

INFLATION (PART 3)

(NOTE- THIS LECTURE IS COMPILED FROM BOOK BY PROF. L.N. DUTTA AND INTERNET)

THEORIES OF INFLATION

Inflation is a process of persistent rise in price-level. Among major theories, there are: (a) classical theory, (b) Keynesian theory and (c) modern version of a combination of demand inflation, cost inflation and economic growth theory of inflation.

A) **The classical theory** of inflation based on the quantity theory of money, states that if the quantity or supply of money is in excess of the total quantity or supply of goods and services, the price level increases. The total supply of goods and services is constrained by the total available productive resources.

In other words, when productive resources are fully employed so that output is at potential level, there is no further scope of expanding output. In such a situation, if supply of money is increased leading to excess purchasing power of the people, the general level of prices must rise. Often this phenomenon is described as 'too much money chasing too few goods'.

In addition, the classical quantity theory stresses that price-level will be increasing exactly in proportion to the increase in quantity of money. For instance, if quantity of money increases by 10 per cent, price-level will also rise by 10 per cent. It is immediately obvious from this classical explanation that inflationary process can be controlled by controlling the quantity of money, since there is direct linkage between the two.

B) Keynes' Inflationary Gap Analysis:

Lord Keynes, in his "How to Pay for War" (1940), provided an analysis in terms of "inflationary gap" which is essentially excess demand version of inflation.

Consider Fig. below where OY_F is national income corresponding to the level of full-employment. Equilibrium at national income OY_F would be established only when aggregate demand or total expenditure ($C + I + G$) is equal to Y_{FE} (Y_{FE} is equal to OY_F).

Real national income cannot increase beyond OY_F because when all means of production including labour are fully employed, there is no possibility of further rise in production or real national income. Thus when aggregate demand is greater than the aggregate demand Y_{FE} which is required to establish the equilibrium at OY_F level of national income, the

equilibrium would not be established at OY_F .

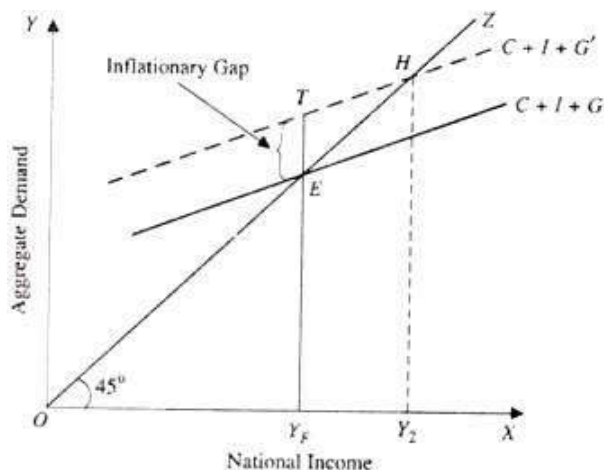


Fig. 5.10. Inflation Gap

It would be seen from Fig. above that aggregate demand Y_FT is greater than aggregate demand Y_FE which is required to maintain the equilibrium at OY_F . Thus with the level of aggregate demand ($C + I + G'$), which is obtained by adding expenditure ET to the aggregate demand curve $C + I + G$, equilibrium would not be established at OY_F which corresponds to full-employment level of income. The actual aggregate demand being greater than Y_FE by the amount ET the level of national income would be greater than OY_F .

Since OY_F is full-employment level of national income, actual production cannot increase beyond that but there would be rise in prices which would raise the money value of OY_F production. The amount by which the actual aggregate demand exceeds the level of national income corresponding to full employment is known as inflationary gap because this excess of aggregate demand causes inflation or rise in prices in the country.

In Fig. above this excess of aggregate demand or inflationary gap is equal to ET . It would be seen from Fig. 5.10 that the aggregate demand curve $C + I + G'$ intersects 45° line (OZ line) at H so that equilibrium level of national income would be OY_2 .

It should be carefully understood that there is no difference between OY_F and OY_2 in terms of real income or actual production; only as a result of rise in price level, national income has increased from OY_F to OY_2 in money terms. Inflationary gap represents excess demand in relation to aggregate production or supply of output which brings about demand-pull inflation.

Now, the question is whether this inflationary gap will be automatically closed or will continue to widen leaving room for ever increasing inflationary process.

There are several possibilities on which this depends:

1. If money supply (M) is constant or rises in smaller proportion than price-level, the rate of interest (r) will rise; so investment (I) will be reduced, thus keep reducing the inflationary gap. This may also, to a certain extent, reduce consumption expenditure (since higher rate of interest may promote savings tendencies).

2. Higher prices may reduce the real value of wealth held in the form of government debt and

other forms of wealth. In addition to this price effect, higher rate of interest means lower price of bonds. So bond incomes decline with its adverse effect on the consumption expenditure implying a shift in C curve downward. The inflationary gap is thus likely to be reduced.

3. With international trade and “net exports” (exports — imports) forming component part of aggregate demand, inflation raises the domestic price of goods, so domestic goods become costlier relative to foreign goods, This tends to increase imports and reduce exports. The net exports part, therefore, gets reduced and the inflationary gap is likely to be reduced.

4. The redistribution of income in favour of the profit earners, as we have already seen earlier, results in lower aggregate demand provided the $M.p.c. + m.p.i$ (marginal propensity to consume and marginal propensity to invest) of profit earners is less than those of the wage earners (which is the most likely case). So, inflation, through such distribution helps reduce aggregate demand and also the inflationary gap. However, given that permanent redistribution of income due to inflation is not possible and possibly, after a time lag, money wages tend to rise in Proportion to price rise, inflationary gap via this route is likely to remain there.

5. The inflationary gap may be induced in case rising prices induce the consumers and investors to expect further price rise in future. This expectation may tempt them to purchase more and invest more in the present to “beat” the likely price rise. Thus, the current aggregate demand will be pushed up and the inflationary gap will be widened.

On the other hand, if the expectation is that the current rise in prices is temporary and likely to be followed by price decrease even to a greater extent, both consumers and investors may postpone some of their current purchases (or, reduce inventories by investors), the aggregate demand curve may be shifted downward and help reducing the inflationary gap.

Thus, the extent the inflationary gap will be automatically bridged depends upon several factors. While some factors help reduce the gap, others may accentuate and widen it. In fact, the entire process of price rise is dynamic in nature and without understanding the underlying dynamic behaviour cannot be predicted if the inflationary process will be halted.

c) Demand Pull Inflation

The Keynesian inflationary gap analysis represents a variety of demand pull inflation. Using the general analytical framework of aggregate demand and aggregate supply the demand pull inflation can be explained in the following manner:

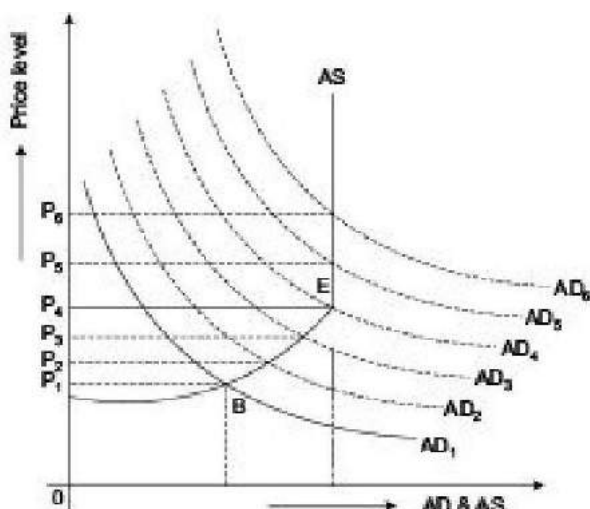
Demand pull inflation can develop irrespective of the full employment level of output (potential output) provided one or more components of aggregate demand gets boosted — for instance, consumption expenditure, private investment expenditure, government investment expenditure or net export — and supply of output fails to respond to sufficient extent, prices will rise in the short run.

Private consumption demand might be boosted due to rise in income levels of individuals arising out of better employment opportunities and government or private expenditures on various kinds of development and social projects.

Similarly, private investment demand may rise due to massive innovations, opening of new territory, etc. An example, in this regard, is the telecom sector development in India and elsewhere which have encouraged enormous private sector investment. Similarly, real estate sector development in India has been largely responsible for growth of private investment since these investment projects have been mostly financed by the banking and financial sectors.

However, the most typical of the demand-full inflation is the government expenditures incurred in times of wars or war-like situations. In the recent past many such situations have occurred (US-Iran, Russia-Afghanistan) including constant preparations and arm-build up between India and Pakistan. These war and defence expenditures from the side of the government greatly boost government demand for various goods and services with immediate impact on the price-level to go up.

Lastly, if the “net exports” of a country rise resulting in higher net incomes from abroad, these are translated into higher price-level at home country. Using the aggregate demand-aggregate supply framework (AD-AS framework), the phenomenon of inflationary process can be explained as shown in the figure below



Given the original aggregate demand curve, AD_1 , and short-run AS curve AS, price-level settles at point P1. For every rise in any the components of AD, AD curve shifts to the right, for instance to AD_2 , AD_3 , and so on and with it the price-level also rises.

However, it rises in response to the supply elasticity. Since aggregate supply curve also rises in the short run, price-level rises but not quite sharply. Only beyond point E, aggregate supply curve is unable to respond to rise in AD. AS curve is completely inelastic. Hence, beyond point E, price level rises more rapidly — from P4 to P5 and P5 to P6.

This is how the demand-pull inflation arises and continues unabated until appropriate demand management policies are applied to check the inflationary process.

d) Cost-Push Inflation

Cost-push variety of inflation is, in fact, the result of rise in various input costs of production being passed on to the price-level of final products— by producers, by service providers, by

businesses and also by the government. On most occasions, wage-bargaining by labour unions can act as market power in raising wage rates which are ultimately included by the employers in their product prices.

Mark-up pricing by sellers is one of the elements of cost-push type of inflation. In most situations, sellers add, over and above: the total cost of production, a certain percentage to their product prices — known as ‘mark-up’ by sellers. In fact mark-ups are done to ensure a certain target rate of return for the producers.

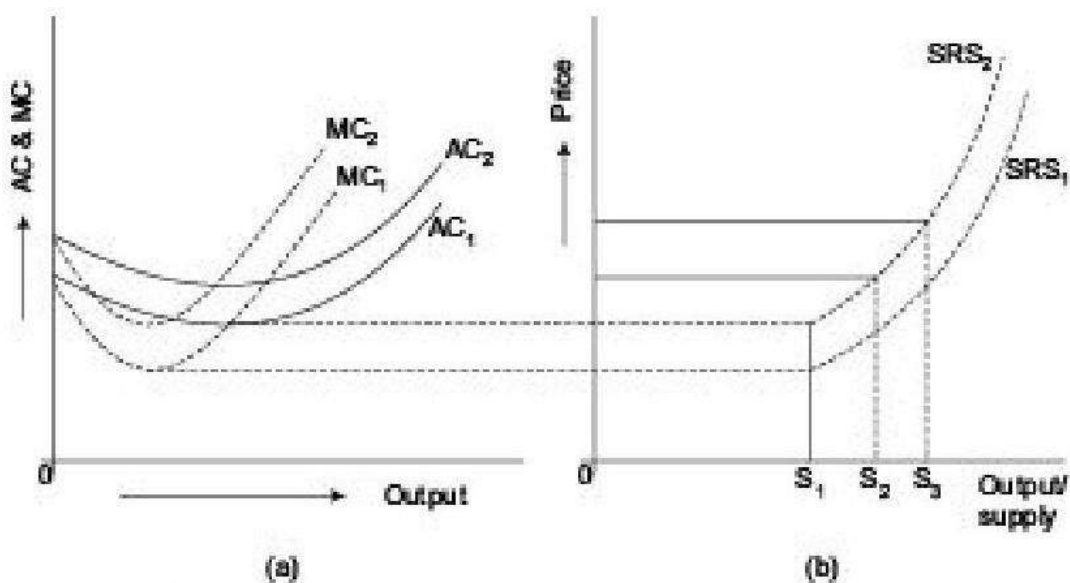
The most glaring example of cost-push inflation is the continuous rise in fuel prices. Fuel being an important input in a number of production activities, naturally finds its reflection in the price-level of final products.

In an agricultural production process, if prices of fertilizers, water charges for irrigation, cost of transportation or agricultural wage rates rise, these are normally reflected in higher prices of agricultural produce.

If government imposes levies or taxes on any item of industrial product, agricultural product, inputs or services of any kind, prices of related products are bound to go up.

‘Cost-push inflation can be illustrated with the help of cost curves that characterize individual producing firms. As we know from microeconomics, short-run cost curves can be shown in terms of marginal cost and average cost curves. We also know that the industry supply curve can be derived from the firm-level marginal cost curves. Now, when raw material costs rise for any item of variable costs rises for firms, their marginal cost curve (and, of course, associated average cost curve) shift upward for each level of output as shown in Fig. (a). Figure (b) has been obtained by showing MC curve as supply curve for the firm since, in the short run, the rising part of MC curve represents the supply curve. For the industry as a whole, individual supplies are aggregated to get industry supply curve.

Figure (a) depicts two MC and two associated AC curves which have their usual shapes in the short run. MC, (and AC,) have been drawn on the assumption of no increase in any of the variable cost items. Shift of MC₁ and AC₁ to MC₂, and AC₂, indicates that



any or some of the items of marginal cost (short-run variable costs are marginal costs) increase for the firm which it adds to the original marginal cost.

By horizontally summing the MC curves across firms and relating them with output prices, we obtain the short-run supply curves of the firm. We may mention here that we are particularly interested in the rising parts of the MC curves, which, translated into supply curves, look like SRS1, and SRS2. While SRS1, shows different levels of output (and supply) at each price of output, SRS2, shows that for the same level of output (and supply) now the firms charge higher price. Hence, the parallel shift in the SRS curves.

NOTE----

Derivation of Supply Curve from Rising Part of Marginal Cost (MC) Curve.

Supply curve finds its origin from the rising portion of marginal cost curve in a perfectly competitive market.

Referring to the diagram given below, a producer is in equilibrium at point E (not at point W) as conditions of producer equilibrium are satisfied at point E (Refer to section 8.1 of chapter 8 for details). So at OP price the output produced by the producer is OM.

If price is OP_1 , the producer is in equilibrium at point E_1 ($MR=MC$), therefore he supplies OM_1 at price OP_1 . Further if the price rises to OP_2 , equilibrium is at point E_2 ($MR=MC$) and quantity supplied is OM_2 . At E_3 quantity supplied is OM_3 .

For profit maximizing firm the price must be greater than or equal to AVC because if

- (i) Price is below AVC, a firm will not produce. The firm is not able to recover its variable cost e.g., at price equal to OP_0 , the price charged by the firm is less than minimum AVC (OP). Hence the firm will produce zero output.
- (ii) Price = AVC represented by point E where price = AVC = OP. Hence a firm will produce OM level of output. Here the firm is just able to recover its variable cost.
- (iii) Price at AVC represented by points E_1 , E_2 and E_3 then firms increase production. At E_1 , the price (OP_1) charged by firm is higher than its minimum AVC(OP). Hence a firm will increase production from OM to OM_1 similarly at E_2

Hence we observe that the producer produces and supplies more at higher levels of price which also satisfies law of supply indicating positive relation between price and quantity supplied. The supply curve we obtain from the diagram which shows that the firm produces that level of output where market price is greater than or equal to minimum AVC. Thus the firm's MC curve above the minimum AVC curve becomes the firm's supply curve

