Firms	Quantity2010	Quantity2018	Price2010	Price2018
Pizza	50	100	8	10
Beer	100	200	4	5
Coffee	150	300	1	2

GDP $_{2010}$ evaluated in 2018 Price

$$Y^{2018}_{2010} = 50 \times 10 + 100 \times 5 + 150 \times 2$$
$$= 500 + 500 + 300$$
$$= 1300$$

GDP 2018 evaluated in 2010 Price

$$Y^{2010}_{2018} = 100 \times 8 + 200 \times 4 + 300 \times 1$$
$$= 800 + 800 + 300$$
$$= 1900$$

Suppose in an **imaginary country**, the basket of goods only contains **pizza, beer, coffee**, and the base year is **2010**. The consumption quantities and prices are given by

Firms	Quantity	Price2010	Price2015	Price2018
Pizza	50	8	8	10
Beer	100	4	3	5
Coffee	150	1	2	2

$$\Pi^{2010}_{2015,2018} = \frac{CPI^{2010}_{2018}}{CPI^{2010}_{2015}} - 1$$

$$CPI^{2010}_{2018} = \frac{50 \times 10 + 100 \times 5 + 150 \times 2}{50 \times 8 + 100 \times 4 + 150 \times 1} =$$

$$CPI^{2010}_{2015} = \frac{50 \times 8 + 100 \times 3 + 150 \times 2}{}$$

Firms	Quantity	Price2010	Price2015	Price2018
Pizza	50	8	8	10
Beer	100	4	3	5
Coffee	150	1	2	2

Step 1:

$$V_{2010} : 50 \times 8 + 100 \times 4 + 150 \times 1 = 950$$

$$V_{2015} : 50 \times 8 + 100 + 3 + 150 \times 2 = 1000$$

$$V_{2018} : 50 \times 10 + 100 \times 5 + 150 \times 2 = 1300$$

Step 2: Inflation between 2010 – 2018

use 2015 base

$$CPI^{2015}_{2018} = \frac{V_{2018}}{V_{2015}} = \frac{1300}{1000} = 1.3$$

$$CPI^{2015}_{2010} = \frac{V_{2010}}{V_{2015}} = \frac{950}{1000} = 0.95$$

Step3 compute $\frac{CPI_{2018} - CPI_{2010}}{CPI_{2010}} = \frac{1.3}{0.95} - 1$