GLOBAL EDITION

Economics

ELEVENTH EDITION

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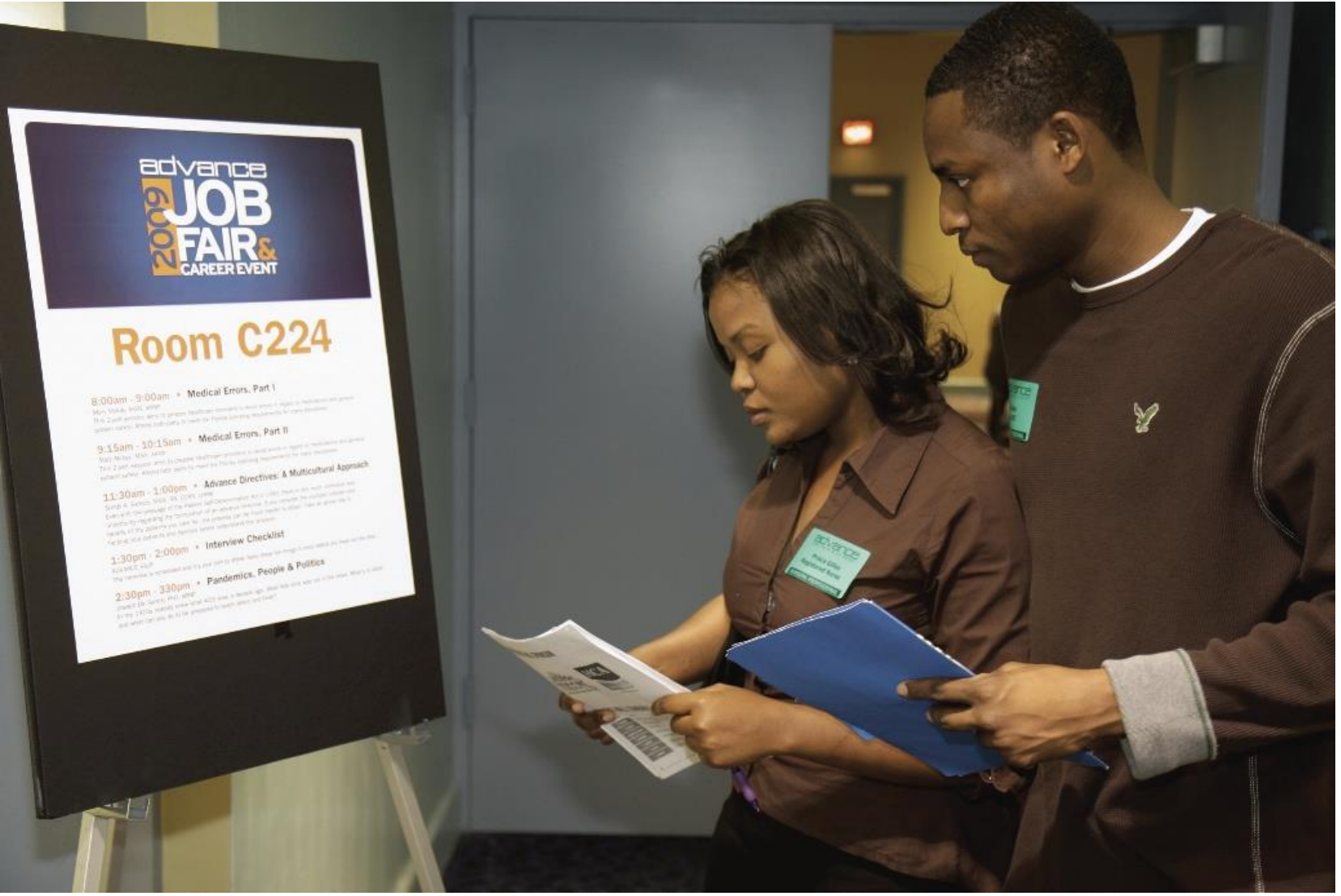


22

MONITORING JOBS AND INFLATION

After studying this chapter, you will be able to:

- Explain why unemployment is a problem and how we measure the unemployment rate and other labor market indicators
- Explain why unemployment occurs and why it is present even at full employment
- Explain why inflation is a problem and how we measure the inflation rate

Each month, we chart the course of unemployment and inflation as measures of the health of the U.S. economy.

- How do we measure the unemployment rate?
- How do we measure the inflation rate?

Are they reliable vital signs for the economy?

As the U.S. economy slowly expanded after a recession in 2008 and 2009, job growth was weak and questions about the health of the labor market became of vital importance to millions of Americans.

Employment and Unemployment

What kind of job market will you enter when you graduate?

The class of 2012 had a tough time:

In July 2012, 25 million Americans wanted a job but couldn't find one.

On a typical day, fewer than half that number of Americans are unemployed.

The U.S. economy creates lots of jobs: 139 million people had jobs during the recession of 2009.

But in recent years, the population has grown faster than the number of jobs, so unemployment is a serious problem.

Employment and Unemployment

Why Unemployment Is a Problem

Unemployment results in

- Lost incomes and production
- Lost human capital

The loss of income is devastating for those who bear it. Employment benefits create a safety net but don't fully replace lost wages, and not everyone receives benefits.

Prolonged unemployment permanently damages a person's job prospects by destroying human capital.

Employment and Unemployment

Current Population Survey

The U.S. Census Bureau conducts a monthly population survey to determine the status of the U.S. labor force.

The population is divided into two groups:

1. The **working-age population**—the number of people aged 16 years and older who are not in jail, hospital, or some other institution
2. People too young to work (under 16 years of age) or in institutional care

Employment and Unemployment

The working-age population is divided into two groups:

1. People in the labor force

2. People not in the labor force

The **labor force** is the sum of employed and unemployed workers.

Employment and Unemployment

To be counted as unemployed, a person must be in one of the following three categories:

1. Without work but has made specific efforts to find a job within the previous four weeks
2. Waiting to be called back to a job from which he or she has been laid off
3. Waiting to start a new job within 30 days

Employment and Unemployment

Figure 22.1 shows the labor force categories. In June 2012:

Population: 314 million

Working-age population: 243.4 million

Labor force: 155.0 million

Employed: 142.2 million

Unemployed: 12.8 million

Employment and Unemployment

Three Labor Market Indicators

- The unemployment rate
- The employment-to-population ratio
- The labor force participation rate

Employment and Unemployment

The Unemployment Rate

The **unemployment rate** is the percentage of the labor force that is unemployed.

The unemployment rate is
(Number of people unemployed ÷ labor force) × 100.

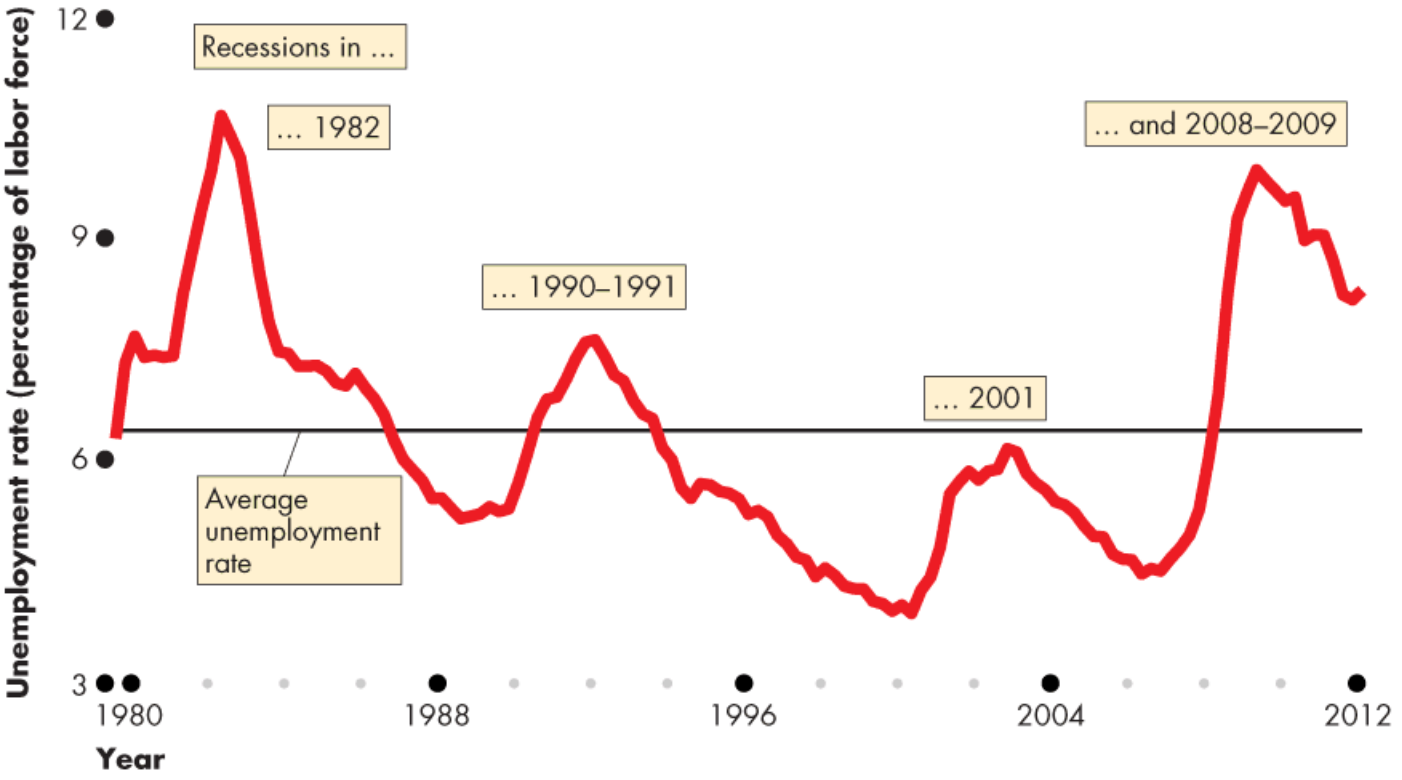
In June 2012, the labor force was 155 million and 12.8 million were unemployed, so the unemployment rate was 8.2 percent.

The unemployment rate increases in a recession and reaches its peak value after the recession ends.

Employment and Unemployment

Figure 22.2 shows the unemployment rate: 1980–2012.

The unemployment rate increases in a recession.



Employment and Unemployment

The Employment-to-Population Ratio

The **employment-to-population ratio** is the percentage of the working-age population who have jobs.

The employment-to-population ratio is (Employment ÷ Working-age population) × 100.

In June 2012, the employment was 142.2 million and the working-age population was 243.4 million.

The employment-to-population ratio was 58.45 percent.

Employment and Unemployment

The Labor Force Participation Rate

The **labor force participation rate** is the percentage of the working-age population who are members of the labor force.

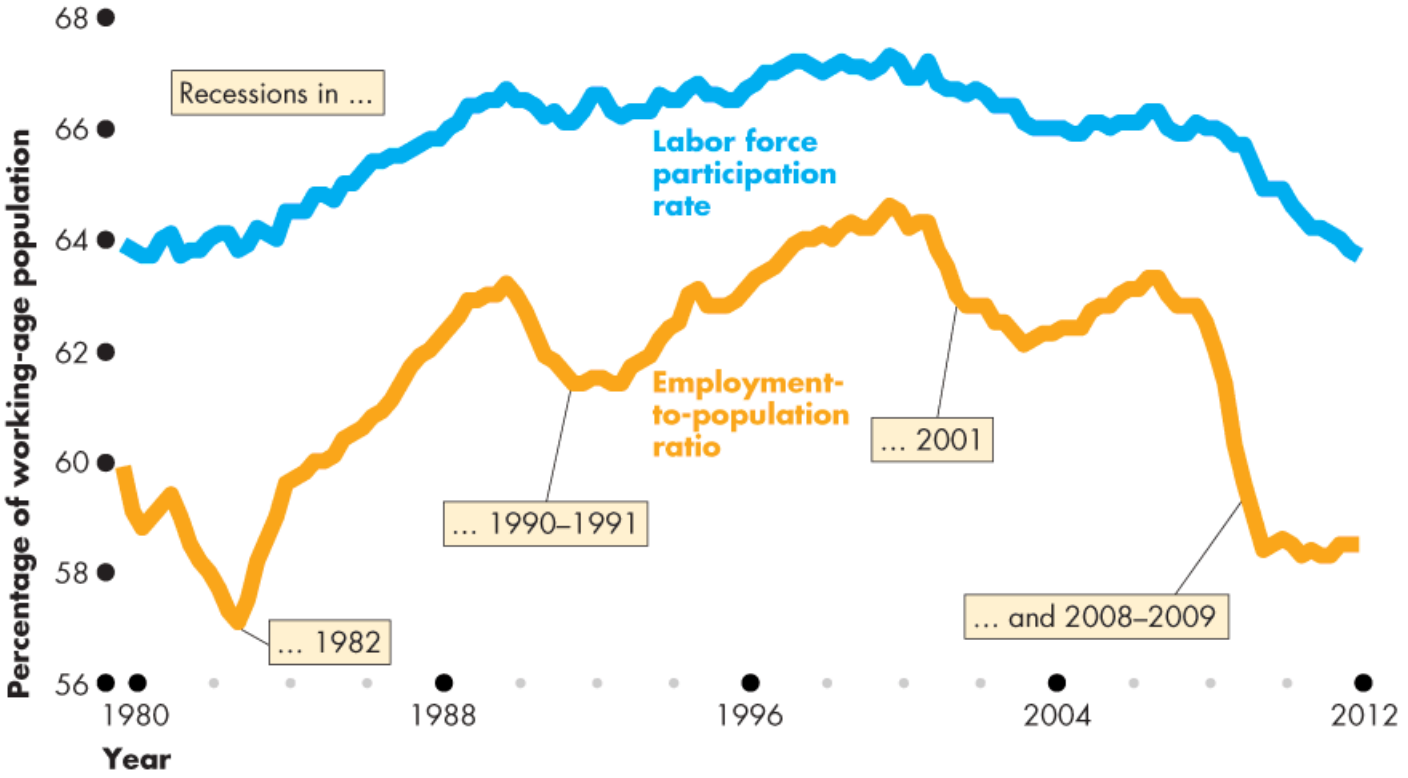
The labor force participation rate is
(Labor force ÷ Working-age population) × 100.

In June 2012, the labor force was 155 million and the working-age population was 243.4 million.

The labor force participation rate was 63.7 percent.

Employment and Unemployment

Figure 22.3 shows that the labor force participation rate and the employment-to-population ratio both trended upward before 2000 and downward after 2000.



Employment and Unemployment

Other Definitions of Unemployment

The purpose of the unemployment rate is to measure the underutilization of labor resources.

The BLS believes that the unemployment rate gives a correct measure.

But the official measure is an imperfect measure because it excludes

- Marginally attached workers
- Part-time workers who want full-time jobs

Employment and Unemployment

Marginally Attached Workers

A **marginally attached worker** is a person who currently is neither working nor looking for work but has indicated that he or she wants and is available for a job and has looked for work sometime in the recent past.

A **discouraged worker** is a marginally attached worker who has stopped looking for a job because of repeated failure to find one.

Employment and Unemployment

Part-Time Workers Who Want Full-Time Jobs

Many part-time workers want to work part time, but some part-time workers would like full-time jobs and can't find them.

In the official statistics, these workers are called *economic part-time workers* and they are partly unemployed.

Most Costly Unemployment

All unemployment is costly, but the most costly is long-term unemployment that results from job loss.

Employment and Unemployment

Alternative Measures of Unemployment

The BLS reports six alternative measures of the unemployment rate: two narrower than the official measure and three broader ones.

The narrower measures, U-1 and U-2, focus on the personal cost of unemployment.

The broader measures, U-4, U-5, and U-6, focus on assessing the full amount of unused labor resources.

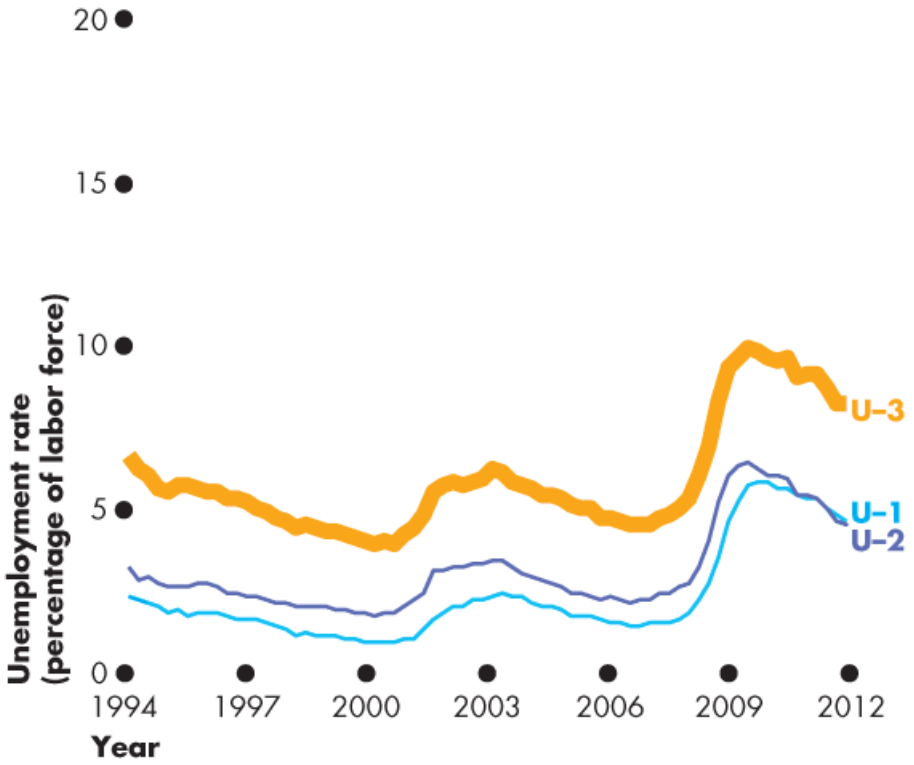
Employment and Unemployment

Figure 22.4 shows six alternative measures.

U-1: Those unemployed for 15 or more weeks

U-2: Unemployed job losers

U-3: The official unemployment rate



Employment and Unemployment

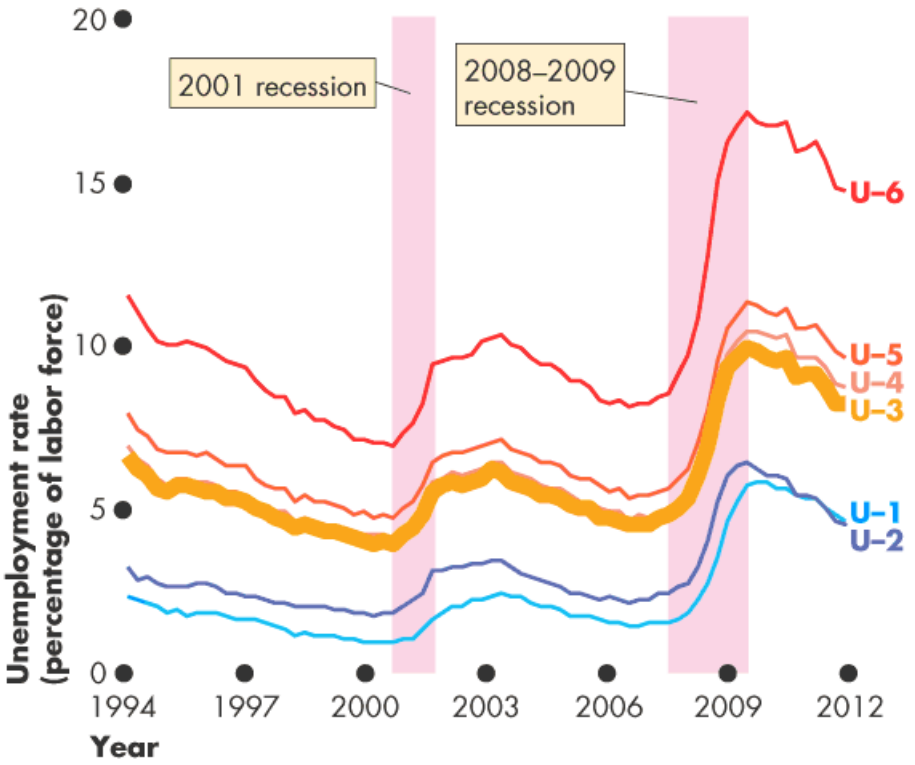
Broader measures are

U-4: U-3 + Discouraged workers

U-5: U-4 + Other marginally attached workers

U-6: U-4 + Part-time workers who want full-time jobs

All measures increase together in recession.



Unemployment and Full Employment

Unemployment can be classified into three types:

- Frictional unemployment
- Structural unemployment
- Cyclical unemployment

Unemployment and Full Employment

Frictional Unemployment

Frictional unemployment is unemployment that arises from normal labor market turnover.

The creation and destruction of jobs requires that unemployed workers search for new jobs.

Increases in the number of people entering and reentering the labor force and increases in unemployment benefits raise frictional unemployment.

Frictional unemployment is a permanent and healthy phenomenon of a growing economy.

Unemployment and Full Employment

Structural Unemployment

Structural unemployment is unemployment created by changes in technology and foreign competition that change the skills needed to perform jobs or the locations of jobs.

Structural unemployment lasts longer than frictional unemployment.

Unemployment and Full Employment

Cyclical Unemployment

Cyclical unemployment is the higher than normal unemployment at a business cycle trough and lower than normal unemployment at a business cycle peak.

A worker who is laid off because the economy is in a recession and is then rehired when the expansion begins experiences cyclical unemployment.

Unemployment and Full Employment

"Natural" Unemployment

Natural unemployment is the unemployment that arises from frictions and structural change when there is no cyclical unemployment.

Natural unemployment is all frictional and structural unemployment.

The **natural unemployment rate** is natural unemployment as a percentage of the labor force.

Unemployment and Full Employment

Full employment is defined as the situation in which the unemployment rate equals the natural unemployment rate.

When the economy is at full employment, there is no cyclical unemployment or, equivalently, all unemployment is frictional and structural.

Unemployment and Full Employment

The natural unemployment rate changes over time and is influenced by many factors.

Key factors are

- The age distribution of the population
- The scale of structural change
- The real wage rate
- Unemployment benefits

Unemployment and Full Employment

Real GDP and Unemployment Over the Cycle

Potential GDP is the quantity of real GDP produced at full employment.

Potential GDP corresponds to the capacity of the economy to produce output on a sustained basis.

Real GDP minus potential GDP is the **output gap**.

Over the business cycle, the output gap fluctuates and the unemployment rate fluctuates around the natural unemployment rate.

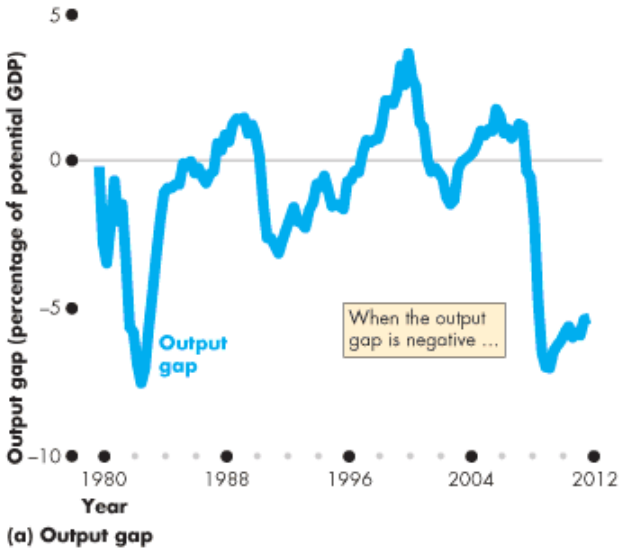
Unemployment and Full Employment

Figure 22.5 shows the output gap and …

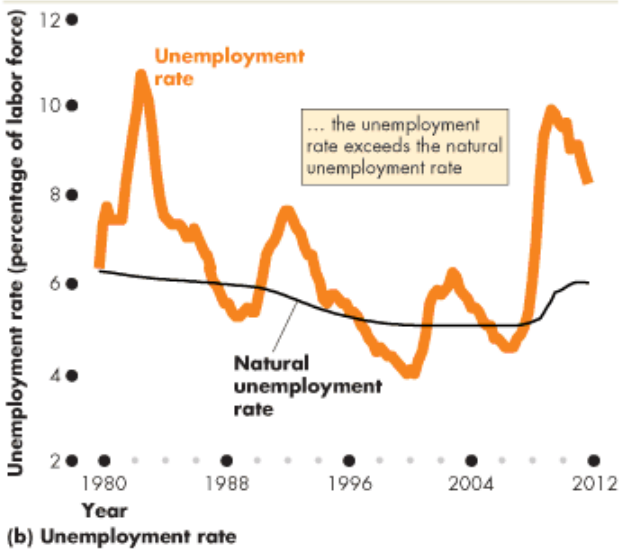
the fluctuations of unemployment around the natural rate.

When the output gap is negative, ...

the unemployment rate exceeds the natural unemployment rate.



(a) Output gap



(b) Unemployment rate

Price Level, Inflation, and Deflation

The **price level** is the average level of prices and the value of money.

A persistently rising price level is called **inflation**.

A persistently falling price level is called **deflation**.

We are interested in the price level because we want to

1. Measure the inflation rate or the deflation rate
2. Distinguish between money values and real values of economic variables.

Price Level, Inflation, and Deflation

Why Inflation and Deflation Are Problems

Low, steady, and anticipated inflation or deflation is not a problem.

Unpredictable inflation or deflation is a problem because it

- Redistributes income and wealth
- Lowers real GDP and employment
- Diverts resources from production

Price Level, Inflation, and Deflation

Unpredictable changes in the inflation rate redistribute income in arbitrary ways between employers and workers and between borrowers and lenders.

A high inflation rate is a problem because it diverts resources from productive activities to inflation forecasting.

From a social perspective, this waste of resources is a cost of inflation.

At its worst, inflation becomes **hyperinflation**—an inflation rate that is so rapid that workers are paid twice a day because money loses its value so quickly.

Price Level, Inflation, and Deflation

The Consumer Price Index

The **Consumer Price Index**, or **CPI**, measures the average of the prices paid by urban consumers for a "fixed" basket of consumer goods and services.

Price Level, Inflation, and Deflation

Reading the CPI Numbers

The CPI is defined to equal 100 for the **reference base period**.

Currently, the reference base period is 1982–1984.

That is, for the average of the 36 months from January 1982 through December 1984, the CPI equals 100.

In June 2012, the CPI was 228.8.

This number tells us that the average of the prices paid by urban consumers for a fixed basket of goods was 128.8 percent higher in June 2012 than it was during 1982–1984.

Price Level, Inflation, and Deflation

Constructing the CPI

Constructing the CPI involves three stages:

- Selecting the CPI basket
- Conducting a monthly price survey
- Calculating the CPI

Price Level, Inflation, and Deflation

The CPI Basket

The CPI basket is based on a Consumer Expenditure Survey, which is undertaken infrequently.

The CPI basket today is based on data collected in the Consumer Expenditure Survey of 2008.

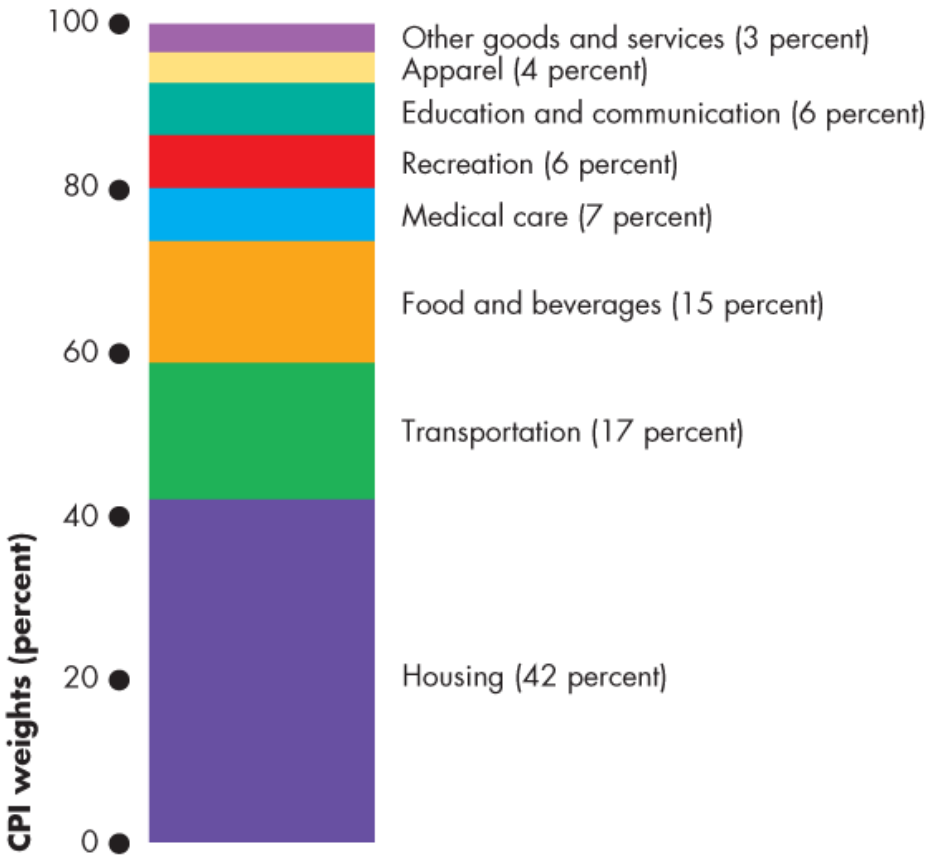
Price Level, Inflation, and Deflation

Figure 22.6 illustrates the CPI basket.

Housing is the largest component.

Transportation and food and beverages are the next largest components.

The remaining components account for 26 percent of the basket.



Price Level, Inflation, and Deflation

The Monthly Price Survey

Every month, BLS employees check the prices of the 80,000 goods in the CPI basket in 30 metropolitan areas.

Calculating the CPI

1. Find the cost of the CPI basket at base-period prices.
2. Find the cost of the CPI basket at current-period prices.
3. Calculate the CPI for the current period.

Price Level, Inflation, and Deflation

Let's work an example of the CPI calculation.

In a simple economy, people consume only oranges and haircuts.

The CPI basket is 10 oranges and 5 haircuts.

The table also shows the prices in the base period.

The cost of the CPI basket in the base period was $50.

TABLE 22.1 The CPI: A Simplified Calculation

(a) The cost of the CPI basket at base-period prices: 2012

CPI basket			
Item	Quantity	Price	Cost of CPI Basket
Oranges	10	$1.00	$10
Haircuts	5	$8.00	$40
Cost of CPI basket at base-period prices			$50

Price Level, Inflation, and Deflation

Table 22.1(b) shows the fixed CPI basket of goods.

It also shows the prices in the current period.

The cost of the CPI basket at current-period prices is $70.

TABLE 22.1 The CPI: A Simplified Calculation

(a) The cost of the CPI basket at base-period prices: 2012

CPI basket			
Item	Quantity	Price	Cost of CPI Basket
Oranges	10	$1.00	$10
Haircuts	5	$8.00	$40
Cost of CPI basket at base-period prices			$50

(b) The cost of the CPI basket at current-period prices: 2013

CPI basket			
Item	Quantity	Price	Cost of CPI Basket
Oranges	10	$2.00	$20
Haircuts	5	$10.00	$50
Cost of CPI basket at current-period prices			$70

Price Level, Inflation, and Deflation

The CPI is calculated using the formula:

CPI = (Cost of basket at current-period prices ÷ Cost of basket at base-period prices) × 100.

Using the numbers for the simple example,

$$\text{CPI} = (\$70 \div \$50) \times 100 = 140.$$

The CPI is 40 percent higher in the current period than it was in the base period.

Price Level, Inflation, and Deflation

Measuring the Inflation Rate

The major purpose of the CPI is to measure inflation.

The ***inflation rate*** is the percentage change in the price level from one year to the next.

The inflation formula is:

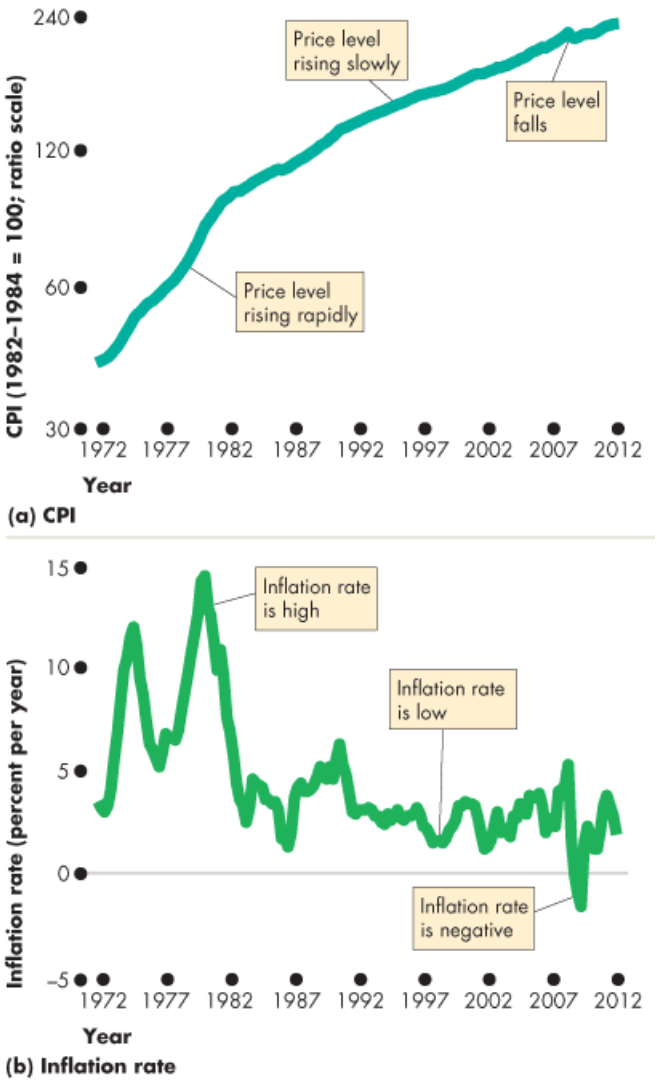
Inflation rate = [(CPI this year – CPI last year) ÷ CPI last year] × 100.

Price Level, Inflation, and Deflation

Figure 22.7 shows the relationship between the price level and the inflation rate.

The inflation rate is

- High when the price level is rising rapidly and
- Low when the price level is rising slowly.
- Negative when the price level is falling



Price Level, Inflation, and Deflation

The Biased CPI

The CPI might overstate the true inflation rate for four reasons:

- New goods bias
- Quality change bias
- Commodity substitution bias
- Outlet substitution bias

Price Level, Inflation, and Deflation

New Goods Bias

New goods that were not available in the base year appear and, if they are more expensive than the goods they replace, they put an upward bias into the CPI.

Quality Change Bias

Quality improvements occur every year. Part of the rise in the price is payment for improved quality and is not inflation.

The CPI counts all the price rise as inflation.

Price Level, Inflation, and Deflation

Commodity Substitution Bias

The market basket of goods used in calculating the CPI is fixed and does not take into account consumers' substitutions away from goods whose relative prices increase.

Outlet Substitution Bias

As the structure of retailing changes, people switch to buying from cheaper sources, but the CPI, as measured, does not take account of this outlet substitution.

Price Level, Inflation, and Deflation

The Magnitude of the Bias

Estimates say that the CPI overstates inflation by 1.1 percentage points a year.

Some Consequences of the Bias

- Distorts private contracts.
- Increases government outlays (close to a third of federal government outlays are linked to the CPI).

A bias of 1 percent is small, but over a decade adds up to almost $1 trillion of additional expenditure.

Price Level, Inflation, and Deflation

Alternative Price Indexes

Alternative measures of the price level are

- Chained CPI
- Personal consumption expenditure deflator
- GDP deflator

Price Level, Inflation, and Deflation

Chained CPI

The *chained CPI* is a price index that is calculated using a similar method to that used to calculate *chained-dollar real GDP* described in Chapter 21.

Price Level, Inflation, and Deflation

Personal Consumption Expenditure Deflator

The PCE deflator equals

(Nominal consumption expenditure ÷ Real consumption expenditure) × 100

PCE deflator is a broader measure of the price level than the CPI because it includes all consumption expenditure.

GDP Deflator

GDP deflator is like the PCE deflator except it includes the prices of all goods and services that are counted in GDP.

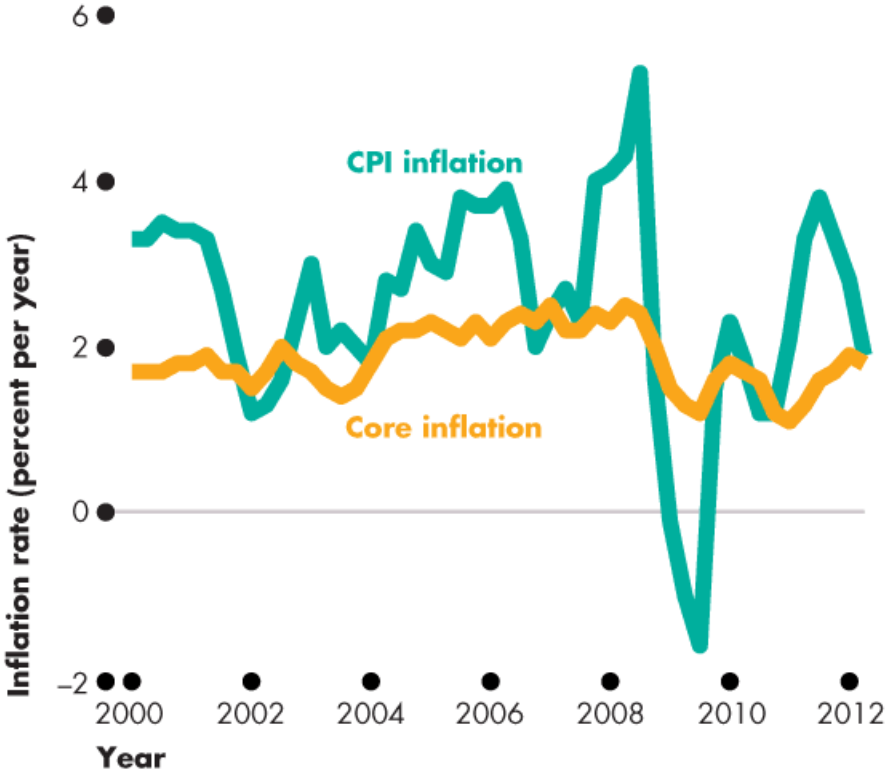
Price Level, Inflation, and Deflation

Core Inflation

The figure shows the CPI inflation rate.

The **core inflation rate** is the CPI inflation rate excluding the volatile elements (of food and fuel).

The core inflation rate attempts to reveal the underlying inflation trend.



Price Level, Inflation, and Deflation

The Real Variables in Macroeconomics

We can use the deflator to deflate nominal variables to find their real values.

For example,

Real wage rate = (Nominal wage rate ÷ GDP deflator) × 100

But not the real interest rate! It is different.