[Academic Script]

Exchange Rates

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Academic Script

1. Introduction

The exchange rates quoted by banks to their customer are based on the rates prevalent in the interbank market. The big banks in the market are known as market makers, as they are willing to buy or sell foreign currencies at the rates quoted by them up to any extent. Depending buy or sell foreign currencies at the rates quoted by them up to any extent. Depending upon its resources, a bank may be a market maker in one or few major currencies. When a banker approaches the market maker, it would not reveal its intention to buy or sell the currency. This is done in order to get a fair price from the market maker. Hence in today's session we will attempt to understand various currency quotes prevalent in foreign exchange market. Two way quotations, direct as well as indirect quotations, spot and forward transactions, spot rates with premium and discounts, forward margin or swap points. Also we will talk about factors determining the spot exchange rates, exchange rates in international market and its Indian context.

So let us start discussing the two way quotations in the interbank market.

2. Two Way Quotations

Typically, the quotation in the interbank market is a two – way quotation. It means the rate quoted by the market maker will indicate two prices. One at which it is willing to buy the foreign currency, and the other at which it is willing to sell the foreign currency. For example, a Mumbai bank may quote its rate for US dollar as under

USD 1 = Rs 48.1525/1650

More often, the rate would be quoted as 1525/1650 since the players in the market are expected to know the big number i.e., Rs 48. In the given quotation, one rate is Rs.48.1525 per dollar and the other rate is Rs.48.1650. per dollar.

3. Direct Quotation

It will be obvious that the quoting bank will be willing to buy dollars at Rs 48.1525 and sell dollars at Rs 48.1650. If one dollar bought and sold, the bank makes a gross profit of Rs. 0.0125. In a foreign exchange quotation, the foreign currency is the commodity that is being bought and sold. The exchange quotation which gives the price for the foreign currency in terms of the domestic currency is known as direct quotation. In a direct quotation, the quoting bank will apply the rule: ―Buy low; Sell high‖.

4. Indirect quotation

There is another way of quoting in the foreign exchange market. The Mumbai bank quotes the rate for dollar as:

Rs. 100 = USD 2.0762/0767

This type of quotation which gives the quantity of foreign currency per unit of domestic currency is known as indirect quotation. In this case, the quoting bank will receive USD 2.0767 per Rs.100 while buying dollars and give away USD 2.0762 per Rs.100 while selling dollars. In other world, he will apply the rule: ―Buy high: Sell low.

The buying rate is also known as the bid rate and selling rate as the offer rate.

5. Spot and Forward transactions

The transactions in the interbank market may place for settlement

(a) on the same day; or

(b) two days later; or

(c) some day late; say after a month

Where the agreement to buy and sell is agreed upon and executed on the same date, the transaction is known as cash or ready transaction. It is also known as value today.

The transaction where the exchange of currencies takes place two days after the date of the contact is known as the spot transaction. For instance, if the contract is made on Monday, the delivery should take place on Wednesday. If Wednesday is a holiday, the delivery will take place on the next day, i.e., Thursday. Rupee payment is also made on the same day the foreign currency is received.

The transaction in which the exchange of currencies takes places at a specified future date, subsequent to the spot date, is known as a forward transaction. The forward transaction can be for delivery one month or two months or three months etc. A forward contract for delivery one month means the exchange of currencies will take place after one month from the date of contract. A forward contract for delivery two months means the exchange of currencies will take place after two months and so on.

6. Forward Margin/Swap points

Forward rate may be the same as the spot rate for the currency. Then it is said to be at par 'with the spot rate. But this rarely happens. More often the forward rate for a currency may be costlier or chapter tan its spot rate. The rate for a currency may be costlier or cheaper than nits spot rate. The difference between the forward rate and the spot rate is known as the ‗forward margin‘ or swap points. The forward margin may be either at ‗premium‘ or at ‗discount‘. If the forward margin is at premium, the foreign correct will be costlier under forward rate than under the spot rate. If the forward margin is at discount, the foreign currency will be cheaper for forward delivery then for spot delivery.

Under direct quotation, premium is added to spot rate to arrive at the forward rate. This is done for both purchase and sale transactions. Discount is deducted from the spot rate to arrive at the forward rate.

7. Interpretation of Interbank quotations

The market quotation for a currency consists of the spot rate and the forward margin. The outright forward rate has to be calculated by loading the forward margin into the spot rate. For instance, US dollar is quoted as under in the interbank

market on 25th January as under:			
Spot	USD 1	=	Rs.48.4000/4200
Spot/February			2000/2100
Spot/Mar			3500/3600

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The following points should be noted in interpreting the above quotation;

1. The first statement is the spot rate for dollars. The quoting bank buying rate is Rs.48.4000 and selling rate is Rs.48.4200.

2. The second and third statements are forward margins for forward delivery during the months of February. Spot/March respectively. Spot/February rate is valid for delivery end February. Spot/March rate is valid for delivery end March.

3. The margin is expressed in points, i.e., 0.0001 of the currency. Therefore the forward margin for February is 20 paise and 21 paise.

4. The first rate in the spot quotation is for buying and second for selling the foreign currency. Correspondingly, in the forward margin, the first rate relates to buying and the second to selling. Taking Spot/February as an example, the margin of 20 paise is for purchase and 21 paise is for sale of foreign currency.

5. Where the forward margin for a month is given in ascending order as in the quotation above, it indicates that the forward currency is at premium. The outright forward rates arrived at by adding the forward margin to the spot rates.

The outright forward rates for dollar can be derived from the above quotations

Follows

	Buying rate		Selling rate	
	February	March	February	March
Spot rate	48.4000	48.4000	48.4200	48.4200
Add; Premium	0.2000	0.3500	0.2100	0.3600
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	48.6000	48.7500	48.6300	48.7800

From the above calculation we arrive at the following outright rates;

	Buying	Selling
	USD 1 = Rs.	
Spot delivery	48.4000	48.4200
Forward delivery February	48.6000	48.6300
Forward delivery March	48.7500	48.7800

If the forward currency is at discount, it would be indicated by quoting the forward margin in the descending order. Suppose that on 20th April, the quotation for pound sterling in the interbank market is as follows:

Spot	GBR 1 =	Rs. 73.4000/4300
Spot/May		3800/3600
Spot/June		5700/5400

Since the forward margin is in descending order (3800/3600), forward sterling is at discount. The outright forward rates are calculated by deducting the related discount from the spot rate. Thus is shown below:

Buying rate **Selling rate**

	May	June	May	June
Spot rate	73.4000	73.4000	73.4300	73.4300
Less; discount	0.3800	0.5700	0.3600	0.5400
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	73.0200	72.8300	73.0700	72.8900

From the previous calculations the outright rates for pound sterling cab be restated as follows;

Buying Sellin

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	GBR	1	=	Rs.	73.4
Spot	73.4000				300
Forward delivery					73.0
May	73.0200				700
Forward delivery					72.8
June	72.8300				900

8. Exchange quotations in International Markets

In International markets, barring few exceptions, all rates are quoted in term of US dollar. For instance, at Singapore Swiss franc may be quoted at 1.5425/5440 and Japanese yen at 104.67/70. This should be understood as;

USD 1 = CHF 1.5425 – 1.5440

USD 1 = JPY 104.67 – 104.70

In interpreting an international market quotation, we may approach from the variable currency or the base currency, viz., the dollar. For instance we may take a transaction in which Swiss franc are received in exchange for dollars as

(a) Purchase of Swiss francs against Dollar

(b) Sale of Dollar against Swiss francs.

The quotation for Swiss franc is CHF 1.5425 and CHF 1.5440 per Dollar. While buying dollar the quoting bank would part with fewer francs per dollar and while selling dollars would require as many francs as possible. Thus, CHF 1.5425 is the dollar buying rate and DEM 1.5440 is the dollar selling rate. It may be observed that when viewed from dollar, the exchange quotation partakes the character of a direct quotation and the maxim Buy low: Sell high�much is applicable.

Forward Margin/Swap Points

Dollar/Foreign Currency Quotation

At Singapore market dollar may be quoted against Deutsche mark and French franc as follows:

	Swiss Franc	Japanese Yen
Spot	1.5425/40	104.67/70
1 month forward	50/60	17/16
2 months forward	70/80	30/29

The forward margin (also called swap margin or swap points) is quoted in terms of points. A point is the last decimal place in the exchange quotation. Thus in a four digit quotation, a point is 0.0001. In a two decimal quotation it is 0.01

As against Swiss franc, the forward margin for dollar is CHF 0.0050/0.0060. Since the order in which the forward margin is ascending, forward dollar is at premium. Premium is added to the spot rate to arrive at the forward rates, both in respect of purchase and sale transactions.

Based on the data given above, the forward rates for dollar against Swiss francs are arrived at as follows;

	Dollar Buying	Dollar Selling
1 month forward	CHF 1.5475	1.5500
2 months forward	CHF 1.5495	1.5520

Foreign Currency/Dollar Quotation

Let us assume the following exchange rates are prevailing

	Pound sterling	Euro
Spot	1.4326/48	0.9525/35
1 month forward	50/53	65/62
2 months forward	90/93	84/82

Against dollar, the forward pound – sterling is at premium. Premium should be added to the spot rate to arrive at the forward rate.

Thus the forward rates for pound sterling are as follows.

	Pound Sterling Buying	Pound sterling Selling
1 month forward	USD 1.4376	1.4401
2 months forward	USD 1.4416	1.4441

9. Factors Determining Spot Exchange Rates

(1) Balance of Payments: Balance of Payments represents the demand for and supply of foreign exchange, which ultimately determine the value of the currency. Exports, both visible and invisible, represent the supply side for foreign exchange. Imports, visible and invisible, create demand for foreign exchange. Put differently, export from the country creates demand for the currency of the country in the foreign exchange market. The exporters would offer to the market the foreign currencies they have acquired and demand in exchange the local currency. Conversely, imports into the country will increase the supply of the currency of the country in the foreign exchange market. When the balance of payments of a country is continuously at deficit, it implies that the demand for the currency of the country is lesser than its supply. Therefore, its value in the market declines. If the balance of payments is surplus continuously it shows that the demand for the currency in the exchange market is higher than its supply therefore the currency gains in value.

(2) Inflation: Inflation in the country would increase the domestic prices of the commodities. With increase in prices exports may dwindle because the price may not be competitive. With the decrease in exports the demand for the currency would also decline; this in turn would result in the decline of external value of the currency. It may be noted that unit is the relative rate of inflation in the two countries that cause changes in exchange rates. If, for instance, both India and the USA experience 10% inflation, the exchange rate between rupee and dollar will remain the same. If inflation in India is 15% and in the USA it is 10%, the increase in prices would be higher in India than it is in the USA. Therefore, the rupee will depreciate in value relative to US dollar.

Empirical studies have shown that inflation has a definite influence on the exchange rates in the long run. The trend of exchange rates between two currencies has tended to hover around the basic rate discounted for the inflation factor. The actual rates have varied from the trend only by a small margin which is acceptable. However, this is true only where no drastic change in the economy of the country is. New resources found may upset the trend. Also, in the short run, the rates fluctuate widely from the trend set by the inflation rate. These fluctuations are accounted for by causes other than inflation.

(3) Interest rate: The interest rate has a great influence on the short–term movement of capital. When the interest rate at a centre rises, it attracts short term funds from other centers. This would increase the demand for the currency at the centre and hence its value. Rising of interest rate may be adopted by a country due to tight money conditions or as a deliberate attempt to attract foreign investment. Whatever be the intention, the effect of an increase in interest rate is to strengthen the currency of the country through larger inflow of investment and reduction in the outflow of investments by the residents of the country.

(4) Money Supply An increase in money supply in the country will affect the exchange rate through causing inflation in the country. It can also affect the exchange rate directly.

An increase in money supply in the country relative to its demand will lead to large scale spending on foreign goods and purchase of foreign investments. Thus the supply of the currency in the foreign exchange markets is increased and its value declines. The downward pressure on the external value of the currency then increases the cost of imports and so adds to inflation.

The effect of money supply on exchange rate directly is more immediate than its effect through inflation. While in the long run inflation seems to correlate exchange rate variations in a better way, in the short run exchange rates move more in sympathy with changes in money supply.

One explanation of how changes in money supply vary the exchange rate is this; the total money supply in the country represents the value of total commodities and services in the country. Based on this the outside world determines the external value of the currency. If the money supply is doubles, the currency will be valued at half the previous value so as to keep the external value of the total money stock of the country constant.

Another explanation offered is that the excess money supply flows out of the country and directly exerts a pressure on the exchange rate. The excess money created, the extent they are in excess of the domestic demand for money, will flow out of the country. This will increase the supply of the currency and pull down its
Exchange rate.

(5) National Income: An increase in national income reflects increase in the income of the residents of the country. This increase in the income increases the demand for goods in the country. If there is underutilized production capacity in the country, this will lead to increase in production. There is a chance for growth in exports too. But more often it takes time for the production to adjust to the increased income. Where the production does not increase in sympathy with income rise, it leads to increased imports and increased supply of the currency of the country in the foreign exchange market. The result is similar to that of inflation, viz., and decline in the value of the currency. Thus an increase in national income will lead to an increase in investment or in consumption, and accordingly, its effect on the exchange rate will change. Here again it is the relative increase in national incomes of the countries concerned that is to be considered and not the absolute increase.

(6) Resource Discoveries when the country is able to discover key resources, its currency gains in value. A good example can be the have played by oil in exchange rates. When the supply of oil from major suppliers, such as Middles East, became insecure, the demand fro the currencies of countries self sufficient in oil arose. Previous oil crisis favored USA, Canada, UK and Norway and adversely affected the currencies of oil importing countries like Japan and Germany. Similarly, discovery oil by some countries helped their currencies to gain in value. The discovery of North Sea oil by Britain helped pound sterling to rise to over USD 2.40 from USD 1.60 in a couple of years. Canadian dollar also benefited from discoveries of oil and gas off the Canadian East Coast and the Arctic

(7) Capital Movements there are many factors that influence movement of capital from one country to another. Short term movement of capital may be influenced buy the offer of higher interest in a country. If interest rate in a country rises due to increase in bank rate or otherwise, there will be a flow of short term funds into the country and the exchange rate of the currency will rise. Reverse will happen in case of fall in interest rates.

Bright investment climate and political stability may encourage portfolio investments in the country. This leads to higher demand for the currency and upward trend in its rate. Poor economic outlook may mean repatriation of the investments leading to decreased demand and lower exchange value for the currency of the country.

Movement of capital is also caused by external borrowing and assistance. Large scale external borrowing will increase the supply of foreign exchange in the market. This will have a favorable effect on the exchange rate of the currency of the country. When repatriation of principal and interest starts the rate may be adversely affected.

(8) Political factors Political stability induced confidence in the investors and encourages capital inflow into the country. This has the effect of strengthening the currency of the country. On the other hand, where the political situation in the country is unstable, it makes the investors withdraw their investments. The outflow of capital from the country would weaken the currency. Any news about change in the government or political leadership or about the policies of the government would also have the effect of temporarily throwing out of gear the smooth functioning of exchange rate mechanism.

Cross Rates and Chain Rule

In India, buying rates are calculated on the assumption that the foreign exchange acquired is disposed of abroad in the international market and the proceeds realized in US dollars. The US dollars thus acquired would be sold in the local interbank market to realize the rupee. For example, if the bank purchased a CHF 10,000 bill it is assumed that it will sell the Swiss francs at the Singapore market and acquire US dollars there. The US dollars are then sold in the interbank market against Indian rupee.

The bank would get the rate for US dollars in terms of Indian rupees in India. This would be the interbank rate for US dollars. It would also get the rate for US dollars in terms of Swiss franc at the Singapore market. The bank has to quote the rate to the customer for Swiss franc in terms of Indian rupees.

The fixing of rate of exchange between the foreign currency and Indian rupee through the medium of some other currency is done by a method known as Chain Rule�given. The rate thus obtained is the Cross rate between these currencies.

10. Summary

Let us summarize today's session. In today's session we will tried to understand various currency quotes existing in foreign exchange market. These currency quotes included two way quotations, further the two types: direct as well as indirect quotations, spot and forward quote transactions, calculation of spot rates with premium and discounts, understanding forward margin or swap points and its calculation, exchange rates in international market and its Indian context.. Apart from these we also discussed the factors determining the spot exchange rates, which included balance of payment, inflation, interest rate, Money Supply, National Income, Resource Discoveries, National Movements and Political Factors. All these understanding will hopefully help you develop more understanding and knowledge about forex market and thereby international finance.