

# chapter 8 (24)

## Unemployment and Inflation

### Chapter Objectives

Students will learn in this chapter:

- How unemployment is measured
- How the unemployment rate is calculated
- The significance of the unemployment rate for the economy
- The relationship between unemployment and economic growth
- Factors that determine the natural rate of unemployment
- The economic costs of inflation
- How inflation and deflation create economic winners and losers
- Why policy makers try to maintain a stable rate of inflation

### Chapter Outline

**Opening Example:** In the presidential elections in 1980 and 1992, the challenger campaigned against the incumbent president using the economy as the major issue. In each case, the challenger won the election. In 1992, Bill Clinton defeated George H. W. Bush by campaigning on the issue of job creation in a time of unemployment. In 1980, Ronald Reagan defeated Jimmy Carter using the dual issues of high unemployment and high inflation. These issues in these elections point up the importance of unemployment and inflation as macroeconomic issues.

#### I. The Unemployment Rate

##### A. Defining and measuring unemployment

1. *Definition:* **Employment** is the number of people currently employed in the economy, either full time or part time. It is an indicator of the state of the labor market.
2. *Definition:* A **labor force participation rate** is the percentage of the population aged 16 or older that is in the labor force.
3. *Definition:* The **unemployment rate** is the percentage of the total number of people in the labor force who are not employed.

##### B. The significance of the unemployment rate

1. The unemployment rate can overstate the true level of unemployment because it is normal for workers to spend some time searching for a job even when jobs are plentiful.
2. The unemployment rate can also understate the true level of unemployment because it doesn't include the number of frustrated workers who no longer look for jobs, also known as discouraged workers.

### C. Defining and measuring unemployment

1. *Definition:* **Discouraged workers** are nonworking people who are capable of working but have given up looking for a job given the state of the job market.
2. *Definition:* **Marginally attached workers** would like to be employed and have looked for a job in the recent past but are not currently looking for work.
3. *Definition:* **Underemployment** is the number of people who work part time because they cannot find full-time jobs.
4. The unemployment rate can vary widely across different age, gender, and racial groups. This is shown in Figure 8-3 (Figure 24-3) in the text.

### D. Growth and Unemployment

1. There is a strong inverse relationship between growth in real GDP and changes in the unemployment rate. This inverse relationship is illustrated using actual data shown in Figure 8-5 (Figure 24-5) in the text.

## II. The Natural Rate of Unemployment

### A. Job creation and job destruction

1. Structural change can be responsible for job losses and new jobs created.
2. Poor performance at individual companies also leads to job loss for their employees.

### B. Frictional unemployment

1. Economists say that workers who spend time looking for employment are engaged in **job search**.
2. *Definition:* **Frictional unemployment** is unemployment due to the time workers spend in search of a job.

### C. Structural unemployment

1. *Definition:* **Structural unemployment** is unemployment that results when there are more people seeking jobs in a labor market than there are jobs available at the current wage rate.
2. The *minimum wage* may be binding for less skilled workers. It affects the wages that people are actually paid and can lead to structural unemployment.
3. By *bargaining collectively*, *labor unions* can often win higher wages from employers than workers would have obtained by bargaining individually.
4. *Definition:* **Efficiency wages** are wages that employers set above the equilibrium wage rate as an incentive for better employee performance.
5. Public policy designed to help workers who lose their jobs can have the side effect of reducing a worker's incentive to quickly find a new job.

### D. The natural rate of unemployment

1. *Definition:* The **natural rate of unemployment** is the normal unemployment rate around which the actual unemployment rate fluctuates; the unemployment rate that arises from the effects of frictional and structural unemployment.
2. *Definition:* **Cyclical unemployment** is the difference between the actual rate of unemployment and the natural rate of unemployment.

### E. Change in the natural rate of unemployment

1. Changes in labor force characteristics (such as the age of workers), changes in labor market institutions (such as the increased number of

temporary employment agencies), and changes in government policies (such as a higher minimum wage) have an effect on the rate of unemployment.

### III. Inflation and Deflation

- A. The level of prices doesn't matter . . .
1. *Definition:* The **real wage** is the wage rate divided by the price level.
  2. *Definition:* **Real income** is income divided by the price level.
- B. . . . but the rate of change of prices does
1. It is important to distinguish between the *level of prices* and the *inflation rate* or the percent increase in the overall level of prices per year.
  2. Increased costs of transactions caused by inflation or **shoe-leather costs** are the result of people trying to avoid holding money.
  3. Changing a listed price for a good has a real cost, called a **menu cost**.
  4. *Definition:* **Unit-of-account costs** arise from the way inflation makes money a less reliable unit of measurement.
- C. Winners and Losers from Inflation
1. *Definition:* The **nominal interest rate** is the interest rate expressed in dollar terms.
  2. *Definition:* The **real interest rate** is the nominal interest rate minus the rate of inflation.
  3. If the actual inflation rate is *higher* than expected, borrowers gain at the expense of lenders. If the inflation rate is *lower* than expected, lenders will gain at the expense of borrowers.
- D. Inflation is easy, disinflation is hard
1. *Definition:* **Disinflation** is the process of bringing the inflation rate down.

## Teaching Tips

### The Unemployment Rate

#### *Creating Student Interest*

Ask students to estimate the current value of the unemployment rate. You can find the current data under Web Resources. You can also present the unemployment rate specific to your area (if it is different from the national average).

#### *Presenting the Material*

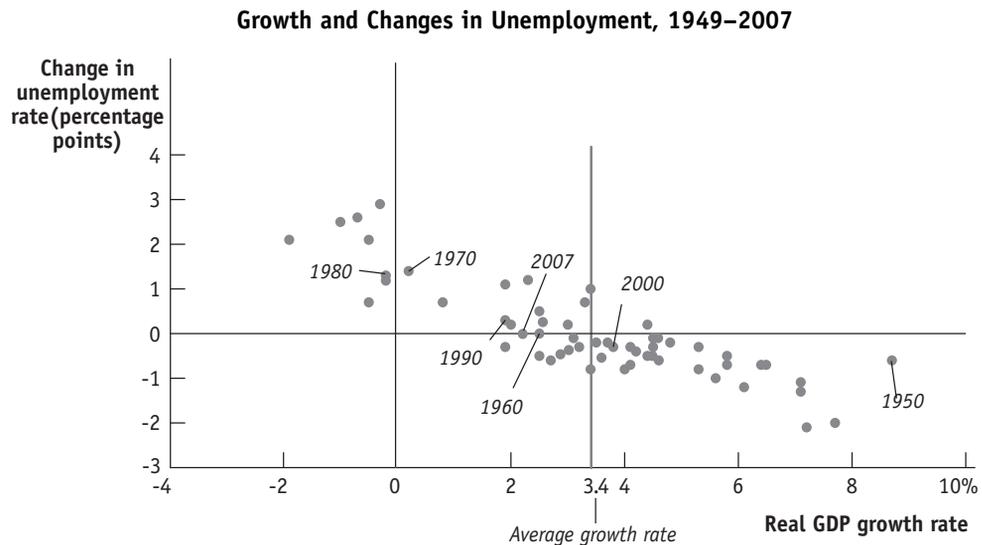
Students often ask how the unemployment rate is determined. You may find an explanation for how employment data is collected on the Bureau of Labor Statistics website at: [http://www.bls.gov/opub/hom/homch1\\_g.htm](http://www.bls.gov/opub/hom/homch1_g.htm).

Use this description of the Current Population Survey to present the definitions of employed, unemployed, in the labor force or not in the labor force. Present the hypothetical family (described below) and have the students determine where they would be counted if the family were part of the CPS. Use the descriptions to point out the definition of a discouraged worker.

Female (head of household)—age 45, worked full time during the month as computer analyst

Male—age 50, laid off last year, did not work or look for work during the month.  
 Female—age 22, not working, applied for positions in retail sales during the month  
 Male—age 15, worked part time during the month at a restaurant  
 Male—age 70, retired.  
 Female—age 68, worked 30 hours per week as a substitute middle school teacher.

The unemployment rate is an indicator of how easy it is for individuals to find a job. It also indicates the potential for lost output, since GDP will generally fall when the unemployment rate rises. This inverse relationship is illustrated in Figure 8-5 (Figure 24-5) of the text with a scatter plot of historical data on the real GDP growth rate and the unemployment rate.



There are some limitations associated with the reported unemployment rate. They include:

- It can overestimate the actual rate of unemployment because some people intentionally do not take the first job they are offered but rather take additional time to search for a job.
- It can underestimate the actual rate of unemployment because discouraged workers cease looking for a job and thus are no longer counted as unemployed, even though they would really like to work.
- The unemployment rate can vary widely across age, gender, and racial groups.

These differences are not reflected in the most commonly reported overall unemployment rate. These differences are illustrated in Figure 8-3 (Figure 24-3) of the text.

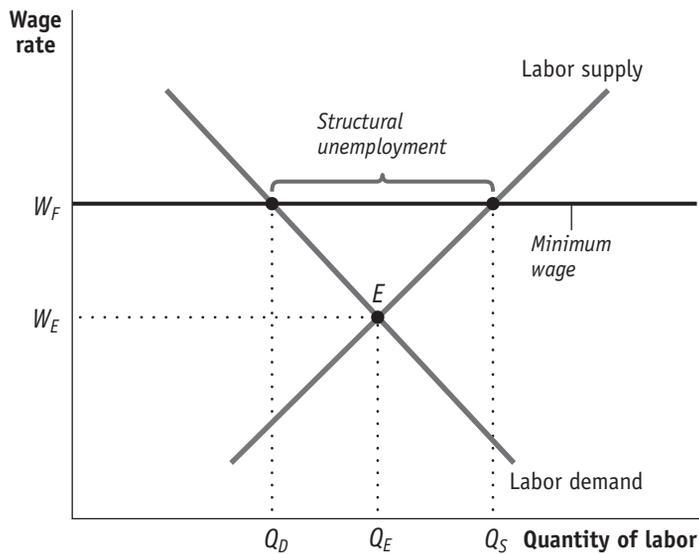
## The Natural Rate of Unemployment

### *Creating Student Interest*

Ask students if they can think of different reasons for why people are unemployed. Some possible responses include: the people are just entering the labor force for the first time, they are reentering the labor force after taking time off to have a baby, they lost their job because the economy went into a recession, or their job has been outsourced to India. Explain to students that economists categorize unemployed persons according to the primary reason for why they do not have a job. These categories include frictional unemployment, cyclical unemployment, and structural unemployment.

### Presenting the Material

Begin by distinguishing between the three types of unemployment discussed in this chapter—*frictional unemployment*, *structural unemployment*, and *cyclical unemployment*. Use a specific real-world example of each to make these concepts less abstract to the students. In addition, when discussing the concept of structural unemployment, use a graph of the labor market, such as the one shown in Figure 8-8 (Figure 24-8) in the text, to illustrate the manner in which structural unemployment is created by a government-set minimum wage. Afterward, define the term *natural rate of unemployment* and discuss those factors that can affect the value of the natural rate of unemployment in an economy.



## Inflation and Deflation

### Creating Student Interest

Ask students to estimate the current rate of inflation. Ask them if they can think of a time when the United States experienced deflation (they may know that there was deflation during the Great Depression). Show students the current and historical inflation data (see website listed under Web Resources).

### Presenting the Material

Ask students how they would feel if all prices in the economy doubled. Then ask them how they would feel if all prices doubled and at the same time their wages doubled. Make sure they see that if both doubled, their real wage would be the same. Make clear that the level of prices doesn't matter, but the rate of change in prices does.

Explain why the rate of change in prices matters using the three types of inflation costs: shoe-leather costs, menu costs, and unit-of-account costs. Also make clear that these are the overall costs to the economy. As far as individuals are concerned, there is also a transfer from the "losers" from inflation to the "winners" from inflation. Explain how borrowers gain from getting money now, when it will buy more (before inflation) and paying it back later (after inflation) when it won't buy as much. Lenders, on the other hand, give the money when it will buy more and only get it back after it won't buy as much.

Finally, make sure students understand that when inflation is expected, people will build that expectation into their decisions. Lenders will charge higher nominal interest rates, workers will require higher wages, etc. If everyone correctly anticipates inflation, everyone builds in the expected inflation correctly and there are no “winners” or “losers.” Only unanticipated inflation will decrease real values (e.g., interest rates/wages).

## Common Student Pitfalls

- **Unemployment benefits.** Since most students have never filed for unemployment benefits, they may erroneously believe that individuals can collect unemployment whenever they are not working, regardless of the reason. Explain that this is not the case; for example, workers who are on strike or are away from their jobs due to illness or bad weather cannot collect unemployment benefits.
- **Gaining or losing from inflation.** Students may incorrectly think that inflation adversely affects all individuals in the economy in the same manner. Explain that this is not the case, as inflation can aid some individuals. For example, borrowers of money are aided by unexpected inflation, since the real value of the money they repay in the future on the loans they hold has less purchasing power than when they initiated the loans.
- **Disinflation versus deflation.** Students may confuse the terms *disinflation* and *deflation*. Emphasize that disinflation is the process of lowering inflation that has become embedded in expectations through keeping the unemployment rate above the natural rate for an extended period. By contrast, deflation is a falling aggregate price level.

## Case Studies in the Text

### Economics in Action

*Rocky Mountain Low*—This EIA looks at state unemployment and explains how unemployment rates can differ from state to state. In 2007, Montana had one of the lowest unemployment rates, while Michigan had one of the highest.

Ask students the following questions:

1. What state showed a relatively low unemployment rate and why? (Answer: Montana, booming oil business)
2. What state has a relatively high unemployment rate and why? (Answer: Michigan, automobile industry layoffs)

*Structural Unemployment in Eastern Germany*—This EIA looks at the unemployment rate in Eastern Germany following the reunification of East and West Germany after the fall of the Berlin wall.

Ask students the following questions:

1. What type of unemployment did East Germany experience after unification, and why? (Answer: structural; low productivity)
2. What has caused wage rates in eastern Germany to remain relatively high despite lower worker productivity? (Answer: unions)

*Israel's Experience with Inflation*—This EIA presents the example of inflation in Israel in the mid-1980s.

Ask students the following questions:

1. What is meant by the term “clean” inflation? (Answer: inflation experienced without a concurrent war or political instability)
2. Give an example of each of the types of inflation costs during Israel’s mid-1980s inflation. (Answer: shoe-leather costs: standing in line at the bank; menu costs: restaurants’ not listing prices; unit-of-account costs: frequently changing store prices)

## For Inquiring Minds

*An Unemployment Lockdown?*—This FIM considers how the number of adults in jail may contribute to a decline in the natural rate of unemployment as those incarcerated move from being counted as unemployed to being counted as “not in the labor force.”

## Global Comparison

*Unemployment Around the OECD*—This global comparison presents data for unemployment rates in over the period 1996–2006 for countries belonging to the Organization for Economic Cooperation and Development.

## Activities

### Numbers Game (5–10 minutes)

Provide students with the following data:

Number of people employed	120,500
Number of people unemployed	4,050

Ask students to compute:

1. The number of people in the labor force.  
(Answer:  $4,050 + 120,500 = 124,550$ )
2. The unemployment rate.  
(Answer:  $(4,050 / (4,050 + 120,500)) \times 100 = 3.25\%$ )

### Name that Unemployment (15 minutes)

Pair students and ask them to classify the people described in each of the following scenarios as either frictionally, structurally, or cyclically unemployed.

1. Phil is currently unemployed because the tire factory where he used to work installed robots, which replaced 500 laborers, including Phil.
2. Jessica is unemployed because she is in the process of reentering the labor force after taking time off to have a baby.
3. Mary is unemployed because she lost her job at McDonald’s after the state increased the minimum wage.
4. Barry is unemployed because he was laid off by the automobile factory when the economy entered a severe, prolonged recession.
5. Sandy left her former job at an accounting firm a month ago. She is in the process of interviewing for a similar position at six different accounting firms, although she has not accepted a job yet.

Answers:

1. Phil is structurally unemployed.
2. Jessica is frictionally unemployed.

3. Mary is structurally unemployed.
4. Barry is cyclically unemployed.
5. Sandy is frictionally unemployed.

### All About the Natural Rate of Unemployment (15 minutes)

Pair students and ask them to answer the following questions.

1. What do economists mean by the *natural rate of unemployment*?
2. Describe four factors that can affect the natural rate of unemployment and indicate the impact of each on the value of the natural rate of unemployment in an economy.
3. What can you deduce if the actual rate of unemployment exceeds the natural rate of unemployment?

Answers:

1. The natural rate of unemployment is the normal unemployment rate around which the actual rate of unemployment fluctuates. It is measured as follows:

$$\text{Natural rate of unemployment} = \text{Frictional unemployment rate} + \text{Structural unemployment rate}$$

2. Possible answers may include:
  - i. An increase in unemployment benefits can increase the natural rate of unemployment.
  - ii. An increase in the number of new workers in the labor force increases the natural rate of unemployment.
  - iii. A decline in union membership decreases the natural rate of unemployment.
  - iv. An increase in labor productivity decreases the natural rate of unemployment.
3. If the actual rate of unemployment is greater than the natural rate of unemployment, then some workers are cyclically unemployed and the economy may be in a recessionary phase of the business cycle.

### Getting Real with Interest Rates (10 minutes)

Pair students and ask them to compute the answers to the following questions.

1. Samantha invested \$2,500 of her savings in a certificate of deposit that pays an annual 4.25% rate of interest. The current annual inflation rate is 5%. Has Samantha made a wise investment from an economic perspective?
2. William wants to earn a real annual interest rate on his investment of at least 7%. If the annual rate of inflation is 4%, what is the minimum nominal rate of interest William would be willing to accept on his investment?

Answers:

1. Samantha has not made a wise investment, as the real interest rate she is earning on this investment is negative. The real interest rate Samantha is earning is computed as follows:

$$\text{Real interest rate} = \text{Nominal interest rate} - \text{Rate of inflation}$$

$$\text{Real interest rate} = 4.25\% - 5\% = -0.75\%$$

2. William must receive a minimum nominal annual rate of interest equal to 11%, which is computed as follows:

$$\text{Real interest rate} = \text{Nominal interest rate} - \text{Rate of inflation}$$

$$7\% = \text{Nominal interest rate} - 4\%$$

$$\text{Nominal interest rate} = 11\%$$

### Weird-Sounding Costs of Inflation (10 minutes)

Pair students and ask them to complete the following exercises.

1. Describe a real-world scenario of shoe-leather costs.
2. Describe a real-world scenario of menu costs.

Answers:

1. During periods of hyperinflation, Juan rushes to the store immediately after getting paid each day to purchase goods and services before the prices of these goods rise. These many trips to the stores result in high shoe-leather costs to Juan.
2. During periods of hyperinflation, Maria, a grocery store owner, must employ several people to change the prices of goods and services posted in her store each day. This has resulted in high menu costs to Maria's business.

### Graphing Unemployment (20 minutes)

Have students graph the unemployment rate over time (for the United States or your state) and identify the phases of the business cycle on their graph. Data sources are provided in the Web Resources section.

## Web Resources

The following websites provide information on unemployment and inflation:

The Bureau of Labor Statistics—unemployment rate:

<http://www.bls.gov/cps/> or <http://www.bls.gov/bls/unemployment.htm>

The Bureau of Labor Statistics—methodology:

<http://www.bls.gov/bls/empsitquickguide.htm>

The Bureau of Labor Statistics—CPI: <http://www.bls.gov/CPI/>

Inflationdata.com—historical inflation data:

[http://inflationdata.com/inflation/Inflation\\_Rate/HistoricalInflation.aspx?dsInflation\\_currentPage=6](http://inflationdata.com/inflation/Inflation_Rate/HistoricalInflation.aspx?dsInflation_currentPage=6)

