Module IV

Foreign Exchange

4.1. Foreign Exchange Market

The foreign exchange market is a decentralized worldwide market. Foreign exchange market is the market in which foreign currencies are bought and sold. The buyers and sellers include individuals, firms, foreign exchange brokers, commercial banks and the central bank. The transactions in this market are not confined to only one or few foreign currencies. In fact, there are a large number of foreign currencies which are traded, converted and exchanged in the foreign exchange market. Foreign exchange market is also described as an OTC (Over the counter) market as there is no physical place where the participants meet to execute their deals. It is more an informal arrangement among the banks and brokers operating in a financing centre purchasing and selling currencies, connected to each other by telecommunications like telex, telephone and a satellite communication network.

The term foreign exchange market is used to refer to the wholesale segment of the market, where the dealings take place among the banks. The retail segment refers to the dealings take place between banks and their customers. The retail segment is situated at a large number of places. They can be considered not as foreign exchange markets, but as the counters of such markets. The central banks monitor market movements and sentiments and intervene according to government policy. The function of buying and selling of foreign currencies in India is performed by authorized dealers / moneychangers appointed by the RBI. The foreign exchange department of the major banks are linked across the world on a 24 hour basis. Major commercial centers are London, Amsterdam, Frankfurt, Milan, Paris, New York, Toronto, Bahrain, Tokyo, Hong Kong and Singapore.

Functions of a foreign exchange market:

- Purchasing power is transferred across different countries which will enhance the feasibility of international trade and overseas investments
- The foreign exchange market acts as a central focal point wherein prices of various currencies are discovered.
- Enables the investors to hedge or minimize their risks
- Enables the traders to arbitrage any inequalities
- Provides an investment / trading avenue to entities who are willing to expose themselvesto this risk

4.2. Foreign currency and foreign exchange :

In the context of India, any currency other than Indian rupees is foreign currency. Foreign exchange includes currency, drafts, bills, letters of credits and traveler cheques which are denominated and ultimately payable in foreign currency.

Determinants of Exchange rate

Numerous factors determine exchange rates. Many of these factors are related to the trading relationship between the two countries. Exchange rates are relative, and are expressed as a comparison of the currencies of two countries. The following are some of the principal determinants of the exchange rate between two countries.

- **Purchasing power parity (Inflation) theorem**: Difference in inflation rates between two countries is considered as the most important factor for variations in exchange rates. If domestic inflation is high, it means domestic goods are costlier than foreign goods. This results in higher imports creating more demand for foreign currency, making it costlier. (In other words the value of domestic currency will decline). If a basket of goods cost Rs470 in India and $10 in US then it is quite natural that the exchange rate should be Rs47/$1. PPP theory can be expressed by the formula: PPPr = Spot rate (1+rh) (1+rf) where rh is inflation rate at home; rf is the inflation rate of foreign country.

Weakness of PPP theory : It is not only inflation, which affects foreign currency movements. PPP ignores substitution effects – i.e. instead of importing goods might be substituted.

- **Interest Rate Parity Theorem**: This is the second most important factor in determining exchange rates after PPP theory. Money tends to move towards country offering a higher interest rate thereby resulting in more demand for the foreign country's currency. If interest rates in Japan are lower than interest rates in US then Japanese investors would prefer to invest in US which would result in more demand for US $ in Japan (this will cause US$ to appreciate in Japan). Interest rates provide the basis for computing forward rates as under: Forward rate = Spot rate x (1+If) (1+Ih)

- **Balance of payments position** : The BOP position has a big impact on the value of a nation's currency. A big or consistent deficit would mount a pressure on the currency of a nation as deficits require payments in foreign currency. In the case of a fixed currency rate scenario – the local currency would be devalued thereby making imports costlier and exports cheaper. However in the free rate scenario a big or consistent deficit would be a forewarning for depreciation of a nations currency

- **Government intervention** : At times the government would intervene by purchasing or selling foreign exchange to control pressures on the nation's currency.

- **Market expectation** : Market expectation as regards interest rates, inflation, taxes, BOP positions etc would affect the foreign exchange rates. Overseas investment : E.g. if US investments in India increases there would be dollar inflows putting downward pressure on dollar in India.

- **Speculation** : Speculators including treasury managers of banks, by virtue of their buying and selling, tend to influence the rates.

- **Devaluation of a currency**

Under the fixed rate regime, the central bank or the government decides the value of the currency with respect to other foreign currencies. The central bank or the government purchases or sells its currencies to maintain the exchange rate. When the government or the central bank reduces the value of its currency, then it is known as the devaluation of the currency. For instance, in 1966 when the India was following the fixed exchange rate regime,the Indian Rupee was devalued by 36 %.

Advantages of Currency Devaluation

- To increase Exports: countries go for currency devaluation to boost their exports in the international market. Devaluation of currency makes its goods cheaper compared to its International competitors.

- Competitive devaluation (race to the bottom):if one country devalues its currency other countries are also incentivized to devalue their own currency to maintain their competitiveness and the international export market.

- To reduce trade deficits: currency devaluation makes a countries exports cheaper, while imports become more expensive. This leads to an increase in exports and decrease in imports. This situation favors the improved balance of payment and reduces trade deficits.

- To reduce the sovereign debt burden: If the debt payments are fixed, devaluation of currency will make the domestic currency weaker and will ultimately make the payments less expensive over time.

Disadvantages of currency devaluation

- Inflation: it can lead to increase in the inflation rate as essential imports such as oil etc will become more expensive. It can also lead to demand-pull inflation.

- It reduces the purchasing power of the country's citizens and foreign goods and foreign tours become expensive for them.

- Large and quick devaluation of currency may reduce the faith of international investors in the domestic economy. Foreign investors would be less interested in holding the government debt as devaluation reduces the value of their holdings.

- Devaluation of currency negatively impacts the corporates and individuals who hold debt in the foreign currency.

- **Depreciation of a currency**

Depreciation is the automatic reduction of the value of a country's currency by the actions of market forces. In the floating exchange rate regimes, the value of a country's currency is determined by the market forces of demand and supply. The exchange rate of the currency changes on daily basis as per the demand and supply of that currency with respect to foreign currencies. A currency depreciates with respect to foreign currency when the supply of currency in the market increases while its demand falls.

Reasons for Depreciation of Currency

- **Decline in exports**: The decline in a country's overall exports leads to a decline in export revenues. This reduces the demand for the country's currency and leads to its depreciation.

- **Large increase in imports**: A large increase in the demand for imported goods and services can lead to a trade deficit. Increase in the current account deficit can lead to a net outflow of the currency which can weaken the exchange rate leading to currency depreciation.

- **Monetary policy of Central Bank**: If the central bank reduces its policy interest rates it can lead to the outflow of hot money such as foreign portfolio investment etc. This can lead to the depreciation of domestic currency.

- **Open market operations of the central bank**: If the Central bank (in Indian case, RBI) undertakes open market operations to buy foreign currency and gold etc. it canlead to the depreciation of domestic currency.

Devaluation vs depreciation

Both devaluation and depreciation lead to the decline in the value of domestic currency. However, there are certain differences between them.

Devaluation	**Depreciation**
Devaluation is the official reduction in the value of a currency.	Depreciation refers to an unofficial decline in the currency's value.

Devaluation is the phenomena associated with fixed exchange rate regime.	Depreciation of a currency is associated with the floating or managed floating exchange rate regime
Devaluation of the currency is done purposely by the central bank or the government	The market forces of demand and supply are responsible for the depreciation of a currency.
The impact of currency devaluation is for short term,	The depreciation of currency can affect the economy for a longer time.
Devaluation of currency is done occasionally by the central bank.	Depreciation and appreciation of currency occur on a daily basis.

- **Revaluation**

Revaluation refers to an upward adjustment to the country's official exchangerate the relative to either price of gold or any other foreign currency. Revaluation increases the value of the domestic currency with respect to the foreign currency. Revaluation is a feature of the fixed exchange rate regime, where the exchange rateis determined by the central bank or the government. Revaluation is opposite to devaluation, which is a downward adjustment.

Reasons for currency Revaluation

- Current account surplus: the government can go for currency revaluation for reducing the current account surplus. This happens for economies where exports are higher than imports.

- To manage inflation: the government may go for currency revaluation in order to manage that inflation rate. Revaluation can lead to either higher inflation or even lower inflation. Currency revaluation can make the imports cheaper which can reduce the inflation rate in the domestic economy.

Changes in the interest rates of other countries and changes in the global economic environment can also lead to currency revaluation in order to manage its impact on the domestic economy.

- **Currency Appreciation**

Currency appreciation refers to the increase in the value of one currency with respect to other foreign currencies. Currency appreciation is the unofficial increase in the value of any currency. It is a feature associated with floating or managed floating exchange rate regimes. Appreciation of a currency takes place when the supply of the currency is lesser than its demand in the foreign exchange market.

Causes of currency appreciation

- Increase in the policy interest rate by the central bank: it would make the investors attractive to invest in the government bonds and domestic securities which can lead to inflow of foreign investment in the form of hot money.

- Current account surplus: current account surplus can cause an inflow of foreign exchange in the economy leading to appreciation in the exchange rate of the domestic currency.

- Increase in exports: it increase the demand for the domestic currency leading to its appreciation with respect to foreign currencies.

- Intervention by the central bank through open market operations: buying of domestic currency from the foreign exchange market by the central bank can lead to an appreciation of the domestic currency.

- Higher economic growth can increase foreign investment in the economy which can cause appreciation in the exchange rate.

4.5. Exchange Rate

The price of one currency in terms of the other is known as the exchange rate. A currency's exchange rate vis-a-vis another currency reflects the relative demand among the holders of the two currencies. For e.g. If the US dollar is stronger than the rupee (implying value of dollar is higher with respect to rupee), then it shows that the demand for dollars (by those holding rupee) is more than the demand for rupees (by those holding dollars). This demand in turn depends on the relative demand for the goods and services of the two countries. Foreign Exchange Rate is the amount of domestic currency that must be paid in order to get a unit of foreign currency. According to Purchasing Power Parity theory, the foreign exchange rate is determined by the relative purchasing powers of the two currencies. Example: If a Mac Donald Burger costs $20 in the USA and Re 100 in India, then the exchange rate between India and the USA will be (100/20=5), 1 $ = 5 Re.

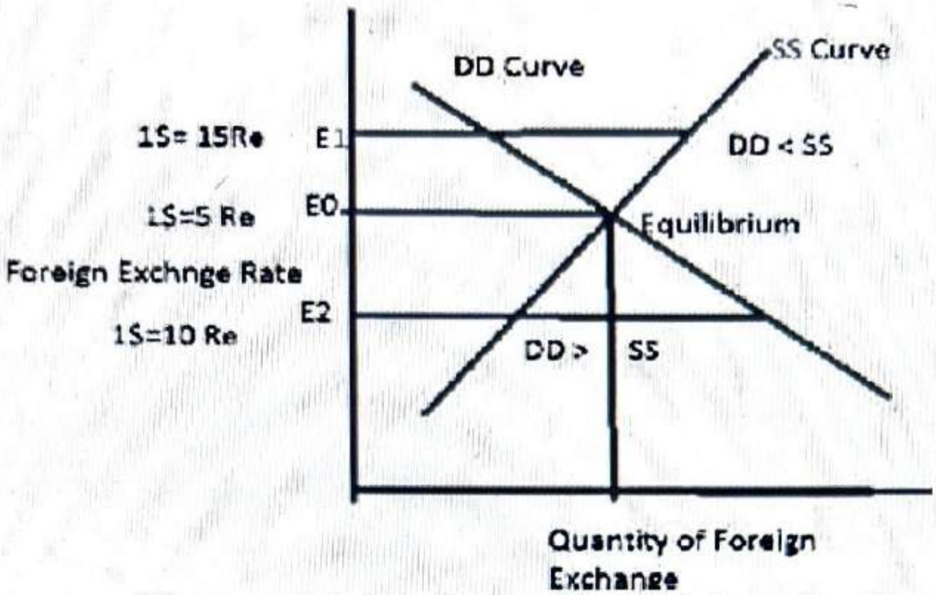

Figure: 4.1: Exchange Rate Determination

In the figure 4.1, the DD curve represents the demand for foreign exchange by India. The SS curve represents the supply of foreign exchange to India. The point where both DD and SS curves intersect is the point of equilibrium. At this point demand for foreign exchange is exactly equal to the supply of foreign exchange. At equilibrium point E0, the exchange rate is 1 $ equal to 5 Re.

In normal day to day functioning of markets, the exchange rate may fluctuate. If at any point in time, the exchange rate is at E1(1$=15Re), then the demand for foreign exchange falls short of supply of foreign exchange, as a result at this point Indians are demanding less foreign currency due to which Re will appreciate vis-a-vis foreign currency. The appreciation mainly occurs due to a favourable balance of payment situation (Surplus). Both the points, E1 and E2 (upward and downward movements) shown depreciation as per the diagram.

By the same token at point E2, demand for foreign exchange is greater than the supply of foreignexchange, at this point Indians are demanding excess foreign exchange than what the foreigners are willing to supply, as a result, at E2 Re will depreciate vis-à-vis foreign currency. The depreciation mainly occurs due to the unfavourable balance of payments situation (Deficits).

4.6. Exchange Rate Regime

An exchange rate regime is a way a monetary authority of a country or currency union manages the currency about other currencies and the foreign exchange market. It is closely related to monetary policy and the two are generally dependent on many of the same factors, such as economic scale and openness, inflation rate, the elasticity of the labor market, financial market development, capital mobility ,etc. There are two major regime types: Fixed and Floating.

- **Fixed/Pegged Exchange Rate Regime**

In a fixed exchange rate regime, the domestic currency is tied to another foreign currencysuch as the U.S. dollar, Euro, the Pound Sterling or a basket of currencies. In a fixed exchange rate system, the government (or the central bank acting on the government's behalf) intervenes in the foreign exchange market to ensure that the exchange rate stays close to a predetermined target. Under this system, exchange rate stability is achieved, but if the exchange rate is fixed at the wrong rate it may be at the expense of domestic economic stability. In a fixed exchange rate system, a rise in the exchange rate of the domestic currency vis- à-vis another foreign currency is called a devaluation. This means that in order to buy 1 unit of a given foreign currency more of the domestic currency is needed. On the other hand, when the exchange rate falls it is termed as a revaluation. Fixed rates provide greater certainty for exporters and importers as there are no or limited exchange rate risks. However, a significant gap between the official rate and that determined by the market can promote black markets. In a black market, the bulk of foreign exchange transactions are carried out outside the banking system. This may force the government to draw down on reserves to meet its obligations and cause scarcity of foreign exchange.

The fixed or pegged rate of exchange can be shown through Fig. 4.2.(a) and (b), the amount of foreign currency is measured along the horizontal scale and the rate of exchange is measured along the vertical scale. In Fig.(a), the equilibrium fixed official rate of exchange is R0 determined by the intersection between the demand and supply function D and S respectively. If the demand for foreign currency increases such that the demand function shifts from D to D1, given the exchange rate, there is excess demand gap which is likely to appreciate the exchange value of foreign currency in terms of domestic currency to R1 or cause corresponding depreciation in the exchange value of domestic currency. It is possible for the government or monetary authority of the home country to fill up the foreignexchange gap AB in any of three possible ways:

- Reduction in the foreign exchange reserves built through BOP surplus in past years (which implies sale of foreign exchange),
- Borrowing of short-term funds externally as accommodating transactions, and
- Export of monetary gold.

The resort to any one of the measures will help maintain the exchange rate at the official levelrate of exchange R0.

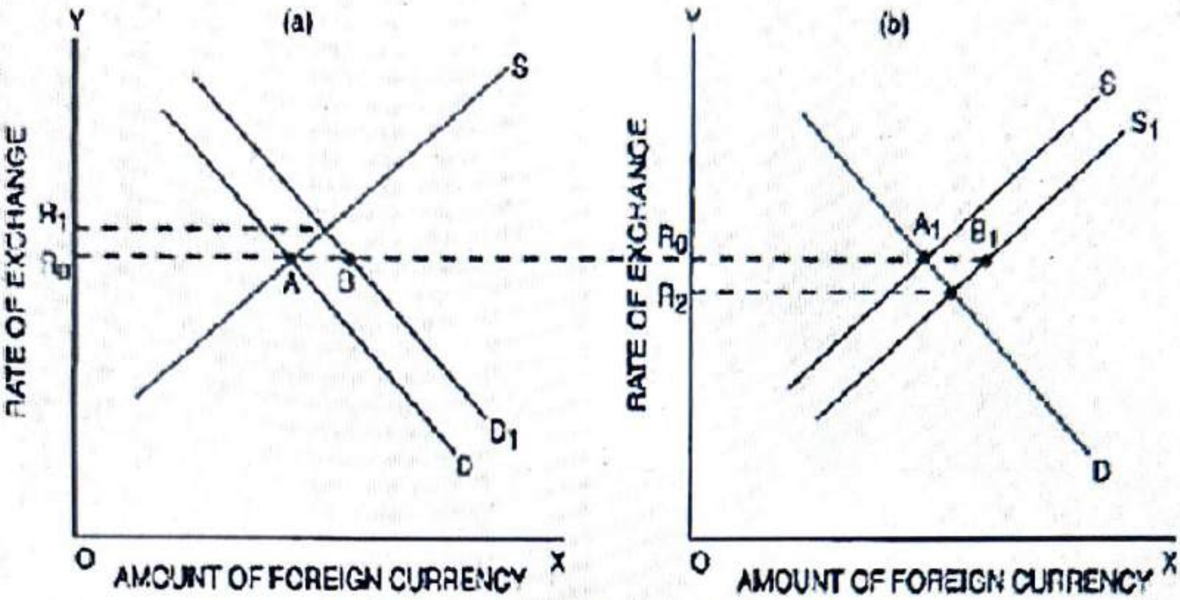

Figure.4.2.: Fixed Exchange Rate Regime

In Fig. (b), the fixed official rate of exchange is again R0. If there is an increase in the supply of foreign currency due to BOP surplus, the supply curve shifts to the right from S to S1. This creates an excess supply gap A1B1. Consequently, the exchange value of foreign currency in terms of domestic currency depreciates to R2 or there is a corresponding appreciation in the exchange value of domestic currency.

In order to maintain the exchange rate at the official level R0, the government or monetary authority will be obliged to buy the foreign currency in the exchange market. Thus in a system of fixed exchange rates, the pegging operations (sale or purchase of foreign currency) can help maintain the equilibrium rate of exchange at the official level.

Merits of Fixed Exchange Rate System

- Fixed exchange rate prevents the member countries from the economic fluctuation which can weaken the economic policies.
- It promotes capital movements. Fixed exchange rate system attracts foreign capital because a stable currency does not involve any uncertainties about exchange rate that may cause capital loss.
- Reduce the Uncertainty and Risk
- Discourage Speculation
- Prevention in Depreciation of Currency
- Adoption of Responsible Macroeconomic Policies
- Attraction of Foreign Investment
- Anti-inflationary

Demerits of Fixed Exchange Rate System

- It creates a barrier on achieving the objective of free markets.
- Under this system, countries with deficits in balance of payment uses their stock of gold and foreign currencies to solve the problem. This can further create serious problem for them. They may be forced to devalue their currency. On the other hand, countries with surplus in balance of payments will face the problem of inflation.
- Speculation Encouraged

- inadequacy of Foreign Exchange Reserves
- Internal Objectives of Growth and Full Employment Sacrificed
- International Competitive Environment bypassed

Floating/Flexible Exchange Rate System

It is an exchange rate system in which market's supply and demand of currencies determines the exchange rate. The exchange rate is allowed to vary to international foreign exchange market influences. Thus, government does not intervene. Automatic variations in exchange rates consequent upon a change in market forces are the essence of freely fluctuating exchange rates. A deficit in the BOP account means an excess supply of the domestic currency in the world markets. As price declines, imbalances are removed. In other words, excess supply of domestic currency will automatically cause a fall in the exchange rate and BOP balance will be restored. There is no pre-determined exchange rate target of the government or the Central Bank. The Central Bank (RBI) or government can indirectly influence the exchange rate by managing the level and volume of foreign and domestic currencies in the banking system. Under a floating exchange rate system, a rise in the exchange rate of the domestic currency vis-a-vis another foreign currency is called depreciation. This means that more rupees are required to buy one unit of foreign currency. On the other hand, appreciation is the fall in the exchange rate of the domestic currency vis-a-vis another foreign currency. This means that fewer rupees are required to buy one unit of foreign currency.

Merits of Flexible Exchange Rate System

- It eliminates the problem of overvaluation or undervaluation of currencies, Deficit or surplus in balance of payments is automatically corrected under this system.
- It frees the government from problem of balance of payments.
- Promotes Growth of Multilateral Trade
- Floating Exchange Rates does not necessarily show large fluctuations:

Demerits of Flexible Exchange Rate System

- It creates situations of instability and uncertainty. Wide fluctuations in exchange rate are possible. This hampers foreign trade and capital movements between countries.
- The uncertainty caused by currency fluctuations can discourage international trade and investments.
- Widespread speculation with a de-stabilizing effect
- Provides an inflationary bias to an economy