

## Working of Contractionary Monetary Policy: A Diagrammatic Presentation

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### Abstract

Monetary policy is central bank's policy to govern the money supply and interest rates in the economy to influence output, employment, and prices. The main instruments of monetary policy include open market operations, repo rate, reserve requirements for banks etc. Monetary policy has many objectives like controlling inflation, promoting growth and employment and ensuring stability in exchange rate and Balance of Payments. Monetary policy is considered to be a very effective tool especially in controlling the inflation. The central bank usually adopts a contractionary monetary policy to contain the prices. A contractionary monetary policy is the one in which the central bank increases the interest rate, CRR and resorts to open market sales of government securities with the goal of reducing the aggregate demand in the economy. This contraction in aggregate demand helps in controlling the prices. The current paper strives to diagrammatically explain the working of a contractionary monetary policy for checking the inflation. The first section explains the concept of monetary policy. The second section elucidates the meaning of contractionary monetary policy. The third section illustrates the derivation of aggregate demand curve. The fourth section enlists some of the most common reasons for inflation whereas the final section explains the working of the contractionary monetary policy using diagrams.

**Key Words:** Monetary Policy, Contractionary Monetary Policy, Interest Rate, Aggregate Demand

### MEANING OF MONETARY POLICY

Monetary policy is central bank's policy of managing money supply and interest rates. It is mainly aimed at achieving macroeconomic goals such as controlling inflation, boosting economic growth and ensuring liquidity. In other words, monetary policy is central bank's policy to govern the money supply and interest rates in the economy to influence output, employment, and prices. The main instruments of monetary policy include open market operations, repo rate, reserve requirements for banks etc.

Monetary authorities across the world are expected to achieve stable rise in gross domestic product (GDP), maintain low rates of unemployment and ensure a reasonable rate of inflation. Monetary policy can be used in combination with or as an alternative to fiscal policy. The fiscal policy is government's policy which uses taxes, government borrowing and spending to manage the economy. The Central Bank is in charge of monetary policy. Central bank generally tries to achieve the dual objective of achieving maximum employment (with around 5 percent unemployment) and stable prices (with 2 to 3 percent inflation). It is the central bank's responsibility to balance economic growth and inflation.

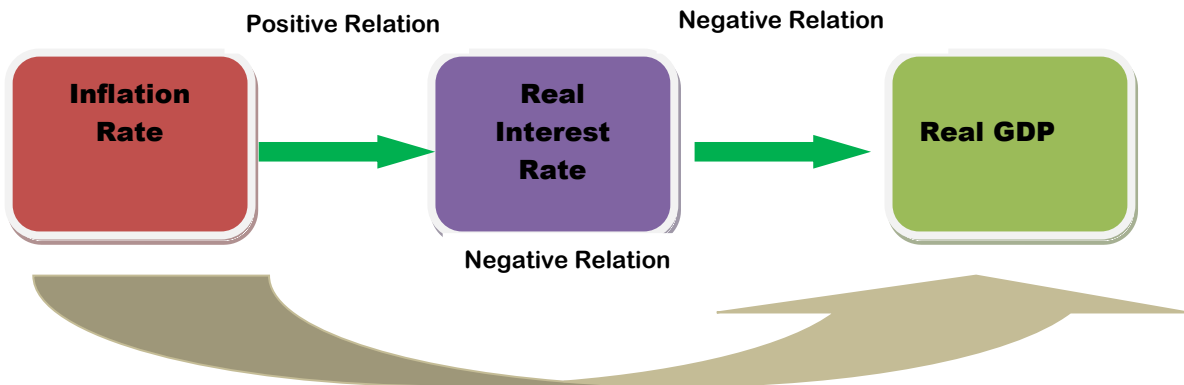
### MEANING OF CONTRACTIONARY MONETARY POLICY

Monetary policy is broadly categorized as expansionary or contractionary. If the country is facing a high unemployment rate during a slowdown or a recession, the monetary authority can opt for an expansionary policy aimed at increasing economic growth and expanding economic activity. As a part of expansionary monetary policy, the monetary authority often reduces the interest rates through various measures that make money saving relatively unfavorable and promotes spending. It leads to an increased money supply in the market, with the hope of boosting investment and consumer spending. Lower interest rates mean that businesses and individuals can take loans on convenient terms to expand productive activities and spend more on expensive consumer goods. An example of this expansionary approach is the low to zero interest rates.

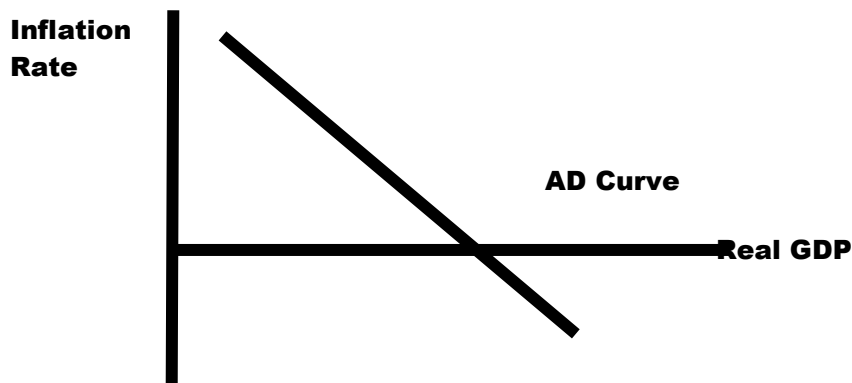
Contractionary monetary policy, on the other hand, is the one which is used to control inflation in the economy. The central bank increases the interest rate under the contractionary monetary policy so as to slow-down the growth of the money supply and thereby brings down inflation. This can also decelerate economic growth and augment the unemployment, but is often required to tame inflation.

**AGGREGATE DEMAND CURVE**

The aggregate demand (AD) curve is a negative sloped curve with respect to inflation rate. If the rate of inflation is taken on the vertical axis and the AD or Real GDP ( $AD = \text{Real GDP} = C + I + G + X$ ) is taken on the horizontal axis, we will get a downward sloping AD curve. The inverse relation between the rate of inflation and AD is via real interest rate. Whenever there is inflation in the economy, the central bank tends to increase the rate of interest. Due to a higher interest rate, there is a fall in consumption expenditure (C), investment expenditure (I) and net exports. Therefore the AD ( $C + I + G + X$ ) decreases.



The above inter-relationship gives the following diagram.



**POSSIBLE CAUSES OF INFLATION**

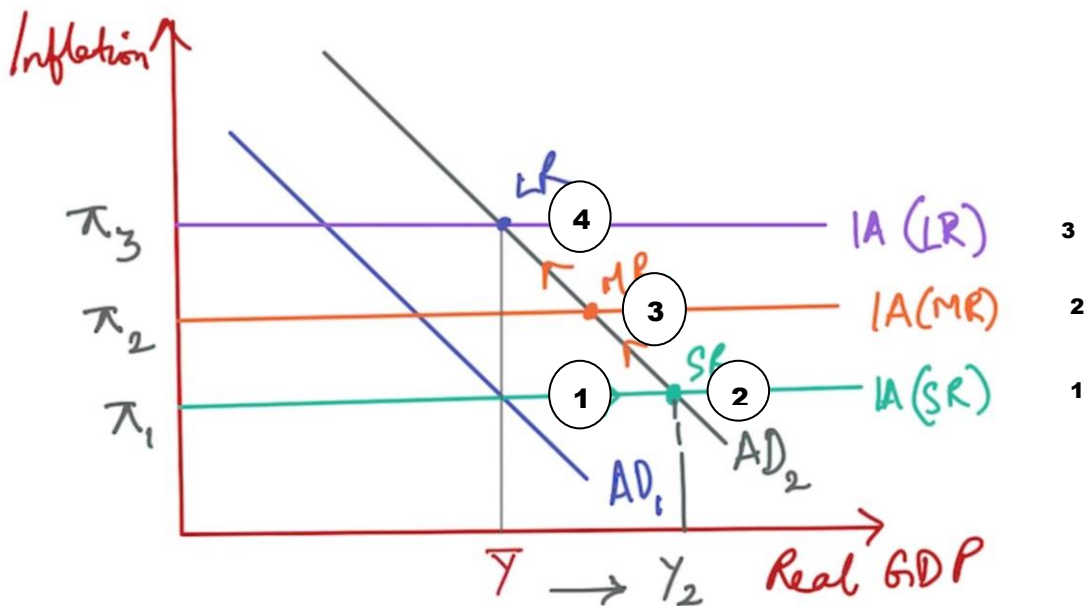
When the demand for the products exceeds the supply, then the excess demand leads to inflation in the economy. Similarly, if the prices of various factors of production increase, the prices of the goods and services also increase. Some of the important demand and supply side causes that result into inflation are:

- *Increase in Public Spending:* Whenever the government increases its spending on various projects, it creates income for the people. The increase in the purchasing power of the people due to additional incomes increases the aggregate demand in the economy. This causes inflationary pressure.
- *Deficit Financing:* When the government's expenditure exceeds its income, it asks the central bank to print new currency. This increase in liquidity is also responsible for price rise. After all, inflation means too much money chasing too few goods.

- *Increased Velocity of Circulation:* A sudden increase in the velocity of money is also responsible for increase in money supply. Sometimes, it is not the money but its velocity which increases, resulting into inflation.
- *Population Growth:* An increase in population is also a cause for increase in demand for goods and services. This also results into demand-pull inflation. That is the reason that more populous countries face higher inflation.
- *Hoarding:* When producers create artificial scarcity, it raises the prices of the goods which are hoarded by the traders. This too is a cause of inflation.
- *Actual Shortage:* Sometimes due to the natural factors like draughts and famines, there is actual shortage of food grains and other basic necessities.
- *Exports:* The foreign demand for the domestic goods also contributes to inflation. The aggregate demand includes net exports besides consumption, investment and government expenditure. So an increase in demand for exports also causes increase in aggregate demand and inflation.
- *Tax Reduction:* When the government reduces the tax-rate, the disposable income of the people increases. This will result into higher demand and higher prices.
- *Imposition of Indirect Taxes:* If the government increases the indirect taxes like GST, it makes the products expensive. Thus imposition of indirect taxes can be a reason for inflation.
- *Price-rise in the International Markets:* One of the most important reasons for inflation is increase in the price of crude oil. Once the crude oil becomes expensive, it makes the transportation of each product expensive resulting into an overall inflation in the economy.

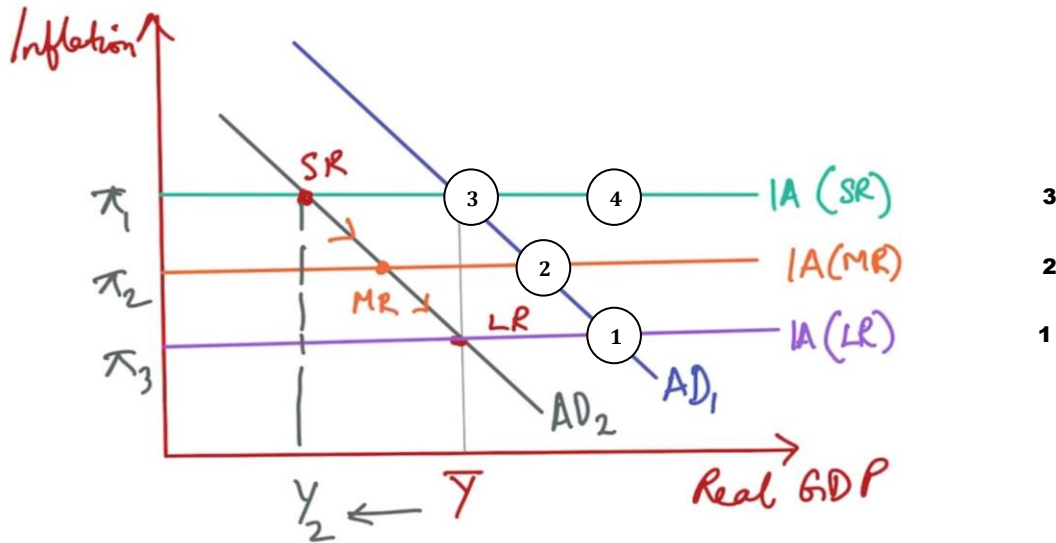
**WORKING OF CONTRACTIONARY POLICY- A DIAGRAMMATIC PRESENTATION**

In the diagram below (figure-1), inflation is taken on vertical axis whereas Real GDP is taken on horizontal axis.  $AD_1$  is the original aggregate demand curve where as  $\pi_1$  is the corresponding rate of inflation. IA is the Inflation adjustment line. The intersection of the  $AD_1$  curve and  $IA_1$  line provides the original equilibrium point 1. The corresponding real GDP is  $\bar{Y}$  which itself is the potential GDP. Suppose now the government expenditure increases resulting into rightward shift in the aggregate demand curve to  $AD_2$ . This results in to the new equilibrium point 2. This equilibrium is the short run equilibrium immediately after the increase in government expenditure. It increases the real GDP to  $Y_2$ . As  $Y_2$  is more than the potential GDP, there is increase in inflation from  $\pi_1$  to  $\pi_2$ . This provides the medium-term equilibrium at point-3 where the  $AD_2$  curve intersects  $IA_2$  line. The real GDP corresponding to this equilibrium is still greater than the potential GDP,  $\bar{Y}$ . So the inflation increases further to  $\pi_3$ . This provides the long term equilibrium point-4 where the  $IA_3$  line intersects the  $AD_2$  curve. This is the mechanism through which the inflation increases from  $\pi_1$  to  $\pi_3$  as a result of increase in government expenditure.



**(Figure-1)**  
In order to control this inflation, the central bank adopts the contractionary monetary policy. The working of the contractionary monetary policy is shown with the help of figure-2.

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(Figure-2)

An increase in the government expenditure has taken the economy from equilibrium point-1 to equilibrium point-4 as seen in figure-1 resulting into increase in inflation from  $\pi_1$  to  $\pi_3$  (figure-1). The central bank responds by adopting a contractionary monetary policy i.e. by increasing the rate of interest. In the above figure-2, aggregate demand curve  $AD_1$  corresponds to a higher government expenditure resulting into higher inflation. When the central bank increases the rate of interest; the aggregate demand curve shifts to  $AD_2$  providing short-run equilibrium point-3. The inflation is still  $\pi_1$  which implies that a contractionary monetary policy can't reduce the inflation in short-run. It only reduces the real GDP from  $\bar{Y}$  to  $Y_2$ . As the real GDP is less than the potential GDP, the inflation falls from  $\pi_1$  to  $\pi_2$  in figure-2. This happens at medium-run equilibrium point-2 where the  $IA_2$  line intersects the  $AD_2$  curve. The real GDP at equilibrium point-2 is still less than potential GDP which causes the inflation to fall further to  $\pi_3$  at long-run equilibrium point-1. This happens where the  $IA_1$  line intersects the  $AD_2$  curve. With every decrease in the rate of inflation, the central bank also reduces the interest rate. This allows the real GDP to rise again to reach the potential GDP.

Thus a contractionary policy brings back the inflation rate down to the level where it was prior to the increase in government expenditure. The real GDP which falls temporarily in short and medium term again rises to come back to potential level  $\bar{Y}$  in the long-run equilibrium.

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