

International Linkages and Domestic Policy

11

Unit highlights:

- ⇒ The basis of and gains from international trade
- ⇒ Concept of absolute advantage and comparative advantage
- ⇒ Balance of payments

Lesson 1: The basis of trade and balance of payment

Lesson Objectives:

After reading this chapter you will know and understand the following:

- w The basis of and gains from international trade
- w The concept of absolute advantage
- w The concept of comparative advantage
- w The concepts of Balance of payment and its different accounts, Deficits and Surplus in different accounts and Overall Balance of Payment Surplus and Deficit.

Introduction

Open economies are engaged in trade of commodities and services with each other. When a country imports it contributes to aggregate demand for goods and services of each of the countries from which goods and services are imported. When a country exports (i.e. other countries import from this country). The export contributes to aggregate demand of goods and services of the country which exports. Earnings from export (foreigners' expenditure on domestic goods and services) are, hence, added to and import expenditure (domestic expenditure on goods and services produced by foreign countries) is subtracted from sum of domestic consumption, investment and government expenditure in order to arrive at the aggregate demand of the goods and service of the home country economy. A change of prices of goods and services produced abroad in terms of domestic currency may affect the trade balance ($X-M$) of the domestic country even if other things remain the same. Besides, economic relationship between countries includes, other than trade, transfer payments between governments and individuals in different countries and capital flows. Capital flows (out flows) occur when persons and firms in the domestic country acquire financial assets issued by other countries and purchase real assets located in other countries. Capital inflow occurs in the home country when foreigners acquire financial assets issued in the home country and purchased real assets in the home country. We will first discuss very briefly why trade takes place between two countries and show how free trade has the potential to improve the welfare level of an economy. This is followed by a discussion of Balance of Payments-the record of the transactions of the residents of a country with the rest of the world. Different accounts of balance of payment

A change of prices of goods and services produced abroad in terms of domestic currency may affect the trade balance ($X-M$) of the domestic country even if other things remain the same.

are introduced. We then explain what are meant by deficit or surplus in different accounts and overall balance of payment deficit or surplus.

Basis of International Trade

The classical theory of international trade is based on labour theory of value. The latter asserts that labour is the only factor of production and that in a closed economy exchange rate between two commodities is determined by the relative amount of labour they embody. Adam Smith propounded the principle of Absolute Advantage to explain trade and demonstrate the gains from trade. Suppose that there are two countries, A and B. They are endowed with homogeneous labour and each of them produces tobacco and wine. By employing 1 unit of labour country A produces 2 units of tobacco or 4 units of wine. In country B one unit of labour produces 1 unit of tobacco or 6 units of wine. In country A, in the absence of trade 1 unit of tobacco will be exchanged for 2 units of wine and in country B in the absence of trade 1 unit of tobacco will be exchanged for 6 units of wine. Country A has absolute advantage in the production of tobacco while country B has an absolute advantage in the production of wine. Both the countries may gain if A exports tobacco to B, and B exports wine to A-the rate of exchange between tobacco and wine being anything between 1:2 to 1:6.

There is a basis for potentially gainful trade for two countries if exchange rate between a pair of commodities differs across the countries in the absence of trade irrespective of the reason for such difference.

We may find as typical the case in which one country is more efficient than the other country in the production of every commodity. David Ricardo put forward the principle of Comparative Advantage to explain trade and its potentially beneficial effect. Let us assume that in country A one unit of labour can produce either 4 units of tobacco or 8 units of wine. In country B one unit of labour can produce either 1 unit of tobacco or 6 units of wine. Country A has absolute advantage in the production of both the commodities. So the principle of absolute advantage cannot explain trade in this situation. According to Ricardo's principle, country A has comparative advantage in the production of tobacco (and comparative disadvantage in wine production), and country B has comparative advantage in the production of wine (and comparative disadvantage in the production of tobacco). Country A would specialize in the production of tobacco and export tobacco to country B which, on its part, would specialize in the production of wine and export wine to country A. Both the countries may gain if the exchange rate between tobacco and wine is set within the domain 1:2-1:6.

Labour theory has long been discarded as the theory of value as labour is not homogeneous, neither it is the only factor of production. In a closed economy the exchange rates between commodities are determined by demand factors, technical condition as well as market structure. There is a basis for potentially gainful trade for two countries if exchange rate between a pair of commodities differs across the countries in the absence of trade irrespective of the reason (i.e. factor endowment, state of technology, scale of production taste etc.) for such difference.

Balance of Payment

The Balance of Payments of a country is a systematic record of all transactions between the residents of the reporting country and the residents of the rest of the world over a specified period of time, usually a year.

The Balance of Payments contains two major accounts: Current and Capital Account. The Current Account records trade in currently produced goods and services, as well as transfer payment. Services include freight, royalty payments and interest payments. It also includes net investment income, the interest and profits on the reporting country's assets (physical and financial) abroad minus the income foreigners earn on the assets they own in the reporting country. Transfer payments, on the other hand, consists of transfers such as gifts and grants. Trade balance refers to only trade in goods while Current Account considers trade in both goods and services and transfer payment to arrive at the Current Account Balance. Total receipts for the sale of currently produced goods and services appear as exports, X and payments of similar goods and services from abroad appear as imports, M in the National Income and Product Accounts. Using the expenditure method we may show the net export term, (X-M) in the GDP identity:

$$GDP = Y = C+I+G+(X-M)=C+S+T+R_f \text{ -----(1)}$$

R_f in the right most expression represents net transfer payments by foreigners and T,G,S,C and I represent taxes, government expenditure, domestic saving, consumption and investment respectively.

The Capital Account records purchases and sales of assets (both physical and financial) such as stocks, bonds, building, land etc. When the receipts of the reporting country from the sale of such assets exceeds its payments for the purchases of foreign assets, the Capital Account is said to be in surplus and

The Balance of Payments of a country is a systematic record of all transactions between the residents of the reporting country and the residents of the rest of the world over a specified period of time, usually a year.

capital inflow occurs. Borrowing abroad gives rise to capital inflow while lending abroad leads to capital outflow.

The Current Account and the Capital Account together must balance. This happens by virtue of the rule that one has to pay for what one purchases. If a country runs a deficit in its Current Account it must have a surplus in the Capital Account. If the country cannot have a surplus in the Capital Account it must balance its Current Account. When a country has deficit in its Current Account it means that this country spends more abroad than it receives from sale to the rest of the world. The deficit needs to be financed either by selling assets or by borrowing abroad. Hence it will run a surplus in the Capital Account. Similarly if a country has surplus in the Current Account it would either buy assets or lend money abroad and has a deficit in the Capital Account.

The Capital Accounts can be split into two separate parts: (1) the transactions of the country's private sector, and (2) official reserve transaction which comes under the purview of the Central Bank. When there is Current Account deficit, the reporting country has three options: (1) the private sector can sell its assets or borrow abroad (2) the government can finance the deficit. It may run down its reserve of foreign exchange by selling foreign currency in the foreign exchange market (which leads to capital inflow), and (3) both the first and the second option can be used. Similarly when a country has Current Account Surplus, the private sector of the country may purchase assets and lend abroad and the government may raise its reserve by buying foreign currency in the foreign exchange market (leading to capital outflow). The increase (decrease) in the official exchange reserve is called Overall Balance of Payment Surplus (Deficit).

Overall Balance of Payment Surplus, $B = \text{Increase of Official Exchange Reserves} = \text{Current Account Surplus} + \text{Private Net Capital Inflow}$, or,

$$B = (X-M) - F - R \text{ ----- (2)}$$

where $F = \text{Net Private Capital Outflow}$ and $R = \text{Net Government and Private transfer}$.

If both the Current Account and the Private Capital Account are in deficit (surplus) then the overall Balance of Payments is in deficit (surplus). In such a situation the Central Bank would lose (gain) reserve. When both the accounts are in balance or one account is in deficit and the other in surplus and absolute amount

of deficit equals absolute amount of surplus the over all balance of payments is zero.

As hinted earlier, exports and imports enter the product market equilibrium condition, the IS equation, X and M do so in about the same way as government purchases or consumption and savings and tax receipts. The trade surplus is believed to be negatively related with income. Under some mobility of capital, inflow of foreign capital is expected to have positive relationship with market rate of interest.

Lesson 2: Exchange rate systems

Lesson Objectives:

After reading this lesson you will understand the following:

- w Systems of Fixed and Flexible Exchange Rate Systems, Nominal and Real Exchange Rates, Devaluation and Depreciation, and Overvaluation and Appreciation.
- w Concepts of Internal balance and external balance
- w Working of monetary and fiscal policy under Fixed Exchange Rate Regime and Flexible Exchange Rate Regime.

Determination of Exchange Rates:

Fixed Exchange Rates: At Bretton Wood Conference held in 1944, the industrial countries reached a consensus in favour of a fixed exchange rate. They agreed that changes in exchange rates should be made only in cases of fundamental disequilibrium. The major countries had fixed exchange rate against one another until 1973.

Under this system central banks are prepared to buy or sell any amount of a foreign currency at the fixed prices or exchange rates. So long as the central bank has the necessary reserves, it can continue to intervene in the foreign exchange markets to keep the exchange rate constant. If the reserve is found to be inadequate, the central bank devalues its currency.

Under Flexible Exchange Rate System exchange rate continuously changes along with change in demand and supply situation.

Floating or Flexible Exchange Rate: Huge Current Account Deficit in USA and consequent outflow of US dollars in the early 1970s caused many advanced countries sterilization difficulties and they apprehended that their monetary systems were running out of control. US gold stock shrank as foreign central banks exchanged dollars for gold. This happened at such a big scale that the USA decided to sell gold for dollar. This violated Bretton Wood's tie of the dollar to gold.

The monetary system has seen the major currencies floating since 1973. With the European countries joining the European Monetary System, essentially pegged to the Deutschmark, and smaller countries pegging their currencies to the currency of one or another of the major countries.

Under Flexible Exchange Rate System exchange rate continuously changes along with change in demand and supply situation. The central banks allow the exchange rate to adjust to equate the supply and demand for the foreign currency. Starting from zero BP situation an increase of export of a country to a country, B relative to import from country, B other things remaining the same, will lead to increase to value of A's currency in terms of B's currency. Such a rise of exchange rate is called **appreciation**. Currency of B on the other hand **depreciates**.

National and Real Exchange Rate

Nominal Exchange rate (usually called Exchange rate) of the foreign currency in terms of the domestic currency shows the number of units of domestic currency that one unit of foreign currency can fetch in the foreign exchange market. The real exchange rate is the product of nominal exchange rate and ratio of foreign to domestic prices, measured in the same currency.

$$\text{Real Exchange Rate} = R = e \cdot P_f/P_d \text{ -----(3)}$$

where e = exchange rate, P_f = foreign price, and P_d = domestic price.

A rise in real exchange rate means a real depreciation of domestic currency. Such depreciation may occur even if nominal exchange rate remains fixed but inflation occurs in the foreign country whereas prices remain stable at home.

Effectiveness of Domestic Policies in the IS-LM Model in an Open Economy

Goods Market Equilibrium: Spending on domestic goods and services may be construed as composed of two components (a) spending by domestic residents, $A[(C+I+G)]$ and (b) Net export, $NX [(X-M)]$, so that $Y=A+NX$. A includes domestic spending goods and services produced both within the country and abroad. X represents foreigner's spending on domestic goods and services and M stands for domestic spending on goods and services produced abroad. Thus $A+NX$ represents total spending by domestic residents as well as foreigners for domestic goods and services.

Export is positively related with level of income of foreigners, Y_f and real exchange rate, R . On the other hand, import is positively related with domestic income level and inversely related with real exchange rate, R . Spending by domestic residents, A is positively related with domestic income level, Y and negatively related with level of interest rate, i . Hence we can write

$$Y = A(Y,i) + NX(Y, Y_f, R) \text{-----} (4)$$

Where $\delta A/\delta Y > 0$, $\delta A/\delta i < 0$, $\delta NX/\delta Y < 0$, $\delta NX/\delta Y_f > 0$ and $\delta NX/\delta R > 0$

An increase in domestic spending will raise domestic level of income and hence import too.

An increase in domestic spending will raise domestic level of income and hence import too. Rise of import would cause a rise in foreigners income which, on its turn, would lead to increase of the export of the domestic country. From global point of view this repercussion effect of domestic spending or income rise is significant for big and rich countries having trade relations with a large number of countries.

Balance of Payment Equilibrium Line

To simplify our analysis we assume that the home country faces a given price of imports and a given export demand. We assume perfect mobility of capital as between countries. For the sake of convenience Balance of Payment Surplus, BP is taken to be the sum of trade surplus, NX and Capital Account Surplus, CF:

$$BP = NX(Y, Y_f, R) + CF(i, i_f) \text{-----} (5)$$

where Y = domestic income level, Y_f = level of income abroad, R = real exchange rate, i = domestic rate of interest and i_f = rate of interest in foreign capital markets.

An increase in Y worsens trade balance while a rise in i above i_f improves capital account balance. $BP=0$ will be horizontal straight line (see figure 11.1) at the level of world interest rate, i_f by virtue of the perfect mobility of capital. If the domestic interest is above i_f , vast amount of capital from abroad will flow into the domestic country creating BP surplus. In the opposite case BP deficit would occur.

Internal and External Balance

An open economy has to reduce or eliminate both deficit in Balance of Payment and unemployment. The economy is said to have achieved external balance when it has zero balance of payments. On the other hand, internal balance is achievement when the economy achieves full employment. In certain cases a policy formulated to deal with one problem worsens another problem. These policy dilemmas can be demonstrated with the help of figure 11.1.

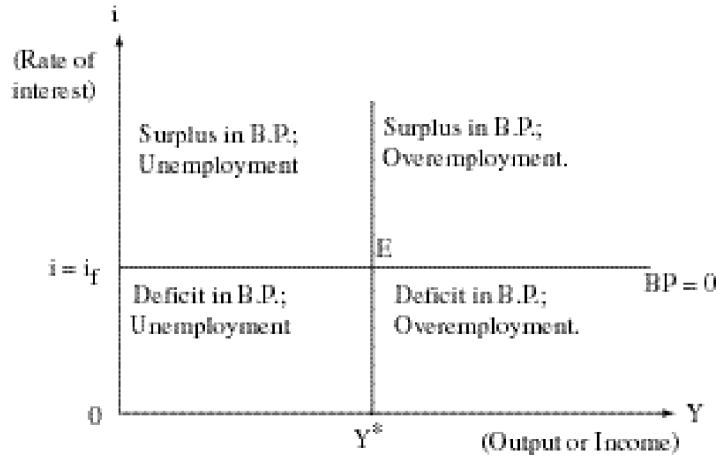


Figure 11.1: External and Internal Balance

In the figure at any point above the horizontal line at the world interest rate, i_f the economy has surplus in the balance of payment, where as, any point below the horizontal line represents deficit in the balance of payments. Let Y^* denote the full employment level of output. Any point to the right (left) of the vertical line at Y^* represents over employment (underemployment) situation.

At E, the point of intersection between the vertical line at Y^* and the horizontal line at i_f , the economy has both internal and external balance, The two lines divides the (i, Y) space into four quadrants representing different combinations of external and internal balance positions.

Suppose, the economy is in the South-West quadrant and has both deficit in balance of payment and unemployment problem. An expansionary monetary policy may lead the economy to the South-East quadrant characterized by deficit in the balance of payment and over employment. Similarly use of expansionary fiscal policy may push the economy to North-East quadrant where the economy experience surplus in Balance of Payment and over employment. It becomes intuitively clear that both monetary and fiscal policy should be used together to achieve external and internal balance simultaneously. The adjustment following the implementation of a policy and the specific sequence in which fiscal and monetary policies should be used to achieve the dual balance depends upon the exchange rate regime. We will discuss nature of such adjustment and the means to achieve both the balances in Fixed and Flexible Exchange rate regimes. We will continue to assume perfect mobility of capital and constant prices of goods and services.

An expansionary monetary policy may lead the economy to the South-East quadrant characterized by deficit in the balance of payment and over

Fixed Exchange Rate Regime

Under fixed exchange rate regime, given the assumption of perfect mobility of capital, monetary policy cannot work independently. This can be shown by using IS-LM model and BP=0 line (see figure 11.2). Let us assume that economy is initially at P, a point on the straight line along which BP=0. This line also passes through E where we have full employment level of output, Y^* . At E we have both internal and external balance.

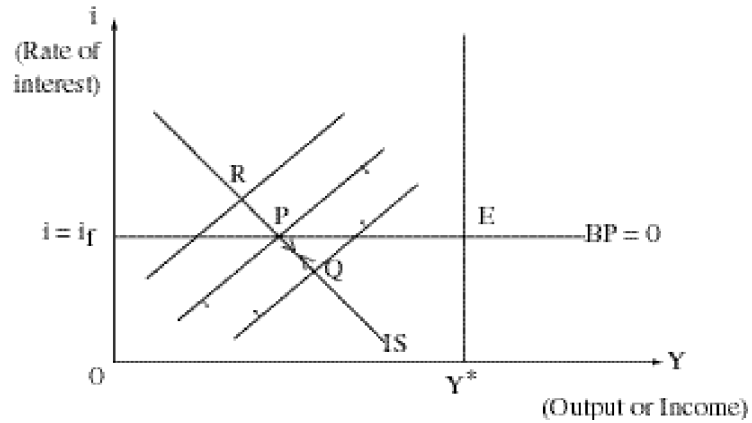


Figure 11.2: Effectiveness of Monetary Policy in a Fixed Exchange Rate Regime

But at P the economy has less than full employment level of output though here the economy has external balance.

Monetary Policy

Suppose now that government increases money supply to cause a rightward shift of LM curve to LM' for reaching Q where employment and output increase. But at Q domestic interest rate will be less than i_f hence there will be an outflow of capital. There will be a deficit in the balance of payment. Value of local currency will depreciate. The Central Bank must intervene to resist the decline. It will sell foreign money and receive domestic money in exchange. The supply of domestic money thus falls. As a consequence LM curve shifts backward. The process continues until the economy moves back to P. If the response in the capital market is massive and quick central bank is forced to reverse almost immediately after the initial expansion. Similarly when the central bank contracts the money supply and raises the domestic rate of interest above i_f , it is almost immediately forced to

expand money supply to initial level in order to resist the appreciation of domestic currency. In this case LM curve shifts to the left to LM' only to come back to the original position in subsequent periods.

Fiscal Policy

In a fixed exchange rate regime government can use expansionary fiscal policy to reduce unemployment. A rightward shift of IS curve to IS' will move the economy from point P to point S (see figure 11.3). Both interest rate and level of output in the home country rise. The higher interest rate induced a capital inflow and appreciation of exchange rate.

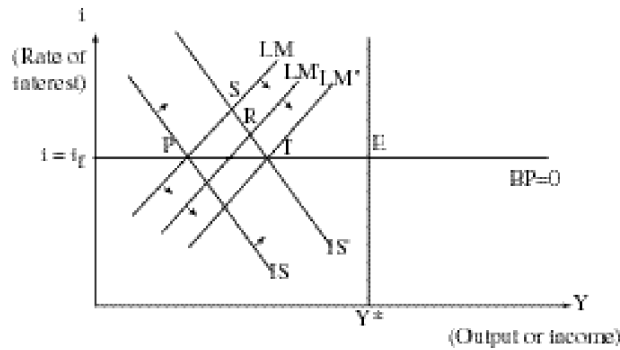


Figure 11.3: Effectiveness of Fiscal Policy in a Flexible Exchange Rate Regime.

To reverse the appreciation the central bank has to expand money supply, thus shifting LM curve, rightward. If the new curve, LM' intersects IS' at any point R above the horizontal line at i_f , the surplus will remain and the home currency will appreciate. The Central Bank has to expand money supply further to reach point T.

Flexible Exchange Rate Regime

In Fixed Exchange rate regime, the commitment of the government to maintain a fixed exchange rate makes the money stock endogenous- the central banks cannot pursue an independent monetary policy.

Under flexible exchange rates the Central Bank does not intervene in the foreign exchange market. The exchange rate adjusts itself to bring about equality between demand and supply of foreign exchange which usually change over time. Any current account deficit will be financed by capital inflows while surplus in

current account is balanced by capital outflows. Adjustments in the exchange rate ensure zero balance of payment i.e. zero sum of the current and capital accounts. Besides, in such a regime the central bank can set the money stock at will.

But, as under the fixed exchange rate, there is only one interest rate i_f at which balance of payment balances. If domestic market rate of interest is above i_f there will be capital inflow, the local currency appreciates causing IS curve shifts leftward. In a situation where $i < i_f$ capital outflow occurs leading to depreciation of home currency and subsequently to rightward shift of IS curve. See figure 11.4.

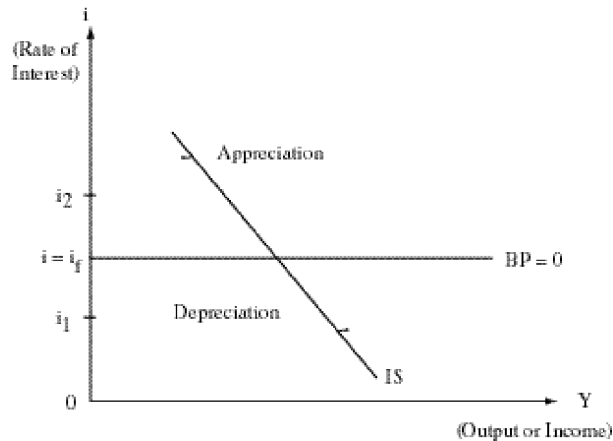


Figure 11.4: Shift of IS Curve in Flexible Exchange Rate Regime.

When the home currency appreciates export will decline and import will increase. The reverse happens when home currency depreciates.

Impact of an Increase in Foreign Demand for Domestic Goods and Services

Suppose the economy is initially at P where the economy has zero balance of payment and there is equilibrium in both goods market and service market. At the initial interest rate, exchange rate and output level, increase in foreign demand leads the economy to Q through rightward shift of IS_0 to IS_1 (see figure 11.5). At Q with domestic interest rate higher than i_f home currency appreciates due to capital inflow.

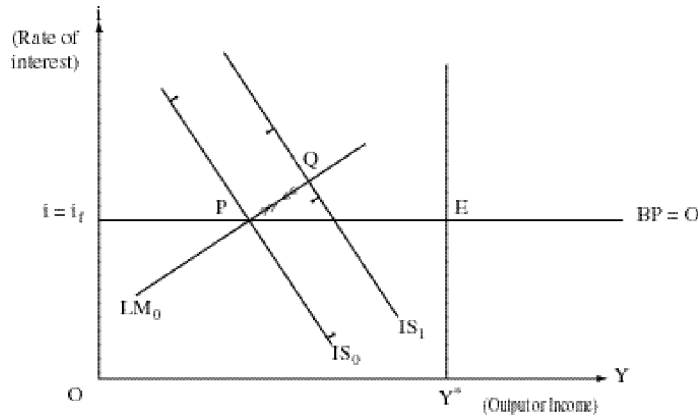


Figure 11.5: Effectiveness of Fiscal Policy in Flexible Exchange Rate Regime

This causes the IS curve shift backward to the original position and the economy to the initial point P. In fact the economy may not even reach Q-any tendency to move in that direction brings about a rise in the value of domestic currency (due to interest rate rise). Similar outcome occurs when reduction of tax rate or increase in government expenditure causes IS curve to initially shift to the right.

Fiscal Policy

As was the case with increase to foreign spending, expansionary fiscal policy cannot affect equilibrium level of output and employment under flexible exchange rate with perfect capital mobility.

Monetary Policy

An expansionary monetary policy may affect the equilibrium level of output, income and employment. If the central bank increases the money supply then the LM curve shifts rightward to LM' (see figure 11.6).

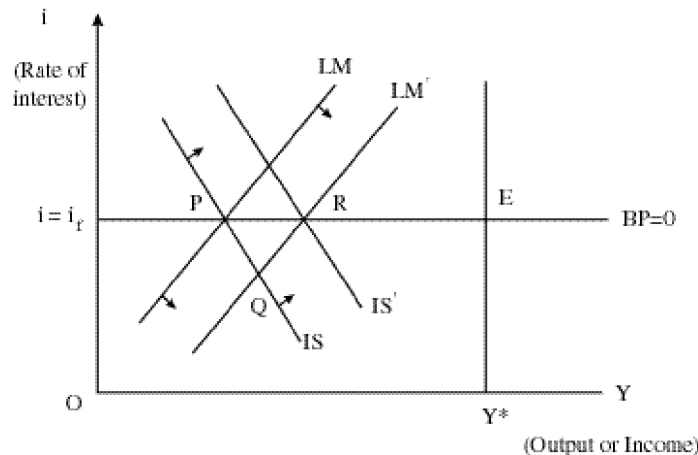


Figure 11.6: Effectiveness of Monetary Policy in Flexible Exchange Rate Regime

At Q, the new point of intersection between IS and LM', $i < i_f$ and home currency depreciates. This causes the IS curve shift rightward to IS' as exports increase and imports are discouraged. The economy thus moves to new equilibrium point R where domestic interest rate is again equal to world interest rate.

The economy has zero balance of payment. But the economy has higher level of income and output.

Concepts of Review:

Absolute Advantage	Devaluation
Comparative Advantage	Depreciation
Balance of Payment	Appreciation
Current Account	Nominal Exchange Rate
Capital Account	Real Exchange Rate
Surplus and Deficit	Balance of Payment Equilibrium Line
Fixed Exchange Rate	Internal Balance
Flexible Exchange Rate	External Balance

Exercise

1. Put tick (✓) marks in the appropriate boxes to indicate whether the following statements are true or false. If the particular statement is found to be false, write the appropriate correct statement:

(a) In a two-country two-commodity case trade does not take place between two countries if one country has absolute advantage over the other in the production of both the commodities.

True False

(b) In country A one unit of labour produces either 2 units of sugarcane or 4 units of cloth. In country B one unit of labour produces either 3 units of sugarcane or 6 units of cloth. Given such a situation trade may take place between two countries.

True False

(c) There is a basis of trade potential beneficial to both the countries if rate of exchange between two goods differs in two countries before trade takes place.

True False

(d) The Current Account includes only exports and imports of goods and services.

True False

(e) The Capital Account records purchases and sales of all types of financial assets.

True False

(f) If a country has a surplus in the Current Account, it would either buy assets or lend money abroad and has a surplus in the Capital Account.

True False

(g) The increase in the official exchange reserve is called over all Balance of Payment Surplus.

True False

(h) Devaluation occurs in fixed exchange rate regime and depreciation occurs in floating exchange rate regime.

True False

(i) Under fixed exchange rate system central banks re prepared to buy or sell any amount of a foreign currency at the fixed price or exchange rate.

True False

(j) Starting from zero balance of payment situation for both of the countries B and P, increase of export (from P) to country B is relative to import (to B) from country, P. Other things remaining the same will lead to increase of value of B's currency in terms of P's currency in floating exchange rate regime

True False

(k) Real depreciation of domestic currency cannot occur if nominal exchange rate of the foreign currency remains unchanged

True False

(l) Internal balance refers to the situation in the labour market while external balance refers to the situation in the balance of payment.

True False

(m) Given that capital is perfectly mobile monetary policy is effective in reducing unemployment and raising level of aggregate output under fixed exchange rate regime

True False

(n) In a fixed exchange rate regime government can effectively use expansionary fiscal policy to reduce unemployment

True False

(o) In a flexible exchange rate regime, an expansionary monetary policy may affect the equilibrium level of output, income and employment

True False

(p) In a closed economy both monetary and fiscal policy may be effective to reduce unemployment and raise aggregate level of output

True False

2. Answer briefly the following

- (i) What factors can be accounted for the variation of exchange rate between two commodity across countries?
- (ii) What are the limitations of the principal of Absolute advantage in explaining trade between two countries?
- (iii) Why should the Current and Capital Account together must balance?
- (iv) What is meant by Overall Balance of Payment Surplus or Deficit? What situations does Bangladesh face in connection with (a) Current Account, (b) Capital Account, and (c) Overall balance of Bangladesh?
- (v) What role remittance of Bangladesh from abroad and foreign assistance play in Balance of Payment of Bangladesh?
- (vi) When does the central of a country devalue the currency in Fixed Exchange Rate regime?
- (vii) When does the domestic currency appreciate or depreciate?
- (viii) What are meant by Internal Balance and External Balance?
- (ix) What are the determinations of trade surplus (X-M) and capital account surplus?
- (x) In what circumstance Balance of Payment Equilibrium (Zero surplus or deficit) line would be horizontal and why?
- (xi) Consider an Open Economy. Assume the Capital is perfectly mobile.
 - (a) Show that monetary policy is not effective in raising the level of output and employment in fixed exchange rate regime.

- (b) Show that fiscal policy is not effective in raising the equilibrium level of output and employment in a flexible exchange rate regime.