CHAPTER 9

INFLATION AND DEFLATION

In this Chapter, I will learn

- INDEX
- INFLATION
- WEIGHTED INDEX NUMBERS
- OLD CONSUMER PRICE INDICES
- NEW CONSUMER PRICE INDICES
- TYPES OF INFLATION
- EFFECTS OF INFLATION
- MEASURES TO CONTROL INFLATION
- RELATED TERMS

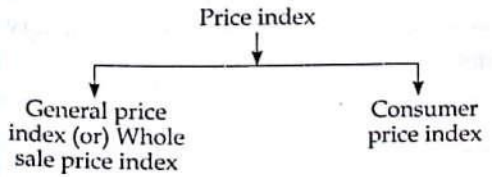
The word 'Inflation' is often heard and seen in media. It is an important problem for policy makers, politicians and common people. Inflation assumes such an importance due to its all round implications. In contrary deflation is less heard because this is a rare phenomenon. So inflation deserves elaboration.Before getting in to the subject matter of inflation it is better to look into index numbers and price indices first.

This chapter covers index, measurement of inflation, weighted index numbers, types of inflation, impact of inflation, measures to control inflation and related terms.

INDEX

An Index number may be described as a specialized average designed to measure the relative change in the level of a phenomenon from time to time. S.P. Gupta observes "An index number is a specialized average designed to measure the change in a group of related variable over a period of time".[1]

Fig 9.1



1 Statistical Methods S.P. Gupta, p. 516

Price Index

Price index is a specialised average that measures the changes in prices over a period of time. The price indices are of two types as shown in the figure 9.1.

General Price Index (GPI)

General Price Index measures the changes in average prices of goods and services. A base year is selected and its index is assumed as 100 and on this basis, price index for further period is calculated.

Consumer Price Index (CPI)

Consumer Price Index measures the average change in prices paid by ultimate consumers for a particular basket of goods and services over a period of time. CPI actually measures the increase in prices a consumer will have to pay for the designated commodity basket (which may be revised every four-five years to factor in changes in consumption pattern).[2]

Construction of Price Index

Price index is calculated by measuring rise in price of current year over price of base year.

Price Index = Current year's price / Base year's Price X 100

$= P_{1/} P_0 X\ 100$

2 Economic survey 2008-09, p. 63

Example:

Take 2004-05 as base year.

Price of rice in 2004-05, ₹ 2/kg

Price of rice in 2005-06, ₹ 3/kg

Price of rice in 2006-07, ₹ 3.50/kg

Price Index for 2005-06 = Price of rice in 2005-06/ Price of rice in 2004-05 X 100

= 3/2 X100

= 150

Price index for 2006-07 = Price of rice in 2006-07/ Price of rice in 2004-05 X 100

= 3.50/2 X100 = 175

INFLATION

Shapiro defines inflation as "persistent and appreciable rise in the general level of prices"[3]. The economic survey of 2008-09 observes inflation as "... an upward movement in the general prices of goods and services and is estimated as the percentage rate of change in a price index over the reference time period".

Measurement of Inflation

Inflation is measured with the help of general or wholesale price index in India.[4] The percentage of rise in the price index of a particular period from previous period price index is the rate of inflation.

Inflation = current period price index – last period price index / last period price index*100

In the above example,

Inflation[5] in the year 2006-07

= 175 – 150/150 x 100

= 16.6%

This is a simple index based calculation. Actually, inflation is calculated on the basis of weighted index numbers.

Note: Base year is used only to calculate the index number. The inflation is calculated as a percentage of rise in index number over last year.

Year-on-Year Inflation

Year–on-year inflation means rate of change of inflation over the corresponding period (week or month or quarter in relation to the frequency of the data) of the previous year. For example, the inflation on second week of January 2010 is computed by calculating the rise in index number over index number on second week of January 2009.

3 Monetary Economics, 5th revised edition , M.L. Jhingan p.232

4 The International Monetary Fund (IMF) statistics reveals that 24 countries use WPI as the official measure to track inflation, compared to 157 countries which use CPI

5 Officially Laspeyres's formula is used in index construction but for the simplicity a simple formula without weightage is used

WEIGHTED INDICES

In India various weighted price index are calculated. They are:

1. Wholesale Price Index (WPI)

2. Consumer Price Index for Industrial Workers (CPI – IW)

3. Consumer Price Index for Urban Non – Manual Employees (CPI – UNME)

4. Consumer Price Index for Agriculture Labourers (CPI – AL)

5. Consumer Price Index for Rural Labourers (CPI - RL)

Among the above indices, until October 2009, only the WPI was used to calculate inflation and made public through the newspapers. So, it is called the **head line inflation.** The other indices were published only as index numbers and not as inflation. But now the inflation is also calculated based on new CPI indices. The new CPI indices are elaborated later.

The weights are assigned on the basis of wholesale transaction (value of quantities) for respective commodity groups for WPI. For other indices, the weights are assigned on the basis of consumer expenditure survey.

For example, in the wholesale market, out of the total transaction (value of quantities) 20.118 % of the transaction takes place in primary products in the base year. So, primary commodities are assigned 20.118

Table 9.1 Salient Features Of Price Indices

S.No			CPI-UNME	CPI – IW	CPI – AL	CPI- (RL)	WPI
1.	Weights allocated on the basis of	Consumer Expenditure Survey					
		First	1958 – 59	1958 -59	1956 – 57	1983	Whole Sale Transactions
		Latest	1982 – 83	2001	1983	1983	
2.	Base year of the Current Series		1984 – 85	2001	1986 -87	1986 -87	2004-05
3.	Number of items/ commodities in basket		146 – 365	120 -160	260	260	676
4.	Number of Centres / villages		59	76	600	600	5482 Quotations
5.	Time lag of the index		2 weeks[6]	1 month	3 weeks	3 weeks	3 weeks
6.	Frequency		Monthly	Monthly	Monthly	Monthly	Monthly

Source: Economic survey 2006-07 and Ministry of commerce and industry

% weight. In consumer expenditure survey, it was found that people spend 46.19 % of their total expenditure on food in the base year. So, food items are assigned with 46.19% weight.

Reason for Assigning Weight

Weights are assigned to arrive at a realistic inflation rate. 20.118% weight means if we take 177.77 points of price rise, only 35.76 points (20.118 X 177.77/100 = 35.76) of price rise get increased in the budget of a wholesale purchaser, because out of his whole purchase, he spends only 20.118% on primary commodities.

The following table 9.1 in the next page gives the details of various price indices regarding base year, number of commodities included, frequency of publication etc.

Whole Sale Price Index (WPI)

This index measures the change in the price of commodities traded in the wholesale market. The following table gives details about weights assigned to different commodity groups within WPI.

Table 9.2 Table showing commodity groups, weight and no. of articles

S.No	Commodity Groups	Weight	No. of Articles
1	Primary Products	20.118	102
2	Fuel, Power, Light & Lubricants	14.91	19
3	Manufactured Products	64.97	555
Total		100.00	676

The Authority responsible for Compilation and Release: Office of the Economic Advisor, Ministry of Commerce & Industry.

OLD CONSUMER PRICE INDICES

Before February 2011, India had only four consumer price indices viz. Consumer Price Index for Industrial Workers (CPI – IW) , Consumer Price Index for Urban Non – Manual Employees (CPI – UNME), Consumer Price Index for Agriculture Labourers (CPI – AL) and Consumer Price Index for Rural Labourers (CPI - RL).

CPI for Industrial Worker (CPI (IW))

This index measures the change in the price of commodity basket consumed by the industrial workers. The following table shows the weights for different commodities group in this index.

Table 9.3 Product groups and weightage of CPI (IW)

S.No	Groups	Weights
1.	Food	46.19
2.	Pan, Supari, Tobacco & Intoxicants	2.27
3.	Fuel & Light	6.43
4.	Housing	15.27
5.	Clothing, Bedding&Foot wear	6.58
6.	Miscellaneous *	23.26

Source: Economic Survey 2005-06

*Medical care, education, transports & communications, recreation & amusement personal care & effects, laundry, domestic services etc.

Authority for compilation & Release: Labour Bureau, Shimla, Ministry of Labour.

Use: Used for wage indexation in government and organized sector.

CPI for Urban Non-Manual Employees (CPI – UNME)

This index measures the change in the price of commodity basket consumed by the non manual employees like office goers. CPI-UNME earlier compiled by the Central Statistical Organisation as an independent index has since been discontinued and is currently linked to the CPI-IW.[6]

Uses

Basically used for determining dearness allowances of employee of some foreign companies working in India in service sectors such as Airlines, Communications, Banking, Insurance & other financial services.

Used under the Income Tax Act to determine capital gains.

Used by Central Statistical Organisation (CSO) for deflating selected service sectors' contribution to GDP at factor cost at current prices to get the corresponding figures at constant prices.

Authority for compilation & Release: CSO – Central Statistical Organisation, Ministry of Statistics and Programme Implementation.

6 Economic survey 2008-09, p. 67

CPI for Rural Labourers and Agricultural Labourers (CPI – AL)

Consumer Price Index for rural labourers measures the change in the price of

commodity basket consumed by rural labourers like agriculture labourers, labourers of village and cottage industries etc.

Consumer Price Index for Agricultural Labourers (CPI – AL) is a subset of Consumer Price Index for Rural Labourers (CPI-RL). It is basically used for revising minimum wages for agricultural labourers in different states.

Authority for compilation and release of both indices: Labour Bureau, Shimla, Ministry of Labour.

NEW CONSUMER PRICE INDICES

The above old consumer price indices cover only a segment of population like Agriculture Labour, Industrial worker etc., and do not give a nationwide picture. Therefore, three new indices are introduced with base year of 2010 (January – December) which cover all segments of population on all India basis. They are as follows:

1. CPI (Rural)
2. CPI (Urban)
3. CPI (Combined)

These indices are published for all India as well as state / union territory level. These indices are released with one month time

lag. The CPI (Combined) is computed by combining Rural and Urban index. From January 2012, these new indices are released.

Table 9.4. Commodity groups and their weights for rural, urban and combined

SNo	Groups	Rural	Urban	Combined
1.	Food, beverages and tobacco	59.31	37.15	49.17
2.	Fuel & Light	10.42	8.40	9.49
3.	Clothing, Bedding & Foot wear	5.36	3.91	4.73
4.	Housing	-	22.53	9.77
5.	Miscella-neous	24.91	28.00	26.31
6.	Total	100	100	100

Source: Central Statistics Office, Ministry of Statistics and Programme Implementation, Government of India.

TYPES OF INFLATION

Different Inflations Based on Rate of Rise in Prices

1. Creeping Inflation

Price rise at very slow rate (less than 3%) like that of a snail or creeper is called Creeping inflation. It is regarded safe and essential for economic growth.

2. Walking or Trotting Inflation

Price rise moderately at the rate of 3 to 7% (or) less than 10% is called Walking or trotting inflation. It is a warning signal to the government to be prepared to control inflation. If the inflation crosses this range, it will have serious implication on the economy and individuals.

3. Running Inflation

Running inflation means price rise rapidly like the running of a horse at a rate of 10-20%. It affects the economy adversely.

4. Hyperinflation (or) Runaway (or) Galloping Inflation

The price rise at very fast at double or triple digit rate from 20 to 100% or more is called Hyperinflation (or) Runaway (or) galloping inflation. Such a situation brings total collapse of the monetary system because of the continuous fall in the purchasing power of money.

Different Inflations Based on Causes

1. Demand Pull Inflation

Demand pull inflation arises due to higher demand for goods and services over the available supply. Higher demand for goods and services arises due to increase in income of the people, increase in money supply and change in the taste and preference of people etc. In other words, demand pull inflation takes place when increase in production lags behind the increase in money supply.

2. Cost Push Inflation

Price rise due to increased input costs

like raw material, wages, profit margin etc., is called Cost push inflation.

Both demand pull inflation and cost push inflation are affected by forces of demand and supply. They are discussed below.

Factors Affecting Demand

a. Increase in Money Supply

Increase in money supply leads to price rise. More money available with people induces people to purchase more goods and services. It means there is an increase in demand. So, prices move upward.

For example, consider a person who goes to market with more money and another one person with less money on a particular day. The former may buy more goods than latter. Likewise, if all people have more money, all may purchase more goods. It leads to price rise in the market.

b. Increase in Disposable Income

The increase in the disposable income leads to higher spending on the part of households. It hikes the level of price.

c. Cheap Monetary Policy

Cheap monetary policy means loan availability at very low interest rate and at easy terms. It leads to more investment by investors with loaned money. It pushes up the demand for capital goods and rise in price of the same.

d. Increase in Public Expenditure

Increase in government expenditure over its income, leads to deficit budget. Increase in government spending increases the demand for consumption and capital goods and services. It increases the price of both goods and services.

e. Repayment of Public Debt

The repayment of public debt borrowed by government to public leaves people with more money. It induces people to spend more. It ultimately leads to increase in price of goods and services.

Factors Affecting Supply

a. Shortage of Factors of production

The shortage in the factors of production viz., land, labour, and capital increases the cost of production. For example, shortage in the labour leads to higher wages. It increases the cost of production and price of goods and services.

b. Industrial Disputes

Industrial disputes lead to strike or lay off. It affects the production and supply of goods. It results in increased prices.

c. Natural Calamities

Natural calamities like earth quake, land slide and tsunami, affect production and supply of goods and services. The end result is price rise.

d. Artificial Scarcities

Artificial scarcities created by activities like hoarding and speculative trading in commodities in the commodities future market, results in price hike.

e. Increase in Exports

Increase in export of a particular commodity leads to shortage of goods in the domestic market. It pushes up prices.

f. International Factors

International factors like oil price hike, shortage in production of certain commodities leads to higher import prices.

EFFECTS OF INFLATION

Inflation has impact on all the economic units. It has favourable impact on some and unfavourable impact on others. The effects are discussed under three different heads as under:

1. Redistribution of income and wealth

It redistributes income from one hand to another. It leads to loss to some group of people and gain to another group of people.

a. Debtors Vs Creditors

In case of debtor and creditor, debtor is gainer and creditor is loser. Take an example. The debtor borrowed ₹ 100 for interest at the rate of 5 % a day and debtor is a mango vendor. He has to repay Rs 105 on the next day. The price of mango on day one is ₹10 per mango. The debtor can buy 10 mangoes. On day two, the price of mango is ₹15. The debtor can sell 10 mangoes for ₹ 150. The debtor can repay his debt by selling only 7 mangoes. So he gains ₹ 45 or 3 mangoes. The creditor can buy only 7 mangoes with ₹ 105 he got back. Suppose, he purchased mango on day one instead of lending, he may have bought 10 mangoes. So he loses 3 mangoes.This relation holds true for private as well as public debt.

b. Producers Vs Consumers

In inflationary situation, the producers stand to gain and consumers stand to lose. The producer's profit will increase as a result of inflation. The purchasing power of money held by consumer falls. So, they have to pay more money to purchase the same amount of goods and services what they bought before inflation. Here, the income of consumer gets transferred from consumers to producers.

c. Flexible income group Vs Fixed income group

The flexible income groups like sellers, self employed, and employees of private concerns whose salary is adjusted according to inflation do not get affected, but fixed income groups like daily wage earners lose as the purchasing power of their income diminishes.

d. Debentures or Bond holders and Savers Vs Equity holders

The Debentures or Bond holders and Savers receive fixed periodical income from their financial assets. The purchasing power of their asset remains intact only if interest rate is more than rate of inflation. Take an example where the interest rate is 8%.The investor can

earn ₹ 8 for ₹ 100 investment. Suppose, if the rate of inflation is 10% she/he can buy fewer goods than that of her/ his purchase before inflation with the invested amount.

The bond issuers gain, the bond holders lose. The fixed interest rate paid for the bonds are not enough to compensate the effect of inflation. So to avoid this, interest is fixed on the basis of inflation. It means interest vary according to inflation. If inflation is 10 % the interest rate shall be adequate to compensate this 10%. The interest rate may be 10 % or more. These types of bonds are called **Inflation indexed bonds**.

The security holders' income depends on the profit of the company. In inflationary situation, the companies earn more profit. So, the equity holders also earn more income.

2. Effects on Production and Consumption

The inflation may lead to fall in the demand for goods and services. It may curtail the amount of production. Inflation also leads to reallocation of resources. Sometimes, only few goods may experience price rise. In that case, the investment from other sectors may shift to these sectors.

In packaged items, in order to maintain same price per package, the producers reduce the quantity or quality or both instead of raising price. It means, less production and consumption.

3. Other Effects

a) Balance of Payment (BoP)

High price reduces the amount of export and increases import from other countries where goods are available at cheaper rate. It results in unfavourable balance of payment.

b) Exchange Rate

High import and low export means high demand for foreign currencies compared to domestic currency. This depreciates domestic currency.

c) Social and Political

Higher rate of inflation leads to social and political tension. The political parties and organised group of people call for strike, hartals and stage dharnas.

MEASURES TO CONTROL INFLATION

The control of inflation needs a multi-pronged strategy. All the strategies need cooperation and harmony among them.

1. Monetary Measures

a. Credit Control

Credit control method is used by RBI to control inflation. It is discussed in detail in the chapter 5 named Indian Financial System- Money Market. RBI used Wholesale Price Index based inflation as a bench mark to control inflation. But now based on Urjit Patel Committee

recommendation, RBI shifted targeting to newly introduced CPI (Combined). The reason is that the CPI (combined) measures the inflation in the consumer market. So it reflects the true and correct cost of living compared to WPI. The people expectation about future inflation is also based on price level in the consumer market.

b. Demonetisation of Currency

Demonetisation of currency means declaring that hereafter currencies of particular denominations are invalid. It suddenly reduces the money to the extent of money kept in those particular denominations. It is resorted to only in extreme cases.

c. Issue of New Currency

In this case all the money in circulation is withdrawn by government and new currency is issued. The new currency of single unit will be made equal to many units of old currency. For example new currency of one Rupee will be made equal to ₹ 100 of old currency. So the money supply is reduced to 1/100th. This too is resorted only under extreme cases.

2. Fiscal Measures

a. Reduction in unnecessary Expenditure

Reduction of unnecessary government expenditure means less demand from government side. It brings down the price level.

b. Increase in Direct Taxes

Increase in direct taxes like income tax reduces the disposable income available with people. It means low demand from households. Less demand leads to lower price.

c. Decrease in Indirect Taxes

Decrease in indirect taxes like excise duty, sales tax brings the prices down.

d. Surplus Budget

Surplus budget means less expenditure than receipts. It reduces the money supply and government demand for goods and services. The price level is brought down due to this.

3. Trade measures

Trade measures refer to export and import of goods and services. In case of shortage of goods in domestic market, the supply can be increased through import of goods from foreign countries at low or nil import duty. The restriction in the form of import licenses has to be eased to increase import. The higher supply helps to bring down the price.

4. Administrative Measures

a. Rational Wage Policy

Rational wage policy helps to keep the cost of production under control. The cost control means price control.

b. Price Control

Direct price control also helps in

inflation control. Price can be controlled by fixing maximum price limits through administered price system and subsidy from the government.

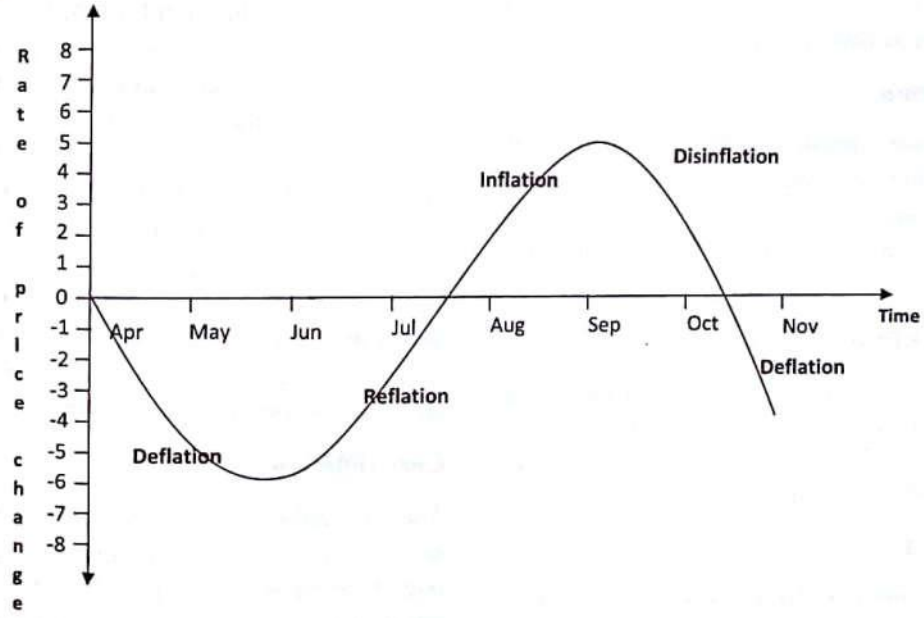
c. Rationing

Rationing of goods in short supply keeps the demand under control so that price comes under control.

Deflation

Deflation is opposite to that of inflation. The persistent and appreciable fall in the general level of prices is called as deflation. The rate of change of price index is negative. The effects, causes and measures are also in the opposite direction.

Fig 9.3

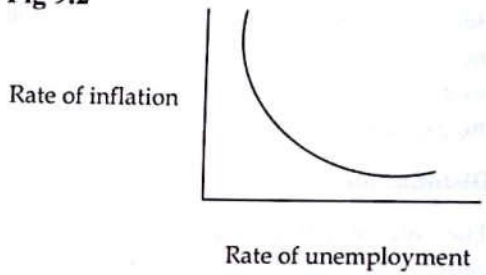


RELATED TERMS

Philips Curve

Philips curve shows the relationship between rate of inflation and rate of unemployment. It shows that the relationship is negative. That is at high rate of inflation the unemployment rate is low as show in fig. 9.2 below.

Fig 9.2



Stagflation

Stagflation refers to the situation of coexistence of stagnation and inflation in the economy. Stagnation means low National Income growth and high unemployment. The Philips curve shows that at high rate of inflation, there is low rate of unemployment. But stagflation proves the contrary.

Before 1970s, it was considered that at the time of inflation, the economy will be booming. 1970s scenario proved contrary the existence of inflation and stagnation.

Disinflation

The rate of inflation at a slower rate is called disinflation. For example, if the inflation of last month was 6% and rate of inflation in the current month is 5% it is termed as disinflation.

Reflation

Reflation means deliberate action of government to increase rate of inflation to stimulate the economy. It is usually done to redeem the economy from deflationary situation.

Base Effect

Base effect refers to the phenomenon of current year index being influenced by very low or high base period index. Consider the following example.

Case 1

Price index on 7th January, 2007 = 110

Price index on 7th January, 2008 = 120

Rate of inflation on 7th January, 2008 = 120 - 110/110 * 100 = 9.09 %

Case 2

Price index on 10th March, 2008 =180

Price index on 10th March, 2009 =190

Rate of inflation on 10th March, 2009 = 190 - 180/180 * 100 = 5.55%

In both the cases, the index number increased by 10, but the rate of inflation is different. The rate of inflation is low in second case compared to first case. This is because of the difference in base period index.

A Comprehensive Picture

The figure 9.3 in the previous page depicts the various rates of price changes in the economy. From the month of April to the end of May, the economy is experiencing negative rate of price change. It is called deflation. From the end of May to the mid of July, the price rate is recovering from negative zone. It is called reflation. From the mid of July, to the end of August, the price rate is moving upward in the positive territory. It is called inflation. From September to the mid of October, the rate of price change is declining but still in the positive territory. It is called disinflation.

Core Inflation

The core inflation is the measure of price rice in the economy excluding the price rise of certain products. Those products are whose price is very volatile and temporary

in nature. Example for these products is fruits and vegetable. These products are seasonal. During the season they are available in plenty and prices are low but in offseason these are scarce and prices are high. It means its prices are temporary and volatile. It is measured to study the long term trend in the price rise. So that the long term policies can be framed to control inflation.