Open Economy Macroeconomics

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An open economy is one that freely interacts with other economies in the world.

This interaction takes place in two ways:

- Export and import of goods and services in world product markets
- Inflow and outflow of capital assets in the world financial markets

The flow of goods and services:

- Exports: Goods and services produced domestically and sold abroad
- Imports: Goods and services produced abroad and sold domestically
- Net exports (NX) = Value of exports (X) – value of imports (M)

If NX is negative, it means trade deficit; if NX is positive, it implies trade surplus and if NX equals zero, balanced trade is attained.

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Factors affecting NX:

- Tastes and preferences and income of consumers worldwide
- Price of goods at home and foreign countries
- Government policies related to trade
- Transportation costs across countries
- Exchange rate of a country

What is the role of exchange rate in regulating trade?

- If native currency depreciates (i.e. when 1 $ is worth more INR), our exports become cheaper and imports become dearer (costlier). This makes our exports appealing to the foreign countries and boosts our exports.
- Similarly, appreciation of native currency (i.e. when 1 $ is worth less INR), our exports become costlier and imports become cheaper, which might affect our exports and trade balance.

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Nominal exchange rate is the rate at which a person can trade the currency of one country for currency for another.

- An increase in the value of a currency as measured by the mount of foreign currency it can buy is called appreciation.
- A decrease in the value of a currency as measured by the amount of foreign currency it can buy is called depreciation.

$$Real\ exchange\ rate = Nominal\ exchange\ rate\ * \frac{P}{P'}$$

Where P is the price level in the domestic country and P' is the price level in the foreign country.

Thus, real exchange rate can be interpreted as the price of a domestic basket of goods relative to price of a foreign basket of goods.

Purchasing Power Parity (PPP)

Purchasing power parity is a theory of exchange rates which advocates that a unit of any given currency should be able to buy the same quantity of goods in all countries.

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PPP implies that nominal exchange rates adjust to equalize the price of a basket of goods across countries.

According to PPP,

$$e * P = P^*$$

Where P and P^* is the price of any good in the native and foreign currency, respectively. Therefore e, the exchange rate will be equal to the price ratio $\frac{P^*}{P}$.

If the purchasing power of a currency is same at home and abroad, then the exchange rate will not change. But if two countries have different inflation rates, then exchange rate (e) will change over time. Going by the formula, if inflation is higher in the home country compared to the foreign country, then e falls and the domestic currency depreciates. Similarly, if inflation is higher in the foreign country, then domestic currency appreciates.

If PPP were not true, unexploited opportunities and profits would exist. The process of taking advantage of difference in prices across markets is known as **arbitrage.** If arbitrage happens, the prices in different markets will converge.

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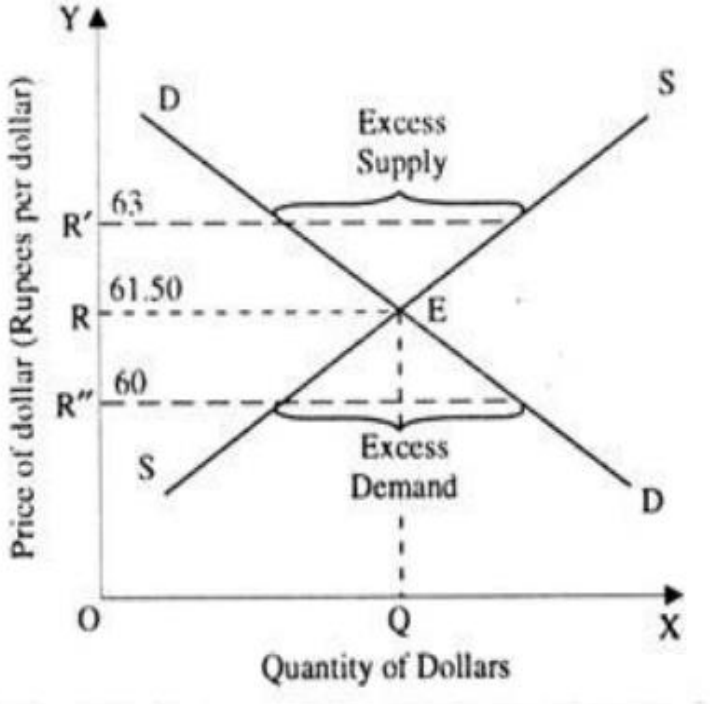
When there is an excess supply of domestic currency, the currency depreciates or weakens (upward). When there an excess demand for the domestic currency, the currency appreciates or strengthens (downward).



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The flow of capital

Net capital outflow refers to the purchase of foreign assets by domestic residents minus the purchase of domestic assets by foreigners.

Factors influencing net capital outflow are:

- The real interest rates being paid on the domestic and foreign assets or the **interest rate differential** (if interest rate is higher in the domestic country, investment in the domestic country will be more profitable and hence there will be a huge net capital inflow).
- Economic and political risks
- Government policies regarding the ownership of capital assets

Net exports (NX) and net capital outflow (NCO) are closely linked and are considered to balance each other or be equal. This holds true as every transaction that affects one side must also affect the other side by the same amount.

Mundell Fleming Model

This model is an extension of the IS-LM model which incorporates the Balance Of Payment (BOP) transactions as well. The model helps to understand how fiscal and monetary policy actions impact the income, interest rate and exchange rate in an open economy.

Assumptions:

- A small open economy
- Interest rate in the home country is determined by interest rate in the world market
- Perfect capital mobility i.e free flow of capital
- Price level at home and abroad do not vary much

Mundell Fleming Model

The IS equation is given as :

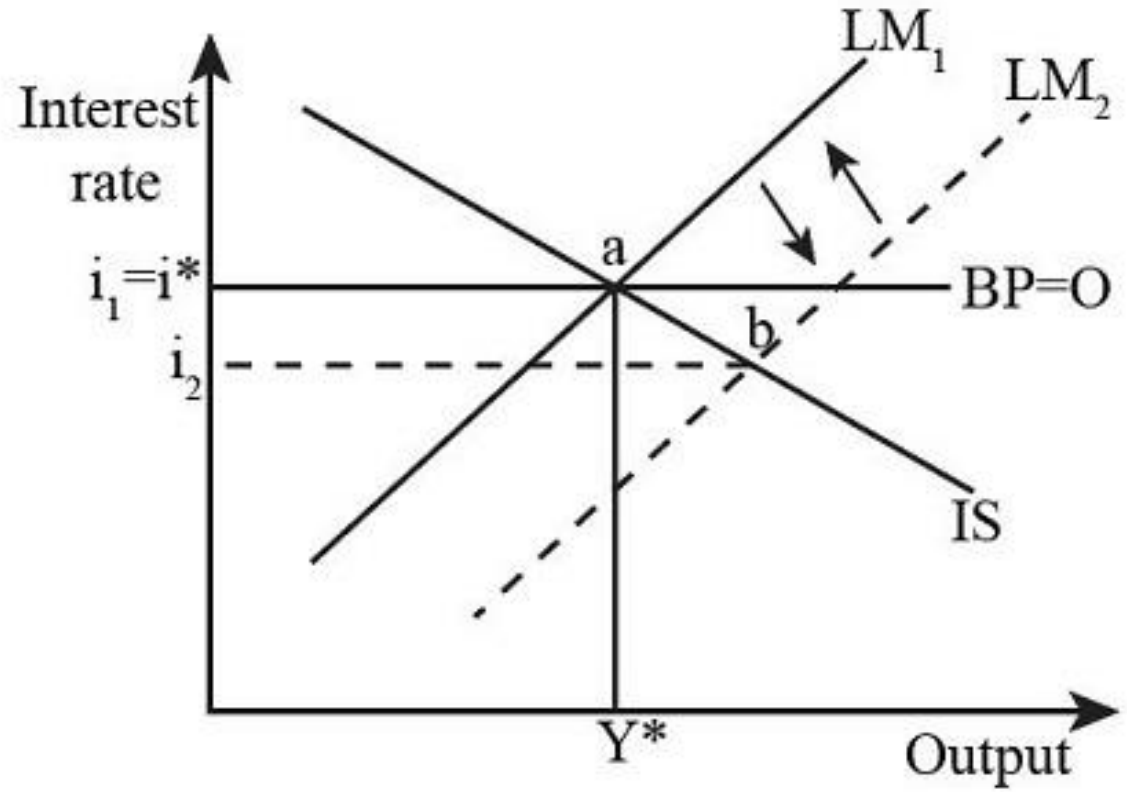
$$Y = C(Y - T) + I(r) + G + NX(e)$$

The LM equation is given as :

$$\frac{M}{P} = L(r, Y)$$

Where **r** is the interest rate and **e** is the exchange rate.

Fixed Exchange Rate - Monetary Policy with PC

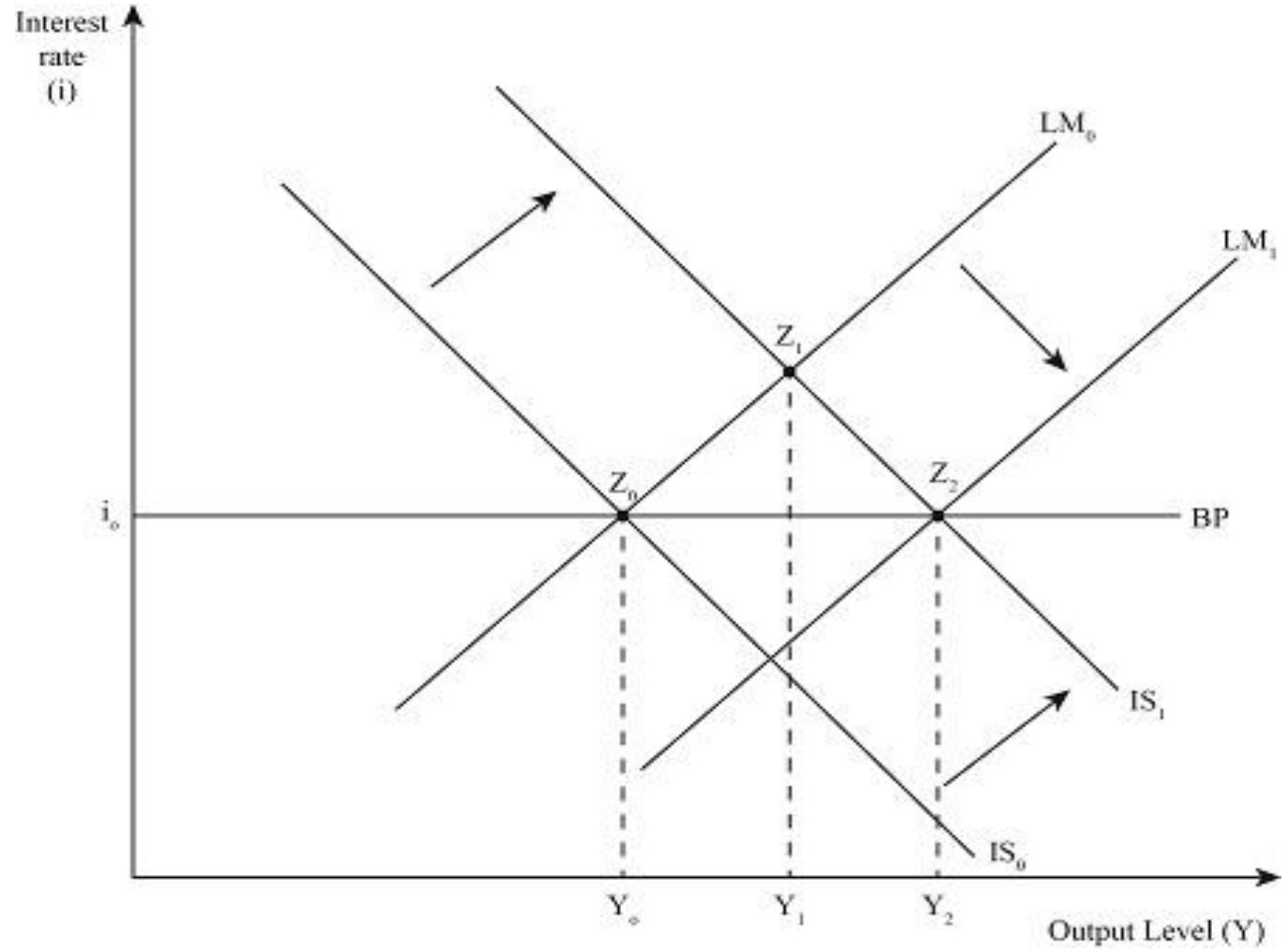


Fixed Exchange Rate - Monetary Policy with PC

- An expansionary monetary policy will shift the LM curve rightward.
- As a result, the interest rate will fall.
- A fall interest rate will induce capital outflow
- As a result, money supply falls and the LM curve shifts backward.

Thus, monetary policy will be ineffective in this case.

Fixed Exchange Rate – Fiscal Policy with PC

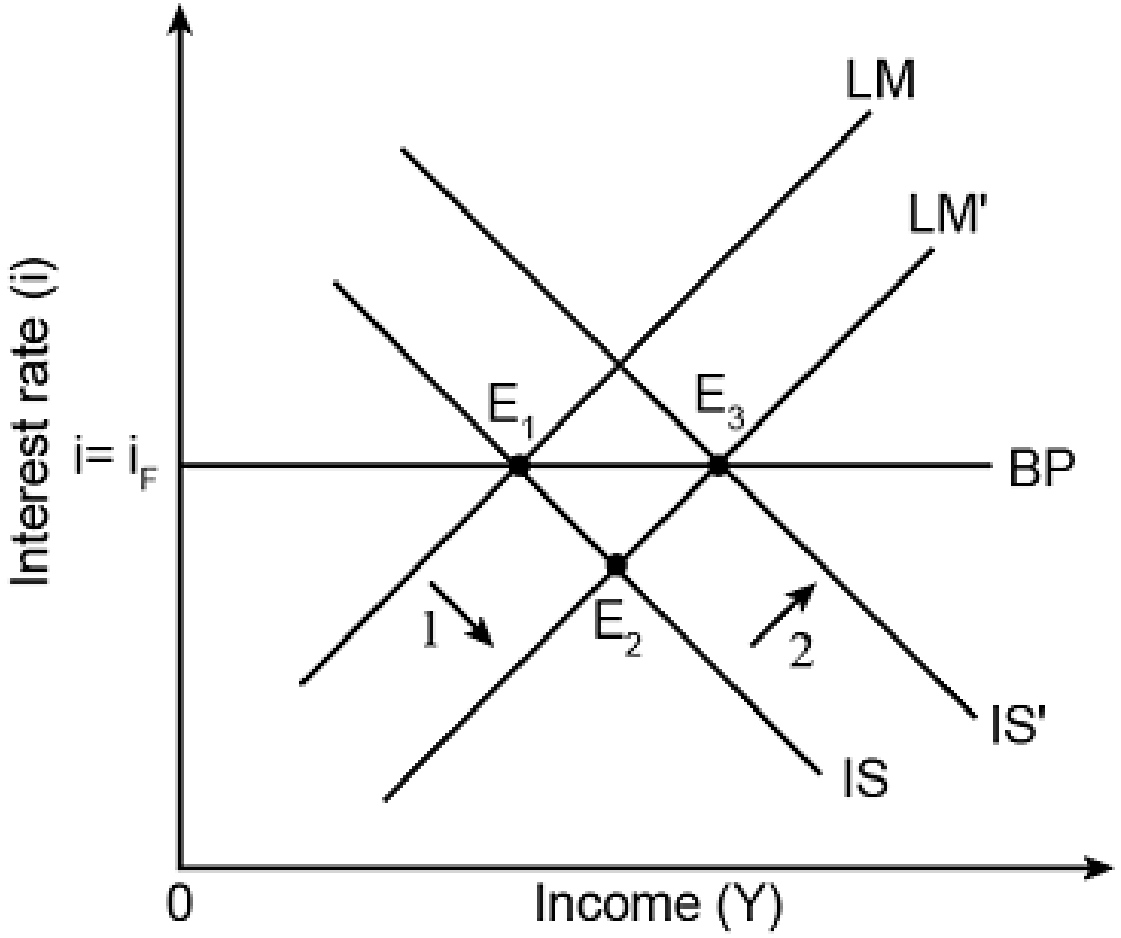


Fixed Exchange Rate – Fiscal Policy with PC

- An expansionary fiscal policy will shift the IS curve rightward.
- As a result, the interest rate will rise.
- A rise in interest rate will induce capital inflow
- As a result, money supply increases and the LM curve shift rightward.
- A new equilibrium will be attained with an increased income (Y).

Thus, fiscal policy will be effective in this case.

Floating Exchange Rate – Monetary Policy with PC

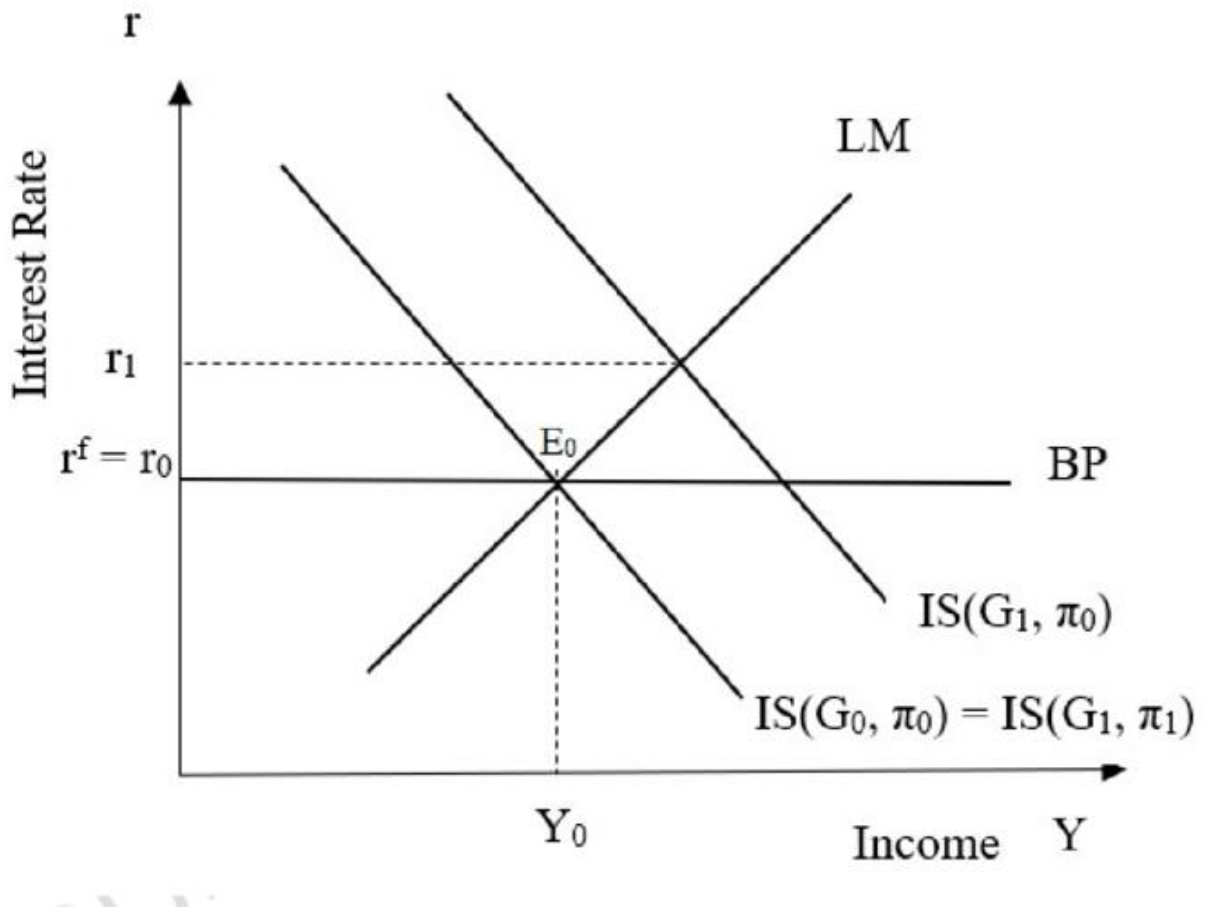


Floating Exchange Rate – Monetary Policy with PC

- An expansionary monetary policy will shift the LM curve rightward.
- As a result, the interest rate will fall.
- A fall interest rate will induce capital outflow
- The capital outflow will cause currency depreciation.
- Currency depreciation results in increase in country's exports and thereby the income (Y).

Thus, monetary policy will be effective in this case.

Floating Exchange Rate – Fiscal Policy with PC



Floating Exchange Rate – Fiscal Policy with PC

- An expansionary fiscal policy will shift the IS curve rightward.
- As a result, the interest rate will rise.
- A rise in interest rate will induce capital inflow.
- The capital inflow will cause currency appreciation.
- Currency appreciation results in decrease in country's exports and thereby the income (Y).

Thus, fiscal policy will be ineffective in this case.

THANK YOU