FOREX CLASS 21

CLASS WORK COVERAGE

To streamline our learning process, I've categorized the questions we'll tackle in class into four distinct groups:

1. ***Classic:*** *These questions are exactly as presented in your book, providing a familiar foundation.*
2. ***Transformed:*** *Here, we've converted book questions into multiple-choice format to enhance your analytical skills.*
3. ***Adapted:*** *These are similar to book questions but with altered numbers or names, presented as multiple-choice questions for varied practice.*
4. ***Original:*** *These are entirely new questions not found in your book, designed to challenge and expand your understanding.*

This structure will help us navigate through a range of problems, ensuring a comprehensive grasp of the material. Looking forward to our next session!

Q. No	Type	Book	Page No.
53	Classic	CW Q BOOK	21
61	Classic	CW Q BOOK	24
62	Classic	CW Q BOOK	25
Extra Q1	Classic	CW ANS BOOK	71
Extra Q1	Classic	CW ANS BOOK	72
94	Classic	CW Q BOOK	41

PART IV: INTERNATIONAL PARITY CONDITIONS

Topic 19 CURRENCY OF INVESTMENT

Question 53:

Your bank's London office has surplus funds to the extent of USD 5,00,000 for a period of 3 months. The cost of the funds to the bank is 4% p.a. It proposes to invest these funds in London, New York or Frankfurt and obtain the best yield, without any exchange risk to the bank. The following rates of interest are available at the three centres for investment of domestic funds there at for a period of 3 months.

London	5% p.a.
New York	8% p.a.
Frankfurt	3% p.a.

The market rates in London for US dollars and Euro are as under:

London on New York

Spot	1.5350/90
1 month	15/18
2 month	30/35
3 months	80/85

London on Frankfurt

Spot	1.8260/90
1 month	60/55
2 month	95/90
3 month	145/140

At which centre, investment will be made & what will be the net gain (to the nearest pound) to the bank on the invested funds?

(*Source: ICAI*)

ANSWER:

i. If investment is made at London

Convert US$ 5,00,000 at Spot Rate (5,00,000/1.5390)		£ 3,24,886
Add: £ Interest for 3 months on £ 324,886 @ 5%		£ 4,061
		£ 3,28,947
Less: Amount Invested	$ 5,00,000	
Interest accrued thereon	$ 5,000	
	$ 5,05,000	
Equivalent amount of £ required to pay the		
above sum ($ 5,05,000/1.5430*)		£ 3,27,285
Arbitrage Profit		**£ 1,662**

ii. If investment is made at New York

Gain $ 5,00,000 (8% - 4%) x 3/12	$ 5,000
Equivalent amount in £ 3 months ($ 5,000/ 1.5475)	£ 3,231

iii. If investment is made at Frankfurt

Convert US$ 500,000 at Spot Rate (Cross Rate) 1.8260/1.5390	€	1.1865
Euro equivalent US$ 500,000	€	5,93,250
Add: Interest for 3 months @ 3%	€	4,449
	€	**5,97,699**
3 month Forward Rate of selling € (1/1.8150)	£	0.5510
Sell € in Forward Market € 5,97,699 x £ 0.5510	£	3,29,332
Less: Amounted invested and interest thereon	£	3,27,285
Arbitrage Profit	£	2,047

Since out of three options the maximum profit is in case investment is made in New York. Hence it should be opted.

* Due to conservative outlook.

Topic 20 CURRENCY OF BORROWING

Question 61:

An Indian company obtains the following quotes (₹/$)

Spot	35.90/36.10
3-Months forward rate	36.00/36.25
6-Months forward rate	36.10/36.40

The company needs $ funds for six months. Determine whether the company should borrow in $ or ₹ Interest rates are:

3-Months interest rate: ₹ : 12%, $: 6%
6-Months interest rate: ₹ : 11.50%, $: 5.5%

Also determine what should be the rate of interest after 3-months to make the company indifferent between 3-months borrowing and 6-months borrowing in the case of:

i. Rupee borrowing
ii. Dollar borrowing

Note : For the purpose of calculation you can take the units of dollar and rupee as 100 each.

(*Source: ICAI)*

ANSWER:

i. If company borrows in $ then outflow would be as follows:

Let company borrows $ 100	$ 100.00
Add: Interest for 6 months @ 5.5%	$ 2.75
Amount Repayable after 6 months	$ 102.75
Applicable 6 month forward rate	36.40
Amount of Cash outflow in Indian Rupees	₹ 3,740.10

If company borrows equivalent amount in Indian Rupee, then outflow would be as follows:

Equivalent ₹ amount ₹ 36.10 x 100	₹ 3,610.00
Add: Interest @11.50%	₹ 207.58
	₹ 3817.58

Since cash outflow is more in ₹ borrowing then borrowing should be made in $.

ii.

a. Let 'i_r' be the interest rate of ₹ borrowing make indifferent between 3 months borrowings and 6 months borrowing then
$(1 + 0.03)(1 + i_r) = (1 + 0.0575)$
$i_r = 2.67\%$ or 10.68% (on annualized basis)

b. Let 'i_d' be the interest rate of $ borrowing after 3 months to make indifference between 3 months borrowings and 6 months borrowings. Then,
$(1 + 0.015)(1 + i_d) = (1 + 0.0275)$
$i_d = 1.232\%$ or 4.93% (on annualized basis)

Question 62:

M/s. Daksh Ltd is planning to import multipurpose machine from USA at a cost of $15000. The company can avail loans at 19% Interest per annum with quarterly rests with which it can import the machine.

However, there is an offer from New York branch of an Indian based bank extending credit of 180 days at 2% per annum against opening of an irrevocable letter of credit.

Other Information:

Spot rate US$ 1 = ₹ 75
180 days forward rate US $ 1 = ₹ 77

Commission charges for letter of credit at 2% per 12 months

i. Justify why the offer from the foreign branch should be accepted?
ii. Based on the present market condition company is not interested to take the risk of currency fluctuations and wanted to hedge with an additional expenses of ₹ 30,000, if so, what is your advise to the company?

Assume 360 days in the year.

(*Source: ICAI*)

ANSWER:

i. Option I (To finance the purchases by availing loan at 19% per annum):

	Amount
Cost of equipment ($ 15,000 at US$ 1 = ₹ 75)	₹ 11,25,000
Add: Interest at 4.75% I Quarter	53,438
Add: Interest at 4.75% II Quarter (on ₹ 11,78,438)	55,976
Total outflow in Rupees	12,34,414
Alternatively, interest may also be calculated on compounded basis, i.e.,	
₹ 1,12,5000 × $[1.0475]^2$	₹ 12,34,413

Option II (To accept the offer from foreign branch):

	Amount
Cost of letter of credit at 1 % on US$ 15,000 at US$ 1 = ₹ 75	₹ 11,250
Add: Interest for 180 days (₹ 11,250 × 19% x 180/360)	₹ 1,069
(A)	₹ 12,319
Payment at the end of 180 days:	
Cost	US$ 15,000
Interest at 2% p.a. [15000 × 2/100 × 180/360]	US$ 150
	US$ 15,150
Conversion at US$ 1 = ₹ 77 [15150 x ₹ 77] (B)	₹ 11,66,550
Total Cost: (A) + (B)	₹ 11,78,869

Advise: Option 2 is cheaper by (₹ 12,34,413 – ₹ 11,78,869) lakh or ₹ 55,544. Hence, the offer may be accepted.

ii. If company is not interested to take the risk of currency fluctuations and wanted to hedge with an additional expense of ₹ 30,000 then it can do so because even taking forward position is resulting in increased cash outflow by the same amount.

PART IV: INTERNATIONAL PARITY CONDITIONS

EXTRA QUESTION

Topic 20 CURRENCY OF BORROWING

Question 1:

A German subsidiary of an US based MNC has to mobilize 100000 Euro's working capital for the next 12 months. It has the following options:

Loan from German Bank	@ 5% p.a.
Loan from US Parent Bank	@ 4% p.a.
Loan from Swiss Bank	@ 3% p.a.

Banks in Germany charge an additional 0.25% p.a. towards loan servicing. Loans from outside Germany attract withholding tax of 8% on interest payments. If the interest rates given above are market determined, examine which loan is the most attractive using interest rate differential.

(Source: ICAI)

ANSWER:

Net Cost under each of the Options is as follows:

i. **Loan from German Bank**
Cost = 5% + 0.25% = 5.25%

ii. **Loan from US Parent Bank**

Effective Rate of Interest $\frac{4\%}{1-0.08}$	4.35%
Premium on US$ $\frac{1.05}{1.04}-1$	0.96%
Net Cost	5.31%

iii. **Loan from Swiss Bank**

Effective Rate of Interest $\frac{3\%}{1-0.08}$	3.26%
Premium on US$ $\frac{1.05}{1.03}-1$	1.94%
Net Cost	5.20%

Thus, loan from Swiss Bank is the best option as the Total Outflow including Interest is Less i.e. €105200.

Question 2:

General Import Company (India) Pvt. Ltd. needs short term funds of ₹50 million for a period of 3 months.

The company collected the following information from its banker :

	₹/€	₹/£
Spot	73.78/55	84.03/10
3 months forward	45/50	85/90

3 month Interest rates (p.a.)

₹ : 8%
€ : 2%
£ : 1.5%

You are required to calculate the annualized effective cost of borrowing,

i. If the company borrows in Euro € and
   a. Covers the exchange rate risk through forward market
   b. Keeps the position open and spot rate after 3 month returns out to be ₹/€ 73.90/98.

ii. If the company borrows in pounds and
   a. Covers the exchange rate risk through forward market
   b. Keeps the position open and spot rate after 3 months turns out to be Rs/£ 84.75/80.

(Source: FOD)

ANSWER:

i. ∈ borrowing

Step 1:

Amount borrowed = $\frac{₹\ 50\,\text{million}}{₹\ 73.78/\in}$ = ∈ 0.67769 million at 2%×3/12 i.e. 0.5%

=∈ 0.67769× 1.005

=∈ 0.681078

a. Forward cover :

Buy ∈ 0.681078 million 3 m forward

at 74.55 + 0.50 = ₹/∈ 75.05

so outflow after 3 m = ∈ 0.681078×₹/∈ 75.05

=₹ 51.1149 million

∴ Annualized cost of borrowing

$$\frac{51.1149-50}{50}\times 100\times\frac{12}{3}=8.92\%$$

b. No cover :

purchase ∈ after 3 m spot at ₹73.98/∈

So, rupee outflow after 3m = 0.681078×73.98

=₹50.3862 million

∴ Annualized effective cost of borrowing = $\frac{50.3862-50}{50}\times 100\times\frac{12}{3}=3.09\%$

ii. Pound borrowing

Amount borrowing $=\frac{₹\ 50\,\text{million}}{84.03}$

= £0.595026 million at 1.5%/4 i.e., 0.375%

Amount payable after 3 m = 0.595026 × 1.00375

= 0.597257 million

Step 2:

Forward cover:

Purchase £ 0.597259 million at 84.10+0.90 forward at = 85

So rupee outflow after 3 m £ 0.597259 × ₹85/£ = ₹50.7670 million

Annualized effective cost of borrowing = $\frac{50.7670-50}{50}\times 100\times\frac{12}{3}=6.14\%$

No cover:

Purchase £ after 3 m. Spot at 84.80

∴ So, rupee outflow after 3m = £ 0.597257×₹84.80/£ = 50.6474 million

Annualized effective cost of borrowing = $\frac{50.6474-50}{50}\times 100\times\frac{12}{3}=5.18\%$

PART VII: AMBIGUOUS

Question 94:

Sun Ltd. is planning to import equipment from Japan at a cost of 3,400 lakh yen. The company may avail loans at 18 percent per annum with quarterly rests with which it can import the equipment. The company has also an offer from Osaka branch of an India based bank extending credit of 180 days at 2 percent per annum against opening of an irrecoverable letter of credit.

Additional information:

Present exchange rate	₹ 100 = 340 yen
180 day's forward rate	₹ 100 = 345 yen

Commission charges for letter of credit at 2 per cent per 12 months.

Advice the company whether the offer from the foreign branch should be accepted.

(*Source: ICAI)*

ANSWER:

Option I (To finance the purchases by availing loan at 18% per annum):

Cost of equipment	**₹ in lakhs**
3400 lakh yen at ₹100 = 340 yen	1,000.00
Add: Interest at 4.5% I Quarter	45.00
Add: Interest at 4.5% II Quarter (on ₹1045 lakhs)	47.03
Total outflow in Rupees	1,092.03
Alternatively, interest may also be calculated on compounded basis, i.e.,	
₹1000 × $[1.045]^2$	₹1092.03

Option II (To accept the offer from foreign branch):

Cost of letter of credit

At 1 % on 3400 lakhs yen at ₹100 = 340 yen	₹ 10.00 lakhs
Add: Interest for 2 Quarters	₹ 0.90 lakhs
(A)	₹ 10.90 lakhs
Payment at the end of 180 days:	
Cost	3400.00 lakhs yen
Interest at 2% p.a. [3400 × 2/100 × 180/365]	33.53 lakhs yen
	3433.53 lakhs yen
Conversion at ₹100 = 345 yen [3433.53 / 345 ×100] (B)	₹ 995.23 lakhs
Total Cost: (A) + (B)	₹ 1006.13 lakhs

Advise: Option 2 is cheaper by (1092.03 – 1006.13) lakh or ₹ 85.90 lakh. Hence, the offer may be accepted.