

## Objectives for Class 24: The Business Cycle and Unemployment

At the end of Class 24, you will be able to:

1. Define each of the phases of the business cycle: *expansion, peak, recession, depression, trough, recovery*.
2. Explain what the *Index of Leading Indicators* is and how it is used.
3. Explain how the **official unemployment rate** is calculated.
4. Name two reasons that the official unemployment rate might be **understated** and one reason that it might be **overstated**.
5. Explain what is meant by the term *“discouraged worker”*.
6. Define each of the four types of unemployment: *frictional, seasonal, cyclical, and structural unemployment*.
7. Explain how *“full employment”* (or *“natural rate of unemployment”*) is defined.
8. Define the term *“Potential Real Gross Domestic Product”*.
9. Explain what is meant by a *“recessionary gap”* or an *“inflationary gap”*.
10. Name **at least three of the problems** that result for society as a whole when unemployment rates are high.
11. Name the **groups in society** that are likely to experience the highest unemployment rates? Explain why this would be so.

## Class 24 The Business Cycle and Unemployment (latest revision October 2004)

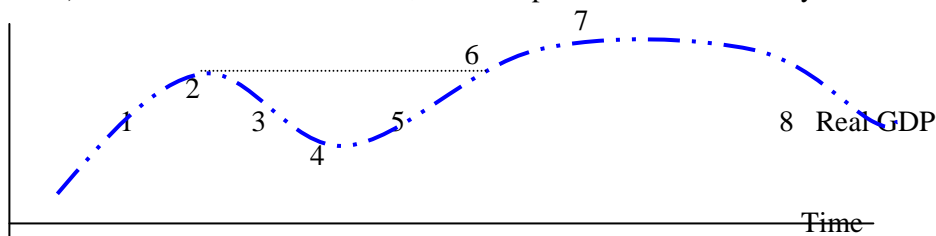
### 1. The Business Cycle

For many hundreds of years, production has gone through a cycle of increases followed by decreases followed by increases. This has come to be known as the *business cycle*. Remember that **we use Real Gross Domestic Product (Real GDP) as our measure of aggregate production**. *When Real Gross Domestic Product (Real GDP) is rising, we have a period called an expansion*. Production is rising, incomes are rising, there are more jobs, and there are fewer unemployed workers. An expansion is a good time. At the time of this writing, the United States is in the longest expansion in its history. But expansions have not continued on and on. *When Real Gross Domestic Product (Real GDP) stops rising, it has hit the peak. Occasionally, Real Gross Domestic Product (Real GDP) stagnates --- it does not rise or fall. This might be called a plateau* (in the West, we might call it a butte or a mesa!). Most commonly, however, Real Gross Domestic Product (Real GDP) actually declines. *When Real Gross Domestic Product (Real GDP) is actually declining, we are in a period of recession. If the decline is very large, the period is called a depression*. Production is falling, incomes are falling, there are fewer jobs, and there are more unemployed workers. A recession is a bad time. (According to an old joke --- it is a recession if many people are unemployed. It is a depression if YOU are unemployed.) Since World War II, recessions have not lasted very long – less than one year on average. *When Real Gross Domestic Product (Real GDP) stops falling, it has hit the trough*. Then, Real Gross Domestic Product (Real GDP) begins to rise (another expansion). *The period while Real Gross Domestic Product (Real GDP) is making up for the production that was lost during the recession is called the recovery*. The recovery will grow into a full expansion that, at some future time, will hit another peak.

Predicting the turning points of the business cycle is both important and difficult. If the government knew that a recession were coming soon, it could undertake policies now that might prevent it. A main index used in prediction is the ***Index of Leading Economic Indicators***. It is composed of 11 economic variables that should rise or fall before Real Gross Domestic Production (Real GDP) rises or falls.

Of all of the phases of the business cycle, the one that has received the most attention is the recession. Recessions and depressions are obviously bad times that we would like to find ways to avoid. Economic thinking was especially influenced by the horrific experience of the Great Depression of the 1930s. Since recessions are periods during which unemployment is high, let us take the rest of this chapter to examine unemployment.

**Test Your Understanding.** The chart below shows the cycle of Real Gross Domestic Product (Real GDP) over time. For each number, label the phase of the business cycle.



## 2. The Measure of Unemployment

As we did with aggregate production, we will begin here by analyzing the official measure of unemployment. Unemployment has very harmful effects. Government uses the tools at its disposal to try to avoid unemployment. If these tools are to be used wisely, we need to know exactly how much unemployment there is. Therefore, the government makes a considerable effort to try to measure unemployment accurately.

Every month, the government conducts a survey of approximately 60,000 households. This is a large survey. (A household involves all people who live together, regardless of the relationship between them.) Only people between the ages of 16 and 74 are surveyed. The survey takes place in the week that includes the 13<sup>th</sup> of the month, called the census week. Some demographic information is obtained from each person --- age, place of residence, ethnic background, and so forth. Then, questions are asked to determine if one is employed or unemployed. ***Basically, one is employed if one worked one or more hours for pay in the week prior to the census week.*** If one did not work one or more hours for pay during the week prior to the census week, one can still be counted as employed. For example, one might have a job but have been ill or on vacation. ***If one did not work one or more hours for pay in the week prior to the census week but did actively seek a job in the previous four weeks, one is counted as unemployed.*** If one cannot be counted as either employed or unemployed, one is not in the labor force. ***The labor force is composed of those people who are officially employed or unemployed. The unemployment rate is the percent of the labor force that is officially unemployed.*** So, for example, in July of 2004, there were 139.7 million people officially employed. This means that in the week prior to the census week, these people had been working at least one hour for pay (or met one of other criteria). In that month, 8.2 million people were officially unemployed. This means that these people did not work in the

week prior to the census week but had been actively seeking a job in the previous four weeks. The labor force was therefore equal to 147.9 million people (139.7 + 8.2). The unemployment rate was 5.4% (8.2 million divided by 147.9 million). The rate is announced on the first Friday of the following month. When it is announced, it is big news.

### Test Your Understanding

- In a certain month, the Labor Department estimated the following:
 

Worked full-time for the whole month	80 million
Worked part-time for the whole month	10 million
Did not work but did search for work	10 million

The official unemployment rate is \_\_\_\_\_.

- In each of the following situations, state whether the person is **employed**, **unemployed**, or **not in the labor force**:
  - William works part-time and attends school part-time \_\_\_\_\_
  - Jose is a full-time student who does not want a job \_\_\_\_\_
  - Jane does not work now but she is looking for a part-time job \_\_\_\_\_
  - Mary is a single mother; she looked for a job for six months without luck. Last month, she gave up looking. \_\_\_\_\_

How good of a measure is this official measure of unemployment? The answer is that it has at least **three problems** that make interpretation of the number difficult. **First, there is the problem of discouraged workers.** Imagine that you meet a person that you would classify as unemployed. This person does not have a job and would definitely take one. The person is not ill or lazy. But the person has not been seeking a job for the last four *weeks*. Why not? *One answer is that the person has simply given up looking for a job.* The government only asks if one has looked for a job during the past four *weeks*. Many of the unemployed have been unemployed for months and months. After looking for so long, they have simply given up. At that time, they are no longer counted as unemployed. **For this reason, the official unemployment rate is too low --- it does not count people who should be counted as unemployed.** **Second, there is the problem of people who are involuntarily working part-time.** The official unemployment rate counts people as fully employed if they have worked only one hour or more. Suppose there is a person who wants a full-time job but has settled for a job working only ten hours a week. The government counts the person as fully employed. But, in reality, the person is partially unemployed. **For this reason, the official unemployment rate is again too low.** (Notice that, if the person wanted to work only ten hours per week, there would be no problem. The problem involves only those working part-time involuntarily.) If we could stop here, we could at least conclude that the official unemployment rate is too low. **But there is a third problem. Many of the people who are officially unemployed are in fact working. They are working in the underground economy. People working in the underground economy do not tell the government that they are working either because what they are doing is illegal or because they do not plan to pay tax on the income earned. As a result of the underground economy, the official unemployment rate is too high. In addition, some of the people who are officially unemployed do not suffer greatly.** For example, assume that Bill is a student who is supported by his parents. He would like a job to buy a better sound system for his car. His unemployment certainly does not cause the kind of hardship as would be experienced by

Tom, whose job is expected to support his wife and four young children. When we put together all of the problems with the official measure of unemployment, we can see that it is not a good measure at all. It might be too high. It might be too low. It could even be just right. But since it is the only measure we have, we will use it. But we must use it with considerable caution.

### Test Your Understanding

Use the concept of a discouraged worker to explain why the official unemployment rate might fall when the economy is getting much worse.

## 3. The Types of Unemployment

Even though unemployment can be a major problem, not all unemployment is bad. Unemployment can occur for different reasons. Since the early 1960s, the government has categorized unemployment into **four types: frictional, seasonal, cyclical, and structural unemployment**.

Imagine that you now work full-time during the day. You meet several people in your class and find that they are earning much more than you are. So you know that jobs exist that are better than yours. What do you do? Probably, you quit your job and devote your time to finding a better job. You quit because finding a new job requires time and effort. If you continued to work on your job, you would not have the time to be able to find a better job. *If you are unemployed because you are searching for a new job (or a first job), you are categorized as frictionally unemployed.* There are several points to notice about frictional unemployment. **First, it is voluntary.** No one is making you quit your job to go find another job. **Second, it is relatively short-term.** You expect to be unemployed for a few weeks to perhaps a few months. **Third, this type of unemployment is a good thing.** You are unemployed because you are devoting your time to an activity that will improve your life. After a short time, you will be better off. Eliminating frictional unemployment would require that no person could move to a better job. **Fourth, because there will be frictional unemployment, we would not even desire an unemployment rate of zero.**

Some people are unemployed because of the season of the year. They have jobs in which one does not work part of the year. So, construction workers may be unemployed when the weather is especially poor. Lifeguards may not work in the winter. Teachers and ski instructors may not work in the summer. *Workers who are unemployed because of the time of the year are called seasonally unemployed.* Again, this type of unemployment is not a major problem. The season will change and these people will become employed again.

At the beginning of this chapter, we described the business cycle. During the recession, production is falling and unemployment is rising. As you will see, this occurs because, for some reason, people are not buying all of the products that can be produced. *People who are unemployed because the number of jobs declines as buyers buy fewer products are called cyclically unemployed.* (The term “cyclical” refers to the business cycle.) This type of unemployment does indeed represent a major problem. During a recession, the economy is not creating enough jobs. Some unemployed people could be without employment for many months. Since the fault here is with the economy, not with the worker, we have a system of **unemployment insurance** to provide income for these workers while they are unemployed. *A worker who loses a job during a recession, but expects to get the job back with the recession is over, is called “laid-off”. A worker who loses a job because the employer is permanently*

*reducing the number of workers is called “downsized”*. In each of these cases, the worker is not at fault for losing the job. *If a worker loses a job because of poor job performance, the worker is “fired”*. As you will see later on, since the Great Depression of the 1930s, we have learned much about the causes of cyclical unemployment and the means to overcome it.

Finally, imagine a situation in which the number of unemployed workers exactly equals the number of vacant jobs. However, for some reason, an unemployed worker and a vacant job do not get together. The worker remains unemployed while the job remains unfilled. Why might this occur? The most obvious answer is that the worker does not have the skills to do the job. An unemployed worker who dropped out of high school will not qualify for a job that requires a Ph.D. in Physics. It is also not unusual for a highly skilled unemployed worker to refuse to take a low skilled job, even though one is available. The unemployed Ph.D. in Physics will refuse the available job at 7-11 because the person believes that he or she can find a much better job by continuing to search. Unemployed workers and vacant job may also not get together because they are in different locations. One may be unwilling to take a job in another part of the country and leave one’s home. Or they may not get together because the unemployed worker is not aware of the vacancy. Information about available jobs is often not very good. *One who is unemployed because of a lack of the right skills, because of being over-qualified, because of being in a different location, or because of lack of job information is called structurally unemployed*. This type of unemployment is indeed a major problem, one that has been very difficult to solve. People who are structurally unemployed are often out of work for an especially long time.

### Test Your Understanding

In each of the following cases, state whether the unemployment would be classified as **"frictional"**; **"seasonal"**; **"structural"**; or **"cyclical"**.

1. Robert lost his job at Boeing. There is a job available at 7 - 11, but he refuses to take it. He has been looking for a job similar to his old job for 9 months.
2. Mary quit her job at Sears and found a better-paying job at Nordstroms. She was unemployed for one month while she found her new job.
3. Maria lost her job with a construction company because of the recession. When the economy improves, she will be called back to her old job.

## 4. What is “Full-Employment”?

Because frictional unemployment and seasonal unemployment exist, we know that we cannot have an unemployment rate of zero. And since frictionally unemployed people are improving their lives, we would not want an unemployment rate of zero if we could have it. So what then should our national goal be concerning unemployment? (This goal is called **“full employment”**.) Remarkably, no formal attempt was made to answer this question until the early 1960s. *The administration of President Kennedy defined full employment as occurring when there is no cyclical unemployment. In order words, full-employment exists if the economy creates a job for every worker who wants one*. The only workers who would be unemployed would be those searching for one of these jobs (frictional unemployment), those waiting for the season of the year to change to begin one of these jobs (seasonal unemployment), or those who lacked the requisite skills for one of these jobs, were over-qualified, or were in the wrong location (structural unemployment). President Kennedy announced, quite arbitrarily, that this would be reached if the unemployment rate were 4%.

In the late 1960s, the form of the definition of full-employment was changed somewhat. The name was also changed to the ***“natural rate of unemployment”***. ***This was defined as the lowest rate of unemployment that could occur before inflation accelerates.*** On first appearance, this definition does not look like the earlier one. You might be wondering why, if we are evaluating unemployment, we bring inflation into the picture. To illustrate this definition, assume that unemployment is “high”. There are many more unemployed people than there are vacant jobs. You go to your employer and ask for a raise. What will the answer be? No, of course. You might insist on the raise and threaten to quit. But it is a hollow threat. You can be replaced very easily. You might then be unemployed for a long time. So you accept the answer – no raise for you. Now, assume that unemployment is “low”. There are many more vacant jobs than there are unemployed workers. Now you insist on a raise. This time, you are likely to get one. Your threat to quit if you do not get a raise is a serious threat. You can probably get a new job very quickly. And the employer may need a long time to find someone to replace you. Besides, the employer need not worry too much about your raise because the employer can get the money back. How? The employer simply raises the price of the product to the consumer. This, of course, is inflation. ***So, when unemployment is high, we have no inflation. When unemployment is low, we do have inflation. What is the dividing line between high and low? What ever this number is, it is called the “natural rate of unemployment”. At this rate, the number of vacant jobs and the number of unemployed workers are in balance.***

Calculating the natural rate of unemployment has proven to be difficult. In the late 1960s and early 1970s, it was assumed to be around 4½ %. Then, it seemed to rise. Partly this was the result of the entrance into the labor force of young people (the baby boomers) and married women. Young people experience many periods of unemployment and married women often take a long time to find a job that fits their home situations. By the late 1970s and 1980s, most estimates of the natural rate of unemployment were between 5½ % and 6 ½ %. But, in the 1990s, the natural rate of unemployment seemed to fall. Partly, this was due to the increase in competition from foreign companies that made it harder for employers to raise their prices. As the official unemployment rate fell below 5½ %, many economists predicted that inflation rates would rise. But they did not rise. As of the time of the writing of this book, the official unemployment rate has fallen to 4% and below without a serious rise in inflation rates. So, we really don’t know what the natural rate of unemployment is today. Throughout this book, we will use 4% as the estimate of the natural rate of unemployment (full employment). But keep in mind that this is just a guess.

Remember that we measure total production by the Real Gross Domestic Product. ***The amount of production we need to have full employment is called Potential Real Gross Domestic Product (GDP).*** In other words, if the actual amount production were sufficient to create enough jobs so that the unemployment rate were 4%, that amount of production would be called Potential Real Gross Domestic Product. So for example, in 1999, we needed a Real Gross Domestic Product equal to a little over \$9 trillion in order to have full employment. In our language, the Potential Real Gross Domestic Product was a little over \$9 trillion. In reality, the Real Gross Domestic Product was close to \$9 trillion. So, in 1999, we just about had full employment (actually, the official unemployment rate in December of 1999 was 4.1%.) However, in 1998, the Real Gross Domestic Product was about \$8.5 trillion. The Potential Real Gross Domestic Product was approximately \$8.6 trillion. So we did not have

full employment. In fact, the unemployment rate in 1998 was 4.5%. *The difference between the actual Real Gross Domestic Product and the Potential Gross Domestic Product is called the Gross Domestic Product (GDP) Gap. The Real Gross Domestic Product is the amount we actually produce. The Potential Gross Domestic Product is our goal – the amount we would like to produce (to have full employment). The GDP Gap is the difference between where we are and where we would like to be. If we are below the goal (that is, if Real Gross Domestic Product is less than Potential Real Gross Domestic Product), the gap is called a recessionary gap. If we are above the goal (that is, if Real Gross Domestic Product is greater than Potential Real Gross Domestic Product), the gap is called an inflationary gap.* So, in 1998, the United States experienced a recessionary gap equal to \$0.1 trillion (\$8.5 trillion minus \$8.6 trillion). We would have had to produce \$0.1 trillion (\$100 billion) more goods and services than we did in order to have had full employment in 1998.

### Test Your Understanding

1. In the 1970s, unemployment insurance benefits were extended and raised. People who were unemployed received more income and, in some cases, received it for a longer time. Explain why this might have contributed to the increase in the natural rate of unemployment during this decade.
2. In the 1990s, most of the people entering the labor force (those in their 20s) were from the small, baby bust cohort. Explain why this may have contributed to the decline in the natural rate of unemployment.

## 5. Why is Unemployment a Social Problem?

Full employment is a national goal. When unemployment rates are high, Presidents have great difficulty being re-elected. Just what is so bad about unemployment? **First, as noted in the previous section, unemployment is associated with reduced production.** If a construction worker is unemployed, he or she is without a job. But you and I are also without the house that could have been built. As noted above, in 1998, there was a recessionary gap of about \$100 billion. This means that, because unemployment was greater than 4%, about \$100 billion worth of goods and services were not produced. The United States as a whole could have been that much richer in 1998. Those goods and services that were not produced in 1998 are lost forever. We are a poorer country when we do not maintain full employment.

High unemployment does not affect everyone equally. **Some groups are affected much more than others.** Determining which groups are most affected is part of the assignment for this chapter. When unemployment rates are high, **blue-collar workers (for example, factory workers and construction workers) are more likely to be affected than white-collar workers (for example, office workers and professionals). Because of this, people with fewer years of schooling are likely to experience higher rates of unemployment.** (Those who did not finish high school typically have the highest unemployment rates. Those with Bachelors Degrees and above typically have the lowest unemployment rates.) **Also because of this, minorities (groups that the government names “Blacks” and “Hispanics”) experience higher unemployment rates than whites.**

In June of 2004, the unemployment rate was 5.5%. In July of 2004, it was also 5.5%. But it is important to remember that this may not represent the same group of people. Some of those unemployed in June became employed in July. And some of those unemployed in July were not unemployed in June. So, when the unemployment rate is 5.5%, you need to remember that many more people than this experience unemployment at some point during

the year. In addition, there were many other people who fear becoming unemployed but do not experience it. Unemployment can lower the quality of life of many people. **Several studies have confirmed that the incidence of many diseases increases during times of high unemployment.** Everything from mental illness, to suicide, cancer, heart attack, stroke, and even the common cold occur more often when unemployment is high. One study from the 1970s concluded that each one percentage point increase in the unemployment rate (say from 5% to 6%) causes 37,000 extra deaths. Another study concluded that the experience of unemployment for one year (affecting 10% to 15% of all unemployed people) would lower one's life expectancy by five years. Undoubtedly, stress is a major reason for this. But it is also true that when people lose their jobs, they also may lose their access to health insurance. **Studies have shown that high rates of unemployment are also associated with increased rates of alcohol and drug addiction,** as measured by admission to rehabilitation programs. This may also contribute to the increase in health problems. **Studies have shown that when unemployment rates rise, the number of automobile accidents increases.** People are angry, they are not concentrating, and they may not be able to afford to properly maintain their automobiles. **Studies have also shown that when unemployment rates rise, crime rates increase.** This is true for all kinds of crime – from murder rates to burglary rates. **Finally, studies have shown that high unemployment rates are associated with many aspects of family breakdown.** Child abuse and spouse abuse (both physical and psychological) tend to rise as unemployment rates rise. Divorce rates do not rise during times of high unemployment, as people cannot afford to live separately. However, divorce rates do rise when unemployment rates fall after a period of being high. At this point, people can afford to separate. But the seeds of the separation came during the time of high unemployment.

### **Test Your Understanding**

1. Explain **why** unemployment rates would tend to be higher for blue-collar workers (those who work in factories or in construction) than for white-collar workers (office workers or professionals).

## **6. Summary and Conclusions**

In this chapter, we have examined the business cycle and its various phases. The phase that receives the most attention is the recession as it is associated with high unemployment. We have examined how the unemployment rate is measured and seen the flaws in the measurement. We have evaluated the measure that we have of full employment (also called the natural rate of unemployment) that serves as our national goal. We have seen that not all unemployed people are unemployed for the same reason. Only those people who are cyclically unemployed or structurally unemployed present a significant social problem. But when unemployment rates are significantly above the rate that we associate with full employment, there are some serious social effects -- the country is poorer than it could have been, the health of many people deteriorates, it is less safe on the roads and on the streets, and families come under great pressure. As we will see in later chapters, there have been several instances in which policy makers have deliberately chosen policies that increase unemployment rates and generate all of these problems. They have done so, not because they are cruel, but because they wish to lower inflation rates. They must believe that inflation also generates some serious social problems. Therefore, let us now turn to a consideration of the problem of inflation.

### Practice Quiz for Class 24

1. In a typical business cycle, **the expansion** is followed, in order, by the \_\_\_\_\_ phases.
  - a. trough and recovery
  - b. peak and expansion
  - c. peak and recession
  - d. recovery and peak
  
2. Mary was laid off by X Company when it closed its San Diego plant. She has been looking for a job for six months. This past month, she went to her first job interview. However, she did not get the job. Mary would be classified as:
  - a. employed
  - b. unemployed
  - c. not in the labor force
  
3. For which of the following reasons is the official unemployment rate **too high**?
  - a. discouraged workers are counted as not in the labor force
  - b. those working part-time involuntarily are counted as fully employed
  - c. those working in the underground economy may be counted as unemployed
  - d. all of the above
  
4. My contract with Palomar College runs from August 1 through May 31 of each year. For the months of June and July, I do not work for pay. I am simply waiting for my job to begin again on August 1, For the months of June and July, I would be:
  - a. frictionally unemployed
  - b. seasonally unemployed
  - c. cyclically unemployed
  - d. structurally unemployed
  
5. The **natural rate of unemployment** (full employment) is:
  - a. the amount of frictional plus seasonal plus structural unemployment
  - b. the rate of unemployment that occurs if the economy is producing at Potential Real Gross Domestic Product
  - c. the lowest unemployment rate before inflation will accelerate
  - d. all of the above
  
6. If the actual Real Gross Domestic Product is \$9,000 billion and the Potential Real Gross Domestic Product is \$10,000 billion, there is a/an
  - a. inflationary gap of \$1,000 billion
  - b. recessionary gap of \$1,000 billion
  - c. recessionary gap of \$9,000 billion
  - d. recessionary gap of \$10,000 billion
  
7. Which of the following is likely to experience the **highest unemployment rates**?
  - a. white males age 20 – 64
  - b. black males age 20 – 64
  - c. white females age 20 - 64
  - d. white males age 65 – 74

Answers: 1. C 2. B 3. C 4. B 5. D 6. B 7. B