Economic growth, business cycles, unemployment and inflation

SUMMARY

After reading this chapter you should be able to...

- Explain the difference between the long-run framework and short-run framework.

- Summarize some relevant statistics about growth, business cycles, unemployment, and inflation.

- List four phases of the business cycle.

- Explain how unemployment us measured and state some microeconomic categories of unemployment.

- Relate the target rate of unemployment to potential income.

- Define inflation and distinguish a real concept from a nominal concept

- State two important costs of inflation.

INTRODUCTION

Introduction

- Problems of:
  - Growth
  - Business cycle
  - Unemployment
  - Inflation

- 2 frameworks
  - Long-run
  - Short-run

GROWTH

- Real GDP

- Per capital real output

- Global experiences with growth
  - The U.S
  - Europe and Japan
  - South East Asia
  - Africa
- The prospect for future U.S. growth, and the rest of the world
- The benefits and costs of growth

Global Experiences with Growth

- ## GDP: First measurement of growth.

TABLE 7-1 Average Annual per Capita Income, Various Regions

	Growth Rates			Income Levels (1990 international dollars)		
	1820–1950	1950–2009*	1820–2009*	1820	1950	2009*
The world	0.9	2.1	1.3	$ 675	$2,108	$ 7,300
Western Europe	1.1	2.6	1.5	1,202	4,578	21,200
North America	1.6	2.0	1.7	1,253	9,463	31,000
Japan	0.8	4.8	1.9	660	1,921	22,500
Eastern Europe	1.1	2.2	1.3	683	2,111	7,600
Former USSR	1.8	1.5	1.2	700	2,600	6,800
Latin America	1.0	1.6	1.2	691	2,503	6,500
China	−0.2	4.4	1.2	600	448	6,050
East Asia	0.3	3.5	1.7	500	668	5,300
Africa	0.6	1.1	0.7	420	1,307	1,700

BUSINESS CYCLES

- Keynesians vs. Classical economists

NBER Dating of the Business Cycle

In December 2008, the six members of the NBER Business Cycle Dating Committee issued this statement:

> The NBER's Business Cycle Dating Committee has determined that a peak in business activity occurred in the U.S. economy in December 2007. The peak marks the end of an expansion that began in November 2001 and the beginning of a recession. The expansion lasted 73 months; the previous expansion of the 1990s lasted 120 months. A recession is a significant decline in economic activity spread across the economy, lasting more than a few months, normally visible in production, employment, real income, and other indicators.

Technically, an economy is in a recession only after it has been declared to be in a recession by a group of economists appointed by the National Bureau of Economic Research (NBER). Because real output is reported only quarterly and is sometimes revised substantially, the NBER Dating Committee looks at monthly data such as industrial production, employment, real income, sales, and sometimes even people's perceptions of what is happening in the economy to determine whether a recession has occurred. In 2001, for example, in the statement quoted above, the committee announced that a recession had begun in March even though, according to preliminary GDP figures, real output did not fall for two consecutive quarters. (Revised figures, which came out more than six months later, showed that GDP had actually started falling earlier and fell for three quarters.) The fact (1) that the NBER economists include many factors when determining a recession and (2) that they base their decision on preliminary data makes it difficult to provide an unambiguous definition of recession.

In 2008, the U.S. economy started falling into a recession that was much deeper than most previous recessions, and which some felt could turn into a depression. While technically it only became a recession when the NBER decided that it was a recession, by early 2008, it was clear to all that the United States was in a recession. People didn't need the NBER to tell them.
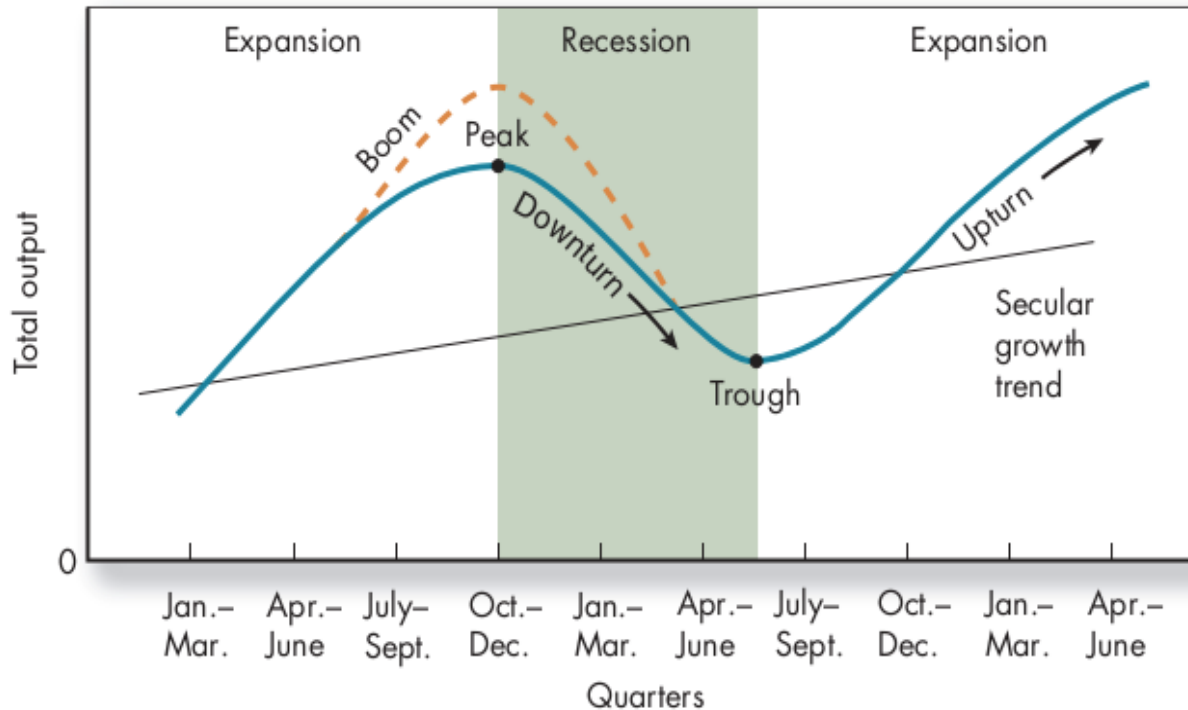
Business cycles

- *"Upward or downward movement of economic activity, or real GDP, that occurs around the growth trend."*
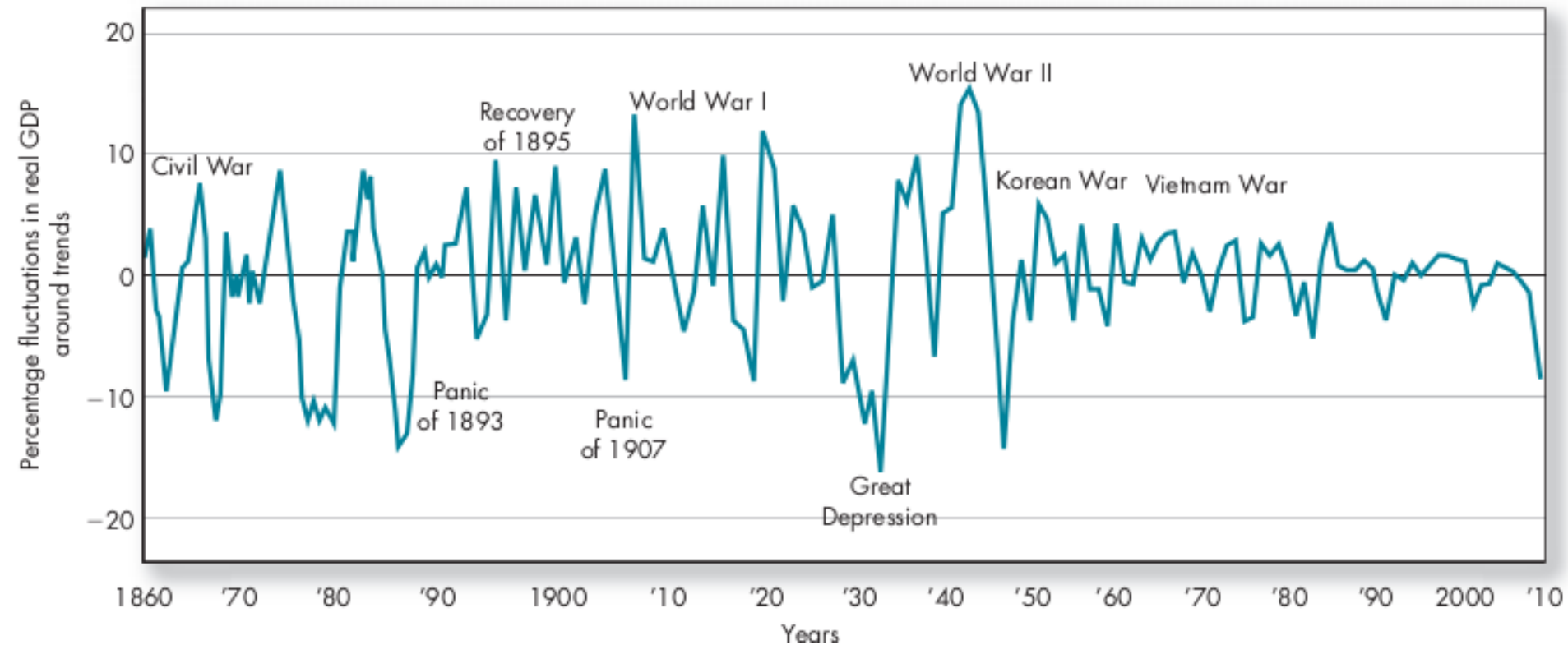
- Definitions:
  - Recession
  - Depression
  - Expansion

Business cycles

- <u>4 phases:</u>
  - ➢ The peak
  - ➢ The downturn
  - ➢ The trough
  - ➢ The upturn.

Changes in the demand side of the economy

⬇

Business cycles

Why do business cycles occur?

Business Cycles	Duration (in months)	
	Pre–World War II (1854–1945)	Post–World War II (1945–2009)
Number (trough to trough)	22	11
Average duration (trough to trough)	50	67
Length of longest cycle	99 (1870–79)	128 (1991–2001)
Length of shortest cycle	28 (1919–21)	28 (1980–82)
Average length of expansions	29	57
Length of shortest expansion	10 (1919–20)	12 (1980–81)
Length of longest expansion	80 (1938–45)	120 (1991–2001)
Average length of recessions	21	10
Length of shortest recession	7 (1918–19)	6 (1980)
Length of longest recession	65 (1873–79)	16+ (2007–)

Source: National Bureau of Economic Research (http://nber.org) and *Survey of Current Business* (www.bea.doc.gov).

- Indicators vs. predictors:
  - Leading
  - Coincident
  - lagging

Business cycles

Leading indicators:

➢ Average workweek for production workers in manufacturing.

➢ Average weekly claims for unemployment insurance.

➢ New orders for consumer goods and materials.

➢ Vendor performance, measured as a percentage of companies reporting slower deliveries from suppliers.

➢ Index of consumer expectations.

➢ New orders for nondefense capital goods.

➢ Number of new building permits issued for private housing units.

➢ Stock prices.

➢ Interest rate spread.

UNEMPLOYMENT

Both business cycles and growth are directly related to unemployment in the U.S. economy. Unemployment occurs when people are looking for a job and cannot find one. The **unemployment rate** is *the percentage of people in the economy who are willing and able to work but who are not working.* When an economy is growing and is in an expansion, unemployment is usually falling; when an economy is in a recession, unemployment is usually rising, although often with a lag.

- Unemployment(s):
  - Cyclical
  - Structural (natural)

From Full Employment to the Target Rate of Unemployment

As I emphasized in Chapter 1, good economists attempt to remain neutral and objective. It isn't always easy, especially since the language we use is often biased.

This problem has proved to be a difficult one for economists in their attempt to find an alternative to the concept of full employment. An early contender was the natural rate of unemployment. Economists have often used the word *natural* to describe economic concepts. For example, they've talked about "natural" rights and a "natural" rate of interest. The problem with this usage is that what's natural to one person isn't necessarily natural to another. The word *natural* often conveys a sense of "that's the way it should be." However, in describing as "natural" the rate of unemployment that an economy can achieve, economists weren't making any value judgments about whether 4.5–5 percent unemployment is what should, or should not, be. They simply were saying that, given the institutions in the economy, that is what is achievable. So a number of economists objected to the use of the word *natural*.

As an alternative, a number of economists started to use the term *nonaccelerating inflation rate of unemployment* (NAIRU), but even they agreed it was a horrendous term. And so many avoided its use and shifted to the relatively neutral term *target rate of unemployment*.

The target rate of unemployment is the rate that one believes is attainable without causing accelerating inflation. It is not determined theoretically; it is determined empirically. Economists look at what seems to be achievable and is historically normal, adjust that for structural and demographic changes they believe are occurring, and come up with the target rate of unemployment.
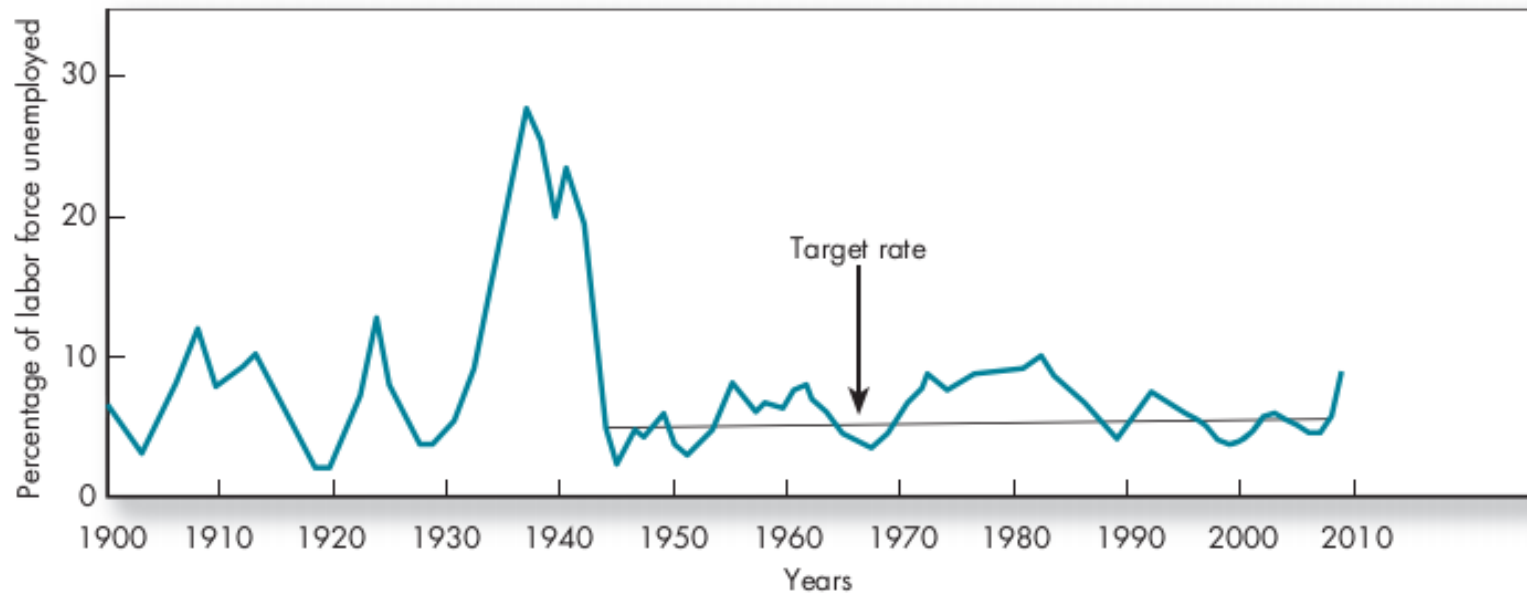
Unemployment

- Related to growth and business cycles.

- Unemployment is:
  - A social problem
  - A governmental problem

- Why has the target rate of unemployment changed over time?
  - Inflation rate
  - Demography
  - Changes in Social and institutional structure
  - Changes in governmental institutions

FIGURE 7-3 **Unemployment Rate since 1900**

The unemployment rate has always fluctuated, with the average around 5 or 6 percent. Since the 1930s, fluctuations have decreased. In the mid-1940s, the U.S. government started focusing on the unemployment rate as a goal. Initially, it chose 2 percent, but gradually that increased to somewhere around 5 percent.

Source: U.S. Bureau of Labor Statistics (www.bls.gov).

Unemployment

- <u>Unemployment rate</u>: Measured by dividing the number of unemployed individuals by the number of people in the civilian labor force and multiplying by 100.

- How is <u>unemployment measured</u>?
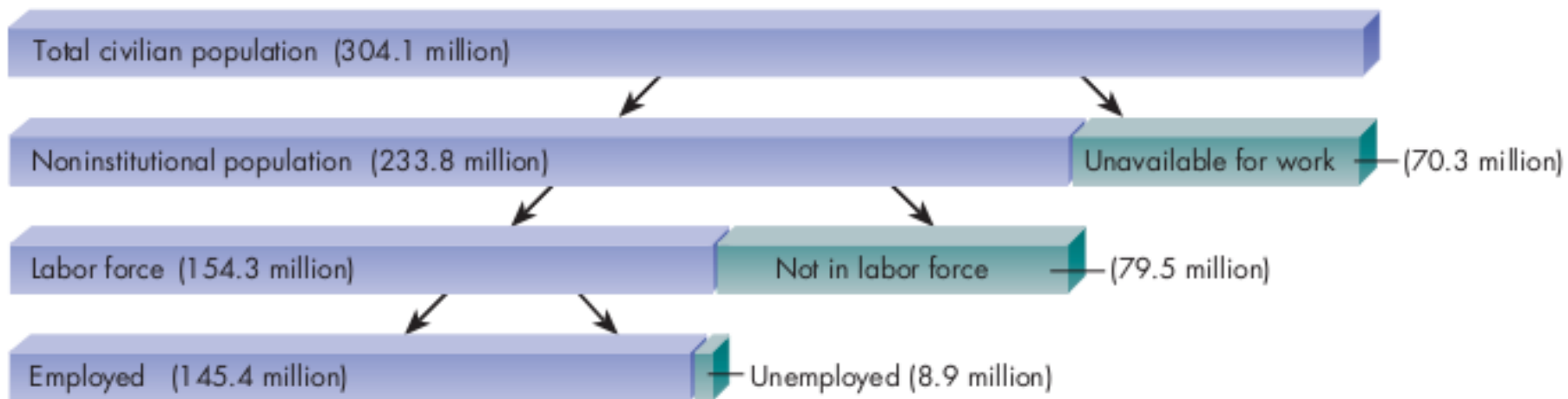
Unemployment

- ## <u>Unemployment and potential output:</u>

TABLE 7-2 Unemployment and Capacity Utilization Rates for Selected Countries (percentages)

	Capacity Utilization			Unemployment			Annual Growth in Real Output 1975–2008
	1975	1985	2008**	1975	1985	2008	
United States	74.6	79.8	75	8.5	7.2	5.8	2.7
Japan	81.4	82.5	75	1.9	2.6	4.0	2.5
Germany***	76.9	79.6	76	3.4	8.2	7.1	1.7
United Kingdom	81.9	81.1	73	4.6	11.2	5.6	2.2
Canada	83.1	82.5	74	6.9	10.5	6.2	2.9
Mexico	85.0	92.0	79	*	*	3.7	3.3
Republic of Korea	86.4	74.6	74	*	10.9	3.2	6.7

*Unavailable.

**Capacity utilization rates are for most recent year available.

***For unified Germany: from 1989 to 2008.

Economists translate the target unemployment rate and target capacity utilization rate into the target level of potential output, or simply potential output (or *potential income* because output creates income). **Potential output** is *the output that would materialize at the target rate of unemployment and the target rate of capacity utilization.* It is the rate of output beyond which prices would rise at ever-increasing rates; that is, the economy would experience accelerating inflation. Potential output grows at the secular (long-term) trend rate of 2.5 to 3.5 percent per year. When the economy is in a downturn or recession, actual output is below potential output. As you will see throughout the rest of the book, there is much debate about what are the appropriate target rates of unemployment, capacity utilization, and potential output.

To determine how changes in the unemployment rate are related to changes in output, we use **Okun's rule of thumb,** which states that *a 1 percentage point change in the unemployment rate will be associated with a 2 percent change in output in the opposite direction.*[3]
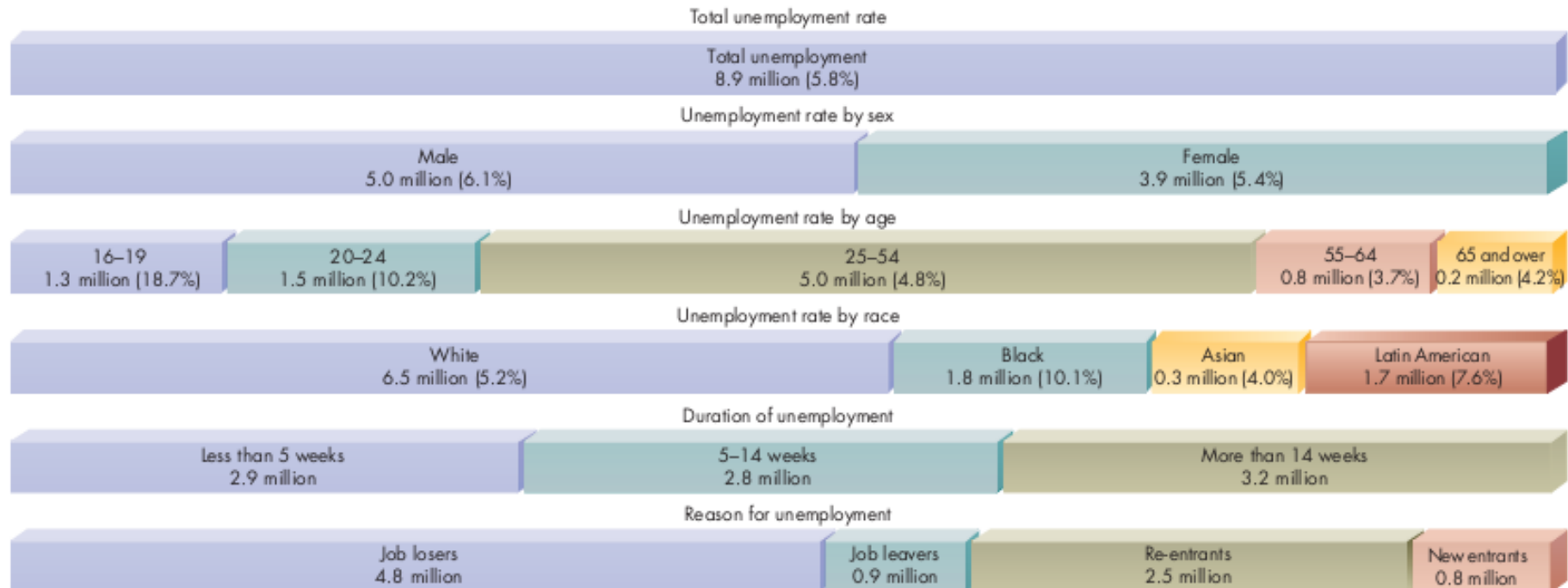
+1 percentage point change in unemployment → −2 percent change in output

For example, if unemployment rises from 6 percent to 7 percent, total output of $14 trillion will fall by 2 percent, or $280 billion, to $13.7 trillion. In terms of number of workers, a 1 percentage point increase in the unemployment rate means about 1.5 million additional people are out of work.

FIGURE 7-5 Unemployment by Microeconomic Subcategories, 2008

Unemployment isn't all the same. This figure gives you a sense of some of the subcategories of unemployment.

Source: *Employment and Earnings 2009*, Bureau of Labor Statistics (www.bls.gov). Data may not add up due to rounding and definitional differences.

Total unemployment rate

| Total unemployment 8.9 million (5.8%) |

Unemployment rate by sex

| Male 5.0 million (6.1%) | Female 3.9 million (5.4%) |

Unemployment rate by age

| 16–19 1.3 million (18.7%) | 20–24 1.5 million (10.2%) | 25–54 5.0 million (4.8%) | 55–64 0.8 million (3.7%) | 65 and over 0.2 million (4.2%) |

Unemployment rate by race

| White 6.5 million (5.2%) | Black 1.8 million (10.1%) | Asian 0.3 million (4.0%) | Latin American 1.7 million (7.6%) |

Duration of unemployment

| Less than 5 weeks 2.9 million | 5–14 weeks 2.8 million | More than 14 weeks 3.2 million |

Reason for unemployment

| Job losers 4.8 million | Job leavers 0.9 million | Re-entrants 2.5 million | New entrants 0.8 million |

INFLATION

Inflation

- Definition:
  - Inflation (deflation) is a continual rise (fall) in the price level.

- Inflation since 1900
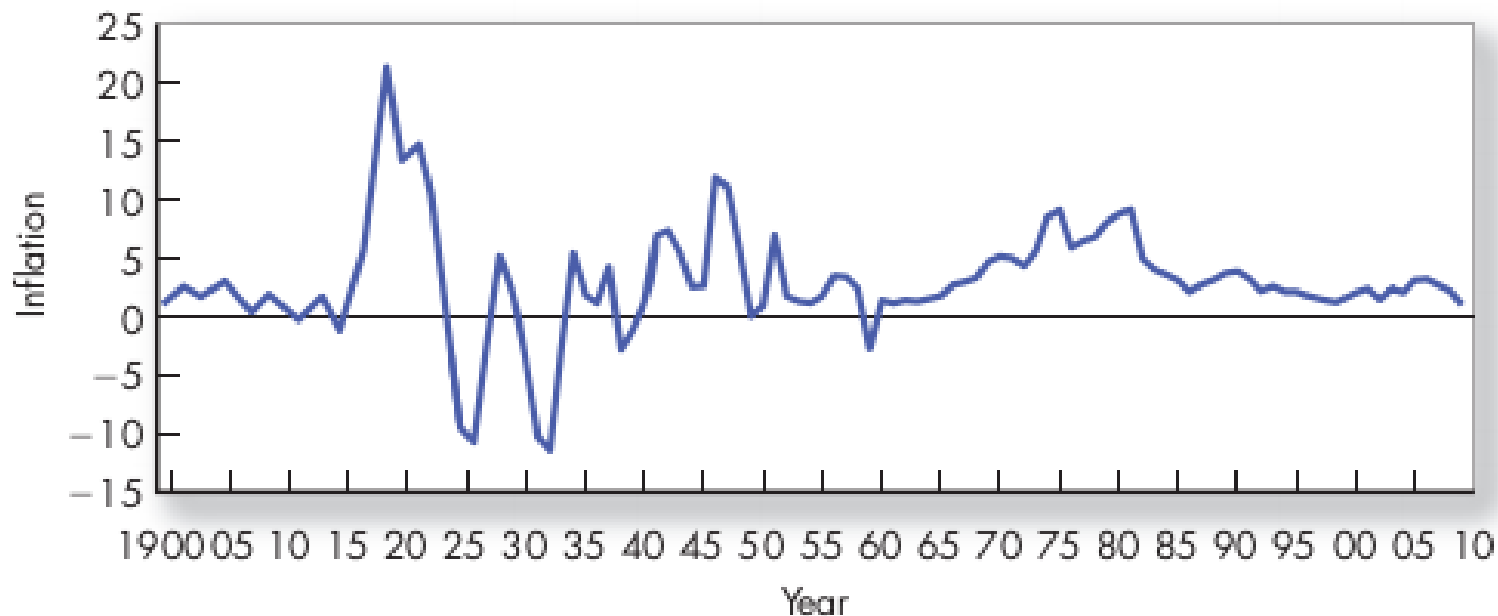
Inflation

- ## Measurement of inflation:

  - ➢ Create a price index: *A price index is calculated by dividing the current price of a basket of goods by the base price of a basket of goods.*

  - ➢ Example:

(1)	(2)	(3)	(4)	(5)
	Prices		Expenditures	
Basket of Goods	2009	2010	2009	2010
10 pairs jeans	$20.00/pr.	$25.00/pr.	$200	$250
12 flannel shirts	15.00/shirt	20.00/shirt	180	240
100 lbs. apples	0.80/lb.	1.05/lb.	80	105
80 lbs. oranges	1.00/lb.	1.00/lb.	80	80
Total expenditures			$540	$675

Price index in 2001: $675 / $540 x 100 = 125

Inflation in 2001 = percentage change in the price index

= [(125 / 100) – 1] x 100 = 25%

Inflation

- <u>Real-world price indexes</u>

  - ➤ Producer Price Index (PPI)

  - ➤ Gross domestic product deflator (GDP deflator)

  - ➤ Consumer price index (CPI)

- <u>Real and nominal concepts</u>

  - ➤ Real output: *The total amount of goods and services measured at current prices*

  - ➤ Nominal output: The total amount of goods and services measured at current prices.

FIGURE 7-7 **Composition of CPI**

The consumer price index is determined by looking at the prices of goods in the categories listed in this exhibit. These categories represent the rough percentages of people's expenditures.

Source: *CPI Detailed Reports*, Bureau of Labor Statistics (www.bls.gov).
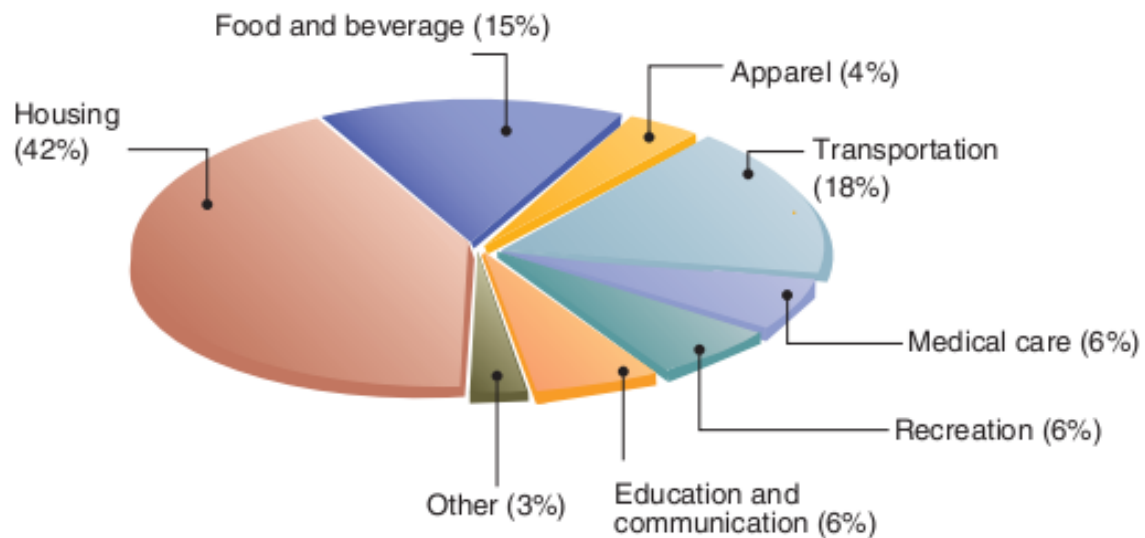
- Issues with the measurement of inflation:
  - Subsitution
  - Quality
  - New products
  - Store measurement
  - Non-market transactions

Inflation

- <u>Expected an unexpected inflation</u>
  - Expected inflation (expect to occur)
  - Unexpected inflation

- <u>Costs of inflation</u>
  - Redistribute incomes
  - Effect on the information prices convey to people

- <u>Hyperinflation</u>
  - 100% or more per year