04.10.2017

Quiz 3

Macroeconomics: (Term 2, 2017)

Consider an economy that produces and consumes pizza and automobiles. In the following table are data for two different years.

	2007		2017	
Good	**Quantity**	**Price**	**Quantity**	**Price**
Automobiles	100	50,000	120	60,000
Pizza	500,000	10	400,000	20

Q1. Using 2007 as the base year, compute the following statistics for each year: nominal GDP, real GDP, the implicit price deflator for GDP, and the CPI. (8 points)

Answer:
Nominal GDP (2007) = 100*50,000 + 500,000*100 = 1,00,00,000
Nominal GDP (2017) = 120*60,000 + 400,000*20 = 1,52,00,000
Real GDP (2017) = 120*50,000 + 400,000*10 = 1,00,00,000
GDP Deflator = Nominal GDP (2017)/ Real GDP (2017) = 1.52
CPI = Real GDP (2017)/ Nominal GDP (2007) = 1

Q2. How much did prices rise between 2007 and 2017? Compare the answers given by the deflator and the CPI. Explain the difference. (6 points)

Answer:
Inflation (GDP Deflator) = (1.52 – 1)*100 = 52 percent
Inflation (CPI Inflation) = (1 – 1)*100 = 0 percent

Q3. Now consider a new kind of price index where I fix the quantities at the base year levels instead of fixing the prices at base year levels. In economics jargon, this price index is known as the Laspeyres index. Compute Laspeyres index for this economy. (6 points)

Answer:

Laspeyres Index = $\sum \left(\frac{p_{2017} * q_{2007}}{p_{2007} * q_{2007}}\right)$*100

$$\sum p_{2017} * q_{2007} = 60{,}000 * 100 + 20 * 500{,}000 = 1{,}60{,}00{,}000$$
$$\sum p_{2007} * q_{2007} = 50{,}000 * 100 + 10 * 500{,}000 = 1{,}00{,}00{,}000$$

Laspeyres Index = 160