INSTITUTE OF INFORMATION TECHNOLOGY

JAHANGIRNAGAR UNIVERSITY

Number of Assignment : 01

Submission Date : 15/07/2022

Course Tittle : Principals of Economics

Course Code : ICT - 3109

Submitted To

Md. Shawkat Ali

Professor

Department of Economics

IIT – JU

Submitted By

Md. Shakil Hossain

Roll – 2023

3nd year 1st Semester

IIT – JU

Roll - 2023 01

Answer to the question no - 1

a

GDP:- Gross Domestic Product is the market value of all final goods and services Produced within an economy in a given Period of time.

Nominal GDP:- Nominal gross domestic Product is the total market value of all goods and Services Produced in a country economy over a given Period. Unlike other GDP measurments nomial GDP is not adjusted to account for Prices changes from inflation and deflation. It means that it rises and falls with the change in Price and economic output in an economy. In the real world the nominal GDP is usually used to compare GDP to other economy variables that do not adjust for inflation including debt.

Nominal GDP, $Y = P \times y$

Here,

P = is the Price level

Y = real output.

Real GDP :- Real Gross Domestic Product is on inflation adjusted measurement that reflects the value of all goods and services Produced by an economy in a given year and is often referred to as Constant Price GDP. inflation Corrected GDP: or Constant dollar GDP.

$$\text{Real GDP} = C + G + I + Nx$$

Here

C = Consumption

G = Government Spending

I = Investment

Nx = Net exports.

the relationship between nominal GDP and real GDP is

$$\text{GDP Deflator} = \frac{\text{Nominal GDP}}{\text{Real GDP}} \times 100$$

Year	Mango		Banana		Chicken		Nominal GDP	Real GDP
	Qty	Price	Qty	Price	Qty	Price		
2014	120	35	500	6	310	110	41300	41300
2015	130	40	530	7	320	125	48910	42930
2016	140	45	550	8	330	130	53600	44500

Calculating Nominal GDP

$2014 = (120 \times 35) + (500 \times 6) + (310 \times 110)$

$= 41300$

$2015 = (130 \times 40) + (530 \times 7) + (320 \times 125)$

$= 48910$

$2016 = (140 \times 45) + (550 \times 8) + (330 \times 130)$

$= 53600$

Roll-2023 04

Calculate Real GDP:-

2014 = (2014 Price of mango × 2014 Qty of mango)
+ (2014 Price of Banana × 2014 Qty of Banana)
+ (2014 Price of chicken × 2014 Qty of Chicken)

= (120 × 35) + (500 × 6) + (310 × 110)

= 41300

2015 = (2014 Price of mango × 2015 Qty of mango) +
(2014 Price of Banana × 2015 Qty of Banana)
+ (2014 Price of Chicken × 2015 Qty of chicken)

= (35 × 130) + (6 × 530) + (110 × 320)

= 42930

2016 = (2014 Price of mango × 2016 Qty of mango)
+ (2014 Price of Banana × 2016 Qty of Banana)
+ (2014 Price of Chicken × 2016 Qty of Chicken)

= (35 × 140) + (6 × 550) + (110 × 330)

= 44500

Roll- 2023 05

Growth Rate :- The growth rate is the Percentage rate of increase of real GDP in an economy over a specified year / Period of time.

$$\text{Growth rate} = \frac{GDP_2 - GDP_1}{GDP_1} \times 100$$

$$= \frac{\text{Difference between ending \& starting value}}{\text{Starting value}}$$

Growth rate of real GDP

$$2015 = \frac{42930 - 41300}{41300} \times 100$$

$$= 3.947$$

$$2016 = \frac{44500 - 42930}{42930} \times 100$$

$$= 3.657$$

b

GDP Deflator :- The GDP Deflaton also called implicit Price deflator is a measure of inflation. It measure the level of Price of all new domestically Produced final goods and Service in an economy is a year. It reflets whats happening to the overall level of Price in the economy the Price of output relative to its Price in the base year is calculated by this

$$\text{GDP Deflator} = \frac{\text{Nominal GDP}}{\text{Real GDP}} \times 100$$

$$2014 = \frac{41300 \times 100}{41300} = 100$$

$$215 = \frac{48910 \times 100}{42930} = 113.929$$

$$2016 = \frac{53600 \times 100}{44500} = 120.449$$

Now. if we want to know how much Prices have increased for year 2015 and 2016. we have to calculate the inflation.

$$2015 = \frac{113.929 * 100}{100} \times 100$$

$$= 13.937$$

the Price increase 13.937 % in 2015

$$2016 = \frac{120.449 - 113.929}{113.929} \times 100$$

$$= 5.727\ \%$$

The Price increase 5.727 % in 2016

Answer to the question no - 2

a.

Calculate the cost of the consumer's Basket:-

Step-1: Servey consumer's to determin a fixed basket of goods 4 Pizzas 6 Pepsis and 8 Hamburgers

Step-2: Find the Price of each good in each year.

year	Price of Pizzas	Price of Pepsis	Price of Hamburgers
2011	120	60	100
2012	125	65	110
2013	130	70	115

Step-3: Compute the cost of the basket

$2011 = (4 \times 120) + (6 \times 60) + (8 \times 100)$

$= 1640$

$2012 = (4 \times 125) + (6 \times 65) + (8 \times 110)$

$= 1770$

$2013 = (4 \times 130) + (6 \times 40) + (8 \times 115)$

$= 1860$

b.

The base year is 2013

$$\text{CPI in 2011} = \frac{1640}{1860} \times 100 = 88.172$$

$$\text{CPI in 2012} = \frac{1770}{1860} \times 100 = 95.161$$

$$\text{CPI in 2013} = \frac{1866}{1860} \times 100 = 100$$

c

$$\text{Inflation rate for 2012} = \frac{95.161 - 88.172}{88.172} \times 100$$

$$= 7.926$$

$$\text{Inflation rate for 2013} = \frac{100 - 95.161}{95.161} \times 100$$

$$= 5.085$$

d

The GDP deflator is the best measure of inflation. Since GDP isn't based on a fixed basket of goods and services. The GDP deflator has an advantage over the CPI.

The GDP deflator measure the Price of all goods Produced. wheanes the CPI measures Price of only the goods and services bought by consumers. Thus an increase in the Price in the goods bought by firms or government will show up in the GDP Deftator but not in the CPI.

So GDP deflator is better in comparison with CPI in the economy.

THE END