Macroeconomics

NOMINAL GDP

- Nominal GDP measures the value of all finished goods and services produced by a country at their **current market prices.**

- **<u>FORMULA OF NOMINAL GDP:</u>**

NOMINAL GDP= Q X P (Current prices)

REAL GDP

Real GDP is a measurement of economic output that accounts for the effect of **constant prices**.

FORMULA OF REAL GDP

REAL GDP= Q X P (Constant prices)

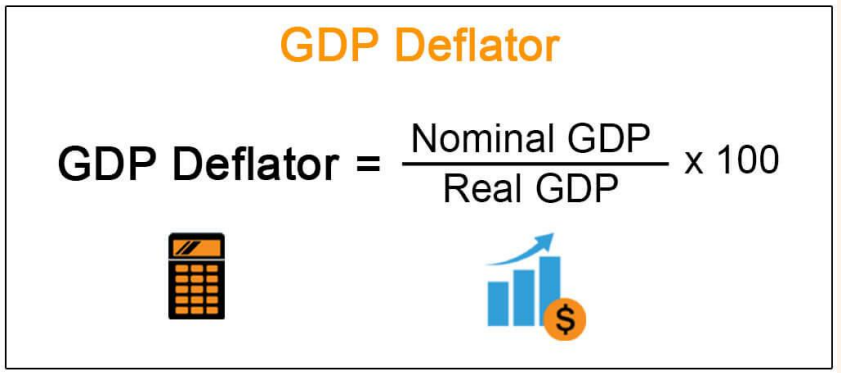
Why Real GDP Matters

The total amount that the economy is producing and consuming is important to track over time. It is a key indicator of the overall health and growth of the economy, and it is used to determine economic policy going forward.

GDP deflator

In economics, the GDP deflator (implicit price deflator) is a measure of the level of prices of all new, domestically produced, final goods and services in an economy in a year.

Formula:



KEY TAKEAWAYS

The GDP price deflator, also known as the GDP deflator or the implicit price deflator, measures the changes in prices for all of the goods and services produced in an economy.

Using the GDP deflator helps economists compare the levels of real economic activity from one year to another.

The GDP deflator is a more comprehensive inflation measure than the CPI index because it isn't based on a fixed basket of goods.

Calculate NOMINAL GDP

Consider the following economy which produces two goods, wine and cheese in the two periods of time.

Year	Price of cheese	Quantity of Cheese	Price of Wine	Quantity of Wine
2018	$5	2 Blocks	$10	4 bottles
2019	$12	3 Blocks	$17	3 bottles

We know,

NOMINAL GDP= Q X P (Current prices)

We could calculate the nominal GDP for the year 2018 as follows:

Nominal GDP in 2018 =$5∗2+$10∗4=$50=$5∗2+$10∗4=$50

We could calculate the nominal GDP for the year 2019 as follows:

Nominal GDP in 2019 =$12∗3+$17∗3=$87=$12∗3+$17∗3=$87

Calculate REAL GDP

Consider the following economy which produces two goods, wine and cheese in the two periods of time.

Year	Price of cheese	Quantity of Cheese	Price of Wine	Quantity of Wine
2018	$5	2 Blocks	$10	4 bottles
2019	$12	3 Blocks	$17	3 bottles

We know,

REAL GDP= Q X P (Constant prices)

Let 2018 as the base year

Real GDP in 2018 =$5∗2+$10∗4=$50=$5∗2+$10∗4=$50
Real GDP in 2019 =$5∗3+$10∗3=$45=$5∗3+$10∗3=$45

Let 2019 as the base year

Real GDP in 2018 =$12∗2+$17∗4=$92=$12∗2+$17∗4=$92
Real GDP in 2019 =$12∗3+$17∗3=$87=$12∗3+$17∗3=$87

Calculate GDP deflator

Consider the following economy which produces two goods, wine and cheese in the two periods of time.

Year	Price of cheese	Quantity of Cheese	Price of Wine	Quantity of Wine
2018	$5	2 Blocks	$10	4 bottles
2019	$12	3 Blocks	$17	3 bottles

We know,

NOMINAL GDP= Q X P (Current prices)
REAL GDP= Q X P (Constant prices)
GDP Deflator = Nominal GDP / Real GDP x 100

Let 2018 as the base year

Nominal GDP in 2018 =$5∗2+$10∗4=$50=$5∗2+$10∗4=$50
Real GDP in 2018 =$5∗2+$10∗4=$50=$5∗2+$10∗4=$50
GDP deflator in 2018 =$50/$50 x 100 =100

Try to calculate deflator in 2019 by yourself.

Consumer Price Index (CPI)

The Consumer Price Index (CPI) is a measure that examines the weighted average of prices of a basket of consumer goods and services, such as transportation, food, and medical care.
It is calculated by taking price changes for each item in the predetermined basket of goods and averaging them.

The CPI is one of the most frequently used statistics for identifying periods of **inflation or deflation**.

How to Calculate the Consumer Price Index and Inflation Rate

- Consumer price index (or CPI-U): A measure of the overall cost of goods purchased by people living in metropolitan urban areas.
- CPI is used to calculate inflation: an increase in the average level of prices.
- Annual inflation rate: the percentage change in the CPI from its preceding year.

$$\text{Inflation Rate} = \frac{CPI\ this\ year - CPI\ last\ year}{CPI\ last\ year} \times 100$$

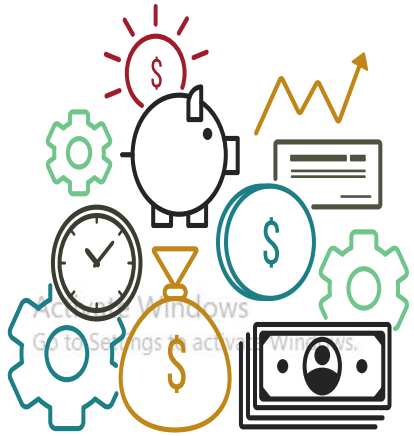
	2016 Base Year		2017	2018
Good	Price	Quantity	Price	Price
Soccer Balls	$10	100	$15	$18
Shoes	$50	40	$52	$56
Concert Tickets	$100	20	$104	$110

1. Calculate the total cost of purchasing the base year fixed basket (100 soccer balls, 40 shoes, and 20 concert tickets) in each year.

For 2016: ($10 x 100) + ($50 x 40) + ($100 x 20) = $5,000

For 2017: ($15 x 100) + ($52 x 40) + ($104 x 20) = $5,660

For 2018: ($18 x 100) + ($56 x 40) + ($110 x 20) = $6,240



1.

- For 2016 (Base Year): ($10 x 100) + ($50 x 40) + ($100 x 20) = $5,000
- For 2017: ($15 x 100) + ($52 x 40) + ($104 x 20) = $5,660
- For 2018: ($18 x 100) + ($56 x 40) + ($110 x 20) = $6,240

2. Construct CPI Index: $$CPI\ in\ Year\ X = \frac{Cost\ of\ Fixed\ Basket\ in\ Year\ X}{Base\ Year\ Cost\ of\ Fixed\ Basket}\ x\ 100$$

$$CPI\ in\ 2016 = \frac{5000}{5000}\ x\ 100 = 100$$

$$CPI\ in\ 2017 = \frac{5660}{5000}\ x\ 100 = 113.2$$

$$CPI\ in\ 2018 = \frac{6240}{5000}\ x\ 100 = 124.8$$

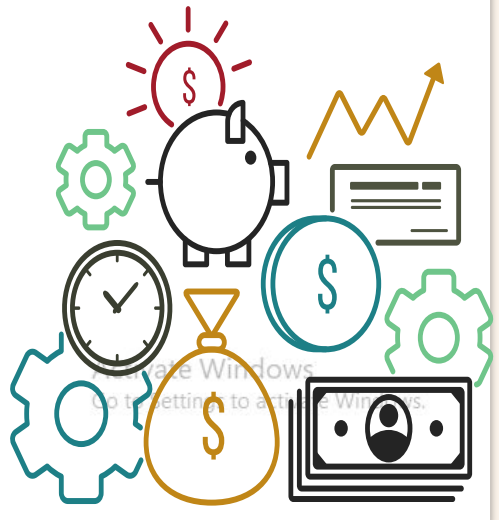
- $CPI\ in\ 2016 = 100$
- $CPI\ in\ 2017 = 113.2$
- $CPI\ in\ 2018 = 124.8$

Inf. Rate = $\frac{CPI\ this\ year - CPI\ last\ year}{CPI\ last\ year}$ x 100

3. Calculate the inflation rate in 2017 and 2018

Inflation rate 2017 = $\frac{113.2 - 100}{100}\ x\ 100 = 13.2\%$

Inflation rate 2018 = $\frac{124.8 - 113.2}{113.2}\ x\ 100 = 10.25\%$




Thank you ☺