IS-LM Model

IS-LM model: Hicks and Hansen

**Integration of the real and money markets**

1

Goods Market Equilibrium-

The Derivation of the IS Curve:

The aggregate demand is determined by consumption demand and investment demand. Thus IS curve relates different equilibrium levels of national income with various rates of interest.

With a fall in the rate of interest, the planned investment will increase which will cause an upward shift in aggregate demand function resulting in goods market equilibrium at a higher level of national income.

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Derivation of IS Curve
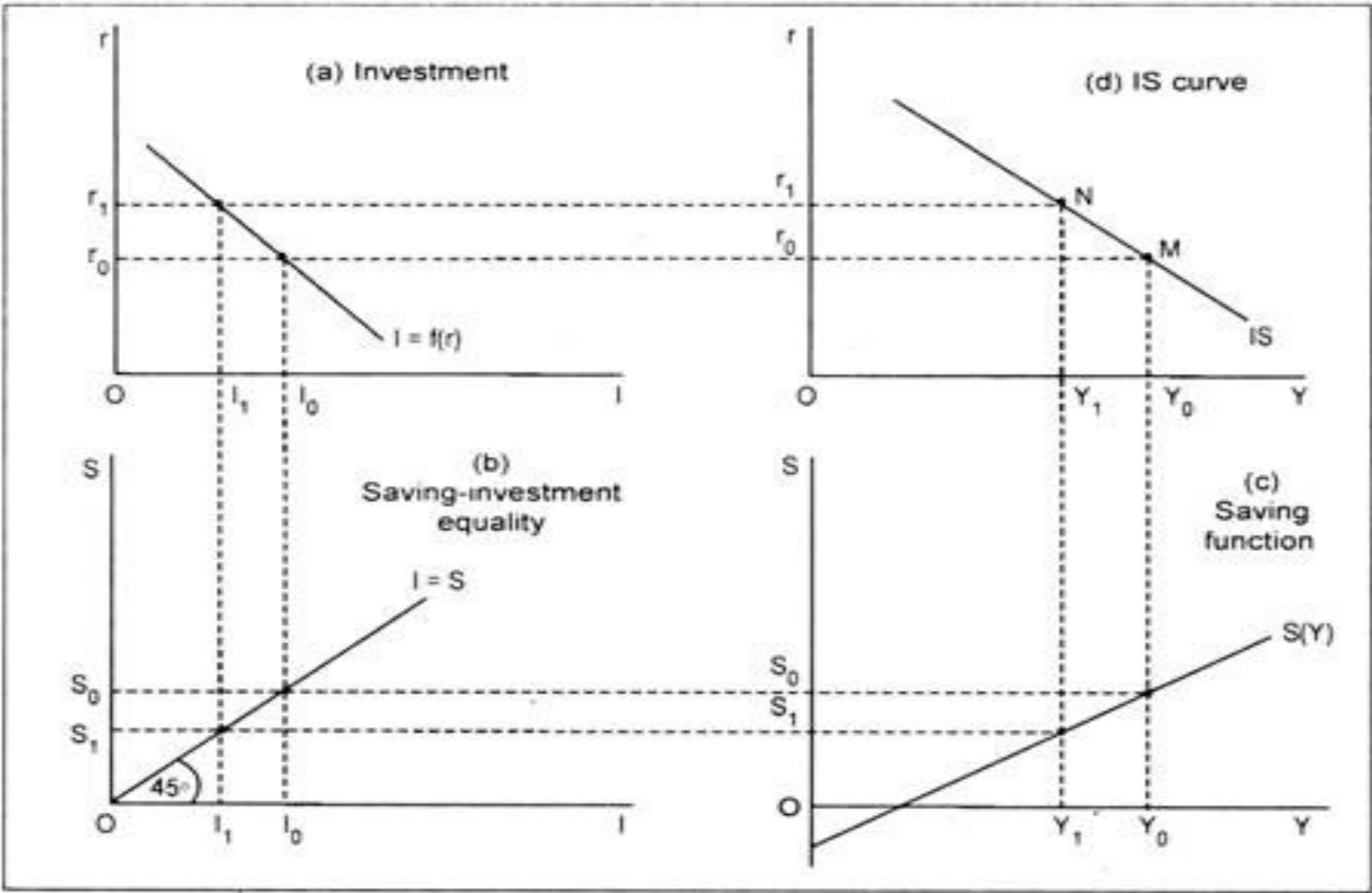
The IS Curve Derivation:

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The derivation of IS curve can be made in terms of a four-part diagram.

In part (a), we have drawn investment function that shows the inverse relationship between investment and the rate of interest.

Part (c) plots the saving function that represents direct relationship between income and saving.

Part (b) is simply a 45° identity line, and

part (d) plots the IS curve.

Slope of IS Curve-

IS curve is negatively sloped. This is because increase in interest rate causes investment spending to rise which shifts the aggregate demand curve up and raises the equilibrium income level. Also, increase in interest rate causes investment to fall, which shifts aggregate demand curve down and lowers the equilibrium income level.

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Shifts in IS curve-

Changes in factors apart from interest rate that would shift the aggregate demand would shift the IS curve. E.g. Increase in autonomous investment will shift the IS curve to the right , while decrease in autonomous investment will shift the IS curve to the left.

Money Market Equilibrium-

Derivation of LM Curve-

The demand for money is a demand for real balances because people hold money for what it will buy. The demand for real balances depends on real income and rate of interest.
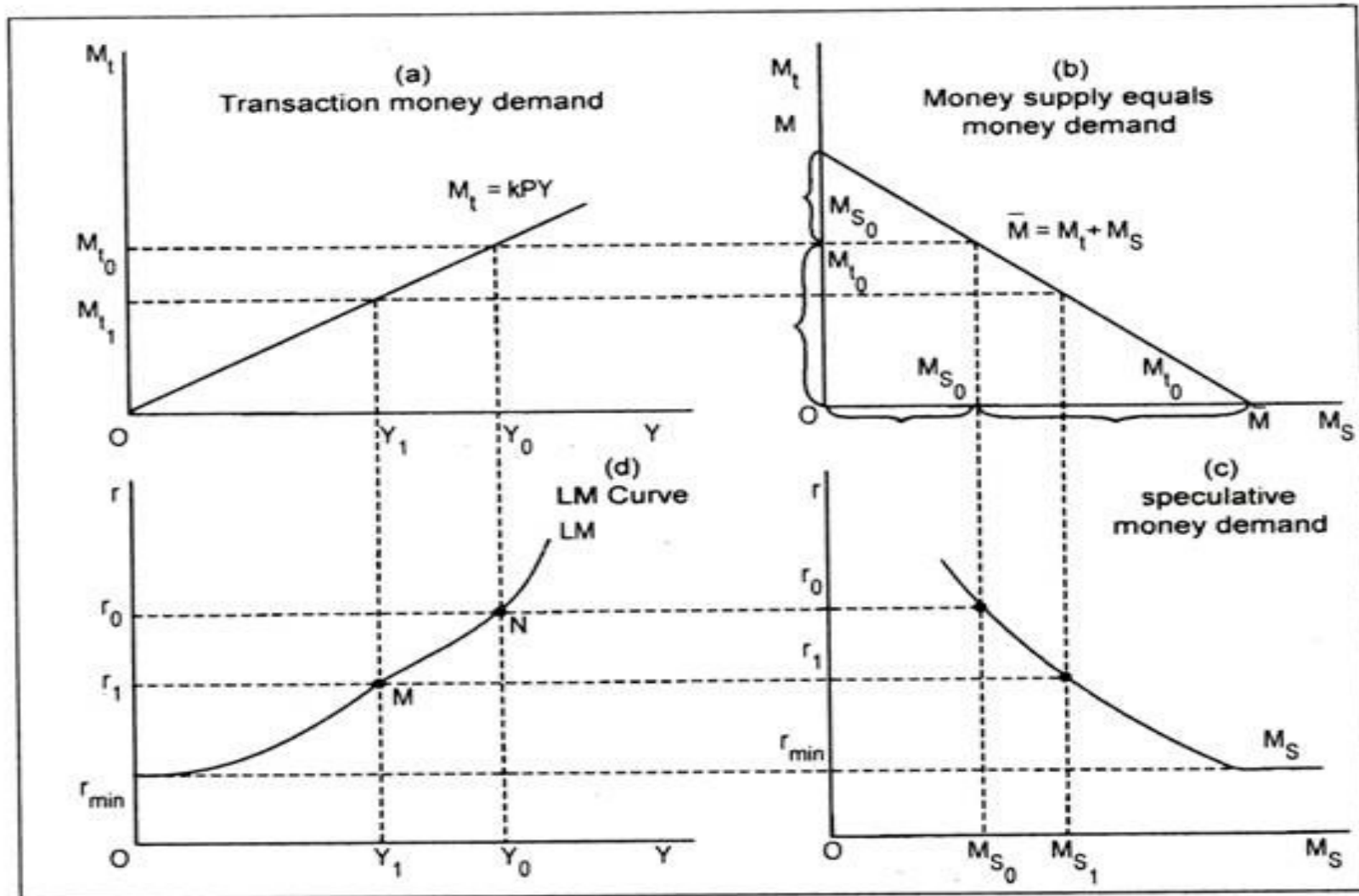
The LM Curve Derivation:

8

A four-part diagram may be used to derive the LM curve.

In above Fig. part(a) shows a proportional relationship between money income and transaction demand for money (M_t= kPY).

Part (c) represents speculative demand for money [M_S = f(r)].

The schedule in (b) is an identity line that mechanically divides money supply into transaction and speculative elements.

Part (d) represents the LM curve.

9

Slope of LM Curve-

The LM curve slopes positively. An increase in interest rate reduces the demand for real money balances. To maintain demand for real money balances equal to the supply of money, the income level has to rise. Therefore LM curve implies that an increase in rate of interest is accompanied by an increase in the income.

10

Shift in LM Curve-

An LM curve is constructed for a given supply of money. An increase in the money supply will shift the LM curve to the right, while decrease in money supply will shift the LM curve to the left.

Equilibrium of the IS-LM curve-
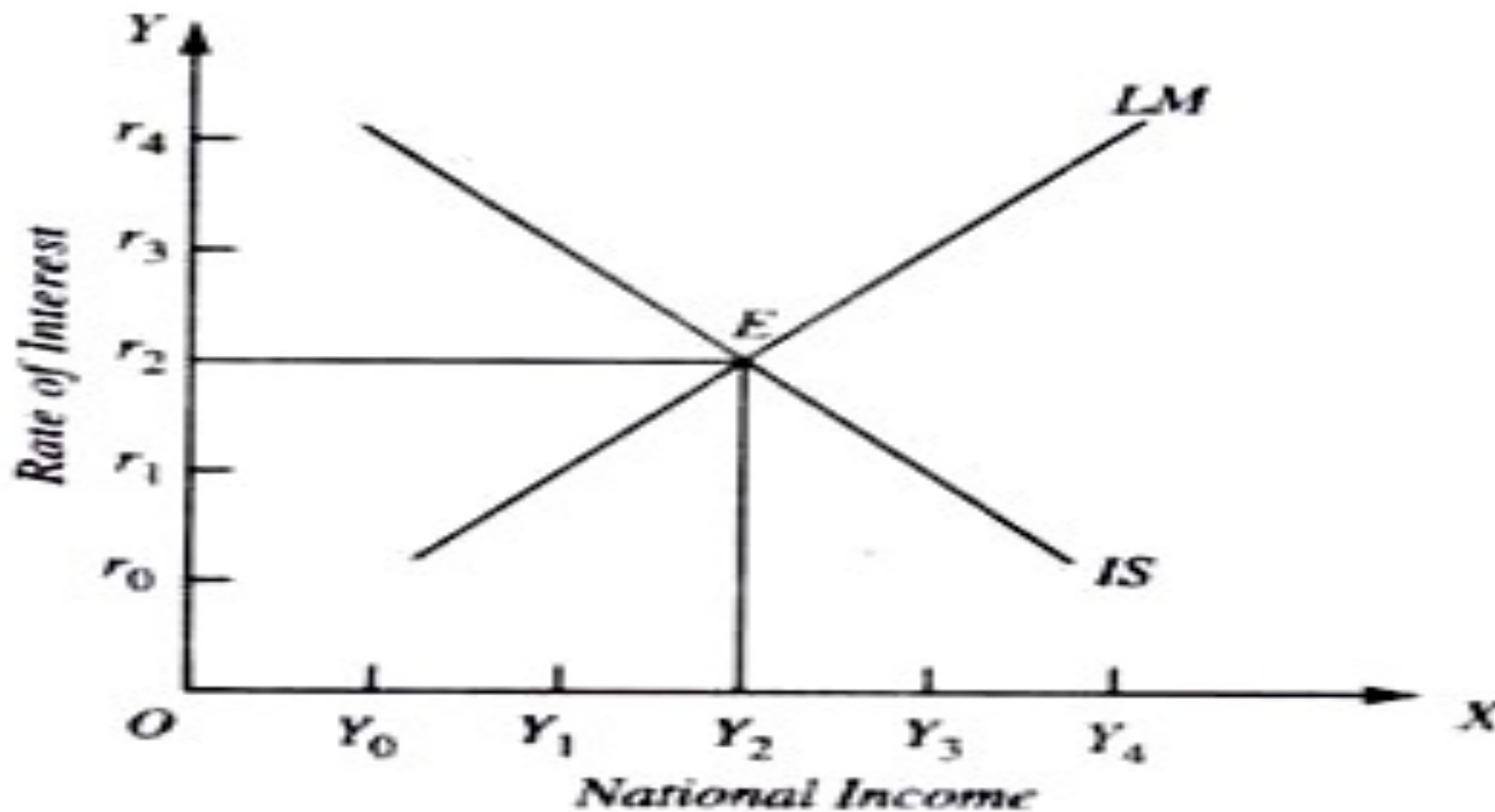
The IS and LM Curves Combined: The Joint Determination of the Interest Rate and the Income Level

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Equilibrium of the IS-LM curve-

Income and the rate of interest are determined together at the point of intersection of these two curves. At this point, income and the rate of interest stand in relation to each other such that

(1) the goods market is in equilibrium, that is, the aggregate demand equals the level of aggregate output, and

(2) the demand for money is in equilibrium with the supply of money

Effects of Monetary Policy-
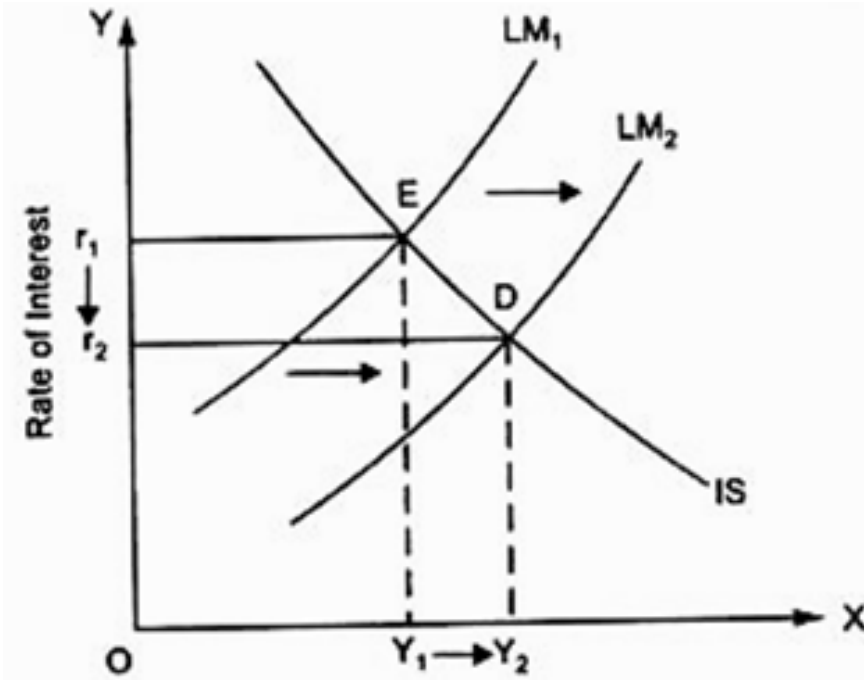
Effect of Expansion in Money Supply on Interest Rate and Income
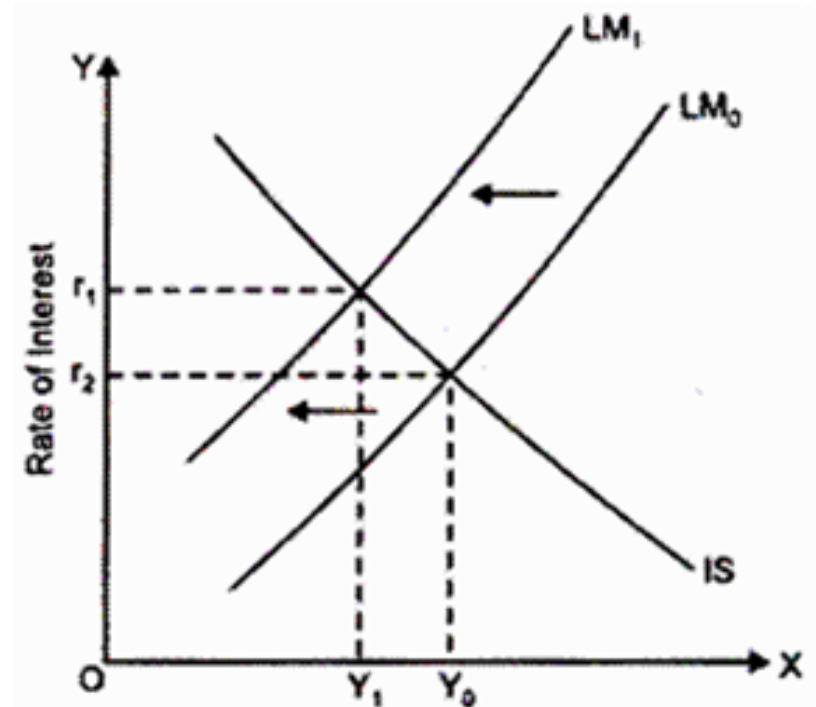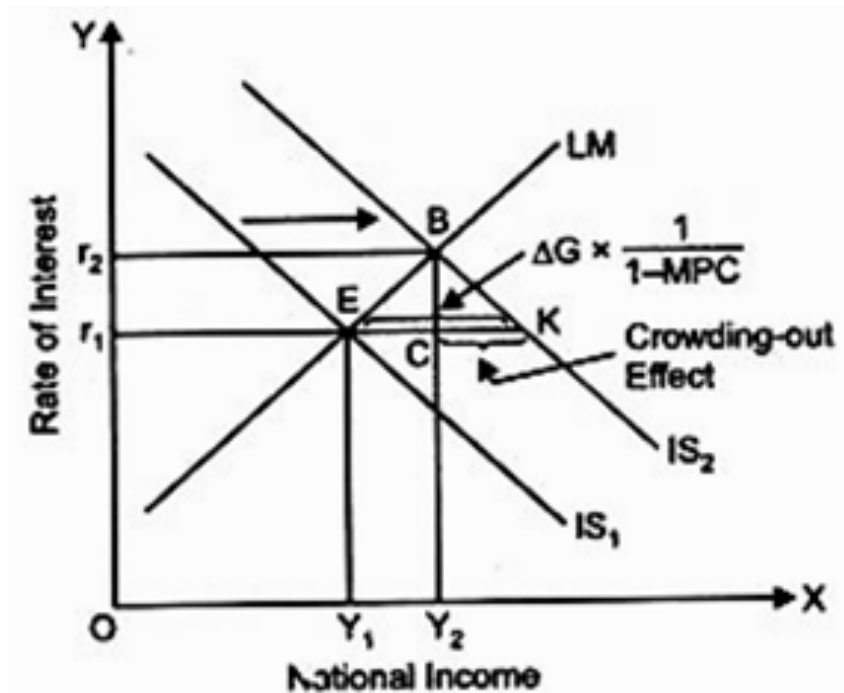
Contractionary Monetary Policy to Fight Inflation

Effects of Monetary Policy-

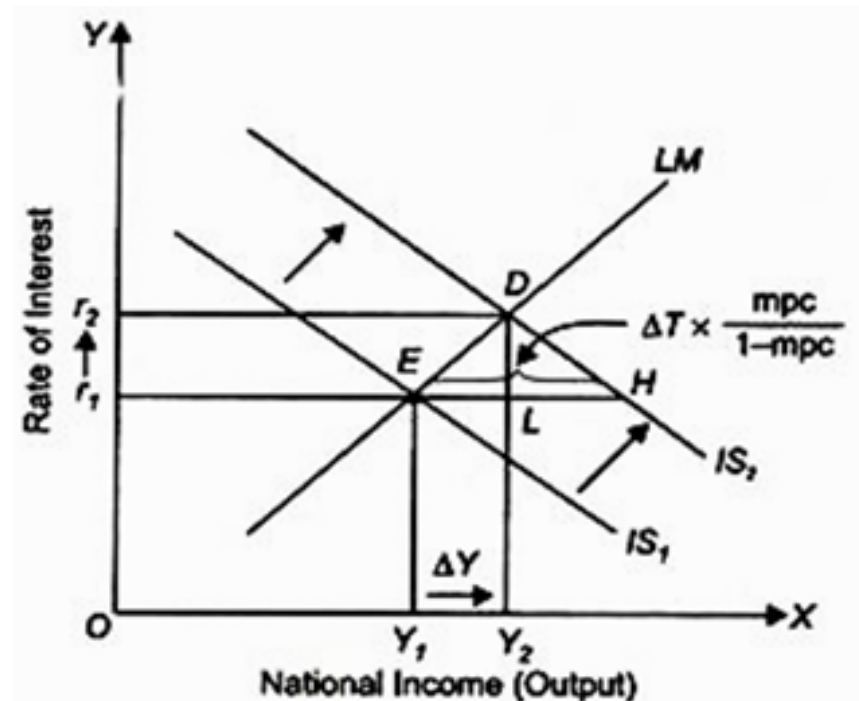IS-LM model can be used to show the effect of expansionary and tight monetary policies.

A change in money supply causes a shift in the LM curve

Expansion in money supply shifts it to the right and decrease in money supply shifts it to the left.

Expansionary Fiscal Policy : Impact of
Increase in Government Expenditure on
Interest Rate and Income

Expansionary Fiscal Policy: Effect
of Cut in Taxes

16

Effects of Fiscal Policy-

Increase in Government expenditure which is of autonomous nature raises aggregate demand for goods and services and thereby causes an outward shift in IS curve which increases the rate of interest.

IS-LM model takes into account the fall in private investment due to the rise in interest rate that takes place with the increase in Government expenditure.

Effects of Fiscal Policy-

That is, increase in Government expenditure crowds out some private investment.

An alternative measure of expansionary fiscal policy that may be adopted is the reduction in taxes which through increase in disposable income of the people raises consumption demand of the people. As a result, cut in taxes causes a shift in the IS curve to the right.