

# UNEMPLOYMENT AND INFLATION

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## FUNDAMENTAL QUESTIONS

1. What is a business cycle?

**Business cycles** are recurring patterns of ups and downs in real GDP. A typical cycle has four stages: expansion, peak, contraction, and trough. During an economic expansion (boom), output, employment, incomes, and prices all rise. A peak is reached, after which economic activity declines. During the contraction (recession) phase, output, employment, and income all drop. If the contraction is severe enough, prices may also decline. The trough marks the end of a contraction and the beginning of a new expansion.

2. How is the unemployment rate defined and measured?

The **unemployment rate** is the percentage of the labor force that is not working. Economists do not include the entire population in the labor force: it is of little consequence, for example, that a newborn baby is unemployed. To be in the U.S. labor force, an individual must be working or actively seeking work.

Some types of unemployment have more impact on the economy than others. *Frictional unemployment* occurs when previously employed workers change jobs or new workers seek their first jobs. *Seasonal unemployment* is a product of regular, recurring changes in the hiring needs of certain industries. Both these types of unemployment tend to be short term. *Structural unemployment*, on the other hand, results from fundamental changes in the structure of the economy, and can be long term. Structurally unemployed persons can't find *any* job they can do. Likewise, *cyclically unemployed* persons who are out of work because the economy is in a recession may be unemployed for a long time.

3. What is the cost of unemployed resources?

The cost of unemployed resources is lost output. **Potential real GDP** is the level of output that can be produced if all nonlabor resources are fully utilized and unemployment is at its natural rate—that is, if the economy is producing the level of output it can realistically produce. To measure lost output, one subtracts the actual real GDP from potential real GDP. The resulting figure indicates the *GDP gap*—the cost of unemployed resources.

Economists do not advocate a zero unemployment rate. Some unemployment is necessary so that workers may be channeled to their most productive employment as their skills change. Economists use the term **natural rate of unemployment** to describe the unemployment rate that would exist in the absence of cyclical unemployment. It describes the labor market when the economy is producing what it realistically can produce. Estimates of the natural rate of unemployment vary from 4 percent to around 7 percent.

## 4. What is inflation?

**Inflation** is a sustained rise in the average level of prices. This does not mean that *all* prices will rise. Some may rise and some may fall, but inflation occurs when the *average* level of prices rises.

## 5. Why is inflation a problem?

**Inflation** is not a problem if prices and incomes rise at the same rate. But if incomes rise more slowly than prices, households will not be able to buy as many goods and services as they did before. Unanticipated inflation redistributes income away from those who receive fixed incomes toward those who make fixed expenditures. Suppose that your mother agrees to lend you \$1,000 for school and that prices unexpectedly double between the time you receive the money and the time you repay your mother. Your mother has lost half of her purchasing power: the \$1,000 that you paid back can only buy what \$500 bought at the time she lent you the money. Your mother, like other creditors, has lost purchasing power to inflation.

## Key Terms

business cycle  
recession  
depression  
leading indicator  
coincident indicator

lagging indicator  
unemployment rate  
discouraged workers  
underemployment  
potential real GDP

natural rate of unemployment  
inflation  
nominal interest rate  
real interest rate  
hyperinflation

## Quick-Check Quiz

### Section 1: Business Cycles

- All of the following are leading economic indicators except
  - the average workweek.
  - unemployment claims.
  - new plant and equipment orders.
  - the prime interest rate.
  - stock prices.
- All of the following change at the same time real output changes except
  - labor cost per unit of output.
  - personal income.
  - payroll employment.
  - industrial production.
  - manufacturing and trade sales.
- Which of the following does *not* change its value after the value of real GDP has changed?
  - outstanding commercial loans
  - the prime interest rate
  - the labor cost per unit of output
  - unemployment duration
  - All of the above are lagging indicators.

4. In correct sequence, the four stages of the business cycle are
  - a. peak, boom, expansion, and contraction.
  - b. peak, contraction, trough, and expansion.
  - c. recession, expansion, peak, and boom.
  - d. contraction, trough, expansion, and boom.
  - e. recession, contraction, peak, and boom.
  
5. Which of the following statements is true?
  - a. Leading indicators are infallible predictors of future changes in real GDP.
  - b. Business fluctuations are called business cycles because they tend to follow regular and predictable patterns.
  - c. Real GDP has risen over the long term.
  - d. According to the NBER, there have been eight recessions since 1929.
  - e. The average time workers are unemployed is a coincident indicator.
  
6. Which of the following statements is false?
  - a. The average workweek is a leading indicator.
  - b. The inventories to sales ratio is a lagging indicator.
  - c. Manufacturing and trade sales are a coincident indicator.
  - d. The money supply is a coincident indicator.
  - e. Delivery times of goods are a leading indicator.
  
7. Which of the following is a leading indicator?
  - a. manufacturers' new orders
  - b. consumer credit to personal income ratio
  - c. inflation rate for services
  - d. personal income
  - e. payroll employment

## Section 2: Unemployment

1. To arrive at the number in the U.S. labor force, we subtract all of the following from the number of all U.S. residents except
  - a. residents under 16 years old.
  - b. institutionalized adults.
  - c. adults who are not looking for work.
  - d. unemployed adults.
  - e. All of the above must be subtracted from the number of U.S. residents to arrive at the number in the labor force.
  
2. Which of the following cause(s) the unemployment rate to be overstated?
  - a. discouraged workers
  - b. underground economic activities
  - c. part-time employment
  - d. underemployment
  - e. students who are not looking for work

3. A graduating college basketball star who has one month off before reporting to his new NBA team is an example of
  - a. frictional unemployment.
  - b. structural unemployment.
  - c. cyclical unemployment.
  - d. technological unemployment.
  - e. a rich, employed person.
  
4. Unemployed migrant workers are examples of
  - a. frictional unemployment.
  - b. seasonal unemployment.
  - c. structural unemployment.
  - d. discouraged workers.
  - e. cyclical unemployment.
  
5. A person who finds that her skills are no longer needed because she has been replaced by a machine is an example of
  - a. frictional unemployment.
  - b. seasonal unemployment.
  - c. cyclical unemployment.
  - d. search unemployment.
  - e. structural unemployment.
  
6. A steelworker who has been laid off during a recession is an example of
  - a. frictional unemployment.
  - b. seasonal unemployment.
  - c. cyclical unemployment.
  - d. search unemployment.
  - e. structural unemployment.
  
7. Job training and counseling are policy measures used to fight primarily
  - a. frictional unemployment.
  - b. seasonal unemployment.
  - c. cyclical unemployment.
  - d. structural unemployment.
  - e. both a and d.
  
8. Which of the following statements is false?
  - a. The GDP gap widens during recessions and narrows during expansions.
  - b. The influx of women and baby boomers into the labor force has increased the natural rate of unemployment in recent decades.
  - c. Men have higher unemployment rates than women because women move out of the labor force to have children.
  - d. Teenagers have the highest unemployment rates in the economy.
  - e. Nonwhites have higher unemployment rates than whites.

Use the following table to answer questions 9 through 11.

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**Unemployment Data**

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Of 2,400 people surveyed, 565 are not working. The status of those not working is as follows:

215 are full-time students.

52 were looking for a job, but became discouraged and quit looking.

32 are in long-term care facilities.

38 are at least 16 years old and are looking for work.

89 are retirees.

112 are under 16 years old.

27 are working in the underground economy and are not looking for "real" job.

19 of those working were under 16 years old.

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9. The number officially unemployed is
- 565.
  - 332.
  - 298.
  - 364.
  - 38.
10. The number officially in the labor force is
- 1,835.
  - 2,256.
  - 1,873.
  - 1,854.
  - 1,900.
11. The official unemployment rate is
- 24 percent.
  - 2 percent.
  - 17 percent.
  - 4 percent.
  - 0 percent.

**Section 3: Inflation**

1. If a college professor's income has increased by 3 percent at the same time that prices have risen by 5 percent, the professor's real income has
- decreased by 2 percent.
  - increased by 2 percent.
  - increased by 7 percent.
  - decreased by 7 percent.
  - not changed.

2. Which of the following groups benefits from unanticipated inflation?
  - a. creditors
  - b. retirees on fixed incomes
  - c. debtors
  - d. workers whose salaries are tied to the CPI
  - e. suppliers who have contracted to supply a fixed amount of their product for a fixed price
  
3. Which of the following could be a cause of demand-pull inflation?
  - a. war in the Middle East, which can increase oil prices
  - b. drought in the Midwest, which can cause crop failures
  - c. suppliers who increase their profit margins by raising prices faster than their costs increase
  - d. increased government spending in the absence of increased taxes
  - e. labor unions, which can force wage increases that are not justified by increases in productivity
  
4. Which of the following statements is true?
  - a. The higher the price level, the higher the purchasing power of money.
  - b. Demand-pull inflation can be a result of increased production costs.
  - c. High rates of inflation are generally caused by rapid growth of the money supply.
  - d. Unexpectedly high inflation redistributes income away from those who make fixed dollar payments toward those who receive fixed dollar payments.
  - e. The real interest rate increases as the rate of inflation increases.
  
5. A lender who does not expect any change in the price level is willing to make a mortgage loan at a 10 percent rate of interest. If that same lender anticipates a future inflation rate of 5 percent, she will charge the borrower
  - a. 5 percent interest.
  - b. 10 percent interest.
  - c. 15 percent interest.
  - d. 2 percent interest.
  - e.  $\frac{1}{2}$  percent interest.

## Practice Questions and Problems

### Section 1: Business Cycles

1. The recurring pattern of real GDP rising and then falling is called a(n) \_\_\_\_\_.
2. When real GDP is growing, the economy is in the \_\_\_\_\_ phase, or boom period, of the business cycle.
3. The \_\_\_\_\_ marks the end of a contraction and the start of a new business cycle.
4. The \_\_\_\_\_ marks the end of the expansion phase of a business cycle.
5. Real GDP falls during the contraction, or \_\_\_\_\_, phase of the business cycle.
6. The \_\_\_\_\_ has the responsibility of officially dating recessions in the United States.
7. A(n) \_\_\_\_\_ is a prolonged period of severe economic contraction.

8. \_\_\_\_\_ change before real GDP changes.
9. \_\_\_\_\_ are economic variables that tend to change at the same time real output changes.
10. Variables that do not change their value until after the value of real GDP has changed are called \_\_\_\_\_.

## Section 2: Unemployment

1. The \_\_\_\_\_ is the percentage of the labor force that is not working.
2. \_\_\_\_\_ have given up looking for work because they believe that no one will hire them.
3. The employment of workers in tasks that do not fully utilize their productive potential is called \_\_\_\_\_.
4. \_\_\_\_\_ unemployment is a product of business-cycle fluctuations.
5. \_\_\_\_\_ unemployment is a product of regular, recurring changes in the hiring needs of certain industries over the months or seasons of the year.
6. \_\_\_\_\_ unemployment is a product of short-term movements of workers between jobs and of first-time job seekers.
7. \_\_\_\_\_ unemployment is a product of technological change and other changes in the structure of the economy.
8. The level of output produced when nonlabor resources are fully utilized and unemployment is at its natural rate is called \_\_\_\_\_.
9. The \_\_\_\_\_ is the unemployment rate that would exist in the absence of cyclical unemployment.
10. Potential real GDP minus actual real GDP equals the \_\_\_\_\_.
11. The existence of \_\_\_\_\_ and \_\_\_\_\_ causes the official unemployment rate in the United States to be understated.
12. The existence of the underground economy causes the official unemployment rate in the United States to be \_\_\_\_\_.
13. Economists measure the cost of unemployment in terms of \_\_\_\_\_.

### Section 3: Inflation

1. \_\_\_\_\_ is a sustained rise in the average level of prices.
2. The higher the price level, the \_\_\_\_\_ the purchasing power of the dollar.
3. The observed rate of interest in the market is called the \_\_\_\_\_ rate of interest.
4. The nominal interest rate minus the rate of inflation equals the \_\_\_\_\_ interest rate.
5. Unexpectedly high inflation hurts \_\_\_\_\_ and benefits \_\_\_\_\_ because it lowers real interest rates.
6. \_\_\_\_\_ inflation is the result of increased spending that is not offset by increases in the supply of goods and services.
7. Increases in prices caused by increases in production costs characterize \_\_\_\_\_ inflation.
8. A very high rate of inflation is called a(n) \_\_\_\_\_.
9. \_\_\_\_\_-push pressures are created by suppliers who want to increase their profit margins by raising prices faster than their costs increase.
10. \_\_\_\_\_-push pressures are created by labor unions and workers who are able to increase their wages faster than their productivity.

## Thinking About and Applying Unemployment and Inflation

### I. Economic Indicators

A clumsy economist has dropped his basket of the following economic indicators, and now they are all jumbled together. Try to use economic reasoning to sort them out in the table that follows.

Labor cost per unit of output  
 Money supply  
 Stock prices  
 Prime interest rate  
 Payroll employment  
 Average workweek  
 Outstanding commercial loans  
 New plant and equipment orders  
 Unemployment duration  
 Unemployment claims  
 Manufacturing and trade sales  
 New building permits  
 Personal income  
 Consumer credit to personal income ratio



Manufacturers' new orders  
 Inventories to sales ratio  
 Delivery time of goods  
 Industrial production  
 Consumer expectations  
 Inflation rate for services  
 Interest rate spread

Leading Indicators	Coincident Indicators	Lagging Indicators
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

## II. Unemployment Rates and Discouraged Workers

- The tiny country of Lanastan has a civilian labor force of 40,000, of whom 38,000 are employed. There are \_\_\_\_\_ unemployed persons in Lanastan, and the unemployment rate is \_\_\_\_\_ percent.
- Five hundred of the unemployed people become discouraged and quit looking for a job. Now the official unemployment rate in Lanastan is \_\_\_\_\_ percent. These discouraged workers have \_\_\_\_\_ the unemployment rate.

## III. In or Out of the Labor Force?

The Department of Labor defines the labor force as all U.S. residents minus residents under 16 years old minus institutionalized adults minus adults who are not looking for work. A person is seeking work if he or she is available to work, has looked for work in the past four weeks, is waiting for a recall after being laid off, or is starting a job within 30 days.

Place an "X" next to those who would be considered part of the labor force.

- \_\_\_\_\_ Björn Dimmen is a Norwegian citizen who is looking for a job in the United States. He plans to move to the United States to marry his American sweetheart.
- \_\_\_\_\_ Carl Wolcott is a retired police chief who has recently been offered a position as head of his state's police academy. Mr. Wolcott is happily raising beagles and has turned down the job.

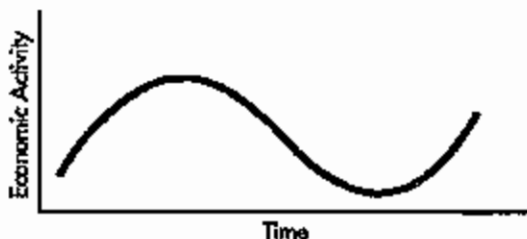
\_\_\_\_\_ Blake Stephans has just been laid off from his quality-control job at Boeing. He is waiting for a recall, but the company has just announced it will lay off even more workers.

\_\_\_\_\_ Thomas Buttking is a recent college graduate who quit his part-time job but is taking the summer off before searching for a "real" job.

\_\_\_\_\_ Joe Shocker, a pitcher on Wichita State University's baseball team, has been selected in the first round of the draft and expects to join the Mets after he finishes playing in the College World Series. In the meantime he will enjoy the sights and sounds of beautiful downtown Omaha.

#### IV. Illustrating the Business Cycle

The horizontal axis measures time and the vertical axis measures economic activity. Label the points on the diagram with the appropriate phases of the business cycle.



#### V. Economic Reporting

Assume you are a reporter for the *Wall Street Journal*. Respond to the following developments. You should bear in mind whether the indicator in question leads, lags, or moves with the economy.

1. The Commerce Department has just released its index of leading indicators, which rose only 0.1 percent in April after dropping 1 percent the previous month. What can you tell your readers about the probable growth of the economy?
2. The Commerce Department reported that new plant and equipment orders were flat in April, after a 3.7 percent decline in March. What does this news imply about the economy?
3. Manufacturers' new orders rose in April, up 4.8 percent from March.
4. The Commerce Department originally reported that the economy grew at a 1.8 percent annual rate in the first quarter. What measure was released? The figures were revised after the U.S. trade deficit increased sharply in March. Would your estimate of economic growth be revised upward or downward as a result of the trade figures?



4. Suppose you were a farmer back in the 1890s. You took out a mortgage loan to buy your farm, and you have to pay \$100 every month for the next twenty years to pay off the mortgage loan. Candidate B for U.S. president advocates an economic policy that will cause significant inflation in the future, while Candidate M advocates policies that will lead to stable or falling prices.
- a. Based on your own economic self-interest, which candidate would you vote for, and why?

b. Based on economic self-interest, which candidate would your banker vote for, and why?

5. A politician was recently heard making the following argument:

Unemployment is a tragedy, both for the unemployed people and for the U.S. economy. We need to use government policies to create more jobs until the number of unemployed people is down to zero. No one should ever be unemployed.

Use economic reasoning to explain why economists would disagree with the goal of zero unemployment.

If your instructor assigns these problems, write your answers above, then tear out this page and hand it in.

## Answers

### Quick-Check Quiz

#### *Section 1: Business Cycles*

1. d; 2. a; 3. e; 4. b; 5. c; 6. d; 7. a

If you missed any of these questions, you should go back and review Section 1 of Chapter 8.

#### *Section 2: Unemployment*

1. d; 2. b; 3. a; 4. b; 5. e; 6. c; 7. e; 8. c; 9. e; 10. d; 11. b

If you missed any of these questions, you should go back and review Section 2 of Chapter 8.

#### *Section 3: Inflation*

1. a; 2. c; 3. d; 4. c; 5. c

If you missed any of these questions, you should go back and review Section 3 of Chapter 8.

### Practice Questions and Problems

#### *Section 1: Business Cycles*

1. business cycle
2. expansion
3. trough
4. peak
5. recession
6. NBER (National Bureau of Economic Research)
7. depression
8. Leading indicators
9. Coincident indicators
10. lagging indicators

#### *Section 2: Unemployment*

1. unemployment rate
2. Discouraged workers
3. underemployment
4. Cyclical
5. Seasonal
6. Frictional (or search)
7. Structural
8. potential real GDP
9. natural rate of unemployment
10. GDP gap
11. discouraged workers; underemployment
12. overstated
13. lost output (or the GDP gap)

### ***Section 3: Inflation***

1. Inflation
2. lower
3. nominal
4. real
5. creditors; debtors
6. Demand-pull
7. cost-push
8. hyperinflation
9. Profit
10. Wage

## **Thinking About and Applying Unemployment and Inflation**

### ***I. Economic Indicators***

#### **Leading Indicators**

Money supply  
Stock prices  
Average workweek  
New plant and equipment orders  
Unemployment claims  
New building permits  
Manufacturers' new orders  
Delivery time of goods  
Consumer expectations  
Interest rate spread

#### **Coincident Indicators**

Payroll employment  
Manufacturing and trade sales  
Personal income  
Industrial production

#### **Lagging Indicators**

Labor cost per unit of output  
Prime interest rate  
Outstanding commercial loans  
Unemployment duration  
Consumer credit to personal income ratio  
Inventories to sales ratio  
Inflation rate for services

## II. Unemployment Rates and Discouraged Workers

1. 2,000; 5

To find the number of unemployed persons, we subtract the number employed from the number in the labor force:  $40,000 - 38,000 = 2,000$ . The unemployment rate is the number unemployed divided by the labor force:  $2,000/40,000 = .05$ , or 5 percent.

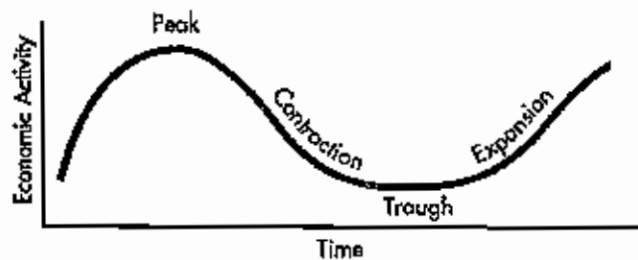
2. 3.75; understated

If 500 unemployed people drop out of the labor force, the labor force becomes  $40,000 - 500 = 39,500$ . We still have 38,000 employed, so the number of "unemployed" people is  $39,500 - 38,000 = 1,500$ . The official unemployment rate becomes  $1,500/39,500 = .0379746$ , or about 3.8 percent. Thus the existence of discouraged workers understates the true unemployment rate.

## III. In or Out of the Labor Force?

_____	Mr. Dimmen is not in the U.S. labor force since he is not a U.S. resident.
_____	Mr. Wolcott is not looking for work and therefore would not be considered part of the labor force.
X _____	Mr. Stephens was laid off and is waiting for a recall, so he is part of the labor force.
_____	Thomas Buttking is not looking for work and therefore would not be considered part of the labor force.
X _____	Joe Shocker will start a new job within 30 days, so he is part of the labor force.

## IV. Illustrating the Business Cycle



## V. Economic Reporting

1. A one-time increase in the index of leading indicators does not signal an expansion. Economists look for several consecutive months of a new direction in the leading indicators before forecasting a change in output. When these figures came out, most economists said the new numbers did not really suggest anything new.
2. New plant and equipment orders are a leading indicator. One would expect orders for new plants and equipment to increase when the economy enters an expansion. By themselves, the previous decline and subsequent flat performance suggest that the economy may be in a rut, but there is not enough evidence to tell.
3. Manufacturers' new orders are a leading indicator. By itself, a big increase might indicate that the economy is picking up, but several months of increase are needed to establish a pattern.
4. The GDP is the main measure of the economy's performance. The increase in the trade deficit indicates that net exports decreased. Since  $GDP = C + I + G + X$ , the GDP would be revised downward.

