UNIT 4

Macroeconomics: Policies

Why It's Important

As you read this unit, learn how the study of economics helps answer the following questions:

- Why is the price of a used car not added to the nation's gross domestic product?

- Why does your dollar buy less than six cents worth of the goods and services it bought 100 years ago?

In the United States, macroeconomic policies are used to stimulate the nation's overall economic growth.

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ECONOMICS
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CHAPTER 13

Economic Performance

Economics & You

A growing economy means an expanding economy, one that continues to provide more people with what they want or need. In **Chapter 13,** you will learn how the nation's economic growth is the key to a better future for everyone. To learn how statistical measures are used to monitor the economy's performance, view the Chapter 20 video lesson:

Measuring the Economy's Performance

ECONOMICS Online

Chapter Overview Visit the *Economics: Principles and Practices* Web site at **epp.glencoe.com** and click on **Chapter 13—Chapter Overviews** to preview chapter information.

Any final product manufactured within the United States is included in the country's GDP.

Measuring the Nation's Output

Study Guide

Main Idea
Gross Domestic Product (GDP) and Gross National Product (GNP) are two important measures of economic performance.

Reading Strategy
Graphic Organizer As you read the section, complete a graphic organizer similar to the one below by identifying what calculations are necessary to go from GDP to GNP.

GDP **+** _____ **−** _____ **=** GNP

Key Terms
Gross Domestic Product, national income accounting, intermediate products, secondhand sales, nonmarket transactions, underground economy, Gross National Product, net national product, national income, personal income, disposable personal income, household, unrelated individual, family, output-expenditure model, net exports of goods and services

Objectives
After studying this section, you will be able to:
1. **Explain** how Gross Domestic Product (GDP) is measured.
2. **Describe** the limitations of GDP.
3. **Understand** the importance of GDP.

Applying Economic Concepts
Gross Domestic Product Read to find out why GDP is the most important measure of overall economic performance.

Cover Story

GDP Growth Revised Up to 4.3 Percent

Torrid consumer spending helped the nation's economy grow at a brisk annual rate of 4.3 percent at the beginning of the year. . . . [The] economy's robust first-quarter pace was far above expectations.

. . . [R]obust consumer spending, which continued to power economic growth, rose at an annual rate of 6.7 percent, the best showing in a decade, the government said.

The GDP report indicated that inflation remains low. An inflation gauge tied to the GDP rose at an annual rate of just 1.2 percent in the first quarter. . . . Spending for new homes and apartments increased at a 15.4 percent rate in the first quarter, the best showing in a year.

Home sales rise

—*The Washington Post*, June 25, 1999

The report in the cover story may be of only passing interest to many people, but it is vitally significant news for economists. This is because **Gross Domestic Product (GDP)**–the dollar amount of all final goods and services produced within a country's national borders in a year–is the single most important measure of the economy's overall economic performance. When GDP does well, the rest of the economy usually does well.

Economists devised **national income accounting**–a system of statistics and accounts that keeps track of production, consumption, saving, and investment–to track overall economic performance. This data becomes part of the National Income and Product Accounts (NIPA) kept by the U.S. Department of Commerce. The NIPA is like a statistical road map that tells Americans where they are and how they got there.

GDP—The Measure of National Output

GDP is a measure of national output. This means that Japanese automobiles produced in Kentucky, Indiana, Ohio, or Tennessee count in GDP even if investors who own the

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plants live outside the United States. On the other hand, production in U.S.-owned plants that are located in Mexico, Canada, or other countries is not counted in GDP.

Computing GDP

The measurement of GDP is fairly easy to grasp. Conceptually, we only have to multiply all of the final goods and services produced in a 12-month period by their prices, and then add them up to get the total dollar value of production.

Figure 13.1 provides an example. The first column contains three categories of products used in the NIPA. These are goods, services, and structures. The third category–structures–includes residential

housing, apartments, and buildings for commercial purposes. In the second column, the final goods and services produced in the year are listed. The next two columns show the quantity produced and the average price of each product. To get GDP, multiply the quantity of each good by its price and then add the results, as is done in the last column of the table.

Government statisticians use scientific sampling techniques along with other methods to estimate both the quantity and the prices of the individual products. In addition, since the reporting process includes such extensive data, GDP estimates are made only quarterly, or every three months. The figures are revised for months after that, so it takes several months or years to discover how the economy actually performed.

ECONOMICS AT A GLANCE

Figure 13.1

Estimating Gross Domestic Product

	Product	Quantity (millions)	Price (per 1 unit)	Dollar Value (millions)
Goods	Automobiles	6	$20,000	$120,000
	Replacement Tires	10	$60	$600
	Shoes	55	$50	$2,750
	...*	...*	...*	...*
Services	Haircuts	150	$8	$1,200
	Income Tax Filings	30	$150	$4,500
	Legal Advice	45	$200	$9,000
	...*	...*	...*	...*
Structures	Single Family	3	$75,000	$225,000
	Multifamily	5	$300,000	$1,500,000
	Commercial	1	$1,000,000	$1,000,000
	...*	...*	...*	...*
			Total Gross Domestic Product = $9 trillion	

Note: *... other goods, services, and structures

Using Tables Gross Domestic Product is the dollar value of all final goods, services, and structures produced within a country's borders in a year. **How is the dollar value for each of the products on the table calculated?**

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Excluded From GDP Although there is no consensus on the size of the underground economy, estimates suggest that it is between 5 and 15 percent of the recorded GDP. *What activities make up the underground economy?*

Some Things Are Excluded

When the Department of Commerce analyzes production data, it faces several decisions concerning what should and what should not be included in GDP.

One case involves **intermediate products**–products used to make other products already counted in GDP. If you purchase replacement tires for your automobile, for example, these tires are counted in GDP. However, if you purchase a new car, the tires are not counted separately because their value is built into the price of the car.

Intermediate products are eliminated from GDP so they are not counted twice, which would make GDP seem larger than it actually is. Some goods such as flour, sugar, and salt *are* included in GDP if they are bought for final use by the consumer. For example, if you buy flour to make a pie, the flour counts in GDP. If you are a baker who buys the flour to make pies for sale, only the value of the pies are counted.

Another decision involves the exclusion of **secondhand sales**–the sales of used goods. When products already produced are transferred from one person or group to another, no new production is created. Although the sale of a used car, house, clothes, or compact disc player may give others cash that they can use on new purchases, only the original sale is included in GDP.

Nonmarket transactions–transactions that do not take place in the market–are excluded because they are so difficult to measure. GDP does not take into account the value of services when you mow your own lawn or perform your own home maintenance. These activities are counted only when they are done for pay outside the home. The largest group of nonmarket transactions excluded from GDP includes the services that homemakers provide. If homemakers received pay for the cooking, cleaning, laundering, child care, and other household chores they normally perform, billions of dollars would be spent every year for these services.

Many other activities take place in the market, but they are excluded from GDP because they are illegal and not reported. Unreported legal and illegal activities such as gambling, smuggling, prostitution, drugs, and counterfeiting are part of the so-called **underground economy.**

Limitations of GDP

Increases in GDP are desirable because they indicate that more people have jobs and earn an income. GDP alone, however, tells nothing about the *composition of output.* If GDP increases by $10 billion, for example, we know that production is growing and we likely would view the growth as a good thing. However, we might feel differently if we discover that the extra production took the form of military nerve gas stockpiles rather than schools, libraries, and parks.

Additionally, GDP tells little about the impact of that production on the *quality of life.* The construction of 10,000 new homes may appear to be good for the economy. However, if the homes threaten a wildlife refuge or destroy the natural beauty of an area, the value of the homes may be viewed differently. In practice, GDP does not take into account quality of life issues, so it is helpful to be aware of such matters to gain a better understanding of GDP.

An Overall Measure of Economic Health

Despite its limitations, GDP is still our best measure of overall economic health. Because it is a measure of the voluntary transactions that take place in the market—and because voluntary transactions are only made when both parties feel they are better off—a larger GDP indicates that more people are better off than before. If GDP does not grow, people may become unhappy and dissatisfied with government or its leaders.

Presidential elections are often influenced by the health of the economy. In 1992, President George Bush lost a very close election to Bill Clinton, in part because people were still suffering from the short but sharp GDP downturn in 1991. Had the economy been healthy, many political analysts believe that Bush would have been reelected.

We can examine smaller parts of GDP—housing, consumer spending, and even the price increases detailed in the cover story—if we want more detail, but the total measure is the standard followed most closely. For these reasons, GDP is the single most important economic statistic compiled today.

GNP—The Measure of National Income

When economists measure income rather than output, they use **Gross National Product (GNP)**—the dollar value of all final goods, services, and structures produced in one year with labor and property supplied by a country's residents.

GNP is based on GDP, but there are differences between the two. While GDP measures the value of all the final goods and services produced within U.S. borders, for example, GNP measures the income of all Americans, whether the goods and services are produced in the United States or in other countries. To go from GDP to GNP, it is necessary to add all payments that Americans receive from outside the United States, then subtract all payments made to foreign-owned resources in the United States.

Figure 13.2 shows the relationship between GDP and GNP. Notice that GNP is the smaller of the two figures. This is because the United States paid out more income to factors of production from the rest of the world than it received; this is not the case for all countries. In a closed economy—one with no foreign sector—GDP equals GNP.

Net National Product

GNP is the first of five income measures included in the National Income and Product Accounts (NIPA). The second measure is **net national product (NNP),** or GNP less depreciation. Depreciation represents the capital equipment that has worn out or become obsolete over the year.

The National Income and Product Accounts
(in billions of current dollars)

Gross Domestic Product (GDP)	**$8,799.7**
Plus: Payments to American citizens who employ resources outside the U.S.	+ 270.3
Less: Payments to foreign-owned resources employed inside the U.S.	- 292.9
Gross National Product (GNP)	**$8,777.1**
Less: Capital consumption allowances and adjustments (depreciation)	- 932.0
Net National Product (NNP)	**$7,845.1**
Less: Indirect business taxes and subsidies	- 594.1
National Income (NI)	**$7,251.0**
Plus: Transfer payments to persons, personal interest income, and Social Security receipts	+ 2,214.7
Less: Undistributed corporate profits, corporate income taxes, and Social Security contributions	- 2,115.0
Personal Income (PI)	**$7,350.7**
Less: Personal taxes and nontax payments	- 1,136.0
Disposable Personal Income (DI)	**$6,214.7**

Source: *Survey of Current Business*, June, 1999 (data for first quarter)

Using Tables The National Income and Product Accounts show the relationship between GDP and five measures of the nation's income. **What is the main difference between GDP and GNP?**

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Visit **epp.glencoe.com** and click on **Textbook Updates—Chapter 13** for an update of the data.

CLICK HERE

National Income

The third measure is **national income (NI).** National income is the income that is left after all taxes except the corporate profits tax are subtracted from NNP. Examples of these taxes, also known as indirect business taxes, are excise taxes, property taxes, licensing fees, customs duties, and general sales taxes.

Personal Income

The fourth measure of the nation's total income is **personal income (PI)**—the total amount of income going to consumers before individual income taxes are subtracted. To go from national to personal income, four adjustments must be made.

First, income that does not go to the consumer must be subtracted from national income. One

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such type of income is retained earnings, also known as undistributed corporate profits. These are the profits that corporations keep to reinvest in new plants, offices, and equipment.

The second type of income that must be subtracted consists of corporate income taxes, which is a form of income to government. The third item subtracted is Social Security contributions from people's paychecks. After these three types of income have been subtracted from national income, transfer payments in the form of unemployment insurance, Social Security, medicaid, and several other forms of assistance must be added back in.

Disposable Personal Income

The fifth and smallest measure of income is **disposable personal income (DI)**—the total income the consumer sector has at its disposal after personal income taxes. This is an important measure because it reflects the actual amount of money the consumer sector is able to spend.

At the individual level, a person's disposable income is equal to the amount of money received from an employer after taxes and Social Security have been taken out. The $586.89 net pay on the check in **Figure 9.9** on page 241, plus the $3.20 of miscellaneous deductions, is disposable personal income.

The $3.20 is part of disposable income because the deduction was for something other than FICA or taxes. The wage earner could even choose to have more salary withheld to cover contributions to a credit union or charity or to buy savings bonds. However, these contributions would not lower a person's disposable personal income—they are merely one way of allocating disposable income.

Did you know?

A Growing Female Workforce The number of women in the labor force has virtually doubled since the early 1960s. From 1960 to 1997, the number of women in the workforce increased from 37.7 percent to 59.8 percent. The increase is a result of women having more education than ever before and delaying child rearing until they are established in their careers.

Economic Sectors and Circular Flows

It is useful to think of the economy as being made up of several different parts, or sectors. These sectors receive various components of the national income, and they use this income to purchase the total output. Sectors, described below and illustrated in **Figure 13.3,** are critical links in the circular flow of economic activity.

Consumer Sector

The largest sector in the macro economy is the consumer, or private, sector. Its basic unit, the **household,** is made up of all persons who occupy a house, apartment, or room that constitutes separate living quarters. A household includes related family members and all others—such as lodgers, foster children, and employees—who share the living quarters.

As long as the person or persons occupy a separate place of residence, a household also can consist of an **unrelated individual**—a person who lives alone even though he or she may have family living elsewhere. The concept of a household is broader than that of a **family**—a group of two or more persons related by blood, marriage, or adoption who are living together in a household.
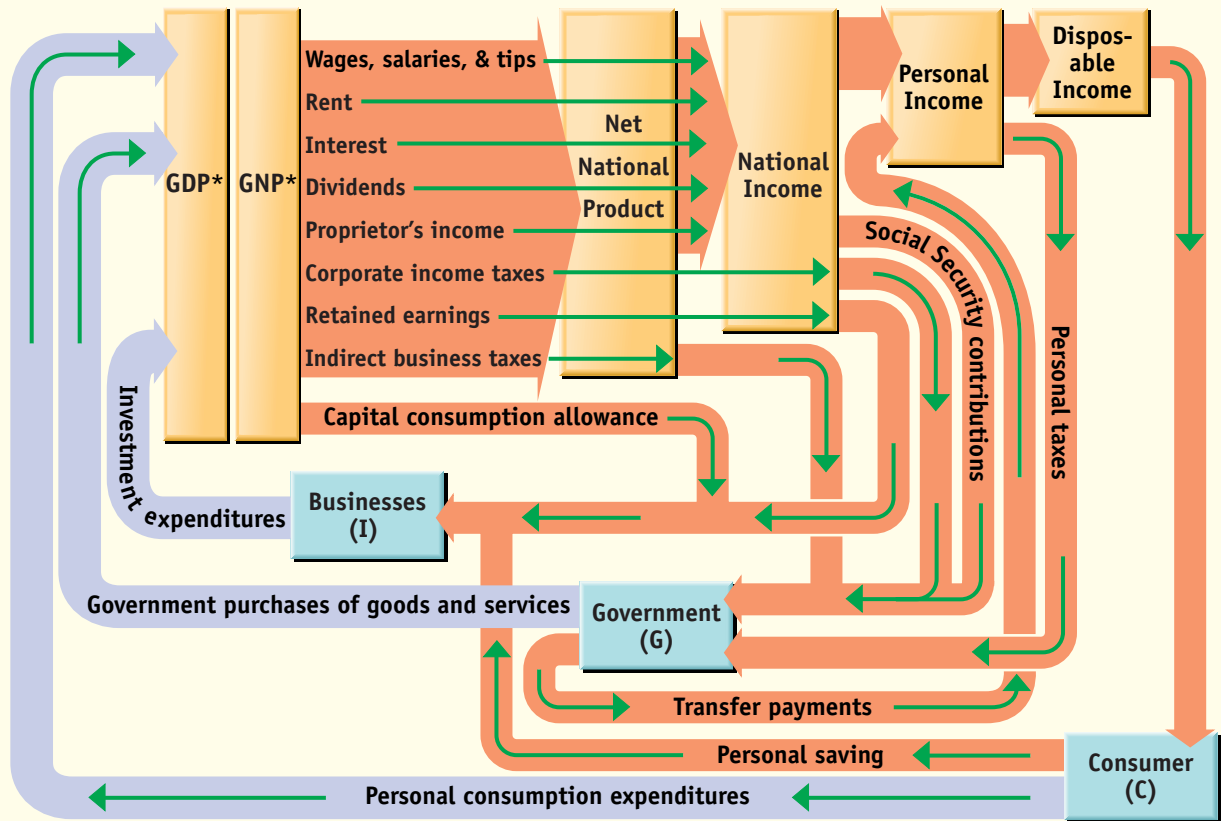
All three definitions have value to the United States Bureau of the Census. The definition of the household is especially useful because the demand for durable goods, such as stoves, water heaters, furnaces, and refrigerators, is more closely tied to the number of households than to the number of families. Also, many households, even when made up of persons not related by blood, marriage, or adoption, tend to behave as a single economic unit.

Shown as **"C"** in **Figure 13.3,** the consumer sector receives its income in the form of disposable personal income. In a sense, the consumer sector receives the income that is left over after all of the depreciation, business taxes, and FICA payments are made, plus the income received in transfer payments that are added back in.

Investment Sector

The second sector of the macro economy is the business, or investment, sector, labeled **"I"** in

Circular Flow of Economic Activity

Wages, salaries, & tips
Rent
Interest
Dividends
Proprietor's income
Corporate income taxes
Retained earnings
Indirect business taxes

GDP* GNP*

Net
National
Product

National
Income

Personal
Income

Dispos-
able
Income

Social Security contributions

Personal taxes

Capital consumption allowance

Investment expenditures

Businesses
(I)

Government purchases of goods and services

Government
(G)

Transfer payments

Personal saving

Personal consumption expenditures

Consumer
(C)

*GNP equals GDP in a closed economy.

Using Charts The three sectors of the economy—Business, Government, and Consumer—combine in purchasing the nation's total output. **What expenditures combine to make up gross domestic product?**

Figure 13.3. It is made up of proprietorships, partnerships, and corporations. It is the productive sector responsible for bringing the factors of production together to produce output.

The income to the investment sector is the depreciation that is subtracted from GNP and the retained earnings subtracted from NI. The business sector can treat depreciation as a form of income because it is a non-cash expense that never leaves the firm.

Government Sector

The third sector is the public sector, which includes all local, state, and federal levels of government. Shown as **"G"** in **Figure 13.3,** the government sector receives its income from sources such as indirect business taxes, corporate income taxes, Social Security contributions, and personal income taxes from the consumer or household sector. If the figure had a foreign sector, then customs duties would also be part of the sector's income.

Foreign Sector

The fourth sector of the macro economy is the foreign sector, usually identified as **"F,"** but not shown in **Figure 13.3.** This sector includes all consumers and producers outside the United States. Unlike the other sectors, the international sector does not have a source of income specific to it.

Instead, this sector represents the difference between the dollar value of goods sent abroad and the dollar value of goods purchased from abroad. If the two are reasonably close, the foreign sector appears to be fairly small, even when there are large numbers of goods and services being traded.

The Output-Expenditure Model

The circular flow in **Figure 13.3** is complete when the output-expenditure model is introduced. The **output-expenditure model** is a macroeconomic model used to show aggregate demand by the consumer, investment, government, and foreign sectors. When this is written as

$$GDP = C + I + G + F$$

the equation becomes a formal output-expenditure model used to explain and analyze the economy's performance.

According to this model, the consumer sector spends its income on the goods and services used by households. These personal consumption expenditures include groceries, rent, books, automobiles, clothes, and almost anything else people buy.

The investment, or business, sector spends its income on plants, offices, equipment, inventories, and other investment goods. These expenditures represent the total value of capital goods created in the economy during the year.

The government sector spends its income on many categories, including national defense, income security, interest on the national debt, health care, roads, and education. The only major government expenditure not included in total output is transfer payments, because this money is used by others to buy goods and services that are part of total GDP.

The foreign sector also buys many goods and services–tractors, computers, airplanes, and agricultural products–that make up GDP. In return, it supplies such products as Japanese cars, Korean shirts, and Brazilian shoes to be consumed at home. For this reason, the foreign sector's purchases are called **net exports of goods and services,** a term that refers to the difference between the United States's exports and its imports.

Section 1 Assessment

Checking for Understanding

1. **Main Idea** Explain the difference between GDP and GNP.

2. **Key Terms** Define Gross Domestic Product, national income accounting, intermediate products, secondhand sales, nonmarket transactions, underground economy, Gross National Product, net national product, national income, personal income, disposable personal income, household, unrelated individual, family, output-expenditure model, net exports of goods and services.

Reviewing Objectives

3. **Describe** how GDP is measured.

4. **List** the limitations of GDP.

5. **Explain** the importance of GDP.

Applying Economic Concepts

6. **Gross Domestic Product** What effect do you think the computer industry has had on the GDP? Use examples, if available, to support your claim.

Critical Thinking

7. **Making Generalizations** What would be the effects of a decline in GDP?

8. **Summarizing Information** Why is GDP not a proper measure of the total income earned by U.S. citizens?

Practice and **assess** key social studies skills with the *Glencoe Skillbuilder Interactive Workbook, Level 2.*

Using a Spreadsheet

People use electronic spreadsheets to manage numbers quickly and easily. Formulas may be used to add, subtract, multiply, and divide the numbers in the spreadsheet. If you make a change to one number, the totals are recalculated automatically for you.

Learning the Skill

To understand how to use a spreadsheet, read the following descriptions of several spreadsheet calculations:

- A spreadsheet is an electronic worksheet. It is made up of numbered cells that form rows and columns. Each column (vertical) is assigned a letter or number. Each row (horizontal) is assigned a number. Each point where a column and row intersect is called a *cell.* The cell's position on the spreadsheet is labeled according to its corresponding column and row–Column A, Row 1 (A10); Column B, Row 2 (B2) and so on. See the diagram below.

A1	B1	C1	D1	E1
A2	B2	C2	D2	E2
A3	B3	C3	D3	E3
A4	B4	C4	D4	E4
A5	B5	C5	D5	E5

- The computer highlights the cell you are in. The contents of the cell also appear on a status line at the top of the screen.

- Spreadsheets use *standard formulas* to calculate numbers. To create a formula, highlight the cell you want the results in. Type an equal sign (=) and then build the formula, step by step. If you type the formula $=B4+B5+B6$ in cell B7, the values in these cells are added together and the sum shows up in cell B7.

- To use division, the formula would look like this: $=A5/C2$. This divides A5 by C2. An asterisk (*)

signifies multiplication: $=(B2*C3)+D1$ means you want to multiply B2 times C3, then add D1.

The computer highlights the cell you're working in.

Practicing the Skill

Study the spreadsheet on this page.

1. Which cell is highlighted? What information is found in the cell?

2. What formula would you type in which cell to calculate the average life expectancy of both males and females in Sri Lanka?

3. What formula would you type in which cell to find the total GNP per capita of the countries listed?

Application Activity

Use a spreadsheet to enter your test scores and your homework grades. At the end of the grading period, input the correct formula and the spreadsheet will calculate your average grade.
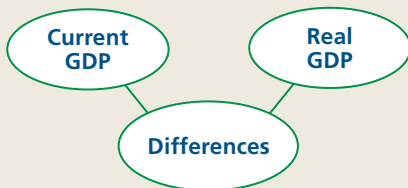
GDP and Changes in the Price Level

Cover Story

Eyes on the Price

Trenton, N.J.—The hospital's finance director is relentlessly unhelpful, but she is still no match for Sabina Bloom, government gumshoe.
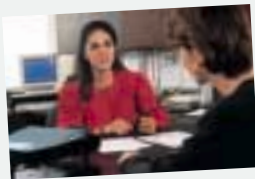
BLS keeps tabs

Mrs. Bloom wants to know the exact prices of some hospital services. "Nothing's changed," the woman says. "Well, do you have the ledger?" Mrs. Bloom asks. "We haven't changed any prices," the woman insists. Mrs. Bloom's fast talk finally pries the woman from behind her desk, and she gets the numbers. It turns out that a semi-private surgery recovery room now costs $753.80 a day—or four cents less than a month ago.

Chalk up another small success for Mrs. Bloom, one of about 300 Bureau of Labor Statistics employees who gather the information that is fed into the monthly Consumer Price Index.

—*The Wall Street Journal,* January 1, 1997

Most people are surprised to discover how hard the government works to collect and process data. The scene described in the cover story dealing with gathering information on inflation is just one such example.

Inflation is a rise in the general price level. It is important to track inflation because it distorts the economic statistics that we keep. To see how this happens, compare the GDP in **Figure 13.1** with the GDP in **Figure 13.4.** Assume that the second table was compiled one year after the first, and that the inflation rate during that year was 10 percent. The second and third columns in each table show that the product composition and quantity of output was the same for both years. In other words, there was no real change in the amount of goods and services produced.

The fourth and fifth columns in each table, however, do not match. Looking at columns 4 and 5, you'll notice that everything costs more in the second table than in the first one. This makes GDP rise by 10 percent, or $900 billion, revealing

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Estimating Gross Domestic Product

	Product	Quantity (millions)	Price (per 1 unit)	Dollar Value (millions)
Goods	Automobiles	6	$22,000	$132,000
	Replacement Tires	10	$70	$700
	Shoes	55	$55	$3,025
	...*	...*	...*	...*
Services	Haircuts	150	$10	$1,500
	Income Tax Filings	30	$160	$4,800
	Legal Advice	45	$220	$9,900
	...*	...*	...*	...*
Structures	Single Family	3	$80,000	$240,000
	Multifamily	5	$330,000	$1,650,000
	Commercial	1	$1,100,000	$1,100,000
	...*	...*	...*	...*
			Total Gross Domestic Product =	**$9.9 trillion**

*... other goods, services, and structures

Using Tables   Inflation can distort the value of Gross Domestic Product from one year to the next. Compare the total gross domestic product in this chart to that in Figure 13.1. **What accounts for the higher total?**

the effects of inflation. The problem is that the dollar value of the final output appeared to go up without any changes in the quantity of goods and services produced.

Constructing a Price Index

To remove the distortions of inflation, economists construct a **price index**–a statistical series that can be used to measure changes in prices over time. A price index can be compiled for a specific product or for a range of items.

It is fairly easy to construct a price index. First, select a **base year**–a year that serves as the basis of comparison for all other years. The price index expresses the price of goods and services in a given year as a percentage of the price of those goods during the base year.

Second, select the **market basket**–a representative selection of commonly purchased goods and services. Then, record the price of each item in the market basket. Finally, total the prices. The total represents the base-year market basket price and is assigned a value of 100 percent.

Figure 13.5 shows a price index for a representative market basket with a large number of items. Because 1982–84 is used as the base period, the prices in the base-year column are lower than those today. The total of the market prices–$1,792.00–is assigned a value of 100 percent, which is the index number for that year.

In order to track inflation, we have to track the price of the goods and services in the market basket at regular intervals, and then compare them to the base year. In **Figure 13.5** for example, the cost of the market basket in 1998 is $2,920.96–or 163 percent

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higher than in the base year. By May of 1999, prices had increased to 166.2 percent of base-year prices.

Major Price Indices

Price indices can be constructed for a number of different purposes. Some measure changes in the price of a single item. Some measure the price changes of imported goods, while others do the same for agricultural products. Different base years are often used for each, but this is not important since index numbers for an individual series are only compared with other numbers in the same series.

Consumer Price Index

The **consumer price index (CPI)** reports on price changes for about 90,000 items in 364 categories. Prices for the goods and services currently sampled are taken from 85 geographically distributed areas around the country and are compared

to their 1982–84 base-year prices. Some of the items are surveyed in all the areas, while others are sampled in only a few.

Information on consumer price changes is collected by Bureau of Labor Statistics employees, as described in the cover story on page 350. The BLS compiles the index monthly and then publishes it for the economy as a whole. There also are separate indices for 28 selected areas across the nation.

Producer Price Index

The **producer price index** measures price changes paid by domestic producers for their inputs. It is based on a sample of about 3,000 commodities and uses 1982 as the base year. The Bureau of Labor Statistics reports the producer price index every month. Although it is compiled for all commodities, it also is broken down into various subcategories that include farm products, fuels, chemicals, rubber, pulp and paper, and processed foods.

STANDARD &POOR'S

Figure 13.5

Constructing the Consumer Price Index

Item	Description	Price Base Period (1982–84)	Price Second Period (1998)	Price May (1999)
1.	Toothpaste (7 oz.)	$1.40	$1.49	$2.25
2.	Milk (1 gal.)	1.29	1.29	1.79
3.	Peanut butter (2 lb. jar)	2.50	2.65	3.73
4.	Light bulb (60 watt)	.45	.48	.65
.....	......	.....	.....	.....
364.	Automobile engine tune-up	40.00	42.00	64.75
	Total Cost of Market Basket:	**$1,792.00**	**$2,920.96**	**$2,978.30**
	Index Number:	**100%**	**163.0%**	**166.2%**

Using Tables   The Bureau of Labor Statistics measures items in terms of their 1982–84 base-period prices. As time goes by, prices change, giving the new market basket a different total value.   **How is the new price index computed?**
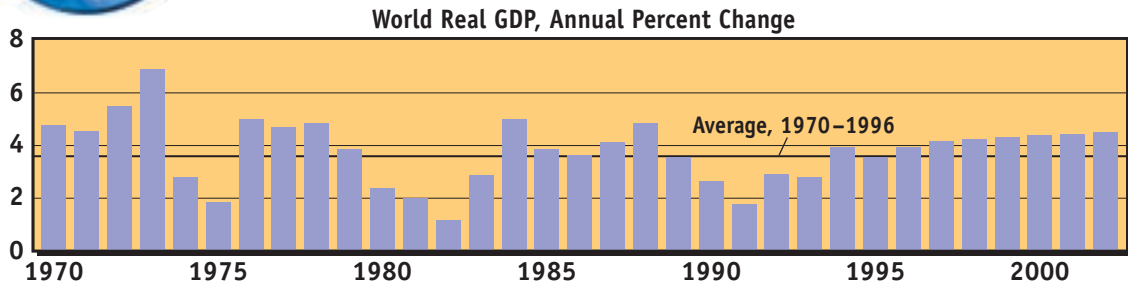
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Visit epp.glencoe.com and click on *Textbook Updates—Chapter 13* for an update of the data.

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World Real GDP, Annual Percent Change

Average, 1970–1996

Source: International Monetary Fund projections

WORLD OUTPUT

Real GDP is gross domestic product after adjustments for inflation. The expansion of real GDP is expected to continue the above trend after the year 2000.

Critical Thinking

1. **Sequencing Information** In what year did real GDP growth show its greatest increase?

2. **Making Comparisons** Compare the growth rates of the 1980s with those of the 1990s. Which decade showed more consistent growth?

Implicit GDP Price Deflator

The **implicit GDP price deflator** is an index of average levels of prices for all goods and services in the economy. It is computed quarterly and has a base year of 1992.

Because GDP is a measure of the final output of goods and services and covers thousands of items instead of hundreds, many economists believe it is a good, long-run indicator of the price changes that consumers face. The deflator is only compiled quarterly, however, so it cannot be used to measure monthly changes in inflation.

Real vs. Current GDP

To compare GDP over time, you need to distinguish between changes in GDP because of the effects of inflation and changes in GDP that represent increases in production and income. When GDP is not adjusted to remove the effects of inflation, it is called **current GDP,** or simply GDP. When the distortions of inflation have been removed, it is called **real GDP** or **GDP in constant dollars.** This measure reflects what the GDP would have been if prices had not changed from what they were in the base year.

Converting GDP to Real Dollars

How would you convert current GDP to GDP in real (inflation-adjusted) dollars? First, divide the current GDP by the deflator, then multiply by 100 (since the deflator is really a percent). Or:

$$\text{Real GDP} = \frac{\text{GDP in current dollars}}{\text{implicit GDP price deflator}} \times 100$$

To illustrate, the GDP estimate for the first quarter of 1999 was $8,799.7 billion. The GDP deflator for that period was 113.47. In other words, prices in 1999 were 113.47 percent higher than in 1992. To calculate, divide current GDP by the deflator and multiply by 100:

$$\text{Real GDP} = \frac{\$8,799.7 \text{ billion}}{113.47} \times 100 = \$7,755.1 \text{ billion}$$

The amount of $7,775.1 billion, then, is the dollar value of all goods and services produced, if measured in 1992 prices.

Comparing GDP in Different Years

Converting current dollar amounts to real dollars is useful for making comparisons. For example, the current GDP estimate for the first quarter of 1999 was slightly larger than the $8,681.2 billion GDP for the fourth quarter of 1998. Was this increase caused by an actual increase in the quantity of goods and services produced? Or was some of the increase in GDP caused by inflation?

We can find out by converting the 1998 fourth quarter GDP to 1992 dollars through the same procedure described above. The only change is that we have to use the GDP price deflator for the 1998 fourth quarter:

$$\text{Real GDP} = \frac{\$8,681.2 \text{ billion}}{113.07} \times 100 = \$7,677.7 \text{ billion}$$

In terms of constant 1992 dollars, real GDP in the last quarter of 1998 amounted to $7,677.7 billion. Because the 1999 real or constant dollar GDP amount of $7,755.1 billion was greater than the 1998 real dollar amount, there was a real increase in GDP that was not due to inflation.

Inflation

AUDIO - VIDEO

"The price may seem a little high, but you have to remember that's in today's dollars."

Comparing Prices As long as we have inflation, we must be careful when comparing prices from different eras. *How can we compare a price today with a price from an earlier period?*

Section 2 Assessment

Checking for Understanding

1. **Main Idea** Would there be a difference between the rate of growth in real GDP and the rate of growth in real GDP per person? Explain. (Real GDP per person includes adjustments for changes in the population.)

2. **Key Terms** Define inflation, price index, base year, market basket, consumer price index, producer price index, implicit GDP price deflator, current GDP, real GDP, GDP in constant dollars.

3. **Explain** why a market basket is used whenever a price index is constructed.

4. **List** three major price indices.

5. **Describe** the difference between real and current GDP.

Applying Economic Concepts

6. **Market Basket** If you were to construct a market basket of goods and services that high school students typically consume, what would you select?

Critical Thinking

7. **Making Comparisons** What do you think a typical market basket 20 years ago might have included that we do not use today? What do you think a future market basket might have that we do not include?

8. **Making Predictions** Suppose you were told that you would earn $60,000 a year in 2008. Explain why this information would tell you little about the standard of living you might enjoy. What other information would you need to have before you could evaluate how well you might live in 2008?

Practice and **assess** key social studies skills with the *Glencoe Skillbuilder Interactive Workbook, Level 2.*

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Profiles IN Economics

Succeeding in a "Man's" Business:
Linda Alvarado
(1951–)

"There are still too many doors that need opening for women and minorities," Linda Alvarado once said. "There's no lack of talent or ambition out there–just a lack of opportunity for women and minorities to try."

Alvarado knows all about talent and ambition–and the obstacles women and minorities face. She herself has become one of the most successful individuals in one of the most male-dominated industries in the country: construction.

SUCCESS IN BUSINESS

As a young woman, Alvarado became intrigued by the construction industry. While still a student, she took a part-time job with a development company. Her talent and ambition earned her a steady advancement, and she eventually struck out on her own.

Alvarado knew enough about the construction industry to make first-rate service and on-time delivery the top priorities of her Denver-based Alvarado Construction Company. An objective analysis would have revealed a strong,

well-run company, poised for growth. But building the Alvarado Construction Company proved difficult. The problem? Many clients and others in the industry clung to the notion that a woman could not run a construction firm. "There's a perception out there that buildings are built by guys–big guys, real men," Alvarado said.

Alvarado's first-rate work disproved this nonsense. Through perseverance, she brought Alvarado Construction to a leading position in the construction industry. Moreover, many international companies, eager for her insight, have sought her entrepreneurial and management talents. Alvarado is also an owner of the Colorado Rockies baseball team.

SUCCESS IN THE COMMUNITY

Alvarado shines when it comes to using her business success to

help others. Because of her own arduous personal experience, she is especially interested in the difficulties facing Hispanics and women and does what she can to help. She regularly meets with other women in business and mentors women who are just starting out. Many civic organizations have lauded her for her extensive contributions to the Hispanic community.

To many young people, therefore, Alvarado is a hero: a living example of how talent and ambition can open doors that long have been closed to women and minorities.

Examining the Profile

1. **Demonstrating Reasoned Judgment** Reread the first paragraph. Explain why you agree or disagree with Alvarado.

2. **Evaluating Information** Do you think successful businesspeople like Alvarado have a moral responsibility to contribute to their communities? Explain your answer.

GDP and Population

Main Idea
Projected population trends can help determine the direction of economic developments.

Reading Strategy
Graphic Organizer As you read the section, complete a graphic organizer similar to the one below by identifying changes in the United States in the categories that are listed.

Rate of growth → Changes

Size of household → Changes

Regional change → Changes
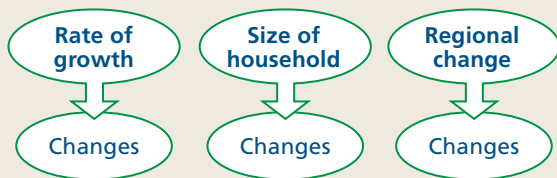
Key Terms
census, urban population, rural population, center of population, demographer, fertility rate, life expectancy, net immigration, baby boom, population pyramid, dependency ratio

Objectives
After studying this section, you will be able to:
1. **Explain** how population is estimated in the U.S.
2. **Describe** the factors affecting future population growth.

Applying Economic Concepts
Urban and Rural How do you define the words *rural* and *urban?* Read to find out how rural and urban are defined in economic terms.

Cover Story

Atlanta Pays Environmental Price for Fast Growth

Atlanta (CNN)—Atlanta, long known as "a city built in a forest," is becoming a concrete jungle as its trees disappear to make way for shopping malls, houses, and highways.

Busy thoroughfare in Atlanta

Metro Atlanta's population jumped from 3 million to 3.5 million between 1990 and 1996, . . . and the trend shows no sign of slowing.

The Atlanta area includes four of the nation's top 10 fastest-growing counties. Developers are clearing an average of 50 acres of tree-covered land per day, which amounts to an area larger than Manhattan each year.

Unemployment . . . hovers around 3 percent. But commuting times have risen along with the number of jobs. The average commute for the Atlanta area is now 35 miles round-trip per day!—longer than any other city's in the nation.

—*CNNInteractive,* March 19, 1999

The rate at which population grows influences GDP and economic growth in several ways. First, for an economy to grow, its factors of production must also grow or become more productive. One of the factors of production, labor, is closely tied to the size of the population.

Second, changes in population can distort some macroeconomic measures like GDP and GNP–which is why they are often expressed on a per capita, or per person, basis. If a nation's population grows faster than output, per capita output falls and the country could end up with more mouths than it can feed. Or, if a nation's population grows too slowly, there may not be enough workers to sustain economic growth.

Finally, population growth affects the quality of life, especially in fast-growing areas such as Atlanta. The study of population involves more than a simple total of people.

Population in the United States

The Constitution of the United States requires the government to periodically take a **census,** an official count of all people, including their place of residence. Because the

official census occurs every 10 years, it is called the *decennial census.* The nation's founders initiated the decennial census to apportion the number of representatives each state elects to Congress.

Counting the Population

The federal government conducted the first census in 1790. Throughout the 1800s, temporary agencies were created each decade to conduct the counts. In 1902, Congress permanently established the Census Bureau. Today, the Bureau works year-round, conducting monthly surveys relating to the size and other characteristics of the population.

When the Census Bureau conducts the decennial census, it uses the household as its primary survey unit. About five in every six households receive a "short form," which takes just a few minutes to fill out. The remaining households receive a "long form," which includes more questions and serves to generate a more detailed profile of the population. Bureau employees use different methods to count special groups, such as homeless persons, who do not normally conform to the household survey unit.

The Census Bureau tabulates and presents its data in a number of ways. One classification denotes the size of the **urban population**–people living in incorporated villages or towns with 2,500 or more inhabitants. The **rural population** makes up the remainder of the total population, including those persons who live in sparsely populated areas along the fringes of cities.

Historical Growth

The population of the United States has grown considerably since colonial times. The rate of growth, however, has steadily declined. Between 1790 and 1860, the population grew at a compounded rate of about 3.0 percent a year. From the beginning of the Civil War until 1900, the average fell to 2.2 percent. From 1900 to the beginning of World War II, the rate dropped to 1.4 percent. It declined slowly but steadily after that, and by 2000 the rate of population growth had fallen to approximately 0.9 percent.

The census also shows a steady trend toward smaller households. During colonial times, household size averaged 5.8 people. By 1960, the average

had fallen to 3.33 and then to approximately 2.60 people today. The figures reflect a worldwide trend toward smaller families in industrial countries where couples often view children as a financial liability. The figures also show that more individuals are living alone today than ever before.

Regional Change

An important population shift began in the 1970s, with a migration to the western and southern parts of the country. These regions have grown quite rapidly, while most of the older, industrial areas in the North and East have grown more slowly or even lost population. Many people have left the crowded, industrial Northeast for warmer, more spacious parts of the country. States such as Arizona, Nevada, and Florida have grown tremendously.

The Census Bureau also tracks changes in the geographic distribution of the population. **Figure 13.6** shows changes in population distribution for nine regions in 1988 and projected in 2010.

The projections show growth in the West and South and losses of population in the Northeast and Central Plains regions.

Center of Population

Another indicator of distribution shifts is the **center of population**–the point where the country would balance if it could be laid flat and all the people weighed the same. In 1790, the center was 23 miles east of Baltimore, Maryland. Since then, it has moved farther west. By the 1990 decennial census, the center of population had reached a point about 9.7 miles southeast of Steelville, Missouri.

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Student Web Activity Visit the *Economics: Principles and Practices* Web site at **epp.glencoe.com** and click on *Chapter 13—Student Web Activities* for an activity using international population data.

Projected Population Trends

Population trends are important to many groups. Political leaders, for example, closely watch population shifts to see how voting patterns may change. Community leaders are interested because increases or decreases in local population affect services such as sanitation, education, crime prevention, and fire protection. Businesses use census data to help determine new plant locations, markets for products, and sales territories.

Factors Affecting Population Growth

According to **demographers**–people who study growth, density, and other characteristics of population, the three most important factors affecting population growth are fertility, life expectancy, and net immigration levels.
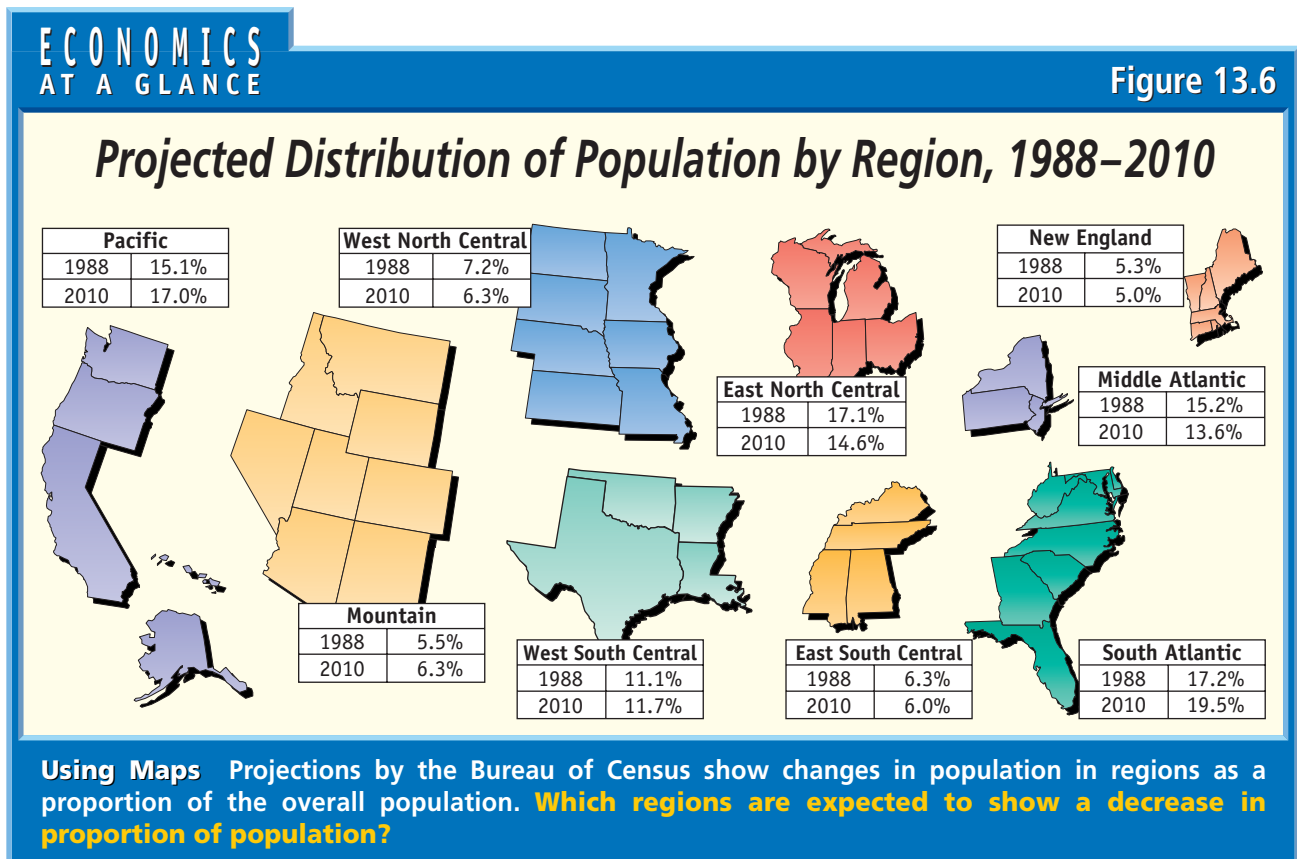
The **fertility rate** is the number of births that 1,000 women are expected to undergo in their lifetime. A fertility rate of 2,110, for example, translates to 2.11 births per woman. The Bureau of the Census projects 2,119 as the most likely fertility rate for the United States. That rate is barely above the replacement population rate–the rate at which the number of births in a population just offsets the number of deaths.

This was not always the case. In the late 1800s and early 1900s, Americans tended to have large families. In the days before modern machines and appliances, the work of maintaining a home and family and earning a living was difficult and time-consuming. Children were needed to do household chores, work on family farms, and bring in additional money from outside jobs.
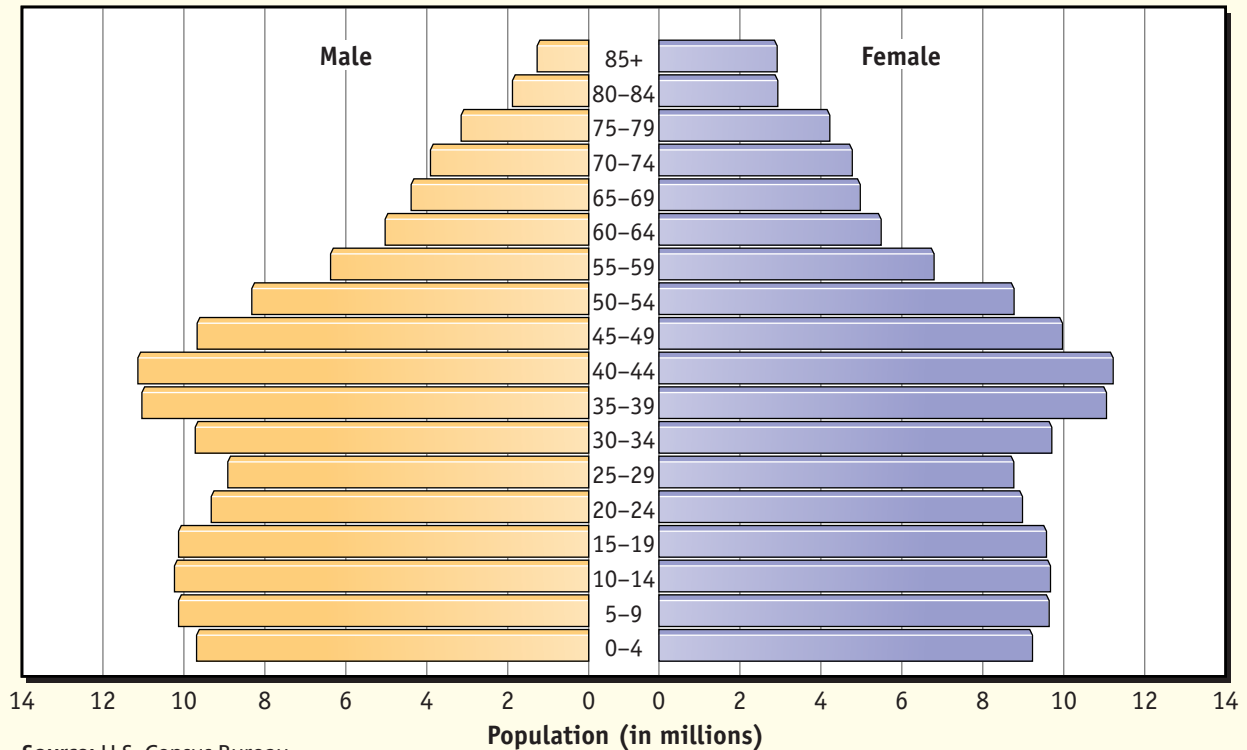
As modern life became more automated, and fewer people lived on farms, having large families became less important. As a result, the nation's birthrate dropped steadily throughout the 1990s.

The second factor, **life expectancy,** is the average remaining life span of people who reach a given

ECONOMICS AT A GLANCE

Figure 13.6

Projected Distribution of Population by Region, 1988–2010

Pacific	
1988	15.1%
2010	17.0%

West North Central	
1988	7.2%
2010	6.3%

New England	
1988	5.3%
2010	5.0%

East North Central	
1988	17.1%
2010	14.6%

Middle Atlantic	
1988	15.2%
2010	13.6%

Mountain	
1988	5.5%
2010	6.3%

West South Central	
1988	11.1%
2010	11.7%

East South Central	
1988	6.3%
2010	6.0%

South Atlantic	
1988	17.2%
2010	19.5%

Using Maps Projections by the Bureau of Census show changes in population in regions as a proportion of the overall population. **Which regions are expected to show a decrease in proportion of population?**

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Distribution of the Population by Age and Gender, 2000

United States: 2000

Male ... 85+ ... **Female**
80–84
75–79
70–74
65–69
60–64
55–59
50–54
45–49
40–44
35–39
30–34
25–29
20–24
15–19
10–14
5–9
0–4

14 12 10 8 6 4 2 0 0 2 4 6 8 10 12 14
Population (in millions)

Source: U.S. Census Bureau

Using Graphs Population pyramids are one way to show distribution of population. **How many males and females were between the ages of 15 to 24 in the year 2000?**

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age. The Bureau of the Census predicts that life expectancy at birth will go from about 75.9 years today to 82.1 years by 2050.

The third major factor is **net immigration**—the net change in population caused by people moving into and out of the country. The Bureau estimates a constant net immigration of about 880,000 per year. This figure is based on 1,040,000 *immigrants*—those entering the country—and 160,000 *emigrants*—those leaving the country—in the future.

Taking into account these three factors, analysts expect the rate of population growth in the United States to continue to decline. The growth rate is likely to fall to 0.82 percent between 2000 and 2005 and then continue to decrease until it reaches 0.49 percent by 2050. At that time, the resident United States population should be about 380 million people.

Projections by Age and Gender

In making its projections, the Census Bureau assumed that the aging baby boomer generation will drive many characteristics of the population.

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Projected Change in U.S. Population by Race and Ethnic Origin, 1990–2050
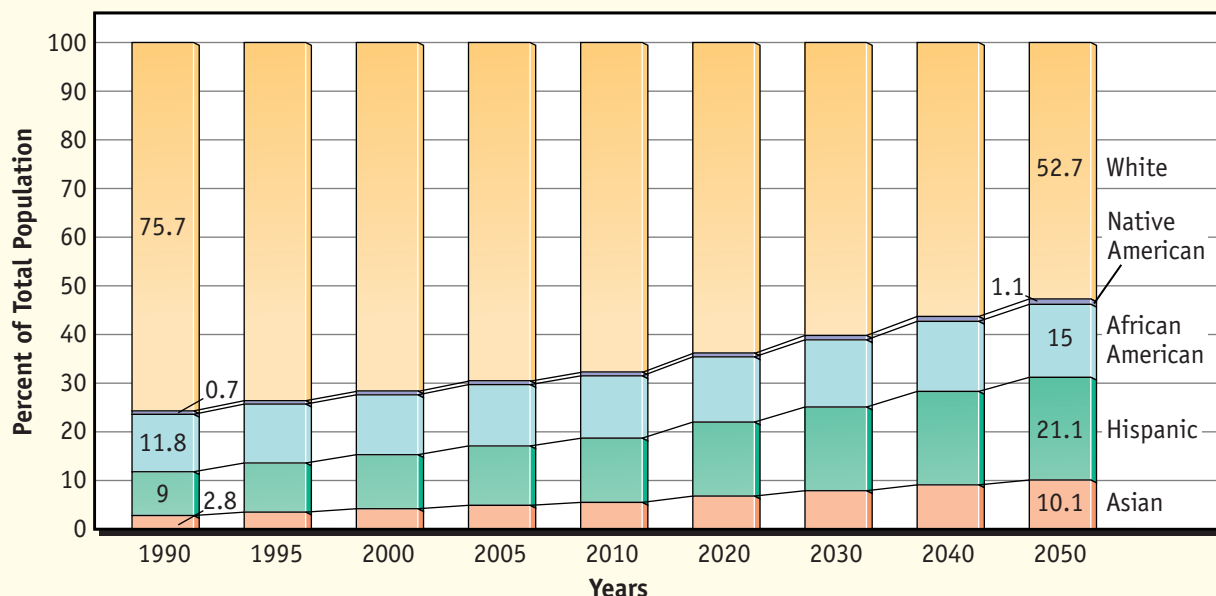
Source: *Population Projections in the United States, by Age, Sex, Race and Hispanic Origin: 1992–2050,* U.S. Bureau of the Census

Using Graphs The distribution of population by race is projected to change dramatically by the year 2050. **Which ethnic components of the population are expected to make the largest gains? Which will incur the largest losses?**

People born during the **baby boom,** the high birthrate years from 1946 to 1964, make up a sizeable portion of the population. As shown in **Figure 13.7** on page 359, people born during those years created a pronounced bulge in the **population pyramid,** a type of bar graph that shows the breakdown of population by age and gender.

The bulge in the middle of the pyramid represents the baby boomers. As years pass, more births add to the bottom of the pyramid and push earlier groups upward into higher age brackets.

Eventually, the baby boomers will reach their retirement years and want to collect pensions, Social Security, and medicare benefits. Because most of these payments are transfer payments,

they will place a heavy burden on the younger and relatively smaller working population. The burden becomes evident with changes in the **dependency ratio**—a ratio based on the number of children and elderly for every 100 persons in the working-age bracket of 18 through 64. The dependency ratio was 63.9 in 1998, but according to Census Bureau projections, it will rise to 67.5 by 2020, to 77.5 by 2030, and to 78.0 by the year 2040.

Finally, notice what the population pyramid indicates about gender. If you compare the left sides of the pyramid with the right, you will see that women tend to outlive men. Separate population pyramids can also be created for any racial or ethnic group.

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Projections by Race and Ethnic Origin

Census Bureau projections for race and ethnic groups are shown in **Figure 13.8.** In 1990, Whites were the largest component of the total population. The numbers of African Americans, Hispanic Americans, Asian Americans, and Native Americans followed in that order.

Differences in fertility rates, life expectancies, and immigration rates will change racial statistics dramatically in the future. By 2050, the Asian component of the population will increase nearly five times, and the Hispanic component will almost double. The number of African Americans will also increase. Whites will remain a bare majority of the total population at 52.7 percent.

Population

Trends   The makeup of the United States population by age, gender, and ethnic origin has changed and is expected to continue this trend. *What is the Hispanic percentage of the population projected to be in the year 2050?*

Section 3 Assessment

Checking for Understanding
1. **Main Idea** How does the rate of population growth affect economic growth?
2. **Key Terms** Define census, urban population, rural population, center of population, demographer, fertility rate, life expectancy, net immigration, baby boom, population pyramid, dependency ratio.
3. **Describe** how U.S. population is estimated.
4. **List** the three most important factors that determine future population growth.

Applying Economic Concepts
5. **Urban and Rural** What could happen to your community that might cause it to be classified as a rural community instead of urban, or urban instead of rural?

Critical Thinking

6. **Drawing Conclusions** At some point, the baby boomers will reach their retirement years. How will this development affect your generation? How do you think the baby boomers will feel about this?
7. **Understanding Cause and Effect** What special demands does a high birthrate put on a nation's economy?

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AUGUST 31, 1998

Without immigrants, economic growth could decline by the year 2015, when the U.S. workforce is expected to shrink. Researchers predict that immigrants will help transform the economy in the twenty-first century.

Immigrants and the Job Market

During the next decade, barring a change in government policy, nearly a million immigrants are expected to arrive in the U.S. every year. Most, both legal and illegal, will continue to come from Latin America and Southeast Asia, but every foreign land will be represented. So will every level of skill, education, and talent: New arrivals will make up hotel beds, start their own shops, and pursue pathbreaking medical research.

And they'll play a critical role in providing the workers needed to keep the economy healthy. As baby boomers age and domestic birthrates stagnate, only foreign-born workers will keep the labor pool growing. By 2006, in fact, immigrants will account for half of all new U.S. workers; over the next 30 years, their share will rise to 60%.

Economic dynamism, in other words, will depend on a continuing stream of foreign-born workers. A limited labor supply "is going to affect growth," says Carol D'Amico, senior research fellow at the Hudson Institute; "if you fast-forward 10 years, it will be a real issue. . . ."

Just as crucial, the array of education and skills immigrants bring could fit neatly with the supply of jobs over the next decade. According to Linda Levine at the Congressional Research Service, a branch of the Library of Congress, 60% of the jobs created through 2005 will require some post-secondary education. But, she adds, low-skill jobs will still represent about half of total employment.

Compare that job market to the prospective immigrant labor force. Of recent arrivals, only 63% have finished high school. . . . Yet immigrants also are 50% more likely than Americans to have a graduate degree. . . .

Indeed, foreign-born workers have shown an extraordinary ability to assimilate and flourish. Certainly, some less skilled workers will remain at the bottom economic rung all their lives. Yet others will catch up quickly. Within a decade of their arrival, the well-educated go from making barely half that of native-born Americans in comparable work to nearly 90%.

Examining the Newsclip

1. **Analyzing Information** What role are immigrant workers expected to play in the U.S. economy during the twenty-first century?

2. **Making Predictions** Will immigrants' skills be needed in the twenty-first century job market? Explain your answer.
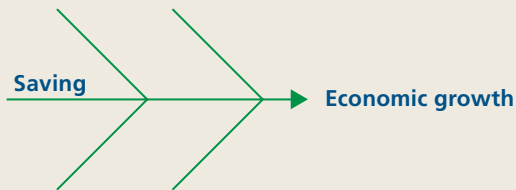
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Economic Growth

Cover Story

Computer Age Gains Respect of Economists

In a nation of technophiles, where Internet millionaires are minted daily, it seems heresy to question the economic payoff from information technology. . . . But for more than a decade, most of the nation's leading economists have been heretics.

Computers are having an impact on the marketplace.

"You can see the Computer Age everywhere," Robert Solow, a Nobel prizewinner from the Massachusetts Institute of Technology wrote a few years ago, "but in the productivity statistics."

For years, even as the computer revolutionized the workplace, productivity . . . stagnated, barely advancing 1 percent per year.

Yet today, even renowned skeptics . . . are having second thoughts. Productivity growth has picked up, starting in 1996, . . . [S]omething seems fundamentally different this time . . . computers (are) finally paying off.

—*The New York Times*, April 14, 1999

Economic growth, one of the seven major goals of the United States economy, has the potential for improving everyone's lot in life. *Everyone* includes not only every American, but also people living in other countries.

Economic Growth in the United States

One of the first things we need to know about economic growth is how to measure it. Two methods are equally important, and both make use of topics covered earlier in this chapter.

Measuring Growth

When we measure economic growth in the short term—a period of one to five years—real GDP, or GDP adjusted to remove the distortions of inflation, is a fairly satisfactory gauge. Changes in real GDP on a quarterly or annual basis are the statistics we hear about most often in the news.

When it comes to the long run, however, real GDP does not tell the whole story. Because population also grows, **real GDP per capita**—the

dollar amount of real GDP produced on a per person basis—is a better measure. Most economists agree that it is the single most important measure of long-term growth because it adjusts for changes in both inflation and population.

Dividing real GDP by the population yields real GDP per capita. If the population grows faster than real GDP, the average amount of output produced for each person in the economy falls. If the population grows more slowly than real GDP, there will be more goods and services available for everyone.
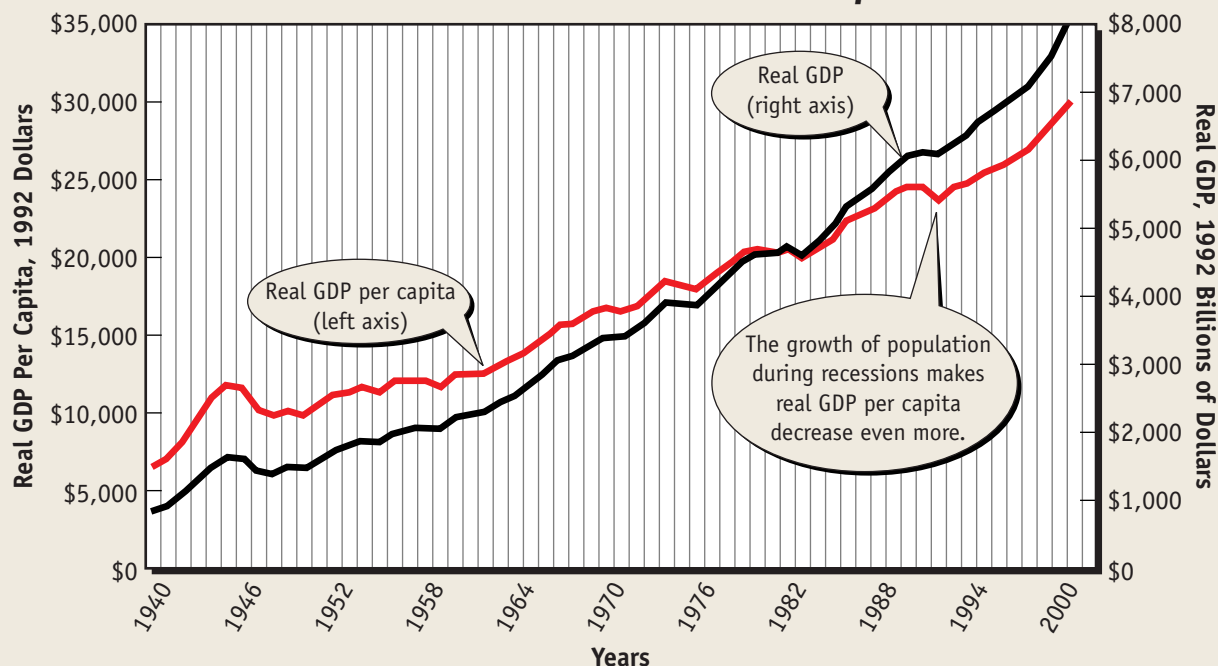
The Historical Record

Figure 13.9 compares real GDP with real GDP per capita. The figure shows that the overall rate of economic growth is somewhat slower when population growth is taken into account. In addition, relatively slow periods of real GDP growth can actually become negative if population growth is taken into consideration, as in 1990–91.

Another way to examine growth is with a **growth triangle**—a table that shows annual compound rates of growth between selected periods of time. **Figure 13.10** shows that there was almost no

STANDARD &POOR'S

Figure 13.9

Real GDP vs. Real GDP Per Capita

Real GDP (right axis)

Real GDP per capita (left axis)

The growth of population during recessions makes real GDP per capita decrease even more.

Source: *Economic Report of the President,* various years

Using Graphs   Real GDP on a per capita basis generally rises slower than real GDP whenever population is growing. A growing population also means that periods of little or no growth are more severe than they appear when measured in terms of real GDP. **How do real GDP and real GDP per capita differ?**

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Annual Growth Rates of Real GDP Per Capita

Most of the decline during the Great Depression took place between 1929 and 1933.

To find the annual rate of growth during the 1980s, start with 1980 on the horizontal axis and read up to the 1990 row.

Strong economic growth after 1995 helped generate a federal budget surplus.

Ending Year	1929	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995
1929													
1933	−8.3%												
1939	0.2%												
1940	0.8%												
1945	3.7%	10.3%											
1950	2.4%	4.0%	−1.9%										
1955	2.4%	3.6%	0.4%	2.6%									
1960	2.1%	2.9%	0.5%	1.7%	0.8%								
1965	2.3%	3.0%	1.2%	2.3%	2.1%	3.4%							
1970	2.3%	2.9%	1.4%	2.3%	2.1%	2.8%	2.2%						
1975	2.2%	2.7%	1.5%	2.1%	2.0%	2.4%	1.9%	1.6%					
1980	2.3%	2.6%	1.6%	2.2%	2.1%	2.4%	2.1%	2.0%	2.5%				
1985	2.2%	2.6%	1.6%	2.2%	2.1%	2.3%	2.1%	2.0%	2.2%	2.0%			
1990	2.2%	2.5%	1.7%	2.1%	2.1%	2.3%	2.0%	2.0%	2.1%	1.9%	1.9%		
1995	1.6%	2.4%	1.6%	2.0%	1.9%	2.1%	1.7%	1.6%	1.6%	1.6%	1.4%	0.9%	
1999	2.2%	2.4%	1.7%	2.1%	2.0%	2.3%	2.0%	2.0%	2.1%	2.0%	2.0%	2.0%	3.3%

Starting Year

Source: *Economic Report of the President*, various years

Using Charts   Changes in real GDP can be overstated if we do not take population growth into account. To find the annual rate of growth between two dates, start with the beginning year on the horizontal axis and read up to the ending year row on the vertical axis. **At what rate did real GDP per capita grow between 1965 and 1990?**

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growth in real GDP per capita between 1929 and 1939. From 1940 to 1970, the annual rate was 2.9 percent, but it then fell to 2.0 percent from 1970 to 1980. Between 1980 and 1990, the growth rate fell to 1.9 percent. Growth plummeted to an even greater extent in the early 1990s, only to rebound spectacularly by the end of the decade.

These are the types of numbers economists, businesspeople, politicians, and even the American public watch on a regular basis. They are far more noticeable—and even painful—when growth is slow, as President Bush discovered in the early 1990s, but they are nevertheless always important.

Importance of Economic Growth

Economic growth benefits a country in many ways. It raises the standard of living, eases the burden of government, and helps solve domestic problems. It can also boost the economies of foreign trade partners.

Standard of Living

A major feature of a free enterprise economy is its ability to increase real per capita output enough to allow people to raise their standard of living. The **standard of living** means the quality of life

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based on the possession of necessities and luxuries that make life easier. A free enterprise system also increases people's free time, allowing them to devote more attention to families, hobbies, and recreational activities.

Government Spending

Economic growth benefits government at all levels by enlarging the **tax base**—the incomes and properties that may be taxed. An enlarged tax base increases government revenues, which helps finance the number and quality of public services. The economic growth and resulting budget surpluses of the late 1990s, for example, gave political leaders the option of increasing spending on highways, defense, and some social programs. It also gave them the opportunity to think about reducing tax rates on citizens.

Domestic Problems

Like most countries of the world, the United States faces varying degrees of poverty, inadequate medical care, inequality of opportunity, and economic insecurity. Most of these problems stem from economic need. Economic growth creates more jobs and income for more people, thus helping to alleviate social ills at their source.

Economic growth in the 1990s helped the United States lower its unemployment rate and reduce the number of people on welfare. Also, intense competition among firms for workers drove the industrial wage up.

Helping Other Nations

Economic growth increases American demand for foreign-made products, which helps create jobs and generate income in those countries. These purchases, in turn, enable foreign citizens to buy more goods and services from the United States, which may also create new jobs here. Consumers in the United States and the countries with which it trades benefit from an increased variety of competitively priced goods and services.

Global Role Model

A number of emerging nations are forming their political and economic ideologies. These nations tend to copy the most successful economic systems of other nations. Many people in the United States believe that emerging nations will be best able to help themselves if they adopt a free market system.

In the past, the free world and the communist world each tried to influence the economic development of emerging countries. The competition ended with the fall of communism in Europe and the breakup of the Soviet Union. Successful economic growth in the United States may now help the market economies of all nations to grow.

Factors Influencing Economic Growth

A number of factors are important to economic growth—especially the quantity and quality of the factors of production. Also important is how efficiently these resources are used.

Land

The United States enjoys an abundance of natural resources. Unlike island nations such as Great Britain and Japan, it need not depend heavily on international trade for raw materials. Although some minerals must be imported, the United States is reasonably self-sufficient in many natural resources.

Even so, the United States needs to conserve its natural resources. Many of the natural resources most Americans take for granted—clean air and water, forests, and fertile land—are dwindling rapidly. Only some of these are **renewable resources,**

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resources that can be replenished for future use. Reseeding, for example, can restore some—but not all—forests for use in the foreseeable future. Trees such as California redwoods and giant firs require centuries to grow to full size.

Capital

A growing supply of high-quality capital favors overall economic growth because it improves the **capital-to-labor ratio**—the total capital stock divided by the number of workers in the labor force. A high capital-to-labor ratio encourages economic growth because it enables individual workers to produce more than they could otherwise.

Because capital goods result from production, it is possible to influence their creation. The key is saving, and the key to saving is the consumer. When people cut back on consumption in order to save and invest, they free up factors of production to generate new capital.

Unfortunately, it is not always possible to reduce consumption so that more can be saved. In some

countries, people are so poor and their incomes so low that they must spend everything they earn just to exist. In these countries, there is very little saving and, therefore, low investment in capital goods. Without capital goods, overall output remains low. People are trapped by circumstances. They are too poor to save, but their incomes can rise only if they have savings to invest in capital goods.
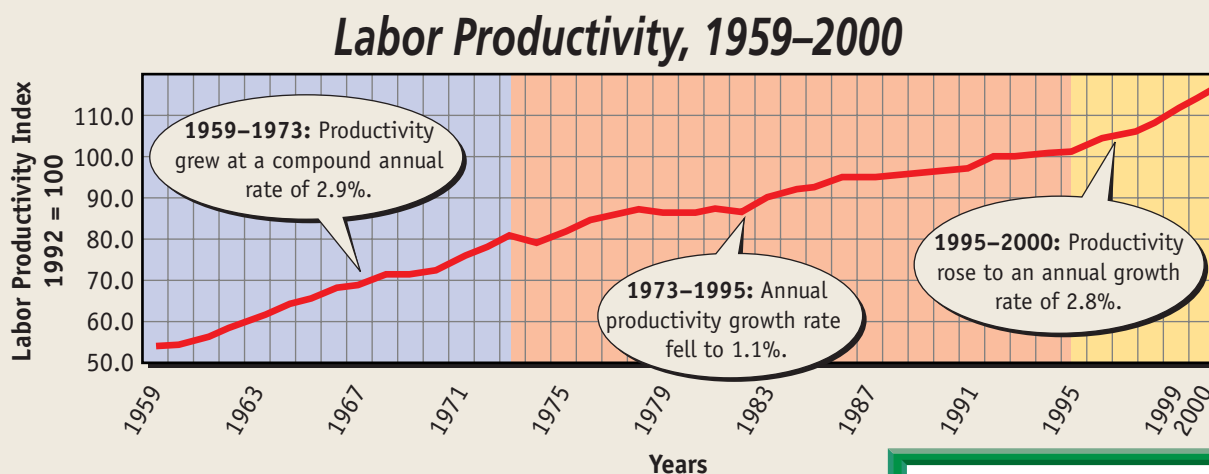
Labor

For any country's economy to grow, it needs a skilled and growing labor force. In general, the size of the labor force is dependent on the size of the population. If the rate of population growth declines, the size of the labor force might also decline. One way to offset a labor shortage is to hire workers from other countries. Another is to encourage new additions to the labor force, such as retirees and people who traditionally have stayed at home.

The American labor force is more educated and skilled today than in the past. In 1970, for example, the median number of school years workers

STANDARD &POOR'S

Figure 13.11

Labor Productivity, 1959–2000

1959–1973: Productivity grew at a compound annual rate of 2.9%.

1973–1995: Annual productivity growth rate fell to 1.1%.

1995–2000: Productivity rose to an annual growth rate of 2.8%.

Source: *Economic Report of the President,* various years

Using Graphs   Labor productivity is the rate of growth of output per unit of labor input.   **How did the productivity index change between 1959 and 1973?**

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had completed was 12.1. In 1991, the median number was 12.7. In 2000, it exceeded 13. This means that one-half of the labor force has a high school education plus at least one year of college or its equivalent.

Entrepreneurs

The entrepreneur's role as an agent of change qualifies him or her as being a key to economic growth. A country may possess the other growth potentials, but without entrepreneurs who are willing to innovate and take risks, economic growth is apt to lag.

As a group, entrepreneurs require little more than a business climate that allows them to succeed. Most entrepreneurs would favor a minimum of government regulation and an economic system that allows them to keep much of their profits. One of the most visible and successful entrepreneurial areas today is the Internet, which is affecting the way that virtually every company does business.

Productivity and Growth

Productivity refers to the efficient use of productive inputs to create goods and services. Without productivity, economic growth is difficult to achieve. The official measure of productivity is **labor productivity**—the amount of output produced per unit of labor input. Productivity goes up when this ratio goes up and down when it goes down.

Figure 13.11 on page 367 traces labor productivity in the U.S. economy since 1959. From 1959 to 1973, the productivity index increased from 54.3 to 80.8, for an annual compound growth rate of 2.9 percent. From 1973 to 1995, however, the productivity rate averaged only 1.1 percent per year.

Productivity rebounded in 1995, reaching an annual compound growth rate of 2.8 percent. As noted in the cover story, part of the increase is due to the personal computer's impact.

When productivity falters, the entire economy suffers. Declining labor productivity can even lead to a rise in the price level, making foreign-made goods cheaper than goods made at home. Eventually, unemployment in domestic industries rises.

When productivity grows, the entire economy benefits. Because people produce relatively more with the same amount of inputs, the prices of goods and services tend to stay low. Domestically produced goods become relatively less expensive than foreign-made ones, so employment at home expands to keep up with increased product demand.

Section 4 Assessment

Checking for Understanding

1. **Main Idea** Why is real GDP per capita considered the best measure of long-term economic growth?

2. **Key Terms** Define real GDP per capita, growth triangle, standard of living, tax base, renewable resources, capital-to-labor ratio, labor productivity.

3. **Describe** two measures of economic growth.

4. **Explain** why economic growth is important.

5. **Identify** the factors influencing economic growth.

6. **Explain** how productivity relates to economic growth.

Applying Economic Concepts

7. **Standard of Living** Identify your most valued material possession. Define the concept "standard of living" in your own words. Then, list the ways in which this possession enhances your standard of living.

Critical Thinking

8. **Determining Cause and Effect** Why is productivity important to a nation's standard of living?

9. **Finding the Main Idea** What does the capital-to-labor ratio measure?

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Chapter 13 Summary

Section 1

Measuring the Nation's Output

(pages 341–348)

- **Gross Domestic Product (GDP)** is the most complete measure of total output.
- GDP excludes intermediate goods and secondhand sales, nonmarket activities, and unreported activities in the underground economy.
- **Gross National Product (GNP)** is the measure of the total income received by American citizens, regardless of where their productive resources are located.
- Other measures of income are **net national product, national income, personal income,** and **disposable personal income,** which appears as the take-home pay on paychecks.
- The four sectors of the macro economy are the consumer, investment, government, and foreign sectors.
- The **output-expenditure model,** GDP = C + I + G + F, is used to show how GDP is consumed by the four sectors of the economy.

Section 2

GDP and Changes in the Price Level (pages 350–354)

- A **price index** tracks price changes over time and can be used to remove the distortions of inflation from other statistics.
- The price index is computed by dividing the latest prices of the market basket items by the base-year prices and then multiplying by 100.
- Three popular indices are the **consumer price index,** the **producer price index,** and the **implicit GDP price deflator.**
- **Current GDP** is converted to **real GDP,** or constant dollar GDP, by dividing the unadjusted number by the price index and then multiplying by 100.

Section 3

GDP and Population (pages 356–361)

- The annual population growth was more than 3 percent until the Civil War, but it has declined steadily to the point where it is now about 0.9 percent annually.
- The factors that contribute to changing populations are the **fertility rate, life expectancy,** and **net immigration.**
- Projections by age and sex show the continuing influence of the baby boom, which will ultimately increase the **dependency ratio.**
- The racial and ethnic mix will change with population gains by Asian Americans, Hispanic Americans, and African Americans, so that the White component of the population will be a bare majority by the middle of the next century.

Section 4

Economic Growth (pages 363–368)

- Because of changes in population, long-term economic growth is usually measured in terms of **real GDP per capita.**
- Economic growth is important because it raises the **standard of living,** increases the **tax base,** increases employment, and helps the economies of other nations.
- Economic growth requires an ample supply of productive resources, especially entrepreneurs, to organize production and make the economy grow.
- When **labor productivity** is increasing, it helps in raising economic growth and improving living standards.

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Self-Check Quiz Visit the *Economics: Principles and Practices* Web site at **epp.glencoe.com** and click on *Chapter 13—Self-Check Quizzes* to prepare for the chapter test.

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Identifying Key Terms

Examine the pairs of words below. Then write a sentence explaining what each of the pairs have in common.

1. base year, market basket
2. Gross National Product, Net National Product
3. household, unrelated individuals
4. intermediate products, secondhand sales
5. underground economy, nonmarket transactions
6. consumer price index, producer price index
7. real GDP, GDP in constant dollars
8. demographer, center of population
9. baby boom, population pyramid
10. life expectancy, dependency ratio
11. standard of living, labor productivity

Reviewing the Facts

Section 1 (pages 341–348)

1. **Explain** why GDP is an important concept.
2. **Explain** the steps necessary to convert GDP into GNP.
3. **Describe** the three main sectors that make up the United States economy.
4. **Describe** the output-expenditure model.

Section 2 (pages 350–354)

5. **Explain** why price indices are used.
6. **Identify** three of the major price indices the federal government calculates.

7. **Explain** how the government uses the implicit GDP price deflator to convert current GDP to real GDP.

Section 3 (pages 356–361)

8. **Describe** the historical growth of population in the United States.
9. **Describe** how the population of the United States is expected to change by the year 2050.

Section 4 (pages 363–368)

10. **Trace** the record of real economic growth per capita in the United States.
11. **Name** the factors that are essential for economic growth.
12. **Describe** the relationship between productivity and economic growth.

Thinking Critically

1. **Expressing Problems Clearly** Why is GDP not a proper measure of the total income earned by American citizens?
2. **Predicting Consequences** Suppose that politicians wanted to examine the growth of real output over the last 10 years. What conclusions would they reach if they used GDP measured in current dollars? How would these conclusions be different if they examined GDP measured in real dollars? Use a chart like the one below to help you formulate your answers.

	Conclusions
GDP in Current Dollars	
GDP in Real Dollars	

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3. **Synthesizing Information** Suppose you were told that you would earn $75,000 in 2010. Explain why this information would tell you little about the standard of living you might enjoy. What other information would you need to have before you could evaluate how well you could live in 2010?

Applying Economic Concepts

1. **Economic Growth** Go to the World Wide Web to find a report on GDP. What are the implications of your report for the future of economic growth?

2. **Nonmarket Transactions** Explain what would happen to GDP if nonmarket transactions were included.

3. **Life Expectancy** How would an increase in life expectancy affect the rate of population growth in the country?

4. **Standard of Living** Under what circumstances, if any, do you think you might prefer economic security to a rise in standard of living?

Math Practice

Your uncle has been telling you how cheap gas was back in 1970 when it was $.35 a gallon. (Assume the price of gas is $1.30 a gallon today.) You know that the CPI was 38.8 in 1970 and that it is 170.0 today. Show how you would use this information to determine when gas was relatively cheaper.

Thinking Like an Economist

In your own words, explain why greater life expectancies and declining birthrates make some entitlements like Social Security and medicare more difficult to fund.

Technology Skill

Developing Multimedia Presentations For one week, clip articles from newspapers that refer to one of the following:

- consumer expenditures
- business expenditures
- government expenditures
- exports or imports

On a separate sheet of paper, log the expenditures under one of the four headings. Now imagine you must teach a younger class the differences among the four sectors that make up our economy. Using a camcorder, videotape examples of consumer expenditures, government expenditures, business or investment expenditures, and foreign expenditures (refer to pages 346 through 348 for examples). Explain on camera how all four sectors work together.

Building Skills

Using a Spreadsheet Use the following information to create a spreadsheet and then a bar graph showing real GDP per capita in the United States for four years.

Years	Population	Real GDP in $Billion
1960	179,323,000	$2,263
1970	203,302,000	$3,398
1980	226,542,000	$4,615
1990	248,710,000	$6,136

Remember to use the following equation to determine real GDP per capita:

$$\frac{\text{Real GDP}}{\text{Population}} = \text{Real GDP per capita}$$

You may find your calculations will be easier if you change GDP from billions of dollars to millions. When you complete your calculations, input the information onto a spreadsheet, then convert the numbers to a bar graph. Print out your completed graph.

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ECONOMICS WORKSHOP IN ACTION

Using Factors of Production

From the classroom of . . .
  Linda Morrell
  Rancocas Valley Regional High School
  Mount Holly, New Jersey

One of the principle goals of an economic system is efficiency. How do we achieve efficiency in production? One key is operational innovation. This includes improving the methods of organizing production in order to reduce costs, improve quality, and meet the demands of the customers.

Setting Up the Workshop

In this workshop, you will experiment with a process that you design to produce paper baskets. You will produce as many baskets as you can, decorated as attractively as possible, within a period of 10 minutes.

Your teacher will provide you with one ruler, one stapler, three colored markers, and a supply of paper. These are your **capital goods,** the tools and equipment you will use to produce the baskets. Before you begin, decide on the design. Read the procedures that follow. Your teacher will tell you when to begin your production process and when to stop.

You are to work individually. Do not communicate with other students. The member of your class who makes the most will have the highest productivity. Only those products that are completed (finished goods) will be counted. Products that were started but not yet completed (goods in process) will count against your productivity (one less for each good in process). Your teacher or a student volunteer your teacher selects will serve as the quality control inspector, who will inspect the baskets and reject any that are not of acceptable quality.

Procedures

STEP 1

Divide, then cut, each sheet of paper into four equal strips.

STEP 2

Decorate the strips to make an attractive design for the basket.

STEP 3

Staple three of the strips so they make a basket. Use the fourth strip for a basket handle.

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STEP 4

After time is called, count the number of baskets you produced and compare your total with that of the other students.

STEP 5

Discuss the results. Discuss what problems occurred due to a scarcity of resources.

STEP 6

Your teacher will place you in a team. Your task is the same as before—create as many baskets as you can. You will have a few minutes to plan your strategy before you begin.

STEP 7

Repeat the 10-minute production period. You are permitted to communicate with your team members as you work.

STEP 8

After time is called, do the following:
- Count the number of baskets your group produced.
- Compare your total with the total of the other groups.
- Describe to the other groups the production process you used.

Summary Activity

1. Why was the total class output higher when everyone worked in groups?
2. Discuss your group's productivity. In what ways could it be increased?
3. Devise a statistical measure to gauge the increase in productivity observed in the activity.
4. Economists use terms like factors of production and intermediate products when they talk about production. Provide examples of each.
5. What is the role of the entrepreneur in the production process?
6. What happens to a firm's productivity and its costs of production when efficiency improves? How do improvements in productivity affect the supply of products?

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