

Study material for B.A (H) Economics IInd Sem.

Paper - Introductory Macroeconomics

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Unit-4 (The closed Economy in the Short Run)

Reference Book : (R. Dornbusch, S. Fischer and R. Startz, Macroeconomics, 11th edition, chapter-11, pp. 250-271).

Topic : Monetary and Fiscal Policy, chapter-11

In this chapter we use the IS-LM model to show how monetary policy and fiscal policy work.

11.1 Monetary Policy

In the United States, the Federal Reserve System, a quasi-independent part of the government, is responsible for monetary policy. The Fed conducts monetary policy mainly through OPEN market operations.

"In an open market operation, the Federal Reserve buys bonds (or sometimes other assets) in exchange for money, thus increasing the stock of money, or it sells bonds in exchange for money paid by the purchasers of the bonds, thus reducing the money stock."

Figure 11.3 shows graphically how an open market purchase works. The initial equilibrium at Point E is on the initial

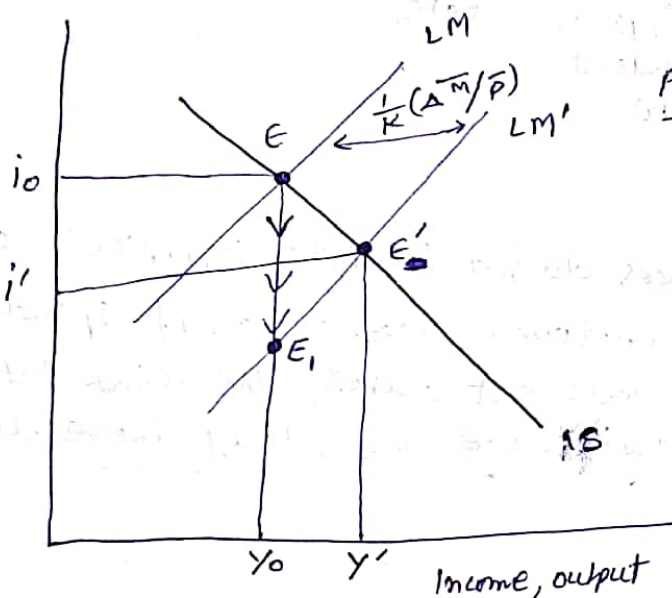
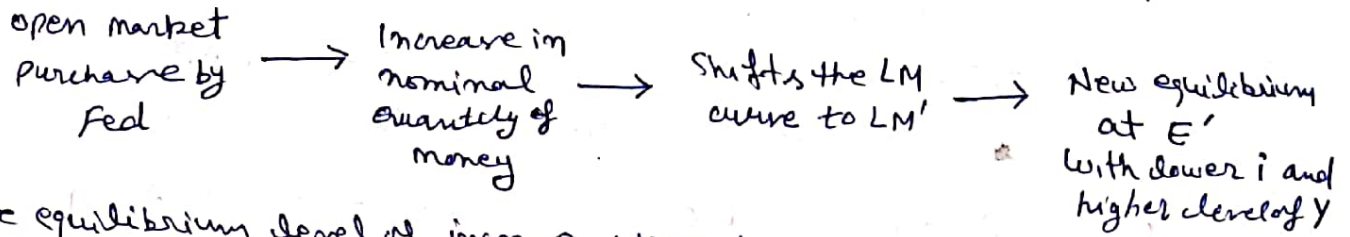


Figure 11.3 Monetary Policy

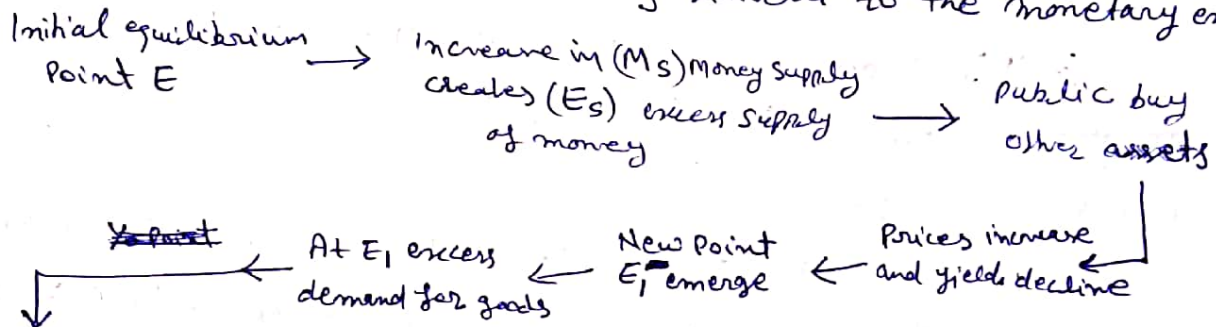
An increase in the real money stock shifts the LM curve to the right.

LM schedule that corresponds to a real money supply, $\frac{M}{P}$.



The equilibrium level of income rises because the open market purchase reduces the interest rate and thereby increases investment spending.

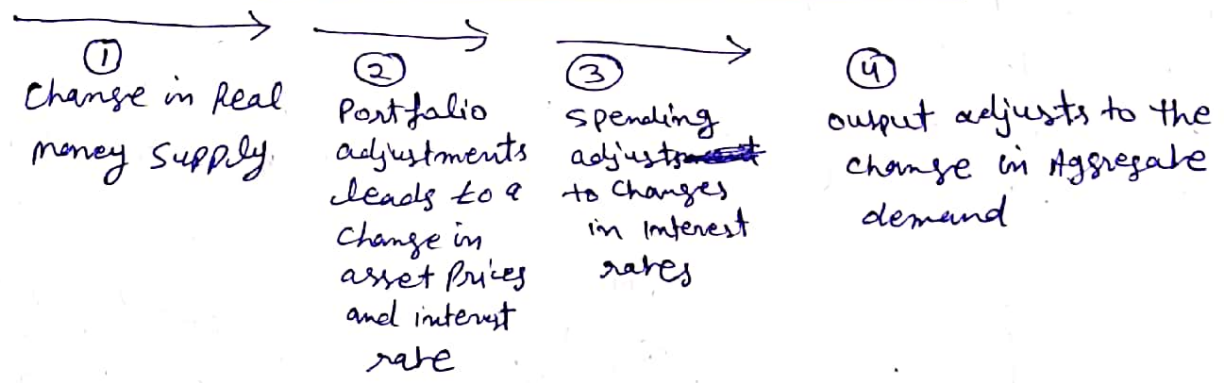
→ Consider next the process of adjustment to the monetary expansion.



The decline in the interest rate, given the initial income level Y_0 , has raised AD and is causing + inventories to run down. In response, output expands and we start moving up the LM' schedule.

The transmission mechanism

Table 11.1 The transmission mechanism



~~if portfolio imbalances do not lead to significant changes in interest rates, for whatever reason, or if spending does not respond to changes in interest rates, the link between money and output does not exist. we now study these linkages in more detail:~~

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The liquidity trap

In discussing the effects of monetary policy on the economy, two extreme cases have received much attention.

The first is liquidity trap, a situation in which the public is prepared, at a given interest rate, to hold whatever amount of money supplied. This implies that the LM curve is horizontal and that changes in the quantity of money do not shift it. In the liquidity trap, monetary policy is powerless to affect the interest rate. The liquidity trap has been a useful expositional device mostly for understanding the consequences of a relatively flat LM curve. But there is a one situation in which the liquidity trap can be of critical practical concern - that's when interest rates are so close to zero that they can't go any lower. Once the interest rate hits zero, there is nothing further that a central bank can do with conventional monetary policy to stimulate the economy because monetary policy cannot reduce interest rates any further (Box 11.1). One way for policymakers to avoid the zero interest rate liquidity trap is to pump out enough money to keep inflation slightly positive.

Banks Reluctance to lend (A case when monetary policy have only a very limited impact on the economy)

As interest rate declined, banks were reluctant to increase their lending in 1991. The underlying reason was that many banks had made bad loans at the end of the 1980s.

Unorthodox monetary policy writ large

The classical case

The LM curve is vertical when the demand for money is entirely unresponsive to the interest rate.

In Chapter 10 [equation - 7] that the LM curve is described by

$$\frac{\bar{M}}{P} = KY - hi \quad \text{--- (1)}$$

if h is zero, then corresponding to a given real money supply, $\frac{\bar{M}}{P}$, there is a unique level of income, which implies that the LM curve is vertical at that level of income. The vertical LM curve is called the classical case resulting equation (1), with h set ~~equal~~ equal to zero and P moved to the right-hand side we obtain -

$$\bar{M} = K(\bar{P} \times Y) \quad \text{--- (2)}$$

We see that the classical case implies that nominal GDP, $P \times Y$, depends only on the quantity of money. This is called quantity theory of money. the quantity theory remains useful for expositional purposes - and a sophisticated version of the quantity theory is still espoused by monetarists. Thus when the LM curve is vertical, monetary policy has a maximal effect on the level of income, and fiscal policy has no effect on income.

11.2 Fiscal Policy and crowding out

This section shows how changes in fiscal policy shift the IS curve, the curve that describes equilibrium in the goods market. Specifically, fiscal expansion shifts the IS curve to the right.

The equation of IS curve derived in chapter (10)

$$Y = \alpha_G (\bar{A} - b_i)$$

Here $\alpha_G = \frac{1}{1 - c(1-t)}$

(3)

Note that \bar{G} , the level of govt. spending, is a component of autonomous spending, \bar{A} , in equation (5). The income tax rate, t , is part of the multiplier. Thus, both govt. spending and the tax rate affect the IS Schedule.

An increase in Govt. Spending

We now show, in Figure 11.6 how a fiscal expansion raises equilibrium income and the interest rate. In figure, we show the effect of a shift in the IS curve/schedule. At each level of interest rate, equilibrium income must rise by $\alpha_G \Delta \bar{G}$ times the increase in govt. spending.

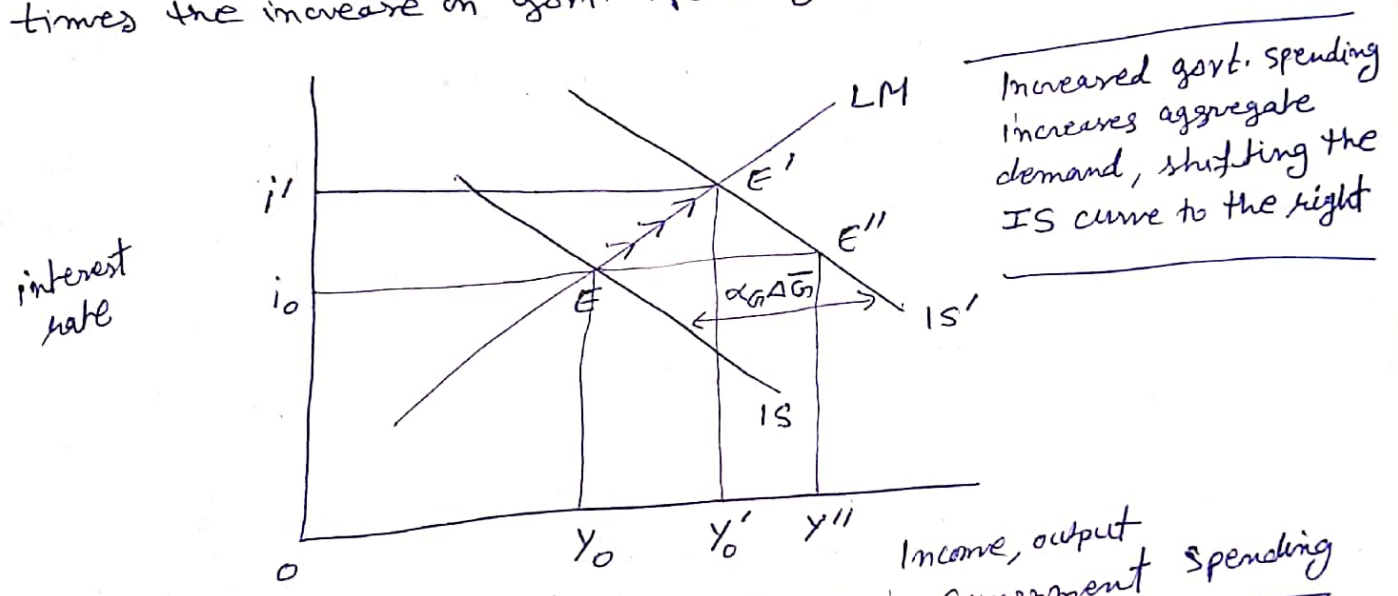


Figure 11.6 Effects of an Increase in Government Spending

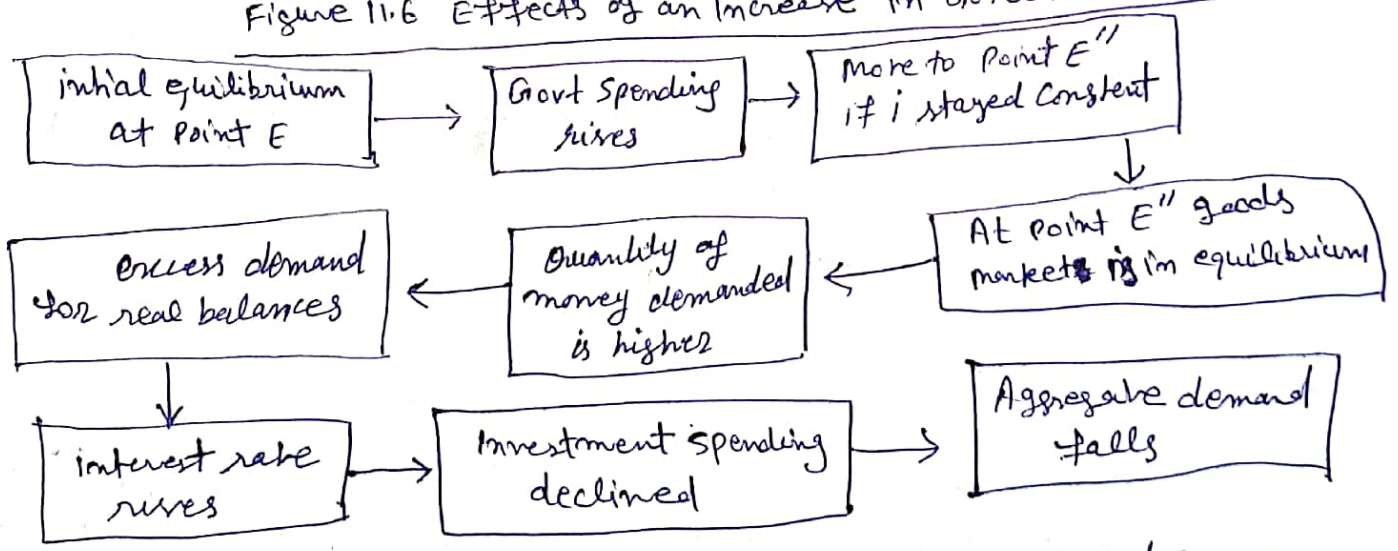


Figure 11.6 shows that only at point E' do both the goods and money markets clear (Planned spending = Income) and at the same time quantity of real balances = real money stock. Point E' is therefore the new equilibrium point.

crowding out

In figure 11.6, income rises only to Y_0' rather than to Y''

i

Interest rate rises from i_0 to i' reduces the level of investment spending

The increase in Govt. spending crowds out investment spending.

So, "crowding out occurs when expansionary fiscal policy causes interest rates to rise, thereby reducing private spending, particularly investment."

What factors determine how much crowding out takes place?

By drawing for yourself different IS and LM schedules, you will be able to show the following:

- Y increases more and i increases less — ~~LM~~ LM schedule flatter.
- Y increases less and i increase less — IS schedule flatter.
- Income and interest rates increases more the larger the multiplier, α_G , and thus the larger the horizontal shift of the IS schedule.

In each case the extent of crowding out is greater ~~than~~ the more the interest rate increases when Govt. spending rises.

To illustrate these conclusions, we turn to the two extreme cases we discussed in connection with monetary policy,

- 1) The liquidity trap
- 2) The classical case

- 1) The liquidity trap — if the economy is in the liquidity trap and thus the LM curve is horizontal, an increase in Govt. spending has its full multiplier effect on the equilibrium level of income. There is no change in the interest rate associated with the change in Govt. spending, and thus no investment spending is cut off. There is therefore no dampening of the effects of increased Govt. spending on income.

The classical case and crowding out

If the LM curve is vertical, an increase in govt. spending has no effect on the equilibrium level of income and increases only the interest rate.

In figure 11.7 we show the crowding out in Panel (b), where the investment schedule of Figure 10.4 is drawn. The fiscal expansion raises the equilibrium interest rate from i_0 to i' in Panel (a). In Panel (b), as a consequence, investment spending declines from the level I_0 to I' .

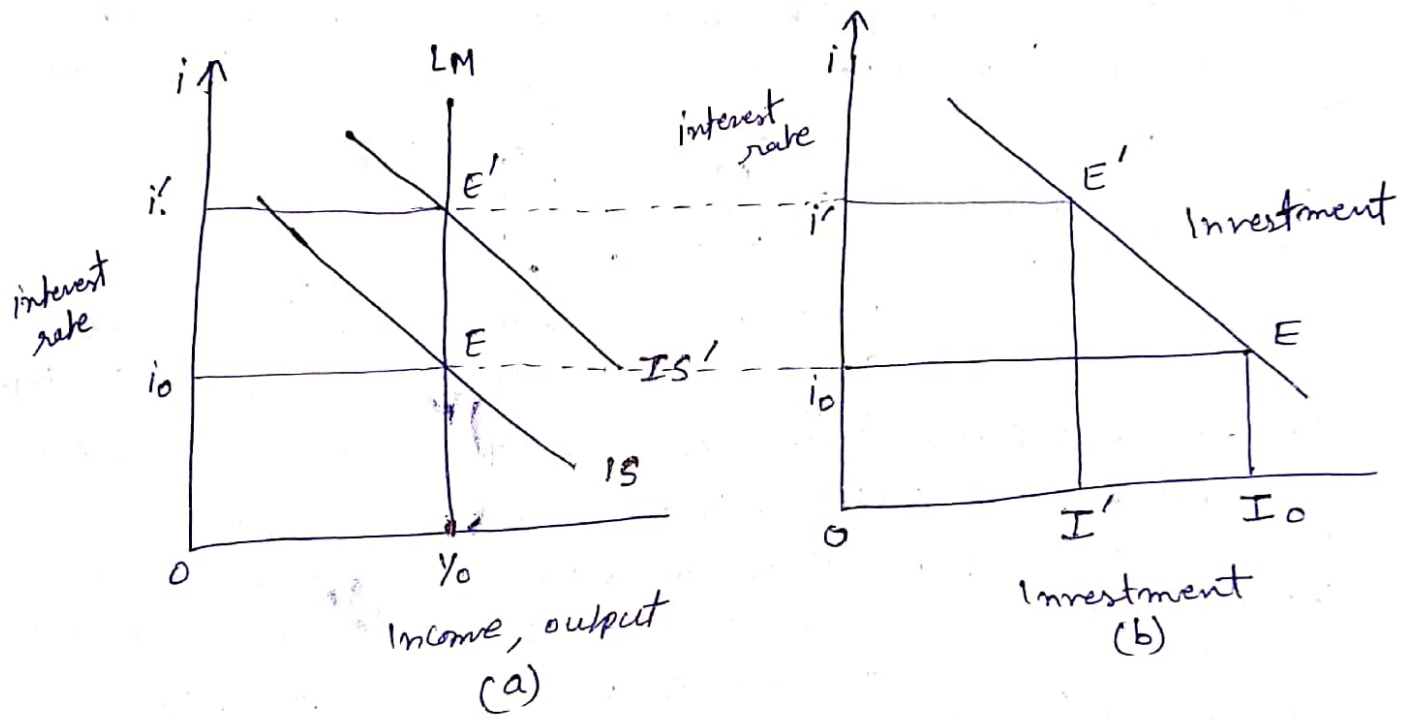


Figure 11.7 Full crowding out

With a vertical LM schedule, a fiscal expansion shifting out the IS schedule raises interest rates, not income. Government spending displaces, or crowds out, private spending dollar for dollar.

Is crowding out important?

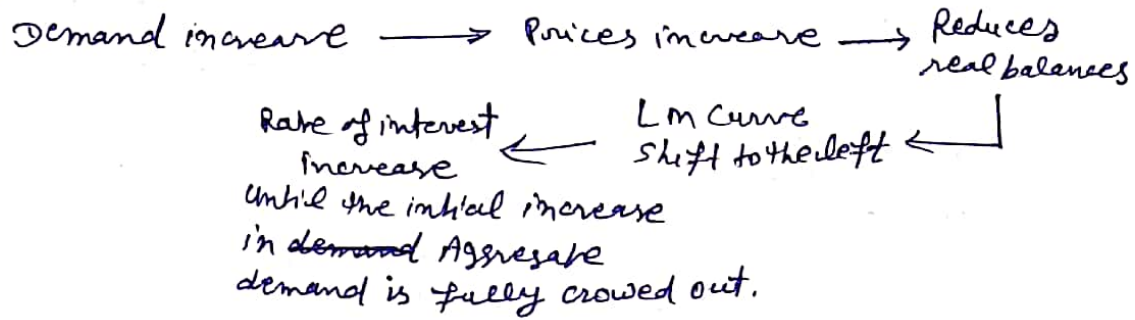
How seriously must we take the possibility of crowding out?

Here three points must be made:

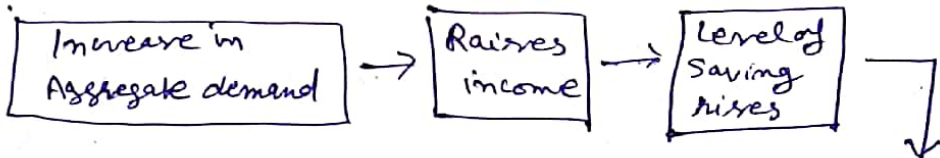
- 1) In this chapter we are assuming an economy with prices given, in which output is below the full employment level. In these

Conditions when fiscal expansion increases demand, firms can increase the level of output by ~~higher~~ hiring more workers.

But in fully employed economies:



2) The second point, however, is that in an economy with unemployed resources there will not be full crowding out because the LM schedule is not, in fact, vertical. A fiscal expansion will raise interest rates, but income will also rise. Crowding out is therefore a matter of degree.



makes possible to finance a larger budget deficit without completely displacing private spending.

3) The third point is that when unemployment, and thus a possibility for output to expand, interest rates need not rise at all when govt. spending rises, and there need not be any crowding out. This is true because the monetary authorities can accommodate the fiscal expansion by an increase in the money supply, thus both the IS and LM schedules shift to the right as in figure 11.8.

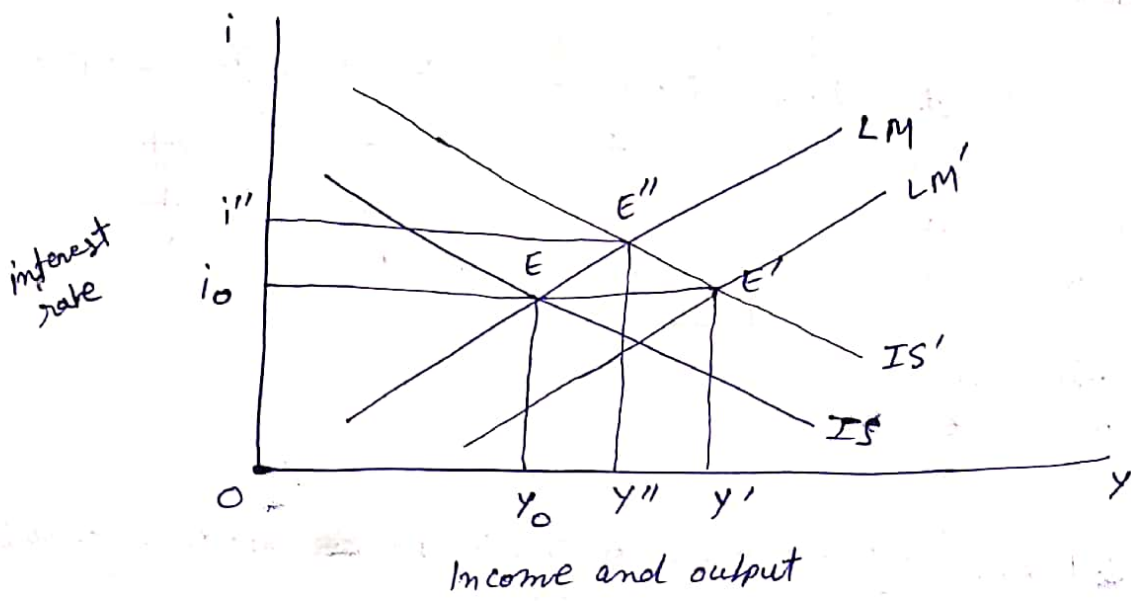


Figure 11.8 Monetary Accommodation of fiscal ~~Policy~~ expansion

11.3 The composition of output and the Policy mix

~~the composition~~ Table 11.2 Summarizes our analysis of the effects of expansionary monetary and ~~and~~ fiscal policy on output and the interest rate, provided the economy is not in a liquidity trap or in the classical case.

Table 11.2 Policy effects on Income and interest rates

Policy	Equilibrium Income	Equilibrium interest rates
Monetary expansion	+	-
Fiscal expansion	+	+

Note: + Increase
- decrease

An Investment Subsidy

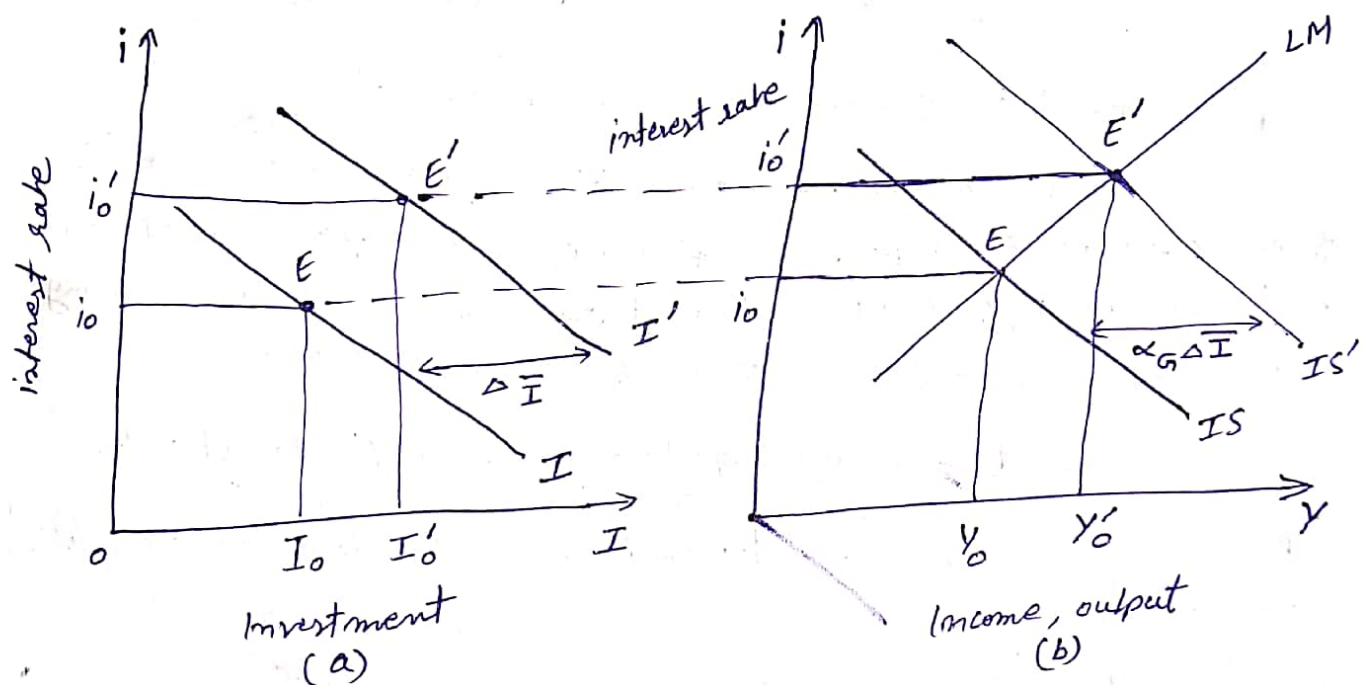
Table 11.3 Summarizes the impacts of different types of fiscal policy on the composition of output, as well as on output and the interest rate. Both an income tax cut and an increase in govt. spending raise the interest rate and reduce investment spending. However, it is possible for the govt. to raise investment spending through an investment subsidy, as shown in Figure 11.9.

Table 11.3 Alternative Fiscal Policies

	Investment rate	Consumption	Investment	GDP
Income tax cut	+	+	-	+
Govt. spending	+	+	-	+
Investment subsidy	+	+	+	+

Note: +, increase
-, Decrease

Figure 11.9 An investment subsidy shifts the ~~IS~~ investment schedule



Panel (a) of Figure 11.9 An investment subsidy shifts the investment schedule

Panel (b), the IS schedule shifts by the amount of the multiplier times the increase in autonomous investment brought about by the subsidy.

The Policy mix

(11)

In Figure 11.10 we show ~~how~~ the Policy Problem of reaching full employment output, Y^* , for an economy that is initially at point E , with unemployment.

- Should we choose a fiscal expansion, moving to point E_1 , with higher income and higher interest rates?
- Should we choose a monetary expansion, leading to full employment with lower interest rates at point E_2 ?
- Should we pick a policy mix of fiscal expansion and ~~accommodating~~ accommodating monetary policy, leading to an intermediate position?

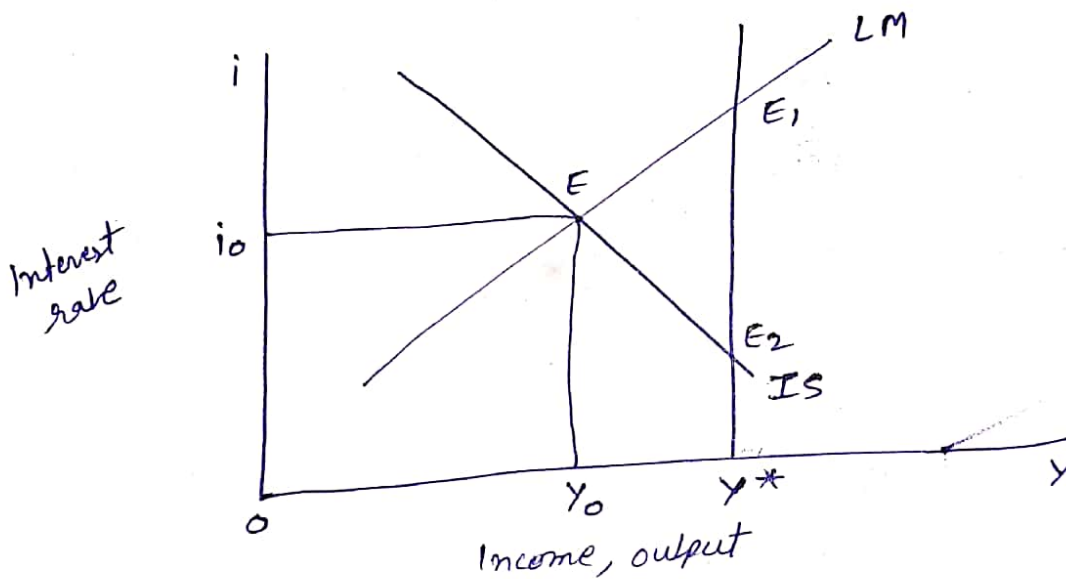


Figure 11.10 Expansionary Policies and the Composition of output

~~Issues of speed and predictability of policies apart from the issues~~
once we recognize that all the policies raise output but differ significantly in their impact on different sectors of the economy, we open up a problem of political economy. Awaiting of speed and predictability of policies apart, the issues have been settled by political preferences. The recognition that monetary and fiscal policy changes have different effects on the composition of output is important.

It suggests that Policymakers can Choose a Policy (12)
mix — a Combination of monetary and Fiscal Policies —
that will not only get the economy to full employment
but also make a contribution to solving other
Policy Problems.

