Open Economy Macroeconomics

Introduction to Open Economy and Introduction to Balance of Payment

Objective

After going through this chapter, you shall be able to understand the following concepts.

- Balance of Payment
- Current Account and Capital Account of Balance of Payment
- Components of Current Account and Capital Account
- Autonomous Items and Accommodating Items
- Factors Affecting BOP or Causes of Disequilibrium of BOP

Introduction

An open economy is that economy, which trades with other economies (or rest of the world) in terms of goods and services. It can also engage in activities such as borrowing and lending and other such activities with the rest of the world. In other words, an open economy involves exchange of goods and services and monetary transactions with the economies of the rest of the world.

An open economy's political functions as well as the economic functions are in sync with the happenings in the world. With the advent of globalisation, today almost every economy in the world is an open economy.

This is because of the various benefits associated with the opening-up of an economy. Some of the advantages (benefits) of an open economy are as follows.

1. An open economy engages in the export and import of goods and services with the rest of the world. Thus, the consumers can choose rationally from a greater pool of goods and services to maximise their satisfaction.

2. Similar to the consumers, the investors also enjoy the benefit of choosing from a wide range of assets and securities. Thus, they enjoy greater investment opportunities to maximise their returns.

3. Besides the freedom of choice in terms of goods and services and investment, firms and workers also enjoy the option choosing the location of production and work. The workers and firms can migrate from one country to another country in order to avail the best suited opportunity.

Balance of Payment

Balance of Payment (*BOP here onwards*) refers to the record of statements of economic transactions of a country with the rest of the world. In other words, it records the inflow of foreign exchange into the country and the outflow of foreign exchange from the country. Those transactions that cause an inflow of foreign exchange are recorded as positive items in the *BOP*. On the contrary, those transactions that cause an outflow of foreign exchange from the country are recorded as negative items in the *BOP*.

Economic Transactions

The following are the economic transactions with reference to the *BOP*.

a. **Visible Items**- Visible items in the *BOP* refer to all types of physical goods, that are exported and imported by the country.

b. **Invisible Items**- As against visible items, invisible items in the *BOP* refers to all types of non-physical goods that are traded by the country. It includes all types of services (such as banking and insurance services, consultancy services, etc.) and unilateral transfers (i.e. one-sided transactions such as interest, royalties, gifts, donations, etc.).

c. **Capital Transfers**- Capital transfers refer to the capital receipts and capital payments of the country.

Balance of Trade

Balance of Trade (*BOT here onwards*) for a country refers to the record of visible trade transactions of the country with the rest of the world. In other words, it shows the balance of exports and balance of imports of all the physical goods of a country.

Difference Between *BOP* and *BOT*

1. *Nature of Transactions*- The nature of transactions covered under *BOP* include goods, services as well as capital transfers. On the other hand, *BOT* includes only those items that are related to the trade of goods.

2. *Completeness*- *BOP* is a more complete and comprehensive measure as it includes both current as well as capital transactions. In contrast to this, the *BOT* includes only the current account transactions.

3. *Net Balance*- Under *BOP*, the net balance is estimated by the aggregate of current account balance as well as the capital account balance. On the other hand, in the *BOT*, the net balance is estimated as the difference between the export of goods and the import of goods.

Components of *BOP*- Current Account and Capital Account

The *BOP* account mainly consists of following two accounts.

a. Current Account

b. Capital Account

Current Account of *BOP*

The Current Account of *BOP* is that account which maintains the records of imports and exports of goods and services as well as the record of unilateral transfers.

Components of Current Account

The following are the three main components of Current Account of *BOP*.

1. ***Export and Import of Goods***- The transactions of a country in the form of export and import of goods is recorded in the current account of the *BOP*. This record of export and import of goods is also called the 'Balance of Visible Trade'. The export of goods is recorded as a positive item in the Current Account of *BOP*. This is because exports result in the inflow of foreign exchange into the country. On the other hand, imports of goods are recorded as negative items in the Current Account of *BOP*, as they result in an outflow of the foreign exchange from the country.

2. ***Export and Import of Services***- Another component of the Current Account is the export and import of services. The record of export and import of services is also called the 'Balance of invisible trade'. Similar to the export of goods, export of services is also recorded as positive items in the Current Account of *BOP*. As against this, the import of services is recorded as negative items in the Current Account of *BOP*. The following are some of the major services that are included in the Current Account of *BOP*.

a. Shipping services, insurance and banking services, etc.

b. Income from investment (i.e. income from profits and dividends)

c. Foreign travel

d. Miscellaneous transactions such as royalties, consultancy services, telephone services, etc.

3. ***Unilateral Transfers***- Unilateral transfers refer to the one-sided transfers such as gifts, donations, grants from foreign governments, etc. A country makes such transfers to the rest of the world as well as receives transfers from the rest of the world. Receipts of unilateral transfers are recorded as positive items in the Current Account of *BOP*, while payments of unilateral transfers are recorded as negative items in the Current Account of *BOP*.

Thus, Balance of Current Account is the net value of the three balances i.e.

Current Account Balance = Balance of Visible Trade + Balance of Invisible Trade + Balance of Unilateral Transfers

The balance of Current Account can either be **deficit** or **surplus**.

If the export of goods and services falls short of the imports of goods and services, then the Current Account balance is **deficit**. On the other hand, if the export of goods and services exceeds the import of goods and services, then the Current Account balance is surplus. That is,

Exports of Goods and Services > Imports of Goods and Service ⇒ Current Account Surplus

Exports of Goods and Services < Imports of Goods and Service ⇒ Current Account Deficit

Capital Account of *BOP*

Capital Account refers to that account of *BOP*, which records all the transactions that cause a change in the status of assets and liabilities of the government or any of the residents of a country.

Components of Capital Account

The following are the three main components of Capital Account of *BOP*.

1. ***Foreign Direct Investment (FDI) and Portfolio Investment***- Foreign Direct Investment refers to the investment in the assets of a foreign country. By investing, the government or any resident of domestic country owns the control over the asset of the foreign country. On the contrary, Portfolio Investment refers to the investment in the assets of a foreign country without any control over that asset.

FDI and Portfolio Investment cause an inflow of foreign exchange into the country. Thus, they are recorded as positive items in the Capital Account of *BOP*. It should also be noted that FDI and Portfolio Investment are the ***non-debt creating*** capital transactions.

2. ***Loans and Borrowings***- Loans and borrowings by a country from the foreign countries or from the international money market are recorded in the Capital Account of the *BOP*. These borrowings can be in the form of commercial borrowings or in the form of assistance. When a country borrows with the consideration of assistance, the transaction would involve a lower rate of interest as compared to the prevailing market rate of interest.

As against this, commercial borrowings involve open market rate of interest. Loans and borrowings result in inflow of foreign exchange into the country. Hence, they are recorded as positive items in the Capital Account of *BOP*. Unlike FDI and Portfolio Investments, loans and borrowings are **debt creating** capital transactions.

3. **Banking Capital Transactions**- Another form of Capital Account transactions are banking capital transactions. Such transactions refer to the transactions of external financial assets and liabilities of the commercial banks and cooperative banks that operate as authorised dealers in the foreign exchange market.

Similar to the Current Account, the balance of Capital Account can either be **deficit** or **surplus**. The Capital account of a country will show a **deficit if there is a net capital outflow from the country**. On the other hand, **capital account of a country will show a surplus if there is a net capital inflow into the country**. That is,

Net Capital Outflow ⇒ Capital Account Deficit

Net Capital Inflow ⇒ Capital Account Surplus

Autonomous Items and Accommodating Items in BOP

Autonomous Items in BOP- Autonomous items refer to those international economic transactions that are undertaken with the sole motive of earning profit. Such transactions are independent of the *BOP* status of a country. Autonomous transactions are also called '**above the line items**' in *BOP*.

It should be noted that the overall balance of *BOP* is governed by the balance of autonomous transactions. The **BOP would show a deficit** if the autonomous receipts **are lesser than the autonomous payments**. On the other hand, the **BOP would show a surplus** if the autonomous receipts are **greater than the autonomous payments**.

Accommodating Items in BOP- Accommodating items refers to those international economic transactions that are not undertaken with the motive of earning profit such as government financing, injection or withdrawal from the official reserves. Such transactions are undertaken as a consequence of the autonomous transactions.

In other words, they are compensating short-term capital transactions that are undertaken to correct the disequilibrium in the autonomous items. For example, if the autonomous receipts are lesser than the autonomous payments, then in the form of accommodating transactions the **government might run down its official reserves** in order to **cover the deficit in the autonomous transactions**. Accommodating items are also called '**below the line items**' in *BOP*.

Overall *BOP* Balance

The Overall *BOP* balance is the aggregate of the Current Account Balance and the Capital Account Balance. The overall BOP balance is defined to different sense- accounting sense and operational sense.

In **accounting sense**, the overall *BOP* will always be in balance or in equilibrium. This is because any deficit in the Current Account is compensated by a corresponding surplus in the Capital Account and any surplus in the Current Account is compensated by a deficit in the Capital Account. For example, if a country is facing a Current Account deficit, then it may finance the deficit by selling its assets or by borrowing from abroad.

However; in the **operational sense**, *BOP* may not always be in equilibrium. The disequilibrium in *BOP* as inferred in operational sense is assessed by the accommodating items in *BOP*. If the accommodating items say, official reserves are increasing, then it implies that *BOP* is in surplus.

On the contrary, if the accommodating items reflect a fall in the official exchange reserves, then it implies that the *BOP* is in deficit. Thus, in operational sense, we can say that the disequilibrium in the *BOP* is judged by the movement in the accommodating items, namely the official exchange reserves.

The movements in the accommodating items are reflected in the change in the Capital Account Balance as well. For instance, if the official exchange reserves are reduced, then it is shown as deficit item of *BOP*.

Disequilibrium in *BOP*

BOP is said to be in disequilibrium when there exists either a surplus in the net balance or a deficit in the net balance.

Causes of Disequilibrium in *BOP*

The following are the factors that cause disequilibrium in *BOP*.

a. **High Inflation**- A high rate of inflation compels large scale imports and discourages exports. This would result in a deficit in *BOP*.

b. **High Development Expenditure**- The developing nations have to incur huge expenditure for developmental purposes, owing to which there are large scale imports. This results in a deficit in the *BOP*.

c. **Business Cycle**- An economy witnesses business cycles in the form of boom and recession that results in the changes in the equilibrium position of *BOP*. For example, during periods of economic depression, exports falls. As a result the *BOP* is in deficit.

d. ***Import of Services***- Underdeveloped and developing countries often import capital and other services from the developed countries. This is reflected as a deficit in the *BOP.*

e*.* ***Changes in Exchange Rates***- The change in the exchange rate (either appreciation or depreciation of the domestic currency) also affects the country's *BOP* position. For instance, depreciation of a country's currency would make its exports cheaper and imports dearer, thereby, resulting in a surplus in the *BOP*. On the other hand, appreciation of a country's currency makes the country's exports costlier and imports cheaper, consequently, result in a deficit in the *BOP.*

f. ***Political Factors***- Political factors such as international relations, government policies regarding investment, etc. may have adverse as well as favourable impact on the *BOP* position of the country.

g. ***Social Factors***- Social factors such as changes in the tastes and preferences, changes in the source of imports, etc. also affect the *BOP* position. For example, a shift towards a cheaper source of imports would have a favourable impact on the *BOP* and *vice-versa*.

Meaning and Type of Exchange Rate, Determination of Exchange Rate

Objectives

After going through this chapter, you shall be able to understand the following concepts.

- Meaning of Foreign Exchange Rate
- Effective Exchange Rate
- Types of Exchange Rate
- Determination Of Exchange Rate Under Flexible Exchange Rate Regime
- Determination Of Exchange Rate Under Fixed Exchange Rate Regime

Meaning of Foreign Exchange Rate

As we know that an open economy engages in various economic transactions (in terms of export and import of goods and services) and monetary transactions with the economies of the rest of the world. Such transactions among the countries require exchange of currencies for the purpose of payments and receipts. In other words, for the transactions to take place every economy is required to purchase foreign currencies in return of its domestic currency.

The rate at which the currency of one economy is exchanged for the currency of other economy is termed as foreign exchange rate. In other words, ***foreign exchange rate refers to the rate at which price of one currency is measured in terms of another currency***. Foreign exchange rate shows the price paid in domestic currency to purchase one unit of foreign currency.

For example, a rupee-dollar exchange rate of 50 ($1= Rs 50) implies that it costs Rs 50 to purchase 1 dollar.

The exchange rate between two currencies can be expressed in following two ways.

a. Nominal Exchange Rate

b. Real Exchange Rate

Nominal Exchange Rate- Nominal exchange rate simply refers to the price of one currency in terms of another currency. The word nominal is used because here exchange rate is quoted in terms of money. For example, a rupee-dollar exchange rate of 48 ($1= Rs 48) is the nominal exchange rate of rupee with dollar.

Real Exchange Rate- As against nominal exchange rate, real exchange rate refers to the ratio of the foreign prices to the domestic prices.

Algebraically, real exchange rate is expressed as follows.

$$R = \frac{e P_f}{P}$$

where,

P_f represents price level in the foreign country

P represents price level in the domestic country

e represents Nominal exchange rate

For example, suppose apples cost Rs 60 per kg in India while they cost $ 2 per kg in USA. Also suppose the rupee-dollar exchange rate is 50 ($1= Rs 50), then the real exchange rate for rupee dollar is calculated as follows.

$$R = \frac{50 \times 2}{60} = 1.66$$

Interpretation of the values of Real Exchange Rate

1. A real exchange rate equal to 1 suggests that the price of a commodity is the same in the two countries when measured in the same currency. For example, real exchange rate equal to one between dollar and rupees suggests that any commodity in US and India will cost the same when measured in either rupees or in dollars.

2. A real exchange rate greater than 1, implies that goods in the foreign country are more expensive than goods in the domestic country.

3. A real exchange rate less than 1, implies that goods in the domestic country are more expensive than goods in the foreign country.

Thus, it can be said that real exchange rate is a measure of country's international competitiveness.

Effective Exchange Rate

In an open economy, a country interacts with many other countries of the world. Thus, it is desirable for a country to measure the strength of the domestic currency relative to not just one foreign currency but to all other currencies. This is represented by the effective exchange rate.

Effective exchange rate measures the strength of one currency relative to other currencies in the international market.

Types of Effective Exchange Rate

The following are the two types of Effective exchange rate.

1. Nominal Effective Exchange Rate (*NEER*)

2. Real Effective Exchange Rate (*REER*)

Nominal Effective Exchange Rate (NEER)

Nominal Effective Exchange Rate (*NEER*) measures the strength of one currency in terms of another currency, without taking into account the changes in the price level in the countries.

Algebraically, *NEER* is represented as follows.

$$NEER = \sum_{i=1}^{n} \left(R^i \text{ index} \right) (W_i)$$

where,

R^i represents the exchange rate of the domestic currency with the currency of the ith trading partner. For example, exchange rate in Indian Rupees/USD$

R^i index represents the index of exchange rate of domestic currency with the currency of the ith partner with reference to the exchange rate in the base year*

W_i represents the ratio of trade volume with i^{th} partner to the total trade volume of the country**

* **Note**: Algebraically, R_i index is the ratio of the exchange rate with the ith partner in year (*a*) and the exchange rate with the ith partner in the base year (b).

$$R_i \, index = \frac{Exchange\ rate\ in\ year\ a\ \left(R_a^i\right)}{Exchange\ rate\ in\ year\ b\ \left(R_b^i\right)}$$

** **Note**: Algebraically, W_i is represented as follows.

$$W_i = \frac{X_i + M_i}{X_{Total} + M_{Total}}$$

where,

X_i represents exports to i^{th} partner

M_i represents imports from i^{th} partner

X_{Total} represents total exports

M_{Total} represents total imports

Real Effective Exchange Rate (REER)

Real Effective Exchange Rate (*REER*) determines the strength of one currency in terms of other currency with consideration of changes in the price level across different countries. In other words, this exchange rate is based on the constant prices, thereby, eliminates the effects of price changes in two countries.

$$REER = \sum_{i=1}^{n} \left(RER_{index}^i\right) (W_i)$$

where,

RER^i index represents the index of real exchange rate of the domestic currency with the currency of the ith partner.

Purchasing Power Parity

It implies the amount of money needed to buy an identical (same) good in two different countries. That is, as per the PPP, if a pen-drive costs Rs 50 in India, then the same pen-drive should cost US$ 1 in USA, if the exchange rate between Indian Rupees and US Dollar is Rs 50/US$. This implies that the pen-drive will cost Rs 50 (or US$1) in India and USA both. In other words, PPP can be expressed as the ratio of prices in both the countries.

$$R = \frac{P_X}{P_Y}$$

where,

R represents Rate of exchange

P$_X$ represents Price level in country *X*

P$_Y$ represents Price level in country *Y*

With real exchange rate equal to 1, currencies of two countries are said to be at purchasing power parity (PPP).

Real PPP- It refers to the ratio of price level in the two countries, taking into account the difference in the rate of inflation in the two countries.

Types of Exchange rate

As we know the exchange rate refers to the rate at which the price of one currency is measured in terms of another currency. The exchange rate system can be of the following three types.

1. Fixed exchange rate system

2. Flexible exchange rate system

3. Managed floating exchange rate system

1. Fixed Exchange Rate System

Under the fixed exchange rate (also termed as the pegged exchange rate) system, the exchange rate is held constant or fixed by the monetary authority of the country. Under this regime, the monetary authority of the country pegs (or, fixes) the value of its currency against various other currencies.

This system of exchange rate avoids frequent fluctuations in the exchange rate and makes international trade more predictable. In other words, it ensures guarantee returns to the exporters.

A fixed exchange rate regime has the following two variants.

a. The Gold Standard System of exchange rate

b. The Bretton Woods System system of exchange rate

a. *The Gold Standard System of Exchange Rate*

The Gold Standard System of exchange rate was prevalent in the economies of the world during the period 1870 to 1914. Under this system, gold was accepted as the common unit of parity between the currencies of various countries. Each participating country defined the value of its currency in terms of gold.

Accordingly, the exchange rate was fixed considering the gold values of different currencies. For example, if one rupee is equivalent to 6g of gold and one dollar is equivalent to 2g of gold, then the rupee dollar exchange rate is 6:2 or 3:1. This implies that it costs Rs 3 to purchase one dollar.

b. *The Bretton Woods System of Exchange Rate*

Under the Bretton Woods System, the monetary authorities of different countries (other than USA) maintained fixed exchange rate among their currencies and the USD (dollar) by intervening in the foreign exchange market. In case the value of a currency is lower as compared to the value of USD, then the monetary authority of that country will buy its own currency in exchange of USD in the foreign exchange market.

This would pull up the price of the currency. On the other hand, if the value of currency is high as compared to the value of USD, then the monetary authority will sell its own currency in exchange of USD. This would push down the value of country's currency.

A country following this system has certain advantages in the international money market. A fixed exchange rate helps the government of the country to control the rate of inflation. This is because a high inflation in the domestic country would imply reduction in the demand for exports and thus reduction in exchange earnings.

Thus, to avoid the trade deficit, the country would maintain the inflation rate at moderate levels. Similarly, this system of exchange rate promotes the formation of long term economic policies in the international trade. It also prevents speculation in the international money market.

Besides, a major advantage offered by the system of fixed exchange rate is that it ensures stability in the exchange market which in turn promotes higher capital movements.

However, this system often becomes difficult to follow due to certain problems associated with it. One of the major problems posed by this system is that a country following this system must hold huge reserves of gold. Besides, the rate of exchange as fixed by the monetary authority, may not be the equilibrium rate of exchange.

In other words, there may be undervaluation or overvaluation of currency by the monetary authority. Also, the practice of holding huge reserves of gold obstructs the movement of capital, thereby affects the growth process.

2. Flexible Exchange Rate System

Under the system of flexible exchange rate, the rate of exchange is determined by the market forces (demand for foreign exchange and supply of foreign exchange) with minimum or no government intervention. The equilibrium exchange rate is determined where the demand for foreign currency is equal to the supply of foreign currency.

The system of flexible exchange rate overcomes the various disadvantages associated with the fixed exchange rate regime. As against the system of fixed exchange rate, flexible exchange rate regime eliminates the need to hold huge gold reserves. Also, since the exchange rate is market determined, it eliminates the problem of overvaluation and undervaluation of currency. Besides this system of exchange rate promotes easy and free capital movements.

However, despite overcoming the disadvantages associated with the fixed exchange rate regime, the system of flexible exchange rate has its own weaknesses. Since, the exchange rate is market determined, it is vulnerable to many fluctuations that can cause instability in the money market and thus, hamper movement of capital. Also, due to various fluctuations, the government can face difficulties in the formation of long term policies. Besides, this system encourages speculation in the foreign exchange market.

3. Managed Floating System of Exchange Rate

Managed floating system of exchange rate combines the features of both the fixed exchange rate as well as the flexible exchange rate. On one hand, the foreign exchange market is allowed to operate freely and on the other hand, there is an official declaration of rules or guidelines for the intervention by the monetary authority. In other words, the managed floating exchange rate regime determines the exchange rate through the market forces with intervention of the monetary authority as and when required.

Determination of Exchange Rate under the Flexible Exchange Rate Regime

We know that under flexible exchange rate system, the rate of exchange is determined by the market forces of demand and supply. The equilibrium exchange rate is determined where demand for foreign currencies is equal to the supply of foreign currencies.

Demand for foreign exchange*:* The foreign currency is demanded for the purpose of payments in various economic transactions and monetary transactions such as for purchasing goods and services from the rest of the world, repayment of loans and borrowings, sending gifts and grants to the rest of the world, for the purpose of investment and purchase of financial assets in rest of the world.

Demand for foreign currencies is inversely related with the exchange rate. In other words, higher the exchange rate, lower will be the demand for foreign currencies and vice-versa.

A rise in the exchange rate (from say, $1= Rs 40 to $1= Rs 50) implies that the goods from abroad become more expensive (it now cost Rs 50 to purchase a commodity worth $1 instead of Rs 40 earlier).

This would result in a reduction in the demand for the foreign commodities. This fall in the demand for foreign goods reduces the demand for dollars and vice versa.

Graphically, the demand curve for foreign currency is represented as follows.

Demand for Foreign Currency
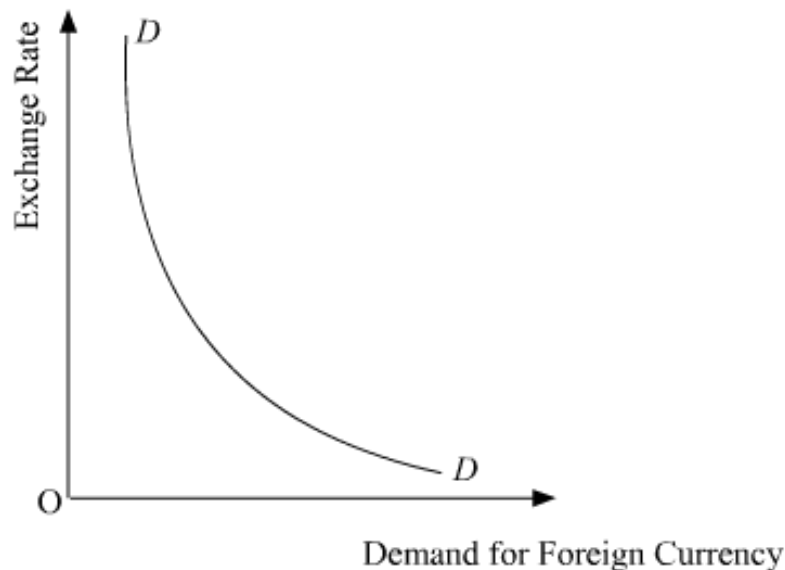
Supply of Foreign Exchange: A country receives foreign exchange from various receipts in the economic transactions such as receipt from exports of the domestic country to rest of the world, receipt of remittances from abroad, FDI and purchase of financial assets in the domestic country.

Besides, the foreign exchange also flows in the country due to speculative activities.

Supply of foreign currency is directly related with the exchange rate i.e. higher the exchange rate, higher will be the supply of foreign currencies and vice versa.

For example, a rise in the exchange rate (say from $1= Rs 40 to $1= Rs 50). This rise in foreign exchange implies that domestic country's export to foreign countries have become cheaper (because now foreigners can purchase Rs 50 worth of goods for $1, as compared to the earlier situation where they could purchase only Rs 40 worth of goods for $1).

This raises the demand for exports. Thereby, the supply of foreign exchange rises.

Graphically, the supply curve for foreign currency is represented as follows.

Exchange Rate

S

S

O

Supply of Foreign Currency
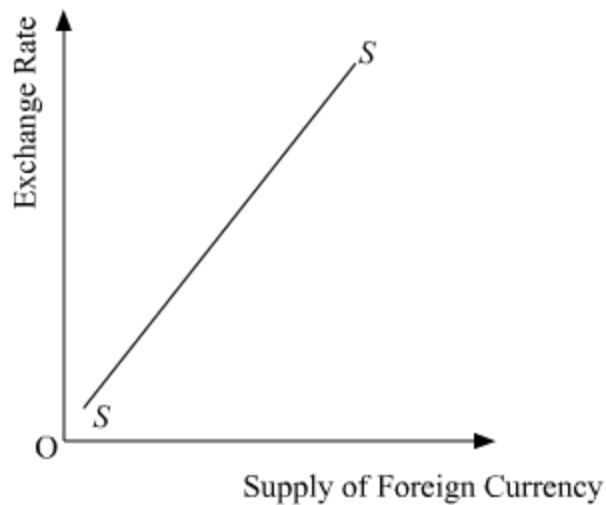
Equilibrium Rate of Exchange

The equilibrium exchange rate is determined where the demand for foreign currency is equal to the supply of foreign currency.

Rate of Exchange

D

S

R_1

Excess Supply

E

R

Excess Demand

R_2

S

D

O

Q

Demand and Supply of Foreign Currency
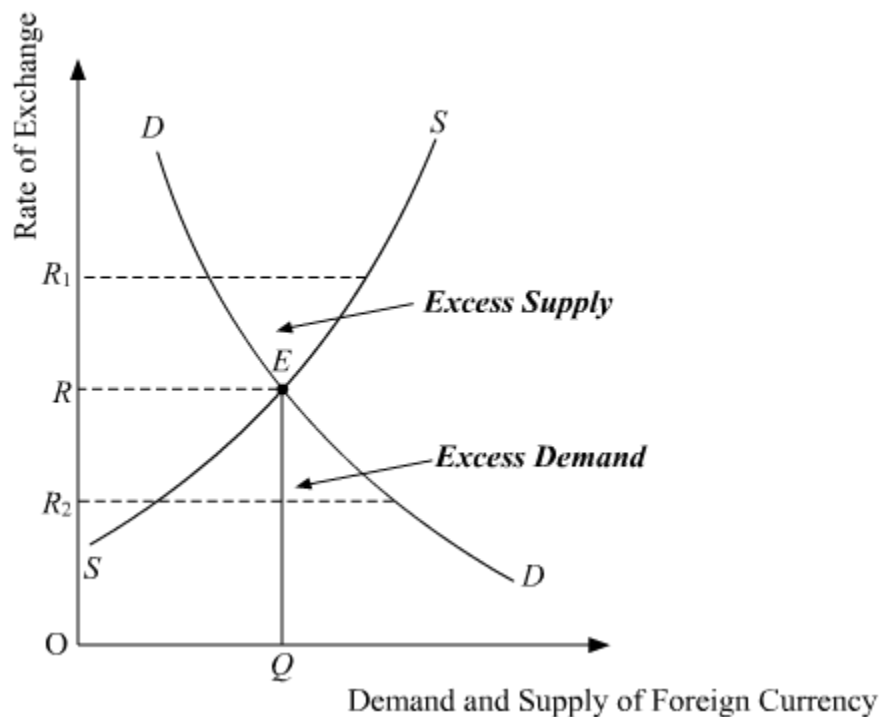
In the diagram, *DD* is the demand curve for foreign currency and *SS* is the supply curve of foreign currency. Point *E*, the point of intersection of demand curve and supply curve represents the equilibrium exchange rate.

OR is the equilibrium exchange rate and *OQ* is the quantity demanded and supplied of foreign currencies.

If exchange rate rises to OR_1, then the supply of foreign currency exceeds the demand for foreign, forcing the exchange rate to fall back to OR. On the contrary, if the exchange rate falls to OR_2, there is excess demand over supply. Hence, the rate of exchange again rises from OR_2 to OR_1.

Changes in Foreign Exchange Rate

The exchange rate can change due to a change in the demand for foreign currency or due to a change in the supply of foreign currency.

Change in Exchange Rate Due to Changes in Demand for Foreign Currency

Let us consider the case of an increase in demand for foreign currency

Demand and Supply of Foreign Currency
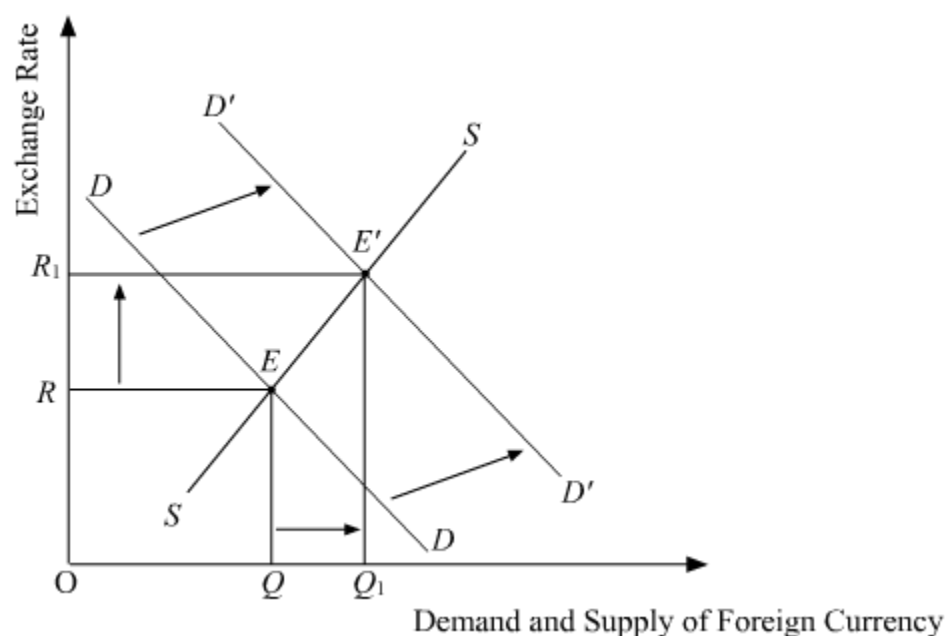
In the diagram *DD* and *SS* are the initial demand curve and supply curve for foreign currency respectively. *E* is the initial equilibrium point, with *OR* as the equilibrium exchange rate. An increase in the demand for foreign currencies shifts the demand curve from *DD* to *D' D'*.

With the shift in demand curve, new equilibrium is established at point *E'* , where the exchange rate rises from *OR* to OR_1 and the demand and supply of foreign currencies rises from *OQ* to OQ_1. A rise in the exchange rate implies currency depreciation*.

Note: Currency depreciation implies that domestic currency has become less expensive in terms of foreign currency.
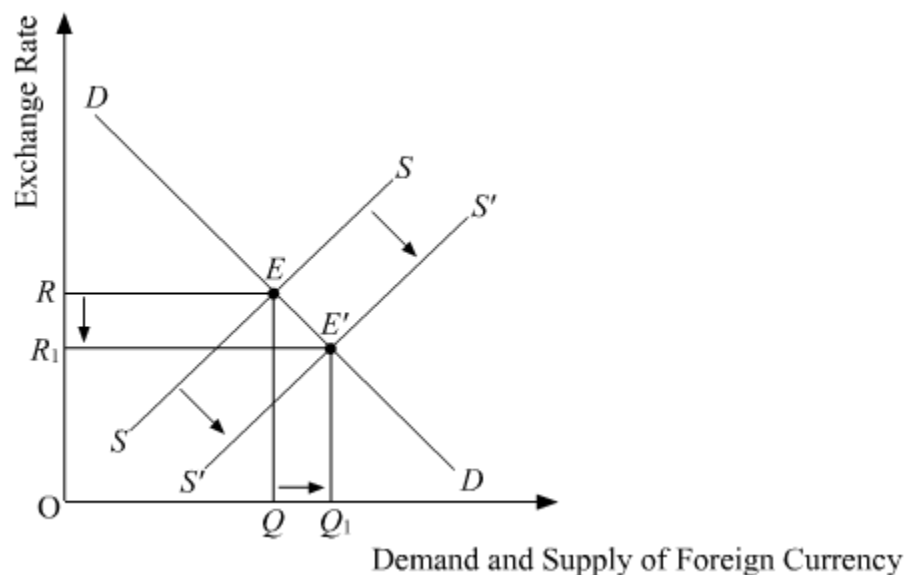
If, in the initial situation, $1 = Rs 40

and in the final situation, $1 = 50 then,

rupee is depreciating against dollar. This is because now $1 can be used to purchase Rs 50 instead of Rs 40. Thus, rupee has become less expensive.

The case of fall in demand for foreign currencies would represent the opposite case where exchange rate falls and the currency appreciates.

Changes in Exchange Rate Due to Changes in the Supply of Foreign Currency

Let us consider the case of increase in the supply of foreign currency

Demand and Supply of Foreign Currency

Rise in the supply of foreign currency would shift the supply curve from *SS* to *S' S'*. With the shift in supply curve, the new equilibrium is established at point *E*, where the exchange rate falls from *OR* to OR_1 and the demand and supply of foreign currency rises to OQ_1. This represents a case of currency appreciation*.

Note: Currency appreciation implies that domestic currency has become more expensive in terms of foreign currency

if in the initial situation, $1= Rs 50

and in the final situation, $1 = Rs 48 then,

rupee is appreciating against dollars. This is because now $1 can be used to purchase only Rs 48 instead of Rs 50. Thus rupee has become more expensive.

Determination of Exchange Rate under the Fixed Exchange Rate Regime

As we know, under the fixed exchange rate system the exchange rate is held constant or fixed by the monetary authority and any decision to change the exchange rate is at the discretion of the monetary authority. The government can either revaluate the currency or devaluate the currency.

Revaluation of a currency occurs when the currency exchange rate is officially raised by the monetary authority. On the other hand devaluation of a currency occurs when the currency exchange rate is officially lowered by the monetary authority.

Demand and Supply of Foreign Currency
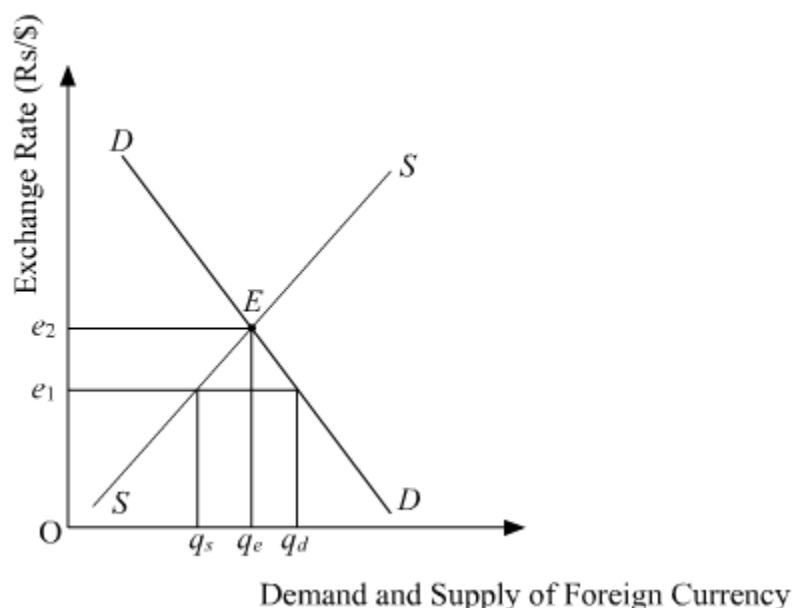
Suppose, the monetary authority wishes to fix the exchange rate at e_1, which is lower than the equilibrium exchange rate under the flexible exchange rate system, e_2 (determined by the intersection of demand curve for foreign exchange and supply curve of foreign exchange).

Thus, in such a case the rupee is overvalued (revaluation). At the exchange rate of e_1, demand for dollars is higher than the supply of dollars. Thus, now to prevent the exchange rate from rising the monetary authority would sell dollars for rupees in the foreign exchange market.

On the contrary, if the monetary authority fixes the exchange rate at level higher than the equilibrium exchange rate under the flexible exchange rate.

International Experience - Transition from Bretton Woods to SDRs, India's Experience regarding Exchange Rate Management

Objective

After going through this chapter, you shall be able to understand the meaning and evolution of:

- Gold Standard system
- The Bretton Woods system
- Floating Exchange Rates
- India's Experience Regarding Exchange Rate Management

Introduction

In the world market, the exchange rates have always played a significant role. These exchange rates have evolved overtime and there has been transformation in the exchange rate systems from gold system to bretton woods and now to flexible exchange rates. Let us understand the meaning of these systems and their evolutions.

The Gold standard

The Gold Standard System of exchange was one of the earliest systems of exchange. It was prevalent in most of the economies in the world from around 1870s till the outbreak of the First World War in 1914. In this system, the participating countries valued their respective currencies in terms of gold. Each of the participating nations committed to guarantee free convertibility of its currency in gold.

Also, the conversion of one currency in terms of other currency (for trade purposes) was in terms of gold. In other words, gold served as the medium of conversion among currencies of different nations. Although the currencies were convertible into each other at fixed price, but that rate was allowed to fluctuate between the upper and lower limits which were fixed and predetermined.

These limits were fixed taking into consideration various factors such as cost of melting of gold, shipping charges, cost of re-coining between two currencies, etc. Eventually, many countries agreed on the gold standard system and stable fixed exchange rate. However; to maintain such a system, all the participating countries were required to hold an adequate stock of gold.

The system of gold standard, overtime faced several problems. One of important problem with this system was that all the participating nations were required to hold adequate stock of gold with themselves. Another major concern that threatened the nations following gold system was that 'Would not a country lose all its stock of gold in situations of high BOP deficit?' In this regard, the following were the two explanations.

As per the **Mercantilists**, a country would indeed lose its stock of gold in situation of BOP deficit unless the state intervened through tariffs and quotas on exports. On the other hand, was the explanation given by **David Hume**. He advocated that if the gold stocks in a country go down, then all the prices and the costs would consequently fall. A fall in the prices would make a country's imports dearer and its exports cheaper.

Thereby, the imports would fall, while the exports would rise leading to an improvement in the BOP. This process continues until the equilibrium is re-established. Thus, according to Hume, in the system of gold standard equilibrium was self-correcting and maintained by automatic equilibrating mechanism.

Besides these problems, it was also observed that the prices were heavily dependent on the gold stocks. As the money supply determined by the stock of gold was limited, so the prices tend to fall. In other words, gold standard was found to be deflationary.

Due to all these aforementioned problems in the gold standard system, the participating countries started losing faith on this system. Gradually and eventually, the gold standard became less popular which pushed the countries to economise gold.

At the downturn of the gold standard, silver was used to supplement gold, which led to the emergence of 'bimetallism'. Another way of economising on gold was the 'Gold Exchange Standard'.

Similar to the Gold Standard System, under this system also the currencies were exchangeable at fixed prices with respect to gold, however; the countries were required to hold minimal or no stock of gold. The breakdown of the Gold Standard System paved the way for the emergence of the Bretton Woods System.

The Bretton Woods System

Under this system, a two-tier system of convertibility was adopted.

The first-tier of the system was convertibility of dollar into gold at a certain fixed price. In the second tier of the system, the monetary authority of different countries maintained a fixed exchange rate among their currencies and the US dollar by intervening in the foreign exchange market.

If in case the value of currency is lower compared to that of the US dollar, then the monetary authority of that country will intervene by purchasing its own currency in exchange of the US dollar, which pulls-up the price of the currency.

The Bretton woods system lasted until 1971. Due to the devastating effect of the World War II, there was a heavy demand for imports by numerous countries to reconstruct their economies. Thus, US along with other participating countries faced huge BOP deficits. In order to cover that deficit, the participating nations started drawing down their reserves of dollar (at that time US dollar was the main component of the currency reserves of the countries). However, the short run dollar liabilities of the US also continued to increase. This increase in liability eroded the credibility of the US commitment to convert dollars into gold at a fixed price.

Thus, the value of gold was undermined and US abandoned the fixed value of the dollar. This is regarded **Triffin Dilemma**, named after **Robert Triffin**, who was the main

critic of the Bretton Woods System. He in fact suggested that instead of gold and dollar, a new 'reserve asset' must be created under the control of IMF.

Thus, in 1967, gold was displaced by Special Drawing Rights (SDRs), also known as the paper gold. SDRs represent a claim on currency by the IMF member countries and these countries could obtain hard currency against the SDRs.

Breakdown of Bretton Woods System and a Gateway to Floating Exchange Rate Regime

The breakdown of the Bretton Woods System was followed by various other events such as the devaluation of pound in 1967, the creation of two-tier gold market (the official rate and the private market determined rate), and the US decision to give up the link between the dollar and the gold.

In 1971, the 'Smithsonian Agreement' was enforced, which widened the permissible band of the movements of the exchange rate to 2.5% above or below the new central rate. Also, in the early 1970s, the developed countries such as UK, Switzerland and Japan started following floating exchange rate regime.

The regulations regarding the exchange rate were further removed with the revision of IMF articles in 1976, which allowed the countries to choose whether to float their currencies or peg them (to a single currency, a basket of currency or to SDR).

Current Scenario

Today, the International Exchange Rate System is characterised by simultaneous existence of multiple foreign exchange regimes in the world. Some of the countries follow fixed exchange rate, while other follow floating exchange rate regime and on the other hand some other countries peg their currencies to the US dollar.

In 1999, the **European Monetary Union (EMU)** was created, which introduced a new common currency called the Euro and permanently fixed the exchange rate between the Euro and currencies of the different member countries. Apart from this, some countries which were former French colonies, peg their currencies to Franc. Also some countries often fix the exchange rate according to their important trading partners.

Hence, we can trace the evolution and emergence of different exchange rate regimes starting from the Gold Standard System followed by the Bretton Woods System, which was subsequently succeeded by SDRs and finally multiple exchange rate regimes in the current scenario.

India's Experience with the Exchange Rate Management

Post independence, Exchange Rate Management in India, has evolved from a system of Fixed Exchange Rate, to a system of basket peg (i.e. pegging of exchange rate

against a basket of currencies) and further to Managed Floating Exchange Rate System.

- Initially, during the period 1947-1971, the external value of rupee was fixed in terms of gold (at 4.15 grams of gold). The period however; saw a devaluation of rupee during 1949. After 1949, the par value of rupee against gold remained more or less stable.

- After 1971, because of India's historic links with Britain, the rupee was linked with Pound Sterling. This system was followed till 1975.

- From 1975, India started following the system of basket peg where, instead of a single currency, rupee was pegged against a basket of currencies. This system was adopted to ensure stability and to overcome the weaknesses associated with a single currency peg. The exchange rate was officially determined by RBI with a nominal band of ± 5% of the weighted basket of currencies.

- During late eighties and early nineties, India witnessed severe crisis in the form of significant rise in the oil prices. Due to such international developments, India faced a severe current account deficit, which rose to 3% during this period. The financing of current account deficit was also difficult because of drying up of access to commercial banks and short-term credit.

  Thus, the only way to finance the deficit was through drain of foreign currency. India's foreign currency reserves fell from US$3.1 billion in August to US$ 975 million in July 1991. Due to the drastic fall in the reserves, various measures were taken to restore the foreign exchange reserves in India such as sending gold abroad, cutting down on non-essential imports, introduction of stabilisation and structural reforms.

  Apart from these measures, a major step taken was a two-step downward exchange rate adjustment (devaluation). Also, a decision was taken to end the Pegged Exchange Rate Regime.

- To ease the transition from a pegged exchange rate regime to market determined exchange rate regime 'Liberalised Exchange Rate Management System [LERMS] was put in place. LERMS involved a dual exchange rate regime under which 40% of the exchange rate earnings had to be surrendered at an official rate determined by RBI and the remaining 60% was to be converted at market determined rates.
- In 1993 such a system of dual exchange rate was converted into a single exchange rate and the system of market determined exchange rate was introduced.

- Since 1993 the exchange rate of rupee has become market determined with the intervention by the RBI in the form of sales and purchases of foreign currencies to ensure stability in the foreign exchange market.

Determination of Income in An Open Economy

Objective

After going through this chapter, you shall be able to understand the following concepts.

- National Income Identity in an Open Economy
- The Import Function
- The Export Function
- Diagrammatic Presentation of the Net Export
- Goods Market and Net Export

Introduction

As we know that in a closed three-sector economy, aggregate demand comprises of three components namely, consumption demand (C), government spending (G) and investment demand (I). However, in an open economy, exports to the rest of the world also constitute an additional source of demand.

Thus, exports must be added to the aggregate demand. On the other hand, imports from the rest of the world add to the supply of goods and services in the domestic market. Therefore, for an open economy, we expand the national income identity to include the component of exports and imports.

The national income identity for an open economy can be represented as

$Y + M = C + I + G + X$

Rearranging the equation

$Y = C + I + G + (X - M)$

$Y = C + I + G + NX$

where, NX represents Net Exports i.e. the difference of exports and imports

Let us discuss the component of imports and exports in detail.

The Import Function

In addition to the demand for the domestically-produced goods and services, in an open economy the goods and services are also demanded from the rest of the world. Import refers to the demand by the domestic country for goods and services produced abroad.

The demand for imports depends on the following two important factors.

a. ***Domestic Income (Y)***- If the domestic income is high, then in addition to the domestically-produced goods and services, the demand for imports will also be high and *vice-versa*.

b. ***Real Exchange Rate (R)***- A higher real exchange rate makes the imports more expensive. Consequently, a rise in the real exchange rate implies a reduction in the demand for imports and *vice-versa*.

For simplicity, let us assume that nominal exchange rate as well as the prices remains constant. That is, we assume that the real exchange rare (R) remains fixed. Thus, the demand for imports is assumed to depend solely on the domestic income.

Algebraically, the demand function for imports can be written as:

$$_- M = \overline{M} + mY$$

where,

$\overline{M}$ represents the autonomous component of import

m represents the marginal propensity to import*

Marginal propensity to import refers to the proportion of the unit increase in the disposable income that is spent on import. That is, it represents the amount of increased disposable income that is spent on the imports by the people. Algebraically, it is defined by the ratio of the change in the disposable income and the change in the imports. That is,

$$MPM = m = \frac{\Delta M}{\Delta Y_d}$$

where,

ΔM represents the change in the imports

ΔY_d represents the change in the disposable income

The Export Function

Export refers to the demand for the domestically-produced goods and services by the rest of the world.

The demand for a country's export by the rest of the world depends on the following two important factors.

a. *Foreign Income*- If the level of income of the people in the foreign countries is high, then the demand for exports is high and *vice-versa*.

b. *Real Exchange Rates*- Similar to the imports, the exports also depends on the real exchange rate. A *higher real exchange rate* makes a *country's exports* to the rest of the world *less expensive*. Thereby, *a rise in the real exchange rate increases the demand for exports and vice-versa*.

In our analysis of the national income identity, the exports are considered as exogenous. Thus, the exports are assumed to remain constant. $(X = \overline{X})$

National Income Identity in an Open Economy

Taking into account the export function and the import function, the national income identity for an open economy can be represented as follows.

$$Y = \overline{C} + c(Y - T) + \overline{I} + \overline{G} + \overline{X} - \overline{M} - mY$$

Taking all the autonomous components in the equation as $\overline{A}$

$$Y = \overline{A} + cY - mY$$

$$\left(1 - c + m\right)Y = \overline{A}$$

$$\Rightarrow Y = \frac{\overline{A}}{(1 - c + m)}$$

Open Economy Multiplier

The multiplier for an open economy is represented as follows.

$$\frac{dY}{d\overline{A}} = \frac{1}{(1 - c + m)}$$

where,

c represents Marginal Propensity to Consume

m represents Marginal Propensity to Import

Comparison of the Open Economy Multiplier With the Closed Economy Multiplier

The multiplier for a closed economy is represented as follows

$$\frac{dY}{dA} = \frac{1}{(1 - c)}$$

On the other hand, multiplier for an open economy is represented as follows

$$\frac{dY}{d\overline{A}} = \frac{1}{(1-c+m)}$$

On comparing the open economy multiplier with the multiplier in a closed economy, we observe that the open economy multiplier would have a smaller value.

$$\frac{1}{(1-c+m)} < \frac{1}{(1-c)}$$

Let us consider this concept with the help of a numerical example.

Suppose, Marginal Propensity to Consume (c) = 0.5 and Marginal Propensity to Import (m) = 0.2

Then, the value of closed economy multiplier = $\frac{1}{1-c} = \frac{1}{1-0.5} = \frac{1}{0.5} = 2$

On the contrary, the value of open economy multiplier
$\frac{1}{1-c+m} = \frac{1}{1-0.5+0.2} = \frac{1}{1-0.3} = 1.42$

The above calculation shows that a unit increase in the autonomous demand increases the output by two units in a closed economy. On the other hand, a unit increase in the autonomous demand will increase output by only 1.42 units in an open economy.

Thus, the open economy multiplier will have a smaller value as compared to the value of the multiplier in a closed economy. This is due to the fact that in an open economy, the induced consumption (as a result of increase in income) would get divided between consumption on the domestic goods and imports.

The increase in imports per unit of income constitutes a leakage from the circular flow. Thereby, reduces the value of multiplier.

Diagrammatic Derivation of Net Export Function from Aggregate Demand
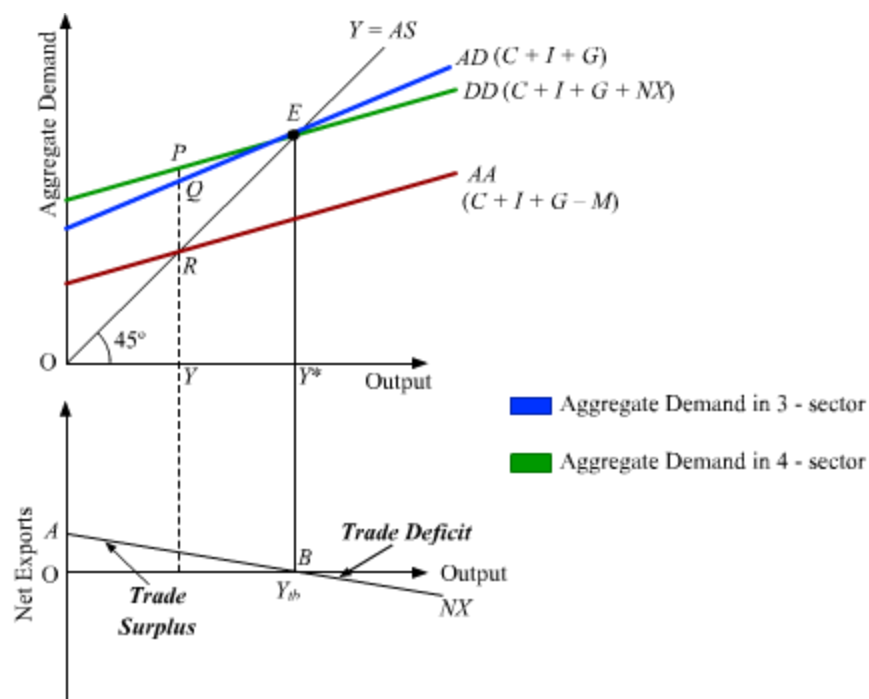
As we know that aggregate demand for an open economy (four-sector model) includes the net export (i.e. the difference of export and imports). Thus, to estimate the aggregate demand for a four sector model two steps are followed. First, subtract imports from the aggregate domestic demand. Second, to the resultant function add exports.

In the upper panel, the line *AD* represents the aggregate domestic demand (for a closed economy) that is equal to ($C + I + G$) as a function of income. From this function we first subtract imports. This implies that the aggregate domestic demand falls. Consequently, the aggregate demand curve *AD* shifts inwards to *AA*. The vertical distance between *AD* and *AA* is equal to the value of imports *(M)* at each point on the two curves.

It should be noted that the shift from *AD* to *AA* is **not parallel**. Rather, the vertical distance between the two lines increases with rise in income. This is because as domestic income increases, a portion of the increase in income is also spent on imports. In other words, as income increases, demand for imports also increases.

Next, to get the total demand for domestic goods we add exports to *AA* function to get the total aggregate demand curve *DD*. The vertical distance between the lines *DD* and *AA* is equal to the value of exports. Since, the exports are assumed to be exogenous and constant the vertical distance between *AA* and *DD* remains constant (the shift from *AA* to *DD* **is parallel**)

From the upper panel of the diagram, we derive the net export function in the lower panel.

For instance, at the income level OY, the exports are represented by the vertical distance PR (vertical distance between DD and AA) and imports are represented by the vertical distance QR (vertical distance between AD and AA).

Accordingly, the net exports are represented by the vertical distance PQ (difference between PR and QR). Since, PR (exports) is greater than PQ (imports) this implies that there exists a **trade surplus.** Similarly, for all income levels lower than OY^* there exists a trade surplus.

Correspondingly, this trade surplus is represented in the lower panel by the area OAB

At Y^* level of output, the value of imports exactly equal the value of exports i.e. **net exports = zero**. Thus, in the lower panel the net export function touches the x-axis.

On the other hand, for all income levels greater than OY^* exports is less than imports and there exists a **trade deficit**. Correspondingly, this trade deficit is represented in the lower panel by the area to the right of Y_{tb}

NX is the required net export function. It can be seen that the net export function is downward sloping. That is net exports hold a negative relation with income.

This is because as income increases imports increases while the exports remain constant. Thus, a rise in income leads to lower net exports.

Goods Market and Net Exports

We know that goods market is in equilibrium, when the aggregate demand is equal to the aggregate supply. However, it might also happen that this equilibrium level of output in the goods market may not correspond to the level of output at which trade is balanced. (i.e. to the level where net exports is equal to zero).

In other words, the equilibrium level of output in the goods market might be associated with a trade deficit or a trade surplus.
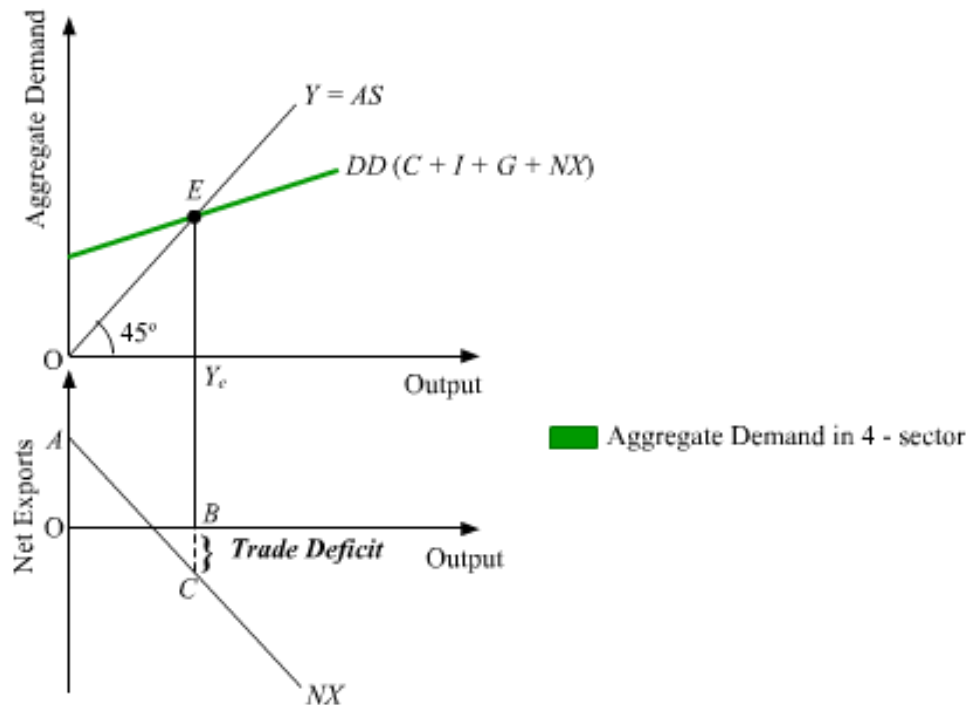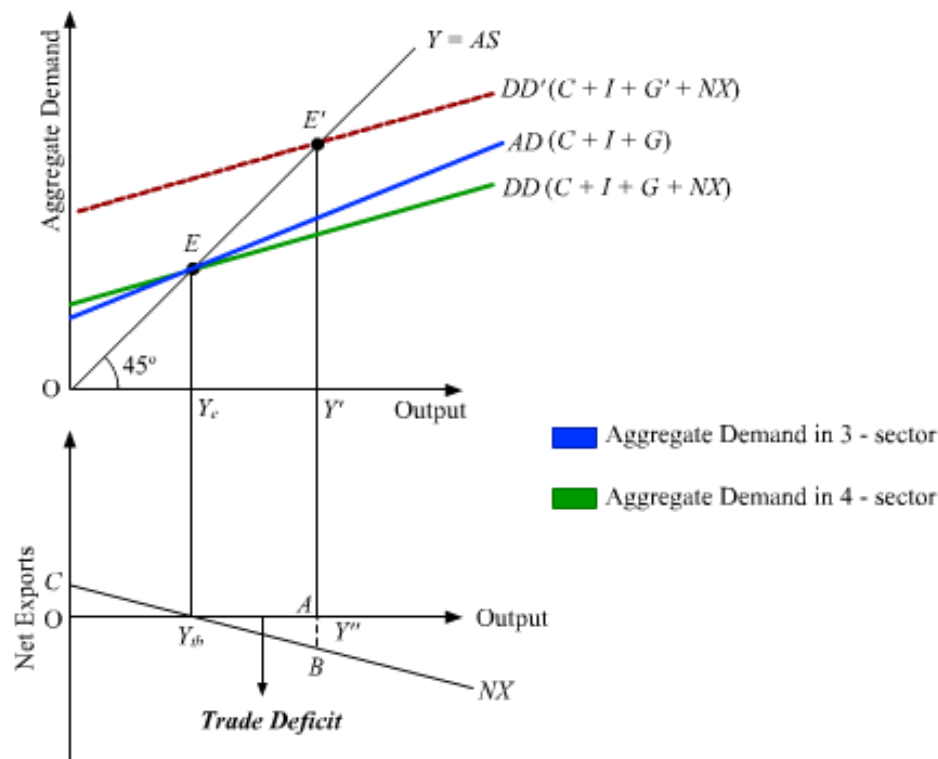
In the upper panel of the diagram, the equilibrium in the goods market is determined by the intersection of aggregate demand curve (*DD*) and the 45° income-line. The equilibrium level of income is represented by Y_e. However, in the lower panel this equilibrium level of output is associated with a trade deficit equal to *BC*.

Similarly, there can also be a situation where the equilibrium in the goods market corresponds to a situation of trade surplus.

Impact of Changes in the Autonomous Expenditure on Aggregate Demand and Trade Balance

Any change (increase or decrease) in the autonomous expenditure affects the level of aggregate demand, thereby, affects the trade balance. For example, an increase in the autonomous expenditure results in a rise in the aggregate demand. However this rise in the aggregate demand leads to a trade deficit.

In the diagram, the initial equilibrium is established at point E, with Y_e as the equilibrium level of output. In the lower panel of the diagram, NX is the net exports curve. Suppose this equilibrium level of output corresponds to a situation of trade balance Y_{tb}.

Now, let us suppose that the autonomous government expenditure (G) increases. With the increase in the government spending, the aggregate demand curve DD shifts upwards to DD'. The new equilibrium in the goods market is established at point E' and the equilibrium income rises to Y'.

However, it should be noted that in the lower panel the net exports schedule as a function of output does not change. This is because, the government expenditure does not affect exports or imports directly. However, as the income increases, imports increase while the exports remain constant. Thus, there exists a situation of trade deficit.
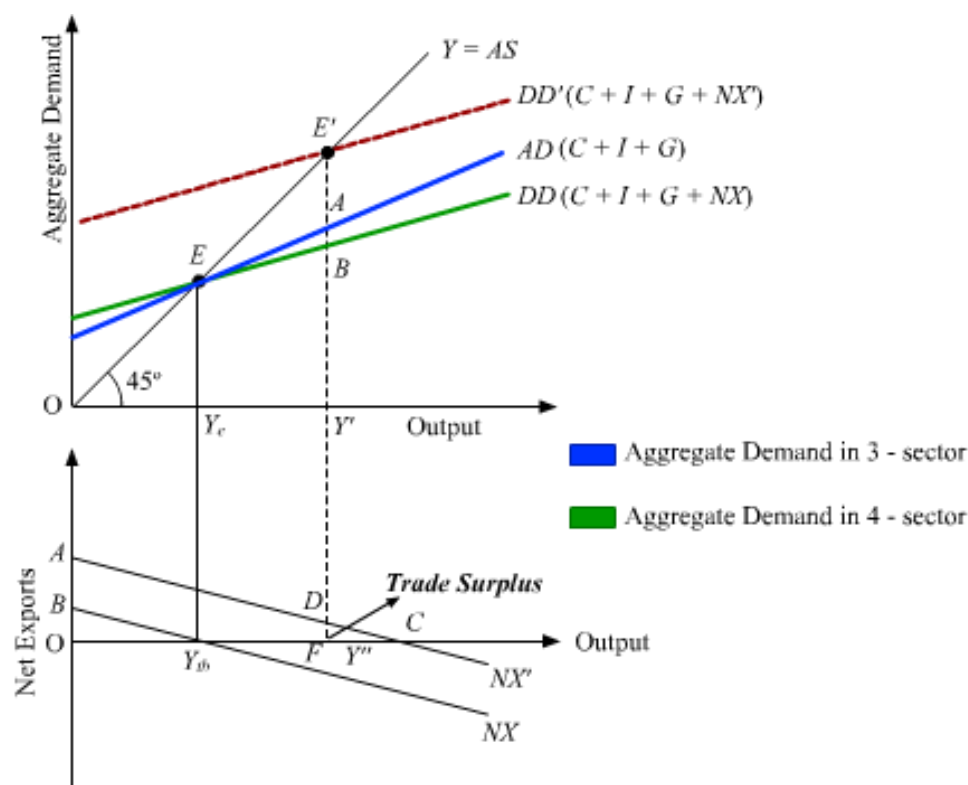
This trade deficit due to increase in the output from Y^e to Y' is represented by the vertical length AB in the lower panel.

Thus, from the above analysis, we can infer that more open an economy is, an increase in the autonomous expenditure will have larger adverse effect on the trade balance.

On the other hand, a decrease in the autonomous expenditure will have smaller adverse effect on the trade balance.

Impact of Changes in the Foreign Demand on Aggregate Demand and Trade Balance

Similar to the change in autonomous expenditure, any change in the foreign demand also affects the level of aggregate demand, thereby, affects the trade balance. For example, an increase in the foreign demand results in a rise in the aggregate demand. However this rise in the aggregate demand leads to a trade surplus.

$Y = AS$

$DD'(C + I + G + NX')$

$AD (C + I + G)$

$DD (C + I + G + NX)$

45°

Y_e Y' Output

Aggregate Demand

■ Aggregate Demand in 3 - sector

■ Aggregate Demand in 4 - sector

Net Exports

Trade Surplus

Y_{tb} Y''' Output

NX'

NX

Suppose the initial equilibrium income is given by Y_e that corresponds to a trade balance equal to Y_{tb}. Also suppose that as a result of the increase in the foreign income, the demand for exports increases. With the rise in the export demand, the aggregate demand curve *DD* shifts upwards to *DD'* such that the new equilibrium is established at point *E'* and the equilibrium income rises to Y'.

In the lower panel due to the rise in the exports, the net export rises and the net export curve shifts upwards from *NX* to *NX'*. At the new level of income, the net exports is represented by the vertical distance *AE'* which are necessarily positive (because the total demand curve *DD'* lies above the aggregate demand curve *AD*). Thus, with a rise in the foreign demand, there is a trade surplus. This trade surplus is represented in the lower panel by the vertical length *DF.*

It should be noted that with the increase in the income, imports also rise but the rise in the imports do not offset the rise in the exports and as a result the net exports are positive i.e. trade surplus.

In the opposite case of recession, the demand for exports would fall and lead to a trade deficit.

Impact of Changes in Prices on Aggregate Demand and Trade Balance

A change in the prices of domestic goods will have an impact on the level of aggregate demand and finally, on the level of output and income. For instance, a fall in the prices of the domestic goods would make the exports less expensive which would raise the demand for exports.

As a result, the level of the aggregate demand increases which will further lead to a corresponding rise in the level of output and income. Hence, a rise (or fall) in the demand for exports with imports remaining constant results in a trade surplus (trade deficit).

Impact of Changes in Exchange Rate on Aggregate Demand and Trade Balance

A rise in the nominal exchange rate termed as 'depreciation' would make the exports relatively less expensive, thereby, raises the demand for exports. A rise (or fall) in the exports raises (or reduces) the level of aggregate demand, which further raises (or reduces) the level of output and income.

Hence, as the domestic currency depreciates an economy experiences trade surplus. On the other hand, with the appreciation in the domestic currency, the economy experiences trade deficit.

Trade Deficits, Savings and Investment

Objectives

After going through this chapter, you shall be able to understand the following concepts.

- Trade Deficits- A Cause for Alarm?
- Private Savings
- Government Savings

Introduction

We know that Trade Deficits are the excess of imports over exports. That is,

Trade Deficits = Imports – Exports

$NX = M - X$

A trade deficit off course is a discouraging situation for any country, as it leads to drain of currency from the country. **But is it obvious that trade deficits will always be a cause for alarm for an economy?** The basic emphasis of this lesson is to provide a suitable answer to the question.

Derivation of Aggregate Savings

In order to answer the question, we need to derive the aggregate saving (by adding private savings and government savings).

The National Income Identity in an open economy is given by a equality between the National Income and the aggregate of Consumption (C), Investments (I), Government Expenditures (G) and Net Exports ($NX = X - M$). That is,

$Y = C + I + G + NX$

or, $Y - C - G = I + NX$ **(i)**

National Income can either be consumed (expended) or saved. This implies that National Income is a sum of aggregate consumption expenditure (by households as well as by government) and aggregate savings. That is,
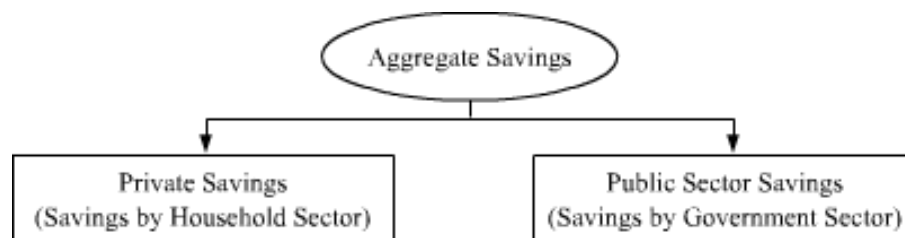
$Y = C + G + S$

or, $Y - C - G = S$

Substituting the value of S in the equation **(i)**

$\Rightarrow S = I + NX$ **(ii)**

The aggregate savings consist of savings by two different economic sectors- savings by households sector (Private Savings) and savings by government sector (Public Sector).

Private Savings

Private savings (S^P) refer to that part of disposable income of households that is not consumed. In other words, private savings are that portion of income that is left after paying taxes and consumption. That is,

$S^P = Y - C - T$ **(iii)**

where,

S^P represents Private Savings

Y represents the income of the households

C represents the consumption expenditure

T represents the amount of taxes paid to the government

Government Savings

On the other hand, government savings (S^G) refers to that part of tax revenue (income for government) that is not used as government consumption expenditure. In other words, government savings is an excess of tax revenues (T) over government expenditure (G). That is,

$S^G = T - G$ **(iv)**

where,

S^G represents Government Savings

T represents tax revenues

G represents government expenditures

Thus, National Savings is equal to the sum of Private Savings and Government Savings.

Adding equations **(iii)** and **(iv)**

or, $S = S^G + S^P = (T - G) + (Y - T - C)$

Putting the value of S in equation **(ii)**

or, $S^P + S^G = I + NX$

or, $(S^P - I) + S^G = NX$

Þ $(S^P - I) + (T - G) = NX$ **(v)**

$(S^P - I)$ represents a difference between private savings and investment

(T – G) represents a difference between tax revenues and government expenditure (i.e. budget deficits)

NX represents net exports

On the basis of the equation **(v)**, we can answer the concerned question- Whether Trade Deficits are a cause for alarm.

Trade deficits will be a cause for alarm if:

1. ***If the savings are smaller***, then the country's long-run growth prospective will be hampered. This is because in the long-run, the country will face shortage of savings, hence, shortage of investment. The shortage of investment will reduce the future production capacity of the country, hence; will hamper the long-run economic growth.

2. If the trade deficit is because of the ***dominating negative sign of the term*** *(T – G)*, then it will be an alarming situation for the economy as a whole. The negative sign of the term *(T – G)* implies budget deficits. In such a situation, the country faces ***twin deficits- budget deficits as well as trade deficits.*** This would further imply increased consumption expenditures by public and government as well. This problem will have following two-sided effects.

   On one hand, the increased consumption expenditures by the public and the government will exert excessive pressure on the country's stock of capital and investments. This is because the increase in the consumption demands is much higher than the increase in the investment levels.

   Consequently, the country will face shortage of investment, i.e. productive capacity, hence, will depend heavily on the imports. This will push the government to face huge deficits to meet the imports payments.

   While, on the other hand, the high budget deficits will push the government to incur loans from rest of the world (ROW) to meet its current demands. The huge volume of loans will be accompanied with heavy interest obligations, thereby, will push the country into ***debt-trap***.

   (Debt-trap is defined as a situation when a country incurs further loans to repay the interest payments on the past incurred loans).

   Trade deficits cannot be treated as a cause for alarm if it reflects a consequent rise in the investment (*I*). This is because an increase in the investment level implies an increased stock of capital, which will increase the future production capacity of the country.

   Thus, due to the increased investment level, the country will enjoy greater volume of

goods and services, which implies a future increase in the earning capacity and higher living standards by the people in the future.