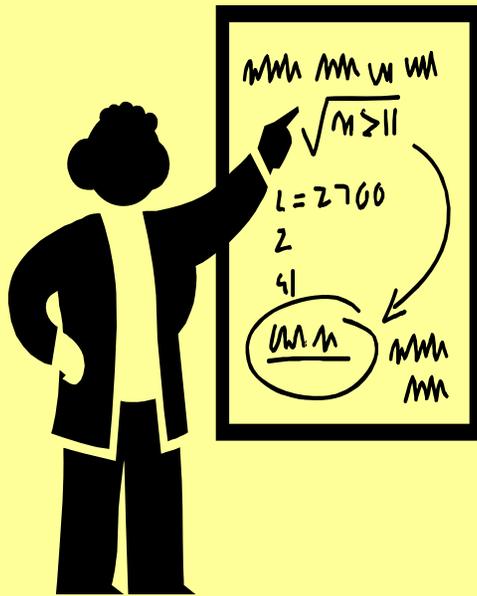


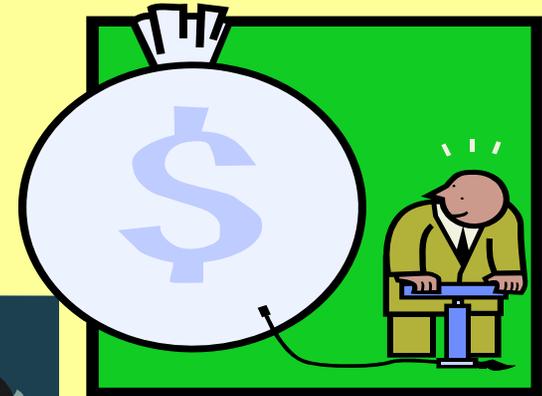
# Measurements of Economic Performance



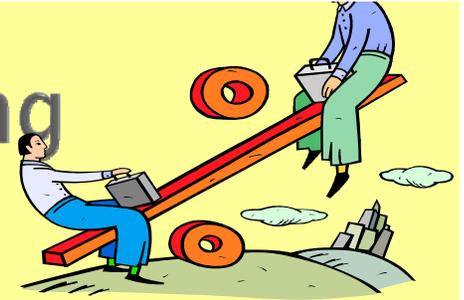
**Dr. Vereda Johnson Williams**  
**Associate Professor**  
**Economics and Finance Department**  
**North Carolina A&T State University**  
**Greensboro, NC**

# Introductions and thoughts on our current economy.

- ▶ Introduce yourself.....
- ▶ How is our economy doing currently???
- ▶ Respond to the question in 3 words.....

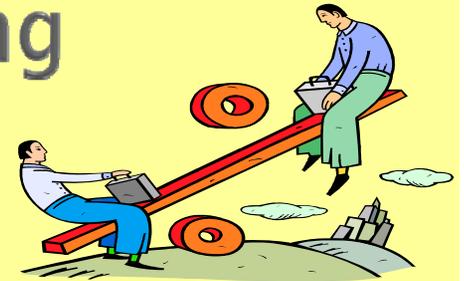


# How is the United States Performing Economically?



- ▶ The Gross Domestic Product (GDP) increased 2.7% in the first quarter of 2010. This is a decrease from the 4<sup>th</sup> quarter of 2009 at 5.6%
- ▶ Prices of goods and services purchased by U.S. residents increased 1.7% in the 1<sup>st</sup> quarter.
- ▶ Energy prices decelerated in the 1<sup>st</sup> quarter and food prices increased.
- ▶ Federal pay raises for civilian and military personnel added .1% to the increase in GDP.
- ▶ Real disposable income increased 2.1%, from an increase in rental income.
- ▶ Personal saving increased .1% and corporate profits increased 8%.

# How is the United States Performing Economically ?



- ▶ The U.S. has lost 5.7 million jobs in the past 16 months. BLS reported the unemployment rate as 9.5%.
- ▶ The six months between October 2008 and March 2009 saw the U.S. economy contract more rapidly than during any other half-year since 1958.
- ▶ In June, prices dropped .2% since May. They were only up 1.1% over last year, driven by a 3.5% increase in health care costs and a 3.9% increase in gas and oil prices.

# Presentation Format

- ▶ Introduction
- ▶ State of the Economy
- ▶ Content Review
  - ▶ Gross Domestic Product
    - ▶ Case Study 1: Gross Domestic Product (handout)
  - ▶ Inflation
    - ▶ Case Study 2: Data Analysis (handout)
  - ▶ Unemployment
    - ▶ Case Study 3: Mass Layoff Statistics (handout)
- ▶ Tying it all together – Measuring the Economy
  - ▶ The Great Depression (handout)
  - ▶ Puzzles A, B, C (handout)
- ▶ Questions and Answers



# Gross Domestic Product

## Key Concepts Review

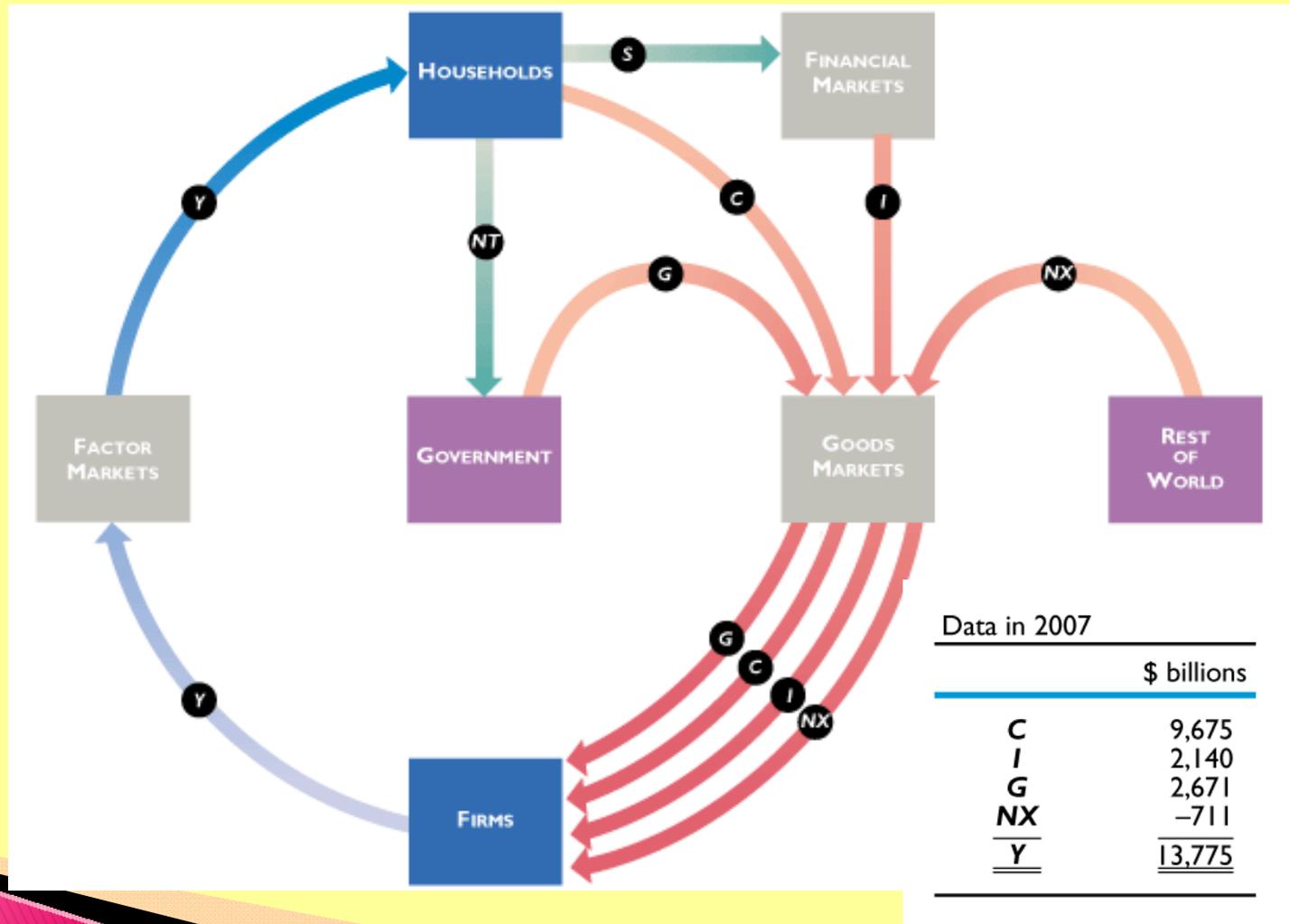
- ▶ Define how the GDP is computed using the expenditure and income approaches.
- ▶ Understand the key components of the GDP.
- ▶ Understand the differences between real and nominal GDP.



# GDP, INCOME, & EXPENDITURE

This figure shows the circular flow of income and expenditure.

The table shows the U.S. data for 2007.



# MEASURING the U.S. GDP

- Income includes net profit, so the income approach gives a net measure.
- Expenditure includes investment. Because some new capital is purchased to replace depreciated capital, the expenditure approach gives a gross measure.
- To get gross domestic product from the income approach, we must add depreciation to total income.
- After making these two adjustments the income approach almost gives the same estimate of GDP as the expenditure approach.

# GDP: Expenditure Approach

TABLE 21.1

GDP: The Expenditure Approach

Item	Symbol	Amount in 2007 (second quarter) (billions of dollars)	Percentage of GDP
Consumption expenditure	<i>C</i>	9,675	70.2
Investment	<i>I</i>	2,140	15.5
Government expenditure	<i>G</i>	2,671	19.4
Net exports	<i>NX</i>	<u>-711</u>	<u>-5.1</u>
GDP	<i>Y</i>	<u>13,775</u>	<u>100.0</u>

SOURCE OF DATA: U.S. Department of Commerce, Bureau of Economic Analysis.

# Expenditures Not in GDP



- **Used Goods**
- Expenditure on used goods is not part of GDP because these goods were part of GDP in the period in which they were produced and during which time they were new goods.
- **Financial Assets**
- When households buy financial assets such as bonds and stocks, they are making loans, not buying goods and services.

# GDP: The Income Approach

- Measures GDP by summing the incomes that firms pay households for the factors of production they hire.
- The U.S. National Income and Product Account divide incomes into two big categories:
  - Wages
  - Interest, rent, and profits



■ TABLE 21.2

GDP: The Income Approach

Item	Amount in 2007 (second quarter) (billions of dollars)	Percentage of GDP
Wages (compensation of employees)	7,882	
Interest, rent, and profit (net operating surplus)	<u>3,334</u>	
Net domestic product at factor cost	11,216	
Indirect taxes less subsidies	955	
Depreciation (capital consumption)	<u>1,686</u>	
GDP (income approach)	13,857	
Statistical discrepancy	<u>-82</u>	
GDP (expenditure approach)	<u><u>13,775</u></u>	

SOURCE OF DATA: U.S. Department of Commerce, Bureau of Economic Analysis.

# MEASURING THE U.S. GDP

- ▶ Real GDP and Nominal GDP
  - **Real GDP** is the value of the final goods and services produced in a given year expressed in the prices of the base year.
  - **Nominal GDP** is the value of the final goods and services produced in a given year expressed in the prices of that same year.
  - The method of calculating real GDP changed in recent years. Here we describe the essence of the calculation. The appendix gives the technical details.

Nominal  
GDP in  
2000 is  
\$100  
million.

Nominal  
GDP in  
2008 is  
\$300  
million.

TABLE 21.3

Calculating Nominal GDP and Real GDP in 2000 and 2008

	Item	Quantities (millions of units)	Prices (dollars)	Expenditure (millions of dollars)
(a) In 2000				
C	T-shirts	10	5	50
I	Computer chips	3	10	30
G	Security services	1	20	<u>20</u>
Y	Real GDP and Nominal GDP in 2000			<u>100</u>
(b) In 2008				
C	T-shirts	4	5	20
I	Computer chips	2	20	40
G	Security services	6	40	<u>240</u>
Y	Nominal GDP in 2008			<u>300</u>

Real GDP  
in 2000 is  
\$100  
million.

Real GDP  
in 2008 is  
\$160  
million—  
only 1.6  
times real  
GDP in  
2000.

TABLE 21.3

Calculating Nominal GDP and Real GDP in 2000 and 2008

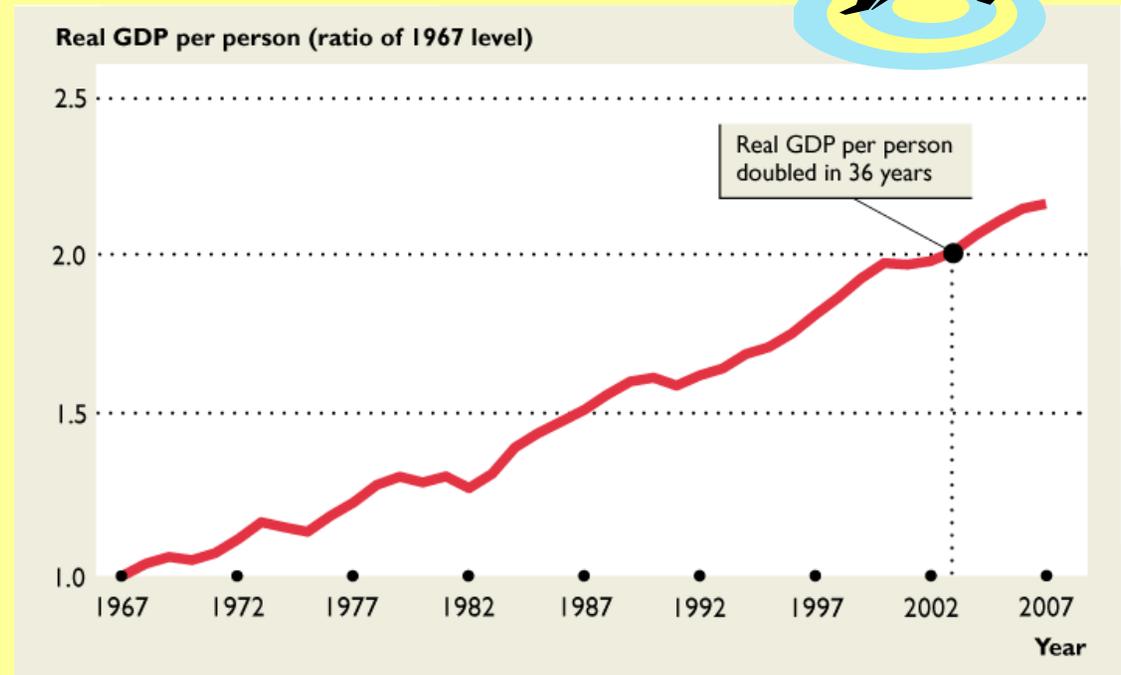
	Item	Quantities (millions of units)	Prices (dollars)	Expenditure (millions of dollars)
<b>(a) In 2000</b>				
C	T-shirts	10	5	50
I	Computer chips	3	10	30
G	Security services	1	20	<u>20</u>
Y	Real GDP and Nominal GDP in 2000			<u>100</u>
<b>(b) In 2008</b>				
C	T-shirts	4	5	20
I	Computer chips	2	20	40
G	Security services	6	40	<u>240</u>
Y	Nominal GDP in 2008			<u>300</u>
<b>(c) Quantities of 2008 valued at prices of 2000</b>				
C	T-shirts	4	5	20
I	Computer chips	2	10	20
G	Security services	6	20	<u>120</u>
Y	Real GDP in 2008			<u>160</u>

# THE USE AND LIMITATIONS OF REAL GDP



Long-Term Trend  
This figure shows the long-term trend in U.S. real GDP per person.

Real GDP per person doubled in the 36 years from 1967 to 2002.



# Gross Domestic Product Case Study 1

- ▶ Housing Construction and the GDP
- ▶ Housing Wealth Effect
- ▶ Credit Availability
- ▶ Securities Market Fluctuations
- ▶ Housing Services and Rental Income
- ▶ Housing and Personal Saving
- ▶ Sources: Bureau of Economic Analysis,  
Federal Reserve Bank of Dallas



# Inflation Key Concepts Review

- ▶ Understand the cost of inflation.
- ▶ Analyze and calculate measures of inflation.
- ▶ Calculate the major price indices related to inflation.
  - ▶ Consumer Price Index (CPI)
  - ▶ Gross Domestic Product Deflator



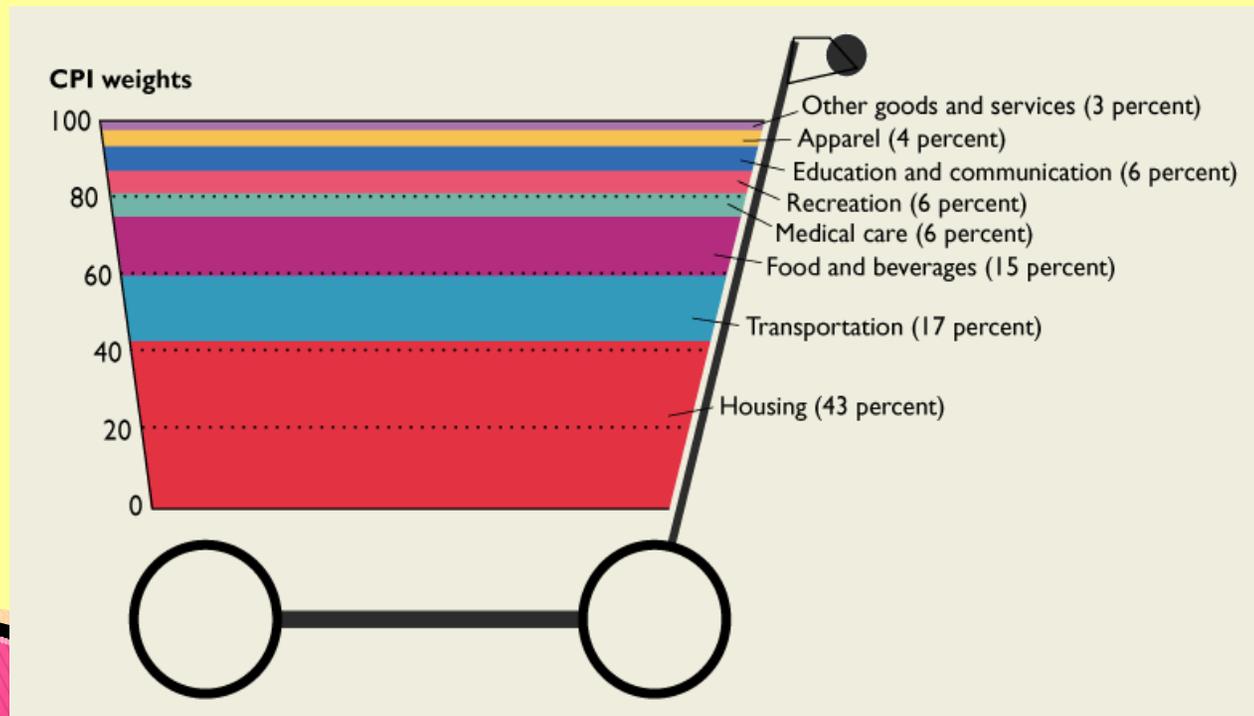
# THE CONSUMER PRICE INDEX

- **Consumer Price Index (CPI)** is a measure of the average of the prices paid by urban consumers for a fixed market basket of consumer goods and services.
- The BLS calculates the CPI every month.
- We can use these numbers to compare what a fixed basket of goods costs this month with what it cost in some previous month.



# THE CONSUMER PRICE INDEX

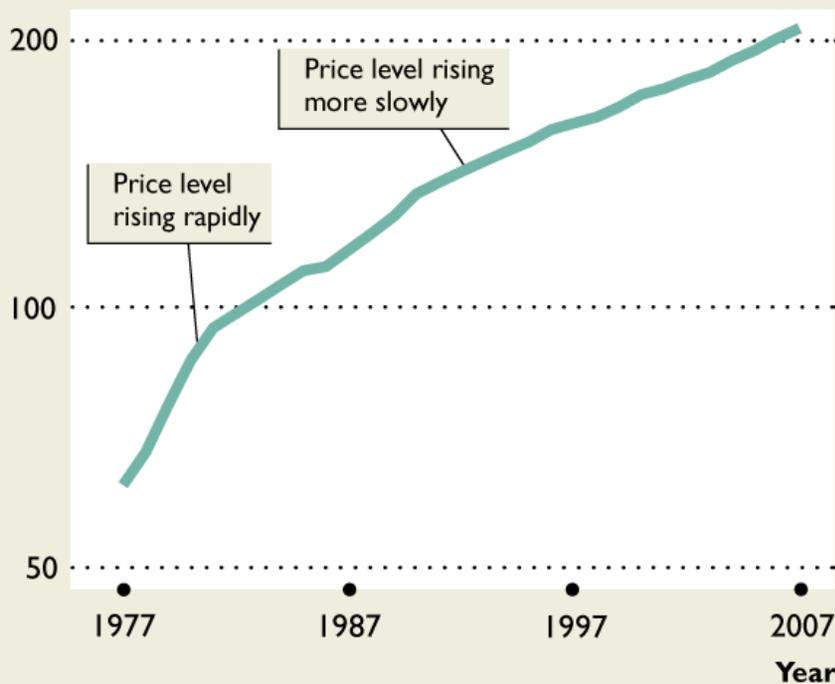
This shopping cart is filled with the items that an average household buys.



# THE CONSUMER PRICE INDEX

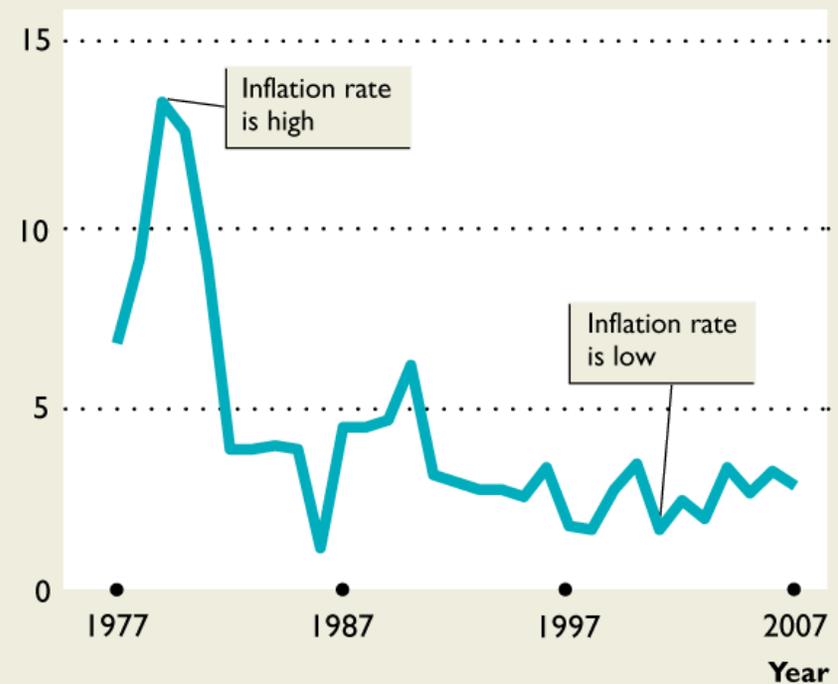
In part (a), the price level has increased every year. The rate of increase was rapid during the early 1980s and slower during the 1990s.

CPI (1982–1984 = 100, ratio scale)



(a) CPI: 1977–2007

Inflation rate (percent per year)



(b) CPI inflation rate: 1977–2007

# THE CONSUMER PRICE INDEX

TABLE 22.1

The Consumer Price Index: A Simplified CPI Calculation

(a) The cost of the CPI basket at base period prices: 2005

CPI market basket			Cost of CPI basket
Item	Quantity	Price	
Oranges	10	\$1 each	\$10
Haircuts	5	\$8 each	\$40
Cost of CPI market basket at base period prices			\$50

(b) The cost of the CPI basket at current period prices: 2008

CPI market basket			Cost of CPI basket
Item	Quantity	Price	
Oranges	10	\$2 each	\$20
Haircuts	5	\$10 each	\$50
Cost of CPI market basket at current period prices			\$70

# THE CONSUMER PRICE INDEX

$$\text{CPI} = \frac{\text{Cost of CPI basket at current period prices}}{\text{Cost of CPI basket at base period prices}} \times 100$$

$$\text{For 2005, the CPI is: } \frac{\$50}{\$50} \times 100 = 100$$

$$\text{For 2008, the CPI is: } \frac{\$70}{\$50} \times 100 = 140$$

# THE CONSUMER PRICE INDEX

- ▶ Measuring Inflation
  - **Inflation rate** is the percentage change in the price level from one year to the next.

$$\text{Inflation rate} = \frac{\text{CPI in current year} - \text{CPI in previous year}}{\text{CPI in previous year}} \times 100$$

$$\text{Inflation rate} = \frac{140 - 120}{120} \times 100 = 16.7 \text{ percent}$$

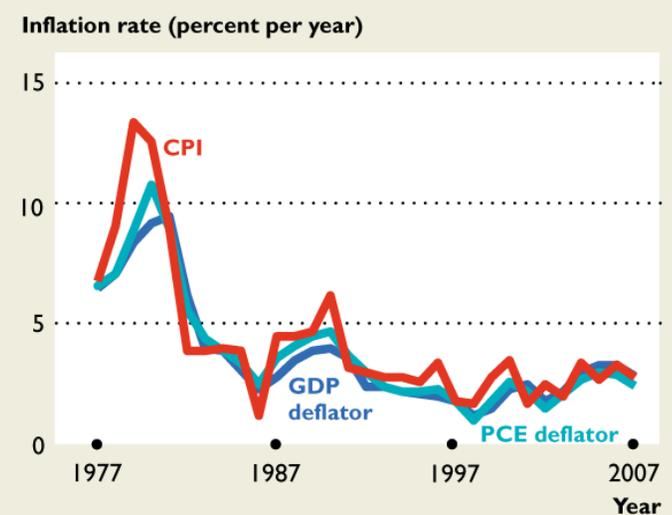
# GDP DEFLATOR ANOTHER PRICE LEVEL MEASUREMENT

- **GDP Deflator**
- The **GDP deflator** is an average of current prices of all the goods and services included in GDP expressed as a percentage of base-year prices.
- $\text{GDP deflator} = (\text{Nominal GDP} \div \text{Real GDP}) \times 100.$
- The GDP deflator is a measure of the price level.
- The percentage change in the GDP deflator is a measure of the inflation rate.

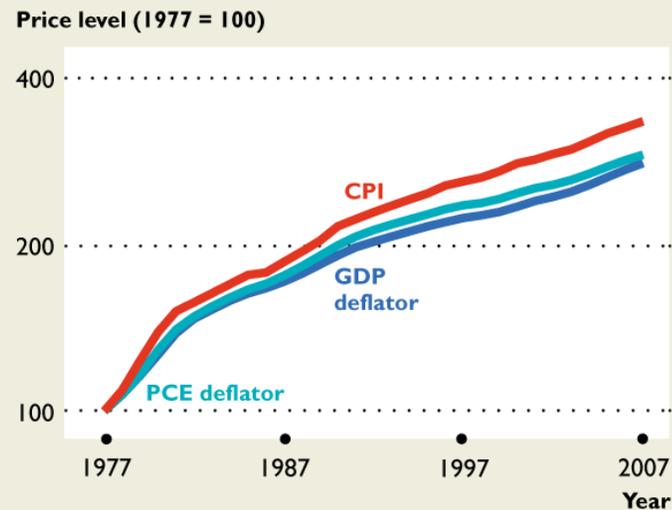
# A CPI COMPARISON

In part (b), the CPI measure of the price level is the highest and the PCE deflator lies between the CPI and the GDP deflator.

The CPI measure overstates the inflation rate.



(a) Three measures of inflation

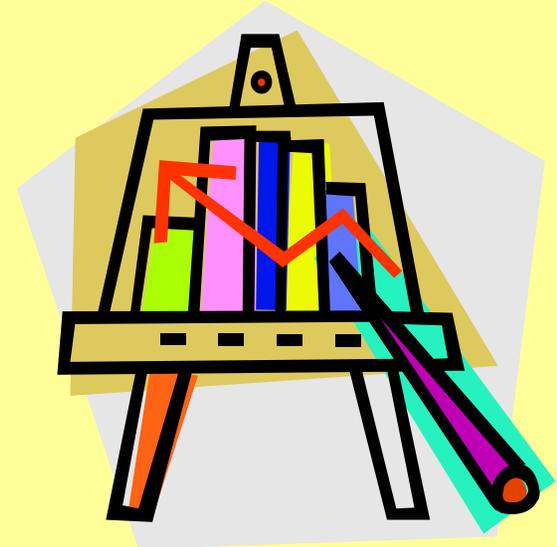


(b) Three measures of price level

# The Inflation Rate – September 16, 2003

## Case Study 2:

- ▶ Data Trends
- ▶ Deflation
- ▶ Consumer Price Index
- ▶ Cost of Inflation
- ▶ Sample Exercise
- ▶ Sources: Council for Economic Education, Bureau of Labor Statistics



# Unemployment Key Concepts Review

- ▶ Understand the nature and causes of unemployment.
- ▶ Compute and analyze the 2 main unemployment measurements.
  - ▶ Labor Force
  - ▶ Unemployment Rate
- ▶ Understand the criticisms associated with the measurement of unemployment.
- ▶ Describe the factors that affect the natural rate of employment.



# LABOR MARKET INDICATORS

- ▶ Two Main Labor Market Indicators
  - The unemployment rate
  - The labor force participation rate
  - **Unemployment rate** is the percentage of people in the labor force who are unemployed.

$$\text{Unemployment rate} = \frac{\text{Number of people unemployed}}{\text{Labor force}} \times 100$$

In August 2007, the unemployment rate was 4.6 percent.

# LABOR MARKET INDICATORS

- **Labor force participation rate** is the percentage of the working-age population who are members of the labor force.

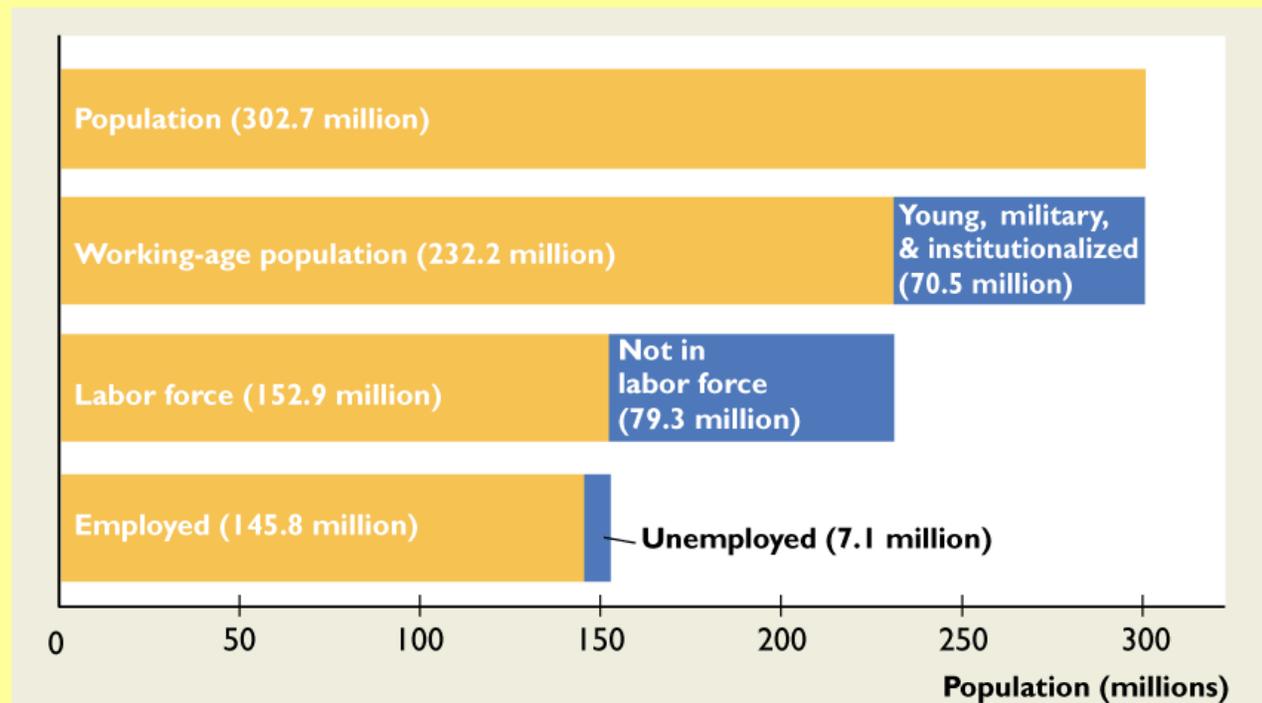
$$\text{Labor force participation rate} = \frac{\text{Labor force}}{\text{Working-age population}} \times 100$$

In August 2007, the labor force participation rate was 65.8 percent.

# LABOR MARKET INDICATORS

This figure shows population labor force categories.

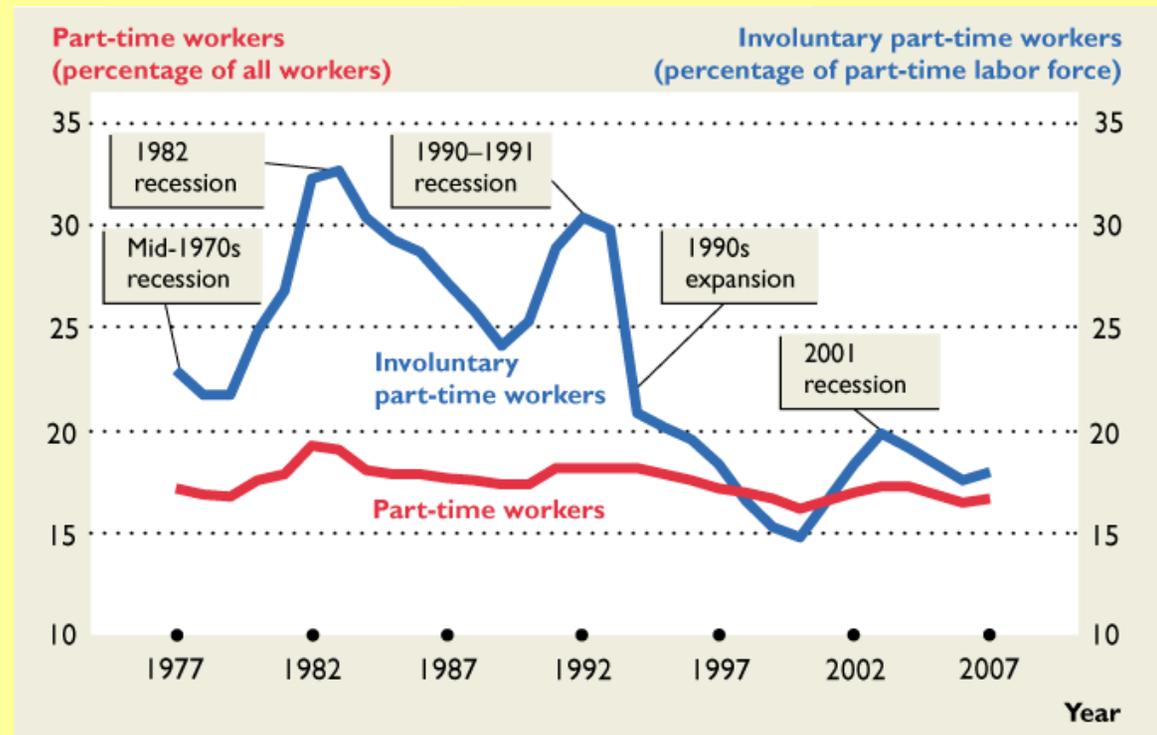
The figure shows the data for August 2007.



# LABOR TRENDS & FLUCTUATIONS

The figure also shows involuntary part-time workers.

Involuntary part-time work increases in recessions and decreases in expansions.

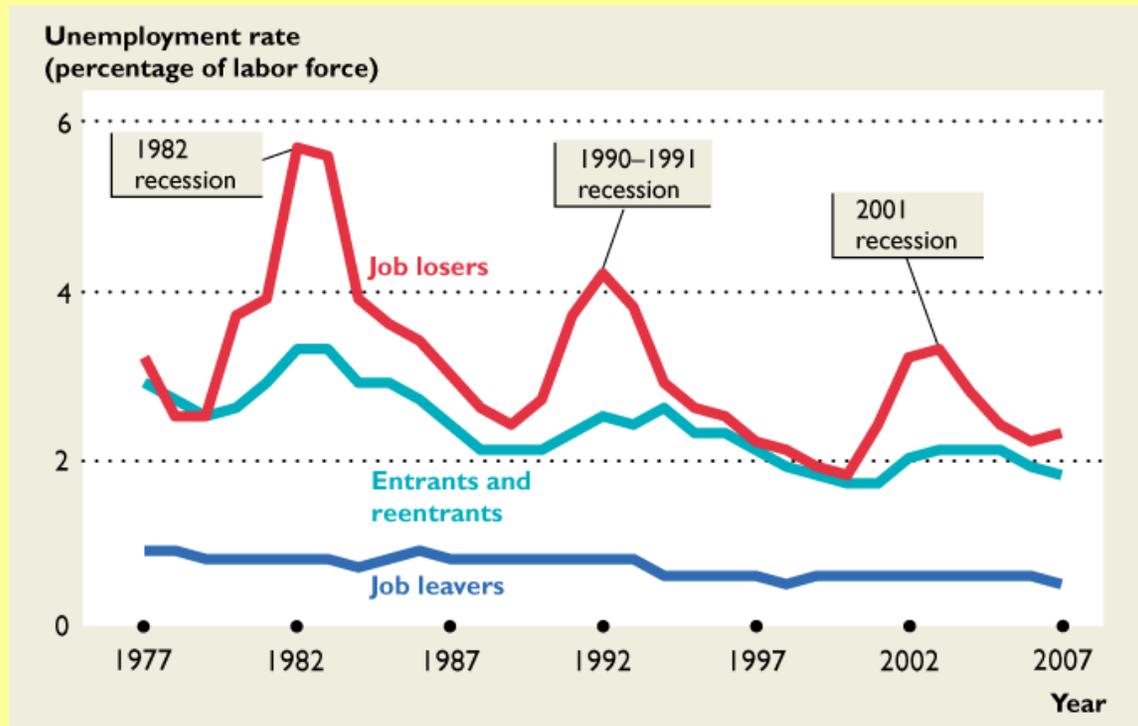


# SOURCES AND TYPES OF UNEMPLOYMENT

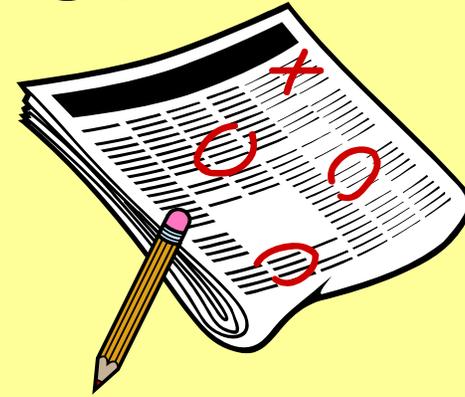
Figure shows unemployment by reasons.

Job leavers are the smallest group, and their number fluctuates little.

Job losers are the biggest group, and their number fluctuates most.



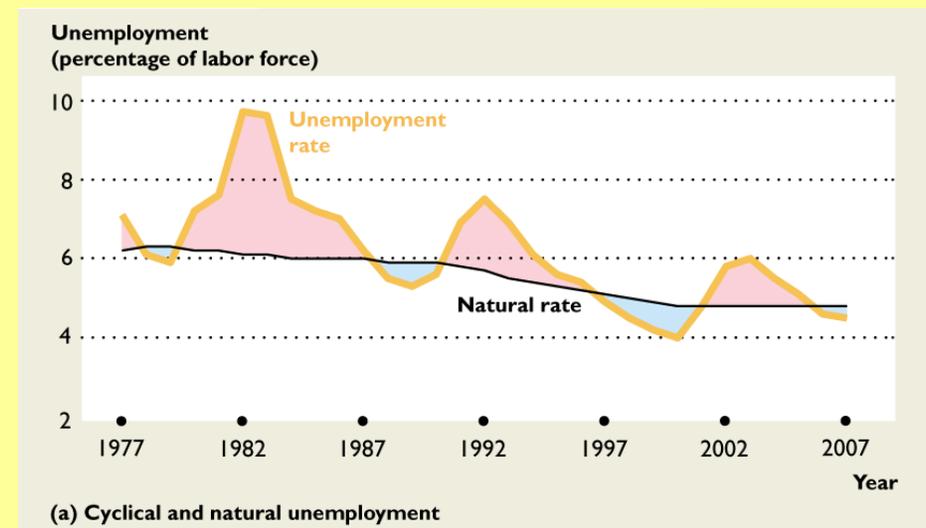
# SOURCES AND TYPES OF UNEMPLOYMENT



This figure shows the U.S. unemployment rate from 1977 to 2007.

As the unemployment rate fluctuates around the natural rate unemployment, ...

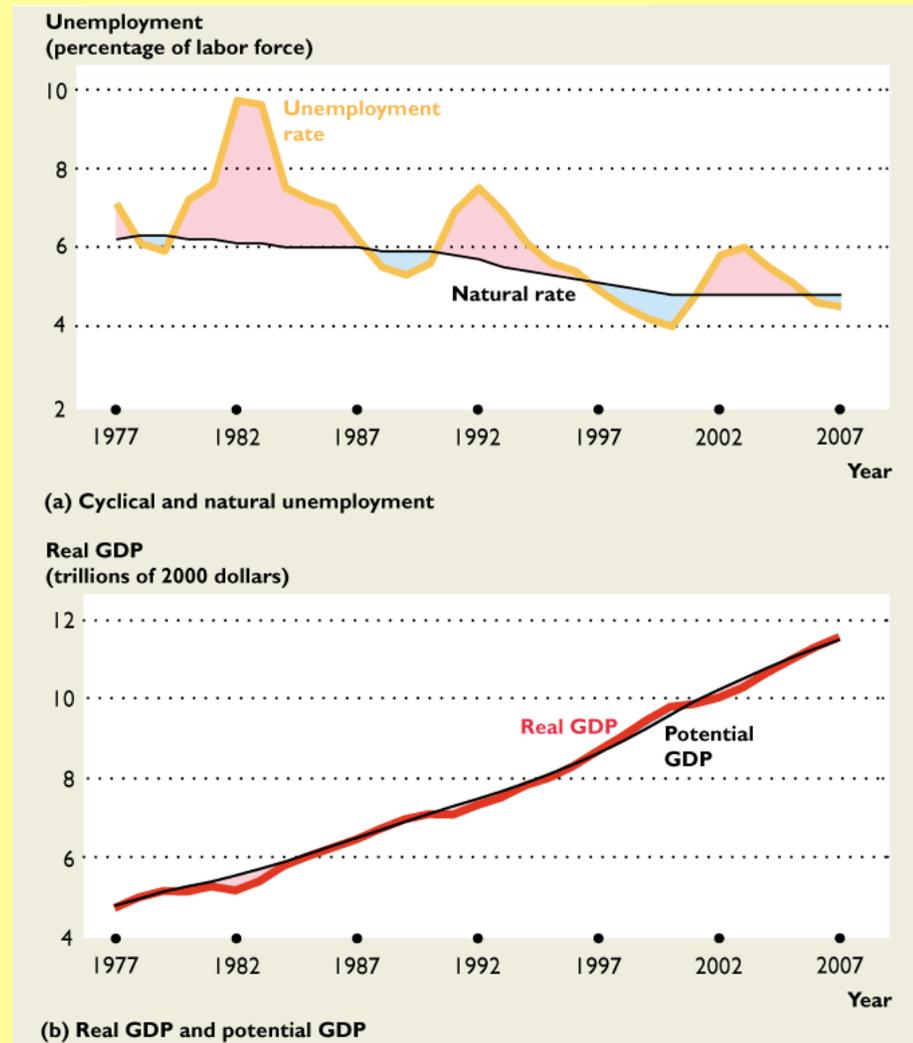
Cyclical unemployment is negative (shaded red) and positive (shaded blue).



# SOURCES AND TYPES OF UNEMPLOYMENT

The figure shows the relationship between unemployment and real GDP.

As the unemployment rate fluctuates around the natural rate unemployment in part (a), real GDP fluctuates around potential GDP in part (b).



# Unemployment Mass Layoff Statistics Case Study

- ▶ Industry Distribution for Mass Layoffs 2010
- ▶ State Distribution of Mass Layoffs
- ▶ Differentiate between summer 2010 and 2010 and 2009 mass layoffs.
- ▶ Comment on state comparisons of unemployment insurance changes.
- ▶ Source: Bureau of Labor Statistics



# Questions and Answers



- ▶ Thanks, it has been a pleasure to speak with you today. Measurements of economic performance will always be a hot topic. This is an area that we want our students to be able to understand and to be able to fully relate to their importance as our future citizens.
- ▶ Contact information: Dr. Vereda J. Williams  
336-334-7188 ext. 2008, [kingvj@ncat.edu](mailto:kingvj@ncat.edu)