Chapter

8

Unemployment and Inflation

Alcatel-Lucent Contributes to Unemployment

When total employment in the United States declined during 2001, Lucent contributed to the decline.

Learning Objectives

8.1 Define **unemployment rate** and **labor force participation rate** and understand how they are computed.

8.2 Identify the three **types** of **unemployment**.

8.3 Explain what **factors determine** the **unemployment rate**.

8.4 Define **price level** and **inflation rate** and understand how they are computed.

8.5 Use **price indexes** to adjust for the effects of inflation.

8.6 Distinguish between the **nominal interest rate** and the **real interest rate**.

8.7 Discuss the **problems** that **inflation causes**.

In Previous Lectures:

Price level A measure of the average prices of goods and services in the economy.
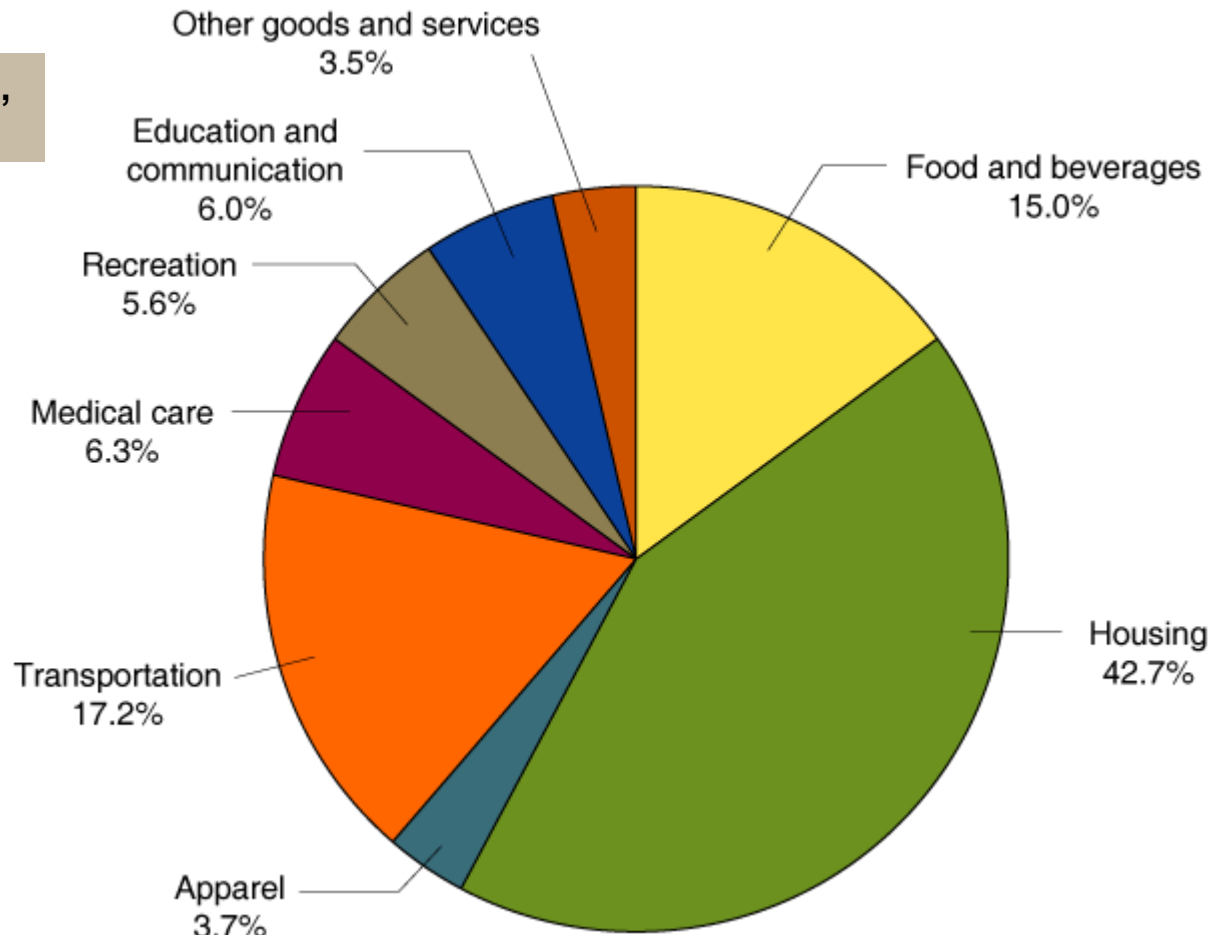
Inflation rate The percentage increase in the price level from one year to the next.

Measuring Inflation

The Consumer Price Index

FIGURE 8-6

The CPI Market Basket, December 2006

Other goods and services
3.5%

Education and communication
6.0%

Recreation
5.6%

Medical care
6.3%

Transportation
17.2%

Apparel
3.7%

Food and beverages
15.0%

Housing
42.7%

Measuring Inflation

The Consumer Price Index

Consumer price index (*CPI*) An average of the prices of the goods and services purchased by the typical urban family of four.

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	BASE YEAR (1999)			2008		2009	
PRODUCT	QUANTITY	PRICE	EXPENDITURES	PRICE	EXPENDITURES (ON BASE-YEAR QUANTITIES)	PRICE	EXPENDITURES (ON BASE-YEAR QUANTITIES)
Eye examinations	1	$50.00	$50.00	$100.00	$100.00	$85.00	$85.00
Pizzas	20	10.00	200.00	15.00	300.00	14.00	280.00
Books	20	25.00	500.00	25.00	500.00	27.50	550.00
Total			$750.00		$900.00		$915.00

Measuring Inflation

The Consumer Price Index

FORMULA	APPLIED TO 2008	APPLIED TO 2009
$\text{CPI} = \dfrac{\text{Expenditures in the current year}}{\text{Expenditures in the base year}} \times 100$	$\left(\dfrac{\$900}{\$750}\right) \times 100 = 120$	$\left(\dfrac{\$915}{\$750}\right) \times 100 = 122$

$$\left(\frac{122-120}{120}\right) \times 100 = 1.7\%$$

Today's Lecture:

1. Is the CPI Accurate?

2. PPI

3. Using CPI to adjust the effect of inflation

CPI

CPI is widely used measure of inflation:

➢ Businesses: Set prices for products; set wages/salaries for employees

➢Federal Government: Social Security payments changes

➢Judges: set alimony increase, child support payments increase

It is important that the CPI be as accurate as possible, but there are four biases that make changes in the CPI overstate the true inflation rate:

- *Substitution bias.*

- *Increase in quality bias.*

- *New product bias.*

- *Outlet bias.*

Measuring Inflation

The Producer Price Index

Producer price index (*PPI*)
An average of the prices
received by producers of goods
and services at all stages of the
production process.

PPI tracks the prices of a market basket of goods. It tracks prices firms receive for goods and services at all stage of production.

PPI therefore gives an early warning of future movements in the CPI.

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Using Price Indexes to Adjust for the Effects of Inflation

$$\text{Value in } 2009 \text{ dollars} = \text{Value in } 1980 \text{ dollars} \times \left(\frac{\text{CPI in } 2009}{\text{CPI in } 1980} \right)$$

2009: 215

1980: 82

For some purposes, we are interested in tracking changes in an economic variable over time rather than in seeing what its value would be in today's dollars.

In that case, to correct for the effects of inflation, we can divide the **nominal variable** by a price index and multiply by 100 to obtain a *real variable*.

Solved Problem | **8-5**

Calculating Real Average Hourly Earnings

YEAR	NOMINAL AVERAGE HOURLY EARNINGS	CPI (1982-1984 = 100)
2004	$15.69	188.9
2005	16.13	195.3
2006	16.76	201.6

YEAR	NOMINAL AVERAGE HOURLY EARNINGS	CPI (1982-1984 = 100)	REAL AVERAGE HOURLY EARNINGS (1982-1984 DOLLARS)
2004	$15.69	188.9	$8.31
2005	16.13	195.3	8.26
2006	16.76	201.6	8.31