

Measuring Broad Economic Goals

Overview

The 1930s were marked by periods of chronically high unemployment in the United States. After World War II, Congress passed the Employment Act of 1946, which stated that it was the policy and responsibility of the federal government to use all practical means to promote maximum employment, production and purchasing power. The Employment Act of 1946 established three important goals for the economy:

1. *Full employment* (also called the natural level of employment) exists when most individuals who are willing to work at the prevailing wages in the economy are employed and the average price level is stable. Even under conditions of full employment, there will be some temporary unemployment as workers change jobs and as new workers seek their first jobs (*frictional* unemployment). In addition, there will be some *structural* unemployment. Structural unemployment exists because there is a mismatch between the skills of the people seeking jobs and the skills required for available jobs.
2. *Price stability* exists when the average level of prices in the economy is neither increasing nor decreasing. The goal of price stability does not imply that prices of individual items should not change — only that the average level of prices should not. A sustained rise in the average level of prices is called *inflation*; a sustained decline is called *deflation*.
3. *Economic growth* exists when the economy produces increasing amounts of goods and services over the long term. If the increase is greater than the increase in population, the amount of goods and services available per person will rise, and thus the nation's standard of living will improve.

In 1978, Congress passed the Full Employment and Balanced Growth (Humphrey-Hawkins) Act establishing two additional goals: an unemployment rate of 4 percent with a zero-percent inflation rate.

Measuring the Achievement of Economic Goals

To determine how well we are achieving the economic goals, we must measure the levels of employment, prices and economic growth. We look at how such measurements are commonly made.

Part A

Measuring Employment

The civilian unemployment rate measures how well we are achieving the goal of full employment. The unemployment rate is derived from a national survey of about 60,000 households. Each month the federal government asks these households about the employment status of household members aged 16 and older (adult population). The survey puts each person in one of three categories: employed, unemployed or not in the labor force. People who are at work (the employed) plus those who are actively looking for work (the unemployed) make up the *labor force*. The labor force is much smaller than the total adult population because many individuals are too old to work, some people are unable to work and some choose not to work.

Adapted from *Master Curriculum Guide in Economics: Teaching Strategies for High School Economics Courses* (New York: National Council on Economic Education, 1985), p. 126.

The *unemployment rate* (UR) is defined as

$$UR = \frac{\text{number of unemployed}}{\text{labor force}} \times 100$$

The *labor force participation rate* (LFPR) is defined as:

$$LFPR = \frac{\text{number in labor force}}{\text{adult population}} \times 100$$

How well has the U.S. economy met the goal of full employment? Use the formulas just given to fill in the last three columns of Figure 11.1. All of the population and labor-force data are in millions.



Figure 11.1
Civilian Employment 1960 to 2000

Year	Civilian Noninstitutional Population Aged 16 and Over	Civilian Labor Force			Unemployment Rate	Labor Force Participation Rate
		Employed	Unemployed	Total		
1960	117	66	4			
1970	137	79	4			
1980	168	99	8			
1990	188	117	7			
2000	209	135	6			

1. In which year was the economy very close to full employment as indicated in the Humphrey-Hawkins Act?
2. Why has the labor force participation rate increased since the 1960s?
3. Do the data on the national unemployment rate in Figure 11.1 reflect the extent of unemployment among a particular group in our society, such as teenagers aged 16 to 19? Explain.

Part B

Measuring Price Changes

Price indexes measure price changes in the economy. By using a price index, you can combine the prices of a number of goods and/or services and express in one number the average change for all the prices. The consumer price index, or CPI, is the measure of price changes that is probably most familiar to people. It measures changes in the prices of goods and services commonly bought by consumers. Items on which the average consumer spends a great deal of money — such as food — are given more weight (importance) in computing the index than items such as newspapers, magazines and books, on which the average consumer spends comparatively less.

The index itself is based on a market basket of approximately 400 goods and services weighted according to how much the average consumer spent in the base year. Other price indexes used in the United States include

- the producer price index, which measures changes in the prices of consumer goods before they reach the retail level, as well as the prices of supplies and equipment businesses buy, and
- the gross domestic product price deflator, or GDP price deflator, which is the most inclusive index available because it takes into account all goods and services produced.

To construct any price index, economists select a previous period, usually one year, to serve as the base period. The prices of any subsequent period are expressed as a percentage of the base period. For convenience, the base period of almost all indexes is set at 100.

For the consumer price index, the formula used to measure price change from the base period is

$$\text{Consumer price index} = \frac{\text{weighted cost of base-period items in current-year prices}}{\text{weighted cost of base-period items in base-year prices}} \times 100$$

We multiply by 100 to express the index relative to the figure of 100 for the base period.

To keep things simple, let's say an average consumer in our economy buys only three items, as described in Figure 11.2. First compute the cost of buying all the items in the base year:

30 x \$5.00	=	\$150
40 x \$6.00	=	240
60 x \$1.50	=	<u>90</u>
TOTAL	=	\$480

To compute the consumer price index for Year 1 in Figure 11.2, find the cost of buying these same items in Year 1. Try this yourself. Your answer should be \$530: the sum of (30 x \$7) + (40 x \$5) + (60 x \$2). The consumer price index for Year 1 is then equal to (\$530 / \$480) x 100, which equals 110.4. This means that what we could have bought for \$100 in the base year costs \$110.40 in Year 1.

If we subtract the base year index of 100.0 from 110.4, we get the percentage change in prices from the base year. In this example, prices rose 10.4% from the base year to Year 1.

Remember that the weights used for the consumer price index are determined by what consumers bought in the base year; in the example we used base-year quantities to figure the expenditures in

Year 1 as well as in the base year. The rate of change in this index is determined by looking at the percentage change from one year to the next. If, for example, the consumer price index were 150 in one year and 165 the next, then the year-to-year percentage change is 10 percent. You can compute the change using this formula:

$$\text{Price change} = \frac{\text{change in CPI}}{\text{beginning CPI}} \times 100$$

Here's the calculation for the example above:

$$\text{Price change} = \frac{165 - 150}{150} \times 100 = 10\%$$

Fill in the blanks in Figure 11.2, and then use the data to answer the questions.



Figure 11.2

Prices of Three Goods Compared with Base-Year Price

	Quantity Bought in Base Year	Unit Price in Base Year	Spending in Base Year	Unit Price in Year 1	Spending in Year 1	Unit Price in Year 2	Spending in Year 2
Whole pizza	30	\$5.00		\$7.00		\$9.00	
Prerecorded audio cassette	40	6.00		5.00		4.00	
Six-pack of soda	60	1.50		2.00		2.50	
Total	—	—		—		—	

4. What is the total cost of buying all the items in Year 2? _____
5. What is the CPI for Year 2? _____
6. What is the percentage increase in prices from the base year to Year 2? _____
7. In August 2000 the CPI was 172.8, and in August 2001 the CPI was 177.50. What was the percentage change in prices for this 12-month period? _____

Part C

Measuring Short-Run Economic Growth

To measure fluctuations in output (short-run economic growth), we measure increases in the quantity of goods and services produced in the economy from quarter to quarter or year to year. The *gross domestic product*, or GDP, is commonly used to measure economic growth. The GDP is the dollar value at market prices of all final goods and services produced in the economy during a stated period.

Final goods are goods intended for the final user. For example, gasoline is a final good; but crude oil, from which gasoline and other products are derived, is not.

Before using GDP to measure output growth, we must first adjust GDP for price changes. Let's say GDP in Year 1 is \$1,000 and in Year 2 it is \$1,100. Does this mean the economy has grown 10 percent between Year 1 and Year 2? Not necessarily. If prices have risen, part of the increase in GDP in Year 2 will merely represent the increase in prices. We call GDP that has been adjusted for price changes *real* GDP. If it isn't adjusted for price changes, we call it *nominal* GDP.

To compute real GDP in a given year, use the following formula:

$$\text{Real GDP in Year 1} = (\text{nominal GDP} \times 100) / \text{price index}$$

To compute real output growth in GDP from one year to another, subtract real GDP for Year 2 from real GDP in Year 1. Divide the answer (the change in real GDP from the previous year) by real GDP in Year 1. The result, multiplied by 100, is the percentage growth in real GDP from Year 1 to Year 2. (If real GDP declines from Year 1 to Year 2, the answer will be a negative percentage.) Here's the formula:

$$\text{Output growth} = \frac{(\text{real GDP in Year 2} - \text{real GDP in Year 1})}{\text{real GDP in Year 1}} \times 100$$

For example, if real GDP in Year 1 = \$1,000 and in Year 2 = \$1,028, then the output growth rate from Year 1 to Year 2 is 2.8%: $(1,028 - 1,000) / 1,000 = .028$, which we multiply by 100 in order to express the result as a percentage.

To understand the impact of output changes, we usually look at real GDP per capita. To do so, we divide the real GDP of any period by a country's average population during the same period. This procedure enables us to determine how much of the output growth of a country simply went to supply the increase in population and how much of the growth represented improvements in the standard of living of the entire population. In our example, let's say the population in Year 1 was 100 and in Year 2 it was 110. What was real GDP per capita in Years 1 and 2?

Year 1

$$\text{Real GDP per capita} = \frac{\text{Year 1 real GDP}}{\text{population in Year 1}} = \frac{\$1,000}{100} = \$10$$

Year 2

$$\text{Real GDP per capita} = \frac{\$1,028}{110} = \$9.30$$

This is adapted from William B. Walz, Michael V. Wines, Robert F. Shiller and Campbell R. McConnell, *Introduction to Macroeconomics*, 10th ed. (New York: McGraw-Hill Book Co., 1987), p. 32. Part II and Chapter 11, National Council on Economic Education, New York, N.Y.

In this example, the average standard of living fell even though output growth was positive. Developing countries with positive output growth but high rates of population growth often experience this condition.

Now try these problems using the information in Figure 11.3.

 **Figure 11.3**
Nominal and Real GDP

	Nominal GDP	Price Index	Population
Year 3	\$5,000	125	11
Year 4	\$6,600	150	12

8. What is the real GDP in Year 3? _____
9. What is the real GDP in Year 4? _____
10. What is the real GDP per capita in Year 3? _____
11. What is the real GDP per capita in Year 4? _____
12. What is the rate of real output growth between Years 3 and 4? _____
13. What is the rate of real output growth per capita between Years 3 and 4? _____
(Hint: Use per-capita data in the output growth rate formula.)

All About GDP

Part A

Is This Counted as Part of GDP?

Which of the following are *included* and which are *excluded* in calculating GDP? Explain your decisions.

1. A monthly check received by an economics student who has been granted a government scholarship
2. A farmer's purchase of a new tractor
3. A plumber's purchase of a two-year-old used truck
4. Cashing a U.S. government bond
5. The services of a mechanic in fixing the radiator on his own car
6. A Social Security check from the government to a retired store clerk
7. An increase in business inventories
8. The government's purchase of a new submarine for the Navy
9. A barber's income from cutting hair
10. Income received from the sale of Nike stock

Part A adapted from William B. Walstad, Michael W. Watts, Robert F. Smith and Campbell R. McConnell, *Instructor's Manual to Accompany Economics*, 10th ed. (New York: McGraw-Hill Book Co., 1987), p. 33. Parts B and C written by John Morton, National Council on Economic Education, New York, N.Y.

Part B**GDP: Is It Counted and Where?**

For each of the following items, write one of the following in the space provided:

C if the item is counted as *consumption spending*.

I if the item is counted as *investment spending*.

G if the item is counted as *government spending*.

NX if the item is counted as *net exports*.

NC if the item is *not counted* in GDP.

- ___ 11. You spend \$7.00 to attend a movie.
- ___ 12. A family pays a contractor \$100,000 for a house he built for them this year.
- ___ 13. A family pays \$75,000 for a house built three years ago.
- ___ 14. An accountant pays a tailor \$175 to sew a suit for her.
- ___ 15. The government increases its defense expenditures by \$1,000,000,000.
- ___ 16. The government makes a \$300 Social Security payment to a retired person.
- ___ 17. You buy General Motors Corp. stock for \$1,000 in the stock market.
- ___ 18. At the end of a year, a flour-milling firm finds that its inventories of grain and flour are \$10,000 above the amounts of its inventories at the beginning of the year.
- ___ 19. A homemaker works hard caring for her spouse and two children.
- ___ 20. Ford Motor Co. buys new auto-making robots.
- ___ 21. You pay \$300 a month to rent an apartment.
- ___ 22. Apple Computer Co. builds a new factory in the United States.
- ___ 23. R.J. Reynolds Co. buys control of Nabisco.
- ___ 24. You buy a new Toyota that was made in Japan.
- ___ 25. You pay tuition to attend college.

Part C *Indexes*

Why Are Items Counted or Not Counted in GDP?

26. We count only the final retail price of a new good or service in GDP. Why?

27. A purely financial transaction will not be counted in GDP. Why?

$$\text{index number} = \frac{\text{current-year cost}}{\text{base-year cost}} \times 100$$

28. When a homeowner does home-improvement work, the value of the labor is not counted in GDP. Why?

Constructing a Price Index

Using the information, let us now construct a price index. Fill in the blanks in Figure 13.1.

Figure 13.1

Constructing a Price Index

Item	No. of Units	Year 1		Year 2		Year 3	
		Price Per Unit	Cost of Market Basket	Price Per Unit	Cost of Market Basket	Price Per Unit	Cost of Market Basket
Cheddar	2 lbs.	\$1.75	\$3.50	\$1.50	\$3.00	\$1.90	\$3.80
Tomato	2 pint	12.00	24.00	15.00	30.00	20.00	40.00
Spaghetti	10 cans	1.25	12.50	1.60	16.00	1.70	17.00
Total Expenditure	—	—	\$40.00	—	\$50.00	—	—

1. You now have the information needed to construct a price index. The first step is to pick a base year and apply the formula. If Year 1 is selected as the base year, the index number for Year 1 is $240 / 240 \times 100 = 100$. The index number for Year 2 is $250 / 240 \times 100 = 104.17$ and the index number for Year 3 is $270 / 240 \times 100 = 112.5$.

2. These index numbers indicate that there was a 4.17 percent increase in prices between Year 1 and Year 2.

(A) What is the percentage increase between Year 1 and Year 3? _____

(B) What is the percentage increase between Year 2 and Year 3? _____

Adapted from Philip Saunders, Introduction to Macroeconomics Student Workbook, 11th ed. (Harcourt, Inc., 1998). Copyright 1999 Philip Saunders. All rights reserved.

Price Indexes

There is more than one method for constructing a price index. The easiest to understand is probably the *weighted-average* method explained in this activity. This method compares the total cost of a fixed market basket of goods in different years. The total cost is weighted by multiplying the price of each item in the basket by the number of units of the item in the basket and then adding up all the prices. The cost of the basic market basket in the current year is then expressed as a percentage of the cost of the basic market basket in the base year using this formula:

$$\text{index number} = \frac{\text{current-year cost}}{\text{base-year cost}} \times 100$$

Multiplying by 100 converts the number so it is comparable to the base-year number. The base year always has an index number of 100 since the current-year cost and the base-year cost of the market basket are the same in the base year.

Part A

Constructing a Price Index

Using this information, let us now construct a price index. Fill in the blanks in Figure 13.1.



Figure 13.1

Constructing a Price Index

Basic Market Basket Item	No. of Units	Year 1		Year 2		Year 3	
		Price Per Unit	Cost of Market Basket	Price Per Unit	Cost of Market Basket	Price Per Unit	Cost of Market Basket
Cheese	2 lbs.	\$1.75	\$3.50	\$1.50	\$3.00	\$1.50	\$3.00
Blue Jeans	2 pair	12.00	24.00	15.50		20.00	40.00
Gasoline	10 gals.	1.25	12.50	1.60	16.00	2.70	
Total Expenditure	—	—	\$40.00	—	\$50.00	—	

- We now have the information needed to construct a price index. The first step is to pick a base year and apply the formula. If Year 1 is selected as the base year, the index number for Year 1 is $(\$40 / \$40) \times 100 = 100$. The index number for Year 2 is $(\$50 / \$40) \times 100 = 125$ and the index number for Year 3 is $(\text{_____} / \$40) \times 100 = \text{_____}$.
- These index numbers indicate that there was a 25 percent increase in prices between Year 1 and Year 2.
 - What is the percentage increase between Year 1 and Year 3? _____.
 - What is the percentage increase between Year 2 and Year 3? _____.

Adapted from Phillip Saunders, *Introduction to Macroeconomics: Student Workbook*, 18th ed. (Bloomington, Ind., 1998). Copyright 1998 Phillip Saunders. All rights reserved.

Part B
Changing the Base Year

We need not have chosen Year 1 to be our base year. To determine if our choice of base year influenced the results, let's use Year 2 as our base year and recompute both the index numbers and the percentage changes between years. The first percentage change in prices has been done for you.

*** Figure 13.2**
Changing the Base Year of a Price Index

Year	Index Numbers (Year 2 = Base)	Percentage Change in Prices (calculated by using changes in index numbers)	
Year 1	$(\$40 / \$50) \times 100 = 80$	Between Yr. 1 and Yr. 2	$([100 - 80] / 80) \times 100 = 25\%$
Year 2	$(\$50 / \$50) \times 100 = 100$	Between Yr. 2 and Yr. 3	
Year 3	$(\$70 / \$50) \times 100 = 140$	Between Yr. 1 and Yr. 3	

- Do the index numbers change when the base year is changed from Year 1 to Year 2? _____
- Does the percentage change in prices between years change when the base year is changed from Year 1 to Year 2? _____ Why or why not?
- Would the price index numbers you have computed above change if a different set of expenditure patterns were selected for weighting? _____ Why?
- Under what conditions would each price index number computed above be a cost-of-living index?
- Would each price index number computed above be accurate if the quality of the goods in the basic market basket changed? _____ Explain why.
- How do you know if the quality of a product changes for the better? For the worse?

Inflation Game: Royalty for a Day

Introduction

Prices usually rise over a period of time. The same items you bought a few years ago may cost more now. For example, a restaurant menu lists its finest steak entrée at \$22; however, two years ago the same steak was only \$20. *Inflation* is the term used to describe an increase in the overall level of prices. It's an important concept to understand because it's discussed so frequently in the media: Price indexes and inflation measurements are reported almost daily in the financial pages, politicians constantly announce programs to control inflation and economists endlessly debate inflation's effects on economic growth.

In general, people don't like inflation because higher prices mean they can purchase less for the same income. However, inflation does not affect everyone in the same way. While many people are hurt by inflation, especially when it is unexpected, others may actually benefit.

This activity is designed to teach you the effects of inflation on different segments of the population: Who is hurt by unanticipated inflation and who benefits?

Overview of the Game

This activity is modeled after an ancient (1950s) television game show called "Queen for a Day," in which (women) contestants took turns describing their lives of tragedy, hardship and sorrow. After all had shared their misery, the sympathetic audience voted for the most deserving by applauding. An "applause meter" measured the sound. The winner was crowned "Queen for a Day" and presented with a robe, crown and many prizes. In this modern version, male and female economics students compete for the honor of "Royalty for a Day" by convincing the audience how much they are suffering because of inflation. Your teacher will provide additional information.

Part A

Audience Scorecard

Using the scorecard on the next page, indicate who is hurt or helped by inflation and give the reason why you think so.

Activity written by Joanne Benjamin, Los Gatos High School, Los Gatos, Calif.

Audience Scorecard

Contestant	Gain or Hurt by Inflation?	Reasoning
Priscilla <i>Homeowner / Worker</i>		
Mayor <i>Government official</i>		
Peter <i>Store owner</i>		
Theresa <i>Auto worker / Union member</i>		
Jerry <i>Real-estate developer / Speculator</i>		
Elmer <i>Retiree</i>		
Mr. Sad Class <i>Teacher</i>		
Lucy <i>High school senior</i>		
Bernie <i>Bank president</i>		
Helga <i>Retiree</i>		
Jerome <i>Potential homeowner / Borrower</i>		
Lawrence <i>British businessowner</i>		

Part B

Spectrum Technique for Analyzing Contestants

Distribute the contestants along the spectrum, and explain why you think each should be located where you put him or her.



Figure 14.1

Spectrum Technique for Analyzing Contestants

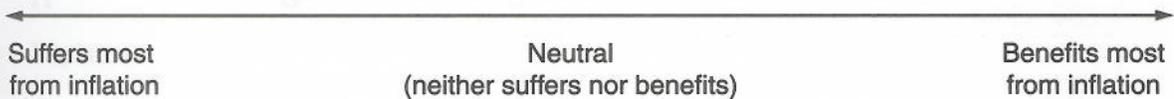
1. Banks extend any fixed-rate loans.

H _____ G _____ U _____

Explain:

2. A farmer buys machinery with a fixed-rate loan to be repaid over a 10-year period.

H _____ G _____ U _____



3. Your family buys a new home with an adjustable-rate mortgage.

H _____ G _____ U _____

Explain:

4. Your savings from your summer job are in a savings account paying a fixed rate of interest.

H _____ G _____ U _____

Explain:

5. A widow lives entirely on income from fixed-rate corporate bonds.

H _____ G _____ U _____

Explain:

Activity written by Scott Shackelford, Macdonough High School, Buffalo, N.Y., and Kathleen Whitsett, Princeton High School, Cincinnati, Ohio.

Who Is Hurt and Who Is Helped by Unanticipated Inflation?

In Questions 1 through 15 decide which people or groups are hurt by unanticipated inflation and which benefit from unanticipated inflation. Circle the correct response, and explain why you answered as you did.

H means the person or group is *hurt* by unanticipated inflation.

G means the person or group *gains* from unanticipated inflation.

U means it is *uncertain* if the person or group is affected by unanticipated inflation or if the effects are unclear.

1. Banks extend many fixed-rate loans.

H G U

Explain:

2. A farmer buys machinery with a fixed-rate loan to be repaid over a 10-year period.

H G U

Explain:

3. Your family buys a new home with an adjustable-rate mortgage.

H G U

Explain:

4. Your savings from your summer job are in a savings account paying a fixed rate of interest.

H G U

Explain:

5. A widow lives entirely on income from fixed-rate corporate bonds.

H G U

Explain:

Activity written by Betty Shackelford, Maconaquah High School, Bunker Hill, Ind., and Kathleen Whitsett, Princeton High School, Cincinnati, Ohio.

6. A retired couple lives entirely on income from a pension the woman receives from her former employer.

H G U

Explain:

7. A retired man lives entirely on income from Social Security.

H G U

Explain:

8. A retired bank official lives entirely on income from stock dividends.

H G U

Explain:

9. The federal government has a \$5,000,000,000 debt.

H G U

Explain:

10. A firm signs a contract to provide maintenance services at a fixed rate for the next five years.

H G U

Explain:

11. A state government receives revenue mainly from a progressive income tax.

H G U

Explain:

Types of Unemployment

There are three types of unemployment:

- *Frictional unemployment* includes people who are temporarily between jobs. They may have quit one job to find another, or they could be trying to find the best opportunity after graduating from high school or college.
- *Cyclical unemployment* includes people who are not working because firms do not need their labor due to a lack of demand or a downturn in the business cycle. For example, if people are not buying many goods and services, workers are laid off.
- *Structural unemployment* involves mismatches between job seekers and job openings. Unemployed people who lack skills or do not have sufficient education are structurally unemployed.

At full employment, we have frictional and structural unemployment, but cyclical unemployment would be zero. At full employment, the level of unemployment is called the *natural rate of unemployment*.

For each of the following situations, put the appropriate letter before the example.

F if it is an example of *frictional* unemployment.

C if it is an example of *cyclical* unemployment.

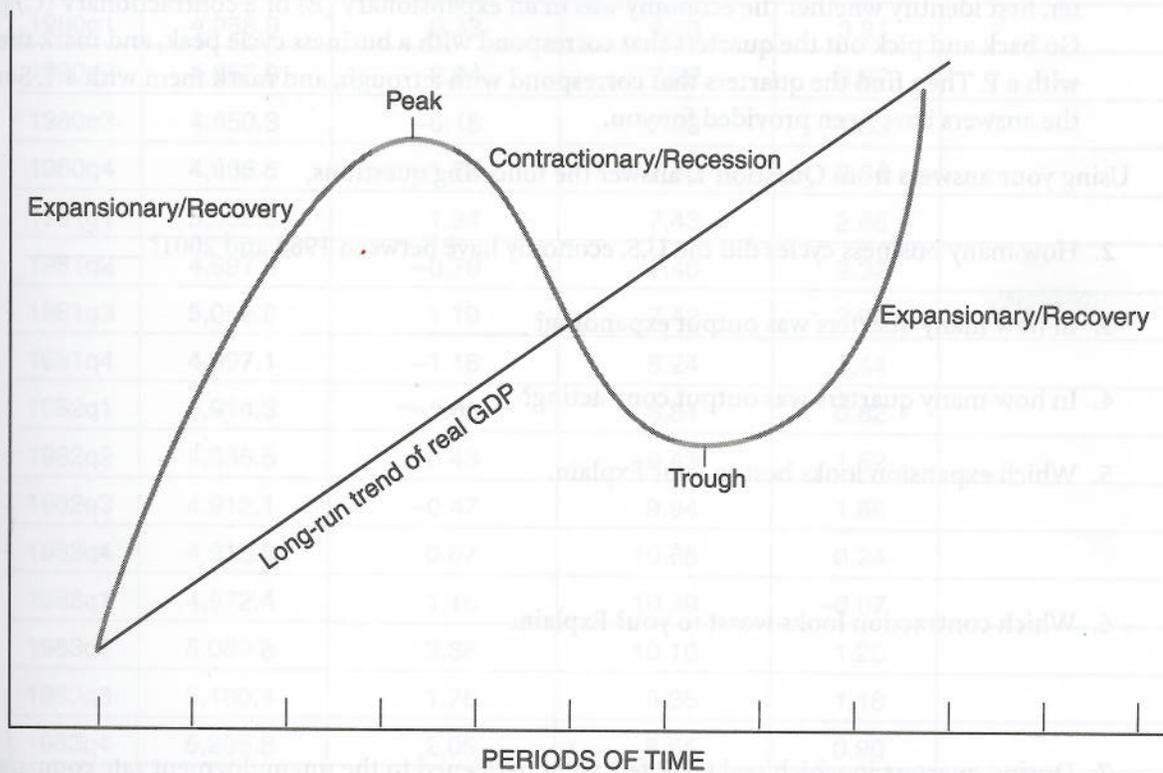
S if it is an example of *structural* unemployment.

- ___ 1. A computer programmer is laid off because of a recession.
- ___ 2. A literary editor leaves her job in New York to look for a new job in San Francisco.
- ___ 3. An unemployed college graduate is looking for his first job.
- ___ 4. Advances in technology make the assembly-line worker's job obsolete.
- ___ 5. Slumping sales lead to the cashier being laid off.
- ___ 6. An individual refuses to work for minimum wage.
- ___ 7. A high school graduate lacks the skills necessary for a particular job.
- ___ 8. Workers are laid off when the local manufacturing plant closes because the product made there isn't selling.
- ___ 9. A skilled glass blower becomes unemployed when a new machine does her job faster.

Activity written by John Morton, National Council on Economic Education, New York, N.Y., and James Spellicy, Lowell High School, San Francisco, Calif.

The Business Cycle

* Figure 17.1
The Business Cycle



The curved line on Figure 17.1 shows a sample business cycle for an economy. The straight line represents the long-run trend of real GDP.

The business cycle can conveniently be divided into four phases:

1. **Expansionary or recovery phase.** Real output in the economy is increasing and the unemployment rate is declining. As the economic expansion continues, inflation may begin to accelerate.
2. **Peak.** Real output, GDP, is at its highest point of the business cycle.
3. **Contractionary or recession phase.** Real output in the economy is decreasing, and the unemployment rate is rising. As the contraction continues, inflationary pressures subside. If the recession continues long enough, prices may actually start to fall, a situation known as deflation.
4. **Trough.** The lowest point of real GDP reached during the business cycle is known as the trough. If the trough is particularly deep, it may be called a depression. A depression is an economic situation where the level of output falls to especially low levels and unemployment climbs to very high levels relative to the historical average. There is no precise decline in out-

Activity written by David Nelson, Western Washington University, Bellingham, Wash., with revision by Rae Jean B. Goodman, U.S. Naval Academy, Annapolis, Md.

put at which a serious recession becomes a depression. However, most business cycles do not end in a depression. The most recent depression the United States experienced was during the 1930s.

1. Figure 17.2 contains information for the U.S. economy from 1980 through 2001. For each quarter, first identify whether the economy was in an expansionary (E) or a contractionary (C) phase. Go back and pick out the quarters that correspond with a business cycle peak, and mark them with a P. Then find the quarters that correspond with a trough, and mark them with a T. Some of the answers have been provided for you.

Using your answers from Question 1, answer the following questions.

2. How many business cycles did the U.S. economy have between 1980 and 2001? _____
3. In how many quarters was output expanding? _____
4. In how many quarters was output contracting? _____
5. Which expansion looks best to you? Explain.
6. Which contraction looks worst to you? Explain.

7. During quarters in which real GDP fell, what happened to the unemployment rate compared with the previous quarter? Why?

8. Look at the unemployment rate in quarters corresponding to a business cycle peak. Why do you think there was still some unemployment in these quarters?

9. Look at the unemployment rate in quarters corresponding to recoveries. Why do you think the unemployment rate remained high?

10. Based on the years 1980 to 2001, how does the rate of inflation correspond with the business cycle?



Figure 17.2

The U.S. Economy from 1980

Year	Real GDP in 1996 Dollars (billions)	% Change From Previous Quarter	Civilian Unemployment Rate	Inflation Rate (CPI)	Phase of Business Cycle
1980q1	4,958.9	0.33	6.30	3.91	
1980q2	4,857.8	-2.04	7.32	3.67	
1980q3	4,850.3	-0.15	7.68	1.83	
1980q4	4,936.6	1.78	7.40	2.64	
1981q1	5,032.5	1.94	7.43	2.65	
1981q2	4,997.3	-0.70	7.40	2.32	
1981q3	5,056.8	1.19	7.42	2.82	
1981q4	4,997.1	-1.18	8.24	1.44	
1982q1	4,914.3	-1.66	8.84	0.82	
1982q2	4,935.5	0.43	9.43	1.52	
1982q3	4,912.1	-0.47	9.94	1.88	
1982q4	4,915.6	0.07	10.68	0.24	
1983q1	4,972.4	1.16	10.39	-0.07	
1983q2	5,089.8	2.36	10.10	1.26	
1983q3	5,180.4	1.78	9.36	1.18	
1983q4	5,286.8	2.05	8.54	0.90	
1984q1	5,402.3	2.18	7.87	1.12	E
1984q2	5,493.8	1.69	7.48	1.08	E
1984q3	5,541.3	0.86	7.45	1.10	E
1984q4	5,583.1	0.75	7.28	0.73	E
1985q1	5,629.7	0.83	7.28	0.63	E
1985q2	5,673.8	0.78	7.29	1.23	E
1985q3	5,758.6	1.49	7.21	0.71	E
1985q4	5,806.0	0.82	7.05	0.89	E
1986q1	5,858.9	0.91	7.02	0.21	E
1986q2	5,883.3	0.42	7.18	-0.21	E
1986q3	5,937.9	0.93	6.99	0.73	E
1986q4	5,969.5	0.53	6.83	0.55	E
1987q1	6,013.3	0.73	6.62	1.12	E

* Figure 17.2 (continued)

Year	Real GDP in 1996 Dollars (billions)	% Change From Previous Quarter	Civilian Unemployment Rate	Inflation Rate (CPI)	Phase of Business Cycle
1987q2	6,077.2	1.06	6.28	1.31	E
1987q3	6,128.1	0.84	6.01	1.15	E
1987q4	6,234.4	1.73	5.87	0.84	E
1988q1	6,275.9	0.67	5.73	0.61	E
1988q2	6,349.8	1.18	5.49	1.26	E
1988q3	6,382.3	0.51	5.49	1.33	E
1988q4	6,465.2	1.30	5.35	1.04	
1989q1	6,543.8	1.22	5.22	1.11	
1989q2	6,579.4	0.54	5.24	1.64	
1989q3	6,610.6	0.47	5.28	0.81	
1989q4	6,633.5	0.35	5.37	0.96	
1990q1	6,716.3	1.25	5.30	1.72	
1990q2	6,731.7	0.23	5.34	1.02	
1990q3	6,719.4	-0.18	5.69	1.73	
1990q4	6,664.2	-0.82	6.11	1.62	
1991q1	6,631.4	-0.49	6.57	0.82	
1991q2	6,668.5	0.56	6.82	0.59	
1991q3	6,684.9	0.25	6.85	0.79	
1991q4	6,720.9	0.54	7.10	0.76	E
1992q1	6,783.3	0.93	7.38	0.70	E
1992q2	6,846.8	0.94	7.60	0.82	E
1992q3	6,899.7	0.77	7.63	0.79	E
1992q4	6,990.6	1.32	7.41	0.71	E
1993q1	6,988.7	-0.03	7.15	0.85	C
1993q2	7,031.2	0.61	7.07	0.77	E
1993q3	7,062.0	0.44	6.80	0.39	E
1993q4	7,168.7	1.51	6.62	0.69	E
1994q1	7,229.4	0.85	6.56	0.64	E
1994q2	7,330.2	1.39	6.17	0.64	E
1994q3	7,370.2	0.55	6.00	0.88	E

* Figure 17.2 (continued)

Year	Real GDP in 1996 Dollars (billions)	% Change From Previous Quarter	Civilian Unemployment Rate	Inflation Rate (CPI)	Phase of Business Cycle
1994q4	7,461.1	1.23	5.62	0.47	E
1995q1	7,488.7	0.37	5.48	0.82	E
1995q2	7,503.3	0.19	5.68	0.88	E
1995q3	7,561.4	0.77	5.66	0.44	E
1995q4	7,621.9	0.80	5.57	0.48	E
1996q1	7,676.4	0.72	5.55	0.91	E
1996q2	7,802.9	1.65	5.47	0.99	E
1996q3	7,841.9	0.50	5.26	0.53	E
1996q4	7,931.3	1.14	5.31	0.72	E
1997q1	8,016.4	1.07	5.23	0.67	E
1997q2	8,131.9	1.44	4.98	0.40	E
1997q3	8,216.6	1.04	4.86	0.40	E
1997q4	8,272.9	0.69	4.68	0.39	E
1998q1	8,396.3	1.49	4.64	0.27	E
1998q2	8,442.9	0.56	4.42	0.54	E
1998q3	8,528.5	1.01	4.53	0.39	E
1998q4	8,667.9	1.63	4.43	0.35	E
1999q1	8,733.5	0.76	4.26	0.39	E
1999q2	8,771.2	0.43	4.26	0.97	E
1999q3	8,871.5	1.14	4.25	0.62	E
1999q4	9,049.9	2.01	4.10	0.62	E
2000q1	9,102.5	0.58	4.02	0.99	E
2000q2	9,229.4	1.39	4.00	1.06	E
2000q3	9,260.1	0.33	4.06	0.80	E
2000q4	9,303.9	0.47	3.97	0.54	E
2001q1	9,334.5	0.33	4.19	0.96	E
2001q2	9,341.7	0.08	4.47	1.04	E

Test Your Understanding of Macroeconomic Indicators

Answer the questions and briefly explain your answers.

1. The unemployment rate and employment both go up. Ellen says that it is not possible for both to rise at the same time. Is Ellen correct or incorrect? Why?
2. True, false or uncertain, and explain why? "Gross domestic product measures the amount of wealth in the economy."
3. True, false or uncertain, and explain why? "A decrease in gross domestic product must reduce a person's standard of living."
4. True, false or uncertain, and explain why? "If nominal GDP increases by 5 percent and the price level increases by 7 percent, real GDP has decreased."
5. True, false or uncertain, and explain why? "In preparing an index of prices, it is important that all commodities entering the index be given equal weight."
6. True, false or uncertain, and explain why? "*Frictional* and *structural* unemployment are two words for the same thing."

Several questions come from Phillip Saunders, *Introduction to Macroeconomics: Student Workbook*, 18th ed. (Bloomington, Ind., 1998). Copyright 1998 Phillip Saunders. All rights reserved. Betty Shackelford, Maconaquah High School, Bunker Hill, Ind., and Kathleen Whitsett, Princeton High School, Cincinnati, Ohio, contributed to this activity.

7. Why does unanticipated inflation help borrowers and hurt lenders?

8. True, false or uncertain, and explain why? "Inflation always increases when unemployment decreases."

9. True, false or uncertain, and explain why? "If the economy is at full employment, the unemployment rate is zero."

10. True, false or uncertain, and explain why? "Seasonal unemployment is a continual worry because some people are out of work on a regular basis."

Sample Multiple-Choice Questions

Circle the letter of each correct answer.

- In the circular flow diagram, which of the following is true in the product market?
 - Households sell goods and services to business firms.
 - Households sell resources to business firms.
 - Business firms sell resources to households.
 - Business firms sell goods and services to households.
 - Households buy resources from business firms.
- In the circular flow diagram, which of the following is true in resource or factor markets?
 - Households buy resources from business firms.
 - Households sell products to business firms.
 - Households sell resources to business firms.
 - Business firms sell goods and services to households.
 - Business firms sell resources to households.
- Which of the following is the best measure of the production or output of an economy?
 - Consumer price index
 - Unemployment rate
 - Gross domestic product
 - Prime rate
 - Index of leading indicators
- The market value of all final goods and services produced in the economy in a given year is
 - net national product.
 - national income.
 - personal income.
 - gross domestic product.
 - producer price index.
- Which of the following people would be considered unemployed?
 - A person who quits work to care for aging parents
 - A person who stayed home to raise his children and now starts looking for a job
 - A person who quits a job to return to school full time
 - A person who is qualified to teach but is driving a bus until a teaching job is available
 - A person who works two part-time jobs but is looking for a full-time job
- In the gross domestic product, the largest dollar amount is
 - consumer spending.
 - rental payments.
 - net exports of goods and services.
 - gross private domestic investment.
 - government purchases of goods and services.
- The largest dollar amount of gross domestic product is
 - rental payments.
 - government expenditures on goods and services.
 - profit.
 - net interest.
 - wages and salaries to employees.