

13

Measuring an Economy's Performance



Simon Annable/Shutterstock.com

LEARNING OBJECTIVES

1. Interpret and critique several measures of economic progress
2. Discuss the difference between nominal values and real values
3. Describe the effects of inflation
4. Explain how price levels are measured
5. Identify and explain the various types of employment

MEASURES OF ECONOMIC PROGRESS

Recall that the standard of living is a measure of the material wealth available to help people live comfortably. It is harder to quantify the quality of life.

- **Quality of life**—a broader measure of citizens' comfort and satisfaction that comes partly from the standard of living but also from more subjective sources of happiness, such as health, recreation, environmental quality, freedom, security, and family life.

GROSS DOMESTIC PRODUCT

- **Gross domestic product**—the total value of all final goods and services produced within a given time period, usually one year.
- **Final goods and services**—goods and services purchased by their ultimate consumer rather than by a firm for use in producing something else.
- **Intermediate goods**—goods purchased by firms that either become part of another good or are used in the production of a good.

HOW GDP IS CALCULATED

GDP is calculated from the addition of four categories:

- Consumption spending by households
- Investment spending by firms
- Government spending on goods and services
- Net exports (exports minus imports)

exports—goods or services sold to foreign buyers.

imports—goods or services purchase from foreign firms.

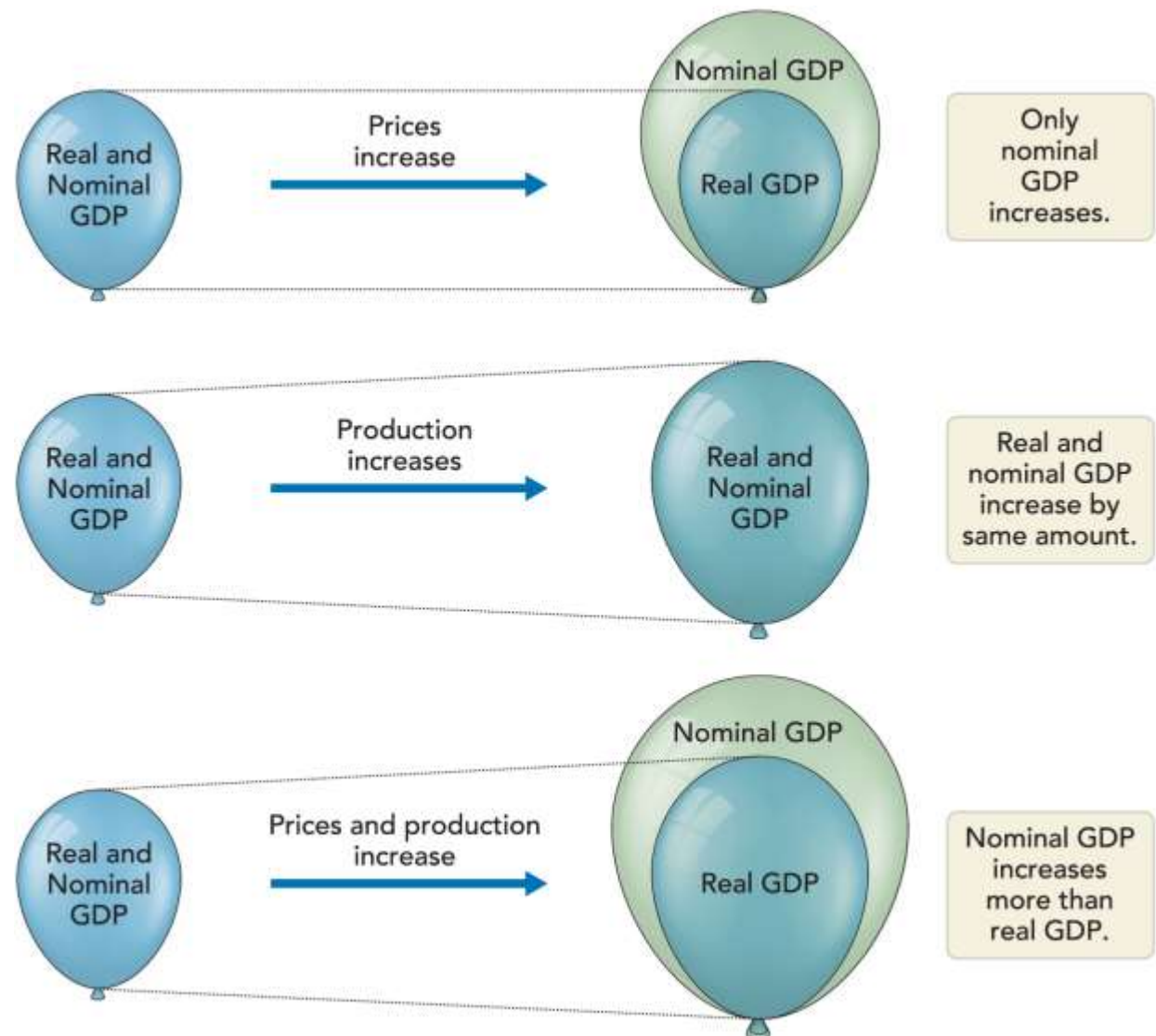


NOMINAL VERSUS REAL VALUES

- **Nominal values**—the actual amount paid or received for a good or service.
- **Purchasing power**—the value of an amount of money expressed in terms of what one could buy with it.
- **Inflation**—an increase in the general price level of goods and services.
- **Deflation**—a decrease in the general price level of goods and services.
- **Real value**—a nominal value adjusted to remove the effects of inflation.

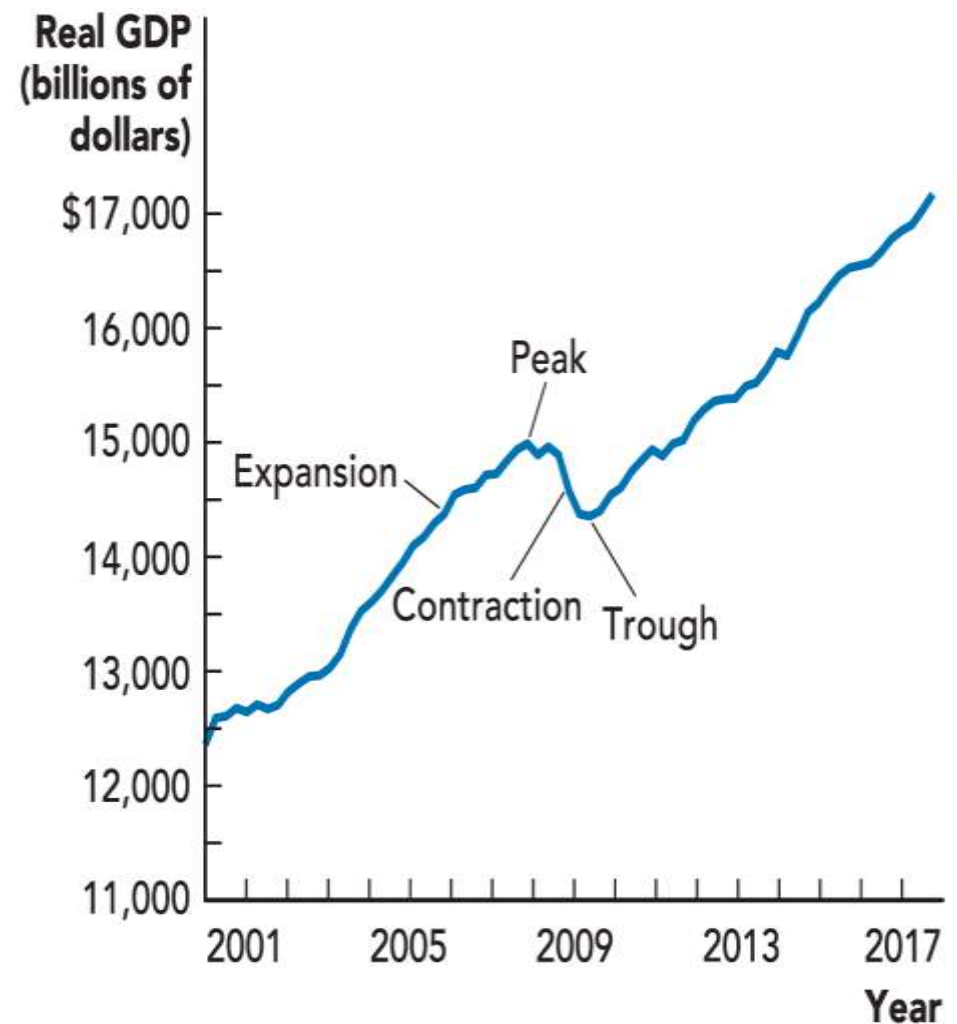
INCREASES IN REAL AND NOMINAL GDP

- The diagram to the right illustrates what factors will affect real and nominal GDP.



GDP AND THE BUSINESS CYCLE PART I

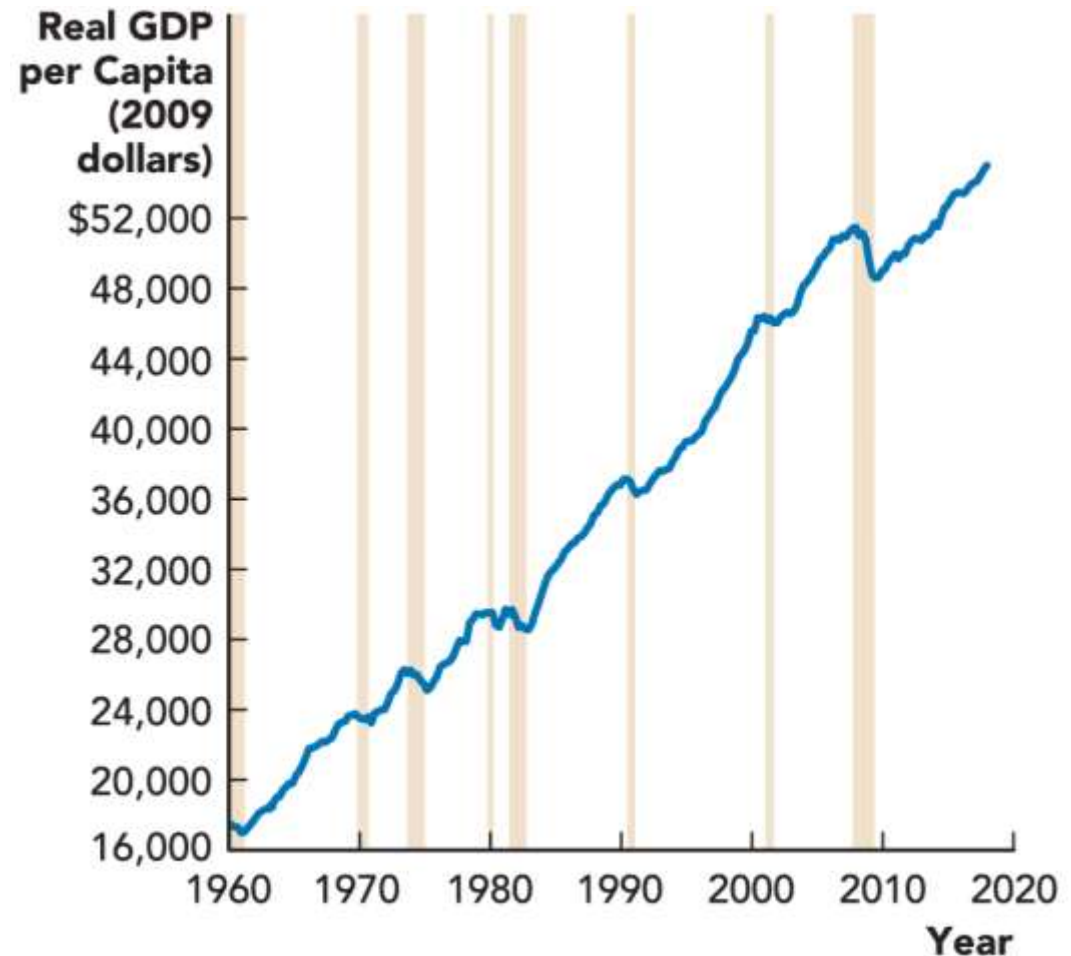
- **Business cycle**—the alternation between expansions and contractions in the economy's level of output.
- **Peak**—the transition from an expansion to a contraction in the economy.
- **Trough**—the transition from a contraction to an expansion in the economy.



Source: Bureau of Economic Analysis.

GDP AND THE BUSINESS CYCLE PART II

- **Recession**—a significant decline in economic activity spread across the economy, lasting more than a few months.
- **Depression**—an economic downturn loosely defined as a 10 percent or more decrease in output over a year.
- **Boom**—a time of great expansion in economic activity.
- **Real GDP per capita**—real GDP divided by the number of people in the population.



Source: Federal Reserve Bank of St. Louis.

Real GDP per capita in the United States

GDP AND THE QUALITY OF LIFE

- Some goods and services are purchased to address problems that are making society worse off, such as:
 - crime
 - natural disasters
 - disease
- There are many goods and services that increase our social well-being but are not included in GDP, such as:
 - a load of laundry done at home
 - do-it-yourself home improvements

NET NATIONAL PRODUCT

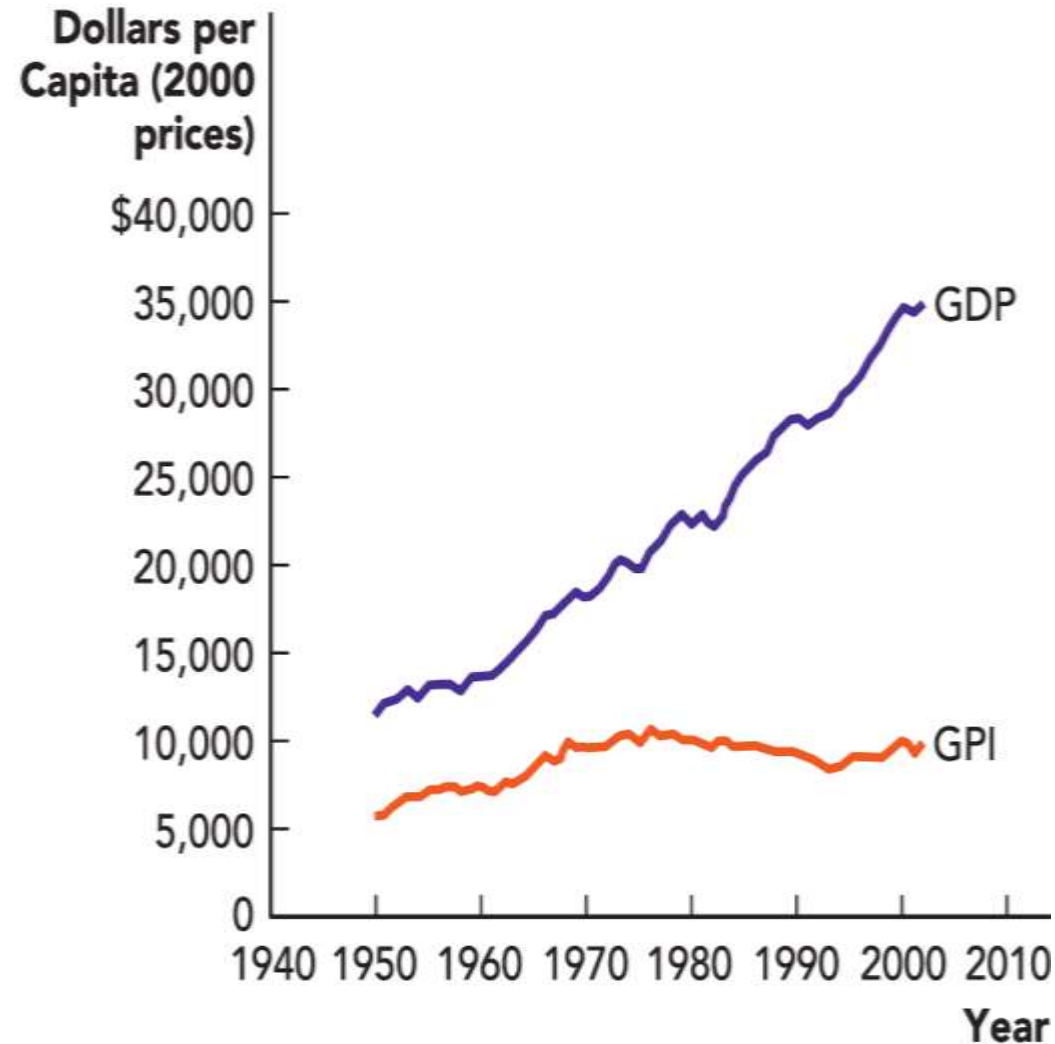
- **Net national product (NNP)**—GDP minus the value of capital depreciation.
- **Capital depreciation**—wear on capital during the production process that depletes the capital's value.



MEASURES OF THE QUALITY OF LIFE

Economists have proposed several alternatives to GDP as broader measures of the quality of life. Examples include:

- the Genuine Progress Indicator (GPI)
- the Human Development Index (HDI)
- Net National Welfare (NNW)
- the Index of Sustainable Economic Welfare (ISEW)



Source: rprogress.org.

NET NATIONAL WELFARE CALCULATIONS

Most of these alternative measures are found by starting with GDP, adding omitted expenditures that make society better off and subtracting expenditures that grow in response to growing problems. For example, the calculation for net national welfare is:

$$\text{NNW} = \text{GDP} + \text{nonmarket output} - \text{externality costs} - \\ \text{pollution abatement and cleanup costs} - \\ \text{capital depreciation}$$

INFLATION

Recall that inflation is an increase in the general price level of goods and services.

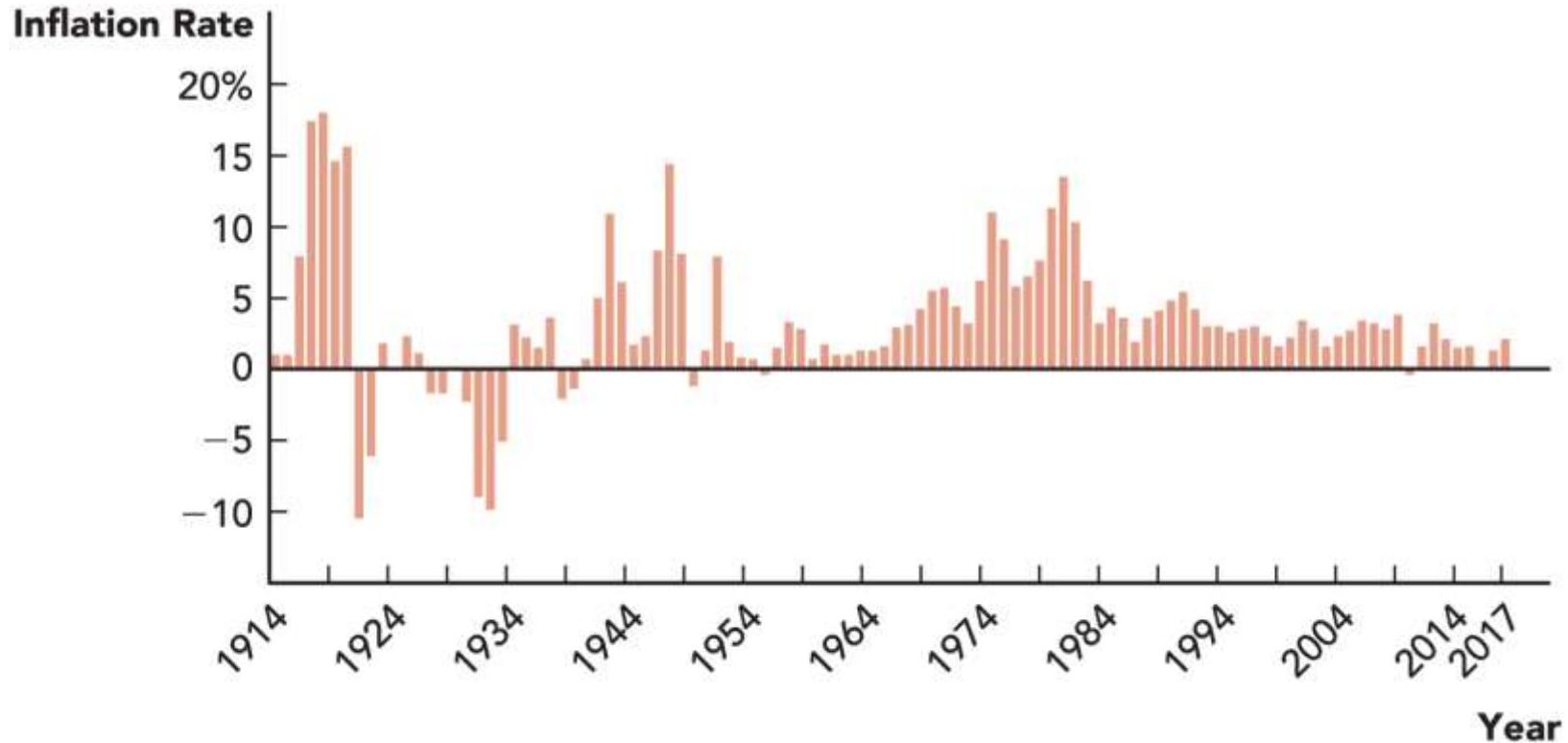
- **Menu costs**—the cost to firms of updating price lists to keep up with inflation.
- **Shoe-leather costs**—the costs individuals incur in their efforts to minimize inflation's erosive effects on the value of their money.



Mint Images Limited/Alamy

In times of inflation, consumers hold less cash and try to protect the value of their money by keeping it in interest-garnering accounts. This in turn increases shoe-leather costs of making trips to the ATM.

U.S. INFLATION RATES



Source: Bureau of Labor Statistics.

- **Hyperinflation**—a period characterized by very high rates of inflation.

CONSUMER PRICE INDEX PART I

- **Consumer price index**—a measure of variation in the overall price level of goods and services purchased by typical consumers.

The CPI is the most commonly used price index. It is calculated by the Bureau of Labor Statistics collecting a representative basket of goods and services in a particular month and dividing the cost in that month by a basket by an arbitrarily chosen base period and multiplying by 100.

Example: If a basket cost \$3 million in this month and \$1 million in the base period, then the CPI for this month is:

$$(\$3 \text{ million}/\$1 \text{ million}) \times 100 = 300$$

CONSUMER PRICE INDEX PART II

The CPI between one year and the next indicates the inflation rate over that period:

$$\text{Inflation rate} = [(CPI_{\text{Year 2}} / CPI_{\text{Year 1}}) - 1] \times 100$$

CPI figures can be used to find real values by adjusting nominal values for inflation:

$$\begin{aligned} & \text{Real price in Year 2 dollars} \\ & = \text{nominal price in Year 1} \times (CPI_{\text{Year 2}} / CPI_{\text{Year 1}}) \end{aligned}$$

LEARN BY DOING: PRACTICE QUESTION 1

The nominal price of a computer in Year 1 is \$836. The CPI for Year 1 is 250, and the CPI for Year 2 is 261. What is the price of the same computer in Year 2 dollars?

- a) \$800.77
- b) \$839.34
- c) \$872.78
- d) 878.53

LEARN BY DOING: PRACTICE QUESTION 1

(Answer)

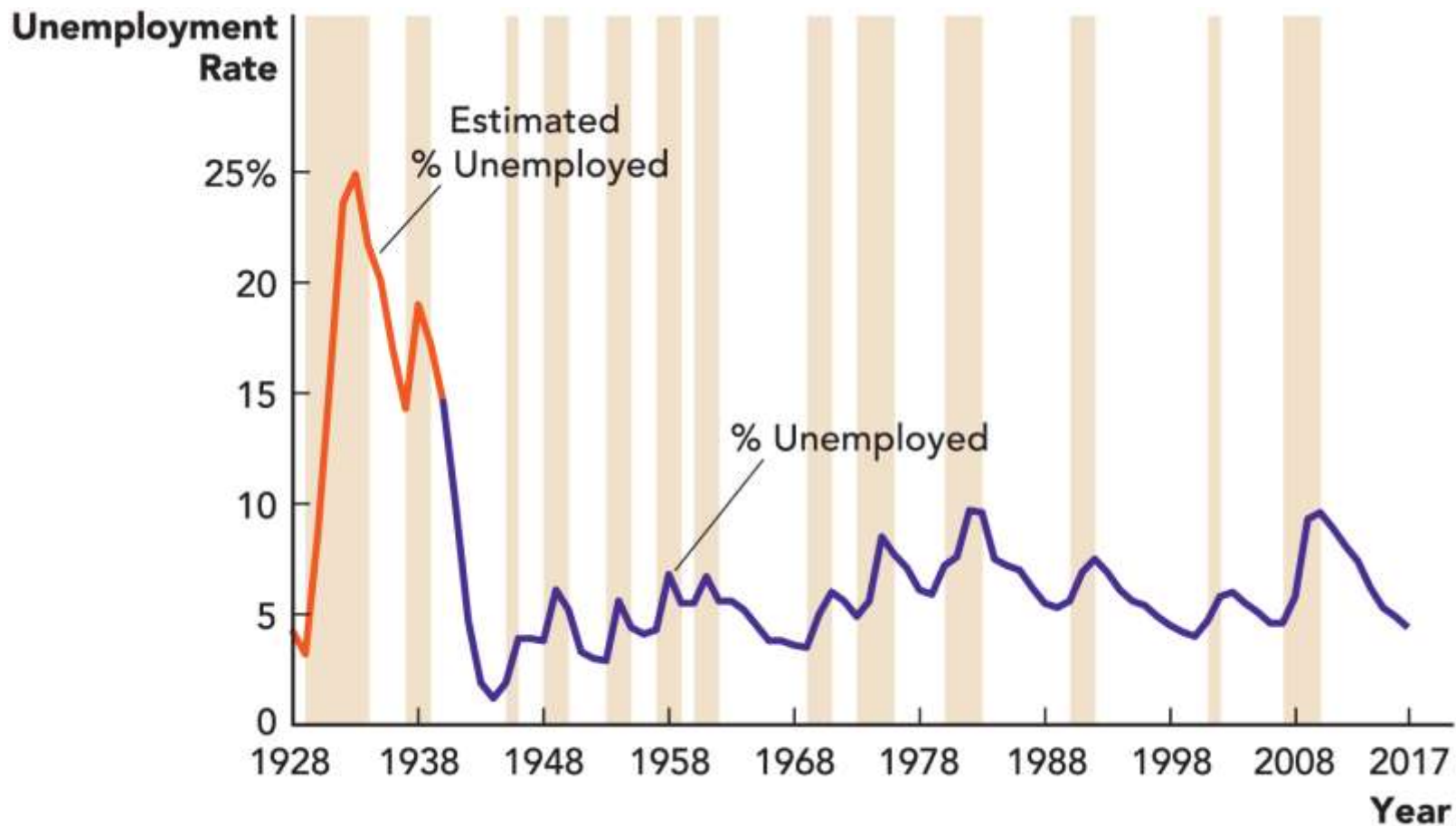
The nominal price of a computer in Year 1 is \$836. The CPI for Year 1 is 250, and the CPI for Year 2 is 261. What is the price of the same computer in Year 2 dollars?

- a) \$800.77
- b) \$839.34
- c) \$872.78 (correct answer)**
- d) 878.53

UNEMPLOYMENT

- **Labor force**—everyone who is aged 16 or older, not on active military duty, not institutionalized, and employed or recently looking for a job.
- **Unemployment rate**—the percentage of the labor force that is unemployed.
- **Discouraged workers**—people who are willing and able to work and have looked for a job for the past year but who have not looked for a job in the past four weeks because they have given up on finding a job.
- **Underemployed workers**—people who are working fewer hours than they want or are overqualified for their positions.

HISTORICAL U.S. UNEMPLOYMENT RATES



Sources: Bureau of Labor Statistics, TheBalance.com, InfoPlease.com.

$$\text{Unemployment rate} = \frac{\text{unemployed} \times 100}{\text{labor force}}$$

TYPES OF UNEMPLOYMENT PART I

- **Frictional unemployment**—unemployment caused by the need for workers and employers to spend time searching for each other.
- **Structural employment**—unemployment caused by a mismatch between the skills workers have and the skills employers seek.
- **Cyclical employment**—unemployment caused by contractions in the economy.
- **Seasonal unemployment**—unemployment caused by a change in the need for workers due to a change in the seasons.

TYPES OF UNEMPLOYMENT PART II

Type of Unemployment	Cause
Frictional	The time it takes to match workers with jobs
Structural	A mismatch between the skills workers have and the skills employers need
Cyclical	A downturn in the economy
Seasonal	A change in staffing needs due to a change in seasons

FULL EMPLOYMENT AND THE NATURAL RATE OF EMPLOYMENT

- **Full employment**—the level of employment when there is no cyclical unemployment.
- **Natural rate of unemployment**—the unemployment rate when there is full employment in the economy.

LEARN BY DOING: PRACTICE QUESTION 2

The CPI in Year 1 is 320, and the CPI in Year 2 is 328. What is the inflation rate between Years 1 and 2?

- a) 3.2%
- b) 2.5%
- c) -2.4%
- d) -1.1%

LEARN BY DOING: PRACTICE QUESTION 2

(Answer)

The CPI in Year 1 is 320, and the CPI in Year 2 is 328. What is the inflation rate between Years 1 and 2?

a) 3.2%

b) 2.5% (correct answer)

c) -2.4%

d) -1.1%