2* Fiscal-Monetary Policies and IS-LM Framework

In the preceding chapter, a study was made of the determination of general equilibrium in which economic system was supposed to be constituted by the goods market or real market and the money market. The Hicks-Hansen IS-LM model was employed to determine simultaneously the equilibrium income and rate of interest. It could provide a determinate solution to the rate of interest. In the present chapter, an attempt will be made to analyse the impact of economic policies like fiscal and monetary policies upon the levels of income and rate of interest. The IS-LM framework will be employed also to analyse the relative effectiveness of the monetary and fiscal policies in an economic system.

1. FISCAL POLICY AND IS-LM MODEL

In chapter 1, we worked with the assumption that the goods or real market is constituted by the households and the business firms and that the goods market equilibrium is determined when $I = S$. However, if this two-sector real or goods market is extended to include also the government sector, the condition for equilibrium can be restated as $I + G = S + T$, where G signifies the government expenditure and T stands for taxes.

The fiscal policy changes like government spending and taxes can bring about shifts in the IS function. An increase in government spending and reduction in taxes can cause a shift in the IS function to the right. On the opposite, a reduction in government spending and an increase in taxes can cause a shift in the IS function to the left.

Suppose an economy is faced with the conditions of recession or depression and the government for the revival of the economic activity takes resort to an expansion of its spending and lowering of the taxes, thereby creating the budget deficit. In such a situation, there can be the possibility of rise in income on account of the operation of the government expenditure and tax multipliers. The rate of interest too is likely to increase. As there is reduction in taxes and an increase in government spending, there is excess demand for money. In order to get hold of additional amount of money, the investors are likely to dispose of bonds and securities. It will lead to a fall in security prices and consequent rise in the rate of interest. Thus an increase in government spending and reduction in taxes will lead to rise in both equilibrium income and rate of interest.

On the opposite, if the economic system is faced with the conditions of boom or inflation, the government will try to counteract the excess

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demand conditions through reduction in government spending and increase in taxes. These twin fiscal measures will result in the creation of budget surplus. As there is a reduction in government spending, the reverse action of the government expenditure multiplier will lead to a fall in income. The increase in taxes too will reduce income due to the operation of tax multiplier. The reduced government spending and increased taxes will cause a fall in income. That will thereby offset the inflationary pressures. As these measures are adopted, the decline in income and transactions demand for money, will leave surplus cash with the investors. In order to make use of it, they will start buying bonds and securities, it will push up the security prices and lower the rate of interest.

The effects of fiscal policy measures mentioned above upon the equilibrium income and rate of interest, can be analysed through Fig. 1.

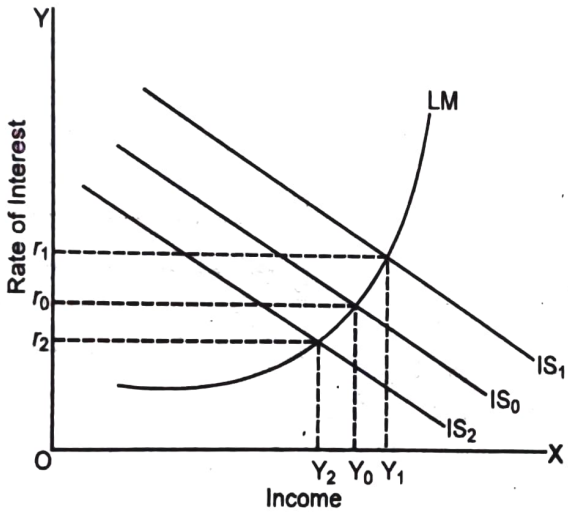

Fig. 1

In Fig. 1, income is measured along the horizontal scale. The rate of interest is measured along the vertical scale. Originally, IS_0 is the investment saving function. It intersects the LM function to determine the original equilibrium income Y_0 and the rate of interest r_0. If the government in order to tackle the conditions of recession and unemployment raises its expenditure and lowers taxes, the IS functions shifts to the right to IS_1. It intersects the LM function to determine higher income Y_1 and also a higher rate of interest r_1. On the contrary, if the economy is faced with the conditions of boom or inflation, the government will adopt the fiscal measures like the reduction in government spending and increase in taxes to tackle this situation. When these measures are adopted, the IS function shifts to the left to IS_2. The intersection between IS_2 and LM takes place to determine a lower equilibrium income Y_2 and a lower rate of interest r_2.

2. MONETARY POLICY AND IS-LM MODEL

The monetary policy is the conscious actions of monetary authority in the country related to the variation in the supply of money, availability of credit and cost of credit to achieve some desired objectives.

Suppose an economic system is faced with the conditions of recession and unemployment, the monetary authority or central bank of the country will attempt to tackle this situation by an expansion in the supply of money and credit and lowering down of the structure of rates of interest. These monetary policy measures will result in a shift in the LM function to the right. As the supply of money and credit is increased, the operation of money supply multiplier will bring about a multiple increase in income. Since excess cash is available, the investors will try to make use of it by the purchase of bonds and securities. It will push up the security prices and bring down the rate of interest. Thus the monetary expansion during recession and unemployment can bring about an increase in income along with a fall in the rate of interest.

If the economy is confronted with the conditions of boom or inflation, the central bank will try to deal with this situation by reducing the supply of money and credit and raising the structure of rates of interest. As these monetary policy measures will be adopted, the LM

function will shift to the left of its original position. The reduction in the supply of money and credit will cause the reverse action of money supply multiplier. As a consequence, the level of income will fall. In order to get hold of more cash, the investors in this situation will start selling bonds and securities. It will cause a fall in security prices but the rate of interest will rise. Thus monetary contraction in the economy in the times of boom or inflation will result in a fall in income along with a rise in the rate of interest.

The effects of monetary policy measures upon income and rate of interest can be analysed through the Fig 2.

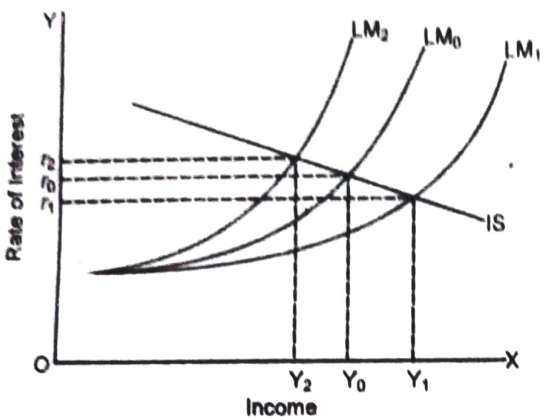

Fig. 2

In Fig. 2, income is measured along the horizontal scale. The rate of interest is measured along the vertical scale. Originally, LM_0 is the liquidity preference money supply function. It cuts the IS function to determine the original equilibrium income Y_0 and rate of interest r_0. If during the conditions of recession and unemployment, the central bank increases the supply of money and credit, the LM function shifts to the right to LM_1. It intersects the IS function to determine a higher income Y_1 but the rate of interest falls to r_1. If there are the conditions of boom or inflation, the central bank reduces the supply of money or credit and the LM function shifts to the left to LM_2. Its intersection with the IS function determines a lower level of income Y_2 and at the same time the rate of interest rises to r_2.

3. EFFECTIVENESS OF MONETARY AND FISCAL POLICIES

Monetary policy implies the variations in the supply of money brought about by the central bank of a country with a view to achieve certain economic goals. The fiscal policy, on the other hand, means the use of government spending and taxes as the instruments for the achievement of those very goals. In the present discussion, we shall however, restrict ourselves only to one dominant goal of economic policy, *viz.*, raising the level of real income. The relative effectiveness of the monetary and fiscal policies in raising the level of real income and influencing the rate of interest can be assessed through the IS-LM general equilibrium framework.

We have already discussed that the LM function, given a fixed supply of money, slopes upwards from left to right. But the entire LM function can be divided into three distinct ranges—the Keynesian range, the Classical range and the Intermediate range.

At one extreme, the LM function is prefectly elastic at the minimum possible rate of interest. The speculative demand for money is perfectly elastic at this rate of interest. The asset holders are ready to exchange securities for cash at the existing security prices even upto an unlimited extent. This is what we call the liquidity trap. This range may be denoted as the Keynesian range, since in Keynes' *General Theory*, this particular situation was greatly emphasised and it is within this range that the monetary policy becomes completely ineffective.

On the other extreme, at some very high rate of interest, the demand for money for idle balances becomes zero. The bond-holders do not anticipate any fall in the asset prices and they prefer to hold only securities and no idle cash. In this section, the LM function is perfectly inelastic and this range of LM function is known as the classical range. In between these two extremes of the pure classical and pure

Keynesian ranges, there is an intermediate range of LM function with varying degrees of elasticity. This intermediate range lies between the pure classical and pure Keynesian ranges.

The relative effectiveness of monetary and fiscal policies over these ranges can be analysed with the help of Fig. 3.

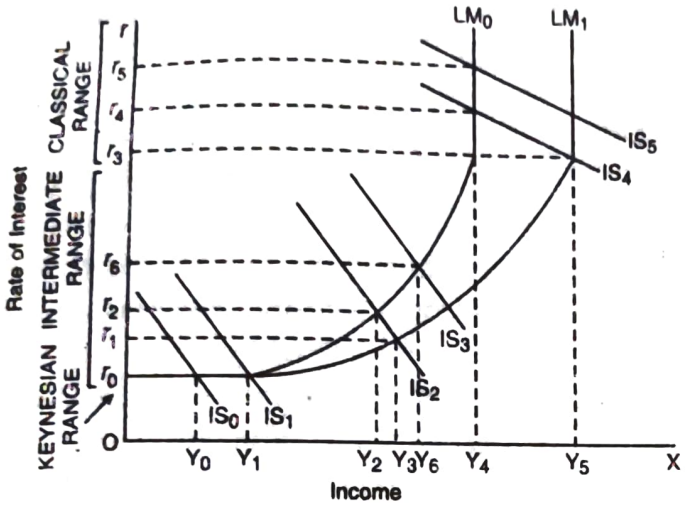

Fig. 3

(*i*) *The Keynesian Range* : The system in this range is initially in equilibrium at Y_0 income and r_0 rate of interest as shown in Fig. 3. This equilibrium is determined at a low level of income and at the minimum possible rate of interest. Since the LM function here is perfectly interest-elastic, this denotes the state of *liquidity trap*. As the monetary authority buys securities, these are exchanged by the security-holders for cash at the existing prices of securities. Therefore, by whatever amount the supply of money is increased, the rate of interest does not fall below r_0 rate of interest. An important policy implication is that the monetary policy becomes completely ineffective here either in raising the level of income or in lowering the rate of interest so that the aggregate demand function cannot be raised through monetary variations. The belief that the economic system was in a state of liquidity trap during the early 1930's led Keynes to suggest unorthodox fiscal prescriptions. If the level of income and rate of interest remain firmly anchored at a low point, the only way out is to raise the aggregate demand or IS function through fiscal measures like public spending, tax reduction and public works. As these measures shift the IS function from IS_0 to IS_1, the level of income increases from Y_0 to Y_1, although the rate of interest continues to remain pegged at the minimum level r_0.

In this range the monetary-fiscal **policy implications** are :

(*a*) Keynes' extreme case of liquidity trap occurs only during deep depression and the monetary policy in this range collapses altogether and is wholly ineffective in extricating the system out of depression.

(*b*) The fiscal operations like increased public spending, tax reduction and the public works can help in raising the level of aggregate demand or income.

(*ii*) *The Classical Range* : A situation quite the opposite of the one just explained above prevails, if the IS curve intersects the LM curve at a point where the latter is perfectly inelastic. In Fig. 3., IS_4 intersects LM_0 at its inelastic part so that equilibrium income is Y_4 and rate of interest r_4. If there is an increase in the supply of money through open market purchase of securities by the central bank, the security holders can be induced to dispose of the securities in exchange of cash only at higher security prices or at a lower rate of interest. As the supply of money is raised, LM function shifts from LM_0 to LM_1 and IS_4 intersects LM_1 at its inelastic part so that the equilibrium is determined at a higher level of income Y_5 and the rate of interest is pushed down to r_3. Since the asset-holders are not inclined to hold any amount of cash balances, the entire amount of money is to be used up for transactions. It follows that in the classical range, the simple quantity theory of money holds valid, and Y rises in proportion to the quantity of money.

In this range, it is thus obvious that the monetary policy is greatly effective. An increase