CHAPTER – II

CONCEPTS AND REVIEW OF LITERATURE

Inflation is the form of taxation which the public find hardest to evade."- Keynes

Price

In commerce\(^{11}\), price is determined by what (1) a buyer is willing to pay, (2) a seller is willing to accept, and (3) the competition is allowing to be charged. With product, promotion, and place of marketing mix, it is one of the business variables over which organizations can exercise some degree of control. In ordinary usage, price is the quantity of payment or compensation given by one party to another in return for goods or services.

Consumer Price Index

CPI is a comprehensive measure used for estimating price changes in a collective of goods and services which is representative of consumption expenditure. CPI is used to measure Inflation and the percentage change in this index over a period of time gives the amount of inflation over that specific period.

The Consumer Price Index (CPI) measures changes in the price level of a 'market basket' of consumer goods and services purchased by households. The CPI is a statistical estimate constructed using the prices of a sample of representative items whose prices are collected

periodically.

**CPI Consumer Price Index**

CPI is calculated by collecting the **Retail** Cost of representative products or Services from the following Categories for Urban Non-Manual Employees

- Food, Beverages and Tobacco
- Fuel and light
- Housing
- Clothing, Bedding and Footwear and
- Miscellaneous

Consumer Price Index is a measure of the cost of living of a person in an economy based upon the citizen’s socio-economic strata. An agricultural labour will have different requirements and weightages compared to an industrial labour.

There are three types of CPI

1. CPI Agricultural Labour
2. CPI Industrial Labour
3. CPI Urban Non-Manual Employees

The constituents and their weightages that go in to form the CPI varies for different types of people. It does not only include products, it includes services too like house rent etc.

**Wholesale Price Index** - It is the index of price prevailing in the wholesale market. In practice, it represents the quoted price of bulk transaction generally at primary stage. For example, the price pertaining to bulk transactions of agricultural commodities may be farm harvest prices, or prices at village/mandi level. Similarly, for manufactured
goods, the wholesale prices are ex-factory gate level or ex-mine level.

The **Wholesale Price Index (WPI)**\(^{12}\) is the 'price of a representative basket of wholesale goods'. Basket of wholesale goods: The wholesale price index (WPI) is based on the wholesale price of a few relevant commodities of over 240 commodities available. The commodities chosen for the calculation are based on their importance in the region and the point of time the WPI is employed. For example in India about 435 items were used for calculating the WPI in base year 1993-94 while the advanced base year 2004-05 and which has now been planned to change to 2010-2011; uses 676 items.

**WPI (wholesale price index) Calculation**

In this method, a set of 435 commodities and their price changes are used for the calculation. The selected commodities are supposed to represent various strata of the economy and are supposed to give a comprehensive WPI value for the economy.

WPI is calculated on a base year and WPI for the base year is assumed to be 100. To show the calculation, let us assume the base year to be 1970. The data of wholesale prices of all the 435 commodities in the base year and the time for which WPI is to be calculated is gathered.

Let us calculate WPI for the year 1980, say, for a particular commodity, say wheat. Assume that the price of a kilogram of wheat in 1970 = Rs 5.75 and in 1980 = Rs 6.10. The WPI of wheat for the year 1980 is,(Price of Wheat in 1980 at Price of Wheat in 1970)/ Price of

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Wheat in 1970 x 100) i.e. \((6.10 - 5.75)/5.75 \times 100 = 6.09\) Since WPI for the base year is assumed as 100, WPI for 1980 will become \(100 + 6.09 = 106.09\).

In this way individual WPI values for the remaining 434 commodities are calculated and then the weighted average of individual WPI figures are found out to arrive at the overall Wholesale Price Index. Commodities are given weight-age depending upon its influence in the economy.

**Base year**

A base year is the year used for comparison for the level of a particular economic index. The base year is taken on many factors like state of food production in that year whether it is normal or below normal. Whether the monsoon in that particular year is good or below the expectations. The overall prices and economic performance in that year. If a particular year is ideal then it is considered as base year. At present 2004-05 is considered as base year as all the conditions are normal in that year.

**Difference b/w WPI & CPI:**

WPI refers to the price index used for determination of price of goods before it amongst the industries, on the contrary, CPI refers to the price index which is used to determine the cost of goods at which it should be sold to the final consumer.

**Inflation**

It is the percentage change in the value of the Wholesale Price Index (WPI) on a year-on year basis. Inflation consumes our net worth and
investments value and also impacts the growth of the nation’s economy, hence it is an important terminology that you may come across time and again. Inflation is caused by a mismatch of demand and supply chain and mostly demand overshooting supply. During periods of rapid growth and structural change, inflation increases.

Inflation is the rate of increase in prices for goods and services. Inflation means there is an increase in the cost of living. **In other word Inflation means that your money won’t buy as much today as you could yesterday.**

The inflation rates are expressed as percentages. If CPI is 3%, this means that on average, the price of products and services we buy is 3% higher than a month earlier. Or, in other words, we would need to spend 3% more to buy the same things we bought a month ago. Statistically speaking, inflation is measured in terms of a percentage rise in the price index (i.e. percentage rate per unit time) usually for an annum (a year) or for 30-31 days (a month).

**Inflation and Growth**

Inflation is not harmful at all times. In fact only when there is a sustained increase above 7% to 8%, there is cause for worry. In fact a low level of inflation between 2% and 5% is a sign of prosperity. It is required for growth. That’s because it gives the producer of goods and services a certain impetus to stay in the market. This in turn gives rise to growth, development and employment which is very much required.
Measures of Inflation

Every country has its own set of commodity basket to track inflation. While some countries use Wholesale Price Index (WPI) as their official measure of inflation and some others use the Consumer Price Index (CPI). The International Monetary Fund (IMF) statistics reveals that, while 24 countries use WPI as the official measure to track inflation, 157 countries use CPI. Conceptually these two measures of inflation stress different stages of price realization as well as composition: while WPI measures the change in price level at wholesale market, CPI measures the change in price level at retail level.

In India, headline inflation is measured through the WPI – which consists of 676 commodities (services are not included in WPI in India). It is measured on year-on-year basis i.e., rate of change in price level in a given month vis a vis corresponding month of last year. This is also known as point to point inflation.

In India, there are three main components in WPI – Primary Articles (weight: 20.12%), Fuel & Power (weight: 14.91%) and Manufactured Products (weight: 64.97). Within WPI, Food commodities (from which Food Inflation) have a combined weight of 24.31%. This includes “Food Articles” in the Primary Articles (14.34%) and “Food Products” in the Manufactured Products category (9.97%). Food Inflation is also calculated on year-on-year basis.

Apart from WPI, CPI is also computed to capture inflation in India. In particular, four categories of CPI are computed – for Industrial Workers (CPI-IW), Urban Non-Manual Employees (CPI-UNME), Agricultural Labourers (CPI-AL) and Rural Labourers (CPI-RL). However, WPI is
considered as the preferred measure of headline inflation due to its wider coverage. To overcome this lacuna, the Central Statistical Organization (on 18th February 2011) has introduced a new series of CPI (with 2010=100 as the base year), which would be calculated for all-India as well as States/UTs – with separate categorization for rural, urban and combined (rural + urban).

**Wholesale Price Index (WPI)**

Wholesale Price represents bulk transactions generally at the early stage of trading. The price pertaining to bulk transactions may have divergent nomenclatures e.g. farm harvest prices, wholesale prices, procurement prices, support prices, administered prices, import prices, forward prices etc. Wholesale price Index relates to the transactions at the primary stage which broadly correspond to producer prices. The Office of the Economic Adviser (www.eaindustry.nic.in) in the Department of Industrial Policy and Promotion, Ministry of Commerce & Industry is responsible for compiling WPI and releasing it. The Office published for the first time, the index number of wholesale prices, with base week ended August 19, 1939= 100, from the week commencing January 10, 1942. Since 1947 the index is being published regularly.

39.7.2 An implicit disadvantage of Lapsers formula, the methodology used for compiling the WPI, is that the indices with fixed weighting diagram fail to capture the dynamic changes in product mix and structure of the economy over time. It has, therefore, been the practice to revise the weighting diagram and the series of WPI based on the recommendations of a Working Group appointed by the Government, roughly once every decade. Ever since the introduction of the WPI on a regular basis, six revisions have taken place introducing the new base
years, viz., 1948-49, 1952-53, 1961-62, 1970-71, 1981-82 and 1993-94. 39.7.3 Latest revision of WPI has been done by shifting base year from 1993-94 to 2004-05. A Working Group was set up with Prof. Abhijit Sen, Member, and Planning Commission as Chairman for revision of WPI series. WPI of the new series [with base year 2004-05] was launched on 14th September, 2010. The above evolution of WPI in India may be summed up in the following table:

<table>
<thead>
<tr>
<th>Base Year</th>
<th>Year of Introduction</th>
<th>No of Items in Index</th>
<th>No of Price Quotations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week ended 19th August 1939</td>
<td>1942</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td>End August 1939</td>
<td>1947</td>
<td>78</td>
<td>215</td>
</tr>
<tr>
<td>1952-53 (1948-49 as weight base)</td>
<td>1952</td>
<td>112</td>
<td>555</td>
</tr>
<tr>
<td>1961-62</td>
<td>July 1969</td>
<td>139</td>
<td>774</td>
</tr>
<tr>
<td>1970-71</td>
<td>January 1977</td>
<td>350</td>
<td>1295</td>
</tr>
<tr>
<td>1981-82</td>
<td>July 1989</td>
<td>447</td>
<td>2371</td>
</tr>
<tr>
<td>1993-94</td>
<td>April 2000</td>
<td>435</td>
<td>1918</td>
</tr>
<tr>
<td>2004-05</td>
<td>September 2010</td>
<td>676</td>
<td>5482</td>
</tr>
</tbody>
</table>

A comparative statement of weights, no of items and no of quotations between the old series and new series is given for the major groups in the table below:

<table>
<thead>
<tr>
<th>Major Group/ Group</th>
<th>Weight</th>
<th>No. of items</th>
<th>No. of Quotations</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Commodities</td>
<td>100.00</td>
<td>100.00</td>
<td>676</td>
</tr>
<tr>
<td>I Primary Articles</td>
<td>20.12</td>
<td>22.02</td>
<td>102</td>
</tr>
<tr>
<td>II Fuel &amp; Power</td>
<td>14.91</td>
<td>14.23</td>
<td>19</td>
</tr>
<tr>
<td>III Manufactured Products</td>
<td>64.97</td>
<td>63.75</td>
<td>555</td>
</tr>
</tbody>
</table>

Change in Reporting of Inflation: At present the WPI for all commodities including manufactured products is released only on a monthly basis. However, until recently WPI for primacy articles and the
fuel group was also being released on a weekly basis. This practice was interred to help in analyzing the trends for policy-making as these commodities are essential in nature. But it was observed over a period of time that there was a tendency for upward revisions in the indices reported once the final numbers were later released. The higher frequency weekly reporting was thus prone to more statistical 'noise' and sometimes provided a misleading picture. So the trade-off was between the more frequent and less reliable data and less frequent but more reliable data. International practice for reporting CPI inflation is also on a monthly basis.

In view of this, the Cabinet Committee on Economic Affairs (CCEA) in its meeting held on 24 January 2012 agreed to discontinue the weekly release of WPI for the commodities/item under the groups “primary articles” and “fuel and power” with immediate effect. The last weekly WPI for the week ending 14 January 2012 was released on 27 January 2012 WPI shall, henceforth, be released on a monthly basis only.

Drivers of headline inflation: Inflation, as measured by the WPI, has remained above 7 since December 2009 Food inflation has been particularly elevated over this period, contributing to an average of one third of total inflation. A moderation in WPI inflation is now clearly visible, but the moderation has largely been due to deceleration in the rate of inflation of nonfood manufactured products. Inflation of primary articles, after declining in last two quarters of 2011-12 increased during last year. Deceleration in the inflation of non-administered petroleum products contributed to the moderation in fuel and power category mitigating the effects of the increase in administered prices of

This index is the most widely used inflation indicator in India. This is published by the Office of Economic Adviser, Ministry of Commerce and Industry. WPI captures price movements in a most comprehensive way. It is widely used by Government, banks, industry and business circles. Important monetary and fiscal policy changes are linked to WPI movements. It is in use since 1939 and is being published since 1947 regularly. We are well aware that with the changing times, the economies too undergo structural changes. Thus, there is a need for revisiting such indices from time to time and new set of articles / commodities are required to be included based on current economic scenarios. Thus, since 1939, the base year of WPI has been revised on number of occasions.

The current series of Wholesale Price Index has 2004-05 as the base year. Latest revision of WPI has been done by shifting base year from 1993-94 to 2004-05 on the recommendations of the Planning Commission as Chairman for revision of WPI series. This new series with base year 2004-05 has been launched on 14th September, 2010. A brief on the historical development of this WPI is given below:

Earlier, the concept of wholesale price covered the general idea of capturing all transactions carried out in the domestic market. The weights of the WPI did not correspond to contribution of the goods concerned either to value - added or final use. In order to give this idea a more precise definition, it was decided to define the universe of the wholesale price index as comprising as far as possible all transactions at first point of bulk sale in the domestic market.
Thus the latest WPI has a basket of 676 items with 5482 quotations. The major criticism for this index is that 'the general public does not buy at the wholesale level', thus WPI does not give the actual feeling of the amount of pressure borne by the general public. However, the increase in wholesale prices does affect the retail prices and as such give some feel of the consumer prices.

**Consumer Price Index (CPI)**

The CPI measures price change from the perspective of the retail buyer. It is the real index for the common people. It reflects the actual inflation that is borne by the individual. CPI is designed to measure changes over time in the level of retail prices of selected goods and services on which consumers of a defined group spend their incomes. Till January 2012, in India there were only following four CPIs compiled and released on national level. (In some countries like UK, Malaysia, Poland it is also known as Retail Price Index).

a. Industrial Workers (IW) (base 2001),  
b. Agricultural Labourer (AL) (base 1986-87) and  
c. Rural Labourer (RL) (base 1986-87)  
d. Urban Non-Manual Employees (UNME) (base 1984-85),

The first three are compiled by the Labour Bureau in the Ministry of Labour and Employment, and the fourth is compiled by Central Statistical Organisation (CSO) in the Ministry of Statistics and Programme Implementation. These four CPIs reflect the effect of price fluctuations of various goods and services consumed by specific segments of population in the country. These indices did not
encompass all the segments of the population and thus, did not reflect
the true picture of the price behaviour in the country as a whole.

**New Series of CPI Started in 2012**

Therefore, there was a strong feeling that there is a need for compiling CPI for entire urban and rural population of the country to measure the inflation in Indian economy based on CPI. Thus, now Central Statistics Office (CSO) of the Ministry of Statistics and Programme Implementation has started compiling a new series of CPI for the

1. CPI for the entire urban population viz CPI (Urban);
2. CPI for the entire rural population viz CPI (Rural)
3. Consolidated CPI for Urban + Rural will also be compiled based on above two CPIs

These would reflect the changes in the price level of various goods and services consumed by the Urban and rural population. These new indices are now compiled at State / UT and all India levels.

The CPI inflation series is wider in scope than the one based on the wholesale price index (WPI), as it has both rural and urban figures, besides state-wise data. The new series, with 2010 as the base year, also includes services, which is not the case with the WPI series. However, this new series will become comparable only in 2013 when the data for 2012 will also be available for comparison.
A comparison of this new series with WPI is given below:

<table>
<thead>
<tr>
<th></th>
<th>WPI</th>
<th>CPI - New Series with reference Feb 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base Year</td>
<td>2004-05</td>
<td>2010</td>
</tr>
<tr>
<td>Elementary Items</td>
<td>676</td>
<td>200 (Weighted items)</td>
</tr>
<tr>
<td>Weightage of Food products (%)</td>
<td>243</td>
<td>49.71</td>
</tr>
<tr>
<td>Weightage of Energy products (%)</td>
<td>14.91</td>
<td>9.49</td>
</tr>
<tr>
<td>Weightage of Miscellaneous Items (%)</td>
<td>Services not included</td>
<td>26.31</td>
</tr>
</tbody>
</table>

**WPI versus CPI**

The need for the CPI was felt because the WPI wasn’t effectively representing how price increases impacted the general population. The WPI was revamped. Its base year was changed from 1993–1994 to 2004–2005. The commodity basket was raised from 435 to 676 items. The CPI uses 2010 as the base year—from January to December.

The composition of the two indices is such that while food has a higher weightage in CPI, manufacturing has a higher weightage in WPI. The fall in global food prices has definitely helped in bringing down both the retail and wholesale prices, but certainly WPI more than CPI. “Fuel prices have climbed down sharply. However, the government has not passed the benefit of a benign fuel prices to customers. That has been used to reduce subsidies and strengthen the fiscal position. This can be seen in CPI,” The basket of items for the two indices is also different with cost of transportation and rent on housing being a part of the CPI and not WPI. WPI is measured on base year 2004-05, CPI is measured on base year 2012 instead of 2010. The government moved to the new base year for CPI from January 2015. Lower raw material prices are not getting reflected in final goods because users are not passing it to
consumers. “They are getting higher margins with fuel being the prominent example. Margin is profit per unit of sale. Volume of growth is not much but value-added growth is high and this is what captures the high profit margin,” WPI may be a more effective measure of inflation, CPI has to be the target of the RBI because “the central bank has to maintain the real interest rate and therefore has to target CPI because retail consumers are impacted by it”.

The differences between the WPI and CPI are a result of the different items that are included in each measure and the weights. For instance, the WPI doesn’t account for services like education, medical care, transport, and communication. The CPI includes these services. Considering that India is a services economy, these domestic services are important if you want to assess the price increase for the general population.

The weight of food items is another difference between the two measures of inflation in India. Food items—including food grains, fruits, vegetables, milk, eggs, meat, fish, condiments, spices, tea, and coffee—account for 14.34% of the WPI. In contrast, they make up 39.73% of the CPI. Food, beverages, and tobacco make up 49.71% of the CPI.

As a result, the CPI is more susceptible to changes in food prices than the WPI. Meanwhile, the WPI is more sensitive to fuel. It assigns a weight of 14.91% to fuel prices. The CPI assigns 9.49% to fuel. Also, higher transaction costs and taxes are only reflected in the CPI.
Measures for Controlling Inflation

Inflation is considered to be a complex situation for an economy. If inflation goes beyond a moderate rate, it can create disastrous situations for an economy; therefore, it should be under control. It is not easy to control inflation by using a particular measure or instrument. The main aim of every measure is to reduce the inflow of cash in the economy or reduce the liquidity in the market.

Definition of Inflation

According to Crowther, "Inflation is a state in which the value of money is failing i.e. the prices are rising."

According to Coulbourn, "Inflation is too much of money chasing too few goods."

Inflation refers to a continuous rise in general price level which reduces the value of money or purchasing power over a period of time.
Features of Inflation

Inflation involves a process of the persistent rise in prices. It involves rising trend in price level.

1. Inflation is a state of disequilibrium.
2. Inflation is scarcity oriented.
3. Inflation is dynamic in nature.
4. Inflationary price rise is persistent and irreversible.
5. Inflation is caused by excess demand in relation to supply of all types of goods and services.
6. Inflation is a purely monetary phenomenon.
7. Inflation is a post full employment phenomenon.
8. Inflation is a long-term process.

Causes of inflation

Inflation refers to a rise in prices that causes the purchasing power of a nation to fall. Inflation is a normal economic development as long as the annual percentage remains low; once the percentage rises over a pre-determined level, it is considered an inflation crisis. There are many causes for inflation, depending on a number of factors.

Cost-push inflation

Inflation is caused primarily by either a rapid rise in wages being paid to workers or by a rise in the price of goods that are commonly purchased by the general population. If the inflation is due to a rise in wages, it is known as cost-push inflation, whereas a rise in the price of goods and services due to demand is known as demand-pull inflation. Cost-push inflation includes a rise in any part of the production costs, including...
wages. As the cost of production increases, the increase is passed onto the consumer, raising the price of the product. A good example of this is the result to an economy when the price of oil rises. Any process that uses oil during production gets more expensive, so the product rises in price accordingly. For the rise to be considered inflationary, it must affect the economy as a whole, rippling through the market to raise the general cost of living.

**Demand-pull inflation**

Demand-pull inflation is the result of a rise in demand for a product that cannot be met immediately by a rise in supply. For example, a switch in consumer tastes to wheat-based products will cause a rise in the demand for those products. Until companies meet that rise, the wheat-based products eventually fail to meet the demand goals, causing the price for the products to rise.

**Other causes**

1. **Increase in money supply:** Over the last few years the rate of increase in money supply has varied between 15 and 18 per cent, whereas the national output has increased at an annual average rate of only 4 per cent. Hence the rate of increase in output has not been sufficient to absorb the rising quantity of money in the economy. Inflation is the obvious result.

2. **Deficit financing:** When the government is unable to raise adequate revenue for its expenditure, it resorts to deficit financing. Five year Plans, massive doses of deficit financing had been resorted to.
3. Increase in government expenditure: Government expenditure in India during the recent years has been rising very fast. What is more disturbing, proportion of non-development expenditure increased rapidly, being about 40 per cent of total government expenditure. Non-development expenditure does not create real goods; it only creates purchasing power and hence leads to inflation.

Not only the above mentioned factors on the Demand side cause inflation, factors on the Supply side also add fuel to the flame of inflation.

1. Inadequate agricultural and industrial growth:

Agricultural and industrial growth in our country has been much below what we had targeted for. Over the four decades period, food grains output has increased and-.i.e. of 3.2 per cent per annum.

But there are years of crop failure due to droughts. In the years of scarcity of food grains not only the prices of food articles increased, the general price level also rose.

Failure of crops always encouraged big wholesale dealers to indulge in hoarding which accentuated scarcity conditions and pushed up the price level.

Performance of the industrial sector, particularly in the period 1965 to 1985, has not been satisfactory. Over the 15 years period from 1970 to 1985, industrial production increased at a modest rate of 4.7 per cent per annum.
Our industrial structure, developed on the basis of heavy industry-led growth, is not suitable to meet the current demand for consumer goods.

2. Rise in administered prices:

In our economy a large part of the market is regulated by government action. There are a number of important commodities, both agricultural and industrial, for which the price level is administered by the government.

The government keeps on raising prices from time to time in order to cover up losses in the public sector. This policy leads to cost-push inflation.

The upward revision of administered prices of coal, iron and steel, electricity and fertilisers were made at regular intervals. Once the administered prices are raised, it is a signal for other price to go up.

3. Rising import prices:

Inflation has been a global phenomenon. International inflation gets imported into the country through major imports like fertilisers, edible oil, steel, cement, chemicals, and machinery. Increase in the import price of petroleum has been most spectacular and its contribution to domestic price rise is very high.

4. Rising taxes:

To raise additional financial resources, government is depending more and more on indirect taxes such as excise duties and sales tax. These taxes invariably raise the price level.
Effect of Inflation

As we know Inflation is the increase in the price of general goods and service. Thus, food, commodities and other services become expensive for consumption. Inflation can cause both short-term and long-term damages to the economy; most importantly it causes slow down in the economy. Inflation can be a problem when it is unexpected or very high, which can result in economic instability and people being afraid to spend money, which hinders economic growth. Furthermore, inflation can make products and services unaffordable to those on fixed-income. It can also cause creditors to lose money and create a negative impact on a country's trade.

1. People start consuming or buying less of these goods and services as their income is limited. This leads to slowdown not only in consumption but also production. This is because manufactures will produce fewer goods due to high costs and anticipated lower demand.

2. Banks will increase interest rates as inflation increases otherwise real interest rate will be negative. (Real interest = Nominal interest rate – inflation). This makes borrowing costly for both consumers and corporate. Thus people will buy fewer automobiles, houses and other goods. Industries will not borrow money from banks to invest in capacity expansion because borrowing rates are high.

3. Higher interest rates lead to slowdown in the economy. This leads to increase in unemployment because companies start focusing on cost cutting and reduces hiring. Remember Jet Airways lay off over 1000 employees to save cost.
4. Rising inflation can prompt trade unions to demand higher wages, to keep up with consumer prices. Rising wages in turn can help fuel inflation.

5. Inflation affects the productivity of companies. They add inefficiencies in the market, and make it difficult for companies to budget or plan long-term. Inflation can act as a drag on productivity as companies are forced to shift resources away from products and services in order to focus on profit and losses from currency inflation.

6. When inflation rises faster than wages, people have less purchasing power. This is especially true for retirees and others who may have a fixed income. Creditors may also lose money if they do not consider inflation in the calculation of loan interest.

7. Inflation at an acceptable low stable rate is good because it increases economic output and productivity while generating employment opportunities. Inflation at extremely high levels, also known as runaway inflation, is bad because essential goods and services become too expensive and unemployment increases, which destabilizes the economy.

8. Deflation is bad for an economy as it keeps prices at low levels, reduces employment opportunities and increases the debt burden on consumers. With a stable, low inflation rate, producers hire more workers to increase output resulting in wage increases for workers.
Terms Related to Inflation

Deflation

Deflation is a condition of falling prices. It is just the opposite of inflation. In deflation, the value of money goes up and prices fall down. Deflation brings a depression phase of business in the economy.

Disinflation

Disinflation refers to lowering of prices through anti-inflationary measures without causing unemployment and reduction in output.

Reflation

Reflation is a situation of rising prices intentionally adopted to ease the depression phase of the economy. In reflation, along with rising prices, the employment, output and income also increase until the economy reaches the stage of full employment.

Stagflation

Paul Samuelson describes Stagflation as the paradox of rising prices with increasing rate of unemployment.

Stagnation

Stagnation in the rate of economic growth which may be a slow or no economic growth at all.
Stagflation

The term 'Stagflation' was coined by Dr. P.R. Brahmananda to describe the inflationary situation of India. According to Brahmananda, Rising prices in the middle of a recession is known as Stagflation.

Inflation rate

If we have the WPI values of two time zones, say, beginning and end of year, the inflation rate for the year will be, \( \frac{\text{WPI of end of year} \text{ at WPI of beginning of year}}{\text{WPI of beginning of year}} \times 100 \). For example, WPI on Jan 1st 1980 is 106.09 and WPI of Jan 1st 1981 is 109.72 then inflation rate for the year 1981 is, \( \frac{109.72 - 106.09}{106.09} \times 100 = 3.42\% \) and we say the inflation rate for the year 1981 is 3.42%.

Since WPI figures are available every week, inflation for a particular week (which usually means inflation for a period of one year ended on the given week) is calculated based on the above method using WPI of the given week and WPI of the week one year before. This is how we get weekly inflation rates in India.

The types of inflation based on the rising prices

Creeping Inflation

When prices are gently rising, it is referred as Creeping Inflation. It is the mildest form of inflation and also known as a Mild Inflation or Low Inflation. According to R.P. Kent, when prices rise by not more than (i.e. Up to) 3% per annum (year), it is called Creeping Inflation.
Chronic Inflation

If creeping inflation persists (continues to increase) for a longer period, then it is often called as Chronic or Secular Inflation. Chronic-Creeping Inflation can be either Continuous (which remains consistent without any downward movement) or Intermittent (which occurs at regular intervals). It is named chronic because if an inflation rate continues to grow for a longer period without any downturn, then it possibly leads to Hyperinflation.

Walking Inflation

When the rate of rising prices is more than the Creeping Inflation, it is known as Walking Inflation. Trotting Inflation is its another name. When prices rise by more than 3%, but less than 10% per annum (i.e., between 3%, and 10% per annum), it is called as Walking Inflation. According to some economists, we must take Walking Inflation seriously as it gives a cautionary signal for the occurrence of Running inflation. Furthermore, if, not checked in due time, it can eventually result in Galloping Inflation.

Moderate Inflation

Prof. Samuelson clubbed together concept of Creeping and Walking inflation into Moderate Inflation. It happens when prices rise by less than 10% per annum (single digit inflation rate). According to him, it is a stable inflation and not a serious economic problem.
Running Inflation

A rapid acceleration in the rate of rising prices is called Running Inflation. It occurs when prices rise by more than 10% in a year. Though economists have not suggested a fixed range for measuring running inflation, we may consider a price increase between 10% to 20% per annum (double-digit inflation rate) as a Running Inflation.

Galloping Inflation

According to Prof. Samuelson, if prices rise by dual or triple digit inflation rates like 30% or 400% or 999% yearly, then the situation can be termed as Galloping Inflation. When prices rise by more than 20%, but less than 1000% per annum (i.e. between 20% to 1000% per annum), Galloping Inflation occurs. Jumping Inflation is it's another name. India has been witnessing it from second five-year plan period.

Hyperinflation

Hyperinflation refers to a situation where the prices rise at an alarming high rate. The prices rise so fast that it becomes very difficult to measure its magnitude. However, in quantitative terms, when prices rise above 1000% per annum (quadruple or four-digit inflation rate), it is termed as Hyperinflation. During a worst-case scenario of hyperinflation, the value of the national currency (money) of an affected country reduces almost to zero. Paper money becomes worthless, and people start trading either in gold and silver or sometimes even use the old barter system of commerce. Two worst examples of hyperinflation recorded in the world history are of those experienced by Hungary in the year 1946 and Zimbabwe during 2004-2009 under Robert Mugabe's regime.
Following is a conceptual graph on Creeping, Walking, Running, Galloping, Hyperinflation, and Moderate Inflation.

In the above figure,

X-axis represents the time in years or annum.

Y-axis implies percentage (%) increase or rise in price.

OA is a Creeping Inflation from 0 to 3%.

AB is a Walking Inflation from 3 to 10%.

BC is a Running Inflation from 10 to 20%.

CD is a Galloping Inflation from 20 to 1000%.

DE is a Hyperinflation from 1000% and above.

OB is an addition of OA and AB. It is a Moderate Inflation.

Note: Graph is not drawn to scale. It is roughly made only to get an understanding of how the actual figure will appear if plotted to scale.
The types of inflation based on different or miscellaneous causes:

- **Deficit Inflation** takes place due to deficit financing.
- **Credit Inflation** occurs due to excessive bank credit or the money supply in the economy.
- **Scarcity Inflation** occurs due to hoarding. Hoarding is an excess accumulation of necessary commodities by unscrupulous traders and black marketers. It is practiced to create an artificial shortage of essential goods like food grains, kerosene, etc. With an intention to sell them only at higher prices to make huge profits during Scarcity Inflation. Though hoarding is an unfair trade practice and a punishable criminal offense still, some crooked merchants often get themselves engaged in it.

**Repo rate:** (repurchase rate) It is the rate of interest that banks pay when they borrow money from the Reserve Bank of India (RBI) to meet their short-term fund requirements. It is also called repurchase rate because when banks borrow money from the financial institution, they use securities with the central bank as collateral. When the money is paid to RBI, the collateral is returned to the banks.

**Reverse repo rate:** This is the rate of interest that banks usually get when they keep their extra funds with RBI (Reserve Bank of India). Repo rate is always higher than the reverse repo rate. At present, the repo rate is 7.50% per annum and the reverse repo rate is 6.50%.

By controlling these rates, the RBI controls the rate of interest in the economy. RBI unexpectedly raised repo rate by 25 basis points from
7.25% and that led to a lot of volatility in both the bond and equity markets.

Cash reserve ratio (CRR): Cash Reserve Ratio is a specified minimum fraction of total deposits of customers, which commercial banks have to hold as reserves with the central bank (RBI). It gives more control to the central bank over money supply. Commercial banks have to hold only some specified part of the total deposits as reserves and it is called fractional reserve (FR).

Measures for Controlling Inflation

Inflation is considered to be a complex situation for an economy. If inflation goes beyond a moderate rate, it can create disastrous situations for an economy; therefore, it should be under control. It is not easy to control inflation by using a particular measure or instrument. The main aim of every measure is to reduce the inflow of cash in the economy or reduce the liquidity in the market.

The different measures used for controlling inflation

The different measures used for controlling inflation are explained below.

1. Monetary Measures

The government of a country takes several measures and formulates policies to control economic activities. Monetary policy is one of the most commonly used measures taken by the government to control inflation.
In monetary policy, the central bank increases rate of interest on borrowings for commercial banks. As a result, commercial banks increase their rate of interests on credit for the public. In such a situation, individuals prefer to save money instead of investing in new ventures.

This would reduce money supply in the market, which, in turn, controls inflation. Apart from this, the central bank reduces the credit creation capacity of commercial banks to control inflation.

**The monetary policy of a country involves the following**

(a) **Rise in Bank Rate**

Rise in Bank Rate is a one of the most widely used measure taken by the central bank to control inflation.

The bank rate is the rate at which the commercial bank gets a rediscount on loans and advances by the central bank. The increase in the bank rate results in the rise of rate of interest on loans for the public. This leads to the reduction in total spending of individuals. The main reasons for reduction in total expenditure of individuals are as follows;

(i) **Making the borrowing of money costlier**

The rise in the bank rate by the central bank increases the interest rate on loans and advances by commercial banks. This makes the borrowing of money expensive for general public.

Consequently, individuals postpone their investment plans and wait for fall in interest rates in future. The reduction in investments
results in the decreases in the total spending and helps in controlling inflation.

(ii) Creating adverse situations for businesses

Creating adverse situations for businesses implies that increase in bank rate has a psychological impact on some of the businesspersons. They consider this situation adverse for carrying out their business activities. Therefore, they reduce their spending and investment.

(iii) Increasing the propensity to save

Increasing the tendency to save is a one of the most important reason for reduction in total expenditure of individuals. It is a well-known fact that individuals generally prefer to save money in inflationary conditions. As a result, the total expenditure of individuals on consumption and investment decreases.

(b) Direct Control on Credit Creation

The central bank directly reduces the credit control capacity of commercial banks by using the following methods:

(i) Performing Open Market Operations (OMO)

Through open market operation the central bank to reduce the credit creation capacity of commercial banks. The central bank issues government securities to commercial banks and certain private businesses. In this way, the cash with commercial banks would be spent on purchasing government securities. As a result, commercial bank would reduce credit supply for the general public.
(ii) Changing Reserve Ratios

Increase or decrease in reserve ratios by the central bank to reduce the credit creation capacity of commercial banks. For example, when the central bank needs to reduce the credit creation capacity of commercial banks, it increases Cash Reserve Ratio (CRR). As a result, commercial banks need to keep a large amount of cash as reserve from their total deposits with the central bank. This would further reduce the lending capacity of commercial banks. Consequently, the investment by individuals in an economy would also reduce.

2. Fiscal Measures

Apart from monetary policy, the government also uses fiscal measures to control inflation. The two main components of fiscal policy are government revenue and government expenditure. In fiscal policy, the government controls inflation either by reducing private spending or by decreasing government expenditure, or by using both.

It reduces private spending by increasing taxes on private businesses. When private spending is more, the government reduces its expenditure to control inflation. However, in present scenario, reducing government expenditure is not possible because there may be certain on-going projects for social welfare that cannot be postponed.

Besides this, the government expenditures are essential for other areas, such as defense, health, education, and law and order. In such a case, reducing private spending is more preferable rather than decreasing government expenditure. When the government reduces private spending by increasing taxes, individuals decrease their total expenditure.
For example, if direct taxes on profits increase, the total disposable income would reduce. As a result, the total spending of individuals decreases, which, in turn, reduces money supply in the market. Therefore, at the time of inflation, the government reduces its expenditure and increases taxes for dropping private spending.

3. Price Control

Another method for ceasing inflation is preventing any further rise in the prices of goods and services. In this method, inflation is suppressed by price control, but cannot be controlled for the long term. In such a case, the basic inflationary pressure in the economy is not exhibited in the form of rise in prices for a short time. Such inflation is termed as suppressed inflation.

The historical evidences have shown that price control alone cannot control inflation, but only reduces the extent of inflation. For example, at the time of wars, the government of different countries imposed price controls to prevent any further rise in the prices. However, prices remain at peak in different economies. This was because of the reason that inflation was persistent in different economies, which caused sharp rise in prices. Therefore, it can be said inflation cannot be ceased unless its cause is determined.

SLR - Statutory Liquidity Ratio

SLR - Statutory Liquidity Ratio - Every bank is required to maintain at the close of business every day, a minimum proportion of their Net Demand and Time Liabilities as liquid assets in the form of cash, gold and un-encumbered approved securities. The ratio of liquid assets to demand and time liabilities is known as Statutory Liquidity
Ratio (SLR). RBI is empowered to increase this ratio up to 40%. An increase in SLR also restricts the bank's leverage position to pump more money into the economy.

**Net Demand Liabilities**

Bank accounts from which you can withdraw your money at any time like your savings accounts and current account.

**Time Liabilities**

Bank accounts cannot immediately withdraw but have to wait for certain period. e.g. Fixed deposit accounts.

**Call Rate**

Call Rate - Inter bank borrowing rate - Interest Rate paid by the banks for lending and borrowing funds with maturity period ranging from one day to 14 days. Call money market deals with extremely short term lending between banks themselves. After Lehman Brothers went bankrupt Call Rate sky rocketed to such an insane level that banks stopped lending to other banks.

**Bank Rate**

Bank Rate is the rate at which central bank of the country (in India it is RBI) allows finance to commercial banks. This is the long term rate (Repo rate is for short term) at which central bank (RBI) lends money to other banks or financial institutions. Bank Rate is a tool, which central bank uses for short-term purposes. The bank rate signals the central bank's long-term outlook on interest rates. If the bank rate moves up, long-term interest rates also tend to move up, and vice-versa. Banks
make a profit by borrowing at a lower rate and lending the same funds at a higher rate of interest. If the RBI hikes the bank rate (this is currently 6 per cent), the interest that a bank pays for borrowing money (banks borrow money either from each other or from the RBI) increases. It, in turn, hikes its own lending rates to ensure it continues to make a profit. Bank rate would be always higher than Repo rate.

**Liquidity Adjustment Facility (LAF)**

Liquidity Adjustment facility was introduced in 2000. LAF is a facility provided by the Reserve Bank of India to scheduled commercial banks to avail of liquidity in case of need or to park excess funds with the RBI on an overnight basis against the collateral of Government securities. RBI accept application for a minimum amount of Rs.5 crore and in multiples of Rs. 5 crore thereafter. LAF enables liquidity management on a day-to-day basis. The operations of LAF are conducted by way of repurchase agreements called Repos & Reverse Repos.

**Repo (Repurchase) rate:**

Repo (Repurchase) rate also known as the benchmark interest rate is the rate at which the RBI lends money to the banks for a short term. When the repo rate increases, borrowing from RBI becomes more expensive. If RBI wants to make it more expensive for the banks to borrow money, it increases the repo rate similarly, if it wants to make it cheaper for banks to borrow money it reduces the repo rate.
**Reverse Repo rate:**

Reverse Repo rate is the short term borrowing rate at which RBI borrows money from banks. The Reserve bank uses this tool when it feels there is too much money floating in the banking system. An increase in the reverse repo rate means that the banks will get a higher rate of interest from RBI. As a result, banks prefer to lend their money to RBI which is always safe instead of lending it others (people, companies etc) which is always risky.

Repo Rate signifies the rate at which liquidity is injected in the banking system by RBI, whereas Reverse Repo rate signifies the rate at which the central bank absorbs liquidity from the banks. Reverse Repo Rate is linked to Repo Rate with a difference of 0.5% between them.

**CRR - Cash Reserve Ratio:**

CRR - Cash Reserve Ratio - Banks in India are required to hold a certain proportion of their deposits in the form of cash. However Banks don't hold these as cash with themselves, they deposit such cash (aka currency chests) with Reserve Bank of India, which is considered as equivalent to holding cash with themselves. This minimum ratio (that is the part of the total deposits to be held as cash) is stipulated by the RBI and is known as the CRR or Cash Reserve Ratio.

When a bank's deposits increase by Rs100, and if the cash reserve ratio is 9%, the banks will have to hold Rs. 9 with RBI and the bank will be able to use only Rs 91 for investments and lending, credit purpose. Therefore, higher the ratio, the lower is the amount that banks will be able to use for lending and investment. This power of Reserve bank of India to reduce the lendable amount by increasing the CRR, makes it an
instrument in the hands of a central bank through which it can control the amount that banks lend. Thus, it is a tool used by RBI to control liquidity in the banking system.

**MSF - Marginal Standing facility:**

MSF - Marginal Standing facility - It is a special window for banks to borrow from RBI against approved government securities in an emergency situation like an acute cash shortage. Bank rate is not used by RBI for monetary management now. It is now same as the MSF rate. MSF rate is higher than Repo rate. Current MSF Rate: 7%. Marginal Standing Facility is a new Liquidity Adjustment Facility (LAF) window created by Reserve Bank of India in its credit policy of May 2011. MSF is the rate at which the banks are able to borrow overnight funds from RBI against the approved government securities. The question is – Banks are already able to borrow from RBI via Repo Rate, then why MSF is needed? We note here that this window was created for commercial banks to borrow from RBI in certain emergency conditions when inter-bank liquidity dries up completely and there is volatility in the overnight interest rates. To curb this volatility, RBI allowed them to pledge G-secs and get more funds from RBI at a rate higher than the repo rate. Thus, overall idea behind the MSF is to contain volatility in the overnight inter-bank rates. Rate of Interest The rate of interest on MSF is above 100 bps above the Repo Rate. The banks can borrow up to 1 percent of their net demand and time liabilities (NDTL) from this facility. This means that Difference between Repo Rate and MSF is 200 Basis Points. So, Repo rate will be in the middle, the Reverse Repo Rate will be 100 basis points below it, and the MSF rate 100 bps above
it. Thus, if Repo Rate is X%, reverse repo rate is X-1% and MSF is X+1%

**CPI Consumer Price Index**

CPI is calculated by collecting the **Retail** Cost of representative products or Services from the following Categories for Urban Non-Manual Employees

- Food, Beverages and Tobacco
- Fuel and light
- Housing
- Clothing, Bedding and Footwear and
- Miscellaneous

Consumer Price Index is a measure of the cost of living of a person in an economy based upon the citizen's socio-economic strata. An agricultural labour will have different requirements and weightages compared to an industrial labour.

There are three types of CPI

- CPI Agricultural Labour
- CPI Industrial Labour
- CPI Urban Non- Manual Employees

The constituents and their weightages that go in to form the CPI varies for different types of people. It does not only include products, it includes services too like house rent etc.
Wholesale Price Index- It is the index of price prevailing in the wholesale market. In practice, it represents the quoted price of bulk transaction generally at primary stage. For example, the price pertaining to bulk transactions of agricultural commodities may be farm harvest prices, or prices at village/mandi level. Similarly, for manufactured goods, the wholesale prices are ex-factory gate level or ex-mine level.

History of inflation in India

India's track record of inflation is good in the sense that it has never had to face the terror of hyper inflation. The highest inflation that India has ever seen in the past two centuries is 53.8%, in the famine year of 1943. Amartya Sen has often written about the havoc wreaked by that inflation in his part of the country. Satyajit Ray captured the sufferings in Ashani Sanket, a film he made in 1973. Those were terrible times, but nothing like what Germany faced in the early 1920’s or what Zimbabwe has to deal with today.¹³

India's experience of inflation has been a mixed bag. There were years when the annual rate of inflation was as high as 40%, while in other years it was in the negative. During last 70 years, beginning with 1939-40, inflation rate was below 6% for 34 years and for remaining years it was above 6%. If the tolerable rate of inflation is assumed to be 6% and below, then India appears to have fared badly in terms of control over inflation, as for 36 years the rate of inflation was above 6%. For about 9 years, the rate of inflation was above 15%. Therefore, there are many who believe India to be an inflation ridden country. They consider the inflation as a permanent characteristic of Indian economy. A strong

¹³ Rajadhyaksha, Niranjan (June 10, 2008): “Inflation: A short history”, posted at Cafeeconomics@livemint.com
inflationary pressure has been built into the Indian economy for a long time, precisely from the start of the Second World War, partly through ever mounting demand on the one side and inadequately rising supply on the other. The expanding demand is due to the rapid multiplication of our population, rising money incomes, expansion in money supply and liquidity in the country, rising volume of black money and continuous rise in demand for goods and services due to rapid economic development. Supply of goods and services too has been rising but the rise in supply has not been proportionate to and matching with the rise in demand. This is due to monsoon tied agriculture, use of backward technology, bottlenecks in transport and power, and shortages of various inputs.\footnote{Dr. P. Arunachalam and Dr. K.C. Sankaranarayanan (November, 1998): “Liberalization and inflation in India”, Yojana, Vol. 42, No. 11, p. 7.}

**Background:**

Price trends reflect a complex phenomenon of demand-supply interaction, pattern and form of state intervention through determining the level of money supply, direct and indirect tax structure and the relative importance of different components of the national production basket which, in turn has been influenced by the investment priorities and policies of the yester years.

Inflation, a related term in economic lexicon, indicating sustained rise in general level of prices of goods and services, assumes significance in economies ridden with disparities because of large many experiencing the phenomenon of being ‘\textit{priced out}\’. 

In situation of high inflation, with a variety of goods and services getting out reach for many, the corrosion in the well being begins to undercut
the achievements in economic growth. Even though it affects all by eroding the purchasing power of income, raising the cost of living and lowering the real value of savings, it is the poor who are most vulnerable to inflation as they do not have any effective hedge against it. Hence inflation has always been one of the most closely monitored macroeconomic indicators.

The changes in prices over a period of time can be gauged by the statistical device of index number of prices. The price index can be either at the wholesale level (WPI) or at the level of the retail end of marketing channel or Consumer Price (CPI).

**Inflation Measures : Conceptual issues**

India has a rich tradition of collection and dissemination of price statistics dating back to 1861 when the Index of Indian Prices was released. Currently, there are five different primary measures of inflation- the **Wholesale Price Index (WPI)** and four measures of the **Consumer Price Index (CPI)**. In addition, **Gross Domestic Product (GDP) deflator** and **Private Final Consumption Expenditure (PFCE) deflator** from the National Accounts Statistics (NAS) provide implicit economy-wide inflation estimate.

The WPI is considered as the headline inflation measure because of its availability at high frequency (weekly), until recently, national coverage and availability of disaggregated data which facilitate better analysis of inflation.

While the WPI does not cover prices of services, CPIs till recently were meant to reflect the cost of living conditions for a homogeneous group of consumers based on retail prices. Among the four measures of CPI
brought out earlier, the **CPI for Industrial workers (IW)** had a broader coverage than the others - the **CPI for agricultural labourers (AL), rural labourers (RL) and urban non-manual employees (UNME)**. In the organised sector, CPI-IW is used as a cost of living index. However, the Central Statistics Office, Ministry of Statistics & PI has now replaced CPI (UNME) by **new series of CPI** since 2010 which provides comprehensive index for population in India (**rural, urban & combined**) instead of targeting a specific segment of urban/rural population.

GDP Deflator, on the other hand, is a comprehensive measure of inflation, implicitly derived from national accounts data as a ratio of GDP at current prices to constant prices. While it encompasses the entire spectrum of economic activities including services, it is available on a quarterly basis with a lag of two months since 1996. Moreover, national income aggregates extensively use WPI for deflating nominal price estimates to derive real price estimates.

Even as each of the measures has its strengths and weaknesses, the selected measure of inflation should broadly capture the interplay of effective demand and supply in the economy at frequent intervals. However, the trend in various measures of inflation during the recent years has raised several conceptual measurement issues of inflation. First, the divergence between WPI inflation and CPI inflation has widened. Second, the representativeness of WPI has reduced as it does not capture the price movement in the services sector which has a larger and increasing share of GDP. Third, old base periods – for CPI-RL (1986-87), CPI-AL (1986-87) and CPI-IW (2001) - fail to capture the rapid structural changes in the economy, though WPI( 2004-05) and
CPI (New Series brought out by CSO, 2010) with recent base years have addressed the issue for now.

**Historical trends in inflation:**

Global inflation pressure is generally subdued. In the euro area, it is expected to stay appreciably below the European Central Bank’s objective for several years; in Japan it will bounce up in response to consumption tax increases and rising inflation expectations in response to the new monetary policy. Consistent with slowing activity and stabilizing commodity prices, inflation has eased in emerging market and developing economies.

![Global Inflation (Y-o-Y Percent Change)](image)

Source: World Economic Outlook, 2013 International Monetary Fund

The Indian economy has experienced inflationary pressures for more than half a century. The pressures, however, became more pronounced since the early 'sixties with sharp rise in WPI during the 'eighties.
The trend in 70’s and 80’s reveals that the prices for the relatively non-essential food items have risen at a lower rate than the prices of the essential food items. The WPI for durable use consumer category has risen at a slower pace than all other categories. During the 80’s inflation for food articles was more than that of the manufactured products and all commodities taken together.

However, India is a moderate inflation country. For example, in the 62 years since 1950-51 average annual inflation rate as measured by changes in the wholesale price index (WPI) increased at a rate of 6.7 per cent per annum, which is not a very high rate considering that many countries, both developed and developing, experienced very high inflation in their modern development history.

In fact, more recently in the 1980s and 1990s the world inflation averaged around 17 per cent per annum. In the 2000s there was a
sharp all round moderation in global inflation.

**Divergence between WPI & CPI**

WPI & CPI differ in terms of their weighting pattern. First, food has a larger weight in CPI ranging from 46 per cent in CPI-IW to 69 per cent in CPI-AL whereas it has a weight of only 14 per cent in WPI. The CPIs are, therefore, more sensitive to changes in prices of food items. Second, the fuel group has a much higher weight in the WPI (15 per cent) than the CPIs (5.5 to 9.5 per cent).

As a result, movement in international crude prices has a greater bearing on WPI than on the CPIs. Third, services are not covered under WPI while they are, to different degrees, covered under CPIs. Consequently, service price inflation has a greater influence on CPIs.

As the retail market receives commodities from wholesale market, it is expected that the change in the prices of commodities in wholesale market would normally transmit to the retail market. Granger causality test in a vector auto-regression (VAR) framework using monthly WPI and CPIs indicates that at the trend level CPIs lag behind WPI by a month. There is also a long run co-integrating relationship between WPI and CPI. Therefore, WPI and CPIs in India may not move away from each other in the long-run if this observed relationship continues to hold.
Long-run relationship between WPI and CPI Inflation

Notwithstanding the long-run lead-lag relationship, the divergence between WPI and CPI has accentuated since early 2008 though CPIs recorded very similar trends as the food component of WPI despite the divergence of the overall indices during the recent period.

In addition, annual inflation based on WPI, CPI-IW, GDP deflator, and PFCE deflator, over longer time spans, followed a similar path.

<table>
<thead>
<tr>
<th>Decades</th>
<th>WPI</th>
<th>CPI-IW</th>
<th>GDP Deflator</th>
<th>PFCE Deflator</th>
</tr>
</thead>
<tbody>
<tr>
<td>1971-72 to 1980-81</td>
<td>10.3</td>
<td>8.3</td>
<td>8.8</td>
<td>8.4</td>
</tr>
<tr>
<td>1981-82 to 1990-91</td>
<td>7.1</td>
<td>9.0</td>
<td>8.7</td>
<td>8.3</td>
</tr>
<tr>
<td>1991-92 to 2000-01</td>
<td>7.8</td>
<td>8.7</td>
<td>8.1</td>
<td>8.5</td>
</tr>
<tr>
<td>2001-02 to 2008-09</td>
<td>5.2</td>
<td>5.3</td>
<td>4.6</td>
<td>4.4</td>
</tr>
<tr>
<td>Long-term Trend 1971-2009</td>
<td>7.7</td>
<td>8.0</td>
<td>7.7</td>
<td>7.6</td>
</tr>
</tbody>
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Recent trends in Inflation:

Consumer price inflation, with higher weights on food, have been generally higher than the headline WPI inflation. However, private final consumption expenditure deflator (PFCED) which accounts for
substitution due to altered spending habits caused by price changes, traces a lower trajectory than WPI.

Price indices for rural laborers (CPI-RL) have reigned higher than those for industrial workers (CPI-IW) in response to improvements in purchasing power and consumption pattern.

In the eight year period from 2000 to 2007, the world inflation averaged 3.9 per cent per annum. Even the emerging and developing economies (EDEs) which traditionally had very high inflation showed an average annual inflation at 6.7 per cent. India’s inflation performance was even better at 5.2 per cent as measured by WPI and 4.6 per cent measured by the consumer price index (CPI-IW). In 2008 the global financial crisis struck following which inflation rose sharply both in advanced countries and EDEs as commodity and oil prices rebounded ahead of a sharp “V” shaped recovery. Thereafter, inflation rate moderated both in advanced economies and EDEs. In India too the inflation rate rose from 4.7 per cent in 2007-08 to 8.1 per cent in 2008-09 and fell to 3.8 per cent in 2009-10. However, the inflation rate backed up and stayed near double digits during 2010-11 and 2011-12 before showing some moderation in 2012-13.
Recent inflationary pressures have become more troublesome because they have persisted despite deceleration in the growth. Even the efforts of Reserve Bank to contain inflation by increasing policy repo rate (13 times between March 2010 and October 2011 by a cumulative 375 basis points from a low of 4.75 per cent to 8.5 per cent) have not succeeded in containing the inflation.

**Factors affection recent price movements:**

Recent inflation spike has been attributed to several factors. With increased liberalization & deregulation, crude oil and other global commodity price trends as well as exchange rate movements are increasingly playing an important role in defining domestic prices. Also, while the growth in domestic agricultural production has stagnated around 3 per cent per annum, the demand for food has increased. Further, demand for protein based products like meat, eggs, milk and fish as well as fruits and vegetables has increased substantially with
rising per capita income. The protein inflation has assumed a structural
character.

This has also resulted in substantial divergence between WPI and CPI
as food has a larger share in the consumer price index basket. Further,
with the increase in income, real consumption expenditure has grown
significantly. Recently released key results of the NSSO 68th round
survey (2011-12) on household consumption expenditure indicate that
real per capita consumption expenditure in rural areas increased at an
average rate of 8.7 per cent during 2009-12 as compared with 1.4 per
cent during 2004-09. Similarly, urban real per capita consumption
increased by 6.7 per cent as against 2.4 per cent in the corresponding
period. The fact that real consumption expenditure expanded during a
period of high food inflation indicates that the demand remains strong,
feeding into higher price levels as supply elasticities remain low. The
high food prices are supported by increase in wages. The average
nominal rural wage increase was of the order of 17 per cent during
2008-09 to 2012-13 so far. Even after adjusting for high rural consumer
inflation, real wage increase over 6 per cent per annum was significant).
In the formal sector, company finance data suggest that the wage bill
has risen at a faster rate since the middle of 2009-10. As wages
increase, entitlement goes up, and consequently demand and
preference for essential commodities increases.
Apart from the above, persistence of near double-digit inflation in 2010 and 2011 raising the medium- to long-term inflation expectations in the economy, stimulus from the crisis driven fiscal and monetary policy amongst others are the main reasons cited for the recent trends in prices.

**Wholesale Price Index (WPI):**

Wholesale Price represents bulk transactions generally at the early stage of trading. The price pertaining to bulk transactions may have divergent nomenclatures e.g. farm harvest prices, wholesale prices, procurement prices, support prices, administered prices, import prices, forward prices etc. Wholesale price Index relates to the transactions at the primary stage which broadly correspond to producer prices. The Office of the Economic Adviser (www.eaindustry.nic.in) in the Department of Industrial Policy and Promotion, Ministry of Commerce & Industry is responsible for compiling WPI and releasing it. The Office published for the first time, the index number of wholesale prices, with base week ended August 19, 1939= 100, from the week commencing January 10, 1942. Since 1947 the index is being published regularly.
An implicit disadvantage of **Lapsers** formula, the methodology used for compiling the WPI, is that the indices with fixed weighting diagram fail to capture the dynamic changes in product mix and structure of the economy over time. It has, therefore, been the practice to revise the weighting diagram and the series of WPI based on the recommendations of a Working Group appointed by the Government, roughly once every decade. Ever since the introduction of the WPI on a regular basis, **six revisions** have taken place introducing the new base years, viz., **1948-49, 1952-53, 1961-62, 1970-71, 1981-82 and 1993-94**. 39.7.3 Latest revision of WPI has been done by shifting base year from 1993-94 to 2004-05. A Working Group was set up with Prof. Abhijit Sen, Member, and Planning Commission as Chairman for revision of WPI series. WPI of the new series [with base year 2004-05] was launched on 14th September, 2010. The above evolution of WPI in India may be summed up in the following table:

<table>
<thead>
<tr>
<th>Base-year</th>
<th>Year of Introduction</th>
<th>No. of items</th>
<th>No. of price quotations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week ended 12th August, 1939</td>
<td>10th January, 1942</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td>End August, 1939</td>
<td>1947</td>
<td>78</td>
<td>215</td>
</tr>
<tr>
<td>1952-53 (1948-49 as weight base)</td>
<td>1952</td>
<td>112</td>
<td>555</td>
</tr>
<tr>
<td>1961-62</td>
<td>July, 1969</td>
<td>139</td>
<td>774</td>
</tr>
<tr>
<td>1970-71</td>
<td>January, 1977</td>
<td>360</td>
<td>1295</td>
</tr>
<tr>
<td>1981-82</td>
<td>July, 1989</td>
<td>117</td>
<td>2371</td>
</tr>
<tr>
<td>1993-94</td>
<td>April, 2000</td>
<td>435</td>
<td>1918</td>
</tr>
<tr>
<td>2004-05</td>
<td>September, 2010</td>
<td>676</td>
<td>5482</td>
</tr>
</tbody>
</table>

A comparative statement of weights, no of items and no of quotations between the old series and new series is given for the major groups in the table below:
Change in Reporting of Inflation:

At present the WPI for all commodities including manufactured products is released only on a monthly basis. However, until recently WPI for primacy articles and the fuel group was also being released on a weekly basis. This practice was interred to help in analyzing the trends for policy-making as these commodities are essential in nature. But it was observed over a period of time that there was a tendency for upward revisions in the indices reported once the final numbers were later released. The higher frequency weekly reporting was thus prone to more statistical ‘noise’ and sometimes provided a misleading picture. So the trade-off was between the more frequent and less reliable data and less frequent but more reliable data. International practice for reporting CPI inflation is also on a monthly basis.

In view of this, the Cabinet Committee on Economic Affairs (CCEA) in its meeting held on 24 January 2012 agreed to discontinue the weekly release of WPI for the commodities/item under the groups “primary articles” and “fuel and power” with immediate effect. The last weekly WPI for the week ending 14 January 2012 was released on 27 January 2012 WPI shall, henceforth, be released on a monthly basis only.
Drivers of headline inflation:

Inflation, as measured by the WPI, has remained above 7 since December 2009. Food inflation has been particularly elevated over this period, contributing to an average of one third of total inflation. A moderation in WPI inflation is now clearly visible, but the moderation has largely been due to deceleration in the rate of inflation of nonfood manufactured products. Inflation of primary articles, after declining in last two quarters of 2011-12, increased during last year. Deceleration in the inflation of non-administered petroleum products contributed to the moderation in fuel and power category mitigating the effects of the increase in administered prices of diesel effected in September 2012. Inflation of manufactured products also decelerated during 2012-13.

Weighted Contribution to headline WPI inflation (%)

Consumer Price Index: (Rural/Urban/Combined)

The Central Statistics Office (CSO) of the Ministry of Statistics and Programme Implementation releases every month CPI for the entire rural population, viz. CPI (Rural), and CPI for the entire
urban population, viz. CPI (Urban), which reflects the changes in the price levels of various goods and services consumed by the rural and urban population and also CPI (Combined). These indices on base 2010=100 are compiled at State/UT and all-India levels and are available from January 2011 onwards. For construction of CPI numbers, two requisite components are weighting diagrams (consumption patterns) and price data collected at regular intervals.

**Weighting Diagram:** Weighting diagram gives the share of each item considered in the total consumption expenditure. The weighting diagrams for the new CPI series have been derived on the basis of average monthly consumer expenditure of an urban/rural household obtained from the NSS 61st round Consumer Expenditure Survey data (2004-05). Only consumption expenditure has been considered for the purpose of preparation of weighting diagrams. Non-consumption expenditure items, like legal expenses, have been excluded.

**Classification of items of consumption:** After exclusion of non-consumption expenditure items, the remaining items were classified into several consumption groups and subgroups considering Classification of Individual Consumption according to Purpose (COICOP), the standard international classification as well as present classification of items adopted in the other CPI numbers compiled at national level.
These items have been divided in five groups as follows:

<table>
<thead>
<tr>
<th>Gr. 1 Food, beverages and tobacco</th>
<th>Gr. 2 Fuel and light</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Cereals and products</td>
<td>Gr. 3 Housing</td>
</tr>
<tr>
<td>1.2 Pulses and products</td>
<td></td>
</tr>
<tr>
<td>1.3 Oils and Fats</td>
<td>Gr. 4 Clothing, bedding and footwear</td>
</tr>
<tr>
<td>1.4 Egg. Fish and Meat</td>
<td>4.1 Clothing and bedding</td>
</tr>
<tr>
<td>1.5 Milk and Milk Products</td>
<td>4.2 Footwear</td>
</tr>
<tr>
<td>1.6 Condiments and spices</td>
<td></td>
</tr>
<tr>
<td>1.7 Vegetables</td>
<td></td>
</tr>
<tr>
<td>1.8 Fruits</td>
<td></td>
</tr>
<tr>
<td>1.9 Sugar, honey etc.</td>
<td></td>
</tr>
<tr>
<td>1.10 Non-alcoholic beverages</td>
<td></td>
</tr>
<tr>
<td>1.11 Prepared meals etc</td>
<td></td>
</tr>
<tr>
<td>1.12 Pan, tobacco and intoxicant</td>
<td></td>
</tr>
<tr>
<td>Gr. 5 Miscellaneous</td>
<td></td>
</tr>
<tr>
<td>5.1 Medical Care</td>
<td></td>
</tr>
<tr>
<td>5.2 Education</td>
<td></td>
</tr>
<tr>
<td>5.3 Recreation and amusement</td>
<td></td>
</tr>
<tr>
<td>5.4 Transport &amp; communication</td>
<td></td>
</tr>
<tr>
<td>5.5 Personal care and effects</td>
<td></td>
</tr>
<tr>
<td>Household requisites</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td></td>
</tr>
</tbody>
</table>

**Criteria of selection of items**

Multiple norms were adopted for selecting the items depending on their importance, their popularity and suitability for pricing on a continuing basis. Accordingly, following four-fold criteria were adopted:

1. to include all PDS items
2. to include all items accounting for 1% or more of total expenditure at sub-group level.
3. to include all items accounting for more than specified percentage of total expenditure of all consumption items as given below:
4. to include all items for which more than 75% households have reported consumption.

All items satisfying any of the above four conditions were retained. These are termed as weighted items. Expenditure on certain item was imputed considering its insignificant share and/or difficulties involved in pricing to the item(s) retained on the basis of mainly same or similar price movements.

Monetary policy aims to target inflation over a horizon of 2 to 3 years. Therefore, to target inflation, it is necessary to have the capability to build an inflation forecast. India has yet to develop skills to forecast inflation over a range of 8 to 12 quarters. In countries which follow IT, sophisticated models are used to forecast inflation. Similarly, there is need to forecast output and its deviation from natural rate, implying forecasting of output gap. The other issue is the target inflation number which needs to be identified and quantified. When considering inflation targeting, it also has to be ascertained as to which of the price indices to use to target inflation. Different economists have different opinions regarding the same, so a preliminary study was conducted as to the options that are available and their implementability as inflation targets. The major price indices followed and measured in India are given in Table 2.

<table>
<thead>
<tr>
<th>Group</th>
<th>Group Description</th>
<th>Specified percentage out of total expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gr.1, Gr.3, Gr.5</td>
<td>Food, beverages and tobacco, Housing and Miscellaneous</td>
<td>&gt;0.04%</td>
</tr>
<tr>
<td>Gr. 2</td>
<td>Fuel and light</td>
<td>&gt;0.03%</td>
</tr>
<tr>
<td>Gr. 4</td>
<td>Clothing, bedding and footwear</td>
<td>&gt;0.02%</td>
</tr>
</tbody>
</table>
Table 2: Major price indices in India

<table>
<thead>
<tr>
<th>Price Index</th>
<th>Compiled by</th>
<th>Frequency of release</th>
<th>Types/ Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wholesale Price Index (WPI)</td>
<td>Office of Economic Advisor in the Ministry of Industry</td>
<td>Weekly</td>
<td>National</td>
</tr>
<tr>
<td>Consumer Price Index (CPI)</td>
<td>CPI (IW, AL, RL) – Labour Bureau in the Ministry of Labour and Employment; CPI (UNME) – Central Statistical Organisation in the Ministry of Statistics and Programme Implementation</td>
<td>Monthly</td>
<td>Industrial Workers(IW), Agricultural Labourers (AL), Rural Labourers (RL), Urban Non-Manual Employees (UNME)</td>
</tr>
</tbody>
</table>

Source: Authors' compilation

Consumer Price Index

A number of CPI indices have been used and modified over the years. Table 3 provides a comparison of the different CPI Indices.

Table 3: A comparison of different CPI indices

<table>
<thead>
<tr>
<th>Salient feature</th>
<th>CPI (UNME)</th>
<th>CPI (IW)</th>
<th>CPI (AL)</th>
<th>CPI (RL)</th>
<th>New CPI Rural</th>
<th>New CPI Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source of weights</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of centres/villages</td>
<td>59 urban centres</td>
<td>78 centres</td>
<td>600 villages</td>
<td>600 villages</td>
<td>1181 villages</td>
<td>310 towns</td>
</tr>
<tr>
<td>No. of markets/quotations</td>
<td>1022</td>
<td>289</td>
<td>1461</td>
<td>1461</td>
<td>1181</td>
<td>1114</td>
</tr>
<tr>
<td>No. of items in the consumption basket</td>
<td>146-345</td>
<td>175-200</td>
<td>260</td>
<td>260</td>
<td>175</td>
<td>200</td>
</tr>
</tbody>
</table>
Index released for 59 centres & all-India
78 centres & all-India
20 states & all-India
20 states & all-India
All States and UTs (35) & all-India
All States and UTs (35) & all-India

Periodicity of index
Monthly
Monthly
Monthly
Monthly
Monthly
Monthly

Time lag of the index
24 days
1 month
3 weeks
3 weeks
1.5 weeks
1.5 weeks


Wholesale Price Index

The base year of WPI has been revised on number of occasions, with the current series of WPI using 2004-05 as the base year, and was launched on September 14th, 2010. A brief on the historical development of WPI year-on-year is provided below:

Table 4: Historical development of WPI

<table>
<thead>
<tr>
<th>Base year</th>
<th>Year of introduction</th>
<th>No. of items in index</th>
<th>No. of price quotations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week ended 19th August 1939</td>
<td>1942</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td>End August 1939</td>
<td>1947</td>
<td>78</td>
<td>215</td>
</tr>
<tr>
<td>1952-53 (1948-49 as weight base)</td>
<td>1952</td>
<td>112</td>
<td>555</td>
</tr>
<tr>
<td>1961-62</td>
<td>July 1969</td>
<td>139</td>
<td>774</td>
</tr>
<tr>
<td>1970-71</td>
<td>January 1977</td>
<td>350</td>
<td>1295</td>
</tr>
<tr>
<td>1981-82</td>
<td>July 1989</td>
<td>447</td>
<td>2371</td>
</tr>
<tr>
<td>1993-94</td>
<td>April 2000</td>
<td>435</td>
<td>1918</td>
</tr>
<tr>
<td>2004-05</td>
<td>September 2010</td>
<td>676</td>
<td>5482</td>
</tr>
</tbody>
</table>

Source: WPI Manual, Government of India

Due to certain shortcomings in WPI calculation, the feasibility of compiling a Producer Price Index (PPI) and switching over from WPI to PPI was explored, leading to introduction of Stage of Processing Index (SOP). This aimed to avoid multiple counting and measuring inflation based on finished goods. The PPI measures price change from the perspective of the seller. Also, the option of including services sector
was looked at. WPI has been replaced in most countries by Producer Price Index (PPI) due to the broader coverage provided by the PPI in terms of products and industries and the conceptual consistency between the PPI and system of the national account. For policy formulation and analytical purpose, measurement of price changes from producers and consumers prospective is considered far more relevant and technically superior compared to one at wholesale level.

In order to get an idea of the average level of inflation in India, the number of years WPI and CPI values were in specific ranges from 1970-71 to 2012-13, has been provided in (Table 5). CPI (UNME) has not been included since it was discontinued in January 2011, hence the data was not available for the year 2013. CPI (RL), New CPI Rural and New CPI Urban also were not to be included since they are very recent indices. In the wholesale price index, it can be noted that fuel and power has experienced the highest levels of inflation over the years, while inflation levels in the All Commodities (AC) and Manufactured Products (MP) brackets has mostly hovered in the below 9 range. In CPI, both Industrial Workers and Agricultural Laborers had below 5 inflation values for the most number of years, followed by values in the range of 9-11. Thus, there are differences in different price indices used in India. Therefore, food prices (F and P) as measured in WPI were higher than 13 percent for 12 of the last 42 years. This reflects that the food prices are subject to vagaries of nature and probably supply side factors

**Price collection in urban areas**

Number of price schedules (quotations) that could be canvassed by the field investigators available was fixed around 1100 and distributed to States/UTs on the basis of urban population (Population Census 2001).
For regular price collection by NSSO (FOD)/Specified State Governments, all cities/towns having population (2001 Population Census) more than 9 lakh and all state/UT capitals not covered therein were selected purposively. Quotations were allotted to these cities/towns as per following criteria.

<table>
<thead>
<tr>
<th>Towns having population</th>
<th>No. of quotations allotted</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than 1 crore</td>
<td>24</td>
</tr>
<tr>
<td>25 lakh – 1 crore</td>
<td>12</td>
</tr>
<tr>
<td>9-25 lakh</td>
<td>8</td>
</tr>
<tr>
<td>Remaining State/UT capitals</td>
<td>4</td>
</tr>
</tbody>
</table>

After selecting the towns/cities as stated above, each State/UT was divided into four strata:

<table>
<thead>
<tr>
<th>Stratum</th>
<th>Towns</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Remaining Class I towns (population more than 1 lakh but less than or equal to 9 lakh)</td>
</tr>
<tr>
<td>II</td>
<td>All Class II towns (population 50000-1 lakh)</td>
</tr>
<tr>
<td>III</td>
<td>All Class III towns (population 20000-50000)</td>
</tr>
<tr>
<td>IV</td>
<td>All Class IV towns (population less than 20000)</td>
</tr>
</tbody>
</table>

After allocating quotations to the selected towns of more than 9 lakh population and State/UT capitals, remaining quotations earmarked for a State/UT were further allocated to different strata in proportion to total urban population of the towns falling in different strata. Number of towns to be selected from strata I and II was decided on the basis of no. of quotations allotted to those strata taking 4 quotations per town. For Strata III and IV, no. of towns were selected based on number of quotations allotted to those strata, taking 2 quotations per town. Towns were selected from each stratum circular systematically ensuring...
regional representation. In all 310 towns have been selected covering all the States and UTs from which 1114 price quotations (Schedules) are canvassed every month. Quotations allocated to a particular town have been distributed by ensuring both the geographical coverage of the selected town and the different segments of population living in the town (poor, middle and affluent). Further, quotations allotted for the town have been distributed over the four weeks of a month to take into account week to week variation in the prices.

In the selected towns, market survey was undertaken by NSSO (FOD) for (i) identification of popular markets (ii) selection of shops/outlets for different commodities in the selected markets and (iii) determination of specifications of commodities to be priced. Rented dwellings, from which house rent data are to be collected, were also identified in all the selected towns during the market survey. Prices are collected by the NSSO (FOD) every month.

**House rent data Collection:** For compilation of house rent index which is a component in the Housing group of CPI (Urban) rent data are also collected from a sample rented dwellings in each of the selected town. For each quotation, six rented dwellings units have been selected. These are selected in such a way that they represent various categories of dwellings with different number of living rooms. Dwellings are visited once in six months for canvassing house rent schedule.

**PDS price data collection:** Public Distribution System (PDS) prices, also known as Fair Price Shop prices, are also collected in respect of four items viz. Rice – PDS, Wheat/ wheat- Atta – PDS, Sugar-PDS and Kerosene- PDS. These are collected in respect of two groups of beneficiaries viz. Above Poverty Line (APL) and Below Poverty Line
(BPL) households.

**Price collection in rural areas:** 39.8.8.1 With a view to have a workload within manageable limits and considering the fact that the CPI (Rural) would provide the price changes for the entire rural population of the country, a total of 1181 villages have been selected at all India level. The broad criterion of selection of villages is indicated below. These villages have been distributed more or less equally among the four weeks to take in to account weekly variations in the prices.

1. Within each State/UT, top 50 villages (if villages in a district are more than 50, all villages if it is less than 50) are arranged in the descending order on the basis of 2001 population for each district;
2. 50 villages selected above have been divided into two sets i.e Set 1 and Set 2 (Set 1 consists of top 25 villages and Set 2 the remaining 25 villages);
3. Within a district two villages (one each from Set 1 and Set 2) have been selected randomly from different tehsils. In case of only one tehsil available in a district, both the villages have been selected from the same tehsil;
4. In case of some UTs where number of districts is less than three, minimum five villages were selected within UT.
5. Sample size in some States/UTs, wherever required, was adjusted on the basis of rural population of the State/UT.

As the field investigators of NSSO (FOD) are not available for price collection in the rural areas, this work has been entrusted to the Department of Posts. Postal officials are trained by NSSO (FOD) and CSO at selected centres in the country for price data collection in the rural areas.
Web portal for data submission

One unique feature of consumer price index mechanism is online transmission and verification of data. This is a completely paperless survey in the sense that no paper schedules are used for transmission of the data.

Two independent web portals for Rural and Urban Price Data have been developed by National Informatics Center (NIC). These web portals are exhaustive in their coverage and are meant for i) uploading and editing of price data by field offices for both rural and urban CPI using dedicated offline data entry software prepared by Computer Centre, MOSPI for the purpose, ii) online, real time scrutiny and validation of uploaded data by CSO supervisors using Diagnostic tables provided specially for the purpose, iii) maintaining the time schedule for survey by real time checking of uploading status besides providing all line information regarding Details of Markets, specifications, historic data and official and administrative details w.r.t. each village/quotation and Scrutiny instructions and guidelines issued by CSO from time to time.

Compilation of indices

Compilation of CPI numbers for items other than house rent consists of two stages i.e. (i) calculation of price indices for elementary aggregates (item level indices) and (ii) the aggregation of these elementary price indices to higher level indices using the weights associated with each level. Laspeyre’s formula is used for aggregation of indices. Specifications of items have been selected on the basis of popularity in the respective areas. These specifications are different in terms of units,
quantity, quality etc. for different price schedules. Prices relative of each product specification (current month price/base year average price) is worked out. Average of these price relatives under the respective item multiplied with 100 gives the index for that item.

In case of seasonal items of vegetables and fruits, whenever prices of these items are not reported in a particular month, weights of such items are imputed on pro-rata basis to the items in the respective section (root vegetables, fresh vegetables, fresh fruits, and dry fruits).

House rent index is compiled by chain base method. Two categories of dwellings viz. rented dwellings and self-owned dwellings are considered in the compilation of the house rent index. The rental equivalence approach is adopted in respect of self-owned dwellings. For each State/UT, previous five months and current month data are used to compile rent relatives for the current month. Rent relative is calculated as current month rent/rent six months ago and then simple average relative is worked out by classifying the dwellings by number of living rooms (1 room, 2 rooms, 3 rooms and 4 or more rooms). These rent relatives are weighted to get a combined rent relative using the estimated proportions of dwellings under each group, obtained from the NSS 65th round survey (2008-09) on Housing Conditions. House rent index is obtained by multiplying the combined rent relative with the corresponding rent index six months ago.

For PDS items, price relatives are worked out separately for Above Poverty Line (APL) and Below Poverty Line (BPL) categories. These price relatives are combined with the respective share of expenditure as obtained from the Consumer Expenditure Survey (2004-05).
All India index at sub group level is compiled by taking the respective expenditure of the State/UT (average household expenditure X total estimated households) as weights. Rural and urban indices are also combined by taking expenditure as weight so as to get State/UT and national indices.

**Dissemination of Indices:**

CSO has started releasing all India point-to-point (annual) inflation rates for January 2012 onwards (Table-II). These provisional numbers are subsequently revised and final numbers are released along with the provisional indices of the next month. Indices are now released on 12th of the following month (on next working day if 12th is a holiday). This CPI series is used for formulation of monetary and fiscal policies.

**Consumer Price Index Industrial Workers**

The Labour Bureau, an attached office of the M/o Labour & Employment, has been compiling and disseminating Consumer Price Index for Industrial workers since its inception in the year 1946. Consumer Price Index Numbers for Industrial workers measure a change over time in prices of a fixed basket of goods and services consumed by Industrial Workers. These index numbers are utilized for regulation of wages and dearness allowances of millions of employees and workers in the organized sector. It also serves as an indicator of retail prices in the country and is used for measuring inflation rates, formulation of wages and interest policies. The Labour Bureau, an attached office of the M/o Labour & Employment, has been compiling and disseminating Consumer Price Index for Industrial workers since its inception in the year 1946.
The CPI-IW series on scientific lines was first introduced with base 1960=100 which was based on the results of Family Living Survey conducted in 1958-59 at 50 industrially important centres. The series was then, updated on base 1982=100 and a revision in 1999-2000 has further updated the base on 2001=100. The current series of CPI-IW with base year 2001=100 covers 78 industrially important centers spread across the country. This index series till 2005 was based on 1982=100. A new series on base: 2001=100 has been released w.e.f. January, 2006 in respect of 78 important centers in which workers belonging to 7 sectors viz. factories, Mines, Plantations, Railways, Public Motor Transport Undertakings, Electricity Generating and Distributing Establishments and Ports & Docks. The data on Consumer Expenditure have been obtained from an ad-hoc survey “Family Income and Expenditure Survey” conducted during September 1999 to August 2000 in respect of 78 selected centers by the NSSO on behalf of Labour Bureau. The survey was conducted over a period of 12 months in each selected centre. These 78 centres were selected on the basis of their industrial importance in the country and distributed among different states in proportion to the Industrial employment in the State subject to a maximum allotment of 5 centers per state per sector. On the basis of the results thrown up by the survey, the weighing diagrams have been derived in respect of 78 constituent’s centers and All -India. The indices are compiled by using price data collected on monthly basis and house rent survey data on half yearly basis. The CPI (IW ), numbers at centre and all India levels are released every month (the last working day of the following months).

The consumption pattern of the working class population undergoes change over a period of time and therefore Labour Bureau has
proposed to revise the base year of the existing CPI-IW series 2001=100 to a more recent base year preferably, 2013-2014=100. In line with the recommendations of Index Review Committee (IRC), the possibilities of extending the scope of the new series to two more additional sectors i.e. Handloom and Construction sectors are being considered. However, Labour Bureau expects an increase in the number of centres from existing 78 centres to around 88-95 centres approximately. Consequently, the total number of family budget enquiry schedules and house rent schedules to be canvassed would increase to 70,000 schedules approximately.

**Agricultural and Rural Labourers (Base Year 1986-87=100):**

Consumer Price Index Numbers for Agricultural and Rural labourers are compiled on the basis of the weights derived from consumer expenditure data collected during NSS the 38 round in 1983 and the prices are collected by NSSO (FOD) on monthly basis. The CPIAL/ RL is compiled for 20 States. The index of each State covers 85 to 106 items, from a fixed sample 600 villages spread over 66 zones. Consumer Price Index Numbers for Agricultural and Rural Labourers is released on the 20th day of the succeeding month and is updated on the same day in the Website (http://www.labourbureau.nic.in ).

Reviews on different types of inflation calculation, assessment and measures have been grouped, analysed and presented in the given below pages.
WPI based inflation calculation

THE HINDU, Special Correspondent Report (July 04, 2006)  
observed that WPI measures the price of a representative basket of wholesale goods. In India, this basket is composed of three groups: Primary Articles (20.1% of total weight), Fuel and Power (14.9%) and Manufactured Products (65%). Food Articles from the Primary Articles Group account for 14.3% of the total weight. The most important components of the Manufactured Products Group are Chemicals and Chemical products (12%); Basic Metals, Alloys and Metal Products (10.8%); Machinery and Machine Tools (8.9%); Textiles (7.3%) and Transport, Equipment and Parts (5.2%).

John Williams (2000) a U.S. economist, described his view of this manipulation when he was interviewed in early 2006. Williams prefers a CPI, or inflation measure, calculated using the original methodology based on a basket of goods having quantities and qualities fixed.

David Ranson (2002), another U.S. economist, also questions the official CPI's viability as an indicator of inflation. Unlike Williams, Ranson doesn't espouse the viewpoint that the CPI is being manipulated. Instead, his view is that the CPI is a lagging indicator of inflation and is not a good indicator of current inflation. According to Ranson, increases in the price of commodities are a better indicator of current inflation because inflation initially affects commodity prices, and it may take several years for this commodity inflation to work its way

15 http://www.thehindu.com/business/Economy/rbi-adopts-new-cpi-as-key-measure-of-inflation/article5859713.ece
through an economy and be reflected in the CPI. Ranson's preferred inflation measure is based on a commodity basket of precious metals.

Forexfraud.com\textsuperscript{18} scrutinized that CPI only includes products which are utilized by the consumer for his needs. It's different from the PPI in that it doesn't include any raw materials, or intermediate goods useful to factories and firms. It differs from the GDP deflator because the latter measures price changes in everything produced within a nation's borders, not just consumer goods, and also excludes the price of imports

Quora.com\textsuperscript{19} evidences that the Wholesale Price Index is exactly the same it is a standard list of goods at wholesale prices. Both of these are pretty crude measures and better for calculating relative increases in a single country than across them.

Forexfraud.com\textsuperscript{20} released that WPI numbers were typically measured weekly by the Ministry of Commerce and Industry. This makes it more timely than the lagging and infrequent CPI statistic. However, since 2009 it has been measured monthly instead of weekly basis

Quora.com\textsuperscript{21} reports that Data on Wholesale Price Index (WPI) is available every week, while data on Consumer Price Index (CPI) is only available every month, so there is a time lag in CPI data availability compared to WPI data availability, which can impact decision making

\textsuperscript{18} http://www.forexfraud.com/forex-articles.html/ Consumer Price Index (CPI): An Important Measure of Inflation
\textsuperscript{20} https://en.wikipedia.org/wiki/Inflation_in_India
both for RBI and the Government of India, as the previous answer states.

**Quora.com**\(^2^{22}\) signifies that According to our policy makers/decision makers at RBI and elsewhere, or so it seems, WPI has a broader coverage compared to all the CPIs, in terms of the commodities covered, quotations, larger number of non-agricultural products and tradeable items, which are missing in the CPIs.

**Failure in adoption of Inflation calculation under WPI.**

**Quora.com**\(^2^{23}\) evidenced that there is a spread of around 9% between CPI and wpi. The reason given is the difference in composition of the basket of goods and services. No service is included in wpi basket as well as energy price is excluded in it too.

**Quora.com**\(^2^{24}\) critically views that WPI is used to track prices of goods at Wholesale stage(meaning goods sold in bulk, rather than retailed). It is practically impossible to find price changes of all the goods traded in the economy. So in WPI a sample set is taken to measure inflation. Then a base year is determined, with respect to which the current inflation will be measured.

**Quora.com**\(^2^{25}\) reports argue that WPI is not advisable; Firstly, for many commodities, such as cars, wholesale markets may not exist. Secondly, with increased competition, prices based on costs, and the reduced role of government in trading of goods and services, it is difficult to obtain

\(^{23}\) https://www.quora.com/How-is-the-inflation-rate-calculated-in-India-For-example-retail-inflation-for-April-2016-was-5.39-Is-this-year-on-year  
\(^{24}\) https://www.quora.com/Why-do-we-use-the-Wholesale-Price-Index-method-in-India  
prices and price data from private producers. Thirdly, WPI doesn’t take the price of services into consideration, which now accounts for 60 percent of the GDP of India. Fourthly, it is too general and cannot be used for specific purposes; for example, if an individual wants to know the trends in office stationery products, then WPI may not capture the correct or complete picture. Fifthly, some commodities may have higher weights during a particular period and may not be consumed during other. For example, woolen textiles are part of the consumption basket only for four months. Sixthly, the share of expenditure of commodities may change overtime. For instance, the expenditure on computers, which were seldomly available before 1990s but now have a significant share in the expenditure of an urban Indian.

The widely held opinion in India is that, the general inflation is driven mostly by the inflation in primary/food articles. This view over the years has become so strong that it has become a new theory of inflation called structural theory of inflation. According to this theory, which has been developed in the context of developing countries, the inflation in developing countries is different and cannot be explained either with the demand-pull theory or with the cost-push theory of inflation, both well documented in economic literature. The proponents of structural theory of inflation argue that developing countries are characterized by some structural rigidities and imbalances, which are responsible for the large part of inflation experienced by them. They, therefore, argue for disaggregate analysis of inflation in developing countries.

Sengupta, Keya (October 15, 1991)\textsuperscript{26} observed that inflation in India is a structural inflation and has, most of the times, resulted from problems

in agriculture. Monsoon dependent nature of agriculture, stagnant production, low productivity, inefficient markets with dominance of speculators and hoarders, etc. are some of the factors that are responsible for inadequate supplies of agricultural and particularly of food articles in relation to increasing demand for them arising from increase in people’s income, growth in population and urbanization. Studies relating to the Indian economy reveal that the inflationary pressures have emanated from the agricultural and particularly the food grains sector.

**Sengupta, Keya (October 15, 1991)**\(^{27}\) examined that the inflation in the category of food articles has a tendency of spreading to other categories and therefore causing inflationary price spiral in the economy. In case of India, where large number of people live in poverty and a large part of income is devoted to food grains, a crop failure in agriculture causes what is called as food-shortage inflation.

**Sengupta, Keya (October 15, 1991)**\(^{28}\) confirmed that the higher food grains prices get reflected in higher wages in industrial sector, causing the cost of production in industrial sector and consequently the prices of industrial products to go up.

**Gupta, Suraj B. (1974)**\(^{29}\) argues that the government sector of developing country like India, rising prices and wages mean additional non-developmental public expenditure, and if revenues do not keep pace, inducing budget deficits and deficit financing through central bank credit to the govt.

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Reddy, Y.V. (1999)\textsuperscript{30} states that rising food grains prices feed other prices in the economy and cause an inflationary price spiral. So, it makes perfect sense to look in to the inside of WPI inflation and see whether food grains prices have grown faster than the price rise in other categories of WPI and the contribution of food inflation in overall inflation.

**CPI is the key weapon for Inflation.**

\texttt{tutor2u.net}\textsuperscript{31} examined that Inflation is a sustained increase in the average price level of a country. The rate of inflation is measured by the annual percentage change in the level of prices.

\texttt{Quora.com}\textsuperscript{32} favours that CPI which RBI considers while making policy adjustments. Look at their monthly or quarterly reports. Both WPI and CPI are measured but it is CPI which consumers feel and what the regulatory bodies consider too.

\texttt{Forexfraud.com}\textsuperscript{33} explains the main use of the CPI release for all traders, including currency speculators is its role as a major determinant of interest rates for central banks. Modern central banks increasingly regard the inflation rate as the main target of policies, and due to the importance of the central bank rate to economic trends, the CPI serves as an early warning indicator of changes in central bank policy directions.

\textsuperscript{31} http://www.tutor2u.net/business/blog/qa-what-is-inflation-and-how-is-it-measured
\textsuperscript{33} http://www.forexfraud.com/forex-articles.html/ Consumer Price Index (CPI): An Important Measure of Inflation
Forexfraud.com supports that CPI is rising; the economy is going through a phase of inflation. Prices are rising, and consumers find it expedient to purchase a needed item as soon as possible, in order to avoid having to buy it at a higher price. The economic situation where the CPI value falls below zero is called deflation. In this case prices are falling, and consumers have less incentive to hasten the next trip to the stores due to the expectation that the next time prices will be cheaper.

Quora.com The Consumer Price Index is calculated quite simply. A standard "shopping basket" of goods is made up. The prices of these are measured over several retailers. The EU does try to standardize these, but really it is down to each individual country to decide what goes into it. The items in the basket are reviewed each year, to reflect changes in habits and culture.

Quora.com highlights that in a developing country similar to India, where more than 75% of the population still dwells in villages, the supermarket numbers are minimal and less affecting to any CPI or inflation rate calculations. Most of the commodity selling corner shops sustain independently without having to depend much on the banking loans. Hence, any changes to interest rates are very unlikely to have any effect on the selling prices of the commodities by the corner shops. An economic model that works well within much of the developed world, will not function well within Indian market.

34 http://www.forexfraud.com/forex-articles.html/ Consumer Price Index (CPI): An Important Measure of Inflation
Forexfraud.com\textsuperscript{37} had illustrated that the tool used to identify price changes across product categories relevant to the consumer is the consumer price index (CPI), which is used by traders, politicians, and analysts for analyzing price movements, market trends, and determining economic policy.

**Adoption of New CPI as the key measure for Inflation.**

Tradingeconomics.com (2013)\textsuperscript{38} observes the consumer price index replaced the wholesale price index (WPI) as a main measure of inflation. In India, the most important category in the consumer price index is Food and beverages (45.86 percent of total weight). Housing accounts for 10 percent; Transport and communication for 8.6 percent; Fuel and light for 6.84 percent; Clothing and footwear for 6.5 percent; Medical care for 5.9 percent and education for 4.5 percent. Consumer price changes in India can be very volatile due to dependence on energy imports, the uncertain impact of monsoon rains on its large farm sector, difficulties transporting food items to market because of its poor roads and infrastructure and high fiscal deficit. This page provides - India Inflation Rate - actual values, historical data, forecast, chart, statistics, economic calendar and news. India Inflation Rate - actual data, historical chart and calendar of releases - was last updated on September of 2016.

Forexfraud.com\textsuperscript{39} observes the purpose of the CPI is measuring price changes which are relevant to the consumer, and as such, the

\textsuperscript{37} http://www.forexfraud.com/forex-articles.html/ Consumer Price Index (CPI): An Important Measure of Inflation
\textsuperscript{38} http://www.tradingeconomics.com/india/inflation-cpi
\textsuperscript{39} http://www.forexfraud.com/forex-articles.html/ Consumer Price Index (CPI): An Important Measure of Inflation
components of the goods that go into its creation are only those of immediate relevance to the consumer.

**Forexfraud.com**⁴⁰ points out the tool used to identify price changes across product categories relevant to the consumer is the consumer price index (CPI), which is used by traders, politicians, and analysts for analyzing price movements, market trends, and determining economic policy.

**Indianexpress.com(2014)**⁴¹ favours the Urjit Patel Committee report recommending inflation targeting was released in January 2014, there was huge opposition to it. One of its main recommendations was to base monetary policy solely on the CPI, and ignore the wholesale price index. This recommendation was criticised by many who argued that the RBI should stick to its traditional approach, which had served it well in the past, and mainly look at the WPI. It is beyond the scope of this article to critique the arguments in favour of the WPI made over the years, and that were also repeatedly made after the Urjit Patel report.

**Quora.com (2014)**⁴² stated that India calculates the rate based on the **Consumer Price Index (CPI) (combined)** as the key measure of inflation. Unlike many countries who adopt Consumer price Index (CPI) for measuring inflation rate, India calculated the inflation rate by **Wholesale Price Index (WPI)** until April last year. Then the RBI governor changed it to Consumer Price Index (CPI) (combined) as the key measure of inflation. The current **inflation rate in India** is **6.46%** as of September 2014 by the newly adopted index.

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⁴¹ [http://indianexpress.com/section/opinion/Correct Price Index _ The Indian Express.html](http://indianexpress.com/section/opinion/Correct Price Index _ The Indian Express.html)

**Quora.com (2013)** Consumer price index or cpi in short is an index used for measuring the general price level prevalent in an economy and also to determine the purchasing power of the currency. The reciprocal of cpi gives the purchasing power or how much value the currency holds.

**Quora.com (2011)** In a developing country similar to India, where more than 75% of the population still dwells in villages, the supermarket numbers are minimal and less affecting to any CPI or inflation rate calculations. Most of the commodity selling corner shops sustain independently without having to depend much on the banking loans. Hence, any changes to interest rates are very unlikely to have any effect on the selling prices of the commodities by the corner shops. An economic model that works well within much of the developed world, will not function well within Indian market.

**Indianexpress.com** explored that the one vital decision for central bankers is which single price index (and corresponding measure of inflation) they should focus on. The phrase “focus on” is used instead of the word “target”, since focusing on a certain measure does not imply that it is being mechanically targeted.

**Indianexpress.com** evidenced that across the world, central banks choose the consumer price index. Their primary task is to preserve the domestic value of the currency. It is the legal, and in some sense moral, responsibility of the central bank to ensure to the public that the contracts they enter into are protected against changes in the aggregate

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45 http://indianexpress.com/section/opinion/Correct Price Index _ The Indian Express.html
46 http://indianexpress.com/section/opinion/Correct Price Index _ The Indian Express.html
price level. It is the CPI that enters into wage and financial contracts either via dearness allowance (DA) adjustment or other legal clauses, or via individual adjustments based on inflation expectations. The DA arrears that the Seventh Pay Commission will dole out at some point will be based on consumer prices. On these grounds, the CPI can also be called the correct price index.

**Inflation curse may bring more pain for India earnings**

*Divdevarkhyani (2012)*\(^{47}\) in her study states that inflation has long been the common man's concern about economy. Though inflation is the most immediate economic parameter to be associated with the hike of price, it has its long and far reaching effects on the society and social concerns. Globally the poorer and developing nations like INDIA are more vulnerable to the effects of global inflation.

*The World Bank Report 2002*\(^{48}\) explores that Inflation distorts the price mechanism by making it difficult to distinguish changes in relative prices from changes in the general price level. Changes in relative prices may be offset by the substitution of lower price inputs used in production. If almost all prices are rising rapidly, there is little incentive to search for cheaper substitutes that could help keep production costs low.

*The World Bank Report 2001*\(^{49}\) exhibits that Inflation creates uncertainty. If businessmen are unsure about the future level of prices, and thus of real interest rates, they will be less willing to take risks and invest, especially in long-term projects. As investment is reduced, so is the long-run growth potential of the economy.

\(^{47}\)http://divdevarkhyani.blogspot.in/2012/08/inflation-curse-for-indian-economy.html  
\(^{48}\)World Bank Report, 2002, Principles of Macroeconomics - Section 6_ Main.html  
\(^{49}\)World Bank Report, 2001, Principles of global economics - Section 4_ Main.html
The World Bank Report 2002\textsuperscript{50} emphasized that there may be a redistribution of resources and production into areas less affected by high inflation rates. Inflationary hedges are used to try to keep up with the effects of inflation, possibly to the detriment of the economy. The classic inflationary hedge is gold (and other precious metals). Gold is desirable in times of high inflation because the paper currency issued by the government rapidly loses its value (purchasing power), while gold prices tend to keep pace with inflation. The reason is that inflation increases the opportunity cost of holding paper currency (which loses its value) and gold is the closest available substitute. As the demand for gold increases, the price of gold rises (along with inflation). As savers shift their assets into gold, they reduce their holdings of stocks and bonds. This reduces the supply of funds available for businesses to borrow, raising the cost of investment ($r$, the interest rate). The result is less business investment and a reduction in the economic growth rate.

The World Bank Report 2002\textsuperscript{51} reveals that inflationary uncertainty pushes up real interest rates, as lenders demand a bigger risk premium on their money. Longer-term interest rates are especially punished as a high inflation premium is added to account for inflationary uncertainty. As a result, the cost of borrowing by businesses and consumers increases substantially, reducing the rate of real economic growth.

Targetstudy.com\textsuperscript{52} opines that inflation has long been the common man's concern about economy. Rising inflation directly affects the price of the consumer goods and services thereby affecting the budget of a common man in one way or the other. Though inflation is the most

\textsuperscript{50} World Bank Report, 2002, Principles of modern economics - Section 7_ Main.html
\textsuperscript{51} WORLD BANK REPORT, 2002, Principles of Macroeconomics - Section 6_ Main.html
\textsuperscript{52} https://targetstudy.com/articles/Inflation – Really a Curse_.html
immediate economic parameter to be associated with the hike of price, it has its long and far reaching effects on the society and social concerns. Globally the poorer and developing nations like India are more vulnerable to the effects of global inflation. Growth of the prices with time and decreasing value of money with time is the effect of inflation.

Targetstudy.com\textsuperscript{53} identified that India is also facing a growing inflation rate. In economics, inflation is defined as a rise in the general level of prices of goods and services in an economy over a period of time. Inflation is a rise in the general level prices of goods and services which make each unit of currency buy fewer goods and services. Consequently, inflation also reflects erosion in the purchasing power of money a loss of real value. When the general price level rises, each unit of currency buys fewer goods and services. Consequently, inflation reflects a reduction in the purchasing power per unit of money leading to a loss of real value in the medium of exchange and unit of account within the economy. A chief measure of price inflation is the inflation rate, the annualized percentage change in a general price index normally the consumer price index over time.

Targetstudy.com\textsuperscript{54} significantly points out that inflation in a growing economy as well as in general economy is really common with time. Inflation’s effects on an economy are various and can be simultaneously positive and negative. A rising inflation is not always means a negative effect on economy; at times price rise can also be good for growth, provided the price rise is consistent, on the other hand a rapid price rise is obviously a negative effect. Negative effects of inflation include an

\textsuperscript{53} https://targetstudy.com/articles/Inflation – Really a Curse.html
\textsuperscript{54} https://targetstudy.com/articles/Inflation – Really a Curse.html
increase in the opportunity cost of holding money, uncertainty over future inflation which may discourage investment and savings, and if inflation is rapid enough, shortages of goods as consumers begin hoarding out of concern that prices will increase in the future. It is not just that inflation is negative; there are few positive effects also which include ensuring that central banks can adjust real interest rates to mitigate recessions, and encouraging investment in non-monetary capital projects.

Targetstudy.com⁵⁵ observed that effect of Inflation on India: Like every other economy, role of inflation on Indian economy is also evident. Like every other economies our Indian economy is also affected by inflation and change in prices of commodity in our country as well as countries with which we have trade relations. Though inflation has always been a major public concern and always been subject to heated political debate in our country, it is an astonishing truth that since 1950 India has experienced one of the lowest inflation rates in the world in comparison to other developing countries and most of these years it had consistently maintained a steady control over the inflation rate by limiting it to only a single digit figure. And the figures are quite impressive.

Targetstudy.com⁵⁶ examines that Inflation in India as in other countries also plays a major role in determining the economic scenario of the country and also helps to take necessary measures whenever required. Though, with proper and efficient fiscal management India has been able to mostly avoid the disastrous global effects of inflation. Various sectors of Indian economy suffered from the onslaught of inflation in

⁵⁵ https://targetstudy.com/articles/Inflation - Really a Curse_.html
⁵⁶ https://targetstudy.com/articles/Inflation - Really a Curse_.html
various periods. Economists generally agree that high rates of inflation and hyperinflation are caused by an excessive growth of the money supply. Since the beginning of recent financial crisis in 2008, Indian government through RBI is printing and injecting gargantuan amount of money in the economy to get out of recession. This is the reason for the double digit inflation in India.

Targetstudy.com\textsuperscript{57} points out that inflation has both positive as well as negative effects on an economy and the measures taken are generally for the welfare only but at times common man are not aware of these. But there are few who find out some loopholes in the policies and start making profit from these activities thereby deceiving the common man. High or unpredictable inflation rates are regarded as harmful to an overall economy as these tend to add inefficiencies in the market, and make it difficult for the companies to budget or plan long-term. Inflation can act as a drag on productivity as companies are forced to shift resources away from products and services in order to focus on profit and losses from currency inflation. Uncertainty about the future purchasing power of money discourages investment and saving. And inflation can impose hidden tax increases, as inflated earnings push taxpayers into higher income tax rates unless the tax brackets are indexed to inflation. There need to be a growth in inflation but only when wages are also increasing. In case of growth in inflation without any increase in wages of the people, the situation can be quite tough for those working on nominal income, daily wagers as well as pensioners. Since inflation causes redistribution of prices, hence if there is no increase in wages as well it would become really difficult for the common man. Inflation also leads to:

\textsuperscript{57}https://targetstudy.com/articles/Inflation – Really a Curse_.html
Targetstudy.com⁵⁸ signifies the major effects of the inflation are the price rise. High inflation can prompt employees to demand rapid wage increases, to keep up with consumer prices. In the cost-push theory of inflation, rising wages in turn can help fuel inflation. In the case of collective bargaining, wage growth will be set as a function of inflationary expectations, which will be higher when inflation is high. This can cause a wage spiral. In a sense, inflation begets further inflationary expectations, which beget further inflation.

Targetstudy.com⁵⁹ highlights that Inflation is directly linked to increase in the price of commodity and food items as well. People can compromise with the luxury items. If there is an increase in the rates of the food items without an increase in the wages of the people, this can lead to a great disparity and difficult for people to afford basic necessities of the life which would automatically lead to unrest in the region or country as a whole. We have already witnessed ouster of many leaders around the world owing to protest by public on the issue of inflation and price rise.

Targetstudy.com⁶⁰ observes that Hoarding is yet another curse that is associated with the problem of hoarding. It has often been observed that people buy durable and non-perishable commodities and other goods as stores of wealth, to avoid the losses expected from the declining purchasing power of money, creating shortages of the hoarded goods. Also a lot of people buy products and store them well in advance whenever a price rise is expected thus leading to a shortage of consumer goods and even if there is no price rise, these people are not

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willing to sell these products at same or lower price and often this leads to rottening of food items that are stored in the cool storages and also lead to destruction of their nutrient content.

Targetstudy.com\(^{61}\) views that a change in the supply or demand for a good will normally cause its relative price to change, signaling to buyers and sellers that they should re-allocate resources in response to the new market conditions. But when prices are constantly changing due to inflation, price changes due to genuine relative price signals are difficult to distinguish from price changes due to general inflation, so agents are slow to respond to them. The result is a loss of allocative efficiency.

www.imf.org (2011)\(^{62}\) evidenced that Long-lasting episodes of high inflation are often the result of lax monetary policy. If the money supply grows too big relative to the size of an economy, the unit value of the currency diminishes; in other words, its purchasing power falls and prices rise. This relationship between the money supply and the size of the economy is called the *quantity theory of money*, and is one of the oldest hypotheses in economics.

www.imf.org (2011)\(^{63}\) reports that on the supply or demand side of the economy can also be inflationary. *Supply shocks* that disrupt production, such as natural disasters, or raise production costs, such as high oil prices, can reduce overall supply and lead to “cost-push” inflation, in which the impetus for price increases comes from a disruption to supply. The food and fuel inflation episodes of 2008 and 2011 were such cases for the global economy—sharply rising food and fuel prices were transmitted from country to country by trade. Poorer


countries were generally hit harder than advanced economies. Conversely, demand shocks, such as a stock market rally, or expansionary policies, such as when a central bank lowers interest rates or a government raises spending, can temporarily boost overall demand and economic growth. If, however, this increase in demand exceeds an economy’s production capacity, the resulting strain on resources creates “demand-pull” inflation. Policymakers must find the right balance between boosting growth when needed without over stimulating the economy and causing inflation.

www.imf.org (2011)\(^\text{64}\) states that people or firms anticipate higher prices, they build these expectations into wage negotiations or contractual price adjustments (such as automatic rent increases). This behavior partly determines future inflation; once the contracts are exercised and wages or prices rise as agreed, expectations have become self-fulfilling. And to the extent that people base their expectations on the recent past, inflation will follow similar patterns over time, resulting in inflation inertia.

Divdevarkhyani (2012)\(^\text{65}\) examines that this crisis ridden world, economies around the world are experiencing high bouts of inflation and India is no exception to that. Indian government is either clueless about the cause of this inflation or is pretending to be clueless to fox the people from seeing the true cause of this rise in prices. Moreover, it is trying to divert everyone’s attention from the true cause of inflation by creating scapegoats like consumers (high demand), hoarders, speculators, food drought etc. This is an age old trick which all

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\(^{64}\) http://www.imf.org//Inflation_ Prices on the Rise - Back to Basics_ Finance & Development.html

\(^{65}\) http://divdevarkhyani.blogspot.in/2012/08/inflation-curse-for-indian-economy.html
governments use to fool its populace when it embarks on the inflationary path in full speed.

**www.Quora.com**[^66] assures that inflation is the general rise in price level. Base year the inflation is assumed to be 0 because that year the currency is assumed to hold full value. This shows how inflation destroy the ability of currency to hold its value. This lead to loss in real wages and if not regulated to raise wage levels at the rate of inflation a wage earner need to find other methods to cover up for cost escalation his or her wage cannot support. This is called cost of living adjustment or cola in short form.

**Divdevarkhyani (2012)**[^67] traced that India’s baseline inflation has crept up to a very uncomfortable 7-8% rate and if visionary, unconventional, and bold measures are not taken with a sense of urgency to mitigate the rapidly increasing supply side constraints, Indian economy will lose whatever productivity gains it may have made in the last two decades.

**Divdevarkhyani (2012)**[^68] argues that inflation has always been a major public concern and always been subject to heated political debate, it is an astonishing truth that since 1950 India has experienced one of the lowest inflation rates in the world in comparison to other developing countries and most of these years it had consistently maintained a steady control over the inflation rate by limiting it to only a single digit figure.

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[^67]: http://divdevarkhyani.blogspot.in/2012/08/inflation-curse-for-indian-economy.html
[^68]: http://divdevarkhyani.blogspot.in/2012/08/inflation-curse-for-indian-economy.html
Divdevarkhyani (2008) evidenced that economists generally agree that high rates of inflation and hyperinflation are caused by an excessive growth of the money supply. Since the beginning of recent financial crisis in 2008, Indian government through RBI is printing and injecting gargantuan amount of money in the economy to get out of recession. This is the reason for the double digit inflation in India.

Divdevarkhyani (2012) reveals the biggest turmoil of inflation came in the year 2008 to 2009 when India experienced both the highest ever rate of inflation in the country and the lowest rate also within span of just few months. Though with proper and efficient fiscal management India has been able to mostly avoid the disastrous global effects of inflation, various sectors of Indian economy suffered from the onslaught of inflation in various periods.

Divdevarkhyani (2012) explored that Oil and aviation fuel, automobile, banking, steel and cement are some of the key industries that are mostly suffering from the present inflation syndromes. Among other industries IT, FMCG or consumer durable industries are facing pressurized by the effects of inflation and either increasing the price of their deliverables or initiating severe cost cutting measures.

www.oneindia.com (2008) illustrates that the inflation we have seen this year is basically due to external factors," Dr. Singh said, adding that: "All over the world and in global markets the price of food, fuel and other commodities has been rising. In many developing countries the rate of inflation is double that in India."

69 http://divdevarkhyani.blogspot.in/2008/05/inflationon-indian-economy.html
70 http://divdevarkhyani.blogspot.in/2012/08/inflation-curse-for-indian-economy.html
71 http://divdevarkhyani.blogspot.in/2012/08/inflation-curse-for-indian-economy.html
Legalserviceindia.com (2007)\textsuperscript{73} amplified that inflation is the supply of excess money and credit relative to the goods and services produced, resulting in increased prices. As the layman understands it, inflation results in the increase in the price of some set of goods and services in a given economy over a period of time. It is measured as the percentage rate of change of a price index.

Legalserviceindia.com (2007)\textsuperscript{74} notes on inflation in India is also a grave issue of concern, given the vast disparity between the rich and the poor on the one hand or the Rural and the Urban on the other. Skyrocketing inflation robs the poor, and hurts others, though much less grievously. The fruits of the much-talked about economic growth have not reached large sections, especially in the rural areas.

www.Quora.com\textsuperscript{75} points out that compared to other countries India is very low on productivity- on all fronts. Cows produce less milk, agricultural yield is low and queues at departmental stores move slower. As a result every unit of capital invested goes less beyond than it should.

www.Quora.com\textsuperscript{76} reveals that India does not have easy access to fuel. Gas, nuclear energy, solar they are all there but we are energy deficit so we end up buying fuel from others. Oh and we do not export significantly to pay for the oil imports so our currency is weaker. The weaker the currency the higher our petroleum bills (Its another matter that oil prices have crashed globally)

\textsuperscript{73} http://www.legalserviceindia.com/article/l177-RBIs-Control-of-Inflation.html
\textsuperscript{74} http://www.legalserviceindia.com/article/l177-RBIs-Control-of-Inflation.html
\textsuperscript{75} https://www.quora.com/What-is-reason-for-high-inflation-in-India-and-how-we-can-calculate-the-Index-figures-year-on-year_
\textsuperscript{76} https://www.quora.com/What-is-reason-for-high-inflation-in-India-and-how-we-can-calculate-the-Index-figures-year-on-year_
www.Quora.com\textsuperscript{77} identified that Indians do not trust the government ability to control inflation or maintain stability in financial markets. As a result they buy a lot of gold. Between 500 to 700 tonnes annually and all of this is imported. This makes the rupee weaker. Since this wealth lies in lockers and not in banks it is not available for investment.

www.Quora.com\textsuperscript{78} brings out that the government spends a lot of money. Ideally if this money was spent on building roads, cities or infrastructure, it should create more jobs and improve productivity. But government spending is always lower in productivity - not just in India but anywhere since they do not have a motivation to cut costs and choose the most efficient methods. The government also ends up spending a lot of salaries because productivity is low.

\textbf{Adoption of CPI based inflation calculation at the Global Level.}

www.Quora.com (2014)\textsuperscript{79} India calculates the rate based on the Consumer Price Index (CPI) (combined) as the key measure of inflation. Unlike many countries who adopt Consumer price Index (CPI) for measuring inflation rate, India calculated the inflation rate by Wholesale Price Index (WPI) until April last year. Then the RBI governor changed it to Consumer Price Index (CPI) (combined) as the key measure of inflation. The current inflation rate in India is 6.46\% as of September 2014 by the newly adopted index.

\textsuperscript{77} https://www.quora.com/What-is-reason-for-high-inflation-in-India-and-how-we-can-calculate-the-Index-figures-year-on-year_
\textsuperscript{78} https://www.quora.com/What-is-reason-for-high-inflation-in-India-and-how-we-can-calculate-the-Index-figures-year-on-year_
\textsuperscript{79} https://www.quora.com/On-which-Index-India-calculates-its-Inflation
Forexfraud.com\textsuperscript{80} evidenced that the main use of the CPI release for all traders, including currency speculators is its role as a major determinant of interest rates for central banks. Modern central banks increasingly regard the inflation rate as the main target of policies, and due to the importance of the central bank rate to economic trends, the CPI serves as an early warning indicator of changes in central bank policy directions.

www.Quora.com\textsuperscript{81} points out that the CPI or inflation rate is well connected with the interest rates, any changes in interest rate can be reflected on the changes in CPI or inflation rate. This law for example, can very well be applied in countries such as USA or UK, where most of the businesses are dependent on the bank loans. Hence, the supermarkets selling day-to-day commodities are likely to change their selling prices based on the interest rates set by the central banks.

www.Quora.com\textsuperscript{82} opines that in a developing country similar to India, where more than 75% of the population still dwells in villages, the supermarket numbers are minimal and less affecting to any CPI or inflation rate calculations. Most of the commodity selling corner shops sustain independently without having to depend much on the banking loans. Hence, any changes to interest rates are very unlikely to have any effect on the selling prices of the commodities by the corner shops. An economic model that works well within much of the developed world will not function well within Indian market.

\textsuperscript{80} http://www.forexfraud.com/forex-articles.html/ Consumer Price Index (CPI): An Important Measure of Inflation
\textsuperscript{81} https://www.quora.com/Why-does-India-use-WPI-instead-of-CPI-to-calculate-inflation
Foxfraud.com The methods for the calculation of the CPI differ from nation to nation. Each national statistical institute employs a slightly differing method in the calculation of the data, and, for example, the European Union uses a Harmonized-CPI in order to bring the varying approaches of its constituent nations into alignment with each other. The calculation of CPI in Zimbabwe, for example, is very different from the way its calculated in the U.S., because the unhappy people of Zimbabwe cannot make use of many items consumed by U.S. citizens.

Indianexpress.com examines that central bankers is which single price index (and corresponding measure of inflation) they should focus on. The phrase “focus on” is used instead of the word “target”, since focusing on a certain measure does not imply that it is being mechanically targeted.

Indianexpress.com traces that across the world, central banks choose the consumer price index. Their primary task is to preserve the domestic value of the currency. It is the legal, and in some sense moral, responsibility of the central bank to ensure to the public that the contracts they enter into are protected against changes in the aggregate price level. It is the CPI that enters into wage and financial contracts either via dearness allowance (DA) adjustment or other legal clauses, or via individual adjustments based on inflation expectations. The DA arrears that the Seventh Pay Commission will dole out at some point will be based on consumer prices. On these grounds, the CPI can also be called the correct price index.

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84 http://indianexpress.com/section/opinion/Correct Price Index _ The Indian Express.html
85 http://indianexpress.com/section/opinion/Correct Price Index _ The Indian Express.html
RBI is the sole authority to control inflation of the Country.

www.Quora.com\textsuperscript{86} traced that CPI is determined at retail stage, where consumers are directly involved. Hence, CPI method better measures the effect of inflation on general public. RBI adopted CPI as the key measure for determining inflation situation of economy, on recommendation of URJIT PATEL COMMITTEE.

www.Quora.com\textsuperscript{87} proves that according to our policy makers/decision makers at RBI and elsewhere, or so it seems, WPI has a broader coverage compared to all the CPIs, in terms of the commodities covered, quotations, larger number of non-agricultural products and tradeable items, which are missing in the CPIs.

Foxfraud.com\textsuperscript{88} states that central bank policies, the CPI release can be useful in predicting the course of national politics, due to the tendency of voters to punish governments which cannot help them at times of rising prices. High gasoline or food prices often correspond to political chaos: the experience of many Latin American nations, Indonesia, Turkey, Russia, and some former Soviet Republics, among others, during the 1990s, as well as the history of political chaos in the U.S. during the high inflation era prior to the election of President Reagan all show clearly how important the CPI can be for political analysis. And since legislation, and political decisions can be some of the most important drivers of economic trends, the role of the CPI in this type of analysis is clear.

\textsuperscript{86} https://www.quora.com/Why-do-we-use-the-Wholesale-Price-Index-method-in-India
\textsuperscript{88} http://www.forexfraud.com/forex-articles.html/ Consumer Price Index (CPI): An Important Measure of Inflation
Foxfraud.com\textsuperscript{89} quotes that currency trends over the long term are strongly depending on central bank interest rate differentials. As such, it is possible to anticipate that among two nations with similar economical structures, the currency of the nation with the higher inflation rate will appreciate over time. Thus, even a simple comparison of basic CPI rates across nations can give us some clues on which currencies are likely to rise in value. For example, during the period of 2002-2007, Australian inflation has been consistently above the inflation level of the United States. During the same period, inflation in the United States has been higher than Japanese CPI. The result is reflected in currency prices: The Australian dollar appreciated against the U.S. dollar, while the dollar itself rose against the yen, during the time period in question.

Foxfraud.com\textsuperscript{90} considered that the CPI in conjunction with many other variables such as the GDP, current account, and global conditions. A high CPI value is indicative of growth and rising demand (and an appreciating currency) only if the central bank acts responsibly to control it. Otherwise, runaway inflation will lead to investor disillusionment, capital flight, social discontent, and political turmoil. We should also note that developing nations are able to tolerate a permanently elevated CPI level better than mature economies. As a result, the inflation targets of nations like Indonesia, Turkey, Brazil, or India are usually higher than those like Britain, or the European Union.

Indianexpress.com\textsuperscript{91} evaluates that one vital decision for central bankers is which single price index (and corresponding measure of

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\textsuperscript{89} http://www.forexfraud.com/forex-articles.html/ Consumer Price Index (CPI): An Important Measure of Inflation
\textsuperscript{90} http://www.forexfraud.com/forex-articles.html/ Consumer Price Index (CPI): An Important Measure of Inflation
\textsuperscript{91} http://indianexpress.com/section/opinion/Correct Price Index _ The Indian Express.html
inflation) they should focus on. The phrase “focus on” is used instead of the word “target”, since focusing on a certain measure does not imply that it is being mechanically targeted.

Indianexpress.com\(^{92}\) emphasized that across the world, central banks choose the consumer price index. Their primary task is to preserve the domestic value of the currency. It is the legal, and in some sense moral, responsibility of the central bank to ensure to the public that the contracts they enter into are protected against changes in the aggregate price level. It is the CPI that enters into wage and financial contracts either via dearness allowance (DA) adjustment or other legal clauses, or via individual adjustments based on inflation expectations. The DA arrears that the Seventh Pay Commission will dole out at some point will be based on consumer prices. On these grounds, the CPI can also be called the correct price index.

Forexfraud.com\(^{93}\) underlines that CPI is the main determinant of central bank interest rate policies: In its various forms (the personal consumption expenditures index (PCE) of the Federal Reserve), the HPCI of the ECB, or the CPI of the BoE, the consumer price index is the main determinant of interest rate policies for central banks of the advanced world. Japan, Britain, Europe, and to an extent, the U.S. all use inflation as the main goal of interest rate policies. Thus, the CPI has some predictive value for the forex and bond markets, as a trend of rising CPI values will eventually lead to the central bank raising rates, and vice versa.

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\(^{92}\) [http://indianexpress.com/section/opinion/Correct Price Index _ The Indian Express.html](http://indianexpress.com/section/opinion/Correct Price Index _ The Indian Express.html)

Earlier, RBI accepted one of the key recommendations of the Committee - shifting to consumer price index (CPI) inflation as the clearly defined nominal anchor, and beginning of a two-year ‘glide path’ to prepare the initial conditions ahead of formal adoption of FIT. Against the requisites for full implementation of inflation targeting (IT) (Roger 2010), India’s shift to FIT has only just begun: A public announcement of a two-year glide path—8% headline CPI inflation by January 2015, 6% by January 2016 with eventual medium-term target of 4% with ±2% band, followed by the recent formal agreement between the government and RBI.

Forexfraud.com estimates that central banks react vigorously to any threat of inflation by lowering rates preemptively, with the hope that prices will begin to rise before the anticipation of deflation has replaced the expectation of perpetually rising prices over the long term in the minds of consumers.

Ideasforindia.in evidences that in January 2014, the Urjit Patel Committee Report, which was appointed to ‘Revise and Strengthen the Monetary Policy Framework’, proposed a new framework for monetary policy - flexible inflation-targeting (FIT). The new framework has been recently formalised as an agreement between the government and the Reserve Bank of India (RBI), making price stability the primary goal of RBI, while keeping in mind the growth objective. The inflation target in the year starting April 2016 and beyond will be 4% (+/-2%) and achievement of this inflation objective or

94 http://www.ideasforindia.in/article.aspx?article_id=420#sthash.wPS2RLDY.dpuf
95 http://www.forexfraud.com/forex-articles.html/ Consumer Price Index (CPI): An Important Measure of Inflation
96 http://www.ideasforindia.in/article.aspx?article_id=420#sthash.wPS2RLDY.dpuf
otherwise, will determine the success or failure of RBI’s actions henceforth.

Economictimes.indiatimes.com\textsuperscript{97} proved that India’s decision to formally implement its central inflation target of 4 percent can help moderate future price raises and support macroeconomic stability, Moody’s Investors Service said on Sunday.

Economictimes.indiatimes.com\textsuperscript{98} states that the government this week notified parliament that it would introduce the target of 4 percent, plus or minus 2 percent, a key confirmation of the inflation-fighting policies championed by outgoing Reserve Bank of India (RBI) Governor Raghuram Rajan.

Economictimes.indiatimes.com\textsuperscript{99} found out that "The changes to the monetary policy regime of the last two years mark a step towards greater policy transparency and predictability, both of which should help in policy transmission and hence monetary policy effectiveness," Moody's Diron said.

Economictimes.indiatimes.com\textsuperscript{100} moderates that "Sustained moderate inflation would contribute to macroeconomic stability and help prevent a repetition of the short marked cycles of the past," Marie Diron, Senior Vice President, Sovereign Risk Group, said in a statement.
Why India should favour for CPI inflation measures.

Wikipedia.org\textsuperscript{101} explains that many developing countries use changes in the Consumer Price Index (CPI) as their central measure of inflation. India used WPI (Wholesale Price Index) as the measure for inflation but new CPI(combined) is declared as the new standard for measuring inflation (April 2014) CPI numbers are typically measured monthly, and with a significant lag, making them unsuitable for policy use. Instead, India uses changes in the Consumer Price Index (CPI) to measure its rate of inflation.

Quora.com\textsuperscript{102} highlights that CPI which RBI considers while making policy adjustments. Look at their monthly or quarterly reports. Both WPI and CPI are measured but it is CPI which consumers feel and what the regulatory bodies consider too.

Quora.com\textsuperscript{103} cited that CPI is determined at retail stage, where consumers are directly involved. Hence, CPI method better measures the effect of inflation on general public. RBI adopted CPI as the key measure for determining inflation situation of economy, on recommendation of URJIT PATEL COMMITTEE.

Quora.com\textsuperscript{104} Consumer price index or cpi in short is an index used for measuring the general price level prevalent in an economy and also to determine the purchasing power of the currency. The reciprocal of cpi gives the purchasing power or how much value the currency holds.

\textsuperscript{101} https://en.wikipedia.org/wiki/Inflation_in_India
\textsuperscript{103} https://www.quora.com/Why-do-we-use-the-Wholesale-Price-Index-method-in-India
\textsuperscript{104} https://www.quora.com/What-is-meant-by-consumer-price-index-pls-explain-me-with-an-example
Ideasforindia.in	extsuperscript{105} monitors that earlier, RBI accepted one of the key recommendations of the Committee - shifting to consumer price index (CPI) inflation\textsuperscript{1} as the clearly defined nominal anchor\textsuperscript{2}, and beginning of a two-year ‘glide path’ to prepare the initial conditions ahead of formal adoption of FIT.

The next chapter deals with the WPI, CPI and RBI Credit control trends in India are revels and Analysis in this chapter. Variants of WPI are analytically evaluated.

\textsuperscript{105} http://www.ideasforindia.in/article.aspx?article_id=420#sthash.wPS2RLDY.dpuf