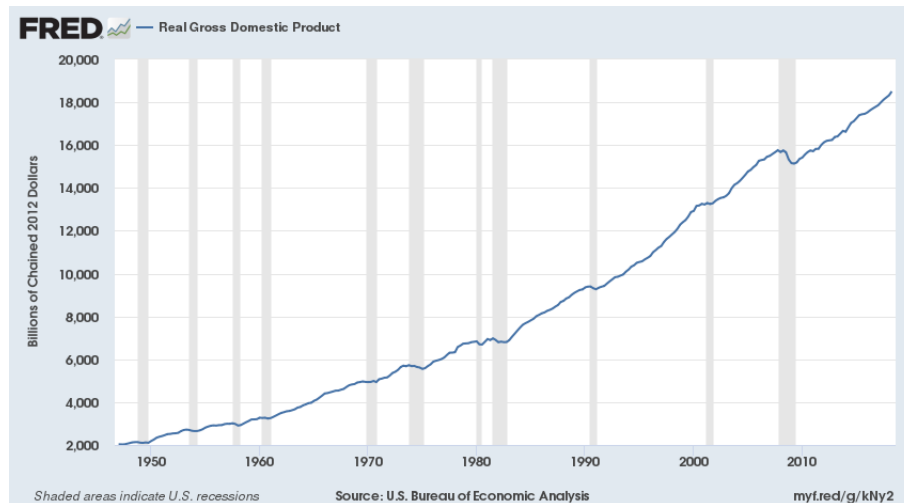


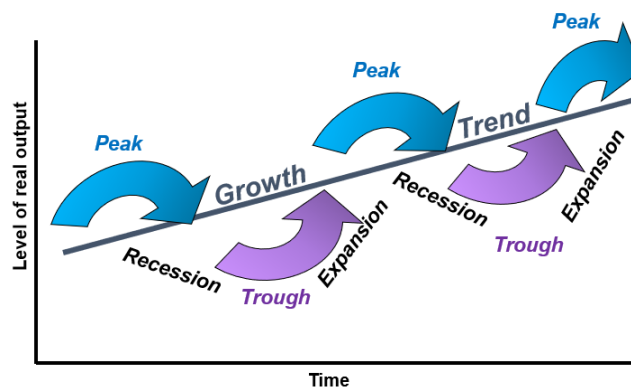
## Chapter 10: Business Cycle and Unemployment

**Instructions:** These are the notes for Chapter 10. Make sure you review the material presented here and read the corresponding chapters on the textbook: **Chapter 20 on Mankiw.**



### Business Cycle: Facts

- In the long-run, the United States experiences economic growth.
- In the short-run, there are fluctuations in the economy.
- **Business cycles** are reoccurring increases and decreases in the level of economic activity over time.
  - Recession: a period of a decline real GDP, lower income, higher unemployment.
  - Expansion: a generalized increase in output, income and business activity.



- Business cycle is unpredictable.
- Causes of business cycles are
  - Demand shocks: Unexpected changes in the demand for goods and services.
  - Supply shocks: Unexpected changes in the supply for goods and services.
- Different industries are affected differently by a recession and expansion :
  - Non-durable goods are affected less: services (haircuts, cell phone service..) and necessities (food and clothing..)
  - Durable goods are the most affected: capital goods (houses, plants, heavy equipment..) and consumer durables (automobiles, major appliances..)



### **Example: The Great Recession of 2008**

- In December 2007, the U.S. economy entered into the "Great Recession".
  - The official duration was 18 months.
- GDP fell by 3.4%.
  - It took 4 years to get back to the pre-recession GDP level.
- Unemployment reached 10.0%. It stayed above 8% for nearly 5 years.

### **Labor Force Statistics**

- What is the unemployment rate, or the labor force participation rate?
- Calculated by the Bureau of Labor Statistics (BLS) and the U.S. Department of Labor.
- Based on a monthly survey of random 60,000 households.
- Based on "adult population" (16 years or older).
- BLS divides population into 3 groups:
  - Employed: paid employees, self-employed, and unpaid workers in a family business
  - Unemployed: people not working who have looked for work during previous 4 weeks; laid off workers
  - Not in the labor force: everyone else, e.g. full-time students, retirees, discouraged workers.
- The labor force is the total # of workers, including the employed and unemployed.

## Labor Force Statistics

- **Unemployment rate:**

% of the labor force that is unemployed

$$\text{Unemployment rate} = 100 \times \frac{\# \text{ of unemployed}}{\text{labor force}}$$

- **Labor force participation rate:**

% of the adult population that is in the labor force

$$\text{labor force participation rate} = 100 \times \frac{\text{labor force}}{\text{adult population}}$$

## Question

Adult population of the U.S. by group, September 2013	
# of employed	144.3 million
# of unemployed	11.3 million
not in labor force	90.6 million

- Calculate the labor force, unemployment rate, adult population, and labor force participation rate using the above data.

### Solution:

- Labor force = employed + unemployed = 155.6 million
- Unemployment rate =  $\frac{\text{unemployed}}{\text{labor force}} \times 100 = 7.26\%$
- Adult population = labor force + not in labor force = 246.2 million
- Labor force participation rate =  $\frac{\text{labor force}}{\text{adult population}} \times 100 = 63.2\%$

## Labor Force Statistics: Different Groups

- The BLS publishes these statistics for demographic groups within the population.
- These data reveal widely different labor market experiences for different groups.

**Labor Force Statistics: By Race**

Adults (20 yrs & older)		
	<i>Unemployment rate</i>	Labor force participation rate
White, male	6.1	72.6
White, female	5.5	58.1
Black, male	14.0	67.9
Black, female	10.0	61.2

**Labor Force Statistics: By Education**

Adults (25 yrs & older)		
	<i>Unemployment rate</i>	Labor force participation rate
less than h.s.	10.3	44.5
h.s. diploma	7.6	59.0
some college or assoc degree	6.0	67.2
bachelor's degree or more	3.7	75.3

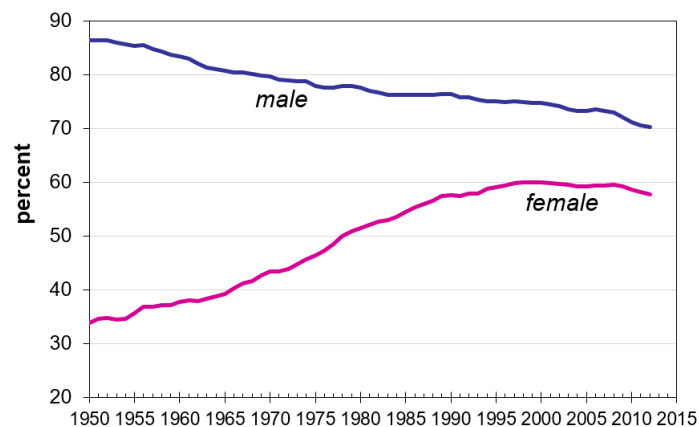
**Labor Force Statistics: By Gender**

Figure 1: LF Participation Rates by Gender, 1950–2012

- Some of the explanations on why LF participation for women has been rising
  - Improved birth control
  - Changing political and social attitudes
  - New technologies: washing machine, dishwasher..

### Question

- In each of the following, what happens to the unemployment rate?
  1. Sue lost her job and begins looking for a new one.
  2. Jon has been out of work since last year, becomes discouraged, stops looking for work.
  3. Sam lost his \$80,000 job, and takes a part-time job at McDonald's until he finds a better one.

### Problems with the Unemployment Rate

- The unemployment rate is not a perfect indicator of joblessness or the health of the labor market
  - It excludes discouraged workers.
  - It does not distinguish between full-time and part-time work, or people working part time because full-time jobs not available.
  - Some people misreport their work status in the BLS survey.
- Despite these issues, the unemployment rate is still a very useful barometer of the labor market and economy.

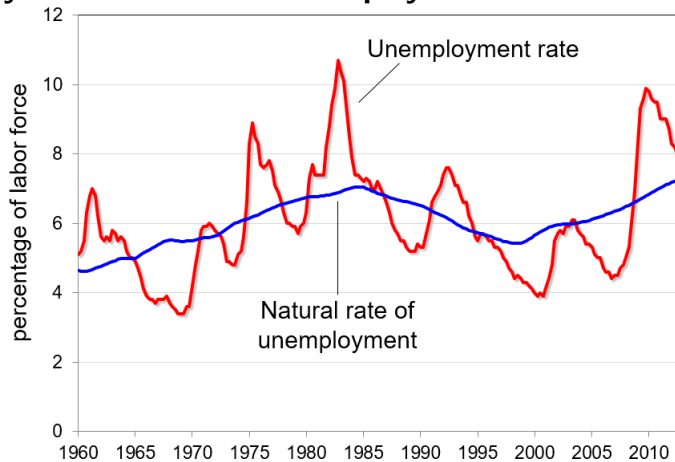
### Question

- Jim loses his job and immediately begins looking for another. Other things the same, the unemployment rate
  - a. increases, and the labor-force participation rate decreases.
  - b. and the labor-force participation rate both increase.
  - c. increases, and the labor-force participation rate is unaffected.
  - d. is unaffected, and the labor-force participation rate decreases.

## Duration of the Unemployment Rate

- Most of the unemployment cases are short:
  - Typically 1/3 of the unemployed have been unemployed under 5 weeks, 2/3 have been unemployed under 14 weeks.
  - Only 20% have been unemployed over 6 months.
- It is harder for policy-makers to improve job conditions for the 20%.

## Cyclical vs. Natural Unemployment Rate



## Cyclical vs. Natural Unemployment Rate

- **Natural rate of unemployment** is the long-run average unemployment.
- **Cyclical unemployment** is the actual unemployment rate, i.e. deviations from its natural rate.
  - Typically due to business cycles.

## Natural Rate of Unemployment

- In a perfect world, labor demand meets labor supply, there would be no unemployment and the equilibrium wage is set!
- In reality, even when the economy is doing well, there is always some unemployment because of market imperfections.
- Natural Rate of Unemployment = Frictional unemployment + Structural unemployment
  - Frictional unemployment is short-term and happens because finding a job takes time.
  - Structural unemployment is long-term and happens due to having not enough jobs.

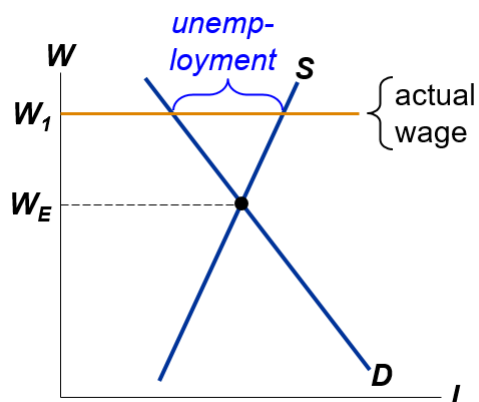
### Frictional Unemployment: Job Search

- **Job search** is the process of matching workers with appropriate jobs.
- How can the policy-makers tackle frictional unemployment?
  - Improve job search: make sure better matches happen!
- However, things are always changing in an economy. Some sectors need more workers, some need fewer.
  - At best, policy-makers can reduce the amount of frictional unemployment instead of fully eliminating it.
- Specifically, we have
  - Government employment agencies that provide information about job vacancies to speed up the matching of workers with jobs.
  - Public training programs that aim to equip workers displaced from declining industries with the skills needed in growing industries.

### Frictional Unemployment: Unemployment Benefit

- **Unemployment insurance (UI)** is a government program that partially protects workers' incomes when they become unemployed.
  - Pros
    - \* Reduces uncertainty over income.
    - \* Gives the unemployed more time to search, resulting in better job matches and thus higher productivity.
  - Cons
    - \* Increases frictional unemployment because workers have less incentive to take jobs while they receive benefits.

### Structural Unemployment



- Structural unemployment occurs when not enough jobs to go around: actual wage is above equilibrium wage!
- Three reasons why actual wage can be higher.

## 1. Minimum-Wage Laws

- The minimum wage may exceed the equilibrium wage for the least skilled or experienced workers, causing structural unemployment (debatable).
- But this group is a small part of the labor force, so the minimum wage can't explain most of the structural unemployment.

## 2. Unions

- A **Union** is a worker association that bargains with employers over wages, benefits, and working conditions.
- Unions exert their market power to negotiate higher wages for workers.
- Empirical fact: A typical union worker earns 10-20% higher wages and gets more benefits than a non-union worker for the same type of work.
- Side effect: wage can be pushed above the equilibrium, causing unemployment.
- Critics of unions: "Unions are cartels. They raise wages above equilibrium, which causes unemployment and/or depresses wages in non-union labor markets."
- Advocates: "Unions counter the market power of large firms, and make firms more responsive to workers' concerns."

## 3. Efficiency Wages

- The theory of efficiency wages: Firms voluntarily pay above equilibrium wages to boost worker productivity because
  - Worker health: Paying higher wages allows workers to eat better, makes them healthier, more productive.
  - Worker turnover: Hiring and training new workers is costly. Paying high wages gives workers more incentive to stay, reduces turnover.
  - Worker quality: Offering higher wages attracts better job applicants, increases quality of the firm's workforce.
  - Worker effort: Having wages above equilibrium would increase worker effort through bonuses etc.

## Question

- Determine the effect of the following on frictional/structural unemployment.
  1. The government eliminates the minimum wage.
  2. The govt increases unemployment insurance benefits.
  3. A new law bans labor unions.
  4. More workers post their resumes at LinkedIn, and more employers use LinkedIn to find suitable workers to hire.



## Summary

- The unemployment rate is the percentage of those who would like to work but have no jobs.
- Unemployment and labor force participation vary widely across demographic groups.
- The natural rate of unemployment is the "natural" rate of unemployment around which the actual rate fluctuates. Cyclical unemployment is the deviation of unemployment from its natural rate and is connected to short-term economic fluctuations.
- The natural rate includes frictional unemployment and structural unemployment.
  - Frictional unemployment occurs when workers take time to search for the right jobs.
  - Structural unemployment occurs when above-equilibrium wages result in unemployment.
- Three reasons for above-equilibrium wages include minimum wage laws, unions, and efficiency wages.