Chapter 7
The Macroeconomy: Unemployment, Inflation, and Deflation

Some measures of economic activity tend to decline ahead of overall declines in the macroeconomy. Such measures are called leading indicators.

Learning Objectives
- Explain how the U.S. government calculates the official unemployment rate
- Discuss the types of unemployment
- Describe how price indexes are calculated and review the key types of price indexes

Learning Objectives
- Distinguish between nominal and real interest rates
- Evaluate who loses and who gains from inflation
- Understand key features of business fluctuations
Chapter Outline

- Unemployment
- Inflation and Deflation
- Changing Inflation and Unemployment: Business Fluctuations

Did You Know That...

- At the onset of a business downturn, there is a sudden jump in the frequency with which the word "recession" appears in the press?

Unemployment

- Question
  - Who are the unemployed?

- Unemployment
  - The total number of adults (aged 16 years or older) who are willing and able to work and who are actively looking for work but have not found a job

Unemployment

- Question
  - What are the costs of unemployment?
Unemployment

- Answer
  - Lost output
    - Early 2000s unemployment rate rose by 2 percentage points
    - Factory output was 80% of potential
    - Lost output was $200 billion of goods and services that could have been produced
  - Personal psychological impact

Unemployment

- Question
  - How would you show the cost of unemployment on a production possibilities curve?

Production Possibilities

More than a Century of Unemployment

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Slide 7-12
The unemployment rate is the percentage of the measured labor force that is unemployed.

**Labor Force**
- Individuals aged 16 years or older who either have jobs or are looking and available for jobs

Labor force = the employed + the unemployed

\[
\text{Unemployment rate} = \frac{\text{unemployed}}{\text{labor force}} \times 100\%
\]

\[
= \frac{5.8}{141.2} \times 100\% = 4.1\%
\]

*U.S., millions of people; as of April 2000*
Adult Population

- Unemployed: 8.5 million
- Not in labor force: 72.1 million
- Employed: 142.7 million

Source: U.S. Department of Labor, Bureau of Labor Statistics

Unemployment

- **Stocks**
  - The quantity of something (unemployed) measured at a point in time

- **Flow**
  - A quantity measured over time (job leavers, job finders)

Visualizing Stocks and Flows

Unemployment

- Unemployment categories
  - Job loser
  - Reentrant
  - Job leaver
  - New entrant
Unemployment

- **Job Loser**
  - An individual whose employment was involuntarily terminated or who was laid off
  - 40–60% of the unemployed

Unemployment

- **Reentrant**
  - An individual who has worked a full-time job before but left the labor force and has now reentered it looking for a job
  - 20–30% of the unemployed

Unemployment

- **Job Leaver**
  - An individual who voluntarily ended employment
  - Less than 10% to around 15% of the unemployed

Unemployment

- **New Entrant**
  - An individual who has never worked a full-time job for two weeks or longer
  - 10–13% of the unemployed
Duration of unemployment
- More than a third of job seekers find work within one month
- Approximately another third find employment within a second month
- About a sixth are still unemployed after six months
- Average duration is just over 15 weeks throughout the last decade

Question
- What is likely to happen to the duration of unemployment during a downturn in the economy?

Discouraged Workers
- Individuals who have stopped looking for a job because they are convinced they will not find a suitable one

Question
- How does the existence of discouraged workers bias the unemployment rate?

Labor Force Participation Rate
- The proportion of working-age individuals who are employed or seeking employment
Question
- Is there an economic explanation for the increase in the female labor force participation rate?

The major types of unemployment
- Frictional
- Structural
- Cyclical
- Seasonal

Frictional Unemployment
- Results from the fact that workers must search for appropriate job offers
Unemployment

- **Structural Unemployment**
  - Results from a poor match of workers’ abilities and skills with current requirements of employers

Unemployment

- **Cyclical Unemployment**
  - Results from business recessions that occur when aggregate (total) demand is insufficient to create full employment

Unemployment

- **Seasonal Unemployment**
  - Results from the seasonal pattern of work in specific industries

Unemployment

- **Question**
  - Does full employment mean that everybody has a job?
Full Employment
- An arbitrary level of unemployment that corresponds to “normal” friction in the labor market

Natural Rate of Unemployment
- The unemployment rate that is estimated to prevail in the long run when all workers and employers have fully adjusted to any changes in the economy
- When seasonally adjusted the natural rate of unemployment should only take into account frictional and structural unemployment

Question
- Does an increase in the unemployment rate necessarily mean there has been a decrease in the employment rate?

Inflation
- An upward movement in the average level of prices

Deflation
- A downward movement in the average level of prices
Inflation and Deflation

- **Purchasing Power**
  - The value of money for buying goods and services
  - Varies with prices and income

Inflation and Deflation

- **Nominal value**
  - Price expressed in today’s dollars
- **Real value**
  - Value expressed in purchasing power

Inflation and Deflation

- **Question**
  - Is a 30-second ad during the Super Bowl really 40 times more expensive today (about $2.00 million) compared to 1967 ($50,000)?

Inflation and Deflation

- **Answer**
  - Depends on what has happened to the price level and the size of the audience during this time
  - Prices: fourfold increase
  - Audience: doubled
Analysis
- Adjusting for viewership and inflation, the cost per viewer is about five times what it was in 1967—not 25 times.

Inflation and Deflation

Measuring inflation
- **Price Index**
  - The cost of today's market basket of goods expressed as a percentage of the cost of the same market basket during a base year

\[
\text{Price index} = \frac{\text{cost today of market basket}}{\text{cost of market basket in base year}} \times 100
\]

Market Basket
- Representative bundle of goods and services

Base Year
- The point of reference for comparison of prices in other years.

Calculating a Price Index for a Two-Good Market Basket

<table>
<thead>
<tr>
<th>Commodity</th>
<th>1992 Market Basket</th>
<th>Cost of Basket per Unit in 1992</th>
<th>2002 Market Basket</th>
<th>Cost of Basket per Unit 2002</th>
<th>Cost of Market Basket at 2002 Prices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn</td>
<td>100 bushels</td>
<td>$4</td>
<td>$400</td>
<td>$8</td>
<td>$800</td>
</tr>
<tr>
<td>Microcomputers</td>
<td>2</td>
<td>$500</td>
<td>$1,000</td>
<td>$425</td>
<td>$850</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td></td>
<td>$1,400</td>
<td></td>
<td></td>
<td>$1,650</td>
</tr>
</tbody>
</table>

\[
\text{Price index} = \frac{\$1,650 - \$1,400}{\$1,400} \times 100 = 117.86
\]
Real-world price indexes
- Consumer Price Index (CPI)
- Producer Price Index (PPI)
- GDP Deflator

Consumer Price Index (CPI)
- A statistical measure of a weighted average of prices of a specified set of goods and services purchased by wage earners in urban areas
- Market basket is based on a consumer expenditure survey
- Methodology problems
  - Substitution effect and the fixed quantity index
  - Quality changes
  - New products

Producer Price Index (PPI)
- A statistical measure of a weighted average of prices of commodities that firms purchase from other firms
- Generally for non-retail markets
- Used as a leading indicator CPI
- PPIs for:
  - Food materials
  - Intermediate goods
  - Finished goods

GDP Deflator
- A price index measuring the changes in prices of all final goods and services produced in the economy
- Broadest measure of prices
- Not based on a fixed market basket
Inflation and Deflation in U.S. History

Anticipated versus Unanticipated Inflation
- The effects of inflation on individuals depend upon which type of inflation exists.

Anticipated Inflation
- The rate of inflation that the majority of individuals believe will occur

Unanticipated Inflation
- Inflation that comes as a surprise to individuals in the economy

Inflation and interest rates
- Nominal Rate of Interest
  - The market rate of interest expressed in today’s dollars
- Real Rate of Interest
  - The nominal rate of interest minus the anticipated rate of inflation
The real interest rate is calculated as follows:

- Nominal interest Rate = 10%
- Expected inflation Rate = 5%
- Real Rate = Nominal Rate - Expected Inflation Rate = 10% - 5% = 5%

Inflation and Deflation

Does inflation necessarily hurt everyone?

- Inflation affects people differently

Unanticipated positive inflation:

- Creditor loses
- Debtors gain

Protecting against inflation:

- Cost-of-living adjustments (COLAs)
  - Clauses in contracts that allow for increases in specified nominal values to account for changes in the cost of living

The resource cost of inflation:

- Repricing, or menu, cost of inflation
  - The cost associated with recalculating prices and printing new price lists when there is inflation
Changing Inflation and Unemployment: Business Fluctuations

- **Business Fluctuations**
  - The ups and downs in overall business economic activity
    - National income
    - Employment
    - Price level

Expansion
- A business fluctuation in which overall business activity is rising at a more rapid rate than previously or at a more rapid rate than the overall historical trend for the nation

Contraction
- A business fluctuation during which the pace of national economic activity is slowing down

Recession
- A period of time during which the rate of growth of business activity is consistently less than its long-term trend or is negative

Depression
- An extremely severe recession
The Typical Course of Business Fluctuations

Figure 7-8

Time

Level of National Business Activity

- Peak
- Growth Trend
- Expansion
- Trough
- Recession

National Business Activity, 1880–Present

Figure 7-9


Explaining business fluctuations:
- External shocks
  - War
  - Weather patterns
  - Oil shock

Leading Indicators
- Events that typically occur before, or “lead” changes in business activity
- Leading indicators can be used to identify external shocks.
- Examples of recession indicators
  - Reduction in the average workweek
  - Decrease in prices of raw materials
  - Drop in the quantity of money circulating
The Leading Economic Indicators Index as compiled by the Conference Board includes items such as:
- Changes in hourly employment
- Changes in the number of new unemployment claims
- New manufacturing orders
- The number of building permits

These LEI measures have been selected because they all preceded past recessions.

The Conference Board regularly revises the index to include factors that are likely to predict future recessions.

The following Web links appear in the margin of this chapter in the textbook:
- http://www.imf.org/external
- http://www.nber.org

- How the U.S. government calculates the official unemployment rate
  - Unemployment is the percentage of the labor force that is looking for work and currently not working

- Types of Unemployment
  - Frictional
  - Structural
  - Cyclical
  - Seasonal
How price indexes are calculated and the key price indexes
- A price index is the cost of today’s market of goods expressed as a percentage of the cost of the same markets basket during a base year
- Key price indexes
  - CPI
  - PPI
  - GDP Deflator

The nominal versus the real interest rate
- Real interest rate = nominal interest rate - anticipated rate of inflation

Those who lose from inflation and those who gain
- Losers are creditors
- Gainers are debtors

Key features of business fluctuations
- Contractions
- Expansions

End of Chapter

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