Measuring Inflation and Unemployment

ECO 120: Global Macroeconomics

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1.1 Goals

Goals

- Specific Goals

    - Learn about different types of unemployment.
    - Learn another measure of the aggregate price level.

- Learning Outcomes

    - LO 3: Define, compute, and explain limitations to measures of the macroeconomy, including gross domestic product, inflation, and unemployment.
    - GELO 1: Students will be able to use mathematical and logical methods to solve problems.

1.2 Reading

Reading

- Measuring employment: Modules 12 and 13

- Measuring prices: Module 15

2 Unemployment

2.1 Labor Force

Labor force

- **Labor force**: people in the population who are willing and able to work.

- The labor force does *not* include:

    - Children

- – People who are institutionalized.
- – People legally not allowed to work.
- – People not employed who are not looking to be employed (eg. retired people).
- – **Discouraged workers**: people who were unemployed and left the labor force.

- Labor force participation rate: percentage of people who are able to work who are in the labor force.

- **Unemployment rate**: percentage of people *in the labor force* who are not employed.

Who is Unemployed?

1. Jack is not currently employed and was fired from his job one year ago. He continues to look for a job without any luck.

2. Joseph quit a job he hated during the height of the recession. He is trying to find another job without success.

3. Jeff is not employed, is 35 years old, single, lives in his mother's basement and eats her food, and has never thought about looking for a job.

4. Jackie was laid off from a full time job one year ago and continues to look for a new full time job. In the last week she was a babysitter for a friend, in which she worked for only 2 hours and at only minimum wage.

Who is Unemployed?

5. Julie was laid off when her employer closed her office. She looked for jobs unsuccessfully for one year, but recently stopped looking because she does not think any jobs are available. If a job opportunity presented itself, she would take it.

6. Jacob was recently laid off from his factory job. He has enough savings to get by, and is using the time instead to care for his elderly father.

7. Jonathan recently robbed a liquor store, was charged, tried, convicted, and put in prison. He was fired from his job at the liquor store.

8. Jessica saved very well over her career, and recently retired at the age of 55. She is enjoying life now traveling the world.

Stephen Colbert

Stephen Colbert, "The Audacity of Hopelessness,"

Aired March 17, 2008.

2.2 Types of Unemployment

Types of Unemployment

- **Frictional unemployment**: unemployment caused by delays in job search, job candidate search.

- **Structural unemployment**: caused by changes in demand for types of work.

  - Changes in technology makes some types of jobs obsolete.
  - Changes in international trade shrink some industries.
  - Changes in tastes and preferences.

- **Cyclical unemployment**: caused by declines in total spending in the economy.

  - Unemployment that increases during recessions, decreases during expansions.

Full employment

- **Natural rate of unemployment**: whatever unemployment rate that is associated with zero cyclical unemployment.

- "Full" employment: when there is zero *cyclical unemployment.*

3 Inflation

3.1 Consumer Price Index

Consumer price index

- **Consumer price index (CPI)**: another measure of the aggregate price level.

- Bureau of Labor Statistics (BLS) chooses a basket of goods: specific goods with specific weights.

$$\text{CPI}_t = \frac{\text{Price of basket at time } t}{\text{Price of same basket in base year}} \, (100)$$

- CPI inflation rate: percentage change in CPI.

$$\text{inflation}_t = \frac{\text{CPI}_t - \text{CPI}_{t-1}}{\text{CPI}_{t-1}} \, (100\%)$$

3.2   Example

Example

- Suppose a country consumed only brats, cheese, and beer, and the CPI basket was given by,

  - Brats: 40%
  - Cheese: 25%
  - Beer: 35%

- Suppose the following data for 2006 and 2007:

	2006		2007	
	Quantity	Price	Quantity	Price
Brats	400	$1.50	500	$1.75
Cheese	150	$1.00	200	$1.50
Beer	200	$2.00	250	$2.00

- Using 2006 as a base year, compute CPI for the country.

- Using 2006 as a base year, compute the GDP deflator for the country.

3.3   More about the CPI

CPI Basket
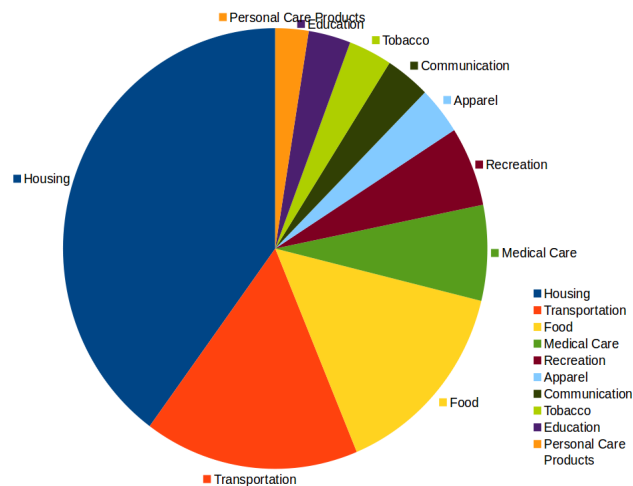
Source: Bureau of Labor Statistics - http://www.bls.gov/cpi/cpiri2012.pdf

Biases with CPI

- New goods bias: how do you compare the price of a computer today with the price of the same good in 1970?

- – Comparing new goods with old goods that were cheaper causes an overestimate of inflation.

- Change in quality bias: prices rise in part because quality improves. This overstates inflation.

- Commodity substitution bias: CPI basket remains fixes, but people's consumption decisions do not.

  - – An increase in prices have a smaller effect when people substitute away from the more expensive goods.

  - – Keeping a constant basket overestimates inflation.

- Outlet substitution bias: when consumers go to discount stores when prices increase.

- Congressional Advisory Commission estimated in 1996 that the CPI over-estimated inflation by about 1.1%.

What is the CPI?

- Who? All urban consumers and urban wage earners and clerical workers, about 87% of the U.S. population.

- It is *not* a cost-of-living index.

  - – Does not account proper treatment of public health and safety concerns: crime, education, quality and accessibility of health care, water quality

  - – Does not account for substitution effects.

- The CPI is unlikely to reflect prices or baskets of any one individual.

  - – Some sub-populations may have special needs - disabled, elderly, chronically ill, poor, etc.

- Taxes associated with purchasing goods and services are counted

  - – Sales, excise, and property taxes.

  - – Government user fees: tolls, fishing license, state park entry fee, etc.

  - – Does not include income taxes, social security taxes.