International Finance

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Lecture - 10
Foreign Exchange Forward Contracts

Good morning. Session ten, we will be discussing about Foreign Exchange Forward Contract. Foreign exchange forward contract is primarily applicable to exporter importer; and exporter importer generally has huge volume of transaction, and this transaction spread over years. And whenever there is a fluctuation in foreign currency, foreign currency it affects them significantly; and for that reason, they need some kind of risk management product. So, as to reduce the, reduce the impact of volatility on foreign currency.

And in this context, one of such, one of the such product is foreign exchange forward contract. In forward contract they book foreign currency; and whenever there is volatility or a fluctuation in exchange rate, it does not affect them. And forward contract are applicable to domestic authorised dealers, only domestic authorised dealer can provide foreign currency forward contract. And, to purchase foreign currency forward contract there should be some underlying risks; risk may be in the form of volatility of foreign currency; only, only whenever there is a volatility, there is a risk; the forward contract can be purchased and sell.

We will be discussing in detail about the forward contract; what are the types of the forward contracts available in the market; how the authorised dealer or the financial institution decide about the forward contract; how they estimate their exchange rate, everything, we will be discussing, with examples because theoretical side is very minimum here. Only, only through examples, we can discuss about forward contract.

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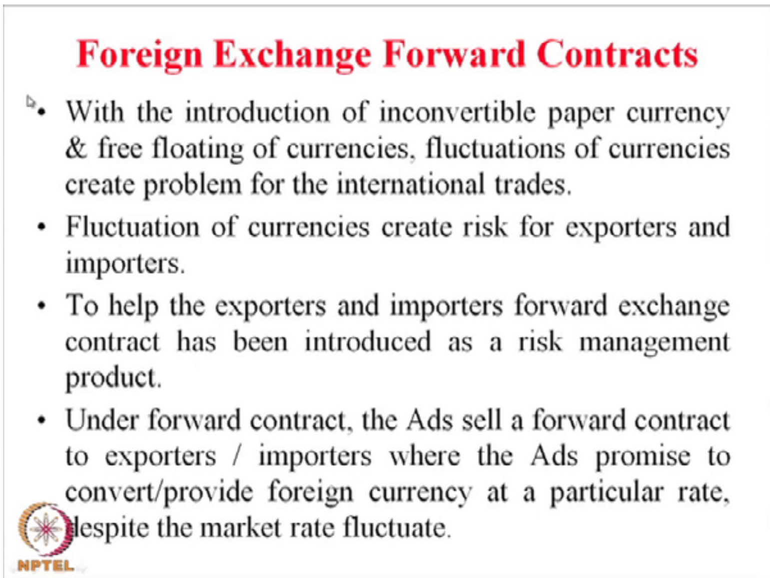

Let us start with the discussion about the forward contract; as I mentioned that, with the introduction of inconvertible paper currency standard, and free floating foreign currency, the fluctuation of currency create problems for, problems for international trade. As we have discussed in earlier session that after the Second World War many country got their independence, and they started their own paper currency standard. The domestic currency are converted into paper currency, and this inconvertible paper currency and floating exchange rate system, create fluctuation in the exchange rate.

And this fluctuation in exchange rate create some kind of risk, in international trade; and this risk need to be minimized, because this risk, with this risk exporter importer cannot have a stability in their foreign currency earnings; and because of this reason, it may affect the international trade. Realizing this risk, over the year, authorised dealer have decided to create some kind of foreign currency market which will provide stability in exchange rate; and this foreign currency market which provides stability in exchange rate is called forward currency contract.

Fluctuation of currency as I mentioned create risk for exporter and importers. To help the exporter and importer, forward exchange contract has been introduced. And this forward currency exchange, forward currency contract is in the form of a risk management product. Under forward contract, the authorised dealer sells a forward contract to exporter, to importer, where the authorised dealer promise to convert foreign currency at a particular rate, despite the market rate fluctuation. What does it mean? It means that whenever a exporter or importer got a forward contract, which you will be applicable in near futures, in in between any foreign currency fluctuation does not affect the exporter or importer, because they are immune to foreign currency fluctuation in the actual market. So, foreign currency fluctuation is not affecting the exporter importer, hence their stability in export and import remains and because of this reason, they are immune to what is called the exchange rate fluctuation.

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And, what are the forward contracts available in the market? The forward contract is available for exporter, for importer, for individual, for firms and companies. And forward contract, what are the types of forward contract? The type, two types of forward contracts primarily available, what is called forward purchase contract and forward sell contract. Forward purchase contract is primarily applicable to inward remittances; because, because whenever inward remittances means, when individuals from foreign country brings foreign currency to domestic country, it is called inward remittances. These inward remittances, for inward remittances the exporter or the individual can purchase, what is called forward purchase contract; for inward remittances it is applicable to export of goods and services.

And in case of forward sale contract, what is called forward sale contract? For outward remittances, that is applicable to importer; when importer wanted foreign currency for importing some goods and services from abroad, any fluctuation in foreign currency affect them. Suppose the importer wants foreign currency after two months, in the form of US dollar, now US dollar in between appreciating, when actually two months arrived, that time the US dollar might be appreciated significantly which will affect the importer balance sheet; because of this reason the importer, what can do? The importer can sell a forward contract and the position will be seized for the foreign currency; any further fluctuation will not affect them. It is called import of goods and services that is outward remittances, forward purchase sale contract replicable.

Similarly, repayment of principal and foreign currency loans; because many companies borrow foreign currency from abroad; they have to pay what is called repay the principal; they have to pay the interest amount which are future oriented. Any fluctuation of foreign currency, foreign currency, affect their principal repayment, affect the interest repayment; and because of this reason, they also sell forward contract to immune their position.

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Another foreign currency forward contract, what are the position? What are the process in foreign currency forward contracts? Process means: process of estimation; process of signing the contract; process of designing the contract. Here, forward contract involve two parties, which are, suppose is a purchase forward contract, means applicable to inward remittances for exporters, those are, the two party, the exporter and the authorised dealer, two party. The exporter goes to the authorised dealer and purchase a forward contract, to immune his position; and in between there is a contract, between the exporter and the authorised dealer, the two party involves here. What the party do? The party agree to buy or sell, a specified amount of forex, at the specified rate, at a specified date in future; they agree to buy or sell.

Suppose they agree to buy means, they agree to buy means, suppose the foreign currency is coming inward remittances, remittances for exporter agrees to buy, means the authorised dealer agree to buy the inward remittances of exporter, for a particular amount, so amount also fixed here, for a particular amount, at a particular rate. They will also sign a contract for rate also, what rate the dollar will be converted into Indian rupee, so that rate also specified. And when the foreign currency will arrive, that date also specified; suppose after one month, the exporter receiving ten millions of dollar and he will bring that 10 million to India and convert the 10 million of US dollar into Indian rupee; then here, authorised dealer sign a agreement or contract with the exporter, the exporter after one month bring 10 million; the amount 10 million fixed. The date of, date in future, the date of arrival of foreign currency also fixed and also what rate authorised dealer will give to the exporter that rate also fixed.

So, three things are fixed here; they sign a agreement for three things. First thing the amount of foreign currency, second thing the date of when the foreign currency will arrive, and third thing is that the rate at which the foreign currency will convert into Indian rupee, the three things in the contract will be there. And in between there is no, there is no money exchange till the contract period; only there is some kind of transaction fee, the party will pay to the authorised dealer.

At the expiration, at the expiration, may at the date of the forward contract is a signed for one month, two months, three months; that date will be specified. At the date of expiration, the dates of contract become liquidated. Or the contract period over, a forward contract can be settled either physical delivery, the ten millions will be delivered to, the exporter will ten million, deliver 10 million to the authorised dealer, the authorised will convert it into Indian rupee, pay the Indian rupee to the exporter; either physical delivery will take place or a cash settlement will take place, cash settlement means the difference amount, the authorised dealer provides to the exporter. The cash settlement in a physical delivery are applicable in case of forward contract.

So, forward contract is a agreement between two party; the two party agreed to buy or sell particular amount of foreign currency, at a particular rate ,at a particular date; and in between the agreement there is no transaction of any money, only the transaction fee will be there. At the expiration of forward contract, at the expiration means, at the date which foreign forward contract matured on that date, that may be physical delivery or there may be a cash settlement.

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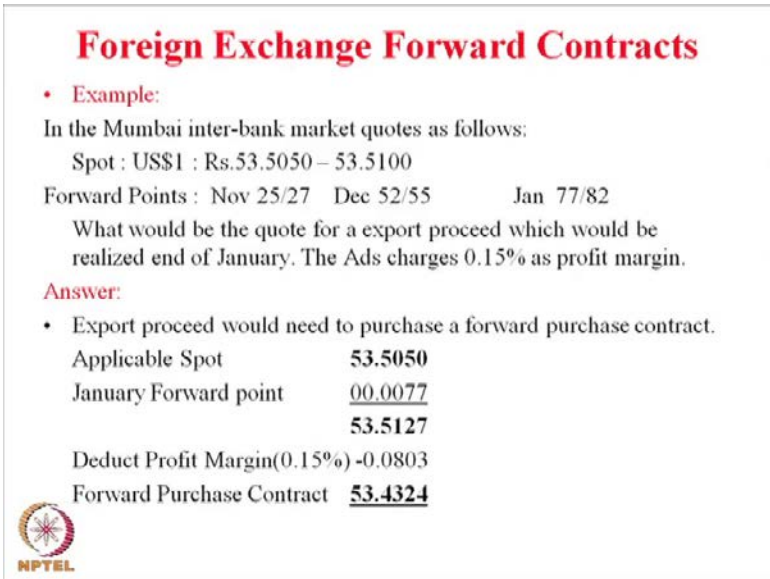

To understand the forward contract we have to do some kind of problems. Without the problems we cannot understand the process of designing a forward contract, the process of estimation of forward contract rate, and process of calculation of the forward contract. So let us do some example.

First you see the example here,, in the Mumbai inter-bank market the dollar is quoting us spot market 1 dollar is 53.5050 and 53.5100. If you buy a forward contract, if you buy a foreign currency then you have to pay 53.5100; you have to sell US dollar you will get 53.5050. And forward points for November 25 27, for December 52 55 and for January 77 82, what does it mean? Forward points are given: In the November month, if you want to calculate the forward contract rate, the forward points are given; if you want to calculate the forward contract for December month, forward contracts are given; if you want to calculate the forward contract for the January month, forward points are given.

What would be the quote for export proceed which would be realized end of January, the exporter supposed to get foreign currency end of January and he wanted a forward purchase, purchase contract because exporter need forward to purchase a forward contract. So, exporter needs a purchase contract, and what will be the rate? The rate of forward contract and the authorised dealer charges 0.15 percent, 0.15 percent as profit margin, profit margins are given to you.

Now, what you have to do? You have to calculate the forward purchase contract for the exporter; what is the rate? If the authorised dealer charge 0.15 percent of profit margin; for which date? The date is January, end of January, entire period of January will be calculated.

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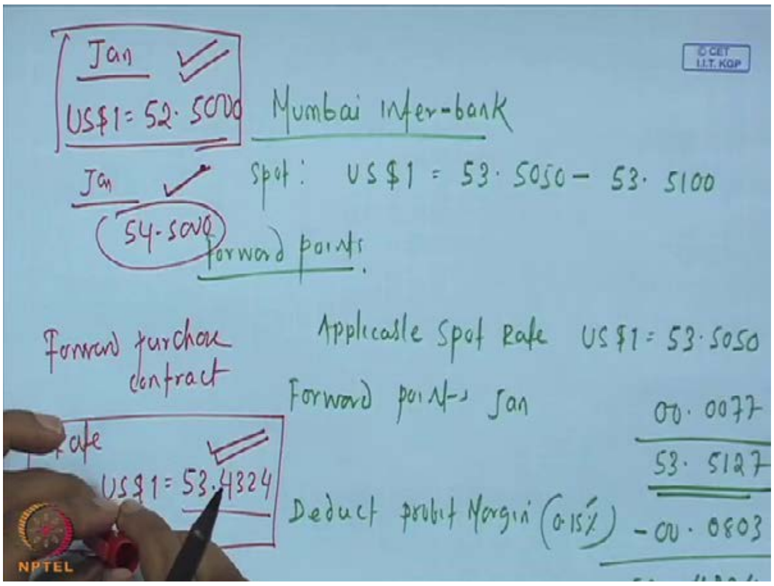

Here three things required: first thing the rate is given to you, the spot rate in US in Indian Mumbai inter-bank market given to us, the spot rate is here, 1 dollar is, the dollar spot rate in the Mumbai inter-bank market, Mumbai inter-bank market, the spot rate between US dollar and Indian rupee is given to us 53.5151 and 53.5100. This is given to us; and in between, we got also December forward points. For whom you are calculating the forward contract? For the exporter; that means, exporter is getting foreign currency during the month of January, but which date of January? You do not know; the month of January, entire month you have to calculate. So, in the month of January the exporter is getting US dollar.

And today we are in the month of suppose, that spot market is suppose around January and has not come to us, before January the spot market rate is given to us; if the exporter wait for the January, it may happen, dollar may depreciate or dollar may appreciate; that means, exporter wanted to covert the US dollar into Indian rupee.

Suppose in between, till the January, rupee is depreciating then the exporter will get more rupee; suppose rupee appreciate exporter may get less rupee. So, the exporter might have thought that rupee may appreciate and he may get in the, if he wait for January during the January month, he may not get a good amount of conversion. So, there is a risk for the exporter. And to avoid this risk the exporter has gone to the authorised dealer and ask for a forward purchase contract, for the rupee dollar exchange rate, for the month of January; and in the January month we have the forward points, and in the in between if you see November month forward 25 27, December month 52 55, and January month 77 82. Now, dollar is coming to India. So, exporter will give the dollar to the authorised dealer. So, when exporter sell dollar in Indian market the authorised dealer will give less amount of rupee. So, here the applicable spot rate, as we discussed, applicable spot rate is for 1 US dollar that is 53.5050, is a applicable spot rate; this the applicable spot rate is 53 5 because the less amount of rupee, the authorised dealer will give to the exporter.

Now, since, the exporter may surrender the US dollar during the month of January, you have to estimate the forward rate, forward spot rate for sell of US dollar. So, forward point for January is given to us; if you see January forward 77 82 means, second one is higher than the first one, 82 is more than the 77; here rupee is depreciating, US dollar is appreciating, we have discussed earlier session. So, when rupee is depreciating, you have to add the forward point. So, forward point is a forward premium. So, you have to add, the US currency is a premium currency here; rupee is a discount currency here. So, you have to add the forward premium, the forward premium is how much 00.0077. So, 77 point you have to add here; now how much coming, it is coming 53 5127. So, 53 5127 after adding the January month premium for the US dollar, or the January month discount for the Indian currency.

Now, the authorised dealer has estimated the forward exchange rate for the month of January. Now before giving the, before giving that rate to the exporter, the authorised dealer may charge, what is called profit margin. Now the profit margin authorised dealer has to deduct from here, because he is quoting, he is purchasing foreign dollar. So, you have to less, surrender less and less. So, deduct the profit margin, profit margin how much here, profit margin is 0.15 percentage, you deduct the 0.15 percentage of this from here. So, how much coming here 00.0803. Now rest, this is coming, after deducting the 53.4324 is the forward purchase contract for the exporter; and the exporter if he sign a contract with the authorised dealer, for the conversion of dollar into rupee, during the month of January, their authorised dealer will quote a forward purchase contract rate of 53 4324. So, forward purchase contract the authorised dealer will quote 53 4324.

So, here forward purchase contract, the rate will be, the applicable rate will be, US dollar 1 will be 53.4324, the authorised dealer will get; authorised dealer will quote, this is the rate to the exporter; if the exporter brings the foreign currency during the month of January then he will be getting per dollar 53.4324.

Suppose in between rupee appreciated; and it is suppose at the month of January rupee become, month of January, month of January, suppose January month rupee become US dollar, one US dollar rupee appreciated to 52.500, what will happen? 500 since rupee appreciated, per dollar is, in month of January market rate 52 500, but in between the authorised, the exporter has signed a contract with the authorised dealer 53 4324, he will be getting this rate only, this rate only; and this rate is not applicable to that exporter, because here, the contract is valid and authorised the exporter will get this rate and this is the advantage for the exporter.

Suppose rupee depreciated to 54 in between, suppose month of January rupee depreciate to 54 500, what will happen? Now actual market in month of January, dollar is available 54 00 sell dollar selling rate; the market will purchase dollar at 54, but exporter is getting 53 4324; then question is, what the exporter will do? Exporter may break the contract, pay the fine and convert the export earning at the available market rate of 54.54 rupees per dollar.

This is the advantage for exporter also; exporter has a, though exporter has signed a contract with the authorised dealer he has a freedom to break it, at any time by paying the contract signing amount, contract signing amount that is the transaction cost and some kind of penalty for that; if the penalty is, after paying the penalty, he is getting the 54 rupees per dollar, it is better for him to break the contract.

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Now, let us come to another example. The example is here; if you go through the example, looking at the depreciation of rupee against US dollar, an importer wanted to book a forward import contract to be delivered after two month. As an authorised dealer, in Mumbai inter-bank market, what would be your price for such contract, if the profit margin is 0.45 percentage. In the Mumbai inter-bank market dollar is quoting as, spot rate 53.5050 53.5100; forward point 1 month 45 40, second month 52 50.

Now, from this example, what are the point given to us? what you suppose to do? Here a importer is there, importer may get us dollar after, US dollar, may get US dollar after two month, importer may need US dollar after two month, but in between the importer has seen the market, evaluate the market, he found that rupee is depreciating, means per dollar, he will be paying more and more rupee, but he needs dollar after two month, not now. He thought that rupee may depreciate further; that means, he supposed to pay more rupee per dollar.

So, he needs to immune his position and for this, he has gone to a authorised dealer. The authorised dealer, in the Mumbai inter-bank market, what rate he will quote to the importer? If the profit margin authorise dealer charge 0.45 percentage and the applicable spot rate is given to us. So, the authorised dealer has to, here a authorised dealer has a, has to sell a, sell a forward contract.

So, the importer has to sell a forward contract, and authorised dealer has to sell the forward contract to importer. Now, same thing, we have to decide ,what is the applicable spot? Then you have to add or deduct the forward points; then, you have to add, what is called that profit margin and decide the rate. Now let us do that, now, here the authorised dealer is quoting a quote for whom? For the importer; what importer needs? Importer needs foreign currency, that is US dollar; then when he needs US dollar, he purchase US dollar the applicable spot will be more to him.

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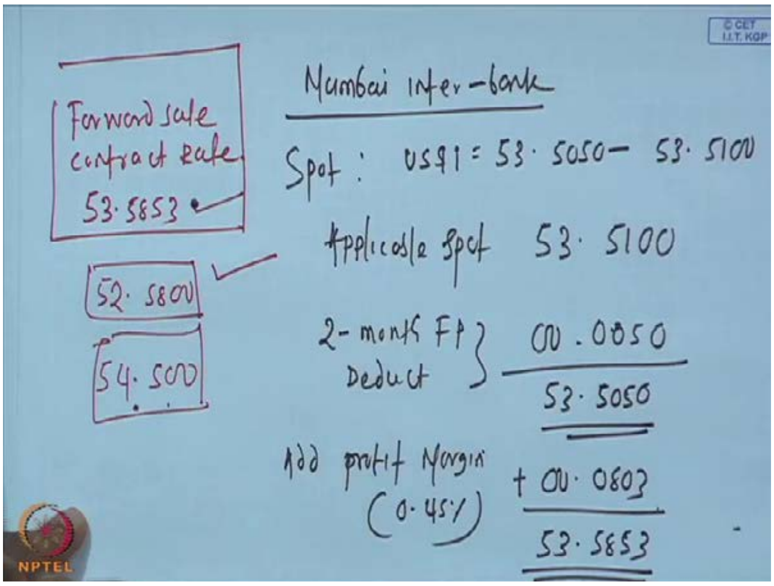

Now, in Mumbai inter-bank market same thing, Mumbai inter-bank market, the spot rate is, the spot rate is US dollar 53.5050 53.5100. So, here, it is importer; the importer needs to purchase US dollar. So, authorised dealer has to charge more. So, the applicable spot is here, applicable spot will be 53 5100.

Now, when the importer needs the dollar? After two month, if you see, after two month he may need the dollar. But this rate is spot rate, today's rate; after two month rate. So, after two month, you see the forward point, the forward point after two month 52 50, what does it mean? Second number 50 is lower than the 52. So rupee is what? Rupee is appreciating, not depreciating here. So, here dollar is a discount currency; rupee is a premium currency.

So, you have to deduct the forward premium. So, forward point need to be deducted. So, applicable forward point is two month; forward point it need to be deducted; two month forward premium is how much? 0.0050; what is the rate now? Rate is 53.5050. So, after two month, rupee, the dollar will be, dollar will be quoted 53.5050.

Now, question is here; the importer will get dollar after two month from the authorised dealer at the rate of 53.5050, but authorised dealer need to add the profit margin. So, add the profit margin here; profit margin, how much 0.45 percentage of 53.5050; this is coming how much 00 0803 0803 which is coming; now it is coming, if you add, it need to be added 53 5853. What does it mean? The importer will get dollar from the authorised dealer at the rate of 53 5853 after two month. So, what is the forward sale contract here? The importer has to, importer had to sale a contract. So, forward sale contract rate will be, for dollar, for two month, after two month 53 5853.

Now, question is here; if rupee is appreciating, then if appreciate, appreciating more than 53 5853; that means, in the after two month rupee become 52 5800; after two month, suppose after two month rupee become 52 5800, then what the importer will do? Importer will break the contract; he will finalise if he want to purchase; if he want to break this contract, how much fine you have to pay; if fine is sufficient to cover from 52 5800, then you will break the contract and purchase the dollar from the actual available rate, at the actual market.

So, this is 52; if suppose rupee become 54 500, another rate; here also then there is no need of breaking the contract because at market rate is available at 54, but he is getting from the authorised dealer at a contracted rate of 53 5853, he will continue with the contract. This is the beauty of the forward contract; the independence or the freedom lie with the party which actually purchase or sell the contract, that is importer and exporter.

Now, let us do a forward contract, what is called a cross currency contract? Because these are the actual markets, dollar or rupee available. So, there is no problem for getting a forward contract. Suppose in the domestic market the importer exporter may not get the currency which actually the demand; here they will go to the authorised dealer, but that particular currency is not available with the authorised dealer, not in the domestic market the authorised dealer will migrate from one market to another market to get a cross currency rate. In case of cross currency rate, what will be the forward cross contract? How we will decide the rate? We have to discuss the problems here.

The cross currency, we have discussed earlier session. The cross currency, you have to for cross currency, you have to migrate from one market to another market that is one country to another country, to get a conversion rate for different rate. And here we have to discuss about a problem where forward cross currency contract, how we can decide the forward cross currency rate? Let us come to a problem.

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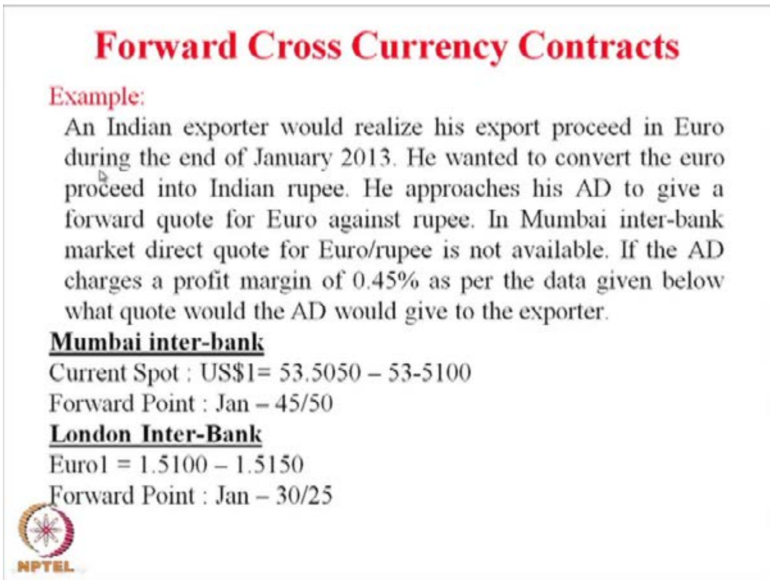

The problem is here; An Indian exporter would realize his export proceed in Euro during the end of January 2013. He wanted to convert the euro proceed into Indian rupee. He approaches his authorised dealer to give a forward quote for Euro against rupee; the authorised here the exporter is getting euro and he wanted the euro to be converted into Indian rupee, he is getting after end of January 2013.

Now, when he approached to the authorised dealer for giving a forward purchase contract, for his export earning which is in the form of euro converted into Indian rupee, what rate the authorised dealer will charge? Here it may happen in Bombay inter-bank market direct quote for Indian rupee and Euro may not be available. So, the authorised dealer will go from Mumbai inter-bank market to London inter-bank market and decide what is called a cross currency rate. So, in Mumbai inter-bank market the rate quote for euro rupee is not available.

If the authorised dealer charges a profit margin of 0.45 percent as per the data given below, what quote would the authorised dealer would give to the exporter? Rate is here, Mumbai inter-bank; current spot is US dollar and Indian rupee forward point; for US dollar Indian rupee given to you, for the January month; in London market Euro and US dollar rate is available; and forward point for euro and US dollar is given to us. Now since direct quote for euro and rupee is not available, the authorised dealer will migrate from Mumbai inter-bank market to London inter-bank market and decide the quote. Now, how, what way we will do it? How we can solve this problem? Suppose you are a authorised dealer what we can give a quote for a rupee euro, after, for a forward currency purchase contract for the end of January 2013.

Now, to do the problem, what way, what is our approach? Our approach is here. As a authorised dealer I am getting what? After January month, I am getting euro; the exporter is surrendering me euro, then what we will do with the euro? I have to give quote for the rupee. What? since direct quote is available in Mumbai market, so what I will do? I have to sell the euro in London market. In London market when I sell the euro, I will get what? I will get US dollar. Once I get the US dollar I will go to Mumbai inter-bank market, sell the US dollar and get rupee. In this process I am migrating from euro to dollar and dollar to rupee that is called cross currency rate.

But everything will take place when? For the month of January 2013, which is, which has not arrived today now. Now, you have to calculate forward currency exchange rate for euro, dollar then dollar, rupee. Here first, you have to go to the London market, London market, London inter-bank market.

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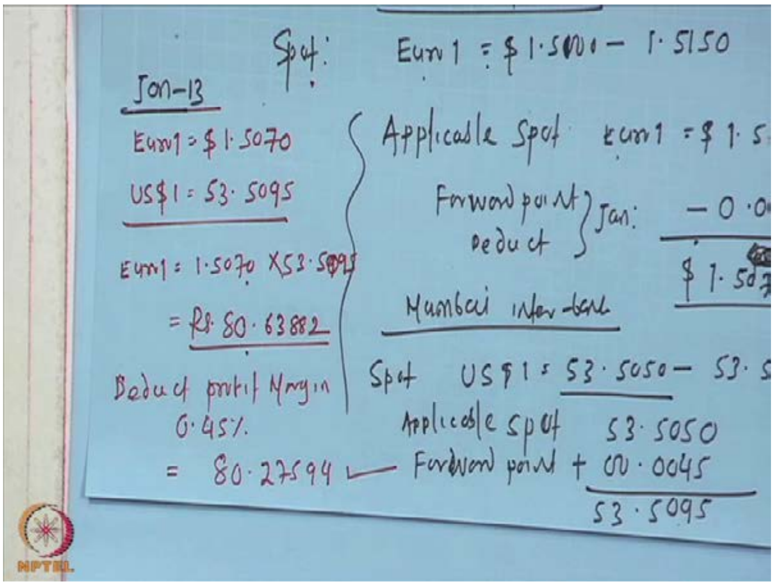

Now, London inter-bank market euro is quoting; 1 Euro is US dollar 1.5100 and 1.5150, but this is a, this is spot rate, the spot market rate, spot market today rate, today rate 1 Euro in London inter-bank market is 1.5100 and 1.5150. But what we are doing? The exporter is surrendering US, Euro; I have to sell the Euro to get the US dollar; when the authorised dealer sell the euro in inter-bank market, the market will give you less. So, the applicable spot, applicable spot will, between Euro and US dollar will be 1.5100, why? Market will give less, so always market give less.

So, applicable spot is per, per euro the rate is 1.5100 dollar; now this is spot rate, I have to calculate for January month. So, January month forward premium, you see the forward point for January 30 25: second one 25, first one 30, what does it mean? It mean, it means that dollar is appreciating, euro is depreciating. So, I have to deduct the forward rate. Forward point for euro and dollar, forward point deduct; how much we have to deduct? The January month premium. So, January month premium is 0.0030, I have to deduct it. When I deduct what I am getting out of that, when I deduct, when I deduct what I am getting out of that, 0 is 70 it is 7 and it will be 94.

Here, we have to calculate the exchange rate actually. So, I will be getting, what is call that, I will be getting a premium for, I will be getting a rate for the US dollar, I have to open excel file here. So, I have to get the, I have to get 1.5100 minus 0.0030. So, I am getting, 1 dollar rate will be 1.5070, the dollar rate will be 1.5170 for the month of January 2013.

Now, once I got the dollar, what I have suppose to do? I will sell the dollar in the inter-bank market of India. So, I have to sell the dollar in the inter-bank market of India. So, I have to, I will be getting rupee. Now, come to the Indian market that is Mumbai inter-bank market; in Mumbai inter-bank market the spot is, spot between dollar and rupee is 53 5050 and 53 5100, but what I am doing? I am selling dollar; I have, I got dollar from the, when I, from the London, London inter-bank market I sold euro and got dollar and that dollar I will be selling in Indian market to get rupee; when I sell dollar, I will get less amount of rupee.

The applicable spot will be this one; applicable spot will be 53 5050. But this is spot rate, but I need rate for the January month. So, January month what is the forward premium? I have to see the January month, the January month forward is 45 50. Rupee is depreciating; so I have to add forward premium, add forward point for January month, adding will be there, rupee is appreciating, so 00.0045; so, this rate will be 53.5095.

So, in the month of January the rate will be 53 5095. So, what we got? We got three things here, first thing the month of January, for the month of January 13, we got three thing: first thing we got the dollar rate will be euro dollar, one euro will be, one euro will be dollar rate 1.5070 and rupee will be, rupee dollar rate will be 53 5095; this two thing we got from the market. Now, this rate will be applicable for January 2013.

Now I have to convert euro into Indian rupee. So, now, euro, euro will be now, 1 Euro is 1 point 5070 dollar, 1 dollar is 53 5095. So, if you multiply that two, we will get what? The 1 Euro, how many, how many rupee will be there? We multiply these two thing; what is the multiplication here 1 point 5070 into 53. 5095; we got how much? We got the dollar quote, here 1 euro will be 80.63882; then1 euro equivalent to how much rupee? How much rupee, we got it, but this is applicable in month of January. So, January month euro will be 80 rupees 63882 paisa.

But this is the rate only, but here the authorised dealer gets the commission; the commission will be 0.45 percentage. You have to, you have to deduct the commission; you are giving a quote for the exporter, so deduct the commission. Deduct profit margin or commission; profit margin is 0.45 percentage of 80 point 63882. So, now, you have to deduct this and you will get the final quote, deduct this we will get the final quote, the quote will be. Here, if you deduct 0.45 percentage from rupees 80.6382; from this we will get the actual calculation. So, how much coming? Here it is coming around, into 0.45 percentage into, is coming the percentage is multiply, that and you will get this minus 8, and you will get this amount, this is coming 80.27594. So, 1 dollar forward sale contract for Euro and Indian rupee will be 80.27594. This will be the rate quote by the authorised dealer for the conversion of Euro proceeds into Indian rupee during the month of January 2013.

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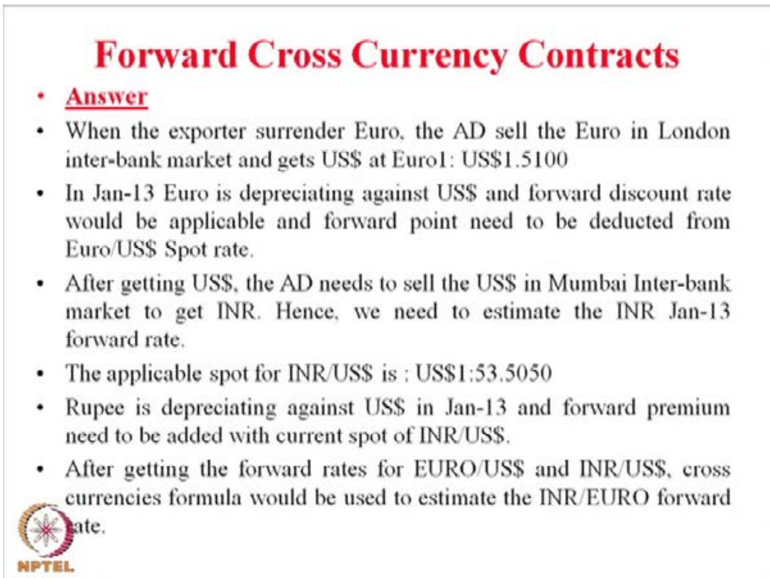

Now, here you have to understand that what we have done. The process is important; the process is here, the process is here when the exporter surrender the euro, the authorised dealer, authorised dealer sell the euro in London market and get US dollar; the US dollar rate will be applicable 1.5100.

Now, in January 13 euro is depreciating dollar is appreciating, so you deduct the forward point from the US dollar. After deducting this forward point, you get the euro and dollar conversion during the month of January that is a forward rate. After getting US dollar, you sell the US dollar in Indian market to convert into rupee. So, rupee a dollar exchange rate you require; rupee dollar exchange rate is, what rate you are selling the dollar to get rupee; when you sell the dollar, you will get less amount of rupee that is 1 dollar 53.5050 this is spot rate.

So, we have to add here, rupee is depreciating, you have to add the forward premium; after adding the forward premium for the month of January, you get the quote product INR and US dollar. After getting the forward quote for Euro dollar and INR dollar, you apply the cross currency to get the INR Euro forward rate. This is the process of calculation of forward cross currency exchange rate.

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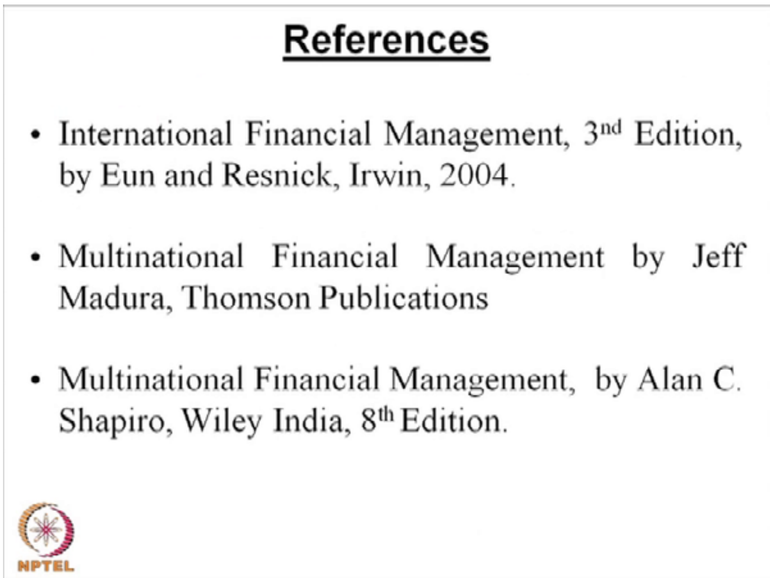

Now, same thing I have done here. Now, the references; references are same whatever we have discussed earlier: the International Financial Management by Resnik and Irwin; and Multinational Financial Management by Madura; Multinational Financial Management by Shapiro. These three books I generally follow. You can go through this book to understand more on forward currency market rate.

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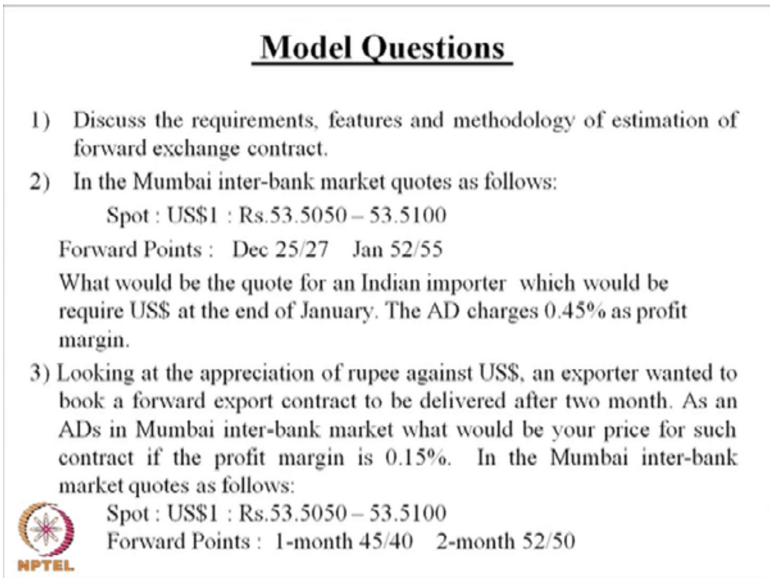

The model question here, the model question here is: Discuss the requirements, features and methodology of estimation of forward exchange rate contract. What you will discuss here? Why you need forward exchange rate, forward contract rate; what are the feature of forward contract. So, what are the rates there, for whom it is applicable, you discuss that. Then calculation process that is methodology of estimation whatever you have discussed you have to mention here.

Second question is a problem. Here Mumbai inter-bank market dollar is given to you, forward points are given to you and what would be the quote for Indian importer which would require US dollar at the end of January. So, importer require dollar, you have to surrender rupee, you require dollar and for the month of January and what rate the authorised dealer quote if the charge or profit margin is 0.45 percent is same thing whatever you discuss that here applicable spot rate is 53.5100 because the importers purchasing dollar you have to surrender more rupee 53. 5110 is the actual applicable rate. For the month of January the rupee is depreciating you add the forward premium 55 to get the forward rate for the month of January; then you add profit margin 0.45 here to get the forward contract rate for the sell contract that is purchase in a sale contract for importer during the month of January.

Third question is here: Looking at the appreciation rupee against US dollar the importer wanted to book a forward export contract to be delivered after two month. Rupee is appreciating, so import exporter will get less amount of rupee when they surrender the US dollar. So, there is a risk for the exporter. So, they want to book the forward contract from the beginning now, for the two month. Authorised dealer in Mumbai inter-bank market, what rate they will charge? If the spot rate is given to you 53 5050 53 5100 and forward points are given to you for the one month, two month.

So, here authorised dealer is bringing dollars. So, the applicable spot is here 53 5050; and second month is 52 50 that is rupee is appreciating you deduct 52 rupee. So, 53 5050 deduct the forward discount here 52 we will get the forward rate for the after two month; then you deduct the profit margin 0.15 percentage that the actual foreign forward currency rate will be after the deducting the 0.15. So, this is the process of calculation. And we have discussed how the exchange rate fluctuation is a risk for the exporter importer. When there is a risk they need some product; the product is nothing, but the forward purchase forward contract rate. Forward contract is a risk management product and exporter importer generally uses this product and sign the contract with the authorised dealer to immune their position.

Next session, we will be discussing about, whenever there is a risk, how much loss will be there for the exporter importer; then the calculation is through the value at risk model. Next session will be value at risk model.

Thank you.