

Measures of Calculating Inflation Rate

In India, generally two kinds of indices are used to measure inflation —

- (i) Wholesale Price Index (WPI)
- (ii) Consumer Price Index (CPI)

WPI was used by Reserve Bank of India till 2014. WPI measures prices of goods at wholesale level. It is the representative basket of wholesale goods. It takes a basket of 697 items into account and shows the combined prices.

- The basket used in WPI is composed of three groups —
- a) Manufactured Products (65% of total weight)
 - b) Primary articles (like food which comprises 20.1%)
 - c) Fuel and Power (14.9%)

The main reason RBI started using CPI for calculating inflation is because it neglects services and the bottlenecks between a wholesaler and retailer.

$$\text{Inflation Rate} = \left(\frac{\text{WPI in current year} - \text{WPI in last year}}{\text{WPI in last year}} \times 100 \right)$$

For eg: Inflation rate in 2019 = $\left(\frac{\text{WPI in 2019} - \text{WPI in 2018}}{\text{WPI in 2018}} \times 100 \right)$

CPI is based on 260 commodities including certain services measures the change in prices at the retail level. The prices of sample goods and services are collected periodically by Ministry of Statistics and Programme Implementation and the change is noted. A base year is used to compare the measure of rates. The base year of CPI is taken as 2012.

$$\text{Consumer Price Index (CPI)} = \frac{\text{Value of Market Basket in two given year}}{\text{Value of Market Basket in the base year}} \times 100$$

$$\text{Inflation at a given year} = \left(\frac{\text{CPI at the given year} - \text{CPI in last year}}{\text{CPI at the last year}} \times 100 \right)$$

Calculation

Goods	Quantity	Base Year Price (2016)	Price (2017)	Price (2018)	$P_{2016} \times Q_n$	$P_{2017} \times Q_n$	$P_{2018} \times Q_n$
Pen	100	10	15	18	1000	1500	1800
Books	40	50	52	56	2000	2080	2240
Copies	20	100	104	110	2000	2080	2200
					5000	5660	6240

We know,

$$\text{CPI} = \frac{\text{Value of basket in the given year}}{\text{Value of basket in the base year}} \times 100$$

Here, base year is 2016.

So,

$$\text{CPI}_{2016} = \frac{5000}{5000} \times 100 = 100$$

$$\text{CPI}_{2017} = \frac{5660}{5000} \times 100 = 113.2$$

$$\text{CPI}_{2018} = \frac{6240}{5000} \times 100 = 124.8$$

Therefore,

$$\text{Inflation rate in 2017} = \frac{\text{CPI}_{2017} - \text{CPI}_{2016}}{\text{CPI}_{2016}} \times 100 = \frac{(113.2 - 100)}{100} \times 100 = 13.2\%$$

Similarly,

$$\text{Inflation rate in 2018} = \frac{124.8 - 113.2}{113.2} \times 100 = 10.25\%$$

This CPI over estimates Inflation — Explain

The CPI is a closely watched measure of inflation. ~~because~~ many economists believe that CPI overestimates inflation for the following reasons —

(i) Since CPI measures the price of a fixed basket of goods it does not reflect the ability of consumers to substitute toward goods whose relative prices have fallen. Thus when relative prices change the true cost of living rises less rapidly than CPI.

(ii) When a new commodity is introduced into the market place consumers are better off because they have more products from which to choose. Hence as the real value of rupees but this increase in the purchasing power is not reflected in a lower CPI.

(iii) When a firm ~~changes~~ changes the quality of good it sells but not all of the goods price change reflect the change in quality of living, hence CPI rises faster than it should if unmeasured quality improvements take place.

SUM: The CPI of an economy is 177.1 in 2001 and 179.9 in 2002. Calculate the inflation rate,

GNP deflator : GNP deflator is another measure of price inflation. GNP deflator measures level of prices of all new domestically produced final goods and services in an economy in a year. Unlike CPI, GNP deflator is not based on a fixed basket of goods and services, the basket of GNP deflator is allowed to change from year to year with people's consumption and investment pattern.

$$\text{GNP deflator} = \frac{\text{Nominal GNP}}{\text{Real GNP}} \times 100$$

'During the period of inflation debtors gain and creditors lose'. Explain.

Ans. During the period of rising prices i.e. inflation debtors gain and creditors lose. This is because when prices rise, value of money falls. Though debtors return the same amount of money but they pay less in terms of goods and services. This is because the value of money was less when they borrowed the money. Thus the burden of debt reduces as the price level rises and the debtors gain as a result.

On the other hand, the creditors lose because although they get back the same amount of money which they lent but they receive less in real terms as the value of money has fallen. Thus we can say, inflation brings about redistribution of real wealth in favour of debtors at the cost of creditors.