

Part - 1∴ Currency of Borrowing :-Short Term Borrowing

Alt 1: Borrow in Home Currency

FX not relevant

XHC matters

Alt 2: Borrow in Foreign Currency

How much? apply common sense

XFC matters

Forward cover (F) or Expected spot [E(s)] No cover

(May be not given → use IRP or PPP)

Long Term Borrowing

Q. 92] CW pg. 40: ECB

NB pg.

Q. 2 Pg 12 (i) Borrow in Euro -

[WSoln] E

Indian Co. ko ₹ chahiye ... But €
borrow kiya h ∴ bid rate ₹/€ becoz
€ borrow krk bechegana → ₹ milega

Step 1: Amount to be borrowed = $\frac{₹500000000}{₹73.78/€} = €677690$

@ 2% p.a. for 3 months i.e. 0.5%

Step 2: Amount payable after 3m = $€677690 (1.005)$
= $€681078$

(a) Buy € forward @ $₹74.55 + 0.50 = ₹75.05/€$

∴ ₹ Outflow after 3 months = $€681078 \times ₹75.05/€$

= $₹51114904$

∴ Annualized Effective Cost

$$= \frac{51114904 - 50000000}{50000000} \times 100 \times \frac{12}{3} = 8.92\%$$

(b) Buy € spot after 3m @ $₹73.98/€$

∴ ₹ outflow after 3m = $€677690 \times ₹73.98/€ = ₹50386150$

$$\therefore \text{AEC} = \frac{50386150 - 50000000}{50000000} \times 100 \times \frac{12}{3} = 3.09\%$$

(ii) Borrow in Pounds -

Step 1: Amount to be borrowed = $\frac{\text{₹}500000000}{\text{₹}84.03/\text{₤}} = \text{₤}595026$

@ 1.5% p.a. for 3 months i.e. 0.375%

Step 2: Amount payable in 3 months = $595026 (1.00375)$
 $= \text{₤}597257$

(a) Buy £ forward @ $\text{₹}84.10 + 0.90 = \text{₹}85.00/\text{₤}$

$\therefore$ £ outflow after 3 m = $\text{₤}597257 \times \text{₹}85.00/\text{₤}$
 $= \text{₹}50766845$

$\therefore$ AEC = $\frac{50766845 - 500000000}{500000000} \times 100 \times \frac{12}{3} = 6.1348\%$

(b) Buy £ spot after 3 months @ 84.80

$\therefore$ £ outflow after 3 m = $\text{₤}597257 \times \text{₹}84.80/\text{₤}$
 $= \text{₹}50647394$

$\therefore$ AEC = $\frac{50647394 - 500000000}{500000000} \times 100 \times \frac{12}{3} = 5.179\%$

Self practice : HW Q. 42] pg. 16

Part-2

Q.1	Pg	71
CW	Soln	Pg.

Alt 1: Euro borrowing

Effective Interest Rate = $5 + 0.25 = 5.25\%$

Alt 2: \$ borrowing

Interest Rate charged = $\frac{4}{0.92} = 4.3478\%$
 ($x = 8\%$ of $x = 4$)

Forward premium as IRP = $\frac{5-4}{1.04} = 0.9615\%$

$\therefore$ Effective Cost = $4.3478 + 0.9615 = 5.3093\%$

Alt 3: S.Fr. borrowing

Interest Rate charged = $\frac{3}{0.92} = 3.2609\%$
 ($x = 8\%$ of $x = 3$)

Forward premium as per IRP = $\frac{5-3}{1.03} = 1.9417\%$

$\therefore$ Effective cost = $3.2609 + 1.9417 = 5.2026\%$

Advice: German Firm should borrow from Swiss Bank as Effective cost is lower.

Self practice: Extra Q.4] HW. Soln. pg. 74.

Q.62	pg
Q.625	(i)

Alt 1: Avail ₹ loan

Loan amount = $\$15000 \times ₹75/\$ = ₹1125000$

@ 19% p.a. i.e. 4.75% per quarter for 2 quarters

Outflow after 6m = $₹1125000 (1.0475)^2 = ₹1234413$

Alt 2: Offer from Foreign Branch.

Borrow \$ 15000 @ 2% p.a. for 6m (180 days)

i.e. 1%.

$\therefore$ Amount payable after 6m = $15000 (1.01) = \$15150$

This is purchased 6m forward @ ₹77/\$

$\therefore$ ₹ outflow after 6m = $15150 \times 77 = ₹1166550$

LC commission to be paid upfront (i.e. today)

2% of $15000 \times 75 \times 6/12 = ₹11250$

This is assumed to have been borrowed @ 19% p.a. for 6 months i.e. @ 9.5%.

$\therefore$ Future Value of premium paid = $11250 \times 1.095 = ₹12319$

So total outflow after 6m = $1166550 + 12319 = ₹1178869$

Alt 2 is cheaper than Alt 1 by ₹55544. Hence offer from

foreign branch should be accepted.

- (ii) If the Co. doesn't want to take the risk of currency fluctuation, it can hedge with additional expense of ₹ 30000 as even the forward hedge is resulting in the same additional amount.

Self Note : $\$15000 \times (77-75) = ₹30000$... shayad...

Self practice: (W.Q. 94) pg. 41

Q.61	Pg	Alt 1: \$ borrowing :-
W. 24		- Let us assume \$ funds required = \$100 - Borrowed @ 5.5% p.a. for 6 months i.e. 2.75%. \$ payable after 6m = $100(1.0275) = \\$102.75$

- Buy \$ 6m forward @ ₹36.40/\$

$$₹ \text{ outflow after 6m} = 102.75 \times 36.40 = ₹3740.10$$

Indian Co. ko \$ chahiye... ₹ Alt 2
me borrow krk betha h.... ab ₹ se
\$ kharidega ∴ (₹/\$) ask rate.

Alt 2: ₹ borrowing :-

- Amount to be borrowed = $\$100 \times ₹36.10/\$ = ₹3610$ (spot)

This is borrowed @ 11.5% p.a. for 6 months i.e. 5.75%.

$$₹ \text{ outflow after 6m} = 3610(1.0575) = ₹3817.58$$

∴ Alt 1: \$ borrowing is advisable.

→ Second part of the sum → after bond valuation.

Part-3

Q.53	Pg	Alt 1: Invest in New York (\$)
W. 21		Net Interest earned = $8-4 = 4\%$ p.a. for 3 months i.e. 1% on \$500000 = \$5000 Sell \$ 3m forward @ $1.5390 + 0.0085 = \\$1.5475/₹$ Net Gain in £ = $\frac{5000}{1.5475} = £3231.02$

Alt 2: Invest in London (£)

Step 1: sell \$ 500000 spot @ \$1.5390/£ getting

$$\frac{500000}{1.5390} = £ 324886.29$$

Step 2: Invest £ @ 5% p.a. for 3 months i.e. @ 1.25%
 £ inflow after 3 m = $324886.29 (1.0125)$
 $= £ 328947.37$

Step 3: \$ payable after 3m = $500000 (1.01) = \$ 505000$
 This is purchased 3m forward @ $1.5350 + 0.0080$
 i.e. @ \$ 1.5430/£
 £ outflow after 3m = $\frac{505000}{1.5430} = 327284.51 £$

Net Gain = $328947.37 - 327284.51 = £ 1662.86$

Alt 3: Invest in Frankfurt (€)

Step 1: Implied spot (€/£) = $\frac{1.8260}{1.5390} / \frac{1.8290}{1.5350}$
 $= 1.1865 / 1.1915$

Step 2: Sell \$ 500000 spot @ €/£ 1.1865 getting
 $500000 \times 1.1865 = € 593250$

Step 3: Invest € @ 3% p.a. for 3 months i.e. @ 0.75%
 € inflow after 3m = 593250×1.0075
 $= € 597699.38$

Step 4: Sell € 3m forward @ $1.8290 - 0.0140 = € 1.8150/£$
 £ inflow = $\frac{597699.38}{1.8150} = £ 329310.96$

Step 5: £ outflow after 3 months on purchasing
 \$ 505000 3 month forward as calculated in
 Alt 2 Step 3 = £ 327284.51

Net Gain = $329310.96 - 327284.51 = £ 2026.45$

So, invest in New York as net gain i.e. £ 3231.01 is highest of all 3 alternatives.

Self practice :- Extra Q.17 HW soln. pg. 71

Q.56	Pg
cw. 22	

Step 1: sell \$ 10 million spot @ €0.4040/\$ getting €4.04 million

Step 2: Invest @ 5.95% pre-tax

i.e. $5.95 \times 0.9 = 5.355\%$ post tax p.a. for 6m

i.e. @ $5.355 \times 6/12 = 2.6775$

Receivable after 6m = 4.04×1.026775

= €4.14817 million

Step 3: sell € 6 month forward @ 0.4041-0.0065 i.e. @ €0.3976/\$

Inflow after 6m = $\frac{4.14817}{0.3976} = \10.433 million

∴ Net Gain = $10.433 - 10 = \$0.433$ million

Note: Annualized % return = $\frac{0.433}{10} \times 100 \times \frac{12}{6} = 8.66\%$

Self P :- Extra Q.2) HW soln. 72

Q.59	Pg
cw. 23	

Alt 1: Invest in India

Step 1: sell £1000000 spot @ ₹69.50/£ getting ₹69500000

Step 2: Invest in India @ 15% pre-tax return

i.e. $15 \times 0.7 = 10.5\%$ post-tax return.

Inflow after 1 yr = 69500000×1.105
= ₹76797500

Step 3: Expected (₹/£) ask rate after 1 year as per PPP-

$$\frac{E(S_1)_{\text{ask}}}{S_{0\text{ask}}} = \frac{1 + i_{\text{₹}}}{1 + i_{\text{£}}}$$

$$E(S_1)_{\text{ask}} = \frac{69.70 \times 1.04}{1.02} = ₹71.0667/£$$

∴ £ inflow after 1 yr = $\frac{76797500}{71.0667} = £1080640$

$$\therefore \text{Expected Rate of Return} = \frac{1080640 - 1000000}{1000000} \times 100$$

$$= \underline{8.064\%}$$

Alt 2 : Invest in Hong Kong.

Step 1 : Sell £ 1000000 spot @ \$/£ 11.15 getting 111.5 lakh

Step 2 : Invest in Hong Kong @ 12% pretax i.e. 12×0.80
 $= 9.6\%$ post-tax return.

$$\text{Inflow after 1 yr} = 111.5 \times 1.096 = \$ 12220400$$

Step 3 : Expected (\$/£) ask after 1 yr as per PPP -

$$E(S_1) = 11.18 \times \frac{1.03}{1.02} = \$ 11.289/\text{£}$$

$$\text{Inflow of £ after 1 yr} = \frac{12220400}{11.289} = \text{£ } 1082505$$

$$\therefore \text{Expected return} = \frac{1082505 - 1000000}{1000000} \times 100 = \underline{8.25\%}$$

Self Practice :- Extra Q.3] Hw. soln. pg. 73