FOREX CLASS 8 PART 2
HOME WORK SUPPORT
COVERAGE

Question			Answer			Lecture Time
Q. No	Page no.	Book	Q. No	Page no.	Book	
21	8	CW Q BOOK	21	10	CW ANS BOOK	00:00:32 TO 00:02:47
EQ	57	HW ANS BOOK	EQ	58	HW ANS BOOK	00:02:48 TO 00:11:06
11	5	HW Q BOOK	11	7	HW ANS BOOK	00:11:07 TO 00:14:21
13	6	HW Q BOOK	13	8	HW ANS BOOK	00:14:22 TO 00:21:18
14	6	HW Q BOOK	14	8	HW ANS BOOK	00:21:19 TO 00:32:44
EQ 1	-	-	EQ 1	-	-	-
EQ 2	-	-	EQ 2	-	-	-
EQ 3	-	-	EQ 3	-	-	-
EQ 4	-	-	EQ 4	-	-	-

Question 21: CW Q BOOK PAGE 8

A company operating in Japan has today effected sales to an Indian company, the payment being due 3 months from the date of invoice. The invoice amount is 108 lakhs yen. At today's spot rate, it is equivalent to ₹ 30 lakhs. It is anticipated that the exchange rate will decline by 10% over the 3 months period and in order to protect the yen payments, the importer proposes to take appropriate action in the foreign exchange market. The 3 months forward rate is presently quoted as 3.3 yen per rupee. You are required to calculate the expected loss and to show how it can be hedged by a forward contract.

(Source: ICAI)

Answer: CW ANS BOOK PAGE 10

Spot rate of ₹ 1 against yen = 108 lakhs yen/₹ 30 lakhs = 3.6 yen

3 months forward rate of Re. 1 against yen = 3.3 yen

Anticipated decline in Exchange rate = 10%

Expected spot rate after 3 months = 3.6 yen – 10% of 3.6 = 3.6 yen – 0.36 yen = 3.24 yen per rupee

	₹ (in lakhs)
Present cost of 108 lakhs yen	30.00
Cost after 3 months: 108 lakhs yen/ 3.24 yen	33.33
Expected exchange loss	3.33

If the expected exchange rate risk is hedged by a Forward contract:

Present cost	30.00
Cost after 3 months if forward contract is taken 108 lakhs yen/ 3.3 yen	32.73
Expected loss	2.73

Suggestion: If the exchange rate risk is not covered with forward contract, the expected exchange loss is ₹ 3.33 lakhs. This could be reduced to ₹ 2.73 lakhs if it is covered with Forward contract. Hence, taking forward contract is suggested.

Question: HW ANS BOOK PAGE 57

XYZ Ltd., an Indian company has imported goods from JFK Ltd a Japanese company with an import exposure of JPY 15,000,000 receivable by the latter party on September 30, 2023. Japanese Yen (JPY) is not directly quoted against Indian Rupee. The current spot rates are:

US $ = INR 75.00

US$ = JPY 108.00

It is estimated that Japanese Yen will appreciate to 102 level and Indian Rupee to appreciate against US $ to INR 72. Forward rates for September 2023 are:

US $ = INR 70.50

US$ = JPY 105.25

Required:

i. Calculate the expected loss, if the hedging is not done. How the position will change, if the firm takes forward cover?

ii. If the spot rates on September 30, 2023 are:

US $ = INR 72.00

US$ = JPY 101.50

Is the decision to take forward cover justified?

(Source: FOD)

ANSWER: HW ANS BOOK PAGE 58

Since the direct quote for ¥ and ₹ is not available, it will be calculated by cross exchange rate as follows:

(₹/$)/(¥/$) = ₹/¥

75.00/108.00 = 0.6944

Spot rate on the date of import 1 JPY = ₹0.6944

Expected rate of JPY for September 2023 = ₹0.7059 (₹72/¥102)

Forward rate of JPY for September 2023 = ₹0.6698 (₹70.50/¥105.25)

i. **Calculation of expected loss without hedging**

Value of import at the time of import (1 JPY = ₹0.6944 x ¥15,000,000) = ₹1,04,16,000

Estimated payment to be made on September 2023 (1 JPY = ₹0.7059 x ¥15,000,000) = ₹1,05,88,500

Loss = ₹1,72,500

Hedging of loss under Forward Cover

Value of import at the time of import (1 JPY = ₹0.6944 x ¥15,000,000) = ₹1,04,16,000

Payment to be made under Forward Cover (1 JPY = ₹0.6698 x ¥15,000,000) = ₹1,00,47,000

Savings = ₹3,69,000

By taking forward cover, savings of ₹3,69,000 can be achieved.

ii. Actual rate of JPY on September 30, 2023 = ₹0.7094 (₹72/¥101.50)

Value of import at the time of import (1 JPY = ₹0.6944 x ¥15,000,000) = ₹1,04,16,000

Estimated payment to be made on September 2023 (1 JPY = ₹0.7094 x ¥15,000,000) = ₹1,06,41,000

Loss = ₹2,25,000

The decision to take forward cover is still justified.

Question 11: HW Q BOOK PAGE 5

Arnie operating a garment store in US has imported garments from Indian exporter of invoice amount of Rs. 1,38,00,000 (equivalent to US$ 3,00,000). The amount is payable in 3 months. It is expected that the exchange rate will decline by 5% over 3 months period. Arnie is interested to take appropriate action in foreign exchange market. The three month forward rate is quoted at Rs. 44.50.

You are required to calculate expected loss which Arnie would suffer due to this decline if risk is not hedged. If there is loss, then how he can hedge this risk.

(Source: ICAI)

Answer: HW ANS BOOK PAGE 7

Spot rate of US$ against Indian Rupee = Rs.1,38,00,000/US$ 3,00,000 = Rs. 46/$

3 month forward rate of US$ 1 against Rupee = Rs. 44.50

Anticipate decline in Exchange Rate = 5%

Expected spot rate after 3 months = Rs. 46 - Rs. 2.30 = Rs. 43.70

Expected Loss

	US$
Present cost of Rs. 138 lakh.	3,00,000
Cost after 3 months Rs. 138 lakh/Rs. 43.70	3,15,789
	15,789

Hedging of Risk (Using Forward Contract)

	US$
Present cost	3,00,000
Cost if forward contract is taken at Rs. 44.50/$	3,10,112
	10,112

Thus, from above it can be seen that though the risk of decline in exchange rate cannot be completely avoided but it can be reduced by taking forward contract. Hence, taking forward contract is suggested.

Question 13: HW Q BOOK PAGE 6

In March, 2009, the Multinational Industries make the following assessment of dollar rates per British pound to prevail as on 1.9.2009:

$/Pound	Probability
1.60	0.15
1.70	0.20
1.80	0.25
1.90	0.20
2.00	0.20

i. What is the expected spot rate for 1.9.2009?

ii. If, as of March, 2009, the 6-month forward rate is $ 1.80, should the firm sell forward its pound receivables due in September, 2009?

(Source: ICAI)

Answer: HW ANS BOOK PAGE 8

i. Calculation of expected spot rate for September, 2009:

$ for £(1)	Probability(2)	Expected $/£ (1) × (2) = (3)
1.60	0.15	0.24
1.70	0.20	0.34
1.80	0.25	0.45
1.90	0.20	0.38
2.00	0.20	0.40
	1.00	EV = 1.81

Therefore, the expected spot value of $ for £ for September, 2009 would be $ 1.81.

ii. If the six-month forward rate is $ 1.80, the expected profits of the firm can be maximised by retaining its pounds receivable.

Question 14: HW Q BOOK PAGE 6

A company operating in a country having the dollar as its unit of currency has today invoiced sales to an Indian company, the payment being due three months from the date of invoice. The invoice amount is $ 7,500 and at today's spot rate of $0.025 per ₹.1, is equivalent to ₹ 3,00,000.

It is anticipated that the exchange rate will decline by 10% over the three months period and in order to protect the dollar proceeds, the importer proposes to take appropriate action through foreign exchange market. The three months forward rate is quoted as $0.0244 per ₹ 1.

You are required to calculate the expected loss and to show, how it can be hedged by forward contract.

(Source: ICAI)

Answer: HW ANS BOOK PAGE 8

Calculation of the expected loss due to foreign exchange rate fluctuation

Present Cost

US $7,500 @ today spot rate of US $0.025 per Re. 1	₹ 3,00,000
Cost after 3 months	
US $7,500 @ expected spot rate of US $0.0225 per Re. 1	₹ 3,33,333
(Refer to working note)	
Expected loss	₹ 33,333
Forward cover is available today at 1 Re. = US $0.0244 for 3 months	

If we take forward cover now for payment after 3 months net amount to be paid is (US $ 7,500/0.0244) = ₹ 3,07,377

Hence, by forward contract the company can cover ₹25,956 (₹33,333 – ₹7,377) i.e. about 78% of the expected loss.

Working Note:

Expected spot rate after 3 months

It is anticipated by the company that the exchange rate will decline by 10% over the three months period. The expected rate will be

Present rate - 10% of the present rate.

= US $ 0.025 – 10% of US $ 0.025

= US $ 0.0225

Alternatively, the expected rate may also be calculated as follows:

$$= \text{US } \$\ 0.025 \times \frac{90}{100} = \text{US } \$0.0225$$

EXTRA QUESTIONS

Question 1:

On January 28, 2023, an importer customer requested a Bank to remit Singapore Dollar (SGD) 2,500,000 under an irrevocable Letter of Credit (LC). However, due to unavoidable factors, the Bank could affect the remittances only on February 4, 2023. The inter-bank market rates were as follows:

	January 28, 2023	**February 4, 2023**
US$ 1=	₹ 80.91/80.97	₹ 80.85/80.90
GBP £ 1 =	US$ 1.7765/1.7775	US$ 1.7840/1.7850
GBP £ 1 =	SGD 2. 1380/2.1390	SGD 2.1575/2.1590

The Bank wishes to retain an exchange margin of 0.125% on ₹/ SGD.

Required:
Estimate how much does the customer stand to gain or lose due to the delay?
(Note: Calculate the rate in multiples of 0.0001)

ANSWER:

On January 28, 2023, the importer customer requested to remit SGD 25 lakhs.

To consider sell rate for the bank:

US $	=	₹ 80.97
Pound 1	=	US$ 1.7775
Pound 1	=	SGD 3.1380
Therefore, SGD 1	=	(Rs. 80.97 × 1.7775)/ SGD 2.1380
SGD 1	=	₹ 67.3172
Add: Exchange margin (0.125%)		₹ 0.0841
		₹ 67.4013

On February 4, 2023 the rates are US $	=	₹ 80.90
Pound 1	=	US$ 1.7850
Pound 1	=	SGD 2.1575
Therefore, SGD 1	=	(Rs. 80.90 × 1.7850)/ SGD 2.1575
SGD 1	=	₹ 66.9323
Add: Exchange margin (0.125%)		₹ 0.0837
		₹ 67.0160

Hence, Gain to the importer = SGD 25,00,000 (₹ 67.4013 – ₹ 67.0160) = ₹ 9,63,250

Question 2:

You have the following quotes from Bank X and Bank Y:

	Bank X	Bank Y
SPOT	USD/CHF 1.0750/55	USD/CHF 1.0753/60
3 months	5/10	
6 months	8/16	
SPOT	GBP/USD 1.1945/60	GBP/USD 1.1940/50
3 months	25/20	
6 months	37/26	

Calculate:

i. How much minimum CHF amount you have to pay for 1 Million GBP spot?

ii. Considering the quotes from Bank X only, for GBP/CHF what are the Implied Swap points for both Bid and Offer Spot rates over 5 months?

ANSWER:

i. To Buy 1 Million GBP Spot against CHF

1. First to Buy USD against CHF at the cheaper rate i.e. from Bank X.
1 USD = CHF 1.0755

2. Then to Buy GBP against USD at a cheaper rate i.e. from Bank Y.
1 GBP = USD 1.1950
Thus Buying rate would be
1 GBP = 1.1950 × 1.0755 CHF
1 GBP = CHF 1.2852
Amount payable CHF 1.2852 Million or CHF 12,85,200

ii. Spot rate Bid rate GBP 1 = CHF 1.0750 * 1.1945 = CHF 1.2841
Offer rate GBP 1 = CHF 1.0755 * 1.1960 = CHF 1.2863
To calculate swap points for Spot over 5 months first we shall calculate Forward rate for 5 months for USD / CHF and then GBP / USD.
USD / CHF 3 months swap points and 6 month swap points are 5/10 and 8/16 respectively.
So, swap points for 5 months:
For Bid rate {5 + [(8-5) * 2/3]} = 7
For Ask rate {10 + [(16-10) * 2/3]} = 14
USD / CHF 5 months 7/14 swap points are premium
Hence, outright 5 Months Forward rate USD/ CHF shall be (1.0750 + 0.0007) 1.0757 / (1.0755 + 0.0014) 1.0769
GBP / USD 3 months swap points and 6 months swap points are 25/20 and 37/26 respectively.
So, swap points for 5 months:
For Bid rate {25 + [(37-25) * 2/3]} = 33
For Ask rate {20 + [(26-20) * 2/3]} = 24

GBP / USD 5 months 33/24 swap points are discount

Hence, outright 5 Months Forward rate GBP/ USD shall be (1.1945 – 0.0033) 1.1912 / (1.1960 – 0.0024) 1.1936

Accordingly, the Outright 5 Months forward rate of GBP / CHF shall be (1.1912 × 1.0757) 1.2814 / (1.1936 × 1.0769) 1.2854

5 Months forward rate	GBP 1 = CHF 1.2814 / 1.2854
Spot Rate	GBP 1 = CHF 1.2841 / 1.2863

Therefore 5-month swap points are at discount of 27/9.

Question 3:

The following 2-way quotes appear in the foreign exchange market:

	Spot	2-months spread
₹/US $	74.00/74.25	1.00/1.25

i. You are required to calculate:
   a. 2 months forward rates.
   b. How many US dollars should the firm sell to get ₹ 10 lakhs in the spot market and after 2 months?
   c. How many Rupees is the firm required to pay to obtain US $ 80,000 in the spot market and after 2 months?

ii. Assume the firm has US $ 27,600 in current account earning no interest. ROI on Rupee investment is 10% p.a. Should the firm encash the US $ now or after 2 months?

ANSWER:

i. **a.** Two Month Forward Rates:
   Buying Rate ₹ 74.00 + ₹ 1.00 = ₹ 75.00
   Selling Rate ₹ 74.25 + ₹ 1.25 = ₹ 75.50

   b. 1. To get ₹ 10 lakh at Spot Market the firm should sell
   = ₹ 10,00,000/ ₹ 74.00 = US $ 13,513.51
   2. To get ₹ 10 lakh after 2 month the firm should sell
   = ₹ 10,00,000/ ₹ 75.00 = US $ 13,333.33

   c. 1. Rupees required to obtain US $ 80,000 in Spot Market:
   US $ 80,000 × ₹ 74.25 = ₹ 59,40,000
   2. Rupees required to obtain US $ 80,000 after 2 months:
   US $ 80,000 × ₹ 75.50 = ₹ 60,40,000

ii. If US$ are converted in ₹ now and get invested in India, then fund position after 2 months will be as follows:

US$ 27,600 × ₹ 74.00	₹ 20,42,400
ROI @ 10% p.a. for 2 month	₹ 34,040
Amount after 2 months	₹ 20,76,440

If US$ are converted after 2 month, then fund position will be:
$ 27,600 × ₹ 75.00 = ₹ 20,70,000
Thus, it is better to get converted US$ into ₹ now and get them invested in India.

Alternatively, this sub part can also be answered as follows:

Computation of Annual Premium on US $ = (1.00/74.00) × (12/2) × 100 = 8.108% or 8.11%
Since, the premium on US $ in lesser than ROI on Indian ₹, it is better to convert US $ in Indian ₹ now and get them invested in India.

Question 4:

The US Dollar is selling in India at ₹ 72.50. If the interest rate for a 3 months borrowing in India is 6% per annum and the corresponding rate in USA is 2.75%.

i. Do you expect that US dollar will be at a premium or at discount in the Indian Forex Market?
ii. What will be the expected 3-months forward rate for US dollar in India?
iii. What will be the rate of forward premium or discount?

Answer:

(i) Under the given circumstances, the US Dollar is expected to quote at a premium in the Indian Forex Market as the interest rate is higher in India.

(ii) Calculation of the forward rate:

$$\frac{1+R_h}{1+R_f}=\frac{F_1}{E_o}$$

Where: R_h is home currency interest rate, R_f is foreign currency interest rate, F_1 is end of the period forward rate, and E_o is the spot rate.

$$\text{Therefore } \frac{1+(0.06/4)}{1+(0.0275/4)}=\frac{F_1}{72.50}$$

$$\frac{1+(0.015)}{1+(0.006875)}=\frac{F_1}{72.50}$$

or F_1 = ₹ 73.09

(iii) Rate of premium:

$$\frac{73.09-72.50}{72.50}\times\frac{12}{3}\times 100 = 3.26\%$$