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Econ Chapter 6: Macroeconomic Measurements, Part I: Prices and Unemployment

6-1) Price vs. Price Level

- Price: Single price
- Price Level: A weighted average of all the prices of all the goods and services in the economy
- Ex. prices of apples, oranges, pears are \$50, \$60, and \$80. The price level and avg. price = \$63

6-1a) Economists measure the price level by constructing a price index.

- Consumer Price Index (CPI) is a major price index
- CPI is based on a group of goods and services called the market basket, purchased by a typical household.
- Market Basket is broken up into eight major categories of goods and services:
 - food and beverages, housing, apparel, transportation, medical care, recreation, education and communication, and other goods and services.
- To calculate CPI, first calculate the total dollar expenditure on the market basket in two years: The current year and the base year
- Base Year: The year chosen as the point of reference or basis of comparison for prices in other years; a benchmark year.

Example CPI problem:

(1)	(2)	(3)	(1a)	(2a)	(3a)
Market Basket	current year price (p/ item)	current year expenditures	Market Basket	Base-year price (p/ item)	Base-year expenditures
10 pens	$\times \$7.00$	$= \$70.00$	10 pens	$\times \$0.20$	$= \$2.00$
5 shirts	$\times \$14.00$	$= \$70.00$	5 shirts	$\times \$7.00$	$= \$35.00$
3 pairs of shoes	$\times \$30.00$	$= \$90.00$	3 pairs of shoes	$\times \$10.00$	$= \$30.00$
		<u>\$167.00</u>			<u>\$67.00</u>

$\uparrow$ total dollar expenditure on market basket in current year $\rightarrow \text{CPI} = \left(\frac{167}{67} \right) \cdot 100 = \boxed{249}$ $\leftarrow$ total dollar expenditure on market basket in base year
 $\uparrow$

• The CPI in the base year is 100

- would be same on top and bottom $\times 100 = 100$
- When we know the CPI for various years, we can compute the percentage change in prices
- Percentage Change in Price = $\left(\frac{\text{CPI}_{\text{later year}} - \text{CPI}_{\text{earlier year}}}{\text{CPI}_{\text{earlier year}}} \right) \times 100$

- Ex. CPI in 1990 was 130.7, CPI in 2005 was 195.3

$$\left(\frac{195.3 - 130.7}{130.7} \right) \times 100 = 49.43 \leftarrow \text{percentage change}$$

$\leftarrow$ In other words, something worth \$1 in 1990 is now worth \$1.49 in 2005

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6-1b)

Inflation and the CPI

Inflation: An increase in the price level

Inflation Rate: The positive percentage change in the price level on an annual basis

• If you know the inflation rate you can find out how your income is keeping up with, not keeping up with, or more than keeping up with inflation.

• How you are doing depends on whether your income is rising by the same percentage, smaller percentage, or a greater percentage than the inflation rate.

- when you make this computation and comparison you are determining your

Real Income

• Real Income: A person's Nominal Income (or current dollar amount of income) adjusted for any change in prices.

- Computing Real Income:

- Calculate inflation rate

- CPI 100 in year 1 and CPI 110 in year 2

$$= \frac{110 - 100}{100} \cdot 100 = 10$$

• Calculate percentage change in income

• \$50,000 in year 1 and \$55,000 in year 2

$$= \frac{55,000 - 50,000}{50,000} \cdot 100 = 10$$

They equal, so this person has kept up with inflation

• If income rises by smaller percentage than inflation rate then not keeping up with inflation

• If income rises by greater percentage than inflation rate then has more than kept up with inflation

6-1c)

GDP Implicit Price Deflator

• Besides CPI, another price index is often cited: the GDP deflator, or the GDP implicit price deflator

• ~~Unlike~~ The GDP implicit price deflator, unlike the CPI, is based on all goods and services produced in an economy, not just the selective market basket.

6-1d)

Converting Dollars from One Year to Another

• Economists convert a past salary into today's salary by using this formula:

$$\text{Salary in today's (current) dollars} = \text{Salary}_{\text{any year}} \times \left(\frac{\text{CPI}_{\text{current year}}}{\text{CPI}_{\text{earlier year}}} \right)$$

• Beatles tickets in 1965

• \$15.10 per ticket in 1965, how much is that equal to in 2014

$$\text{ticket}_{2014} = \$15.10 \times \left(\frac{237.900}{31.5} \right) = \boxed{\$1138.52}$$

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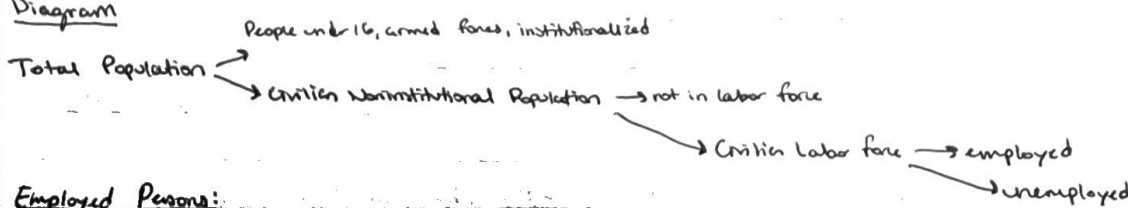
Measuring Unemployment

6-22a

Who's unemployed?

- The total population of the United States can be divided into two broad groups
- Group 1: Persons under age of 16, in the armed forces, or institutionalized
- Group 2: All other people in the total population, is called the civilian noninstitutional population
- The Civilian Noninstitutional Population can be divided into two groups
- Group 1: Persons not in the labor force
- Group 2: Persons in the civilian labor force
- Persons not in labor force are neither working nor looking for work
 - Ex. People retired, engaged in housework, choose not to work
- Persons in the civilian labor force are either employed or unemployed

Diagram



Employed Persons:

- All persons who did any work for pay or profit
- All persons who did at least 15 hours of unpaid work in a family-operated enterprise
- All persons who were temporarily absent from their regular job because of illness, vacation, bad weather, industrial dispute, or various personal reasons

Unemployed Persons: All persons who do not have jobs, who make specific active efforts to find a job

during the prior four weeks, and who are available to work, all persons who were not working and who were waiting to be called back to a job from which they were previously laid off.

6-23

The Unemployment Rate and the Employment Rate

Unemployment Rate: The percentage of the civilian labor force that is unemployed. It is equal to the number of unemployed persons divided by the civilian labor force.

$$\text{Unemployment Rate (U)} = \frac{\text{Number of Unemployed Persons}}{\text{Civilian Labor Force}}$$

Employment Rate (employment-population ratio): Number of employed persons divided by the Civilian Noninstitutional population

$$\text{Employment Rate (E)} = \frac{\text{Number of Employed Persons}}{\text{Civilian Noninstitutional Pop.}}$$

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Labor Force Participation Rate (LFPR): The percentage of the civilian noninstitutional population that is in the civilian labor force

$$\text{Labor Force Participation rate (LFPR)} = \frac{\text{Civilian Labor Force}}{\text{Civilian noninstitutional population}}$$

Difference between Employment Rate and LFPR

- Employment rate shows ~~the~~ percentage of population that is working, LFPR shows percentage of population that is willing to work

(6-2c) - The unemployment rate and employment rate do not add up to 100 percent because the denominator of the unemployment rate is not the same as the denominator of the employment rate

(6-2d) Reasons for Unemployment

- An unemployed person may fall into one of four categories:

- 1.) Job Loser: Fired or laid off; most unemployed people

- 2.) Job Leaver: Was employed in civilian labor force and quit the job in hopes of getting a better job.

- 3.) Reentrant: Someone was previously employed, hasn't worked for some time, and is currently reentering the labor force

- 4.) New entrant: Someone who has never held a full-time job for two weeks or longer and is now in the civilian labor force looking for a job.

$$\text{Unemployed persons} = \text{Job losers} + \text{Job leavers} + \text{Reentrants} + \text{New entrants}$$

(6-2e) Discouraged Workers

- Adam gets laid off and looks for work for 6 months: he is unemployed

- Adam, after 6 months, gets discouraged and stops looking for work: he is a discouraged worker

- Discouraged worker not counted in unemployment rate

(6-2f) Types of Unemployment

Frictional Unemployment: Unemployment that is due to the natural so-called frictions in the economy and that is caused by changing market conditions and represented by qualified individuals with transferable skills who change jobs.

$$U_f = \frac{\text{Number of frictionally unemployed}}{\text{Civilian Labor Force}}$$

- Matching qualified workers with the available jobs takes time!

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Structural Unemployment: Unemployment due to structural changes in the economy that eliminate some jobs and create others for which the ~~unemployed~~ unemployed are unqualified.

- Do not have transferable skills
- Automobile worker laid off as computer engineering demand increases
- He is structurally unemployed because he lacks the computer skills

$$U_s = \frac{\text{Number of Structurally Unemployed}}{\text{Civilian Labor Force}}$$

Natural Unemployment: Adding the frictional unemployment^{rate} and the structural unemployment^{rate} gives the natural unemployment rate

$$U_N = U_F + U_s$$

(6-25) The Natural Unemployment Rate and Full Employment

- A changing economy can never have full employment because of frictional and structural changes that occur continually.
- Economists do not equate full employment with a zero unemployment rate.
- Full Employment: Exists when the economy is operating at its natural unemployment rate.
- The economy can be operating at full employment and some people will still be unemployed.

Cyclical Unemployment Rate: The difference between the unemployment rate and the natural unemployment rate.

$$U_c = U - U_N$$