QUESTION – 78

A Ltd. of U.K. has imported some chemical worth of USD 3,64,897 from one of the U.S. suppliers. The amount is payable in six months time. The relevant spot and forward rates are:

Spot rate	USD 1.5617–1.5673
6 months' forward rate	USD 1.5455–1.5609

The borrowing rates in U.K. and U.S. are 7% and 6% respectively and the deposit rates are 5.5% and 4.5% respectively.

Currency options are available under which one option contract is for GBP 12,500. The option premium for GBP at a strike price of USD 1.70/GBP is USD 0.037 (call option) and USD 0.096 (put option) for 6 months period.

The company has 3 choices:

(i) Forward cover

(ii) Money market cover, and

(iii) Currency option

Which of the alternatives is preferable by the company?

(Study Material & PM)

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① Forward Cover

Cash Outflows = $\frac{\$364897}{1.5455}$

= £236103

② Money Market Cover

Step 1 Amt to be invested in US money market @ 4.5% p.a. for 6 months

Amt = $\frac{\$364897}{1.0225}$ = $356867

Step 2 Buy $356867 at SR

$\frac{\$356867}{1.5617}$ = £228512

Step 3 Borrow £228512 from UK money market @ 7% for 6 months

Cash Outflows = £228512 × 1.035

= £236510

Option 3 Currency option

Step 1 Buy put option at £ $/£ 1.70 & pay premium $0.096 per £.

Step 2 No. of Contracts

Exposure : $364897

Contract size = £12500

Contract size : £12500 × 1.70 = $21250

$$\text{No.} = \frac{\$364897}{\$21250} = 17.17 \text{ i.e. } 17 \text{ contracts}$$

Step 3 Cash Outflows

- option Hedging = ($21250 × 17) = $\frac{\$361250}{1.70}$ = £212500
- forward cover = ($364897 − $361250)

  = $\frac{\$3647}{1.5455}$ = = £2360
- premium = $0.096 × (£12500 × 17)

  = $\frac{\$20400}{1.5617}$ = £13063

£227923

opp. cost £13063 × 7% × 6/12 £457

Currency option is the best due to Lower C.O.

QUESTION – 79

XYZ, an Indian firm, will need to pay JAPANESE YEN (JY) 5,00,000 on 30th June. In order to hedge the risk involved in foreign currency transaction, the firm is considering two alternative methods i.e. forward market cover and currency option contract.

On 1st April following quotations (JY/INR) are made available:

Spot	3 months forward
1.9516/1.9711.	1.9726/1.9923

The prices for forex currency option on purchase are as follows:

Strike Price	JY 2.125
Call option (June)	JY 0.047
Put option (June)	JY 0.098

For excess or balance of JY covered, the firm would use forward rate as future spot rate. You are required to recommend cheaper hedging alternative for XYZ.

(Study Material, PM & Exam November – 2015)

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option 1 forward Cover

Cash Outflows = $\frac{¥50000}{1.9726}$

= ₹253473

option 2 Currency option

step 1 Buy put option at

£ ¥/₹ 2.125 at pay premium

¥0.088 per ₹

Step 2 Cash Outflows

Option Hedging = $\frac{¥500000}{2.125}$ = ₹235294

Premium

¥0.098 × ₹235294

= $\frac{¥23059}{1.9516}$ = ₹11815

Cash Outflows = ₹247109

Currency option is better due to lower C.O.

QUESTION – 80

An American firm is under obligation to pay interests of Can$ 1010000 and Can$ 705000 on 31st July and 30th September respectively. The Firm is risk averse and its policy is to hedge the risks involved in all foreign currency transactions. The Finance Manager of the firm is thinking of hedging the risk considering two methods i.e. fixed forward or option contracts.

It is now June 30. Following quotations regarding rates of exchange, US$ per Can$, from the firm's bank were obtained: $/Can$

Spot	1 Month Forward	3 Months Forward
0.9284-0.9288	0.9301	0.9356

Price for a Can$ /US$ option on a U.S. stock exchange (cents per Can$, payable on purchase of the option, contract size Can$ 50000) are as follows:

Strike Price	Calls		Puts	
(USD/Can$)	July	Sept.	July	Sept.
0.93	1.56	2.56	0.88	1.75
0.94	1.02	NA	NA	NA
0.95	0.65	1.64	1.92	2.34

According to the suggestion of finance manager if options are to be used, one month option should be bought at a strike price of 94 cents and three month option at a strike price of 95 cents and for the remainder uncovered by the options the firm would bear the risk itself. For this, it would use forward rate as the best estimate of spot. Transaction costs are ignored.

Recommend, which of the above two methods would be appropriate for the American firm to hedge its foreign exchange risk on the two interest payments.

(Study Material, PM, MTP March – 2022 & Exam Nov - 2013)

Option 1 Currency option

July

- Buy 1 month Call option at £ $/can$ 0.94 & pay premium $0.0102 per can$
- No. of Contracts = $\frac{\text{Can\$1010000}}{\text{Can\$50000}}$ = 20 Contracts
- Cash Outflows

Option Hedging (can$50000×20)
= can$1000000 × 0.94 = $940000

Uncovered = (can$1010000 − can$1000000)
= can$10000 × 0.9301 = $9301

Premium = $0.0102 × can$1000000 = $10200

Cash outflows = $959501

Sep Buy 3 month Call option at £ $/can$ 0.95 & pay premium $0.0164

No. = $\frac{705000}{5000}$ = 14 contracts

Cash outflows

Option Hedging = (can$50000 × 14)
= can$700000 × 0.95 = $665000

Uncovered = CD$8000 × 0.9356 = $4678

Premium = $0.0164 × 700000 = $11480

$681158

option 2 forward cover

July Cash outflows = Can $1010000 × 0.9301
= $939401

Sep. Cash outflows = Can $705000 × 0.9356
= $659598

It is better to Hedge using FC for both july & sep due to Lower C.O.

QUESTION – 81

On 19th April following are the spot rates

Spot EURO/USD 1.20000 USD/INR 44.8000

Following are the quotes of European Options:

Currency Pair	Call/Put	Strike Price	Premium	Expiry date
EUR/USD	Call	1.2000	$ 0.035	July 19
EUR/USD	Put	1.2000	$ 0.04	July 19
USD/INR	Call	44.8000	₹ 0.12	Sep. 19
USD/INR	Put	44.8000	₹ 0.04	Sep. 19

(i) A trader sells an at-the-money spot straddle expiring at three months (July 19). Calculate gain or loss if three months later the spot rate is EUR/USD 1.2900.

(ii) Which strategy gives a profit to the dealer if five months later (Sep. 19) expected spot rate is USD/INR 45.00. Also calculate profit for a transaction USD 1.5 million.

(Practice Manual)