

# Measuring Inflation and Unemployment

ECO 120: Global Macroeconomics

# Goals

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- Specific Goals
  - Describe how the Consumer Price Index (CPI) measures aggregate price level.
  - Compute the aggregate price level using the CPI.
  - Describe some drawbacks to using and interpreting the CPI.
- Learning Outcomes
  - LO 3: Define macroeconomic measures of production, prices, inflation, and employment. Students will be able to explain how each is measured and evaluate usefulness and limitations for each measure.
  - GELO 1: Students will be able to use mathematical and logical methods to solve problems.

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# Reading

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- Module 16

# Consumer price index

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- **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: Growth rate of the CPI.

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## 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.

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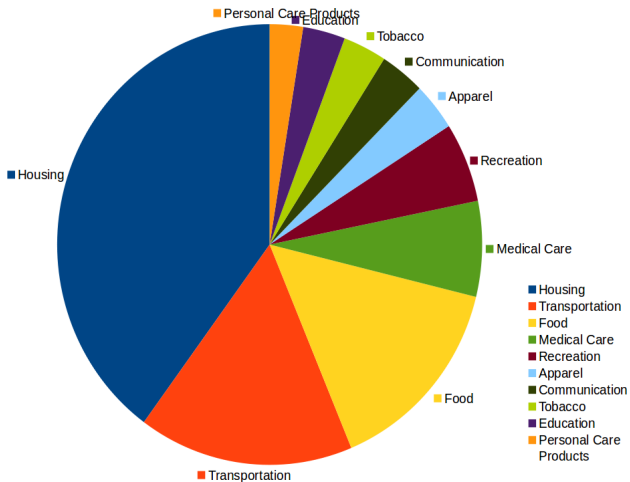
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# CPI Basket

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

# How Should the CPI be Interpreted?

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- 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.
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# All Items Excluding Food and Energy

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- **Core inflation:** Measure of CPI inflation that *excludes* food and energy products from the basket.
- *Arguably*, central banks carefully monitor this measure in addition to the headline CPI when monitoring inflation.
- Energy and food prices are *more volatile* than other prices.
  - Monthly movements in *only* food and energy prices are poor predictors of the long-run behavior in prices.
  - Non-food-and-energy prices are actually better long-run predictors of food and energy prices!
  - Monetary policy (changing the supply of money) can't make food and energy more affordable.

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# U.S. CPI Inflation (Core vs Headline)

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