Economic Investigations

Investigation #4: How Can a Family Be in Poverty and Not Be Poor?

There Is More to the Story
“Economic Investigations: There Is More to the Story” was a National Science Foundation funded project, which began in September 2003. The Social Science Education Consortium (SSEC) of Boulder, Colorado, was the grantee agency. James Davis, Executive Director of the SSEC, was the project director, and Donald Wentworth, Professor Emeritus of Pacific Lutheran University, was project co-director.

The overall project goal was to help students achieve a deeper understanding of puzzling economics questions so they could explain and provide thorough, supported, and justifiable accounts of economic phenomena, facts, and data. Three objectives guided project development:

• Create a classroom laboratory orientation for the investigations similar to those students would encounter in a laboratory science course.
• Develop quantitative skills in students—more so than they would acquire in a standard high school economics course.
• Focus the investigations on intriguing economics questions to spark student and teacher interest.

The Investigations

Twelve investigations were created by teams of economics curriculum materials developers and high school economics teachers. The titles of each investigation identify its content area followed by the main question addressed in the investigation. The investigation titles are:

Microeconomic Investigations
1. Women’s Wages: Do Women Earn Less Money Than Men?
2. Organ Transplants: Where Are the Missing Kidneys?
3. Minimum Wage: Does Raising the Rate Help Younger Workers?
4. Poverty: How Can a Family Be in Poverty and Not Be Poor?
5. Health Care: Who Should Pay the Cost?

Macroeconomic Investigations
6. Performance of the National Economy: How Do We Measure the Economy’s Health?
7. Inflation: Are Higher Prices the Only Problem?
8. Employment and Unemployment: How Can Both Rates Rise at the Same Time?
10. Monetary Policy: Can the Federal Reserve Diagnose and Treat an Ailing Economy?

International Investigations
11. African-U.S. Trade: What’s in It for Africa?
12. Imports: Does American Employment Decline Because of International Trade?
Investigation and Field Test Results
The investigations were field-tested by high school teachers in the spring semesters of 2004 and 2006. Field test locations included Jefferson County Colorado; Milwaukee, Wisconsin; Sioux Falls, South Dakota; Scottsdale/Mesa, Arizona; and Plano, Texas. Based on this field test, the investigations were found to promote deeper student understanding of economic issues through the use of effective instructional methods. Students acknowledged that they learned a great deal from the investigations and teachers stated they would recommend the investigations to other teachers.

Cooperative Publishing Agreement
The Social Science Education Consortium has transferred the copyright of these investigations to JA Worldwide. JA Worldwide is making them available to teachers by posting them on the JA Worldwide website (www.ja.org) and distributing them in CD-ROM format. The investigations also will be posted on the SSEC website (www.socialscience-ed.org). Ultimately, the investigations will support the revised Junior Achievement high school program, JA Economics.

Authorship and Consultants
The project was fortunate to have an excellent group of authors and consultants. These individuals are listed below.

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The project evaluator was William Walstad, Professor of Economics, University of Nebraska, Lincoln.

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Field-Test Teachers

Below are the teachers who completed field tests during the second year of the project.

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Investigation # 4:  
How Can a Family Be in Poverty and Not Be Poor?

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Investigation #4: How Can a Family Be in Poverty and Not Be Poor?

Introduction

Measures of Poverty
The United States is a wealthy nation. It produces more goods and services per capita than any other nation. Yet, poverty remains a persistent problem. The official poverty rate in the United States in 2002 was 12.1 percent—up from 11.7 percent in 2001. In 2002, 34.6 million people were classified as being in poverty. African Americans and Hispanics have higher percentages of people in poverty than do whites. About 24 percent of African Americans and 21.8 percent of Hispanics are classified as being in poverty, compared to 8 percent of whites.

Yet, many economists believe that the official method of measuring poverty is flawed. The official poverty statistics are based solely on money income. They do not, for example, account for the value of any assets a family might hold, including a home, car, or other personal possessions.

In this investigation, students discuss the role of government in providing programs to reduce poverty. They analyze official and alternative measures of poverty. They explore how current definitions can classify people as living in poverty, even though they are not actually poor.

Student Comprehension
This investigation helps students examine the following issues related to measuring poverty:

- Is reducing poverty an appropriate economic role for government?
- What are absolute and relative measures of poverty?
- What is the official measure of the number and rate of people in poverty?
- How is this measure used to determine whether a family is considered to be in poverty?
- What is omitted from the official poverty measure?
- What are alternative measures of poverty?
- How does the use of these measures change the poverty rate?

In this investigation, students are asked to discuss the role of government in alleviating poverty. They also examine measures of poverty. Students study the official poverty measure, and compare it to alternative measures. They will discover that their results for the number of people living in poverty and the poverty rate will vary, depending on which measure they use to investigate poverty.
Concepts
Public Good
Private Good
Absolute Measures of Poverty
Relative Measures of Poverty

Objectives
After completing this lesson, students will be able to
- apply economic thinking to determine the role of government in reducing poverty;
- recognize the difference between absolute and relative measures of poverty;
- recognize how the official measure of poverty is determined; and
- predict how alternative measures of poverty can change the poverty rate.

Economic Principles
Income inequality exists in all economic systems. All societies have to decide what role government will play regarding its poor.

There are two views of poverty: absolute and relative. When poverty is viewed in absolute terms, it is defined on the basis of a standard, such as income or value of assets. When poverty is viewed in relative terms, it is defined on some relational measure. For example, households in the lowest 10 percent of income might be considered to be in poverty. If we define poverty as an absolute measure, then it is conceivable that poverty could be eliminated. If we define poverty as a relative measure, then there will always be people who are considered to be poor.

Some economists argue that efforts to redistribute income from the rich to the poor are not an appropriate economic function of the government. They suggest that this is a job for private charities. Other economists disagree. They suggest that reducing poverty is a “public good.” How might this be the case? Most individuals in society feel better when they are not directly confronted by signs of poverty, such as homeless people, deteriorated housing, dangerous neighborhoods, etc. When poverty is reduced, everyone tends to benefit. When the benefits are so widespread, there is a reduced incentive for private charities to pay. The “public good” argument means that government is justified in providing financial support for programs that reduce poverty.
The United States measures poverty in absolute terms, rather than in relative terms. Its approach is based on several assumptions. The official measure of poverty, developed in 1963-1964, was based on estimates supplied by the Department of Agricultural. The estimates indicated how much money income is needed annually for food, multiplied by three to cover other expenses as well, and adjusted for family size. This measure, called the poverty income threshold or poverty line, sets the income below which a family is considered to be in poverty.

Some economists believe that the official method of measuring poverty is flawed. The official poverty statistics are based solely on money income. Official poverty measures do not account for the value of in-kind benefits, such as food stamps or housing vouchers. Nor do they account for the value of any assets a family might hold, including a home, car, or other personal possessions. In fact, families in poverty often own homes and cars and are only rarely malnourished. When variables are considered beyond money income, many families who are classified as being in poverty might not be those we normally consider poor.

Investigation

Description
Students analyze the economic role of government in alleviating poverty. They are introduced to different measures of poverty. They identify some of the characteristics of people who are officially in poverty. They analyze alternative measures of poverty and their strengths and weaknesses.

Time Required: 60 minutes

Materials
- Visual #1 What Is Poverty?
- Visual #2 Private Goods and Public Goods
- Visual #3 Is Reducing Poverty a Public Good?
- Visual #4 How the United States Measures Poverty
- Visual #5 Number in Poverty and Poverty Rate
- Visual #6 Number in Poverty and Poverty Rate by Race and Hispanic Origin
- Visual #7 Poverty Rates by Age
- Visual #8 Material Living Conditions of People in Poverty
- Activity #1 Using the Official Measure of Poverty
- Activity #2 Alternative Poverty Measure: National Academy of Science-Based Measure
- Activity #3 Alternative Poverty Measure: Income
procedure

1. Tell students this lesson will investigate a serious problem in the United States. Point out that millions of people in the United States are classified as being below the poverty level. Explain that they will examine why the government redistributes income to reduce poverty, how the poverty level is measured, and how families that are classified as being in poverty might not actually be poor.

2. Display Visual #1 – What is Poverty? Explain the distinction between measuring poverty in absolute and relative terms. If poverty was measured in relative terms, it could never be eliminated.

3. Ask the class if they think the federal government should play a role in reducing poverty. What is an economic argument for opposing this as a role of government? It lies in understanding the distinction between private goods and public goods.

4. Display Visual #2 – Private Goods and Public Goods. Point out that the argument made on behalf of government funding for poverty reduction is the same argument made on behalf of government funding for other sorts of public goods. Ask the students to identify examples of private goods where the benefits are conveyed to the payer. Examples might include movie tickets, a laptop computer, or a cup of coffee. Ask the students to identify example of public goods. Examples might include national defense, police, flood control, and severe weather warning systems. Point out that such public goods will not be supplied by the private economy in the quantities necessary to obtain the desired levels of protection. Some sort of public subsidy will be necessary.

5. Display Visual #3 – Is Reducing Poverty a Public Good? Discuss the first two questions. Explain how many view fighting poverty to be a public good. Tell students that because the benefits of reduced poverty are so widespread, it is hard to get enough people to fund its reduction. Nonpayers would “free ride” on the resources provided by others. For that reason, without sufficient funding from government, we would not have enough programs to reduce poverty.

6. Explain that the United States government defines poverty in absolute terms. Display Visual #4 – How the United States Measures Poverty. Explain how income is used to establish the poverty income threshold, or the poverty line.
7. Display **Visual #5 – Number in Poverty and Poverty Rate**, to provide information on who is considered to be in poverty. Ask: “How many people are in poverty? What is the poverty rate? When does the poverty rate seem to increase?”

**Answer:** 34.6 million Americans are considered to be in poverty. The poverty rate is 12.1 percent. The poverty rate increases during recessions.

8. Display **Visual #6 – Number in Poverty and Rate by Race and Hispanic Origin**. Ask: “How is the poverty rate and number different when we compare racial groups?”

**Answer:** The number of whites in poverty is greater than the number of African Americans and Hispanics in poverty. But the poverty rate is higher for African Americans and Hispanics.

9. Display **Visual #7 – Poverty Rates by Age**. Ask: “How has the poverty rate changed for people ages 65 years and older? How has it changed for people under 18 years?”

**Answer:** Poverty rates have declined significantly since 1959 for people ages 65 years and older. The rate of poverty for people under 18 years decreased until the late 1970s, after which it increased.

10. Explain that the class will now make decisions about who officially is in poverty. They will use the poverty measure published by the U.S. Census Bureau to determine whether four hypothetical families are in poverty. Distribute **Activity #1 – Using the Official Measure of Poverty**. Ask the students to use Table 1 to determine whether each family is in poverty. Discuss their answers.

**Answers to Activity #1 – Using the Official Measure of Poverty**

**Family A**
- What is Family A’s income?
  **Answer:** $10,500
- What is the threshold for Family A?
  **Answer:** $10,874
- Is Family A in poverty?
  **Answer:** Yes. Family A’s income is below the poverty threshold.

**Family B**
- What is Family B’s income?
  **Answer:** $14,400
- What is the threshold for Family B?
  **Answer:** $14,494
- Is Family B in poverty?
  **Answer:** Yes. Family B’s income is below the poverty threshold.
Family C
What is Family C’s income?
Answer: $24,000
What is the threshold for Family C?
Answer: $22,007
Is Family C in poverty?
Answer: No. Family C’s income is above the poverty threshold.

Family D
What is Family D’s income?
Answer: $32,000
What is the threshold for Family D?
Answer: $24,038
Is Family D in poverty?
Answer: No. Family D’s income is above the poverty threshold.

11. Explain that some economists believe that the official method of measuring poverty is flawed. The official poverty statistics are based solely on money income. Official poverty measures do not account for the value of in-kind benefits, such as food stamps or housing vouchers. Nor do they account for the value of any assets a family might hold, including a home, car, or other personal possessions.

12. Distribute Activity #2 – Alternative Poverty Measure: National Academy of Science-Based Measure. Ask the class to read the information and complete the exercise.

Answers to Activity #2 – Alternative Poverty Measure:
National Academy of Science-Based Measure

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Official Poverty Measure</td>
<td>12.1%</td>
<td>Method 1</td>
</tr>
<tr>
<td>Method 1</td>
<td>12.4%</td>
<td>Method 2</td>
</tr>
<tr>
<td>Method 2</td>
<td>13.0%</td>
<td>Method 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13.0%</td>
</tr>
</tbody>
</table>

The rate of poverty increased with the use of the National Academy of Science-Based Measure. This measure’s estimates of work-related expenses and medical expenses resulted in classifying more people as living in poverty.
13. Distribute **Activity #3 – Alternative Poverty Measure: Income**. Ask the class to read the information and complete the exercise.

Answers to Activity #3 – Alternative Poverty Measure: Income

Table 1

<table>
<thead>
<tr>
<th>Measure</th>
<th>Poverty Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>MI</td>
<td>12.1%</td>
</tr>
<tr>
<td>MI-Tx</td>
<td>11.6%</td>
</tr>
<tr>
<td>MI-Tx+NC-MM</td>
<td>9.9%</td>
</tr>
<tr>
<td>MI-Tx+NC</td>
<td>9.4%</td>
</tr>
<tr>
<td>Mi-tx+NC+HE</td>
<td>8.6%</td>
</tr>
</tbody>
</table>

The rate of poverty decreased with the use of the alternative income measure. This measure’s estimates of income and of some assets, such as equity in housing, resulted in classifying fewer people as being in poverty.

14. Explain that still other economists argue that the U.S. Census Bureau measures do not account for the actual living conditions of people who are classified as being in poverty. W. Michael Cox of the Federal Reserve Bank of Dallas suggests that we should also take a close look at material living standards. When the standards of nutritious food, adequate clothing, and adequate living conditions are compared, it appears that a much smaller number of people are living in actual poverty.

15. Display **Visual #8 – Material Living Conditions of People in Poverty**. Discuss the statistics with the class. Explain that while there are, indeed, poor households in need of help, these statistics suggest that the U.S. Census Bureau undercounts the economic resources, or annual income, of people in poverty.
Closure

Ask students to summarize the main points of the lesson on measuring poverty.

• How could reducing poverty be considered a public good?

   **Answer:** Seeing fewer signs of poverty is a real benefit to society as a whole. When the benefits are so widespread, there is a reduced incentive for private charities to pay. When alleviating poverty is considered to be a public good, there is an economic role of government to play in reducing it.

• What is relative poverty? Absolute poverty?

   **Answer:** Absolute measures of poverty set a standard by which to measure poverty. Relative measures of poverty define poverty on some relational measure, such as households with the lowest 10 percent of income.

• How does the U.S. Census Bureau measure the poverty rate?

   **Answer:** The U.S. Census Bureau sets a measure of income below which a family is considered to be in poverty.

• What are some limitations to the current measure used by the U.S. Census Bureau?

   **Answer:** The official poverty measures do not account for the value of in-kind benefits or work-related costs, such as transportation or daycare. Nor do they account for material living conditions, including assets, housing, and nutrition.
Multiple Choice (3)

1. Which of the following describes the economic argument for implementing government programs to reduce poverty?
   a. Private goods
   b. Public goods
   c. Government entitlements
   d. Human services

2. Which key factor is used by the U.S. Census Bureau to establish whether a household is in poverty?
   a. Homeownership
   b. Medical expenses and day-care requirements
   c. Income
   d. Food stamps and health insurance

3. What is the result when the National Academy of Science-Based Poverty Measure is used to measure poverty?
   a. There is an increase in the number and rate of people in poverty.
   b. There is a decrease in the number and rate of people in poverty.
   c. There is an increase in the number, but a decrease in the rate, of people in poverty.
   d. There is a decrease in the rate and an increase in the number of people in poverty.
ANSWER KEY

Multiple Choice (3)
(Answers are shown in bold.)

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   c. There is an increase in the number, but a decrease in the rate, of people in poverty.
   d. There is a decrease in the rate and an increase in the number of people in poverty.
Investigation #4 – Assessment #2

Essay (2)

1. Using the official system of the U.S. Census Bureau, explain how a household is classified as being in poverty.
2. How could it be the case that people classified in poverty might not be poor?

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Essay (2)

1. Using the official system of the U.S. Census Bureau, explain how a household is classified as being in poverty.

   **Answer:** The U.S. Census Bureau provides a measure of poverty based on income. It establishes thresholds that vary according to family size. If a family’s income is less than the family’s threshold, then that family is considered to be in poverty.

2. How could it be the case that people classified in poverty might not be poor?

   **Answer:** Most of us think of people in poverty as being poor in the sense that they have inadequate housing, poor nutrition, etc. The official poverty measure of the U.S. Census Bureau is based solely on estimates of how much money income is required to live adequately. The official poverty measure does not account for the value of in-kind benefits, such as food stamps or housing vouchers. Nor does it account for the value assets a family might hold, including a home, car, or other personal possessions. In fact, families in poverty often own homes and cars and are only rarely malnourished. When variables are considered beyond money income, many families who are classified as being in poverty might not actually be poor.
What Is Poverty?

Will we always have the poor?

- **Should we define poverty in absolute terms?**
  
  Poverty is defined on the basis of a standard, such as having the lowest income or lowest value of assets.

- **Should we define poverty in relative terms?**
  
  Poverty is defined as having the lowest income as well as the lowest value of assets relative to some other group.

- **If we define poverty as an absolute measure, then it is conceivable that poverty could be eliminated.**

- **If we define poverty as a relative measure, then there will always be people who are considered to be poor.**
Private and Public Goods

- Private goods and services convey their benefits only to the payer.

- Public goods and services convey their costs and benefits to payers and nonpayers.

- What might be some examples of private goods and services?

- What might be some examples of public goods and services?
Is Reducing Poverty a Public Good?

- Should the government redistribute income from the rich to the poor?

- If help for the poor were left to private charities, would enough assistance be provided?

- What is the case for claiming that poverty reduction is a public good?

  Individuals often do not like to see or be reminded of poverty.

  When poverty is reduced, there are real benefits to society as a whole.

  Because the benefits of reduced poverty are so widespread, it is difficult to get enough people to fund its reduction. Nonpayers would “free ride” on the resources provided by others.

  Therefore, government is justified in providing financial support for programs that reduce poverty.
How the United States Measures Poverty

• The United States government defines poverty in absolute terms.

• The absolute measure of poverty was developed in 1963-64 based on estimates by the Department of Agriculture of how much money is needed annually for food. That number was then multiplied by three to account for all expenses, and adjusted for family size.

• This measure is called the Poverty Income Threshold, or Poverty Line. It sets the income below which a family (including all family members) is considered to be in poverty.
Number in Poverty and Poverty Rate

Number in Poverty and Poverty Rate by Race and Hispanic Origin

*(Numbers in thousands)*

<table>
<thead>
<tr>
<th></th>
<th>Number Below Poverty</th>
<th>Poverty Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Races</td>
<td>34,570</td>
<td>12.1</td>
</tr>
<tr>
<td>White</td>
<td>24,074</td>
<td>10.3</td>
</tr>
<tr>
<td>African American</td>
<td>8,884</td>
<td>23.9</td>
</tr>
<tr>
<td>Asian</td>
<td>12,487</td>
<td>10.0</td>
</tr>
<tr>
<td>Hispanic</td>
<td>8,555</td>
<td>21.8</td>
</tr>
</tbody>
</table>

Material Living Conditions of People in Poverty

- In 2002, 46 percent of all poor households owned their own homes.
- The average home owned by a person classified as poor had three bedrooms, 1-1/2 baths, a garage, and a porch or patio.
- Nearly three-quarters of poor households own a car.
- 97 percent have a color television.
- 76 percent of poor households have air conditioning.
- 84 percent of the poor report having enough to eat.
- The average consumption of protein, vitamins, and minerals is the same for poor and middle-class children.

Using the Official Measure of Poverty

Directions: The U.S. Census Bureau produces the official poverty measure for the United States. This is an absolute measure of poverty. If a family’s income is less than the family’s threshold, then that family, and every individual in it, is considered to be in poverty. The official poverty thresholds are the same for the whole nation. Examine Table 1, below, to answer the questions for Families A, B, C, and D.

Poverty Thresholds in 2002 by Size of Family and Number of Related Children under 18 Years

Table 1

<table>
<thead>
<tr>
<th>Size of family unit</th>
<th>Related children under 18 years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>None</td>
</tr>
<tr>
<td>One person (unrelated individual):</td>
<td></td>
</tr>
<tr>
<td>Under 65 years</td>
<td>9,359</td>
</tr>
<tr>
<td>65 years and older</td>
<td>8,628</td>
</tr>
<tr>
<td>Two people</td>
<td></td>
</tr>
<tr>
<td>Householder under 65 years</td>
<td>12,047</td>
</tr>
<tr>
<td>Householder 65 years and older</td>
<td>10,874</td>
</tr>
<tr>
<td>Three people</td>
<td>14,072</td>
</tr>
<tr>
<td>Four people</td>
<td>18,556</td>
</tr>
<tr>
<td>Five people</td>
<td>22,377</td>
</tr>
<tr>
<td>Six people</td>
<td>25,738</td>
</tr>
<tr>
<td>Seven people</td>
<td>29,615</td>
</tr>
<tr>
<td>Eight people</td>
<td>33,121</td>
</tr>
<tr>
<td>Nine people or more</td>
<td>39,843</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau
Family A

Family A consists of two retired people. Suppose also that each member had the following income in 2002.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Husband</td>
<td>$6,500</td>
</tr>
<tr>
<td>Wife</td>
<td>$4,000</td>
</tr>
</tbody>
</table>

1. What is Family A’s income?

2. What is the threshold for Family A?

Family B

Family B consists of three people: two children and their mother. Suppose also that each member had the following income in 2002.

<table>
<thead>
<tr>
<th>Member</th>
<th>Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother</td>
<td>$14,400</td>
</tr>
<tr>
<td>First child</td>
<td>0</td>
</tr>
<tr>
<td>Second child</td>
<td>0</td>
</tr>
</tbody>
</table>

1. What is Family B’s income?

   ______________________________

2. What is the threshold for Family B?

   ______________________________


   ________________________________________________________________________________
   ________________________________________________________________________________
   ________________________________________________________________________________
   ________________________________________________________________________________
   ________________________________________________________________________________
   ________________________________________________________________________________
   ________________________________________________________________________________
Family C consists of five people: two children, their mother and father, and a great-aunt. Suppose also that each member had the following income in 2002.

<table>
<thead>
<tr>
<th>Member</th>
<th>Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother</td>
<td>$10,000</td>
</tr>
<tr>
<td>Father</td>
<td>$10,000</td>
</tr>
<tr>
<td>Great-aunt</td>
<td>$4,000</td>
</tr>
<tr>
<td>First child</td>
<td>0</td>
</tr>
<tr>
<td>Second child</td>
<td>0</td>
</tr>
</tbody>
</table>

1. What is Family C’s income?

2. What is the threshold for Family C?

Family D

Family D consists of six people: four children, their mother and father. Suppose also that each member had the following income in 2002.

<table>
<thead>
<tr>
<th>Member</th>
<th>Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother</td>
<td>$13,000</td>
</tr>
<tr>
<td>Father</td>
<td>$19,000</td>
</tr>
<tr>
<td>First child</td>
<td>0</td>
</tr>
<tr>
<td>Second child</td>
<td>0</td>
</tr>
<tr>
<td>Third child</td>
<td>0</td>
</tr>
<tr>
<td>Fourth child</td>
<td>0</td>
</tr>
</tbody>
</table>

1. What is Family D’s income?

2. What is the threshold for Family D?

The Rest of the Story
Many economists believe that the official method of measuring poverty is flawed. The official poverty statistics are based solely on money income. Official poverty measures do not account for the value of noncash benefits, such as food stamps or housing vouchers. They do not account for the value of any assets a family might hold, including a home, car, or other personal possessions. Nor do they account for some work-related expenses, such as transportation, child care, or out-of-pocket medical expenses.

Concerns about the accuracy of the poverty statistics have led the U.S. Census Bureau to explore alternative measures of the poverty rate. Two alternatives are considered below.

National Academy of Science-Based Poverty Measure
In 1995, a panel of the National Academy of Sciences (NAS) recommended new ways to measure poverty. Like the official measure, the NAS-Based Measure adds together the incomes of all family members who live together. However, the NAS-Based Measure has several other features.

The NAS-Based Measure
- uses after-tax income;
- includes noncash benefits, such as food stamps and housing vouchers;
- deducts from income some work-related expenses, such as transportation and child care; and
- includes estimates for out-of-pocket medical expenses.

The NAS-Based Measures differ, however, on how they account for health care costs.
Alternative National Academy of Science-Based Measure, 2002

Table 1

<table>
<thead>
<tr>
<th>Alternative National Academy of Science-Based Method, 2002</th>
<th>Number Below Poverty Level</th>
<th>Poverty Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Official Poverty Measure</td>
<td>34,570</td>
<td></td>
</tr>
<tr>
<td><strong>Method 1:</strong> Medical expenses are subtracted from income.</td>
<td>35,244</td>
<td></td>
</tr>
<tr>
<td><strong>Method 2:</strong> Medical expenses are not subtracted from income, but instead are used to determine thresholds.</td>
<td>37,013</td>
<td></td>
</tr>
<tr>
<td><strong>Method 3:</strong> This method combines Methods 1 and 2.</td>
<td>37,135</td>
<td></td>
</tr>
</tbody>
</table>

Exercise

Let’s examine how the NAS-Based Measure changes the Poverty Rate.

- The total population of the United States in 2002 was 285,371,000.
- Examine Table 1. Divide the number of people in poverty by the total population. Enter the results in the Poverty Rate column.
- How did the poverty rate change using the NAS-Based Measure? Why?
Alternative Poverty Measure: Income

Poverty Estimates Using Alternative Income Definitions
The official poverty measure uses money income before taxes to estimate family resources. Economists have questioned the accuracy of this measure. The U.S. Census Bureau has developed an alternative method of defining income. This approach takes into account many more sources of income, federal and state taxes, the value of employer-provided health benefits, noncash transfers, plus an estimate of the value of a home.

Table 1 lists five sets of poverty estimates. The first is the official poverty measure. The other four are experimental measures, which use the following definitions:

- **Money Income (MI)** is collected for all people in the sample, ages 15 years and over. Money income includes earnings, unemployment compensation, workers’ compensation, Social Security, Supplemental Security Income, public assistance, veterans’ payments, survivor benefits, pension or retirement income, interest, dividends, rents, royalties, income from estates, trusts, educational assistance, alimony, child support, assistance from outside the household, and other miscellaneous sources. It is income before deductions for taxes or other expenses, and includes lump-sum payments or capital gains.

- **MI – Tx** is money income plus realized capital gains (losses), less federal and state income taxes and less payroll taxes.

- **MI – Tx + NC - MM** is money income plus realized capital gains (losses), less federal and state income taxes, less payroll taxes, plus the value of employer-provided health benefits and all noncash transfers except Medicare and Medicaid.

- **MI – Tx + NC** is money income plus realized capital gains (losses), less federal and state income taxes, less payroll taxes, plus the value of employer-provided health benefits and all noncash transfers.

- **MI – Tx + NC + HE** is money income plus realized capital gains (losses), less federal and state income taxes, plus the value of employer-provided health benefits and all noncash transfers, plus the annual benefits of converting one’s home equity (net of property taxes) into an annuity.
Poverty Estimates
Based on Alternative Measures of Income Deflators: 2001 and 2002

Table 1
(Numbers in thousands)

Investigation #4 – Activity #3, page 3

Exercise

Let’s examine how the Alternative Income Measure changes the Poverty Rate.

- The total population of the United States in 2002 was 285,371,000.

- Examine Table 1. Divide the number of people in poverty by the total population. Enter the results in the Poverty Rate column.

- How did the poverty rate change using the alternative income measure? Why?