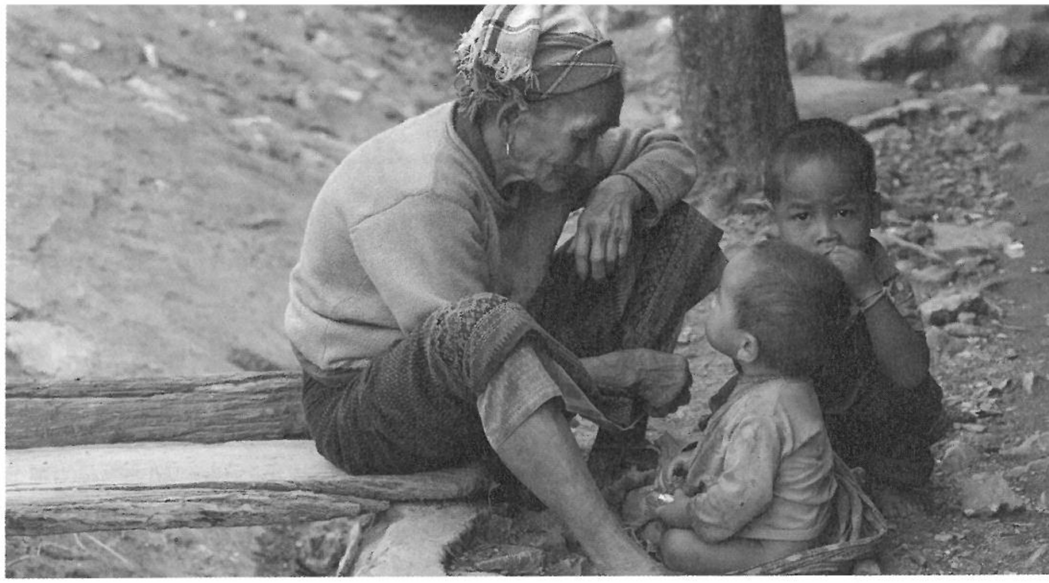
Chapter 33



© Josef Muellek/iStockphoto

# Income Distribution, Poverty, and Government Policy

## Fundamental Questions

1. Are incomes distributed equally in the United States?
2. How is poverty measured, and does poverty exist in the United States?
3. Who are the poor?
4. What are the determinants of poverty?
5. Do government programs intended to reduce poverty benefit the poor?
6. Why are incomes unequally distributed among nations?

Income is what resource owners receive as payment for the use of their resources. Resource owners have incentives to increase the value of their resources—that is, to increase their income. They will innovate and adopt the latest technology in order to enhance the value of capital. They will acquire additional skills and education in order to increase their wages and salaries. They will redirect their land from agricultural uses to commercial uses when they gain from so doing, and they will make improvements to their land to enhance its value. Resource owners want to ensure that they get the highest value for the use of their resources, now and in the future.

In every society, different people own different resources and differently valued resources. This means that incomes vary from person to person. The United States is a wealthy society. Yet many Americans today are living on city streets, in parks, under bridges, or in temporary shelters. Income is unequally distributed in the United States.

However, even the poor in the United States are better off than the entire populations of other nations. In Bolivia, the average life expectancy is only 53 years, a full 20 years less than in the United States. In Burma, only about one-fourth of the population has access to safe water. In Burundi, less than one-fourth of the urban houses have electricity. In Chad, less than one-third of the children reach the sixth grade. In Ethiopia, average income is just $120 a year.

Why is Ethiopia so poor and the United States so rich? Would the poor in the United States be rich in Ethiopia? Who are the poor and the rich? Is the inequality of incomes something that can or should be corrected? These questions are the topic of this chapter. Previous chapters have discussed how the market system works to ensure that resources flow to their highest-valued uses, that output is produced in the least-cost manner, and that people get what they want at the lowest possible price. But the market does not produce equal incomes. Markets ensure that goods and services are allocated to those with the ability to pay, not necessarily to those with needs, and definitely not in equal amounts to everyone.

One of the major controversies in economics over the last 100 years has been which system makes people better off, capitalism and free markets or socialism and government-controlled markets? In general, the answer is that capitalism and free markets lead to higher standards of living than government-run economies. The poorest nations in the world are the most repressive, and the wealthiest are the freest. Yet some wealthy nations attempt to ensure that incomes do not differ much from one individual to another. Sweden and Denmark, for instance, are wealthy societies in which government has a large role and family incomes do not differ much from one family to another. Hong Kong, on the other hand, has risen from a destitute little outcropping of China 50 years ago to one of the wealthiest societies in the world, and it has very little government involvement and wide differences in income from one family to another. In this chapter we discuss income distribution and how economic well-being is measured.

## 1. Income Distribution and Poverty

1 **Are incomes distributed equally in the United States?**

In March of each year, the U.S. Census Bureau conducts a survey of about 60,000 American families carefully selected to be representative of the whole population. Families are ranked in order of income from highest to lowest. Then they are separated into five equal-sized groups each containing a fifth of all families. The highest income fifth contains the 20 percent of families who have the highest incomes, the second fifth contains families with incomes between the 60th and 80th percentiles, and so on. Then the total income of the

**TABLE 1** Income Distributions, 2005–2007

| Year | Lowest Fifth | Second Fifth | Third Fifth | Fourth Fifth | Highest Fifth | Top 5 Percent |
|---|---|---|---|---|---|---|
| **Share of Aggregate Income*** | | | | | | |
| 2007 | 4.1 | 9.7 | 15.6 | 23.3 | 47.3 | 20.1 |
| 2006 | 4.0 | 9.5 | 15.1 | 22.9 | 48.5 | 21.5 |
| 2005 | 4.0 | 9.6 | 15.3 | 22.9 | 48.1 | 21.1 |
| **Mean Income*†** | | | | | | |
| 2007 | $16,068 | $38,304 | $61,444 | $91,881 | $186,529 | $316,618 |
| 2006 | 15,980 | 37,812 | 60,144 | 90,902 | 192,705 | 341,112 |
| 2005 | 15,684 | 37,319 | 59,718 | 89,316 | 187,237 | 327,798 |

*Families as of March of the following year.
†Income in 2007 dollars.
**Sources:** http://www.census.gov/hhes/www/income/histinc/f02AR.html; http://www.census.gov/hhes/www/income/histinc/f03AR.html.

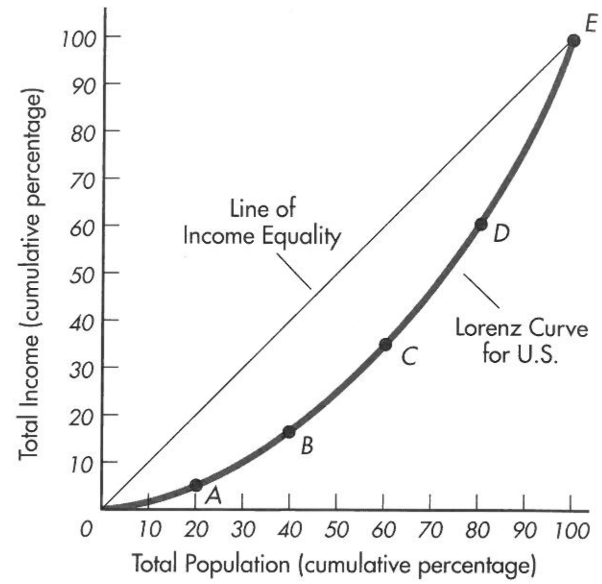
families within each fifth is summed and that sum is expressed as a percentage of the total income of all families. The result is five percentages which give the share of total income received by each fifth of families. Table 1 shows the results for 2005–2007. In 2007, the lowest fifth, containing the 20 percent of families with the lowest incomes, received 4.1 percent of total income, while the highest fifth received 47.3 percent.

Clearly, incomes are not equal. This is expected in a market-based economy. People have different skills and abilities and earn different incomes as a result. But how much inequality is there, and can too much inequality be a bad thing? It is not easy to measure income inequality. We have to decide what should be counted as income and whether income is a better measure of people's standards of living than some other measure, such as their expenditures. Then, once these choices have been made, a way to present the degree of inequality has to be chosen.

## 1.a. Income Inequality

The most common way to present income inequality is using a graph known as the Lorenz Curve. Equal incomes among members of a population can be plotted as a 45-degree line that is equidistant from the axes (see Figure 1). The horizontal axis measures the total population in cumulative percentages. Cumulative means that as we move along the horizontal axis, the percentages are increasing. The numbers end at 100, which designates 100 percent of the population. The vertical axis measures total income in cumulative percentages. As we move up the vertical axis, the percentage of total income being counted rises to 100 percent. The 45-degree line splitting the distance between the axes is called the *line of income equality.* At each point on the line, the percentage of total population and the percentage of total income are equal. The line of income equality indicates that 10 percent of the population earns 10 percent of the income, 20 percent of the population earns 20 percent of the income, and so on, until we see that 90 percent of the population earns 90 percent of the income and 100 percent of the population earns 100 percent of the income.

**FIGURE 1** The U.S. Lorenz Curve




*The farther a Lorenz curve lies from the line of income equality, the greater the inequality of the income distribution. The bottom 20 percent of the U.S. population receives 3.6 percent of total income, seen at point A. The Lorenz curve is plotted by successively adding 10 percent of the population and each group's percentage of total income.*

**Source:** www.census.gov/hhes/www/incineq.html; http://ferret.bls.census.gov.

**Lorenz curve:** a curve measuring the degree of inequality of income distribution within a society

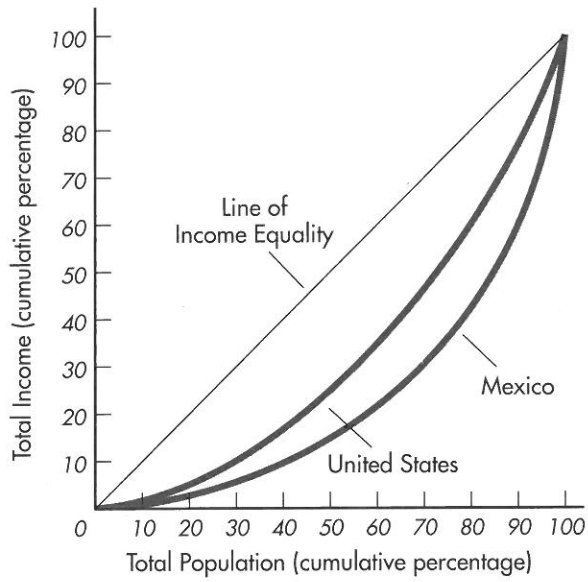
**Gini coefficient:** a measure of income inequality ranging between 0 and 1; 0 means that all families have the same income; 1 means that one family has all of the income

Points off the line of income equality indicate an income distribution that is unequal. Figure 1 shows the line of income equality and a curve that bows down below the income-equality line. The bowed curve is a **Lorenz curve**. The Lorenz curve in Figure 1 is for the United States in 2007. It shows that the bottom 20 percent of the population received 4.1 percent of income, seen at point *A*. The second 20 percent accounts for another 9.7 percent of income, shown as point *B*. The third 20 percent accounts for another 15.6 percent of income, so point *C* is plotted at a population of 60 percent and an income of 29.4 (4.1 + 9.7 + 15.6) percent. The fourth 20 percent accounts for another 23.3 percent of income, shown as point *D*. The richest 20 percent accounts for the remaining 47.6 percent of income, shown as point *E*. With the last 20 percent of the population and the last 47.3 percent of income, 100 percent of the population and 100 percent of income are accounted for. Point *E*, therefore, is plotted where both income and population are 100 percent.[1] Notice that the more bowed out the Lorenz curve, the greater the income inequality. For instance, in Figure 2 a comparison of income distribution in the U.S. and Mexico in 2007 is illustrated. You can see at a glance that incomes are more unequally distributed in Mexico than in the U.S. because the Lorenz curve for Mexico bows out farther than the U.S. curve does.

Another way you will see income distributions reported is with the **Gini coefficient**. The Gini coefficient is the area between the Lorenz curve and the line

[1]A Lorenz curve for wealth could also be shown. It would bow down below the Lorenz curve for income, indicating that wealth is more unequally distributed than income. Wealth and income are different and should be kept distinct. Wealth is the stock of assets. Income is the flow of earnings that results from the stock of assets.

**FIGURE 2** **Lorenz Curves for Mexico and the United States**




*Based on data for the United States and Mexico, the two Lorenz curves show that total income in Mexico is distributed among Mexican citizens much more unequally than total income in the United States is distributed among citizens of the United States.*
**Source:** Data are from *World Development Report, 2009.*

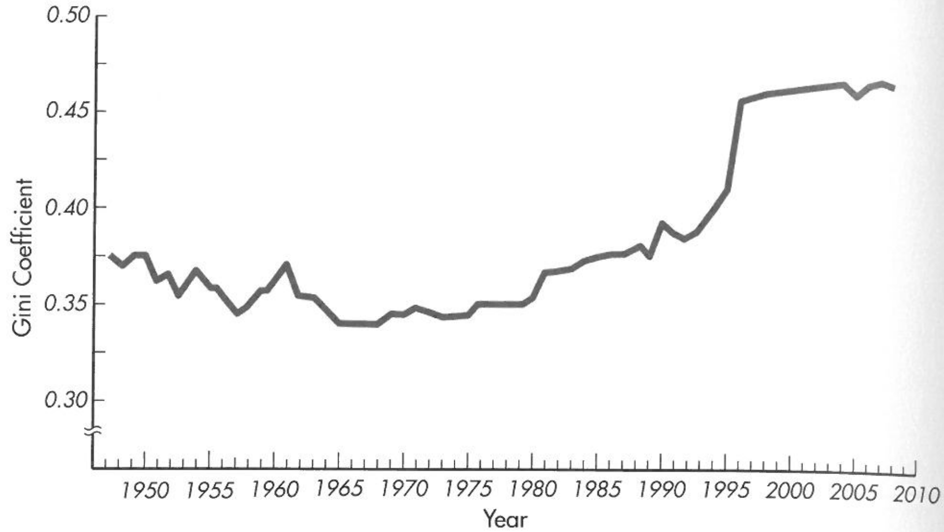
of perfect equality divided by the total area under the line of income equality. A Gini of 0 would occur if every family had the exact same amount of income, since there would be no difference between the line of income equality and the Lorenz curve. A Gini of 1 would occur if one family had all the income, since the Lorenz curve would be the rectangle going from 0 to 100 on the horizontal axis and from 100 on the horizontal axis up to the line of income equality—the entire area. According to Figure 3, the coefficient was between .35 and .37 until the 1990s; it then increased and has reached .466. This means that the distribution of income in the United States became slightly more equally distributed from 1947 to 1968, then became less equal from then until the mid-1990s, and then became more unequal after that.

A simpler measure of income inequality is the ratio of the average income in the top fifth to average income in the bottom fifth or the ratio of shares of the top fifth to the bottom fifth. This is called the HiLo ratio.[2] In 2007, as noted in Table 1, the ratio was 186,529/16,068 = 11.6 = 47.3/4.1. The higher the ratio, the more the top income quintile earns relative to the bottom quintile; 12 is more unequal than 11.6.

Notice that all of these measures are just indicators of inequality. They do not tell us what is too much or too little, whether an amount is good or harmful, or even whether absolute incomes are high or low. For instance, if

[2]Edgar Browning, *Stealing from Each Other*, Westport, Conn.: Praeger, 2008, Chapter 2.

**FIGURE 3** The Gini Coefficient




*The Gini coefficient is a measure of the dispersion of income that ranges between 0 and 1. A lower value indicates less dispersion in the income distribution: A Gini of 0 would occur if every family had the exact same amount of income, whereas a Gini of 1 would occur if all income accrued to only one family. Figure 3 shows that from 1947 to 1968, the dispersion of income fell gradually. Since then the dispersion has risen slowly.*
**Source:** *Economic Report of the President, 2000* and *2006*.

all incomes double, the shares are unchanged even though everyone is better off. Thus, the shares are only indicative of relative inequality, how families stand relative to one another.

**1.a.1. Families or Households** The Census Bureau also provides income shares for households. The primary difference is that a household can be a single person living alone, whereas a family must be composed of at least two people. The family data that we have been discussing do not contain single persons living on their own. As a result, the family data contain about 80 million families, whereas the household data contain about 120 million households. The household distribution also has a problem: The number of persons per household varies widely among the five fifths. The number of households is the same in each fifth but the number of persons is not. In fact, the top fifth of households contains 72 percent more people than the lowest fifth. Thus income per person in the top fifth is only 8.6 times income per person in the bottom fifth. If we have to choose between the family data and the household data, the family income one is preferable because family size varies less among the quintiles.

**in-kind transfers:** the allocations of goods and services from one group in society to another

**1.a.2. In-Kind Transfers** The census data overstate inequality because of what they do and do not measure. The census figures are for before-tax incomes, but isn't it the after-tax incomes that count? After all, much real income received by people is in nonmonetary form and so is not counted at all. Particularly important are government in-kind transfers that add to people's incomes but are not counted as income. **In-kind transfers**, or noncash transfers, are services or products provided to certain sectors of society. For example, food stamps, Medicaid, and housing assistance are not counted as income. Even the Earned Income Tax Credit is not counted even though it is a cash transfer and contributed about $380 billion in income in 2008.

**1.a.3. Size of Family or Household Units** The census data do not account for differences in the number of persons per family/household. Higher income families/households have more persons to support. There are about twice as many persons in the highest quintile group as in the lowest quintile. The data should be adjusted to reflect the difference in number of persons in each quintile.

**1.a.4. Consumer Expenditures** Income inequality might not be the best measure of how well off people are. People's standards of living are better evaluated by how much they consume, not their income. Many economists believe we would get a better picture of how rich or poor people are by looking at their consumption: What they have versus what they earn. The distribution of consumer expenditures is quite a bit more equal than is the distribution of income. According to the Bureau of Labor Statistics, the distribution of consumer expenditures had a HiLo ratio of 4.8 in 2005 in contrast to the income ratio of 14.1. The reason is that low-income households have substantially greater consumer expenditures than their income. In 2008, the poorest fifth consumed almost twice as much as their before-tax incomes.

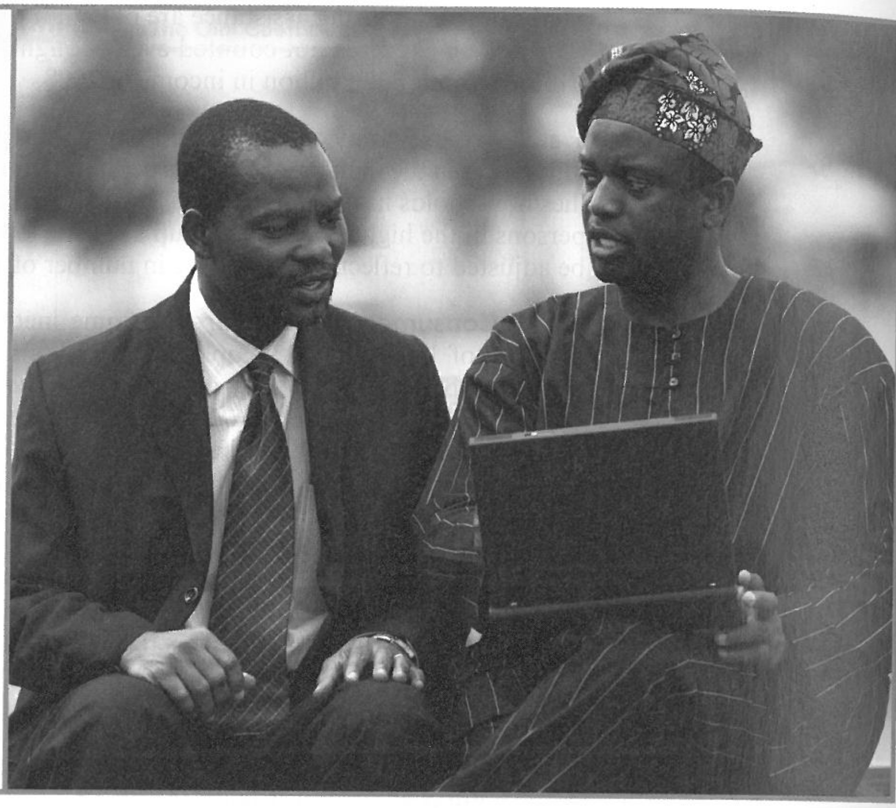
**1.a.5. Mobility** When assessing the degree of inequality in a nation it is important to know what happens over time. Do the poor stay poor and wealthy stay wealthy? When people see the history of the income shares, such as shown by the Gini coefficient of Figure 3, they are struck with how little it varies from year to year. In Figure 3, you can see how the distribution changed little from 1945 to 1993. The data seem to suggest that over that time the rich stayed rich and the poor stayed poor. Then from 1993 on, income inequality has risen, suggesting that while the rich got richer, the poor got poorer. These implications or suggestions are misleading because the same people are not in the same income quintiles over time. Economists use the term **mobility** to refer to the extent of movement within the income distribution over time. The lowest income quintile, for instance, tends to be largely the young and old. But as time passes, the young move from the lowest quintile to higher ones as they move into prime earning years and new young move into the lowest quintile. In fact, of all workers in the lowest quintile in one year, 32 percent had moved to a higher quintile just one year later. Similarly, those in peak earning years tend to be in the top quintile of income but drop into lower ones as they age and retire. Among those in the top quintile in one year, 25 percent had fallen to a lower quintile one year later. The longer the time period considered, the greater the mobility. Of those in the lowest quintile in one year, two-thirds are in a higher quintile 15 years later. Of those in the highest quintile in year one, 61 percent were in a lower quintile 15 years later.[3]

**mobility:** the extent to which people move from one income quintile to another over time

About 55 percent of taxpayers move to a different income quintile within 10 years. Among those with the very highest incomes in 1996—the top $\frac{1}{100}$ of one percent—only 25 percent remained in the group in 2005.

**1.a.6. Income Distribution in Other Nations** Income is much more equally distributed in industrial nations than it is in developing countries. In developing countries, the richest 20 percent of the population have more than 50 percent of

[3]Browning, *Stealing from Each Other*, pp. 24–25.



*Incomes are unequally distributed in every nation. In developing countries, the distinction between rich and poor is greater than in the industrial nations, although the per capita income is significantly less in the developing countries. For instance, although the per capita income in Nigeria is only 7 percent of the per capita income in the United States, the wealthy in Lagos, Nigeria, live very well, with large houses, servants, expensive clothes, and other accoutrements of wealth. During the 1970s, many Nigerians became very wealthy as the price of oil surged and Nigerian oil production rose. Economic crisis and the collapse of oil prices since the late 1970s have led to a decline in Nigeria that has wiped out the gains of the previous twenty years.*

© ad_doward/iStockphoto

total household income while the poorest 20 percent have less than 4 percent. Interestingly, the income distribution in the former and current communist countries of Russia and China is more unequal than that in the United States. Although the inequality of incomes within a nation compares the relative status of residents in that nation, it does not tell us anything about their absolute levels. It tells us very little about the quality of life of the people in different nations. Per capita income in the U.S. exceeds $47,000, whereas in China it is near $6,000 and is about $400 in Cameroon.

## 1.b. Measuring Poverty

Defining poverty is difficult. We can, without too much trouble, say which groups have higher or lower income levels and how incomes are distributed in a society, but this does not provide much information about a person's quality of life. All the income inequality measures can tell us is what one's income is relative to that of others; they are relative measures. Per capita income—income per person—is an absolute measure. It doesn't compare incomes, but simply states the level. Per capita income does not indicate how people feel about their income status or whether they enjoy good health and a decent standard of living. Those who are comfortable in one country could be impoverished in another. The poverty level in the United States would represent a substantial increase in living standards in many other nations. Yet members of a poor family in the United States would probably not feel less poor if they knew that their income level exceeded the median income in other countries.

2 | **How is poverty measured, and does poverty exist in the United States?**

**1.b.1. What Is Income?** In the United States, data related to poverty are collected and published annually by the Department of Health and Human Services. Table 2 lists the poverty thresholds of income for a nonfarm family of four since 1959. Families with incomes above the cutoffs would be above the poverty level, in the eyes of the federal government. These cutoffs are arbitrary numbers selected by the government to provide an indication of how many people are in poverty.

Where does the poverty income threshold come from? A 1955 study found that the average family in the United States spent about one-third of its income on food, so when the government decided to begin measuring poverty in the 1960s, it calculated the cost to purchase meals that met a predetermined nutritional standard for a year and multiplied that cost by 3. That is where it drew the poverty line. Since then, the official poverty-line income has been adjusted for inflation each year.

**cash transfers:** money allocated away from one group in society to another

The poverty thresholds count earnings from cash transfers (except earned income tax credit) but not in-kind transfers. **Cash transfers** are unearned funds given to certain sectors of the population. They include some social security

**TABLE 2** Average Income Poverty Cutoffs for a Nonfarm Family of Four in the United States, 1959–2009

| Year | Poverty Level | Year | Poverty Level |
|---|---|---|---|
| 1959 | $ 2,973 | 1990 | $13,359 |
| 1960 | $ 3,022 | 1991 | $13,924 |
| 1966 | $ 3,317 | 1992 | $13,950 |
| 1969 | $ 3,743 | 1993 | $14,764 |
| 1970 | $ 3,968 | 1994 | $15,200 |
| 1975 | $ 5,500 | 1995 | $15,600 |
| 1976 | $ 5,815 | 1996 | $16,036 |
| 1977 | $ 6,191 | 1997 | $16,400 |
| 1978 | $ 6,662 | 1998 | $16,660 |
| 1979 | $ 7,412 | 1999 | $16,895 |
| 1980 | $ 8,414 | 2000 | $17,463 |
| 1981 | $ 9,287 | 2001 | $17,463 |
| 1982 | $ 9,862 | 2002 | $18,244 |
| 1983 | $10,178 | 2003 | $18,900 |
| 1984 | $10,609 | 2004 | $19,424 |
| 1985 | $10,989 | 2005 | $19,874 |
| 1986 | $11,203 | 2006 | $20,516 |
| 1987 | $11,611 | 2007 | $21,100 |
| 1988 | $12,090 | 2008 | $21,834 |
| 1989 | $12,675 | 2009 | $22,050 |

**Source:** www.census.gov/hhes/www/poverty.html.

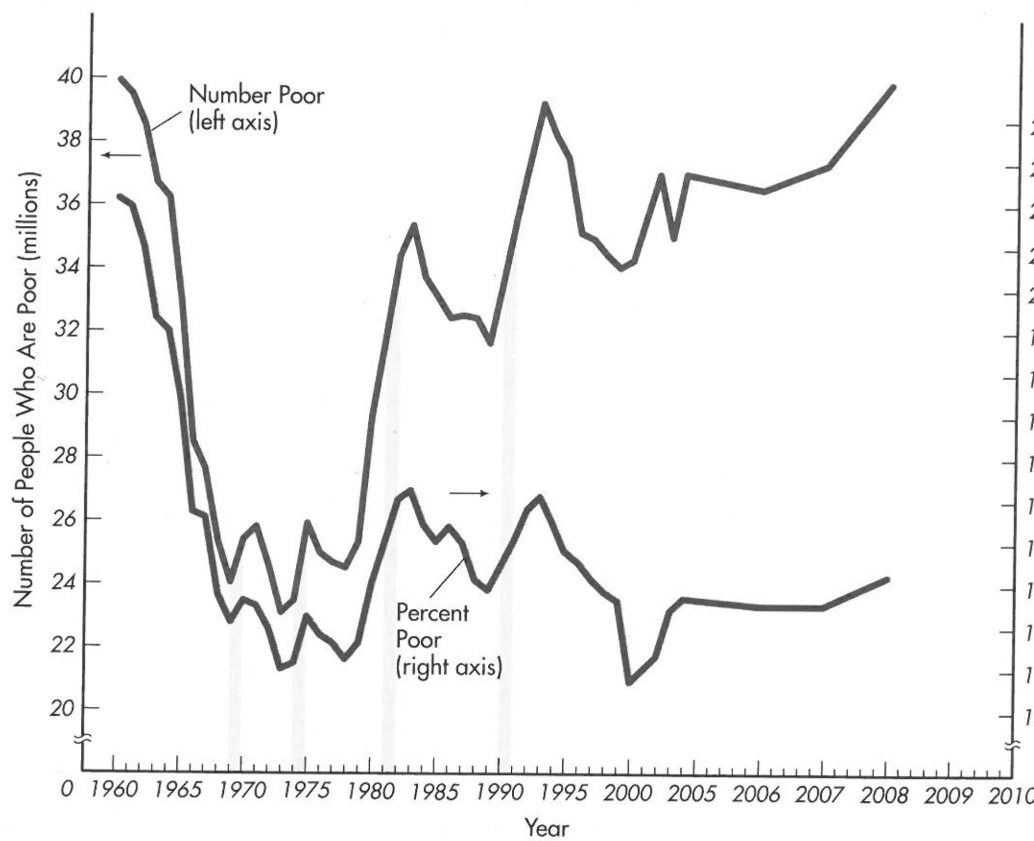
*The health of the economy is a primary determinant of the incidence of poverty.*

benefits and disability pensions, as well as unemployment compensation to those who are temporarily out of work.

How many Americans fall below the poverty line? Figure 4 compares the number of people living in poverty and the percentage of the total population living in poverty (the incidence of poverty) for each year.

There are many controversies over how poverty should be measured. Some argue that the poverty rate is really not nearly as high as Figure 4 indicates—that government transfers and other programs are not properly taken into account. Also, the poverty measure makes no distinction between the needs of a 3-month-old and those of a 14-year-old or between a rural family in a cold climate and an urban family in the subtropics. It draws no distinction between income and purchasing power. A welfare mom living on $400 a month is treated in a manner identical to that of a graduate student who earns $400 a month at a part-time job and borrows an additional $1,500 from her parents. Nor does it consider the problem of income from the underground economy—the income that is not reported or measured in income statistics.

**FIGURE 4** The Trends of Poverty Incidence




*The number of people classified as living in poverty is measured on the left vertical axis. The percentage of the population classified as living in poverty is measured on the right vertical axis.*

**Source:** www.census.gov/hhes/www/poverty.html; http://aspe.hhs.gov/POVERTY/09poverty.shtml.

**RECAP**

1. The Lorenz curve shows the degree to which incomes are distributed equally in a society. The more the Lorenz curve bows out, the more unequal is the income distribution.
2. The Gini coefficient is a measure of the degree to which the Lorenz curve bows down away from the line of income equality. The higher the Gini coefficient, the greater the income inequality.
3. The HiLo ratio is the ratio of the average income of the top quintile divided by the average income of the bottom quintile.
4. Income inequality measured on the basis of before-tax income is considerably reduced by adjusting for taxes and transfers, number of people in the family or household, and relying on expenditures rather than income.
5. Inequality is a measure of relative status in a country. It does not tell us the absolute level of income or consumption nor the standard of living.
6. The income level selected as the poverty threshold is arbitrary—an attempt to measure the income people would need to purchase three meals of a certain nutritious value.
7. The incidence of poverty is the percentage of the population whose income falls below the poverty threshold.

## 2. The Poor

3 | **Who are the poor?**

A higher percentage of women fall into poverty than do men; a higher percentage of African Americans and Hispanics fall into poverty than do others; a higher percentage of those without high school education fall into poverty than do those with high school educations.

### 2.a. Temporary and Permanent Poverty

If those who are poor at any one time are poor only temporarily, then their plight is only temporary. If people in poverty are able to improve their situation even while others slip into poverty temporarily, the problem of poverty for society is not as serious as it is if poverty is a permanent condition once a person has fallen into it. Approximately 25 percent of all Americans fall below the poverty line at some time in their lives. Many of these spells of poverty are relatively short; nearly 45 percent last less than a year.

4 | **What are the determinants of poverty?**

**2.a.1. The Economy and Poverty** The major factor accounting for the incidence of poverty is the health of the economy. People are generally made better off by economic growth. Economic stagnation and recession throw the relatively poor out of their jobs and into poverty. Economic growth increases the number of jobs and draws people out of poverty and into the mainstream of economic progress. Recessions increase poverty and economic booms reduce poverty.

*The primary characteristic of those who fall below the poverty line is the lack of a job.*

The recession of 1969–1970 was relatively mild. Between 1969 and 1971, the unemployment rate rose from 3.4 to 5.8 percent, and the total number of people unemployed rose from 2,832,000 to 5,016,000. This recession halted