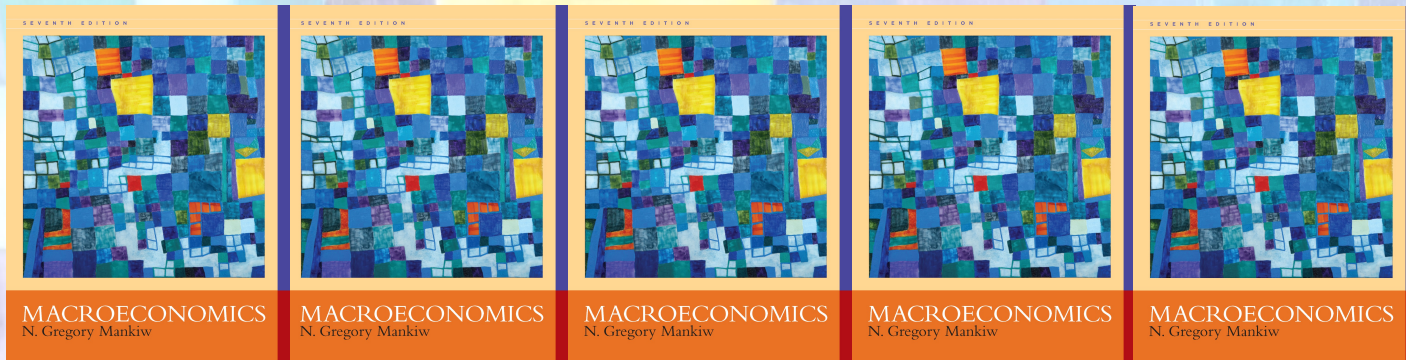# MANKIW'S MACROECONOMICS MODULES ®

CHAPTER 6
Unemployment

A PowerPoint™ Tutorial

To Accompany

MACROECONOMICS, 7th. Edition
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# Job Loss, Job Finding, and the Natural Rate of Unemployment

The average rate of unemployment around which the economy fluctuates is called the **natural rate of unemployment.** The natural rate is the rate of unemployment toward which the economy gravitates in the long run. Let's start with some fundamental equations that will build a model of labor-force dynamics that shows what determines the natural rate.

Using this notation, the rate of unemployment is **U/L.**

$$L = E + U$$

Labor force

is composed of

Number of unemployed workers

Number of employed workers

Now, we'll denote the rate of job separation as *s.* Let *f* denote the rate of job finding. Together these determine rate of unemployment.

$$f\, U = s\, E$$

Number of people finding jobs		Number of people loosing jobs
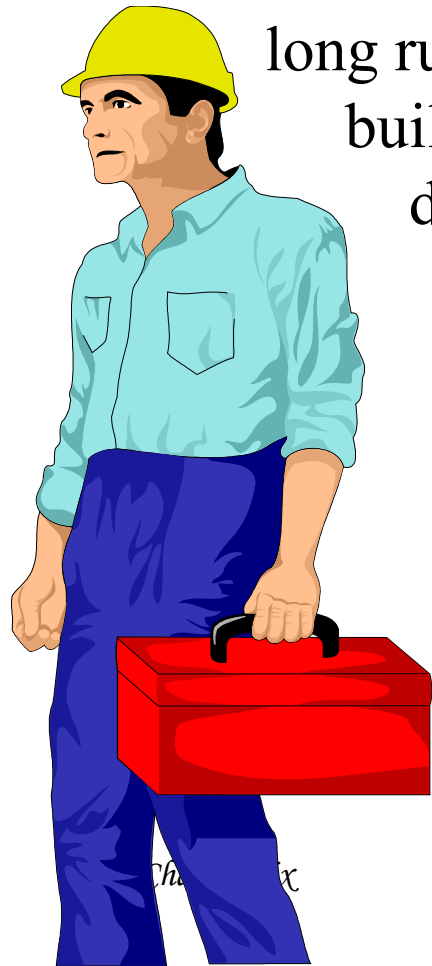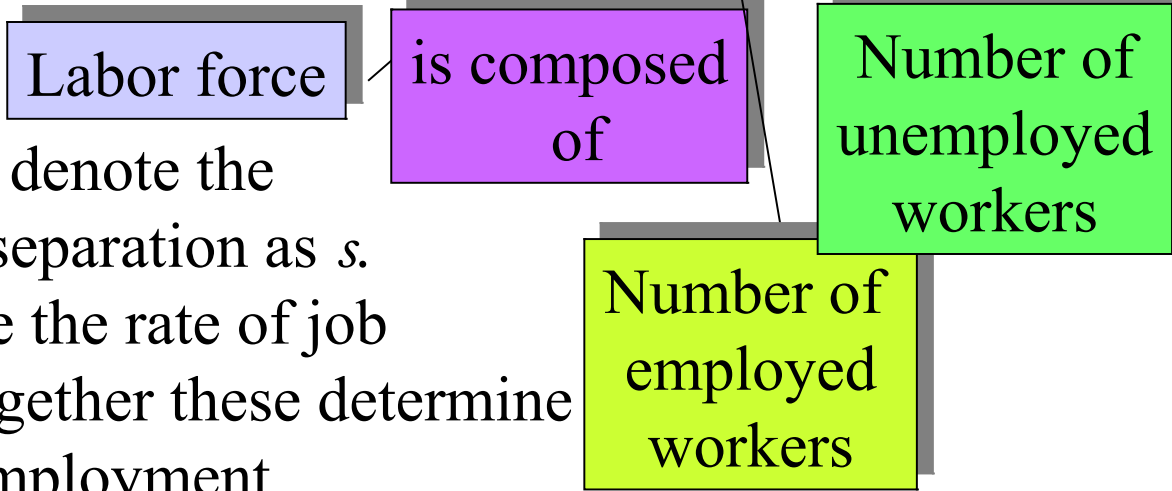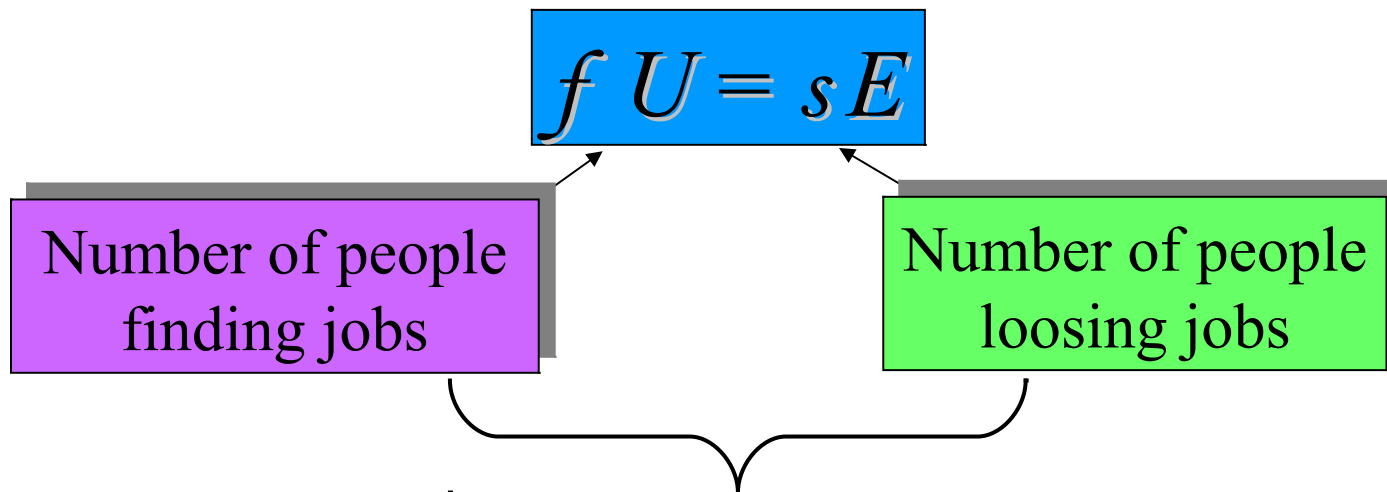
Steady-state unemployment rate

From an earlier equation, we known that $E = L - U$, that is the number of employed equals the labor force minus the number of unemployed. If we substitute $(L-U)$ for E in the steady-state condition, we find:

$$f\, U = s\, (L - U)$$

Then, divide both sides by L and to obtain:

$$f\, U/L = s\, (1 - U/L)$$

Now solve for U/L for find :

$$U/L = s\, /\, (s + f)$$

$$U/L = s / (s + f)$$

This can also be written as:

$$U/L = 1 / (1 + f/s)$$

This equation shows that the steady-state rate of unemployment U/L depends on the rates of job separation s and job finding f.
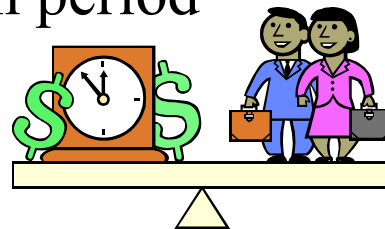
POLICY IMPLICATION

Any policy aimed at lowering the natural rate of unemployment must either reduce the *rate of job separation* or increase the *rate of job finding*. Similarly, any policy that affects the rate of job separation or job finding also changes the natural rate of unemployment.

The unemployment caused by the time it takes workers to search for a job is called *frictional unemployment.*

Economists call a change in the composition of demand among industries or regions a *sectoral shift.* Because sectoral shifts are always occurring, and because it takes time for workers to change sectors, there is always frictional unemployment.

In trying to reduce frictional unemployment, some policies inadvertently increase the amount of frictional unemployment. One such program is called *unemployment insurance.* In this program, workers can collect a fraction of their wages for a certain period after losing their job.
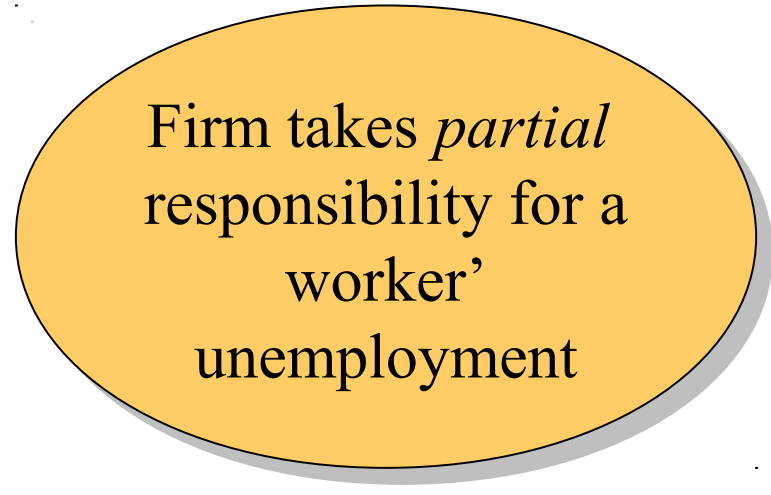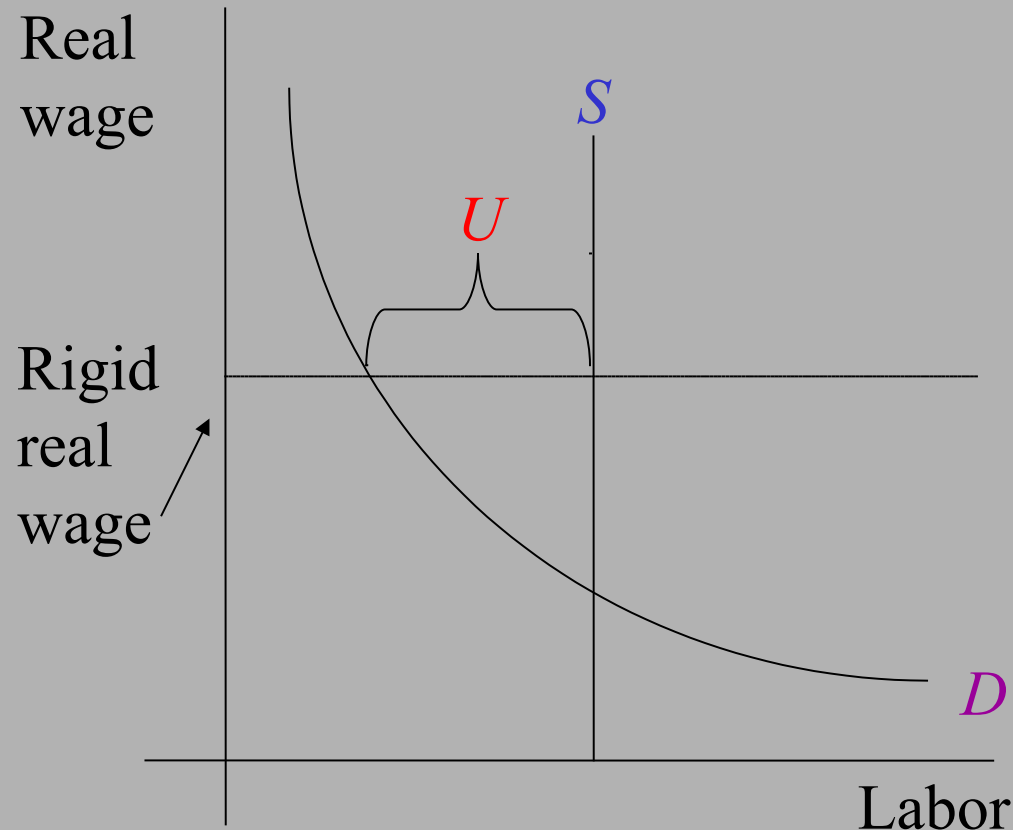
To Pay or Not to Pay?

100 percent experience-related

partially experience related

Firm takes *full* responsibility for a worker's unemployment

Firm takes *partial* responsibility for a worker' unemployment

# Real-Wage Rigidity and Structural Unemployment

Wage rigidity is the failure of wages to adjust until labor supply equals labor demand.

The unemployment resulting from wage rigidity and job rationing is called **structural unemployment.** Workers are unemployed not because they can't find a job that best suits their skills, but rather, at the going wage, the supply of labor exceeds the demand. These workers are simply waiting for jobs to become available.

Real wage

S

U

Rigid real wage

D

Labor

If the real wage is stuck above the equilibrium level, then the supply of labor exceeds the demand. Result: unemployment *U*.

Minimum-Wage Laws

The government causes wage rigidity when it prevents wages from falling to equilibrium levels.

Many economists and policymakers believe that tax credits are better than increases in the minimum wage—if the policy goal is to increase the incomes of the working poor. The ***earned income tax credit*** is an amount that poor working families are allowed to subtract from the taxes they owe.
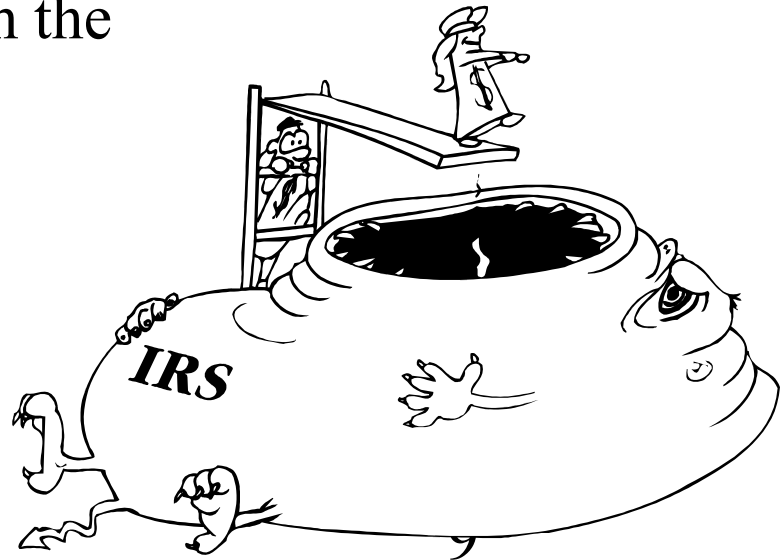
Economists believe that the minimum wage has the greatest impact on teenage unemployment. Studies suggest that a *10-percent increase in the minimum wage reduces teenage employment by 1 to 3 percent.*

Teenagers are the least skilled, have the lowest marginal productivity, and take their compensation in the form of on-the-job-training, say, at Mankiw's Burgers. Yum! Speaking of burgers, about three-fifths of all workers paid the minimum wage or below are in the food service industry.

An apprenticeship is a classic example of training offered in place of wages.

Unions and Collective Bargaining

Another cause of wage rigidity is the monopoly power of *unions.*
In the United States, **only 18 percent** of workers belong to unions. Often, union contracts set wages above the equilibrium level and allow the firm to decide how many workers to employ. Result: a decrease in the number of workers hired, a lower rate of job finding, and an increase in structural unemployment.

The unemployment caused by unions is an instance of conflict between different groups of workers—*insiders* and *outsiders.* In the United States, this is solved at the firm level through *bargaining.*

Efficiency Wages

Efficiency-wage theories suggest that high wages make workers more productive. So, though a wage reduction would lower a firm's wage bill, it would also lower worker productivity and the firm's profits. The first efficiency-wage theory suggests that wages influence attrition. A second efficiency-wage theory contends that high wages reduce labor turnover. A third efficiency-wage theory holds that the average quality of a firm's workforce depends on the wage it pays its employees. A fourth efficiency-wage theory holds that a high wage improves worker effort.

Trends in Unemployment

The natural rate of unemployment has not been stable.

1950s & 60s — Below 5%

1970s & 80s — Over 6%

1990s — Below 5%

The Rise of European Leisure

The four largest European countries– France, Germany, Italy, and the United Kingdom– have experienced high levels of unemployment in recent years. The cause? No one knows for sure, but here is a leading theory: Many economists believe that the problem can be traced to the interaction between a long-standing policy and a recent shock. The long-standing policy is to have generous benefits for the unemployed. The recent shock was a technologically driven fall in the demand for unskilled workers relative to skilled workers.

Did you know that Europeans are more likely to be unemployed that their American counterparts? Europeans enjoy shorter workweeks and more frequent holidays. Also, the employment-to-population ratio is higher in the U.S. than it is in Europe. Also, Europeans retire earlier than Americans.

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Key Concepts of Chapter 6

Natural rate of unemployment
Frictional unemployment
Sectoral shift
Unemployment insurance
Wage rigidity
Structural unemployment
Insiders versus outsiders
Efficiency wages
Discouraged workers