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## UNIT 7 INFLATION: CONCEPT, TYPES AND MEASUREMENT\*

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### Structure

- 7.0 Objectives
- 7.1 Introduction
- 7.2 Measurement of Price Level
  - 7.2.1 Definition of Index Number
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### 7.0 OBJECTIVES

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After going through this unit you should be in a position to

- explain the concept of inflation;
- explain how inflation is measured;
- distinguish between various types of price indices to measure inflation; and
- identify the types of inflation;

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### 7.1 INTRODUCTION

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We come across the term inflation very often in newspapers. The reason why it holds such importance is because of its adverse effects on an economy as well as people. A question that could arise at this point is in what way does inflation affect our everyday life? Let us illustrate with the help of a single household. Inflation, in simple words, is a steady rise in the prices of various goods and services. Given the level of the money income, a household consumes a group of commodities at a given price level.

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With inflation, the price level goes up. So with the same level of money income, the household could consume a smaller amount of the commodities than it was consuming earlier.

Alternately, to maintain the earlier level of consumption this household now needs to have more money.

For example, suppose the household has a monthly income of Rs.100, consumes the entire income on a single commodity A and does not save anything. If the price of commodity A is assumed to be Rs. 4 then the household consumes 25 units of A in a month. Now suppose, the price of commodity A goes up from Rs.4 to Rs.5. The household will be able to consume only 20 units of commodity A.

To maintain the level of consumption at 25 units of A per month, the household needs to have a monthly income of Rs. 125. Thus, we see that with inflation, one unit of money purchases a smaller amount of goods than it was doing earlier. In other words, with inflation, purchasing power of money goes down.

In the above example, consumption of the household comprises one commodity only. But for a typical household, consumption involves a variety of goods and services. As a result, increase in the price of one commodity need not affect household consumption adversely if there is a decline in the price of some other good. Therefore, to ascertain the effect of inflation we need to take into account the change in the prices of all the goods consumed by the household. To do that, we need to find the change in the general level of prices. Therefore, before defining inflation we discuss the meaning of price level and the changes in it.

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## **7.2 MEASUREMENT OF PRICE LEVEL**

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We are familiar with the term ‘price’ of a product. What do we mean by the term ‘price level’? What is the difference between the two? And how do we measure price level? These are some of the questions we try to answer in the present section.

In simple terms price is defined as the rate at which goods and services are exchanged for money. It is the amount of money received for selling or, paid for buying, one unit of a commodity (or services) in an exchange economy.

The term price level is an aggregate concept. It relates to the price of a basket of goods and services. See that we do not refer to the price of a single commodity but to a group of goods and services taken as a whole. Therefore, when we talk of a change in the price level it is always in reference to a group of commodities. Since the prices of commodities differ, in order to measure a change in the price level of a group of commodities, it is necessary to use index numbers. More specifically, we have to use price index. Let us understand the idea of an index number in an elementary form.

### 7.2.1 Definition of Index Number

An index number is a concept which enables us to compare the changes in a group of distinct, but related, variables in two or more time periods.

A price index is used for comparing changes in the general level of prices of a group of commodities. Generally a price index refers to changes in the prices obtained over time. It is expressed by putting a particular period (called the 'base period') equal to 100 and the price level for other periods are expressed relative to this base. For example, when we say, the wholesale price index has gone up this year with respect to last year, we are taking last year price level as the base or, the reference point = 100. With respect to it we measure the change in the price level this year.

The *price relative* of an individual item is the ratio of its current price to its price in a base period. The simplest price index for a given commodity can be expressed as

$$I_{t,0} = 100 (p_t / p_0) \quad \dots (7.1)$$

where  $p_t$  and  $p_0$  denote prices in the current period 't' and the base period '0' respectively.

For instance, if price of a kilo of potato goes up from Rs. 8 in 2017 to Rs. 10 in 2018, then the price index in this case would be:

$$I_{2017,2018} = 100 (10/8) = 125 \quad \dots(7.2)$$

This index shows a 25 per cent increase in the price of potato over the year. In other words, you need 25 per cent more money to maintain your consumption of potatoes at the same old level.

### 7.2.2 Types of Index Numbers

Index numbers could be of various types, depending upon its purpose and methodology. So far as price index is concerned, there are two main types of price indices, viz., Wholesale Price Index (WPI) and Consumer Price Index (CPI). Both the price indices are different in terms of i) the goods and services included, ii) the weights assigned to each category of goods and services, and iii) the prices (whether wholesale or retail) taken into account.

As it is not possible to consider all goods and services (because of time and resource constraints), the index numbers are estimated on the basis of a sample survey. The numerical value of two price indices will be different depending upon three factors, viz., (i) the commodities included in construction of the index, (ii) the weights assigned to each commodity, and (iii) the base year of the price index. Thus while comparing two price indices we should take into account the above factors. We will discuss about index numbers in greater detail later in the course 'Statistical Methods for Economics'.

**Wholesale Price Index (WPI)**

The WPI is the price of a representative basket of wholesale goods. This index measures the changes in price of goods and services at the wholesale market. In India the WPI is published by Office of the Economic Adviser, Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry, Government of India.

The data are collected at the first point of *bulk sale* in the domestic market. The prices used are ‘wholesale prices for primary articles, administered prices for fuel items and ex-factory prices for manufactured products’. One advantage of the WPI is that it has a long history, dating back to January 1942, which makes it useful for assessing long-term trends in inflation. The WPI also covers a broad range of goods, from raw materials to finished manufactures. A major limitation of the WPI is that it excludes the services sector which has a major contribution to GDP.

**Consumer Price Index (CPI)**

Consumer Price Index measures changes over time in general price level of goods and services that households acquire for consumption purposes. The CPI numbers in India are widely used i) as a macroeconomic indicator of inflation, ii) as a tool for inflation targeting by the RBI, iii) for monitoring price stability by the government, iv) for indexation of dearness allowance to employees, and v) as deflator for national accounts. The CPI is published by the Central Statistics Office (CSO), Government of India. You might have come across the term ‘headline inflation’ in newspapers and various reports. It refers to inflation based on the comprehensive consumer price index.

**Check Your Progress 1**

- 1) If a country is experiencing inflation, the change in the nominal national product will (choose the correct alternative)
  - a) be falling faster than the rate of inflation
  - b) equal the change in the real national product
  - c) understate the value of national income
  - d) overstate the change in the real value of production

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- 2) Distinguish between wholesale price index and consumer price index.

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### 7.3 INFLATION DEFINED

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With the background of prices and price level in view we go on to the definition of inflation. We mentioned earlier that inflation is defined as a *persistent* rise or, a tendency towards persistent rise in the *general level of prices*. The adjective ‘persistence’ has to be taken note of. The reason is, if price level goes up today but falls tomorrow then it may not imply inflation, but only short-term fluctuations in prices. The term ‘general price level’ is also important since, over a period of time, prices of some commodities may have gone up while some others may have actually fallen. As a result, on the whole, the average of these prices may remain constant or even go down. Similarly if the price of a group of commodities, which constitute a small fraction of the total value of output of the economy, would go up, then again it might not be inflationary as such. That is, the effect of rise in prices of such commodities might be too small so as to affect the average price level of all the commodities. Thus we see that inflation is a macroeconomic phenomenon and is not concerned with the rise in the price of a particular commodity, or, a small group of commodities.

In Section 7.1, it was pointed out how inflation is likely to affect a household with fixed money income. In many cases, however, some of the income classes actually benefit from inflation or at the least may remain unaffected by it. We will discuss the causes and effects of inflation in the next Unit.

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### 7.4 TYPES OF INFLATION

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On the basis of the severity of inflation or, the rate of acceleration in prices we can divide inflation into three different types, viz., moderate, galloping and hyper-inflation. Further, there are some other related concepts which we discuss below.

#### 7.4.1 Moderate Inflation

When the general price level increases slowly but steadily, it is known as ***moderate inflation***. In the case of India, the Monetary Policy Committee (MPC) resorts to *inflation targeting* at a rate of 4 per cent per annum. The rate of inflation as per targets should not be outside the range of 2 per cent to 6 per cent per annum.

### **7.4.2 Galloping Inflation**

Steady and fairly high rate of increases in the general price level is known as *galloping inflation*. The rate of inflation runs into two digits (20 per cent, 40 per cent, etc.) and sometimes even as high as three digits (i.e., 200 per cent). Some Latin American countries like Brazil and Argentina had experienced inflation rates of over 100 per cent in the 1970s.

### **7.4.3 Hyper-Inflation**

Hyper-inflation is a situation where the rate of inflation is very high. Thus the value of money gets eroded rapidly. In order to cope with such a situation, households minimize their holdings of local currency. Generally it happens in an economy which faces wars and their aftermath, socio-political upheavals or other crisis. In these situations it is very difficult to impose tax on the residents by the government, which leads to fiscal deficit and government has to finance it primarily through money creation rather than imposing taxes or borrowings. In a situation of hyper-inflation, certain functions of money such as 'a store of value' and 'a medium of exchange' are no more valid.

There have been several instances of hyperinflation in various countries. Brazil had hyperinflation during the 1980s. A recent example of hyperinflation is Zimbabwe during 2008-09, where prices almost doubled from one day to the next day. The public used to spend money on food or whatever other commodities they could, rather than holding on to money, as the value of money eroded rapidly. According to some reports, it was impossible to estimate the rate of inflation in 2008 – it was around 79.6 billion per cent in November 2008. As a consequence, the country abandoned its currency and allowed use of foreign currencies for transaction in 2009.

### **7.4.4 Stagflation**

The term stagflation (stagnation plus inflation) refers to the situation where an economy grows very slowly or at zero rate (stagnant) and prices keep rising. The side effects of stagflation are increase in unemployment- accompanied by a rise in prices, or inflation. It raises economic dilemma as the actions designed to lower inflation may worsen unemployment and vice versa. This happened during the 1970s, when crude oil prices rose dramatically, fuelling sharp inflation in developed economies.

### **7.4.5 Deflation**

Deflation is a situation where there is a consistent decline in price level. Here again you have to notice the words 'consistent' and 'price level'. Thus decline in price of a single commodity cannot be terms as deflation. A situation of deflation arises when aggregate demand is lower than aggregate supply. Thus, deflation is characterized by a decrease in output, increase in unemployment, and general slowing down of the economic activities.

**Inflation**

The Great Depression of 1930s is an example of an acute deflation when prices crashed, unemployment increased to a very high level, and GDP of the developed countries fell sharply. There are many adverse effects of deflation. Deflation in a modern economy is bad because it increases the real value of debt, and discourages production in the economy as prices keep falling.

**7.4.6 Core inflation**

The measurement of inflation after removing the transitory or temporary price volatility is known as ‘core inflation’. If temporary price shocks are taken into account, they may affect the estimated overall inflation numbers, which may not match with the actual inflation number. To eliminate this possibility, core inflation is considered to assess actual inflation by removing the temporary shocks and volatility. In India core inflation is calculated on the basis of price increase in manufactured products excluding food products. Thus it does not include agricultural commodities, fuel and energy and food products.

**Check Your Progress 2**

- 1) A price index in years after the base year
  - a. is never 100.
  - b. is always greater than 100.
  - c. is always less than 100.
  - d. can be less than, greater than, or equal to 100.
- 2) The CPI in 2017 was 111.5 and in 2018 was 114.1. The inflation rate is
  - a. 2.3%
  - b. 2.6%
  - c. 112.8
  - d. Insufficient information
- 3) Briefly discuss the various types of inflation.

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**7.5 LET US SUM UP**

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Inflation is a persistent rise in the price level. When there is a rise in the price level, there is a decline in the purchasing power of money. For measuring change in the price level we take the help of the price index. An index number is a device for comparing the magnitude of a group of distinct, but related, variables in two or more time periods. There are two important types of price indices, viz., wholesale price index and consumer price index.

Deflation is a persistent decline in the price level. Hyper-inflation is a situation of very high inflation, which could arise in the aftermath of wars or serious economic crisis in an economy. The severity of most of the costs of inflation enhances during hyperinflation. Stagflation is commonly referred to a situation of stagnation in growth coupled with high inflation. Core inflation is an inflation measure which excludes transitory or temporary price volatility as in the case of some commodities such as food items, energy products, etc.

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## **7.6 ANSWERS/ HINTS TO CHECK YOUR PROGRESS EXERCISES**

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### **Check Your Progress 1**

- 1) d
- 2) Refer to Sub-Section 7.2.2 and answer.

### **Check Your Progress 2**

- 1) d
- 2) a
- 3) Refer to Section 7.4 and answer.



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## UNIT 8 CAUSES AND EFFECTS OF INFLATION\*

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### Structure

- 8.0 Objectives
- 8.1 Introduction
- 8.2 Causes of Inflation
  - 8.2.1 Demand-Side Inflation
  - 8.2.2 Supply-Side Inflation
  - 8.2.3 Quantity Theory of Money
  - 8.2.4 Structural Theory of Inflation
- 8.3 Effects of Inflation
  - 8.3.1 Debtors and Creditors
  - 8.3.2 Fixed Income Groups
  - 8.3.3 Traders and Investors
  - 8.3.4 Agriculturists
  - 8.3.5 Government
- 8.4 Cost of Dis-inflation
- 8.5 Let Us Sum Up
- 8.6 Answers/ Hints to Check Your Progress Exercises

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### 8.0 OBJECTIVES

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After going through this Unit you will be in a position to

- explain the major causes of inflation;
- distinguish between demand pull inflation and cost push inflation;
- explain the quantity theory of money and structural theory of inflation; and
- appreciate the effects of inflation on various sections of people.

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### 8.1 INTRODUCTION

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In the previous Unit we explained the concept and types of inflation. In this Unit we look into the causes and effects of inflation. According to Nobel Laureate Milton Friedman, “Inflation is always and everywhere a monetary phenomenon”. By this he meant that inflation is always higher when money supply exceeds economic growth for a period of time. Monetarists also regard inflation as “too much money chasing too few goods”. Apart from money supply there are several other factors that cause inflation. Further, as we discuss below, inflation affects various sections of society differently.

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## 8.2 CAUSES OF INFLATION

The causes underlying inflation are generally ascribed to the source through which inflation originates. You have learnt from microeconomics that price of a commodity is determined at the level where supply equals demand. If demand exceeds supply there is an increase in price. On the other hand, if supply exceeds demand, price will go down. In either case the price adjustment takes place till demand and supply are equal. However, the source of the change in one case originates from the demand side while in the other case it originates from the supply side. A similar process applies in the case of aggregate demand and aggregate supply also. Depending upon the initial process, we classify inflation into two types, viz., (i) demand-pull or demand-side inflation, and (ii) cost-push or supply-side inflation.

### 8.2.1 Demand-Side Inflation

Factors which increase aggregate demand, while there is no increase in aggregate supply, can cause demand-side or demand-pull inflation. According to the Keynesian view, demand-pull inflation occurs when aggregate demand exceeds aggregate supply at full employment level of output thereby attributing inflation to the relationship between aggregate demand (C+I+G) and full employment level of output. Increase in aggregate demand will take place if there is an increase in (i) Consumption (could be due to increase in income, reduction in saving, or reduction in tax rate), (ii) Investment (due to reduction in rate of interest or optimism in business sentiments), and (iii) increase in government expenditure. Remember that in the Keynesian framework aggregate supply curve is horizontal, upward sloping, and then vertical based on the time period under consideration (LRAS in Fig. 8.1). Let us assume that the current level of aggregate demand is  $AD_1$ . The equilibrium price level is  $P_1$  and the level of real output is  $Y_1$ . As you can observe from Fig. 8.1, at output level  $Y_1$ , there is under-utilisation of production capacity. In other words, the economy is operating below the full employment level  $Y_{FE}$ . An increase in aggregate demand (from  $AD_1$  to  $AD_2$ ) in this situation (for example, due to a rise in government spending), will lead to an increase in real output (from  $Y_1$  to  $Y_2$ ). You should note that there is no increase in prices in this situation as the supply curve is infinitely elastic (horizontal part of the LRAS curve in Fig. 8.1).

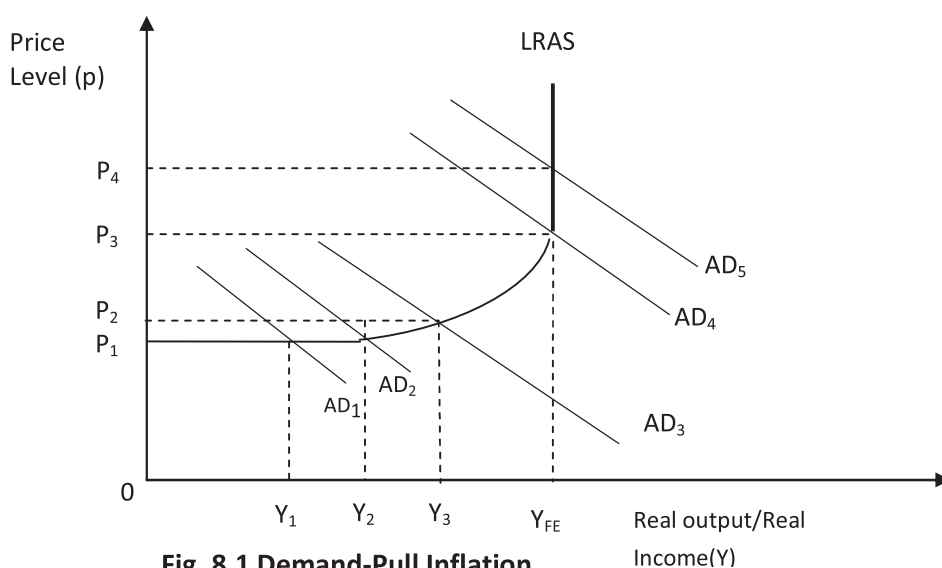


Fig. 8.1 Demand-Pull Inflation

## Inflation

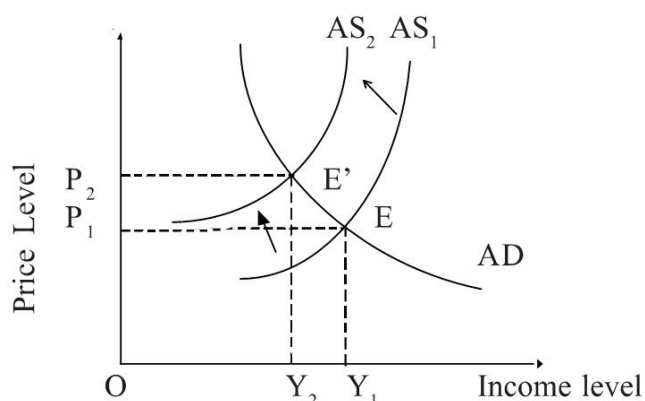
Further increase in government spending however would result in increases in output and prices. A shift in the AD curve from  $AD_2$  to  $AD_3$  will increase real output (from  $Y_2$  to  $Y_3$ ) but the price level will also rise (from  $P_1$  to  $P_2$ ). This is because producers are not willing to supply more at the existing price  $P_1$ ; they are willing to supply output  $Y_3$  only at a higher price, that is,  $P_2$ . The result is similar if AD increases from  $AD_3$  to  $AD_4$ . At this stage, the economy is approaching the full employment level of output ( $Y_{FE}$ ); some production units have some spare capacity but others are operating at full capacity. Under such a situation increase in aggregate demand will result in price rise in some industries, and so a rise in the average price level when AD rises. Further increase in AD (from  $AD_4$  to  $AD_5$ ), when the economy is at full employment output, will result in price rise without any increase in the level of output.

### 8.2.2 Supply-Side Inflation

Keynesian theory of cost-push inflation attributes the basic cause of inflation to supply-side factors such as increase in wage rate or unexpected rise in raw material prices. Cost-push inflation is usually regarded as wage inflation process as wages constitute a substantial part of total costs of production. Powerful and militant trade unions often bargain for higher wages. If increase in wage rate is the same as the growth rate in productivity of labour, then average cost of production does not increase. If trade unions succeed in negotiating a higher wage increase, not matched by productivity growth, then cost of production increases. Such a situation forces producers to increase prices of the goods and services they produce. This kind of inflation is known as **wage-push inflation**. A pre-requisite for wage-push inflation is unionization of labour.

The workers, faced with inflation in the economy, often demand a rise in wage rate. The producers often comply with such demands. As the cost of production increases, the firms increase the price of the product. Further, the firms increase the price of their products so that they can have higher profits. When the prices of goods and services increase, workers demand higher wages to compensate for price rise. In this process, a series of increase in wage rate leads to a series of increase in prices. This sort of a situation leads to a **wage-price spiral**. A pre-requisite for firms to increase prices is market imperfection. In a market with many competitors, a firm would have limited scope for increasing prices.

Suppose AD is the aggregate demand curve and  $AS_1$  is the aggregate supply curve. Thus, the economy operates at equilibrium output  $Y_1$  and equilibrium price level  $P_1$  (see Fig. 8.2). Suppose there is a shift in the aggregate supply curve from  $AS_1$  to  $AS_2$  due to increase in the cost of production. The shift in the AS curve indicates that the supply of the same level of output can be made only at a higher price. The new equilibrium point is  $E'$  with equilibrium output  $Y_2$  and equilibrium price level  $P_2$ . Note that, in this case, there is a decline in output and increase in price level.



**Fig. 8. 2 Cost-Push Inflation**

### 8.2.3 Quantity Theory of Money

The discussion above reflects the explanation offered by Keynesian economists. The Monetarist view, however, is different from the Keynesian explanations. The Monetarists use the '**Quantity Theory of Money**' (discussed in another Unit of this course) to explain the causes of inflation. Recall the 'equation of exchange' used in the Quantity Theory of Money

$$MV = PY$$

where:

- M = quantity of money in circulation in the economy
- Y = real national income
- P = price level
- V = velocity of circulation, the speed at which money circulates in the economy

The quantity theory of money is based on two assumptions, viz., (i) that money is 'neutral', and (ii) velocity of circulation (V) is constant for any given situation. The neutrality of money, based on the dichotomy of the market, implies that changes in money supply do not affect the level of output. The monetarists argue that output (Y) is a real variable, which is driven by real factors only. Aggregate output (Y) is constant (AS curve is vertical) as there is full employment in the economy. Full employment is maintained through flexibility in wage rate and prices.

The Monetarists use the equation of exchange to simplify the explanation of how monetary policy works. The two sides of the equation of exchange must always be in balance. If V is constant and Y cannot be changed by an increase in M, then the *only* part of the equation that can be changed by an increase in M is P. So, if the Central Bank increases the money supply leading to a rise in M, the result *has to be* a proportional increase in P. The observed long-run relationship between money and prices supports the monetarist view that over expansion of money supply could result in higher inflation, and that inflation can be prevented by appropriate regulation of money supply.

### 8.2.4 Structural Theory of inflation

The structural theory of inflation, as developed by Myrdal, Streeten and several other Latin American economists, attributes the phenomenon of inflation to structural factors or structural rigidities, generally found in developing economies. The structural theory refers to the resource gap (i.e., saving is less than investment), food-shortages (resulting from dependence of agriculture on rainfall), foreign exchange scarcity, and poor infrastructural facilities. All these structural factors, according to the structural theory of inflation, are the real causes of inflation in developing countries.

The structural theory came to the fore in the 1970s when the world was confronted with a situation of rising prices coupled with high unemployment (stagflation), something that demand-pull theories could not explain. It was observed that the two oil price shocks in the 1970s, which were essentially supply-side shocks (because they increased the cost of production), were capable of producing such a situation. Structural economists, on their part, argue that in developing countries, in addition to money, structural factors such as supply and demand conditions also play an equally important role in determining price in the economy. Financing public investment through money expansion increases productive capacity and real output, while real output, at the same time, would increase the demand for money. Further, the concern of the government to maintain a desired level of real public expenditure leads to increase in nominal expenditure of the government leading to rise in prices.

Although this strand of thought invited criticism, we should not deny that supply of goods and services matters. Government intervention to increase productivity for example by encouraging research and development, may well contribute in combating inflation in the longer term.

#### Check Your Progress 1

- 1) Match the following:
 

1. Inflation	a. when inflation is due to excess demand
2. Hyper-inflation	b. sustained increase in the price level
3. Demand-pull inflation	c. inflation due to rise in production costs
4. Cost-push inflation	d. an accelerating increase in the price level
  
- 2) An increase in oil prices, such as the oil shocks in the 1970s, lead to \_\_\_\_\_, thereby causing \_\_\_\_\_.
  - a) a movement along the AS curve; cost-push inflation
  - b) a leftward shift in the AS curve; demand-pull inflation
  - c) a rightward shift in the AS curve; cost-push inflation
  - d) a leftward shift in the AS curve; cost-push inflation

3) Distinguish between demand-pull and cost-push inflation.

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### 8.3 EFFECTS OF INFLATION

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Inflation reduces the value of money thereby leading to erosion of purchasing power. If the nominal income of a person is increasing at a rate higher than the rate of inflation, her real income (i.e., nominal income divided by price level) will be increasing. On the other hand, if the nominal income of a person is increasing at a rate lower than the inflation rate, her real income is declining.

Broadly, there are two economic groups in every society, the fixed income group and the variable income group. The fixed income group usually suffers as their real income declines with inflation. On the other hand, people with variable income such as industrialists, traders, real estate holders, and speculators may gain during rising prices. Generally speaking, which income group of the society gains or losses from inflation depends on who anticipates inflation and who does not. Those who correctly anticipate inflation can adjust their present earnings, borrowing and lending activities accordingly.

Some people, mainly from poorer background, are habituated to hold cash; even they do it during high inflation. The value of money erodes during inflation; therefore, there is a cost associated with holding of cash. The cost accrued for such a feature is often called 'inflation tax'. This is not an actual legal tax paid to the government; rather it refers to the penalty for holding cash at a time of high inflation. For example, suppose you are holding Rs. 1000 in cash and the inflation rate is 10 per cent. After one year, the cash you are holding will be the same (i.e., Rs. 1000) while purchasing power of money will decline by 10 per cent (i.e., goods which are available for Rs. 100, will be priced at Rs. 110 after one year). Thus, the cash you are holding will be equivalent to Rs. 900 only in today's prices.

If an investor is holding securities, real estate or other assets, the effect of inflation may be negligible. We discuss below the effect of inflation on different segments of society.

### 8.3.1 Debtors and Creditors

During periods of rising prices, debtors gain and creditors lose. When prices rise the value of money falls. Though debtors return the same amount of money (or nominal money), they pay less in terms of goods and services (or real money). This is because the value of money is less than when they borrowed the money. Thus, the burden of the debt is reduced and debtors gain.

On the other hand, creditors lose. Although they get back the same amount of money which they lent, they receive less in real terms because the value of money falls. Thus, inflation brings about a redistribution of real wealth in favour of debtors at the cost of creditors.

### 8.3.2 Fixed Income Groups

Persons with fixed salary are at a loss when there is inflation. The reason is that their salaries are slow to adjust when prices are rising. Workers may gain or lose depending upon the speed with which their wages adjust to rising prices. If the labour unions are strong, workers may get their wages linked to the cost of living index. In this way, workers may be able to protect themselves from the adverse effects of inflation. There is often a time lag between the raising of wages by employers and the rise in prices. Thus, workers lose because by the time wages are hiked, the cost of living index has increased further. Moreover, if the workers have entered into contractual wages for a fixed period, they lose when prices continue to rise during the period of contract. Overall, the wage earners are in the same position as the white-collar workers.

The recipients of 'transfer payments' such as pensions, unemployment benefits, social security, etc. and recipients of interest and rent live on fixed incomes. All such persons lose during inflation because they receive fixed payments for a period, while the value of money continues to fall.

### 8.3.3 Traders and Investors

Proprietary income earners such as producers, traders and real estate holders gain during periods of rising prices. Let us discuss the case of the producers. When prices are rising the value of their inventories (goods in stock) rise in the same proportion. So, their profits go up as their sales go up. The same is the case with traders in the short run. But producers receive more profit in another way – input prices do not increase in the same proportion as output prices. This is because wage rate and prices of certain raw materials increase with a time lag. The owners of real estates are gainers during inflation because the prices of landed property usually increase faster than the general price level.

### 8.3.4 Agriculturalists

Agriculturists are of three types, viz., landlords, peasant proprietors, and landless agricultural workers. Landlords lose during rising prices because they get fixed rents. Peasant proprietors, however, who own and cultivate their farms gain.

During periods of high inflation, prices of farm products increase faster than the cost of production – wage rate and land revenue do not rise to the same extent as the rise in the prices of farm produce. Landless agricultural workers, however, are hit hard by rising prices. Their wages are not raised by the farm owners; government does not revise minimum wages frequently and trade unionism is absent among them.

### 8.3.5 Government

The government as a debtor gains at the expense of households who are its principal creditors. This is because interest rates on government bonds are fixed and are not raised to offset expected rise in prices. The households however stand to gain as tax payers. The taxes are paid with a lag, on income earned during the year, and the real value of taxes is reduced because of inflation. Thus, the net effect on households while dealing with the government is complex. As creditors, real value of their assets declines and as tax-payers, real value of their liabilities declines during inflation.

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## 8.4 COST OF DIS-INFLATION

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In the previous section we saw that inflation results in re-distribution of income and the lower income groups suffer the most. High inflation is seen to have led to discontent among people; sometimes leading to political instability and fall of government in many countries. Thus, the consequences of inflation are not only economic, but also social and political. In view of this, policy makers always try to control inflation. In fact, many countries, including India, pursue 'inflation targeting' as the only objective of monetary policy. When there is high inflation, the government has to adopt a tight monetary policy so that aggregate demand is brought under control. The policies are geared towards reduction of the inflation rate, that is, dis-inflation.

During periods of high inflation, there is fair chance that government revenue is much less than government expenditure resulting in huge fiscal deficits. In order to finance the deficit, the government has three options, viz., (i) borrow from public, (ii) run down on foreign exchange reserve, and (iii) print money. Usually a government running huge deficit is already under heavy debt and paying a high amount of interest. Hence, further borrowing becomes difficult. Moreover, such governments also have low foreign exchange reserve and therefore, printing money becomes an easy option which fuels the rate of inflation. You can recall the Indian condition in 1990-91 when it was loaded with heavy debt, foreign exchange reserve was abysmally low, and there was double-digit inflation. In general, high inflation puts the economy out of gear and it becomes difficult to maintain economic stability.



## Inflation

For reducing the rate of inflation, policy makers in an economy have to reduce aggregate demand, through imposition of restrictions on consumption and investment, and cutting down on government expenditure. When investment (both private and public) is reduced, there is an adverse effect on economic growth (remember that the multiplier effect works for decrease in investment also). Further, with the decline in investment, there is a fair chance that unemployment in the country will increase. In fact, the ‘Phillips Curve’ (to be discussed in another Unit) describes the relationship between inflation and unemployment. Empirically it is observed that the relationship between inflation and unemployment is inverse, at least in the short run. An implication of the *Phillips Curve* is that a lower rate of inflation is possible only if the government is willing to accept a higher rate of unemployment. Thus, there could be a trade-off between inflation and unemployment in the short run. Higher unemployment brings in another set of problems – lower economic growth, growing poverty, social discontent, and possibility of political instability.

### Sacrifice Ratio

Slower economic growth puts pressure on fiscal targets – revenue generation is adversely affected as growth rate slows down while government expenditure increases due to cost escalation. The high fiscal deficit is a source of not only inflation, but also government debt. Very often we measure the cost of inflation in terms of ‘Sacrifice Ratio’, which is defined as follows:

$$\text{Sacrifice ratio} = \frac{\text{Percentage loss of output}}{\text{Percentage decline in inflation rate}}$$

For example, for a country, inflation declined by 2 per cent while output declined by 5 per cent. Thus, sacrifice ratio is  $5/2$ , that is, 2.5. The sacrifice ratio indicates the potential output that has to be sacrificed for reducing inflation by one per cent.

### Cold Turkey or Gradualism

In the process of disinflation, a question arises: whether the policy makers should go for a rapid decline in inflation rate or they should follow such a policy that reduction in inflation is gradual. The classical economists suggest that disinflation process should be rapid – this strategy is sometimes referred to as ‘cold turkey’. According to this view, government policy of disinflation should be visible, and people should believe that the government is sincerely trying to reduce inflation. In the process it will reduce expected inflation. The Keynesian economists however suggest a ‘gradual approach’, as there are several frictions in the economy. In an economy there are several wage contracts which require time to expire and thus some time is required for the economy to adjust to the new inflation target set by the government. During the adjustment period the unemployment rate could be very high. According to the Keynesian view, the

cold turkey approach may not lower inflation expectations, because people may doubt whether it is possible to bring down inflation so rapidly. Further, according to them, the cost of rapid decline in inflation would be enormous in terms of high unemployment and unsustainable politically.

**Check Your Progress 2**

- 1) Unexpected inflation will (tick the correct answer)
  - a. Hurt borrowers.
  - b. Hurt lenders.
  - c. Hurt borrowers and lenders equally.
  - d. Have no effect on either borrowers or lenders.
- 2) Give a brief account the cost of dis-inflation for an economy.

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**8.5 LET US SUM UP**

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There are mainly two types of inflation, viz., (i) demand-pull inflation, and (ii) cost-push inflation. Both types of inflation cause an increase in the overall price level within an economy. Demand-pull inflation occurs when aggregate demand for goods and services in an economy rises more rapidly than an economy's productive capacity. Cost-push inflation, on the other hand, occurs when prices of production process/factor inputs increase. Rapid wage increases or rising raw material prices are common causes of this type of inflation. In the long run, inflation occurs because of expanding money supply. However, there are several factors such as business cycles, international oil prices, and changes in exchange rate that can cause inflation in the short run. Also, we learnt from the structural theory of inflation that structural factors such as saving-investment gap, food shortages, foreign exchange scarcity, and infrastructural bottlenecks are the real causes of inflation in developing countries.

Inflation has economic, social and political implications. Inflation leads to re-distribution of wealth, usually in favour of the rich. Further, we discussed the effect of inflation on various sections of society. Certain groups of people in society are affected by inflation more adversely than others. Generally, people with fixed incomes such as workers, salaried persons, teachers, pensioners, interest and rent earners, are made worse off during inflation because their incomes do not increase as fast as the prices.

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## 8.6 ANSWERS/HINTS TO CHECK YOUR PROGRESS EXERCISES

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### Check Your Progress 1

- 1) 1-b, 2-d, 3-a, 4-c.
- 2) d
- 3) According to the Keynesian view, demand-pull inflation occurs when aggregate demand exceeds aggregate supply at full employment level of output thereby attributing inflation to the relationship between the aggregate expenditure (C+I+G) and full employment level of output. Refer to Sub-Section 8.2.1.

Keynesian theory of cost-push inflation attributes the basic cause of inflation to supply side factors, particularly to the possibility that rising production costs will lead to inflation. Refer to Sub-Section 8.2.2.

### Check Your Progress 2

- 1) b
- 2) Refer to Section 8.3 and answer.

