CHAPTER 7

Government Subsidies and Income Support for the Poor

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- Discuss the extent of poverty in the United States.
- Understand the basis for government assistance to the poor and the major government programs that benefit the poor in the United States.
- Explain the difference between cash assistance, price-distorting subsidies, and in-kind allotments of benefits and discuss their effects on incentives and resource allocation.
- Analyze the impact of transfer payments to the poor on work incentives.
- Examine the negative income tax, wage rate subsidies, and the Earned Income Tax Credit as alternative programs to aid the poor.
In 2001, 33 million people in the United States were classified as poor—nearly 12 percent of the population. Despite the vast wealth of the United States, poverty remains a serious social problem, the signs of which are visible to us daily in large cities and rural areas. Many live in dilapidated substandard housing. Children go to bed hungry. Many of the poor lack access to adequate health care and education.

Poverty breeds crime and social unrest. Many citizens believe that it is their moral responsibility to help the poor through charitable contributions. Philanthropic organizations and religious institutions have traditionally acted as intermediaries to channel such contributions to the poor. However, charitable contributions are unreliable and unstable as a means of providing income support for the poor. Many citizens do not contribute in the belief that others will take up the slack. During recessions, when the ranks of the poor swell, charitable contributions typically decline because the incomes of the nonpoor decline.

Support for the poor has evolved into a government function in the United States and most other industrialized nations. Today, 13.5 percent of federal government expenditure in the United States is allocated to programs that support the poor. The Personal Responsibility and Work Opportunity Act of 1996 enacted by Congress has fundamentally overhauled the nation’s system of welfare support to the poor. The concept of income support for the poor as an “entitlement” program was scrapped. In its place the new law created two types of grants to state governments and directed state governments to develop systems of welfare support that allow families with children to provide the means to care for themselves while they make efforts to find work and avoid births outside of marriage. The new law strictly limits eligibility for welfare payments to five years for most families and withholds benefits from most noncitizens. Additional grants to states provide funds to subsidize child care for families on welfare and other families to assist them in working. Other revisions in the system of support for the poor limit eligibility for food stamps and provide for new policies to reduce out-of-wedlock births.

The new system of support for the poor is designed to encourage work and to eliminate the so-called “welfare trap” that made the prospect of remaining on welfare more desirable than finding work for many of the nation’s poor. Under the old law, a family receiving cash assistance from the government often found that its disposable income actually declined as welfare benefits were reduced after a family member began earning income from a job. This reduced work incentive and encouraged dependency on government welfare support. All programs of support to the poor and proposals to reform these programs must come to grips with the trade-off between providing a minimum living standard to those who are poor—a group that is alarmingly composed of a growing number of children—while at the same time trying to minimize the work disincentive for those who are eligible for support.

In this chapter, we examine the major government programs that assist the poor in the United States. We also develop a general framework for analyzing the impact of subsidies and transfers to individuals on the allocation of resources. Government assistance to the poor requires redistribution of income from the nonpoor to the poor. The generosity of the programs affects the tax burdens on those who must finance their costs. Of course, social costs of programs designed to
redistribute income are inevitable. Transfer programs that subsidize the consumption of particular goods, such as food or medical services, are likely to affect the choices of recipients in ways that cause losses in efficiency. The availability of transfers also can affect the incentives of eligible recipients to work. The social losses from distortions in work and spending decisions of transfer recipients are matters of concern to those who finance the programs.

Economic analysis of transfer and subsidy programs provides insight into their effects that are not immediately obvious. Much of this chapter is devoted to an in-depth analysis of the impact of the major transfer programs on incentives of those eligible, or potentially eligible, for the benefits.

**POVERTY IN THE UNITED STATES**

Federal statistics classify as poor those people who live in households having annual income below the established poverty level. According to a definition developed by the Social Security Administration, people are poor if their income is less than three times the cost of a “nutritionally adequate diet.” This method of measuring poverty assumes that a poor family does not have enough income to purchase a low-cost diet and twice that amount to spend on other goods and services. The official poverty-level income varies with the size of the family and whether the family has a head of household older than 65. A two-person household headed by a person older than 65 is classified as poor at a lower level of income than a two-person household not headed by an elderly person. Larger households are classified as poor at higher levels of income than smaller households.

The **poverty threshold** is the level of income below which a household is classified as poor in the United States. The poverty threshold is adjusted each year by multiplying the previous year’s threshold by the change in the Consumer Price Index and adding the increase to the previous year’s threshold. This threshold varies by family size, age of household, and the number of related children under age 18 in the household. The average poverty threshold for a family of four in the United States in 2001 was $18,104 per year. In 2001, the poverty threshold for a U.S. family of four consisting of two adults and two related children under the age of 18 was $17,960 per year. For a family consisting of a single parent and two related children under the age of 18, the threshold was $14,269. By contrast, for a single person under the age of 65, the threshold was $9,214.

The definition of poverty is arbitrary, and many would argue that it is either too low or too high. Be that as it may, this definition has become the poverty standard for statistical purposes. If only cash income is counted, including government cash transfer payments received, 32.9 million people were living below the poverty line in 2001. This amounted to 11.7 percent of the population. Families with children have a greater likelihood of living in poverty in the United States than those with no children. Approximately one-third of the people classified as poor are children. More than one-third of the poor live in families headed by a female with no husband. The female-headed family accounts for more than half the families classified as poor. The elderly have lower poverty rates than other demographic groups. Approximately 10 percent of the elderly (those over 65 years of age) in the United States are poor.
Table 7.1 and the accompanying chart show the extent of poverty in the United States over the 42-year span from 1959 to 2001. The official rate of poverty in the United States declined from 22.4 percent of the population in 1959 to 11.1 percent in 1973. From 1973 to 1983, the official poverty rate increased to more than 15 percent of the population. From 1984 to 1989, the poverty rate declined from 15.2 percent to 12.8 percent of the population. The chart accompanying Table 7.1 shows that the poverty rate in the United States fell significantly in the 1960s but rose sharply between 1977 and 1983, then fell again after 1983. However, partly as a result of a recession, the poverty rate increased again from 1990 to 1993. Since then the poverty rate fell steadily until 2001 when the effects of recession increased poverty rates.

One problem with the official poverty statistics is that they measure only cash income. They do not include government transfers of goods and services received by the poor. This is significant because, as shown in the following discussion, transfers of
### Number of Poor and Poverty Rate: 1959–2001

<table>
<thead>
<tr>
<th>YEAR</th>
<th>NUMBER</th>
<th>PERCENTAGE OF POPULATION</th>
<th>YEAR</th>
<th>NUMBER</th>
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</tr>
<tr>
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<td></td>
<td>2001</td>
<td>32,907,000</td>
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</table>

**Note:** The data represents the midpoints of the respective years.

†The increase in the number of poor this year partially reflects changes in measurement methodology.

goods and services rather than cash are the dominant means of aiding the poor in the United States. However, these figures can be adjusted to account for such transfers.

For example, by adding the market value of noncash assistance in food, housing, medical care, and other forms of noncash income in 2001, the overall rate of poverty would be reduced from 11.7 to 7.8 percent of the population.

GOVERNMENT PROGRAMS TO AID THE POOR: THE BASIS AND THE TRADE-OFFS

NEEDS VERSUS EARNINGS AND THE EQUITY-EFFICIENCY TRADE-OFF

Government programs to aid the poor establish minimum standards of living for those eligible for assistance. A common justification for establishing minimum standards of well-being through transfers is that market outcomes can result in households earning less than the minimum level required for survival. The result is low-income families who cannot earn enough to support their children and otherwise meet their needs. Such outcomes are viewed as unacceptable by many citizens and provide a basis of support for a program of “safety-net” measures to prevent citizens’ incomes from falling below minimally acceptable levels. This approach justifies programs and policies that provide the poor with the transfers discussed in this chapter.

Disagreement on what is minimally required for survival would have to be resolved to implement such policies. At the extreme, if it were agreed that needs do not differ among individuals, policies that distribute income according to need would call for an equal distribution of income. This notion, however, conflicts with the belief that people should be rewarded according to their abilities and the value of their work. A compromise solution would allow people to obtain earnings in line with the value of their work, but provide minimal income support. This compromise could be coupled with policies that provide equal opportunity in labor markets and schooling. A substantial number of poor families are poor because of insufficient earnings rather than inability to work.

A pragmatic approach to the problem of altering income distribution to alleviate poverty is one that considers the impact of transfers on efficiency. This approach recognizes that transfers to low-income people can decrease their incentive to work and distort the pattern of consumption so that the net benefits from resource use are less than would be possible if resources were efficiently utilized. In effect, this approach recognizes that the way the “pie” is divided can ultimately affect its size. Under such circumstances, losses in efficiency decrease the economy’s potential for producing goods and services and jobs. Insofar as transfers cause such losses, these losses must be weighed against the gains of improved equity. At the extreme, many argue that the best way to improve the lot of the poor is to pursue efficient policies because efficiency maximizes job opportunities. However, many of the poor are not employable because of age or health, so programs that create jobs do little to help them. In fact, as shown in this chapter, many of the transfer policies in the United States are designed to help people incapable of working or to benefit poor children.
COLLECTIVE BENEFITS RESULTING FROM AID TO THE POOR: 
SOCIAL STABILITY AND SAFETY NETS

Changes in the distribution of income that reduce the incidence of poverty can result in benefits that are collectively enjoyed. From this perspective, income redistribution to the poor can be viewed as a public good. Many people who support government efforts to redistribute income do so because they believe that they, and other nonpoor citizens, will benefit when poverty is reduced. They might also believe that government programs that establish a safety net to prevent personal income from falling below certain levels provide the nonpoor with insurance; that is, if individuals should suffer a financial or health-related catastrophe, government policies would prevent them from becoming destitute. In 1991 and 1992, a period of recession and slow growth in the United States, the number of people receiving such benefits increased substantially.

In addition, many people have genuine compassion for those who are unfortunate enough to be unable to provide for their own needs and indeed experience satisfaction when the government provides subsidies to the poor. Income redistribution also can provide collective benefits through social stability. Many people reason that a society in which poverty is prevalent breeds discontent and revolution, with the potential for chaos and violence. Upper-income groups tend to support income transfers to the poor to secure the benefits of social stability, thereby reducing the probability of revolutionary upheaval.

But why do we rely on government rather than on private charity to provide assistance to the poor? The answer lies in the public-good nature of charity. Voluntary donations to the poor are likely to result in an undersupply of income redistribution to low-income groups relative to the efficient amount because of the free-rider problem discussed in Chapter 4. Government action to redistribute income can establish uniform standards of eligibility for aid. Such standards might not be ideal from the point of view of all citizens, but these government standards reflect the political compromise necessary to obtain a public program of ensured tax-financed income redistribution.

GOVERNMENT PROGRAMS OF ASSISTANCE TO THE POOR IN THE UNITED STATES

ELIGIBILITY

One of the crucial concerns in the development of programs to aid the poor in the United States has been the effect of transfers on the work incentive of the recipients. As a result, the major welfare programs for the poor in the United States mainly assist those who, for one reason or other, cannot work. These groups include the disabled, the aged, and families of needy children headed mainly by women. Those falling into these demographic categories satisfy the status test for public assistance. The status test ensures that they belong to one of the particular
groups that is eligible for poverty relief. Because people in these groups are not usually in the labor force, transfers to them are believed to have minimal effects on work incentive. In effect, this policy “tags” certain groups of limited work capacity and makes them eligible for government assistance.

The status test provides only a crude indication of the extent to which candidates for public assistance are capable of working. Use of health, age, or other arbitrary criteria to determine whether a person is able to work provides only an imperfect indication of the actual capacity to work. For example, tagging poor children who are not expected to work as eligible for government assistance means that their parents also will receive assistance. To prevent adverse work incentive effects on parents in poor families with dependent children, most state welfare programs provide aid only to families with a single parent—primarily female-headed families. However, with increased labor force participation of women in the United States in recent years, the notion that single mothers are not expected to work has come under scrutiny. Concern has increased about the effect of government assistance programs assisting children on the incentives of single parents to seek work.

Under the reformed system of income support for the poor in the United States, the status test for eligibility has been revised. Depending on individual state policy, most recipients of welfare are required to work or seek work training and are eligible for income support only for a limited time. Thereafter, their status will be irrelevant because they will no longer be eligible for assistance. Except for a limited number of poor who are disabled, the new program will therefore greatly increase the incentive to work for all people with low incomes.

To be eligible for cash and other forms of assistance in the United States, recipients also must pass a means test, which establishes that those passing the status test also have incomes and asset levels that are below the minimally required amounts to be eligible for aid. Those meeting both the means test and the status test are automatically entitled to the transfers. For this reason, these transfer programs, often called entitlement programs, require payments to all those people meeting eligibility requirements established by law. However, under the reformed system in the United States, even those families meeting the means test could be denied income support after a certain period of entitlement.

Government programs to aid the poor consist of direct cash transfers, direct provision of such basic goods and services as medical care, subsidies to assist the poor in obtaining housing and food, and various programs designed to aid children and provide incentives to the poor to become self-sufficient. The bulk of the aid, however, is in direct provision of goods and services or subsidies to assist the poor in obtaining goods and services.

**CASH ASSISTANCE TO THE POOR IN THE UNITED STATES: TEMPORARY ASSISTANCE TO NEEDY FAMILIES AND SUPPLEMENTAL SECURITY INCOME**

Two major programs provide welfare assistance in the form of cash transfers to the poor in the United States: Temporary Assistance to Needy Families (TANF) and Supplemental Security Income (SSI). TANF provides family support payments on
a temporary and limited basis through grants to state governments, which in turn determine eligibility by income and conditions for receiving welfare payments. All states began implementing the new federal welfare system on July 1, 1997.

TANF is a federal block grant that provides funding to states to support the poor. TANF replaces three programs of support to the poor that existed prior to 1996: Aid to Families with Dependent Children (AFDC), which provided income support to families with children deprived of parental support; JOBS, an employment and training program for AFDC recipients; and Emergency Assistance (EA), which provided short-term emergency services and benefits to needy families.

The old AFDC program was widely criticized for discouraging work effort by recipients. Single females headed most AFDC families. If the head of the family began to work, her AFDC cash payments were reduced. Most states allowed welfare recipients to earn a standard allowance of $120 per month before cutting welfare benefits after the first year of work. Allowances were also made for child-care costs equal to 20 percent of earnings up to a maximum amount per year. After the maximum allowances were reached, AFDC payments began to decline by 67 cents per dollar earned during the first four months of employment. When the welfare recipient had been employed for four consecutive months, AFDC benefits were reduced by $1 for each $1 of earnings after the standard allowances of $120 and those for child care expenses. By working, welfare recipients also incurred expenses for commuting, nonreimbursed child care costs, clothing, taxes, and other costs. And as income rose, families found that eventually they became ineligible for other government programs that subsidized food, medical care, or housing. After getting off welfare, household heads, most of whom had skills that could command only low wages in the labor market, found that their family’s income ended up lower than it was under welfare!

The old system severely dampened the incentive to work by reducing the net gains from accepting employment. Welfare under AFDC became a bitter trap for many families. They knew that if they were to enter the labor market given their skill set, they would not be able to earn more than they could have under welfare. The incentive for many was to remain a welfare recipient under AFDC. In effect, many families could not improve their living standard by going off welfare, so they found ways to remain eligible for AFDC. Some families remained on welfare for more than one generation. Despite attempts to fix the system in the late 1980s by providing more training and education for recipients, by the mid-1990s the political forces had moved toward a more radical reform. The result was The Personal Responsibility and Work Opportunity Act of 1996 that established TANF. The new system is often called “workfare” because it does not give recipients of temporary cash assistance the option of not working. All recipients must accept work training and are expected to eventually find a job unless the recipient is disabled. Cash assistance to the poor is limited to a maximum of five years over a recipient’s lifetime. In short, the emphasis of the current system of welfare in the United States is to make sure people are only allowed temporary government assistance and to help them to eventually become self-sufficient.

The new system of assistance to needy families under TANF is fundamentally different from that under previous programs. Under AFDC and EA, funding was
open-ended as entitlement programs that required payment of benefits to all who met status and means tests. The amount spent supporting the poor was therefore not directly under the control of the federal and state governments and could vary year by year, depending on the number of people entitled to receive benefits. The new program caps federal spending each year and allocates funds to states on the basis of historical spending for AFDC, EA, and JOBS.

TANF is fully administered by state governments. Each state determines criteria for eligibility to receive benefits and monthly payments under the program vary widely from state to state. To assist the states and the poor in finding jobs, the new welfare law also provides funds to states to help subsidize child care for families in need so that they can seek employment. The new law also limits welfare payments to noncitizens and provides funding to develop new policies that will reduce the rate of nonmarital births and make sure that child support payments by absent spouses are collected.

The new welfare law did not fundamentally change the SSI program. However, it did change the criteria by which some children are classified as disabled. The new law is expected to result in a reduction in the number of children eligible for aid under this program.

SSI is a federally funded and operated program that provides cash transfers to the aged, the blind, and the disabled who pass a means test. Most states supplement the basic SSI payments made to individuals by the federal government. Because of the state supplements, SSI benefits vary considerably; payments received by the individuals also vary with their income from other sources.

In addition, state governments have programs of general assistance to the poor, which provide financial aid to couples without children and unrelated individuals who pass a means test but are ineligible for benefits under SSI or TANF. The federal government provides additional assistance to the poor through the Earned Income Tax Credit (EITC), a program for families who work and have children that provides assistance in the form of supplements to earnings that are transfers paid out when eligible recipients file appropriate federal income tax forms. The maximum credit per family was $4,140 in 2002. The EITC has emerged as a major means of support to the poor in the United States. The features of the EITC are discussed at the end of this chapter.

**IN-KIND AID TO THE POOR: FOOD STAMPS, MEDICAID, HOUSING ASSISTANCE, AND OTHER PROGRAMS**

The federal and state governments also assist the poor through in-kind benefits, which are noncash benefits that increase the quantities of certain goods and services that will be consumed by the recipients. In-kind benefits are those received in some form other than money that improve the well-being of recipients. These benefits consist of medical services, food, housing, and other services provided either directly to recipients or at subsidized prices to eligible families and individuals. In dollar terms, in-kind subsidies are much more important than cash transfers to the poor. Some poor people also receive subsidies that lower the prices they pay for services such as housing they purchase in the marketplace.
**Medicaid** was enacted by Congress in 1965 to provide, at government expense, medical care services for the poor. The program is jointly financed by the federal and state governments but administered by state governments. It provides benefits for most of those eligible for TANF and SSI cash subsidies and others who pass a means test. Under Medicaid, all states (except Arizona) provide basic health services to eligible recipients. Each state determines eligibility requirements under Medicaid and can provide benefits above the minimum established by federal law. Each state establishes its own reimbursement policies to medical providers who supply services to Medicaid patients. Service provider fees are billed directly to the various state governments. State governments are required to provide Medicaid coverage for all children age 19 or younger in families with income at or below the poverty threshold. Some states also provide Medicaid to dependent children over the age of 19 in families that are above the poverty line. In most states adults are provided with Medicaid coverage only if their family income is below the poverty threshold.

Medicaid has become the most expensive of all programs of public assistance to the poor. Based on Congressional Budget Office estimates federal government expenditures for the Medicaid program in 2003 amounted to $155 billion, or 7.4 percent of total federal spending. Medicaid costs have been rising rapidly and are expected to continue to do so at an even more rapid rate. The Medicaid program benefits more than 40 million recipients. Beneficiaries under the program receive a card that they can use in lieu of cash to pay for medical services from physicians and hospitals. Medicaid expenditures are projected to be $329 billion by 2012!

The **food stamp program** is a federally financed subsidy program that began in 1971. Under this program administered by state governments, recipients receive food coupons or electronic benefits transfer (EBT) cards that can be redeemed for food and related items at stores. An eligible recipient must pass a means test. The actual amount of stamps received per month varies with a person’s earned income, less allowable deductions. The benefits received by recipients decline as earned income increases. Total federal government outlays for the food stamp program in 2003 were estimated to be $24 billion.

Finally, various other programs, including those for social services (such as foster care, child nutrition, and state children’s health insurance) are available through state and local governments for those who meet both means and status tests. The State Children’s Health Insurance Program (SCHIP) provides health insurance benefits for children in working families accounting for an estimated $4 billion of federal spending to aid the poor in 2003. This program became effective in 1998 and guarantees health care to children in families who may otherwise be ineligible for Medicaid but whose families do not have health insurance. Nearly five million children were enrolled in SCHIP in 2002.

**FEDERAL EXPENDITURES FOR ASSISTANCE TO THE POOR IN THE UNITED STATES**

Table 7.2 (p. 262) shows Congressional Budget Office (CBO) projected federal government expenditures under the major programs of government aid to the poor in
the United States in fiscal year 2003. Total expenditures under the major transfer programs to low-income people in the United States absorbed an estimated 13.6 percent of total federal government expenditures in 2003.

Based on the CBO estimates, cash transfers to the poor accounted for only 32.4 percent of total federal spending to aid the poor in 2003. The remainder, 67.6 percent, is accounted for by in-kind benefits. Cash transfers consist of TANF and SSI benefits paid to individuals and families and assistance to the working poor through the Earned Income Tax Credit. Total cash payments to the poor were estimated to account for only 4.4 percent of total federal government spending in 2003. Federal grants under TANF go to state governments and do not necessarily end up as support to the poor.

IN-KIND VERSUS CASH TRANSFERS
As the data in Table 7.2 demonstrate, the welfare system of aid to the poor in the United States is heavily weighted toward provision of goods and services. The reasons for this are complex. Political realities make it more likely that a given dollar amount of in-kind assistance can gain approval while equivalent amounts of cash assistance cannot. Apparently, assistance to the poor is more likely to obtain votes when a particular issue is clarified. For example, programs of food assistance to the poor were expanded after an investigation of the extent of hunger in the United States in the 1960s. It also appears that programs of in-kind assistance to the poor are more easily approved during periods of high unemployment.

The rationale for many in-kind benefits to the poor is that they allow some control over the spending patterns of recipients. Many people who support such programs as food stamps, public housing, and government-supplied training and schooling argue that these programs ensure that the recipients will spend their grants on necessities rather than luxuries. However, in-kind benefits free up cash

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<tr>
<td>TANF</td>
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<td>1.23</td>
</tr>
<tr>
<td>Earned Income and Child Credits</td>
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<td><strong>Subtotal: All Cash Transfers</strong></td>
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</tr>
<tr>
<td><strong>Subtotal: All In-Kind Transfers</strong></td>
<td><strong>194</strong></td>
<td><strong>9.21</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>287</strong></td>
<td><strong>13.62</strong></td>
</tr>
</tbody>
</table>

Source: Congressional Budget Office (Baseline Projections).
that would have been spent on the subsidized items. This cash then can be spent on nonsubsidized items. In other words, in-kind subsidies, like cash subsidies, allow increased purchases of all goods.

**CHECKPOINT**

1. How is poverty officially defined in the United States? Based on the official definition of poverty, has any progress been made in reducing its incidence in the United States since 1960?
2. How is eligibility determined for government programs designed to assist the poor in the United States?
3. What are the major types of government programs that provide support for the poor in the United States?

**SUBSIDIES AND TRANSFERS TO INDIVIDUALS: ECONOMIC ANALYSIS OF THEIR EFFECTS**

A major concern about all transfer programs is their effect on resource allocation. In-kind programs of assistance can distort the behavior of the recipients in ways that cause losses in efficiency. The programs can result in consumption of goods or services by recipients beyond the point at which the marginal benefit of the item to the consumer falls to equal its marginal social cost. In addition, the availability of the programs themselves could result in changes in the behavior of those who would take advantage of eligibility requirements. Finally, those who are already receiving government assistance might lose their incentive to work if earning income results in a loss of cash and in-kind benefits. The effects of government assistance programs to the poor on resource allocation highlight the realities of the equity-efficiency trade-off.

All forms of assistance to the poor in the United States can be regarded as subsidies. In effect, subsidies are the opposite of taxes. They are payments to individuals, usually from governing authorities, subject to certain terms and conditions. Economic analysis of in-kind and cash subsidies helps to isolate their impact on efficiency.

**PRICE-DISTORTING SUBSIDIES**

Let’s begin our analysis with a discussion of subsidies that decrease the price of consuming a good or service to the recipient. For example, poor people often are eligible for housing subsidies that allow them to rent apartments at monthly rents below the market equilibrium rent for similar housing. The government then pays the difference between the actual rent and the amount that the tenant pays. The difference between the market rent paid to the landlord and the tenant’s rent is the subsidy. Some government programs subsidize payments on mortgage loans to enable low-income individuals to buy their own homes. Similarly, some poor people also receive subsidies that reduce the price of energy and other services.
Subsidies that reduce prices to consumers below the market price are called **price-distorting subsidies**, which (other things being equal) are likely to result in losses in efficiency as individuals act to substitute the subsidized good for other goods in their annual budgets. Figure 7.1 illustrates the impact of a price-distorting subsidy for housing services. Suppose, for example, the government agrees to pay a certain fraction (such as 40 percent) of monthly rents of low-income citizens. Initially, before the subsidy is available, the person (whose indifference curves are drawn in Figure 7.1) is in equilibrium at point $E_1$. At that point, she purchases $H_1$ units of housing services (measured in terms of, say, square feet or number of rooms rented per month) and spends $N_1$ on other goods each month. Total expenditure on housing per month is represented by the distance $N_1I$.

The government subsidy reduces the price of housing services to the recipient and therefore swivels the budget line outward from $IA$ to $IB$. The consumer now is in equilibrium at point $E_2$, at which she consumes $H_2$ units of housing per month.

A price-distorting subsidy to housing services moves the recipient from equilibrium at point $E_1$ to equilibrium at $E_2$, as the price that must be paid for such services declines. If instead the recipient were given $N_2S$ per year as a cash subsidy, she would be in equilibrium at point $E_3$. The person is better off at $E_3$ than at $E_2$ because she achieves utility level $U_3 > U_2$. 

**FIGURE 7.1**

A Price-Distorting Subsidy

A price-distorting subsidy to housing services moves the recipient from equilibrium at point $E_1$ to equilibrium at $E_2$, as the price that must be paid for such services declines. If instead the recipient were given $N_2S$ per year as a cash subsidy, she would be in equilibrium at point $E_3$. The person is better off at $E_3$ than at $E_2$ because she achieves utility level $U_3 > U_2$. 

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Her total monthly expenditure on housing services now is represented by the distance IS. However, only a portion of this comes out of her income. Of the total annual expenditures on housing after receipt of the subsidy, IN2 is paid by the recipient and N2S is paid by the government. The total amount of the subsidy received by the individual is therefore N2S per year. After receipt of the subsidy, then, she enjoys H2 units of housing services each month and spends N2 on other goods each year.

Suppose instead this consumer were given a monthly cash subsidy exactly equal to the amount that would be received under the price-distorting housing subsidy. The amount of the monthly cash subsidy would be N2S. The budget line would now be LL’. This budget line goes through point E2, with the result that the consumer could still buy the combination of housing services and other goods that would be affordable under the price-distorting subsidy. However, the increase in cash income now enables the consumer to purchase more of all goods, not only housing services. The equilibrium under the cash subsidy is at point E3, where the consumer chooses to purchase H3 units of housing services per month and to spend N3 on other goods each month. This result will hold as long as the marginal rate of substitution of housing services for expenditure on other goods, which is the marginal benefit of housing services to the person, declines. Because the slope of the budget line LL’ is steeper to the left of point E2, the equilibrium must be at a point on an indifference curve that is also steeper. The consumer must substitute expenditure on other goods for housing to increase the marginal benefit of housing, thereby moving to a steeper point on the indifference curve at point E3. The price-distorting subsidy induces the consumer to purchase a larger amount of housing services than would be the case if she received an equivalent cash grant.

A cash grant to an individual equal to the amount received under the price-distorting subsidy would therefore allow the person to enjoy a higher level of utility. After all, the consumer could always use the cash grant to purchase the combination of housing and other goods at point E2. The cash subsidy gives the recipient greater freedom of choice, thereby allowing the achievement of a higher level of satisfaction. The difference between the utility level U3 and the utility level U2 is a loss in utility to the recipient from the N2S dollars of subsidy compared to the unrestricted cash grant. This deadweight loss of price-distorting subsidy is the extra benefit a recipient can enjoy from the dollar amount of the price-distorting subsidy if instead the grant was received in a lump sum. Here the deadweight loss of the subsidy is the difference in well-being of the individual at point E2 compared to what she can enjoy at point E3 for the same dollar amount of subsidy. A net gain would result if each individual receiving a price-distorting subsidy were able to get the same sum in the form of a lump-sum unrestricted cash transfer. Naturally, with the cash transfer, the individuals would choose to consume less of the subsidized good.

THE EXCESS BURDEN OF A PRICE-DISTORTING SUBSIDY: MARKET EFFECTS

Now let’s examine the effect of a price-distorting subsidy on the market for a product like housing services. To make the analysis simple, assume that the housing industry operates under conditions of constant costs so that the
The long-run supply curve of housing is perfectly elastic. Figure 7.2 shows the long-run market supply curve for a standard one-bedroom apartment along with the demand curves for these apartments by low-income tenants. Because the supply curve is perfectly elastic, the rent for the apartments is independent of the demand by low-income tenants. The marginal social cost of making one-bedroom apartments available to tenants is assumed to be $400 per month. Assuming no externalities in the production or consumption of housing, and perfect competition in the housing market, the supply curve of housing gives the marginal social cost of any given number of apartments, which is constant at $400 per month.

The demand curve shows that the marginal benefit of one-bedroom apartments to low-income tenants varies with the number rented. In the absence of any subsidy, the market equilibrium rent would be $400 per month for the apartment and the number of apartments rented would be \( Q_1 \). This would be efficient because at point \( E \) the marginal benefit of the apartments equals their marginal social cost to low-income tenants. Assuming no positive externalities are associated with housing consumption to low-income tenants, the marginal benefit they

**FIGURE 7.2**

**Excess Burden of a Subsidy**

The cost of a subsidy to low-income tenants to taxpayers is represented by the rectangular area \( BAE'C \). The net benefits to recipients of the subsidy are represented by the area \( BEE'FC \). The excess burden of the subsidy is the difference between its costs to taxpayers and the benefits to recipients, represented by the triangular area \( EAE' \). The subsidy causes more than the efficient amount of resources to be devoted to housing because the marginal social cost of housing after the subsidy exceeds the marginal social benefit received by tenants.
receive from renting a one-bedroom apartment is also the marginal social benefit of making that apartment available to them.

Now suppose that the government agrees to pay one-half the rent for low-income tenants. As a result of the subsidy, the price to low-income tenants falls to $200 and the quantity demanded by these tenants increases to \( Q_2 \), corresponding to point \( E' \). At that point, tenants pay only $200 per month rent but landlords receive $400. The $200 difference between the market rent and the rent paid by tenants is the price-distorting subsidy per tenant represented by the distance \( AE' \). Naturally, this housing subsidy distorts prices and this induces low-income tenants to increase their consumption of housing services. Families who would normally live in small one-room apartments or with relatives now move into one-bedroom apartments and are made better off as they consume more housing. Because of the price-distorting subsidy, more resources are devoted to making one-bedroom apartments available to low-income tenants. When \( Q_2 \) units are supplied each month to these tenants, the $400 marginal social cost of the apartments exceeds the marginal social benefit to tenants of only $200. Too many apartments are being supplied to low-income tenants relative to the efficient number. In effect, the subsidy program induces a reallocation of resources toward housing, but the value of the resources used exceeds the benefits they provide to the tenants. The result is a loss in net benefits from resource use because the subsidy induces tenants to consume housing beyond the point at which its marginal benefit to them equals the marginal social cost of the service.

Now let’s look at the cost of the subsidy to taxpayers and compare those costs with the net increment in benefits low-income tenants enjoy as a result of the subsidy. The monthly cost of the subsidy to taxpayers is the $200 subsidy per apartment multiplied by the \( Q_2 \) apartments rented by the recipients of the subsidy. This is represented by the area \( BAE'C \) in Figure 7.2. The total value of the subsidy to recipients can be calculated as follows:

1. Those low-income tenants who would rent one-bedroom apartments even without the subsidy enjoy a $200 per month net gain as the net rent they pay is cut from $400 to $200. The total net monthly gain to these individuals is $200 multiplied by \( Q_1 \) apartments, which is represented by the area \( BEFC \) on the graph.

2. As a result of the subsidy, the number of apartments rented to low-income tenants increases. The monthly net gain to each of these tenants is the difference between the monthly marginal benefit they place on housing and the monthly $200 rent. The total monthly net gain for these tenants is represented in the graph as the triangular area \( EE'F \).

The total increase in net benefits to recipients of the subsidy is therefore the sum of the rectangular area \( BEFC \) and the triangular area \( EE'F \). The sum of the two areas is the area \( BEE'FC \).

The area \( BEE'FC \) is less than the area \( BAE'C \) representing taxes paid to finance the subsidy to tenants. The subsidy costs more to taxpayers than it is worth to those who receive it. This difference between the cost of the program to taxpayers and the gain in net benefits to the tenants is called the **excess burden of the subsidy**,
represented by the triangular area $EAE'$. The excess burden measures the additional cost over and above the taxes paid for the subsidy. This additional cost is the loss in efficiency in housing markets that results, because the subsidy results in overconsumption of housing beyond the point at which its marginal social benefit equals its marginal social cost.

Price-distorting subsidies result in an excess burden because they encourage recipients of the subsidy to consume the subsidized good beyond the point at which its marginal social benefit falls to equal its marginal social cost. A smaller lump-sum cash subsidy (in this case equal to the area $BEE'TC$) can be substituted for the dollar value of the price-distorting subsidy that would make recipients equally as well-off and cost taxpayers less in taxes. If we wish to preserve efficiency in the marketplace, then lump-sum transfers to the poor are preferable to price-distorting subsidies.

**MEDICAID: A PRICE-DISTORTING SUBSIDY THAT LOWERS THE PRICE TO ZERO**

The analysis of the effects of subsidies on resource use is pertinent to the economic effects of Medicaid, which is the largest program of assistance to the poor in the United States. Basically, Medicaid is a government-financed health insurance plan for the poor. Although its actual provisions are quite complex, the program can be viewed in general as reducing to zero the money price of medical services to most eligible low-income persons.

Figure 7.3 analyzes the effect of such a medical subsidy program as Medicaid on consumption of medical services by the poor. Assume that the annual quantity of medical services consumed can be measured by office or hospital visits to medical practitioners. Medical services are presumed to be supplied by a perfectly competitive industry. In Figure 7.3, the marginal social costs of supplying medical services do not increase as more are made available to the poor. In the absence of any subsidies, the poor would have to pay the market equilibrium price of an office visit. This price would equal the marginal social cost of medical service of $P^* = $100. Given the demand for medical services by low-income people, the quantity that they would consume at the market price would be $Q^*$. The demand curve for medical services by the poor reflects their willingness to pay, given their low incomes. This is their marginal benefit for medical services. The equilibrium at $P^*$ would be efficient because $P^* = MC = MB_L$ of medical services.

When low-income people are eligible for Medicaid, the price of medical services becomes zero. At zero price, the quantity demanded by Medicaid recipients is $Q_G$. At this level of annual consumption, recipients of Medicaid are consuming medical services beyond the point at which their marginal benefits equal the marginal cost of the service. At point $E_2$, the marginal social cost of providing medical service to low-income people exceeds the marginal benefit that they obtain. This is because, at zero price, recipients of the subsidy consume medical services up to the point at which their marginal benefit ($MB_L$) is zero.

The total annual cost of the Medicaid program to taxpayers is represented by the area $P^*AE_20$. However, the dollar value of the gain in well-being for recipients
of Medicaid is less than the cost of the program to taxpayers. In the absence of a subsidy, low-income people would consume \( Q^* \) units of medical services (a certain number of office visits per year). The difference between the maximum amount that they would pay for that amount of medical services and the market price of $100 per office visit is represented by the triangular area \( P^*BE_1 \). This is the consumer surplus that they earn on \( Q^* \) office visits per year. The gain in consumer surplus to recipients of the Medicaid program is the area \( P^*E_1E_2 \). This represents the net gain in well-being to recipients of Medicaid (see the appendix to Chapter 1 for a discussion of consumer surplus).

Part of the increase in consumer surplus is the extra net benefit on the \( Q^* \) units of medical service that would have been purchased anyway. This is represented by the rectangular area \( 0P^*E_1Q^* \). The remainder is the area \( Q^*E_1E_2 \). This is the consumer surplus on the extra medical services consumed after the price falls to zero.

The excess burden of the Medicaid subsidy is represented by the triangular area \( E_1AE_2 \). This is a measure of the loss in efficiency due to the in-kind subsidy as the recipients consume medical services beyond the point at which their marginal benefit falls to equal the marginal social cost of the services. The recipients of Medicaid could be made as well off with a cash subsidy, which would be less than the amount the government would have to pay to finance the program!

A cash subsidy to the poor would increase their ability, and therefore willingness, to pay for medical services. In Figure 7.3, this would shift the demand curve for such services outward. The advantage of the cash subsidy to the recipients is that it could be used to purchase not only medical services but also other services or goods. In the case of Medicaid, the subsidy is enjoyed only if more medical services are consumed than would be consumed if the price were $100 per office visit.
services are purchased. For example, the U.S. Bureau of the Census estimated that the average market value of medical services received by a single parent with two children under Medicaid was $2,166 in 1987. However, based on ability and willingness to pay, the bureau estimated that these benefits were worth on average only $652 in 1987 for such a family if its income were $10,000 per year. Instead of receiving Medicaid, the recipient could be given an unrestricted lump-sum grant of the $652 and be as well off as with Medicaid while taxpayers would save $1,514! The prices of medical services have more than doubled in the United States since 1987 and more services are available. Roughly adjusting the 1987 estimates for inflation would indicate that in 2003 dollars a cash grant of about $1300 would make the family just as well as Medicaid. The savings to taxpayers in 2003 dollars would roughly be about $3000 per Medicaid family.

**ADDITIONAL EFFECTS OF SUBSIDIES: THE CASE OF INCREASING COSTS**

Suppose the long-run supply curve of medical services is upward sloping. This would imply that the prices of inputs, such as the services of physicians and hospitals, would increase as a result of increased annual production of medical services. Figure 7.4 shows that in this case the market for medical services would be affected by the Medicaid program.

The market demand for medical services, again measured as office visits per year, is \(D_M\) in Figure 7.4. This demand curve is the lateral summation of the demand curve for medical services for low-income people, \(D_L\), and everyone else, \(D_O\). The

![FIGURE 7.4 Impact of the Medicaid Program on Price: The Case of Increasing Cost](image)

The initial market equilibrium corresponds to point \(E_1\), at which the market demand curve \(D_M\) intersects the market supply curve \(S\). If low-income people are eligible for Medicaid, their quantity demanded increases to \(Q_G\). The market demand curve \(D'_M\) is obtained by adding \(Q_G\) to the demand curve \(D_O\). Given the new increased demand by the poor for medical services, the price of an office visit increases from $100 to $140.
market price, $100 per office visit, corresponds to the point at which $D_M$ intersects the upward-sloping supply curve at point $E_1$. At that price, low-income people consume $Q_L$ visits per year and others consume $Q_O$ visits per year, for a total of $Q_1$.

The Medicaid program reduces the price of an office visit to zero for low-income people only. As a result, their quantity demanded increases to $Q_G$. The total market demand curve is now the sum of the quantity demanded by all others at any given price and $Q_G$, where $Q_G$ is independent of price because $P = 0$ to Medicaid recipients. The new market demand curve, $D'_M$, intersects the market supply curve at point $E_2$. The market price increases to $140 per office visit. At that higher price, those who are not receiving Medicaid decrease the quantity of medical services demanded per year to $Q_O$. Total quantity demanded is $Q_2 = Q_O + Q_G$.

It follows that when the supply of medical services is upward sloping, the government subsidy program will cause the price of medical services to increase. This means that those paying the taxes to finance the program also will pay more for their own medical services but that owners of specialized inputs necessary to provide medical services, such as physicians and hospitals, will enjoy increases in income. Consumers of medical services who are ineligible for the subsidies therefore suffer a reduction in real income, while medical practitioners are likely to enjoy an increase in real income. This points out how price-distorting subsidies, in addition to causing losses in efficiency, also can cause changes in the distribution of income through changes in the market price of the subsidized goods or services.

Concern about the impact of Medicaid and other government subsidy programs for medical care, such as those enjoyed by the elderly and veterans, on the prices of medical services has led to recent cutbacks in coverage. These cutbacks have reduced the subsidy received by the poor by limiting the kinds of medical services that are provided free. Cost-containment measures that limit reimbursement to hospitals and physicians decrease incentives to offer such services to Medicaid patients.

We discuss the economics of health care and the role of government in providing medical services in greater detail in Chapter 9.

**CHECKPOINT**

1. What is a price-distorting subsidy? Why do price-distorting subsidies result in a deadweight loss?
2. What is the excess burden of a subsidy?
3. Explain why the Medicaid program contributes to an overallocation of resources to health care in the United States relative to the efficient amount. Under what circumstance does subsidized medical care contribute to increases in the price of medical services?

**MEDICAID AND STATE GOVERNMENT BUDGETS: SKYROCKETING COSTS**

Medicaid is absorbing more than 20 percent of state government budgets in the United States and expenditures by state governments on Medicaid have been growing rapidly in recent years. In 2002, total state government spending was growing at an average rate of six percent per year while state spending for Medicaid was growing at about twice that rate. As of 2002, only elementary and secondary education accounted for a larger share of state budgets than Medicaid, which has risen from 17.8 percent of state government spending in 1992 and will
soon absorb a quarter of state budgets unless current double-digit percentage increases decline. A major factor in the growth of spending is increased spending for prescription drugs used by Medicaid beneficiaries.

Medicaid is a federal/state means-tested entitlement program that mandates payment for medical assistance to eligible individuals and families with low incomes and inadequate resources to pay for their own health care. Under federal guidelines, each state establishes its own eligibility standards, determines the type of services to be provided, sets payment rates to providers, and in general administers the program. There is considerable variability in policies regarding Medicaid coverage and payment among the states. A person who is eligible for Medicaid benefits in one state may not qualify for those benefits in another state.

The federal government pays a share, called the Federal Medical Assistance Percentage (FMAP), of each state’s Medicaid costs. FMAP is determined each year using a formula that considers per capita income in each state relative to the national average per capita income. States with lower than average per capita income are reimbursed with a higher share of their Medicaid outlays than states with per capita income that is higher than average. The law sets bounds for FMAP—it cannot be lower than 50 percent but it cannot exceed 83 percent. On average, in 2001 FMAP was 57 percent. It ranged from 50 percent in several high-income states to 77 percent in Mississippi. Combined federal and state government spending under Medicaid in 2003 was approaching $300 billion per year.

In general, federal guidelines require states to provide Medicaid coverage for most individuals receiving federally assisted income support (these include all those who meet criteria for public assistance under income-support programs that were in effect in mid-1996). Children under six whose family income is at or below 133 percent of the federal poverty level must also be covered under federal guidelines for Medicaid. Legal resident aliens who entered the United States after August 22, 1996, are ineligible for Medicaid for a period of five years after their arrival. Medicaid is similar to most private health insurance plans in that it provides inpatient and outpatient hospital benefits, physician services, and diagnostic services for children. Most states also provide prescription drug coverage, clinic, transportation services, and other services. Long-term nursing care, a benefit not available under most private health insurance plans, is part of the benefits available under Medicaid.

States pay most health care providers directly on a fee-for-service basis. As discussed earlier in this chapter, the Medicaid recipient is not billed and in most cases the price to the recipient is zero (although cost pressures could change this policy in many states). Some states also used managed-care facilities (health maintenance organizations) under prepayment contractual arrangements. States can set rates of payment to providers with the federal requirement that rates must be high enough to generate a supply of services comparable to that available to the general population in the area. Providers participating in Medicaid must accept the state payment rates under the program as payment in full. States also make special payments to hospitals that serve a disproportionate number of Medicaid recipients or uninsured patients. This disproportionate share hospital (DSH) payment was used heavily and, in many cases, inappropriately between 1988 and 1991 and has since become severely restricted.
State governments do have the power to require some Medicaid recipients to pay a share of some of the cost of medical services they receive. Those who receive long-term care in nursing facilities are usually expected to contribute some of their income to their care. Average Medicaid payments per person were about $3,500 per year in 2002. However, costs for aged Medicaid recipients, who comprise about 11 percent of all Medicaid enrollees, averaged nearly $10,000 per person in 2002. This is a cause of concern to the Medicaid program because as the population ages, the percentage of total Medicaid recipients who are elderly will rise. In the past, Medicaid has paid 45 percent of the cost of long-term institutional care for the elderly and these costs will rise sharply in the future. Another concern under Medicaid is the growth of spending for prescription drugs, which has been increasing at the rate of 20 percent per year from 1999–2002. Many states are considering reducing payments for prescription drugs as a way of limiting the increases in Medicaid costs.

**SUBSIDIES TO HOUSING AND FOOD**

**PUBLIC HOUSING**

Let’s return to the issue of housing subsidies. Some housing subsidies for the poor in the United States reduce the price of housing only if the poor agree to move into specially constructed government-supplied housing reserved for low-income families. This housing is usually rented to eligible citizens at rates considerably below those prevailing in the market. Public-housing programs are expected to increase the recipient’s consumption of housing. Unfortunately, the availability of these programs could actually reduce the consumption of housing by restricting the freedom of choice of the consumer.

Suppose, for example, a government program makes available a standard three-room apartment at a rental rate of $30 per room per month. The total rent paid by those eligible for the government housing is $90 per month. Assume the housing can be measured in standardized rooms per unit. This, of course, is a simplification because housing can vary greatly in quality and other characteristics (such as the neighborhood in which it is located). Assume that the market rent for a standardized room (the same size and quality as that provided in public housing) is $100 per month. The three-room public-housing apartment would cost $300 per month if rented on the free market. The cash equivalent of the public-housing subsidy to eligible tenants is $210 per month, which is the difference between the market rent and the subsidized rent.

Figure 7.5 (p. 274) shows that a person who is eligible for public housing could be induced to move from a larger privately rented apartment to a smaller government-subsidized unit. This person would reduce monthly consumption of housing as a result of the availability of the subsidy. Those taking advantage of the subsidy have no choice in the size or quality of their apartments. They must accept the standardized three-room units offered in the public-housing projects or forgo the subsidy.
The person whose indifference curves are illustrated in Figure 7.5 is currently in equilibrium at point $E_1$. He currently rents a four-room apartment at the going market rent of $400 per month. After paying rent, he has $0F$ remaining to spend on other goods. For example, if his monthly income were $800, he would spend $400 on housing and have $400 left over each month to spend on other goods.

Now suppose the person becomes eligible for a new public-housing program. He can move into a standardized three-room public-housing apartment at the subsidized rent of $90 per month if he chooses. Point $G$ on the graph represents this alternative. At that point, the tenant would be consuming a three-room apartment, which normally would cost $300. He spends only $IM = $90 a month for this apartment. The remainder is paid by government as a subsidy represented on the graph by the distance $MH = $210. If the eligible recipient chooses to move to public housing, he will spend $90 per month on housing, and assuming an $800 monthly income, have $710, represented by the distance $MO$, left over to spend on other goods.

The analysis shows that the eligible tenant in fact will choose to move out of the nonsubsidized four-room apartment and into the subsidized three-room apartment, because he is better off at point $G$ compared with his initial equilibrium at point $E_1$. If he were to remain in the four-room apartment, he would achieve utility level $U_1$ at...
By moving into the subsidized three-room apartment, he can increase his utility level to $U_2$ at point $G$. Therefore, given the choice, he accepts the subsidized apartment and reduces the amount of housing consumed per month.

The analysis also shows that if the person were to receive the cash value of the housing subsidy, he would increase his consumption of housing. The subsidy of $210 per month is represented by the distance $GJ = MH$ on the graph. If this amount were given in cash each month to the person, the budget line would become $I'B$. With the monthly cash grant, he would be in equilibrium at point $E_2$. He would move from his four-room apartment into a five-room apartment. He would spend $500 per month on housing. His total income would be $800 (monthly earnings) plus $210 (monthly grant), for a total of $1,010. He would spend $510 on other goods. This person would consume more housing and be better off ($U_3 > U_2$) at point $E_2$ than at point $G$.

Thus, for some people, a public-housing program could have results opposite to those intended. Some people would not want to reduce the quantity of housing if they were eligible for public housing. For example, a person currently in equilibrium consuming the services of a three-room apartment per month would clearly be made better off by the subsidy. She would gladly move into the government-supplied three-room apartment, provided that it were of the same quality as her current residence. This is because the subsidy would enable her to have more of other goods while consuming the same amount of housing per month. For this person, the housing subsidy would be equivalent to a cash grant.

Figure 7.6 (p. 276) shows the case of a person who will turn down the opportunity to enter a government housing project even with no differences in the quality of government-and market-supplied housing. This person’s indifference curves are steeper than those drawn in Figure 7.5. The person is originally in equilibrium at point $E_1$ in a four-room apartment. If he were to move to point $G$, the government-supplied three-room housing, he would be made worse off, achieving utility level $U_1 < U_2$. He therefore remains at point $E_1$ by refusing subsidized housing.

In fact, many argue that in some cases government housing is of lower quality than market housing, because the housing projects have been concentrated in low-income neighborhoods. The concentration of poverty-level households in deteriorating neighborhoods results in crime and other social problems that plague tenants. Public housing is also an expensive subsidy. One estimate is that new construction of public housing in 1984 required a federal subsidy of $5,000 per unit per year! Given the magnitude of that subsidy, few new public-housing projects have been built in recent years. An equivalent cash grant of that amount would clearly contribute greatly to pull many low-income people out of poverty.

The Housing and Community Development Act of 1987 authorized a new voucher program that gives low-income households coupons, like food stamps, that can be used to rent housing. These vouchers provide subsidies to rent privately owned housing units instead of limiting the subsidy to public housing.

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Some subsidy programs do not distort prices. **Fixed allotment subsidies** give eligible recipients the right to consume a certain amount of a good or service each month either through direct allotment of the item or the issuance of vouchers that can be used only to buy a specific item. An example of a fixed allotment subsidy is the food stamp program.

The food stamp program grants low-income people the right to purchase a certain amount of food per month through the issuance of special stamps. For most recipients of food stamps in the United States, the stamps received are equivalent to a cash transfer. This is illustrated in Figure 7.7.

The person whose indifference curves are illustrated in Figure 7.7A has a current monthly income equal to \( 0I \). Given the price of food, the person is initially in equilibrium at point \( E_1 \), where she purchases \( Q_{F1} \) units of food per month and spends \( M_1 \) per month on other goods. Suppose that this person now becomes eligible for a monthly grant of food stamps that will allow her to purchase \( Q_F \) units of food each month. The cash value of these stamps, given the current price of food, is \( F \). This represents the amount of cash necessary to purchase \( Q_F \) units of food per month. For example, the average value of food stamps for a family of four in 2002 was about $320 per month in the United States and its territories. A monthly cash grant of \( F \) would allow the recipient to increase her purchase of other goods by \( 1B \). However,
because the stamps can be used only to purchase food (and related items), the budget constraint, after the monthly food stamp grant, becomes $ICA'$. If instead a monthly cash grant of $F$ were given to the recipient, the budget line would be $BA'$. Under the food stamp grant, the market baskets of goods represented by the section $BC$ on the
A common way of subsidizing the poor in less-developed nations is through food subsidies.† The governments of Brazil, China, Colombia, Egypt, Mexico, Morocco, Pakistan, Sudan, Thailand, and Tunisia subsidize food and place no restrictions on who can buy the subsidized food and how much can be bought at the subsidized prices. Government outlays to finance food subsidies range from less than 1 percent of total outlays to as much as 17 percent. Although the food subsidies provide benefits to all who consume food, they amount to a higher percentage of the income of the lowest income groups in these nations. The value of the food subsidy to the poorest fifth of households in Egypt in the early 1980s was estimated to be 8.7 percent of the income of the urban poor and 10.8 percent of the rural poor.‡‡ In Egypt, most of the subsidy is given to bread and wheat flour sold through normal retail outlets. General food subsidies are often criticized because they provide benefit to the rich as well as the poor. In some nations, where rural consumers have little or no access to markets, the bulk of the subsidies accrues to the urban poor and barely reduces the poverty concentrated in rural areas.

To better target the poor, some nations subsidize only those foods that are mainly consumed by low-income groups. For example, Mexico subsidizes maize tortillas sold in markets. However, because rural consumers, who live far from organized markets, tend to make their own tortillas at home, this subsidy benefits the urban poor more than the rural poor.

In some nations, households receive a limited amount of food at subsidized prices while food is generally sold in markets at prices determined by supply and demand. The food ration system allows all citizens to purchase a minimum amount of food at low prices while allowing those who wish to purchase more to do so on the open market at nonsubsidized prices. These schemes provide less benefit to upper-income groups than do general food subsidies.

Some nations, such as Sri Lanka, operate food stamp programs similar to those used in the United States. Households with low income are given food stamps to purchase both food and kerosene. In Sri Lanka, about 50 percent of the population benefits from these food stamps.

Finally, some governments sponsor specific food distribution schemes that distribute free or highly subsidized food through special government or health centers to groups that suffer from malnutrition. These programs are often designed to benefit children and pregnant women.

‡‡ World Bank, 93.
Figure 7.7B illustrates the case of a person who, under a cash grant, would be in equilibrium along the line segment BC. This person is initially in equilibrium at point E₁. A cash grant of F would move him to point E₂, which in Figure 7.7B falls on BC, and he would consume Q^*_F units of food per month. If instead he were given a monthly amount of food stamps valued at F per month, he would be forced to point C. At that point, his maximum possible monthly utility is U₂, which is less than U₃, obtained with the equivalent cash grant. This is because he cannot use the stamps to purchase combinations of food and other goods on the line segment BC. At C, he consumes Q₃ units of food per month, which is greater than Q^*_F units that he would choose to consume each month if he were given a cash grant. For this person, the food stamps do increase food consumption above the monthly level he would choose with an equivalent cash grant. He is also forced to spend F per month on food. He would spend only BL on food (and 0L on other goods) with the cash grant. However, this person is worse off with food stamps than he would be with an equivalent monthly cash grant.

It is commonly believed that the cash value of food stamps is so low that recipients would be likely to spend at least that much on food even if they were given cash. Given that most recipients are likely to spend more than this amount per person per meal, food stamps can be regarded as equivalent to a cash grant. Contrary to common belief, this program is unlikely to increase the consumption of food over the levels that would prevail if recipients were given the cash value of the stamps.

Does the food stamp program contribute to an increase in the price of food? Keep in mind that although the program provides more than $24 billion for food expenditures (based on 2003 estimates), it does not increase actual expenditures by that amount because recipients normally would spend some of their own cash on food even in the absence of the program. Part of the food stamp grants increases expenditures on other goods. Total expenditures on food in the United States exceed $500 billion per year. It is therefore unlikely that the injection of only a portion of the $24 billion from the food stamp program into the food market is likely to have a major effect on the price of food.

Food stamp recipients peaked in 1994 and numbers have declined steadily after that time. Between 1994 and 2000 food stamp caseloads fell by 37.5 percent. Apparently many of those still eligible for food stamp program benefits simply did not apply for them after they stopped receiving public assistance under TANF in the late 1990s. Only about half of extremely low-income families no longer receiving income support under TANF (those with income below 50 percent of the poverty threshold) continue to receive food stamps even though all remain eligible. On average, 71 percent of those eligible for food stamp benefits in 1994 applied for and received the benefits, but by 1997 only 59 percent of those eligible were receiving benefits.

**CHECKPOINT**

1. How do public-housing programs affect the choices of those eligible for apartments in public-housing projects?
2. How does the food stamp program operate in the United States?
3. Explain why the consumption of food by most food stamp recipients would be unchanged if instead of food stamps they received the cash value of those stamps.
THE IMPACT OF GOVERNMENT ASSISTANCE PROGRAMS FOR THE POOR ON THE WORK INCENTIVE OF RECIPIENTS

Welfare benefits in cash or in kind assure the recipient of a minimum level of real income independent of work. The more generous the grant, the greater the disincentive to work. In other words, a transfer results in an income effect that is unfavorable to work. This is illustrated in Figure 7.8. The indifference curves drawn illustrate a person’s preference for leisure or income. Leisure per day is plotted on the horizontal axis. The maximum hours of leisure that a person can enjoy per day is 24. Leisure is defined as engaging in any activity other than work for pay.

The line $AB$ shows a person’s opportunity for giving up leisure for income by working, assuming that the only way the person can obtain income (or goods and services) is by working for an employer. In other words, the line $AB$ assumes

FIGURE 7.8 The Income Effect of a Transfer

If leisure is a normal good, an increase in income caused by a transfer increases leisure hours per day. The income effect of the transfer therefore is unfavorable to work. A transfer of $BG$ dollars per day will reduce hours worked per day to zero for the person whose indifference curves are illustrated.
that nonwage income is zero. If the person can work at a wage of \( w \) per hour, the equation of the budget line is

\[
I = w(24 - L),
\]  

(7.1)

where \( I \) is income per day and \( L \) is leisure hours per day. If \( L = 24 \), along \( AB \), the person’s income will be zero.

The slope of the budget line is \(-w\). The person whose indifference curves are illustrated is in equilibrium at point \( E_1 \), where he enjoys \( L_1 \) hours of leisure per day. He therefore works \((24 - L_1)\) hours each day.

If the person were to receive a transfer payment of \( BD = AC \) per day, his income per day would increase by that amount. Even if he took 24 hours per day in leisure, he would enjoy positive income. The increase in income leads to an increase in the consumption of all normal goods. If leisure is a normal good, the person will increase the amount consumed. In Figure 7.8, the transfer payment to the person shifts the budget line upward to \( CD \) and results in a new equilibrium at \( E_2 \), where the individual increases hours of leisure per day by \( L_1L_2 \). He decreases hours worked per day. If the person were eligible for a transfer of \( BG = AF \) per day, he would be in equilibrium at point \( E_3 \), where he would consume 24 hours per day in leisure, therefore not working at all. Eligibility for a subsidy of that amount would cause the person to drop out of the labor force!

Another work disincentive effect results from the way in which benefits are reduced as the recipient earns more income. This is illustrated in Figure 7.9 (p. 282). Given the wage rate that a person can earn, the amount of the transfer for which the person is eligible varies with hours worked per day (or any other time period).

In Figure 7.9, the maximum subsidy per day a person is eligible for is \( BD \). This is granted if the person does not work at all. As the person works, the subsidy steadily declines. At point \( C \), where the person works \((24 - L^*)\) hours per day, the daily transfer would be zero.

This subsidy program shifts the person’s budget line up to \( CD \) and decreases its slope at points corresponding to more than \( L^* \) hours of leisure per day. This means that the net effect of the program is to reduce the person’s real wage rate if he works less than \((24 - L^*)\) hours per day. In Figure 7.9, the person is in equilibrium at point \( E_2 \) after the subsidy. The subsidy program reduces hours worked per day from \((24 - L_1)\) to \((24 - L_2)\). This type of subsidy has a substitution effect in addition to an income effect for people who work less than \((24 - L^*)\) hours per day. It decreases work incentive by causing the wage a recipient can earn to decline, because working increases earned income but decreases transfer income. As a result, the recipient has an incentive to substitute leisure for work. In effect, the subsidy decreases the opportunity cost of an hour of leisure by reducing the wage when more than \( L^* \) hours per day are enjoyed. In this case, both the income and the substitution effects of the transfer act to decrease hours worked per day.

When a transfer recipient starts working, the transfer usually gets phased out. For example, suppose a recipient is eligible for a $300 per month transfer if she has no earnings at all. Suppose her transfer is reduced by 70 cents for each dollar of
earnings. At any level of earned income, $I_E$, her monthly transfer, $T$, can be calculated from the following formula:

$$T = 300 - 0.7I_E.$$  \hfill (7.2)

For example, if she earns $300 per month, her transfer would be reduced from $300 to $90 per month. The transfer eventually would be terminated if she earns sufficient income. To calculate this level of income, set $T$ equal to zero in the preceding equation and solve for $I_E$. In this case, $I_E$ is equal to $428.57$ per month. This would correspond to the level of earned income at point C in Figure 7.9.

If recipients of welfare are out of the labor force, these unfavorable effects on work incentive will be minimal. The cash benefits of many programs are often at values low enough to minimize their income effects. Most states, for example, have paid benefits that are insufficient to raise a recipient’s income above the poverty level, even at the maximum monthly amounts. Evidence does indicate that recipients have been more likely to work in states where welfare benefits are

**FIGURE 7.9**

A Transfer That Declines with Earned Income

Transfer income per day declines as the recipient’s earned income per day increases. At point $C$, the subsidy per day would be zero. The subsidy reduces the net wage if the person takes more than $L^*$ hours of leisure per day. This transfer reduces the incentive to work because it generates both income and substitution effects unfavorable to work.
minimal than in states where benefits are more generous. The new welfare law enacted by Congress deals with work disincentives by limiting the period of eligibility for assistance and requiring recipients to work.

WORK AND WELFARE: EMPIRICAL EVIDENCE

Numerous empirical studies and even some experiments have attempted to measure the impact of welfare programs on the work incentive of recipients. One research study has concluded that in the absence of income support, women whose families received these benefits would have worked between 10 and 15 hours per week more than they actually did in the early 1980s. However, because most welfare recipients are unskilled and earn very low wages, this extra work would have increased their disposable income by a mere $1,500 per year—hardly enough to bring them out of poverty and certainly not enough to take the place of the welfare stipends. Most of the experimental evidence also suggests that means-tested transfers have an effect on work effort but that the effect on low-income men and women with dependent children is small. A 10 percent increase in cash transfers will reduce hours worked by less than 2 percent, according to estimates based on these experiments. These findings suggest that even if welfare benefits were to be reduced substantially, or if the rate at which they are phased out with earnings is reduced, work would increase but the increase would not be sufficient to bring the workers out of poverty.

PROGRAMS WITH NO STATUS TESTS: THE NEGATIVE INCOME TAX AND SUBSIDIES TO THE WORKING POOR

Critics of the U.S. system of assistance to the poor argue that the status tests are demeaning to the recipients. They also argue that the “patchwork quilt” overlap of programs lacks consistent goals. Some have proposed scrapping the system in favor of a negative income tax (NIT), a cash assistance program that would provide a minimum income guarantee for all Americans. All those with income below the floor would receive cash subsidies from the government while those above the floor would pay taxes. An NIT plan would integrate the system of government assistance with the federal income tax.

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4Ibid.

5The economist Milton Friedman proposed the original idea for an NIT in the late 1960s. Friedman suggested to replacing all income support programs for the poor with minimal income guarantee for all Americans. See Milton Friedman, “The Case for the Negative Income Tax,” in Republican Papers, Melvin R. Laird, ed. (New York: Praeger, 1968).
HOW AN NIT WOULD WORK

The first step in developing an NIT plan is to decide on the income guarantee. This represents a floor on family income. A person with zero earnings would be guaranteed the standard of living represented by the floor. Suppose the floor is set at $I_G = $5,000 per year for a family of four. The floor, of course, would vary with household size.

The second step in the plan is to determine the rate, $t_N$, at which the transfer received by those with zero income would be phased out as recipients’ annual earnings increase. Assuming $t_N = 50\%$, for every $2$ earned the transfer to eligible recipients from the government will be reduced by $1$.

The annual transfer, $T$, received by any eligible family can be expressed as

$$T = I_G - t_N I_E$$  \hspace{1cm} (7.3)

where $I_E$ is earned income per year. For example, if $I_E$ is zero, the family will receive a transfer of $I_G = $5,000. As the family’s annual earnings increase, the annual transfer will be reduced accordingly. Table 7.3 shows how the transfer will decline with income.

If the family earns enough, the transfer will fall to zero, and the family will begin to pay taxes instead of receiving transfers (which are negative taxes) from the government. The level of income at which this occurs is called the break-even income and can be determined from Equation 7.3 by setting $T = 0$ and solving for $I_E$. This gives the annual earned income, designated as $I_B$, at which $T = 0$:

$$0 = I_G - t_N I_B$$  \hspace{1cm} (7.4)

$$I_B = I_G / t_N$$  \hspace{1cm} (7.5)

$I_B$ is the annual income at which the taxpayer is neither paying taxes nor receiving transfers. As shown in Table 7.3, when $I_G = $5,000 and $t_N = 50\%$, $I_B = $10,000.

The disposable income, $I_D$, of a family receiving a transfer is obtained by adding earned income and the transfer, as shown in Table 7.3. For example, the disposable income of a family of four with $2,000 earned income is $2,000 + [($5,000 - .5(2,000)] = $6,000. A family of four with income greater than the break-even level of $10,000 per year would pay positive taxes. Its disposable income would be earned income minus taxes paid.

A crucial step in implementing an NIT comes after a family reaches the break-even level of annual income. If income is taxed at a flat rate of, say, 20\%, after the break-even point, the effective tax rate paid by taxpayers would actually be lower than that paid by transfer recipients whose income declines by 50\% with earnings! Figure 7.10 (p. 285) shows that disposable income would vary with earned income assuming that $t_N$ is 50\% and that income above the break-even level is taxed at 20\%.

A problem with a national income guarantee plan such as NIT is that it can end up being very expensive if the income guarantee is set at any reasonable level, because the plan requires no status test. For example, suppose the income
### NIT: Disposable Income of Recipients in Relation to Earned Income

<table>
<thead>
<tr>
<th>EARNED INCOME ((I_E))</th>
<th>TRANSFER FROM GOVERNMENT ((T = I_G - I_E / l^2))</th>
<th>DISPOSABLE INCOME ((I_D = I_E + T))</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0$</td>
<td>$5,000$</td>
<td>$5,000$</td>
</tr>
<tr>
<td>$1,000$</td>
<td>$5,000 - [0.5 \times (1,000)] = 4,500$</td>
<td>$5,500$</td>
</tr>
<tr>
<td>$2,000$</td>
<td>$5,000 - [0.5 \times (2,000)] = 4,000$</td>
<td>$6,000$</td>
</tr>
<tr>
<td>$3,000$</td>
<td>$5,000 - [0.5 \times (3,000)] = 3,500$</td>
<td>$6,500$</td>
</tr>
<tr>
<td>$4,000$</td>
<td>$5,000 - [0.5 \times (4,000)] = 3,000$</td>
<td>$7,000$</td>
</tr>
<tr>
<td>$5,000$</td>
<td>$5,000 - [0.5 \times (5,000)] = 2,500$</td>
<td>$7,500$</td>
</tr>
<tr>
<td>$6,000$</td>
<td>$5,000 - [0.5 \times (6,000)] = 2,000$</td>
<td>$8,000$</td>
</tr>
<tr>
<td>$7,000$</td>
<td>$5,000 - [0.5 \times (7,000)] = 1,500$</td>
<td>$8,500$</td>
</tr>
<tr>
<td>$8,000$</td>
<td>$5,000 - [0.5 \times (8,000)] = 1,000$</td>
<td>$9,000$</td>
</tr>
<tr>
<td>$9,000$</td>
<td>$5,000 - [0.5 \times (9,000)] = 500$</td>
<td>$9,500$</td>
</tr>
<tr>
<td>$10,000$</td>
<td>$5,000 - [0.5 \times (10,000)] = 0$</td>
<td>$10,000^a$</td>
</tr>
</tbody>
</table>

*a*Break-even income.

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#### An NIT Plan

![Diagram](image)

All people with less than the break-even level of income, \(I_B\), would receive transfers. The annual disposable income of these people therefore would exceed their annual earned income. All people with annual earned income greater than \(I_B\) will pay taxes. Disposable income for these people therefore will fall short of earned income.
guarantee is set at the level of about $10,000 for a family of four and at correspondingly lower levels for smaller families and higher levels for larger families. With $t_N$ equal to 50 percent, all families of four with income of less than $20,000 per year would be transfer recipients. This could be a substantial portion of the population! The taxes on the remaining portion of the population would have to be quite high to finance the transfers and other government services. If a lower $t_N$ is used to encourage work effort, it would be even worse. If $t_N = 0.2$, and $I_G = $10,000, the break-even income level would be $I_B = $50,000. Therefore, all families of four with income of less than $50,000 per year would receive transfers! As this is likely to include more than 80 percent of American families, who would pay the taxes?

WAGE RATE SUBSIDIES

Concern about the work disincentive effects of existing transfer programs for the poor has led to proposals for wage rate subsidies (WRS) as a means of both supporting the incomes of the working poor and providing them with incentives to work. Under a WRS plan, minimum-wage legislation would be repealed and workers would be induced to search for jobs at the market-determined wage. Those working at the lowest wages would receive subsidies from the government to raise their incomes to some minimum level. The subsidy would vary with hours worked and would be phased out as a worker’s hourly wage rate increased.
The decline in welfare dependency in Wisconsin has resulted in a bonanza of funds to the state coffers. The new federal system simply gives each state a block grant—a lump sum of money—to spend on the poor based on the caseloads under the old AFDC program. As Wisconsin has reduced the number of families receiving cash assistance more rapidly than other states, it will still get the same amount from the federal government. For example, in 1997 the state got $2.6 billion more from the federal government than it would have gotten under the old entitlement system based on the number of recipients of public assistance. The $2.6 billion welfare bonus went into the state treasury and is used as the state sees fit. Wisconsin is spending virtually all of this windfall on services for the poor. Given the lower caseloads, Wisconsin is now spending 62 percent more than it has in the past on helping the poor. This aid is in the form of child care, health care, and job opportunities. The poor in Wisconsin now get help in the form of transportation to work, résumé classes, and appropriate clothing for work.

Fortunately, a booming economy in the late 1990s helped this new system work in Wisconsin.

In 1999, Wisconsin received $793 million from the federal government as financing for welfare programs but only spent 45 percent of that amount. However, Wisconsin still spent more than $20,000 per family in its Wisconsin Works program. The state provides job placement services and counselors, offers guarantees of child care, and has created thousands of public service jobs for the poor. Cash benefits under TANF per recipient in Wisconsin are the third highest in the nation. Wisconsin also provides the working poor with subsidized health care wage supplements. The program has resulted in 50 percent declines in welfare caseloads since 1997. The high spending per case is partly accounted for by the fact that caseloads have declined so dramatically.


For example, if a worker earned $2.00 per hour, the government might subsidize the hourly wage at the rate of $1.50, bringing up actual take-home wages per hour to $3.50 for the worker. Employers would still pay $2.00 per hour. The lower wages made possible by the plan would provide more employment opportunities but maintain the worker’s income and incentive to work. Table 7.4 (p. 38) shows how the WRS might vary with hourly wages. For a worker earning wages of, say, $3.00 per hour, the subsidy might be reduced to only $1.00 per hour, giving the worker a net wage of $4.00 per hour. The subsidy might decrease with an increase in wages until it fell to zero at, say, wages of $5.00 per hour.

The subsidization schedule would have to be designed to provide incentive for workers to move on to higher paying jobs. The subsidy also would have to be phased out at some reasonable level of wages to keep the costs of the plan down.

An obvious advantage of WRS is that it directly increases wages and encourages low-income people to seek and find work. It also encourages employers to hire low-income workers, assuming that wages under the plan would be below those that would prevail under minimum-wage laws.

THE EARNED INCOME TAX CREDIT

The Earned Income Tax Credit (EITC) has emerged in the United States as a form of wage subsidy that is a major means of income support for the working poor. The EITC has only minimal status tests. The EITC is available only to those who work.
The EITC is actually part of the Federal Income Tax code. It was first introduced in 1975 as a modest program to stimulate consumption when the United States was in recession. The program provides a *negative tax payment* (actually a transfer of income) to low-income earners. Notice that this is not a tax refund—it is a payment from the federal government to workers who file income tax returns. People eligible for the EITC file a regular income tax return but instead of paying taxes or receiving a full or partial refund on taxes already paid, they actually get a payment from the federal government! The EITC works to reduce some of the work disincentive effects of the tax system on welfare recipients who take a job, and it also reduces the burden of Social Security taxes that all workers must pay when they have earnings.

The EITC was expanded as an income support program for the working poor in 1979 and 1986. Legislation enacted in 1990 raised the maximum credit to $1,998 per year in 1994 and simplified eligibility for the EITC. The amount a household can receive under the EITC is dependent on its income, the number of children in the household, payments the family makes for health insurance, whether a new child was born during the year, and whether the family receives other tax benefits. The benefits under the program are phased out as a family’s income rises over a certain threshold amount, like the NIT plan discussed in the preceding sections. Several states, including New York, Maryland, Massachusetts, and Wisconsin, have their own EITC programs that supplement the federal EITC.

The EITC was greatly expanded as a result of legislation enacted in 1993. In 2002, for a family with two children, the maximum credit was $4,140. This amount is indexed for inflation to keep the real amount constant in future years. In 2002, the maximum payment was paid to a single-parent family with two children beginning at $10,550 annual earned income until income reached $13,550 annually. After income increases greater than $13,550 per year, the tax credit is reduced by 21.06 cents for each extra dollar of income (see Table 7.5). The break-even level of income under the EITC for a single-parent family with two children was $33,200 in 2002.

The EITC was estimated to benefit more than 15 million families in 2002. It typically can increase the money income of a family with one earner working full time at

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Prior to 1993, only workers with children were eligible for credits. The new legislation makes single workers also eligible for the EITC. However, payments to single workers are limited to a portion of the workers’ Social Security tax up to a maximum of a $376 in 2002. An estimated five million individuals will benefit from this new extension of the EITC.

The changes in the EITC represent an increase in the cash support for the poor and an increased federal commitment to support the working poor. Payments under the EITC are entirely the responsibility of the federal government, although as pointed out above, several states have their own programs.

**EITC VERSUS NIT**

A common criticism against the NIT was that it would discourage work effort. The EITC is more favorable to work effort than the NIT because it is available only to those who work. In that sense, it is more like a wage rate subsidy than an NIT. In effect, the EITC turns an $8 per hour wage into a $11.20 hourly wage (a 40 percent increase) for workers eligible for the full credit. The EITC can also be viewed as a substitute for an increase in the minimum wage. Also, because the credits are a percentage of income earned, tax rates at low levels of income are actually negative, which encourages recipients to work more. For the program the tax rate is as much as minus 40 percent of earnings for a two-child family.

The EITC differs from the NIT plans already discussed in that the basic income guarantee is a percent of earnings and increases as earnings increase until it reaches the maximum amount allowed. Also, the negative tax rate for phasing out benefits is only slightly more than 20 percent. This low tax rate is much more conducive to encouraging work than is the case for a system with a 50 percent negative tax rate. However, the break-even level of income is much higher, which adds to the cost of the plan. Under existing legislation, all two-child families with income less than between $33,150 and $34,178, depending on marital status, per year receive EITC payments from the federal government rather than paying federal personal income taxes! Families still pay the payroll tax and any applicable

<table>
<thead>
<tr>
<th>TOTAL EARNED INCOME</th>
<th>EITC</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>2,000</td>
<td>810</td>
</tr>
<tr>
<td>4,000</td>
<td>1,610</td>
</tr>
<tr>
<td>6,000</td>
<td>2,410</td>
</tr>
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<td>3,210</td>
</tr>
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<td>10,550</td>
<td>4,140</td>
</tr>
<tr>
<td>15,000</td>
<td>3,823</td>
</tr>
<tr>
<td>20,000</td>
<td>2,770</td>
</tr>
<tr>
<td>33,200</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: Internal Revenue Service.
state income tax. Also, recipients with incomes greater than $20,000 per year are subject to both payroll and income taxes that increase the effective taxes they pay on additional earnings to as much as 50 percent.

When combined with other programs, such as food stamps and Medicaid, which in effect provide an income guarantee for those with zero income who are eligible for these programs, the EITC represents a way of increasing support for the poor in the United States while increasing their incentive to work.

Of course, the EITC does not exempt the working poor from all taxes. Working poor still must pay the employee share of the payroll tax that supports Social Security and Medicare in the United States and could be subject to state income taxes. However, for low-income childless workers, the EITC amounts to a refund of much of the employee share of the federal payroll tax. The EITC for low-income workers with children, in most cases, more than offsets their share of the federal payroll tax.

Figure 7.11 shows how the EITC varied with taxpayer (or adjusted gross income) for childless families, families with one child, and families with two or more children in 2002.

<table>
<thead>
<tr>
<th>CHECKPOINT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What is the income effect of a transfer on incentives to work?</td>
</tr>
<tr>
<td>2. How does the TANF program diminish the work disincentive of cash transfers in the United States?</td>
</tr>
<tr>
<td>3. How would an NIT program with no status test differ from the current U.S. system of public assistance to the poor? What is the advantage of a WRS plan to assist the poor? How does the EITC benefit low-income workers?</td>
</tr>
</tbody>
</table>

**FIGURE 7.11**

**EITC 2002**

Source: Internal Revenue Service.
THE NEW WELFARE LAW: THE EMPHASIS ON WORK AND LIMITS TO ELIGIBILITY

Analysis of the effects of transfers on the work-leisure choice suggests that they impair incentives to work. Both income effects and substitution effects discourage work when cash transfers are means-tested. The substitution effect can be particularly acute when welfare benefits are phased out as recipients earnings increase, as has been the case in the United States until 1996. Under the old system, a female head of a family eligible for cash transfers under AFDC would also have been eligible for food stamps, Medicaid, and possibly other programs such as housing subsidies. If a mother receiving income support began working, her welfare benefits would be phased out beyond allowances for basic child care expenses and other work-related expenses (about $2,000 a year).

After the mother had earned the first $2,000, cash transfers would have been phased out at first at a rate of 67 cents for each dollar of earnings during the first four months of work. After four consecutive months of work, the welfare benefits would have been phased out at $1 for each dollar at work. Because of the benefit phaseout, the fact that workers were subject to payroll and income taxes from working, and the loss of food stamp and Medicaid benefits, welfare recipients often found that by working full time their disposable income (including the value of their in-kind transfers) actually fell compared to what they could have received by not working and receiving full welfare benefits! Under these circumstances, many welfare recipients had little incentive to enter the labor market to seek employment.

The Personal Responsibility and Work Opportunity Act of 1996 is a fundamental change in the system of income support to the poor in the United States that requires most welfare recipients to work. Under the new law, cash assistance can only be a temporary source of income to most low-income recipients who meet status and means tests. Further, each state government is now required to set up plans to assist recipients who receive funds under the TANF program in developing work skills and finding work. The law also provides federal funds in the form of a grant to state governments to subsidize child care for families on welfare, families leaving welfare, and low-income families. The function of welfare as a safety net for families experiencing temporary financial problems is preserved while reducing long-term dependency on means-tested government transfer programs. Here are the provisions of TANF designed to achieve these objectives:

1. Means-tested cash transfers are limited to five years to any family over their lifetime. However, states may exempt up to 20 percent of their caseload for families in which work is difficult or impossible because of disabilities and other problems. All able-bodied recipients of welfare payments who have been on welfare for two years must participate in some activity designed to help them become self-supporting. Federal standards now require states to have one-half of their welfare recipients in work programs for 30 hours per week. States can set up even stricter programs and will be penalized by the federal government if they do not get a set percentage of their welfare recipients to work.
2. To enable heads of families with dependent children to work, each state receives a grant to subsidize child care services to the poor.

3. To reduce future caseloads and numbers of welfare recipients, TANF includes policies to reduce the number of nonmarital births. Teen mothers are required to live at home with a responsible adult and attend school. Those unmarried mothers who do not help establish paternity for their children have their cash benefits reduced by 25 percent. Funds are also provided to help states enforce child support laws.

4. A parent with a child over the age of five who refuses an offer of work approved by social service caseworkers would lose benefits. Some states would put children of nonworking parents in foster homes. Only adults with children under one year old—about 15 percent of recipients—are exempt from the work requirement. Legal immigrants who arrived in the United States after August 1996 were denied access to TANF for a period of five years.

Each state has the responsibility of implementing these laws. In general, states have developed programs to provide training, child care, health care, transportation, and wage rate subsidies, and are putting some of their block grant funds into contingency funds to provide additional support for the poor during periods of economic downturns.

TANF has increased the supply of unskilled labor in the marketplace. In growing areas where jobs are plentiful, the increased supply is likely to be easily accommodated. However, in areas experiencing declines in growth, unemployment among those who have exhausted their five-year supply of benefits could be a problem. These individuals and their families would have no source of income unless they received private charity or the state developed some contingency plans to support them during recessions. Lower wages could result in more payments through the EITC program.

THE IMPACT OF WELFARE REFORM IN THE UNITED STATES: TANF, DECLINING CASELOADS, AND INCREASED LABOR FORCE PARTICIPATION OF THE POOR

Since the introduction of TANF, welfare caseloads in the United States have declined. The labor force participation among less-skilled single mothers has increased more than expected.\(^7\) State programs have focused on providing job preparation skills (interviewing skills, getting along on the job, getting child care and assistance with searching for a job) to those enrolled in TANF. Relatively small amounts are actually spent on training for specific jobs. State governments have greatly increased their spending for work support including child care subsidies and transportation subsidies. States also assist those enrolled in TANF with job search expenses and, in some cases, subsidize wages.

Prior to 1996, it was typical for state governments to spend 70 percent of their welfare budgets on cash assistance to the poor. By 2000, a study of six states showed that 38 percent of state assistance of the poor was going to child care subsidies while direct cash assistance had fallen to less than one-third of state assistance to the poor.8 There has been a substantial and rapid decline in welfare caseloads throughout the United States since 1996. Former recipients are being weaned off public assistance and are staying off. Labor force participation rates of single mothers with children have risen by 10 percentage points between 1994 and 1999. The increased labor force participation rates have not only increased earnings but have also increased labor force experience which over time leads to increased worker productivity and higher wages.

Poverty rates, through 2001, particularly for families headed by single mothers have declined more quickly than have poverty rates on average. Most of the research on the impact of TANF indicate that the new program explains a significant portion of the decline in caseloads although other factors, including the strong growth in jobs in the booming U.S. economy from 1996–2000, also were important factors in explaining declining caseloads. In addition, there is general agreement that the EITC, which is basically a WRS to low-income workers also helped increase labor force participation and decrease caseloads particularly for single parents. One estimate is that welfare reform increased labor supply among less-skilled women in the United States by more than one million workers between 1996 and 2002. Although this labor supply effect put downward pressure on market wages, it was offset by increased demand for labor over the same period and, as a result, there was no significant decline in market equilibrium wages paid to less-skilled workers.9

The increased expenditures on work support for the poor, particularly child care, have made a substantial impact on labor supply and work among single parents. The increase in labor supply by single parents has been substantial since 1996 and exceeded increases in labor supply among married women and less-skilled men in the labor force. TANF has also apparently been successful in reducing poverty rates among less-skilled and disadvantaged women.10

The reforms in the United States have influenced other nations. Some communities in Germany are now imposing time limits on public assistance. Canada has given local governments greater control over social assistance programs and has experimented with programs designed to move women from dependence on welfare to work in the labor market. In the United Kingdom, a program similar to the U.S. EITC is now in place.

The impact of the new welfare system on work is actually part of a long-term trend. There has been a steady shift away from means-tested and status-tested grants to the poor toward support for the working poor. This has diminished the

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10See Blank, op. cit., p. 1144.
income and substitution effects unfavorable to work inherent in grant programs with phase-outs that subject the poor to high effective tax rates that discourage work. The new programs have provided strong incentives to work particularly in single-parent families.\textsuperscript{11} The decline in families on welfare began in 1993 and by 1998 the number of families receiving welfare payments through either AFDC and TANF had declined by 50 percent. There is good reason to believe that the declines in welfare rolls are due primarily to changes in incentives for the poor to work. The expansion of the EITC for families encourages work. New rules introduced in the 1990s also prohibit states from removing children from the Medicaid rolls if they are in families with income below the poverty level. This means that a poor single mother does not risk losing health insurance for her children if she works.

Although it is difficult to accurately assess the reasons for the decline in welfare cases, one expert has estimated that 50 percent of the decline is a result of the new welfare law. Another 30 percent of the decline can be attributed to the EITC and other programs that support workers. Finally, 20 percent was due to a strong economy.\textsuperscript{12}

The new system also has some impact on family structure. Wage supplement programs like the EITC are phased out as incomes increase. In many cases maximum benefits are available to a single-earner family with children. This discourages single mothers from marrying when marrying can increase family income and reduce the payments under the EITC. Two earners in a family can increase family income enough to result in very high effective tax rates as payments under the EITC and such programs as food stamps are reduced. These effective tax rates can be as high as 70 percent if marriage raises family income to the $20,000 per year range. As a result, the system encourages one-earner families with children and discourages marriage to another wage earner.

Overall, the new system has been effective in reducing poverty rates. The shift from means-tested cash transfers to work support has reduced poverty rates of single-parent families from 51 percent to 44 percent.\textsuperscript{13} States have experienced a windfall of cash from the federal government as their welfare rolls have declined. Because states receive a fixed grant from the federal government based on their historical welfare rolls, they can pocket the amounts not spent through reductions in cash assistance. In New York, for example, the cash windfall by 1999 had reached a total in excess of $1 billion. The state received more than $6 billion in federal grants for welfare but spent only $5 billion of it on assistance to the poor. States can use these excess funds as their legislatures choose and much of the $1 billion windfall in New York State ended up as huge tax cuts to benefit mainly middle-income voters!

From 1997 to 2000 welfare rolls have been lower than anticipated and most states received more under TANF from the federal government than they would have under the old entitlement programs. In many states, including Connecticut,
Texas, and Minnesota, federal grant money has been used to replace state funds for existing antipoverty programs, thus freeing up money in the state budgets for either tax cuts or funding of other programs. The shift away from means-tested cash support for the poor leaves many unprotected by a safety net if unemployment rates soar and job opportunities for the unskilled dry up. Although unemployment insurance could provide some support to the poor in a recession, the current system replaces only a small fraction of wages and is unlikely to keep the unemployed poor from being mired in poverty if their jobs evaporate. State governments will have some hard choices to make if many people no longer eligible for TANF lose their jobs. They could simply stick by the rules and allow the poor to take to the streets or starve as their assistance is cut off; they could relax the limits on means-tested cash transfers, or they could provide subsidized public service jobs. All the options are likely to be costly and could require state governments to raise taxes or cut other services at a time when tax revenues are declining because of a recession. However, during the recession of 2001, unemployed workers previously on TANF in many large cities retained their jobs.

The program’s attempt to reduce out-of-wedlock births has not been especially successful. Only 12 states showed miniscule reductions since 1996. Today one out of every three births in the United States is to an unwed mother. The rate is two out of three in Washington, D.C.! A contest to reduce out-of-wedlock births gave a $100 million prize shared by the five states that reduced their out-of-wedlock birth rates most without increasing abortions. The prize went to Alabama, California, Washington, D.C., and Michigan.

THE WELFARE ROLLS IN NEW YORK CITY AND THE RECESSION OF 2001

TANF was introduced during a period of almost unprecedented prosperity in the United States. A booming job market and tight labor markets in many large cities made it relatively easy to find jobs for those on the new temporary assistance program. A major concern with the reformed welfare program was how well it would hold up under the pressure of the rising unemployment rates that accompany a recession. When the first recession of the new millennium began in March 2001, the reformed welfare program met its first test.

Despite the recession, the number of people enrolled in welfare programs in many large cities actually fell in 2002. For example, in New York City, which has more enrolled in welfare programs of all cities in the United States, the number of people receiving aid under public assistance actually decreased by 10 percent during the first nine months of 2002. Some have argued that many of the poor have merely fallen through the safety net and are looking for other sorts of aid from private charity. However, it is more likely that many of the single mothers who have found jobs under TANF are in occupations that are relatively unaffected by the recession. Single mothers have found jobs in such as industries as education, health care, and social services. These service occupations have been expanding instead of contracting during the downturn of 2001 and the slow recovery in 2002. And jobs in these areas are increasing. In other cities, many single mothers who
found work under TANF were employed in travel-related industries such as hotels and restaurants. These industries were hard hit during the recession and welfare rolls in states such as California have increased.14

There were, however, some concerns that the situation could change unless the sluggish recovery from the recession picks up. By mid-2002 there was an increase in monthly applications for public assistance in New York City.

**PROGRAMS TO AID THE POOR AND THE DISTRIBUTION OF MONEY INCOME IN THE UNITED STATES**

How effective have U.S. transfers to the poor been in changing the distribution of income in the United States? Table 7.6 shows the distribution of annual money income before taxes for selected years from 1947 to 2001. The money income of each one-fifth of households includes cash transfers. The table provides some indication of the degree of inequality in the distribution of money income among these households. If the distribution of income were perfectly equal, each one-fifth of households would receive one-fifth, or 20 percent, of total aggregate annual money income. The data in the table indicate significant inequality of income in the United States.

The 1970s were marked by a sharp increase in the importance of transfers and aid to the poor, as associated with President Johnson’s “war on poverty.” The data, however, seem to indicate that during the 1970s, these programs had little impact on the actual distribution of money income. These data do not include the impact of the many income in-kind transfers for which the poor are eligible. Adjustment can be made for in-kind transfers. If assumed that each dollar’s worth of in-kind benefits is worth a dollar to the recipient, inclusion of in-kind transfers would increase the share of income of the lowest group by about two percent.15 This indicates that in-kind transfers have reduced income inequality. Despite the sharp increases in spending to aid the poor, their income shares have fallen since 1967 while income shares of the rich (the highest fifth) have increased.

One explanation for this could be that the growth in transfers has been accompanied by an increase in the number of poor people.

**INTERPRETING DATA ON INCOME INEQUALITY: SOME PITFALLS**

It is quite difficult to interpret the data on income distribution in Table 7.6. Part of the problem of interpretation stems from the fact that the income data are for households rather than for individuals. For example, over time in the United States the number of households with two earners has increased. If there is a greater tendency for upper-income households to have more than one earner, then any increased share of income going to them overstates their individual gains relative to lower-income households.

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For example, between 1979 and 1993, the average real family income of the richest fifth of families increased by 18 percent while the poorest fifth of families suffered a 15 percent decline in income. Much of the decline in income in the lowest fifth could be accounted for by an increase in the proportion of female-headed families. Female-headed families typically earn less than male-headed families. If all families experienced increased income in the lowest fifth but the proportion of families headed by females increased, then the share going to this fifth could decline even if all families in the lowest fifth have higher incomes.

Similarly, it is possible that the income shares going to the upper fifth can increase even if individual incomes do not grow within this fifth if more upper-income people marry other upper-income people. For example, suppose two mid-level managers each earn $50,000 per year and would normally fall in the fourth fifth of families if they were single. If they marry each other, then their household income doubles to $100,000 even though their individual earnings have not increased. Therefore, they will be in the highest fifth of families, thereby increasing the share going to that group.

To better understand what is happening to income distribution, it would be more useful to look at how earnings and other sources of income vary among people of similar characteristics (e.g., 18- to 24-year-old males with only a high school education) and other distinct groups (such as retirees) and how the proportion of people with differing characteristics changes over time.
Further, remember that incentives to earn income are part of the engine that drives economic growth. We can’t necessarily conclude that a higher share of income going to the rich is bad if the alternative is to tax it away and reduce the incentive to work and invest, which decreases economic growth and opportunities for all, including the lower-income groups of society.

**SUMMARY**

Many government subsidies benefit low-income people. Eligibility for these subsidies is determined by a status test and a means test. The status test determines whether a person belongs to one of the demographic groups eligible for government assistance. The means test determines whether the person’s income and wealth are low enough for eligibility for government assistance.

In the United States, both in-kind and cash subsidies are used to assist the poor. In-kind subsidies include transfers in the form of food, medical services, and housing to the poor. They account for about two-thirds of federal assistance to the poor in the United States. In-kind subsidies can result in an excess burden that results from inefficient resource use. In most cases, in-kind subsidies free enough cash for other uses by recipients that they can be regarded as equivalent to cash transfers.

Most transfers reduce the incentive to work. In evaluating transfer programs, voters must weigh the desire to obtain changes in the distribution of income against the decreases in efficiency and work incentive resulting from the subsidy programs.

**A FORWARD LOOK**

The following chapter looks at social insurance programs. These programs transfer income to people who need not pass a means test. The major social insurance program in the United States is the Social Security pension system, and its functions are closely analyzed.

**IMPORTANT CONCEPTS**

- Deadweight Loss of a Subsidy
- Earned Income Tax Credit (EITC)
- Entitlement Programs
- Excess Burden of a Subsidy
- Fixed Allotment Subsidies
- Food Stamp Program
- In-Kind Benefits
- Means Test
- Medicaid
- Negative Income Tax (NIT)
- Poverty Threshold
- Price-Distorting Subsidies
- Status Test
- Supplemental Security Income (SSI)
- Temporary Assistance to Needy Families (TANF)
- Wage Rate Subsidies (WRS)

**QUESTIONS FOR REVIEW**

1. List the major programs of government assistance to the poor in the United States. What percentage of the population is poor? Do all the poor qualify for government assistance programs?

2. What is a means test? How does it differ from a status test? What are entitlement programs, and how are the expenditures under these programs related to means tests and status tests?
3. Suppose the government gave away heating oil free to eligible low-income citizens. Use a graphic analysis to show the excess burden in the market for this good. Under what circumstances will the subsidy cause the market price of fuel oil to increase?

4. What are the possible collective benefits of government assistance to the poor? Why are in-kind benefits to the poor more prevalent than cash benefits?

5. Explain why in many cases in-kind transfers to the poor are likely to be equivalent to cash transfers in their effects.

6. Suppose a person receives stamps from the government that allow the purchase of $300 worth of clothes per year. These stamps cannot be used to buy any other items. Show how these stamps affect the person’s budget line. Show the various market baskets of goods that could be purchased with a $300 cash grant that cannot be purchased with the stamps.

7. Explain how cash and in-kind transfer programs can reduce the incentive to work by recipients.

8. Suppose a person will receive $50 per day as a transfer if he does not work at all. This transfer is reduced by 60 cents for each $1 of earned income. How much daily earned income will reduce the transfer to zero?

9. Has poverty in the United States been eliminated as a result of transfers to the poor? What are some of the problems involved in measuring poverty?

10. Explain why the negative income tax plan is likely to be more expensive than the current system of assistance to the poor. What are the advantages of wage rate subsidies?
earned, cash benefits decline by 67 cents for each dollar earned. Plot the recipient’s money income–leisure trade-off (budget) line under these circumstances. Assume that she can find work at $4 per hour. How many hours will she have to work per day before her benefits are eliminated? Assuming that her indifference curves for work and leisure are convex, show her equilibrium allocation of time between work and leisure per day. Show that it is possible to have more than one most-preferred outcome.

4. A proposal for a negative income tax is designed to provide an income guarantee for each person, irrespective of his age or status, of $3,000 per year. Thus, a family of four would have an income guarantee of $12,000 per year. The transfers under the program will be phased out at a rate of 25 percent as earned income increases. Calculate the break-even level of income for a family of four. If all families above the break-even level of income pay a flat-rate 25 percent tax on their earnings, plot disposable income as a function of earned income. Comment on the costs of this plan.

5. Get the directions for the Federal Income Tax or go to http://www.irs.gov to obtain the tables for the EITC for the current year. Explain how the program increases earnings for low-income workers and affects their incentives. Draw a curve for single workers, married workers filing jointly, and single parents showing how the EITC will vary with earnings. Why does the EITC encourage low-income workers to work? Use indifference curve analysis to show the income and substitution effects resulting from the EITC up to the point at which the maximum credit level of earnings is reached. How does the EITC phaseout affect tax rates paid for workers after they go past the level of earnings that pays the maximum credit under the EITC?

SUGGESTIONS FOR FURTHER READING


**INTERNET RESOURCES**

**http://www.house.gov**
This is the home page of the U.S. House of Representatives. Click on Committees. A wealth of information on government spending programs can be obtained by accessing the *Overview of Entitlement Programs* also known as the “Green Book” of the Ways and Means Committee. This book can be searched to obtain details on all federal transfer and entitlement programs. Other useful committees to access include Appropriations and Budget.

**http://www.census.gov**
The Census Bureau’s home page includes a search engine that allows you to access information on the population of the United States and its characteristics, including income levels and income distribution, poverty rates, and other information.

**http://www.dhhs.gov**
The home page of the U.S. Department of Health and Human Services has information on welfare programs and on the Medicaid program.

**http://www.ssc.wisc.edu/irp/**
This is the home page for the Institute for Research on Poverty of the University of Wisconsin. You can use it to browse for issues related to welfare reform and the status of the poor in the United States.

**Is Workfare Working?**
1. What is workfare?
2. How have programs like TANF affected welfare caseloads and incentives to work since 1998?
3. How has the recession affected people who found jobs under TANF?

**What Accounts for Recent Increases in Income Inequality?**
1. What are some of the causes of increased income inequality in the United States in recent years?
2. What government policies can be used to reduce income inequality?