

Some Special Cases in the IS-LM Model

Liquidity Trap Zone: Till lesson 3, we considered an upward sloping LM curve. However, we know that the interest rate has a floor value, where the speculative demand for money becomes infinitely elastic. Without any exception, everybody will anticipate that interest rates can only rise in future, and not fall. Accordingly, they will keep any additional cash in the form of cash only, and not try to buy some bonds with it. Thus, there is no way that bond prices can rise, so that r may fall.

Thus, we have a horizontal stretch of the LM curve as depicted in fig 1. LM curve is perfectly interest elastic in this zone. We may also have a vertical stretch where LM curve becomes completely interest inelastic. There is no demand for money for speculation purpose (interest rate may be so high that nobody expects it to rise any further). There is only transaction demand for money. Given price level and money supply, money market is at equilibrium for a particular level of Y . This zone is called classical zone (also shown in fig 1).

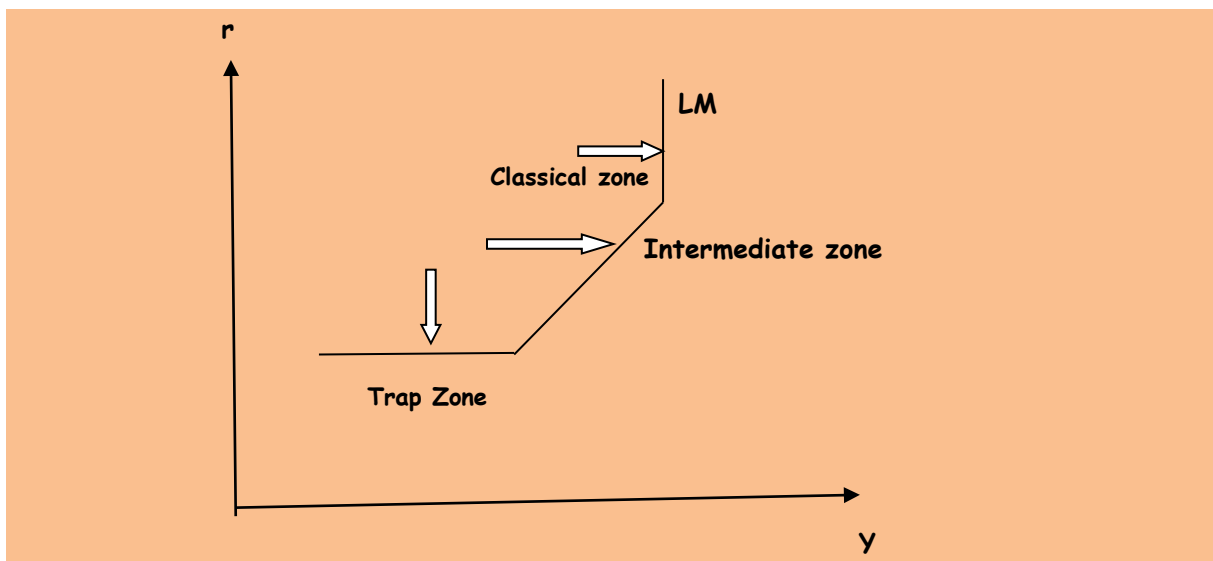


Fig 1

The size of the fiscal policy multiplier (that is, the effectiveness of the fiscal policy) depends on the slope of the LM curve at the initial equilibrium point. Fiscal policy will be more effective in the flatter zone of the LM curve and less effective in the steeper zone. We will consider two extreme cases: 1) When at initial equilibrium LM curve is horizontal (the trap zone), 2) When at initial equilibrium LM curve is vertical (the classical zone).

Let us briefly examine the above statement with the help of the following diagram (fig 2)

The investment function is given by $I=I(r, y)$. Investment is a negative function of r and positive function of Y . As Y increases producers are induced to invest more to cater to higher demand ($0 < I_y < 1, I_r < 0$).

Also, it is assumed that $0 < C_{yd} + I_y < 1$ (This is the stability condition of the equilibrium).

The equilibrium conditions in the goods and money market are now given by the following two equations

$$Y = C((Y-T), r) + I(Y, r) + G \dots (1)$$

$$M/P = k(Y) + l(r) \dots (2)$$

In this model we will study the impact of loan financed increase in government expenditure (G)

Case 1: Possibility of 'crowding in' as a result of loan financed increase in G

We know that equilibrium income (Y) and interest rate (r) are determined by the interaction of IS and LM curves. Say, the initial equilibrium is given by the pair (r_0, Y_0) . Now there is an increase in G (financed by loan). As a result, IS curve will shift rightwards and new equilibrium will be (r_1, Y_1) . As explained in our previous lessons,

$$r_1 > r_0 \text{ and } Y_1 > Y_0$$

This creates the possibility of a 'crowding in' along with 'crowding out' for private investment and the former may dominate. Why? For, the rise in r crowds out private investment. On the other hand, the increase in Y raises private investment. If the **positive 'income effect'** is more dominant than the **negative 'interest effect'**, private investment may actually increase as a result of expansionary fiscal policy. At the new equilibrium, the level of investment (say, I_1) is greater than original investment (say, I_0).

There are two opposing effects on consumption also. The ultimate impact on C depends on relative strength of the two effects. If the negative effect of the rise in interest on consumption is stronger than positive effect of the income rise, we shall have $C_1 < C_0$. **Rise in savings due to reduced consumption may be a source of additional private investment.**

Case 2: No Crowding in at Full Employment Level of Output

Let us now consider a case in the intermediate zone where initial equilibrium is at full employment level of output (say, Y_f) and interest rate (say, r_0). There is no scope to increase physical volume of output as the economy is already at the full employment level. As government expenditure increases (financing through internal borrowing), the price level starts to increase, causing LM curve to shift leftward (due to decline in real money supply) until new equilibrium is attained again at (r_1, Y_f) . **As Y is the same, there is no crowding in of private investment. So increase in government spending fully crowds out private investment. On the other**

hand, increase in the rate of interest unambiguously reduces or crowds out private consumption expenditure as well (as shown in fig 3).

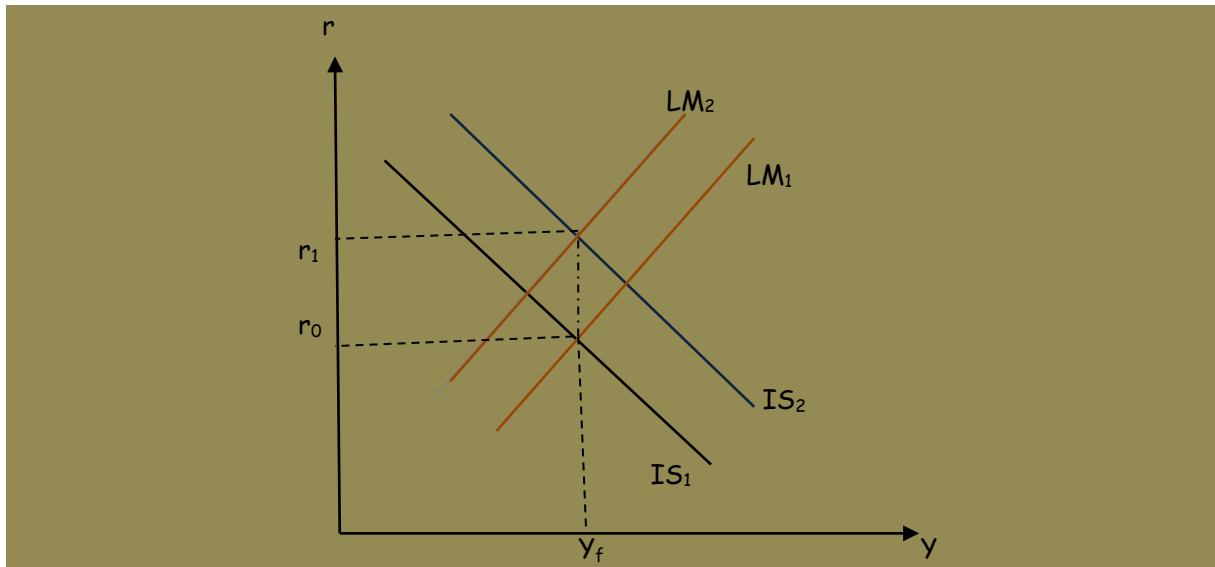


Fig 3

Conclusion: Loan-financed increase in government expenditure crowds out both private investment and private consumption in this modified version of IS-LM model.