


**Economic Fluctuations,  
Unemployment, and Inflation**

*Full Length Text* — Part: 3 Chapter: 8  
*Macro Only Text* — Part: 3 Chapter: 8

To Accompany "Economics: Private and Public Choice 11th ed."  
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Slides authored and animated by:  
James Gwartney, David Macpherson, & Charles Skipton

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**Swings in the  
Economic Pendulum**

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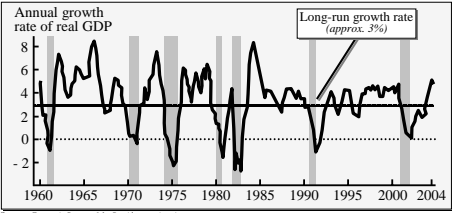
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**Instability in the Growth of Real GDP**


- Although real GDP in the United States has grown at an average rate of approximately 3%, the growth has been characterized by economic ups-and-downs. Note, periods of recession are indicated with shading.



Annual growth rate of real GDP

Long-run growth rate (approx. 3%)

Source: Economic Report of the President, various issues.

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### The Hypothetical Business Cycle

- The four phases of the business cycle are expansion, peak, contraction, and recessionary trough.
- In contrast with the hypothetical cycle represented here, as the previous exhibit illustrated, real world business cycles are characterized by expansions and contractions of varying duration and magnitude.

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### Economic Fluctuations and the Labor Market

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### Labor Market Classifications

- **Employed**
  - a person (16 years old or over) who is
    - working for pay at least one hour per week,
    - self employed, or,
    - working 15 hours or more each week without pay in a family-operated enterprise.
- **Unemployed**
  - a person not currently employed who is either
    - actively seeking a job, or,
    - waiting to begin or return to a job.
- **Civilian Labor force**
  - civilians (16 years and older) who are either employed or unemployed.
- **Not in the labor force**
  - persons (16 years and older) who are neither employed nor unemployed (like retirees, students, homemakers, or disabled persons).

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### Labor Market Indicators

- The non-institutional civilian adult population is grouped into two broad categories:
  - Persons not in the labor force, and
  - persons in the labor force. (*This group includes both the employed and unemployed*).

$$\text{Labor Force Participation Rate} = \frac{\# \text{ in the Labor Force}}{\text{Civilian population (16+)}}$$

Recall the Labor Force =  $\text{Employed} + \text{Unemployed}$

- To be classified as unemployed, one must either be on layoff or actively seeking work.

$$\text{Rate of Unemployment} = \frac{\# \text{ Unemployed}}{\# \text{ in the Labor Force}}$$

Recall the Labor Force =  $\text{Employed} + \text{Unemployed}$

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### Unemployment and Measurement Problems

- The definition of unemployed involves some subjectivity.
- Some argue the *employment/population ratio* is a better indicator of job availability than the *unemployment rate*.

$$\text{Employment / Population Ratio} = \frac{\# \text{ employed}}{\text{Civilian population (16+)}}$$

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### U.S. Population, Employment, and Unemployment: 2004

<b>Labor Force Participation Rate</b>	$= \frac{\text{Civilian labor force}}{\text{Civilian population (16+)}}$	$= \frac{147.4}{223.4}$	$= 66.0\%$
<b>Employment / Population Ratio</b>	$= \frac{\text{Number employed}}{\text{Civilian population (16+)}}$	$= \frac{139.3}{223.4}$	$= 62.3\%$
<b>Rate of Unemployment</b>	$= \frac{\text{Number unemployed}}{\text{Civilian labor force}}$	$= \frac{8.1}{147.4}$	$= 5.5\%$

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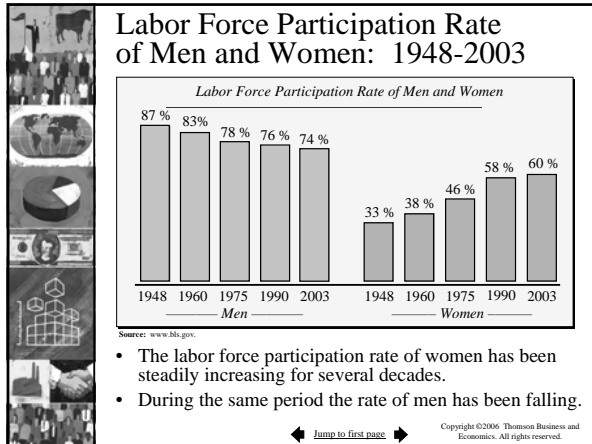
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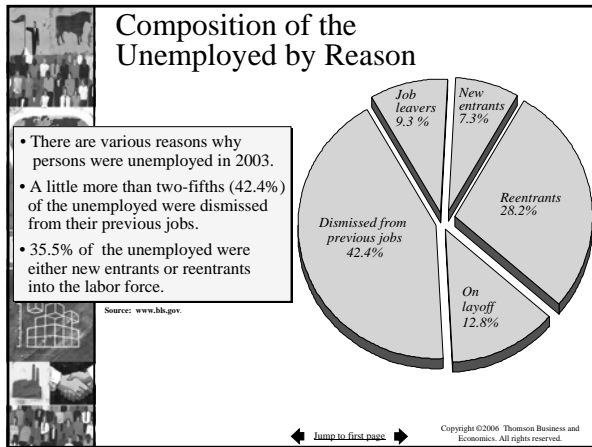
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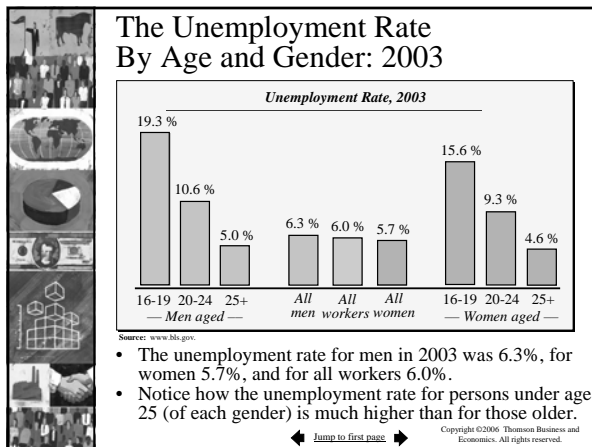
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**Questions for Thought:**

- Classify each of the following as employed, unemployed, or not in the labor force:
  - a person who is not working but applied for a job at Wal-Mart last week
  - a person working part-time who is searching diligently for a full-time job
  - an auto worker vacationing in Florida during a layoff at a General Motors plant who expects to be recalled in a couple of weeks
  - a 17-year-old who works six hours per week as a route person for the local newspaper
  - a homemaker working 70 hrs a week preparing meals and performing other household services

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**Questions for Thought:**

- Classify each of the following as employed, unemployed, or not in the labor force: *(cont.)*
  - a college student who spends between 50 and 60 hours per week attending classes and studying
  - a retired Social Security recipient
- The following are for the U.S. in 2003 *(in millions)*

Population <i>(age 16 and over)</i>	291.0
Civilian pop. <i>(age 16 and over)</i>	221.2
Employed	137.7
Unemployed	8.8

  - Calculate the unemployment rate.
  - Calculate the labor force participation rate.
  - Calculate the employment / population ratio

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**Three Types of Unemployment**

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### Three Types of Unemployment

- **Frictional Unemployment:**
  - Caused by *imperfect information*.
  - Occurs because:
    - employers are not aware of all available workers and their qualifications, and,
    - available workers are not fully aware of all the jobs being offered by employers.
- **Structural Unemployment:**
  - Reflects an imperfect match of employee skills to skill requirements of the available jobs.
  - Also reflects structural and demographic characteristics of the labor market.
- **Cyclical Unemployment:**
  - Reflects business cycle conditions
  - When there is a general downturn in business activity, cyclical unemployment increases.

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### Employment Fluctuations: *Historical Record*

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### Unemployment and Output Are Linked Over the Business Cycle

Source: <http://www.fed.org> and Robert J. Gordon, *Macroeconomics* (Boston: Addison-Wesley, 2003).

- Here we illustrate the unemployment rate from 1960-2003.
- As expected, unemployment rose rapidly during each of the seven recessions (*the shaded years indicate periods of recession*).
- In contrast, soon after each recession ended, the unemployment rate began to decline as the economy moved into an expansionary phase of the business cycle. Note that the actual rate of unemployment was greater than the natural rate during and immediately following each recession.

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### The Concept of Full Employment

- **Full Employment:**  
The level of employment that results when the rate of unemployment is normal, considering both frictional and structural factors.
- Full employment is closely related to the concept of the **natural rate of unemployment**.
- **Natural Rate of Unemployment:**  
The level of unemployment that reflects "job shopping" in an economy of imperfect information and dynamic change.

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### The Concept of Full Employment

- The **natural rate of unemployment** is:
  - neither a temporary high nor temporary low.
  - a rate that is both achievable and sustainable.
  - the level of unemployment accompanying an economy's "**maximum sustainable rate of output**."
- Both demographic factors (e.g. young workers as a share of the labor force) and public policy (e.g. the level of unemployment benefits) influence the **natural rate of unemployment**.
- The actual rate of unemployment generally rises above the natural rate during a recession and falls below the natural rate during a boom.

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### Unemployment Across Economies

Average Unemployment Rate (1994-2003)

Country	Average Unemployment Rate (1994-2003)
Spain	14.6 %
France	10.6 %
Italy	10.5 %
U.K.	8.6 %
Germany	6.5 %
U.S.	5.1 %
Japan	4.2 %

Source: Economic Outlook, OECD (June 2004).

- In recent years, the unemployment rate in the U.S. and Japan has been persistently lower than the comparable rate of major European economies. Most economists believe the higher unemployment benefits, less flexible collective bargaining, and more regulated labor markets of Europe explain this phenomenon.

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## Actual and Potential GDP

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## Actual and Potential GDP

- **Potential output** : Maximum sustainable output level consistent with the economy's resource base, given its institutional arrangements.
- Actual and **potential output** will be equal when the economy is at **full employment**.

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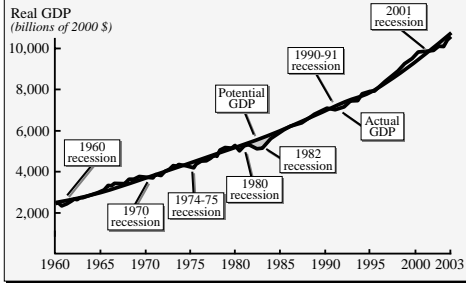
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## Actual & Potential GDP, 1960-2003



Source: U.S. Department of Commerce, Bureau of Economic Analysis.

- Here we illustrate both actual and potential GDP.
- Note the gap (shaded area) between actual and potential GDP during periods of recession.

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**Questions for Thought:**

1. During a recession, which of the following will be true?
  - a. The actual rate of unemployment will be lower than the natural rate.
  - b. Actual GDP will be lower than potential GDP.
  - c. Actual employment will exceed what is considered full employment.
2. How will increased usage of the Internet by employers and employees influence the job search process? Will it tend to increase or decrease the natural rate of unemployment?

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**Questions for Thought:**

3. *True or false.* When full employment is present the rate of unemployment will be zero.
4. What is the relationship between the natural rate of unemployment and full employment? Why might the natural rate change?
5. Frictional unemployment is a result of:
  - (a) not enough jobs for everyone to be employed
  - (b) unemployed workers' skills not matching those needed for available jobs
  - (c) a decline in the demand for labor, such as during a recession
  - (d) imperfect information & temporary periods of unemployment while workers change jobs

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**Effects of Inflation:  
*An Overview***

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### What is Inflation?

- The **Rate of Inflation** is calculated as:
 

$$\text{Inflation rate} = \frac{\text{This year's price index} - \text{Last year's price index}}{\text{Last year's price index}} \times 100$$
- Inflation** is an increase in the general level of prices.
  - High rates of inflation are almost always associated with substantial year-to-year swings in the inflation rate, making them difficult to forecast accurately.

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### The Inflation Rate, 1953-2003

Sources: Derived from computerized data supplied by FAME ECONOMICS. Also see Economic Report of the President (annual).

- Above is the annual rate of inflation for 1953-2003.
- Between 1953 and 1965, the general price level increased at an average annual rate of only 1.3%.
- In contrast, the inflation rate averaged 9.2% from 1973 to 1981, reaching double-digits during several years.
- Since 1982, the average rate of inflation has been lower (3.1% from 1983-2003) and more stable.

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### Unanticipated and Anticipated Inflation

- There are two different kinds of inflation:
  - Unanticipated inflation:**  
An increase in the price level that comes as a surprise, at least for most individuals.
  - Anticipated inflation:**  
A widely expected change in the price level.

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### Effects of Inflation

- High and variable rates of inflation are harmful for a number of reasons:
  - Because unanticipated inflation alters the outcomes of long-term projects like the purchase of a machine or operation of a business, it will both increase the risks and retard the level of such productive activities.
  - Inflation distorts the information delivered by prices.
  - People will respond to high and variable rates of inflation by spending less time producing and more time trying to protect their wealth and income from the uncertainty created by inflation.

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### What Causes Inflation?

- Nearly all economists believe that rapid expansion in the money supply is the primary cause of inflation.

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### Questions for Thought:

1. Suppose that the CPI was 150 at the end of last year and 157.5 at the end of this year. What was the inflation rate during the year?
2. If decision makers anticipate an inflation rate of 3% at the start of a year and prices during the year rise by 7%, this is an example of
  - a. anticipated inflation.
  - b. an inflation rate higher than anticipated.
  - c. an inflation rate lower than anticipated.
3. *True or false:* when the inflation rate is high and variable, decision makers will generally be able to anticipate year-to-year changes in inflation quite accurately.

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**Questions for Thought:**

4. How would an unanticipated 5 percent jump in inflation impact the wealth of:

- a. Joe, who has a 30-year home mortgage at a fixed interest rate.
- b. The McCoy's, who hold most of their wealth in long-term fixed yield bonds.
- c. Hanna, a retiree drawing a pension of a fixed dollar amount.
- d. Jose, a heavily indebted small-business owner.
- e. Mike, the owner of an apartment complex with substantial debt at a fixed interest rate.
- f. Tina, a worker whose wages are determined by a 3-year union contract ratified three months ago.

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**Questions for Thought:**

5. Compared to the United States, labor markets in Europe are characterized by more generous unemployment benefits. Other things constant, how will this influence the unemployment rate in Europe compared to that in the U.S.?

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**End  
Chapter 8**

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