option 2 Cover from New York

- First Buy $ from ₹

  ₹/$ 49.2625

- Thereafter Buy Dkk from $

  Dkk/$ 7.5670

$$₹/Dkk = 49.2625 \times \frac{1}{7.5670} = ₹6.5102$$

Sell Dkk to customer =	₹6515000
Buy Dkk from New York (Dkk 1000000 × 6.5102)	₹6510200
profit	4800

Cover from London Market is better due to Higher Gain.

option 1 Cover from London Market

- first Buy £ at ₹/£ 74.3200
- Thereafter Sell £ & Buy DKK

DKK/£ 11.4200

$$₹/DKK = 74.3200 \times \frac{1}{11.4200} = 6.5079$$

profit/Loss

Sell DKK to Customer (DKK 10000000 × 6.5150) = 65150000

Buy DKK from London (DKK 10000000 × 6.5079) = 65079000

profit = ₹71000

5. Exchange Rate Determinants (Imp)

1. Interest Rate parity (IRP) [Interest Rate] [most Imp]
2. purchasing Power parity (PPP) [Inflation Rate] [1]
3. International fisher Effect (IFE) [x]

1 Interest Rate parity

1. Exchange Rate between two country's currency depends on Interest Rates of their countries.

2. As per IRP, Currency of a country having Lower Rate of Interest will be stronger than currency of a country having higher Rate of Intt.

3. As per IRP, Theoretical forward Rate is calculated as under

$$f = S_{(2)} \times \frac{1+r_2}{1+r_1}$$

Eg

₹/$ 80 (SR)

₹/$ 83 (1YEARFR)

India 10% ✓ USA ✓ 8%

We have ₹ 8000000

India : ₹ 80000000 (1.10) = 88000000

USA = $\frac{₹80000000}{80}$ = $1000000 × 1.08

= $1080000 × 83 ?

= ₹89640000

88000000

Calculate forward Rate at which Indifference between Investment in India & Investment in USA

India (10%)	USA (8%)
₹ 80000000 × 1.10	= $\frac{₹80000000 × 1.08}{₹80}$ × f
1 × 1.10	= $\frac{1 × 1.08}{S}$ × f
f	= $S × \frac{1.10}{1.08}$

USA (8%)	India (10%)
$	₹

SR $1 = ₹80

$1 (1.08) = ₹80 (1.10)

$1 = ₹80 × $\frac{1.10}{1.08}$ ₹

Suppose

₹/$ SR ₹ 80.25

Intt. Rates

India = 12% P.a.

USA = 10% P.a.

Calculate 6 Months FR using IRP.

IRP

$$F = S \times \frac{1+r}{1+r}$$

$$= ₹80.25 \times \frac{1.06}{1.05}$$

$$= ₹81.01$$

EXAMPLE – 47

Spot Rate ₹/$ = 70.25

Rate of Interest

India = 12% p.a.

USA = 8% p.a.

Calculate 3 months forward rate if

(i) Nothing is mentioned in question.

(ii) Rate of interest compounded annually or effective.

(iii) Rate of interest compounded continuously.

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0.01
÷4096
+ 1
X = 12 times

(i)

$$f = ₹70.25 \times \frac{1.03}{1.02}$$

$$= ₹70.94$$

(ii)

$$f = ₹70.25 \times \frac{(1.12)^{3/12}}{(1.08)^{3/12}}$$

$$= ₹70.89$$

(iii)

$$f = ₹70.25 \times \frac{e^{0.12 \times \frac{3}{12}}}{e^{0.08 \times 3/12}}$$

$$= ₹70.25 \times \frac{e^{0.03}}{e^{0.02}}$$

$$= ₹70.25 \times e^{(0.03-0.02)}$$

$$= ₹70.25 \times e^{0.01}$$

$$= ₹70.25 \times 1.0101$$

$$= ₹70.96$$

EXAMPLE – 48

Spot Rate ₹/£ = 57.45

Rate of Interest

India = 10% p.a. Effective

UK = 8% p.a. Effective

Calculate 7 months FR

Power

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$$f = ₹57.45 \times \frac{(1.10)^{7/12}}{(1.08)^{7/12}}$$

$$= ₹58.07$$

$1.10 \div 1.08 = \sqrt{\ }$ 12 times

$-1 \times 7/12 + 1$

$x = 12 \times 57.45$

EXAMPLE – 49

Spot Rate $/£ = 1.5075

Rate of Interest

US = 8% p.a. Effective

UK = 11% p.a. Effective

Calculate 9 months FR.

$$F = \$1.5075 \times \frac{(1.08)^{9/12}}{(1.11)^{9/12}}$$

$$= 1.4768$$

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EXAMPLE – 50

Spot Rate ¥/₹ = 0.3045

Interest Rate

Japan = 4% p.a. Compounded Quarterly

India = 10% p.a. Compounded Quarterly

Calculate 5 months FR

Compounded Annually

Effective

Japan = $(1.01)^4 = 1.0406$

India = $(1.025)^4 = 1.1038$

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$$F = ¥0.3045 \times \frac{(1.0406)^{5/12}}{(1.1038)^{5/12}}$$

$$= ¥0.2971$$

EXAMPLE – 51

Spot Rate €/£ = 1.2545

6 Months FR

€/£ = 1.2775

Rate of interest

Europe = 8% p.a.

UK = ?

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$$f = S \times \frac{1+r_A}{1+r_B}$$

$$€1.2775 = €1.2545 \times \frac{1.04}{1+r}$$

$$r = \left[\left(\frac{1.2545 \times 1.04}{1.2775}\right) - 1\right] \times \frac{12}{6} \times 100$$

$$= 4.25\% \text{ p.a.}$$