Topics

1. Imputations in the GDP
2. GDP deflator and classifying price indices
3. Problems from the textbook

1. Imputations in the GDP

- Imputed values - estimates regarding components of GDP (i.e. goods and services) that are not sold in the marketplace.

Notable examples:

1. Value of housing for renters v.s. homeowners:

- For renters, rent is an expenditure of the renter and income for the landlord.

To include the value of housing services for homeowners, GDP includes what rent *would* be if the home was available for rent instead of owner-occupied.

- For owner-occupied housing, the imputed value is counted as an expenditure of the homeowner and as income for the homeowner.

2. Sometimes imputations are left out for simplicity:

- value added cooking ingredients at home (versus going to a restaurant)
- the underground economy

2. GDP deflator and classifying price indices

GDP deflator = Nominal GDP / Real GDP

= Price today / Base price

Paasche index - price index where the basket of goods is allowed to change

Laspeyres index - price index where the basket of goods is fixed

CPI - price of a basket of goods and services purchased by a typical consumer relative to the price of the same basket in some base year.

Note:

- GDP deflator is a **Paasche index** because it's calculation depends what is *produced* in a given year relative to a base year. If production changes in a given year, this shows up in the GDP deflator.
- CPI is a **Laspeyres index** because it's calculation depends on the consumption of the typical consumer (which is assumed to be constant).

- Consider the apples and oranges example. Suppose in the first year, production is normal. In the next year, a harsh winter makes it impossible to produce oranges that year. Lastly, suppose that the typical consumer purchases five apples and two oranges in a given year.

- Notice the different effects on the two price indices in year 2:

$$\text{GDP} = \frac{(5 \times \text{Price of apples year 2}) + (0 \times \text{Price of oranges year 2})}{(5 \times \text{Price of apples year 1}) + (0 \times \text{Price of oranges year 1})}$$

$$= \frac{5 \times \text{Price of apples year 2}}{(5 \times \text{Price of apples year 1})}$$

$$\neq$$

$$\text{CPI} = \frac{(5 \times \text{Price of apples year 2}) + (2 \times \text{Price of oranges year 2})}{(5 \times \text{Price of apples year 1}) + (2 \times \text{Price of oranges year 1})}$$

Key: CPI keeps the basket of goods purchased by the typical consumer fixed from year to year.