Overview
In this chapter, we will examine broadly the labor market and see how full utilization of our labor resources improves the level of production and our standard of living. We will see how economists measure the performance of the labor market using unemployment statistics. We will also address a number of sources of unemployment, the different types of unemployment, it causes and the associated costs – private and social - of being unemployed, as well as some policies that the government might use to lower certain types of unemployment.

Learning Objectives
By the end of this chapter, students should understand:

- the data used to measure the amount of unemployment.
- how unemployment can result from minimum-wage laws.
- how unemployment can arise from bargaining between firms and unions.
- how unemployment results when firms choose to pay efficiency wages.

Key Points
1. The unemployment rate is the percentage of those who would like to work but do not have jobs. The Bureau of Labor Statistics calculates this statistic monthly based on a survey of thousands of households.

2. The unemployment rate is an imperfect measure of joblessness. Some people who call themselves unemployed may actually not want to work, and some people who would like to work have left the labor force after an unsuccessful search.

3. In the U.S. economy, most people who become unemployed find work within a short period of time. Nonetheless, most unemployment observed at any given time is attributable to the few people who are unemployed for long periods of time.

4. One reason for unemployment is the time it takes for workers to search for jobs that best suit their tastes and skills. Unemployment insurance is a government policy that, while protecting workers’ incomes, increases the amount of frictional unemployment.

5. A second reason why our economy always has some unemployment is minimum-wage laws. By raising the wage of unskilled and inexperienced workers above the equilibrium level, minimum-wage laws raise the quantity of labor supplied and reduce the quantity demanded. The resulting surplus of labor represents unemployment.

6. A third reason for unemployment is the market power of unions. When unions push the wages in unionized industries above the equilibrium level, they create a surplus of labor.

7. A fourth reason for unemployment is suggested by the theory of efficiency wages. According to this theory, firms find it profitable to pay wages above the equilibrium level. High wages can improve worker health, lower worker turnover, increase worker effort, and raise worker quality.
Definitions and Statistics
Most people are probably more aware of the height of current and recent inflation and the measures taken by their governments to fight inflation, but they will probably not be aware of the importance and scale of the problem of unemployment as recently as 10 – 15 years ago.

This brings up the issue of the various definitions: the labour force, the participation rate, and the unemployment rate.

**Labour force:** People with a job or registered as looking for work. It is the total number of workers, including both the employed and the unemployed.

\[
\text{Labor force} = \text{Number of employed} + \text{Number of unemployed}
\]

**Participation rate:** the fraction of the population of working age who are in the labour force. It is the percentage of the adult population that is in the labor force.

\[
\text{Labor - force participation rate} = \left( \frac{\text{Labor force}}{\text{Adult population}} \right) \times 100\%
\]

**Unemployment rate:** the fraction of the labour force without a job but registered as looking for work. It is the percentage of the labor force that is unemployed.

\[
\text{Unemployment rate} = \left( \frac{\text{Number of unemployed}}{\text{Labor force}} \right) \times 100\%
\]

Measuring Unemployment
How Is Unemployment Measured? In the United States the Bureau of Labor Statistics (BLS) surveys 60,000 households every month. The BLS places each adult (aged 16 or older) into one of three categories: employed, unemployed, or not in the labor force.

Are you employed or unemployed?
Remember that to be considered to be unemployed, you must be without a job and be looking for work. Many students are not in the labor force, but may consider themselves to be unemployed simply because they do not have a job.

Measuring the unemployment rate is useful because it answers the following question: Of those in the economy who want to work, what percentage cannot find a job?

**Example for Cyprus**

<table>
<thead>
<tr>
<th>LABOUR STATISTICS FOR CYPRUS</th>
<th>2006</th>
<th>2007*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economically active population (thousand)</td>
<td>382.6</td>
<td>392.9</td>
</tr>
<tr>
<td>Gainfully employed population (thousand)</td>
<td>358.9</td>
<td>369.8</td>
</tr>
<tr>
<td>Males (%)</td>
<td>56.1</td>
<td>55.4</td>
</tr>
<tr>
<td>Females (%)</td>
<td>43.9</td>
<td>44.6</td>
</tr>
<tr>
<td>Registered Unemployed (thousand)</td>
<td>12.8</td>
<td>12.0</td>
</tr>
<tr>
<td>Males (thousand)</td>
<td>5.7</td>
<td>5.2</td>
</tr>
<tr>
<td>Females (thousand)</td>
<td>7.1</td>
<td>6.8</td>
</tr>
</tbody>
</table>

Note: *Provisional Figures

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Using data for 2007, we see that there were 369.8 thousand people that were gainfully employed and 12.0 thousand people registered as being unemployed.

- **Labor Force = 369.8 + 12.0 = 381.8 thousand.**
- **Unemployment Rate = \( \frac{12.0}{381.8} \times 100\% = 3.1\% \).**
- **Labor-Force Participation Rate = \( \frac{381.8}{513.8} \times 100\% = 74.3\% \), where 513.8 (thousands) is the working age population of Cyprus. The Labor Force participation rate for males was 83.5% and for females 65.7%.

**Labor Force Breakdown in Cyprus, 2007**

<table>
<thead>
<tr>
<th>Working Age Population (513.8K)</th>
<th>Employed (369.8K)</th>
<th>Unemployed (12.0K)</th>
<th>Non-Participants (132.0K)</th>
<th>Labor Force (381.8K)</th>
</tr>
</thead>
</table>

As an exercise, work out the following hypothetical data for the country of “Utopia” to calculate the Labor force, the unemployment rate and the labor force participation rate.

<table>
<thead>
<tr>
<th>Population</th>
<th>Employed</th>
<th>Unemployed</th>
</tr>
</thead>
<tbody>
<tr>
<td>240,000</td>
<td>180,000</td>
<td>30,000</td>
</tr>
</tbody>
</table>

Labor Force =
Unemployment rate =
Labor-force participation rate =

*Answers at the end of the Notes for this Chapter.*
Natural Rate of Unemployment:
This is the normal rate of unemployment around which the unemployment rate fluctuates.

<table>
<thead>
<tr>
<th>Year</th>
<th>Gainfully employed population (thousand)</th>
<th>Registered Unemployed (thousand)</th>
<th>Labor Force (thousand)</th>
<th>Unemployment Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>309.3</td>
<td>10.9</td>
<td>320.20</td>
<td>3.4</td>
</tr>
<tr>
<td>2001</td>
<td>318.1</td>
<td>9.5</td>
<td>327.60</td>
<td>2.9</td>
</tr>
<tr>
<td>2002</td>
<td>323.8</td>
<td>10.6</td>
<td>334.40</td>
<td>3.2</td>
</tr>
<tr>
<td>2003</td>
<td>331.5</td>
<td>12.0</td>
<td>343.50</td>
<td>3.5</td>
</tr>
<tr>
<td>2004</td>
<td>342.1</td>
<td>12.7</td>
<td>354.80</td>
<td>3.6</td>
</tr>
<tr>
<td>2005</td>
<td>349.5</td>
<td>13.2</td>
<td>362.70</td>
<td>3.6</td>
</tr>
<tr>
<td>2006</td>
<td>358.9</td>
<td>12.8</td>
<td>371.70</td>
<td>3.4</td>
</tr>
<tr>
<td>2007</td>
<td>369.8</td>
<td>12.0</td>
<td>381.80</td>
<td>3.1</td>
</tr>
</tbody>
</table>

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Given the data for the unemployment rate in Cyprus, it may be said that the natural rate of unemployment in Cyprus is around 3.4%.

Static and Dynamic Views of the Labor Market and Unemployment

Dr. Savvas C Savvides-- School of Business, EUROPEAN UNIVERSITY CYPRUS
Types of Unemployment

Traditionally, unemployment is categorised according to its source. There are four types of unemployment that we will consider: Frictional, structural, cyclical and seasonal. We briefly explain each one below.

*Frictional*: the irreducible minimum in a dynamic society caused when people are in between jobs. It is the unemployment that results because it takes time for workers to search for the jobs that best suit their tastes and skills.
Structural: arises from the mismatch of skills and job opportunities as the technological and productive structure of the economy changes. It is the unemployment that results because the number of jobs available in some labor markets is insufficient to provide a job for everyone who wants one. Three possible reasons for structural unemployment are minimum-wage laws, unions, and efficiency wages.

Cyclical: unemployment which is associated with the business cycle. It is the deviation of unemployment from its natural rate.
Seasonal: Unemployment associated with seasonal changes in economic activity.

Why Are There Always People Unemployed?

In an ideal labor market, wages would adjust so that the quantity of labor supplied and the quantity of labor demanded would be equal. However, there is always unemployment even when the economy is doing well. The unemployment rate is never zero; it fluctuates around the natural rate.

Job Search

Definition of job search: the process by which workers find appropriate jobs given their tastes and skills.

Because workers differ from one another in terms of their skills and tastes and jobs differ in their attributes, it is often difficult for workers to match with the appropriate job.

Some frictional unemployment is inevitable because it often occurs because of a change in the demand for labor among different firms.

a. When workers decide to stop buying a good produced by Firm A and instead start buying a good produced by Firm B, some workers at Firm A will likely lose their jobs.

b. New jobs will be created at Firm B, but it will take some time to move the displaced workers from Firm A to Firm B.

c. The result of this transition is temporary unemployment.

d. The same type of situation can occur across industries as well.

This implies that, because the economy is always changing, frictional unemployment is inevitable. Workers in declining industries will find themselves looking for new jobs, and firms in growing industries will be seeking new workers.

Public Policy and Job Search

1. Government programs can help to reduce the amount of frictional unemployment.

2. These programs include:

   a. Government-run employment agencies that give out information on job vacancies.

   b. Public training programs that aim to ease the transition of workers from declining to growing industries and to help disadvantaged groups escape poverty.

3. Critics of these programs argue that the private labor market will do a better job of matching workers with employers and therefore the government should not be involved in the process of job search.

Unemployment Insurance

Definition of unemployment insurance: a government program that partially protects workers’ incomes when they become unemployed.
Because unemployment insurance reduces the hardship of unemployment, it also increases the amount of unemployment that exists.

Many studies have shown that more generous unemployment insurance benefits lead to reduced job search effort and, as a result, more unemployment.

Unemployment benefits are much more generous in Germany than they are in the United States.

**Minimum-Wage Laws**

Unemployment can also occur because of minimum-wage laws. The minimum wage is a price floor. If the minimum wage is set above the equilibrium wage in the labor market, a surplus of labor will occur. However, this is a binding constraint only when the minimum wage is set above the equilibrium wage.

Most workers in the economy earn a wage above the minimum wage. Minimum-wage laws therefore have the largest effect on workers with low skill and little experience (such as teenagers).

Anytime a wage is kept above the equilibrium level for any reason, the result is unemployment.

1. Other causes of this situation include unions and efficiency wages.

2. This situation is different from frictional unemployment where the search for the right job is the reason for unemployment.

The labour demand schedule (LD), as any demand schedule, is downward sloping. Two upward-sloping labour supply curves exist: the fully employed labour force (LF), and a schedule showing how many people accept jobs (AJ) at each real wage rate, representing the reality that workers may exercise their choice not to work at given market wages, or that they are between jobs.
From the above figure, we can graphically derive the concept of *equilibrium unemployment* (also easy to conceptualise non-graphically). This is EF at the market wage rate. Equilibrium unemployment is defined as the *natural rate of unemployment* and is the unemployment rate when the market is in equilibrium. This unemployment is defined as voluntary. A worker is voluntarily unemployed if at the given level of wages, she or he wishes to be in a job, but does not yet wish to accept a job.

Classical unemployment is also easily shown on the diagram, representing the distance AB between demand and supply caused by the higher wage \( w^* \). As a consequence of our definition of voluntary unemployment, we define a worker as being *involuntarily unemployed* if she or he would accept a job offer at the going wage rate. We also classify workers who accept their trade union rate if above market equilibrium wage rate as being voluntarily unemployed and in this case part of equilibrium unemployment AC.

We can now conceptually divide total unemployment into two parts: Firstly, the *equilibrium or natural rate* is equilibrium unemployment determined by normal labour market turnover, structural mismatch, union power and incentives in the labour market. Secondly, *Keynesian unemployment (demand deficient)* is involuntary unemployment in disequilibrium, brought about by low aggregate demand and slow wage adjustment. This suggests (given the slow pace of wage adjustments) that the quickest way to eliminate this is by interest rate changes, which tend to increase demand and eliminate the spare capacity (unemployment). By contrast, when the economy is already in long run equilibrium, further boosting of demand through interest rate changes would serve no purpose, since the remaining unemployment is ‘voluntary’ unemployment. The implication of this is that when the economy begins with only voluntary unemployment, then it is supply side not demand side policies which must be employed to make headway in this.

**The Cost of Unemployment**

In today’s dynamic economies, there is a never ending flow of workers in and out of the unemployment pool – emerging in different jobs, of perhaps relocating from saturating or declining industries to emerging industries etc. It is important therefore that governments take adequate measures and safeguards to provide *training and retraining programs* so that job skills match those required by new job opportunities, and that *adequate benefits* are provided for those in this transition period (unemployment benefits, welfare benefits, etc).

Given the existence of frictional unemployment, zero unemployment is clearly impossible. Thus one of the jobs of economists must be to provide politicians with the information which will help gauge the right level of benefits which (although they can be seen as a ‘misallocation of resources’ – not rewarding the production of goods and services) allow workers to successfully move from job to job in an ever changing economy yet do not provide a disincentive to work.
The Theory of Efficiency Wages

Definition of **efficiency wages**: above-equilibrium wages paid by firms in order to increase worker productivity.

Efficiency wages raise the wage above the market equilibrium wage, resulting in unemployment.

There are several reasons why a firm may pay efficiency wages.

**Worker Health**

a. Better paid workers can afford to eat better and can afford good medical care.

b. This is not applicable in rich countries such as the United States, but can raise the productivity of workers in less-developed countries where inadequate nutrition and health care are more common.

**Worker Turnover**

a. A firm can reduce turnover by paying a wage greater than its workers could receive elsewhere.

b. This is especially helpful for firms that face high hiring and training costs.

**Worker Effort**

a. Again, if a firm pays a worker more than he or she can receive elsewhere, the worker will be more likely to try to protect his or her job by working harder.

b. This is especially helpful for firms who have difficulty monitoring their workers.

**Worker Quality**

a. Offering higher wages attracts a better pool of applicants.

b. This is especially helpful for firms who are not able to perfectly gauge the quality of job applicants.

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**Answers to exercise on Utopia’s labor force data:**

Labor Force = 180,000 + 30,000 = 210,000
Unemployment rate = (30,000/210,000) × 100% = 14.3%
Labor-force participation rate = (210,000/240,000) × 100% = 87.5%