

1 Profit/Loss due to Transaction Exposure

	At Current Rate	At 6 months Rate
Sales	$2400 \text{ units} \times \text{€}500 \times 51.5$ $= \text{₹}6180000$	$2400 \times \text{€}500 \times 52$ $\text{₹}6240000$
(-) Import Cost	$2400 \times \text{S\$}800 \times 27.25$ $= 5232000$	$2400 \times \text{S\$}800 \times 27.75$ 5328000
(-) FC	2400×1000 $= 2400000$	2400×1000 $= 2400000$
(-) VC	2400×1500 $= 3600000$	2400×1500 $= 3600000$
Profit	3480000	3120000

Loss due to Transaction Exposure
 $= 3480000$
 $- 3120000$
 $= \text{₹}360000$

2. Profit or Loss due to Transaction & Operating Exposure

• Transaction Exposure

Revised

	Current Exchange	6 Months Rate
Sales	$(₹25000 \times 2400)$ 60000000	(25000×2400) 60000000
Imports cost	$₹192000 \times 27.15$ 52128000	$₹192000 \times 27.75$ 53280000
FC	2400000	2400000
VC	3600000	3600000
	₹1872000	₹920000

Loss due to Transaction Exposure

$$= ₹1872000 - ₹920000$$

$$= ₹952000$$

operating exposure if the contracted price of air conditioners is ₹ 25,000 :

(i) the current exchange rate changes to

₹/Euro 51.75/80

₹/\$\$ 27.10/15 **27.15**

(ii) Price elasticity of demand is estimated to be 1.5

(iii) Payments and receipts are to be settled at the end of six months.

(Study Material & PM)

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Operating Exposure

price per unit = ₹ 25000

$$\text{price (€) at previous SR} = \frac{₹ 25000}{51.50} = € 485.44$$

$$\text{price per unit as per revised SR} = \frac{₹ 25000}{51.75} = € 483.09$$

$$\begin{aligned} \text{\% decrease in price} &= \frac{€ 485.44 - € 483.09}{€ 485.44} \times 100 \\ &= 0.48\% \end{aligned}$$

$$\begin{aligned} \text{price Elasticity of demand} &= 1.5 \\ \text{\% increase in quantity} &= 0.48 \times 1.5 \\ &= 0.72\% \end{aligned}$$

$$\begin{aligned} \text{Total No. of units} &= 2400 \text{ unit} + 0.72\% \\ &= 2417 \text{ units} \end{aligned}$$

QUESTION - 120

AMK Ltd. an Indian based company has subsidiaries in U.S. and U.K.

Forecasts of surplus funds for the next 30 days from two subsidiaries are as below:

U.S. \$12.5 million

U.K. £ 6 million

Following exchange rate information is obtained:

	\$/₹ ✓	£/₹ ✓
Spot	0.0215	0.0149
30 days forward	0.0217 ✓	0.0150 ✓

Annual borrowing/deposit rates (Simple) are available.

₹	6.4%/6.2%
\$	1.6%/1.5%
£	3.9%/3.7%

H.W.
C.W (copy)

Handwritten calculations for the AMK Ltd. problem:

India

₹ 500 m
6.4%
2.6667
- ₹ 502.6667 m
+ ₹ 576.7558
+ ₹ 401.2333
₹ 475.3224 m

U.S.

\$12.5 m
1.5%
\$0.01562
\$12.5156

U.K.

£ 6 m
3.7%
£0.0185
6.0185

Handwritten notes and corrections:

- India: ₹ 402.6846, ₹ 2581.3953
- U.S.: 484.0799 + 6.2% = 486.5810 m
- U.K.: 486.5810 m
- Final India total: ₹ 475.3224 m

The Indian operation is forecasting a cash deficit of ₹500 million.

It is assumed that interest rates are based on a year of 360 days.

- ✓ (i) Calculate the cash balance at the end of 30 days period in ₹ for each company under each of the following scenarios ignoring transaction costs and taxes:

(a) Each company invests/finances its own cash balances/deficits in local currency independently.

(b) Cash balances are pooled immediately in India and the net balances are invested/borrowed for the 30 days period.

- (ii) Which method do you think is preferable from the parent company's point of view?

• (Practice Manual)

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Non deliverable forward Contract (NDF)



off-shore Market [Out of India]



Settled in (\$)

QUESTION - 129**(Imp)**

On 1st February 2020, XYZ Ltd. a laptop manufacturer imported a particular type of Memory Chips from SKH Semiconductor of South Korea. The payment is due in one month from the date of Invoice, amounting to 1190 Million South Korean Won (SKW). Following Spot Exchange Rates (1st February) are quoted in two different markets:

USD/ INR 75.00/ 75.50 in Mumbai

USD/ SKW 1190.00/ 1190.75 in New York

Since hedging of Foreign Exchange Risk was part of company's strategic policy and no contract for hedging in SKW was available at any in-shore market, it approached an off-shore Non Deliverable Forward (NDF) Market for hedging the same risk.

In NDF Market a dealer quoted one-month USD/ SKW at 1190.00/1190.50 for notional amount of USD 100,000 to be settled at reference rate declared by Bank of Korea.

After 1 month (1st March 2020) the dealer agreed for SKW 1185/ USD as rate for settlement and on the

If Buy SKW 1190 Millions Today

$$₹/\$ = 75.50$$

$$SKW/\$ = 1190$$

$$₹/SKW = 75.50 \times \frac{1}{1190} = 0.0634$$

$$SKW 1190 \times 0.0634$$

$$= ₹ 75.446 \text{ M}$$

$$= ₹ 754.46 \text{ Lacs}$$

same day the Spot Rates in the above markets were as follows:

USD/ INR 75.50/ 75.75 in Mumbai

USD/ SKW 1188.00/ 1188.50 in New York

₹/\$
SKW/\$

Analyze the position of company under each of the following cases, comparing with Spot Position of 1st February:

(i) Do Nothing. ✓

(ii) Opting for NDF Contract. Note: Both Rs./ SKW Rate and final payment (to be computed in Rs. Lakh) to be rounded off upto 4 decimal points.
(10 Marks)

(MTP April 2021)

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option 1 Do Nothing

Buy SKW 1190m at 1 month
SR

₹/\$ 75.75
SKW/\$ 1188

$$\text{₹/SKW} = 75.75 \times \frac{1}{1188} = 0.0638$$

$$\text{SKW 1190 millions} \times 0.0638 = 75.922\text{m} = ₹ 759.22\text{L}$$

$$\text{Loss} = 759.22 - 754.46 = 4.76\text{Lakh}$$

option 2 NDF Contract

Step 1 Since skw payable & we are afraid from skw rising but we have to take position on \$, hence we should take short position (sell) on \$ at SKW/\$ 1190

$$\text{Amt of short position (\$)} = \frac{\text{SKW } 1190 \text{ m}}{1190} = \$1 \text{ m}$$

or \$10,000,000

Step 2 Gain or Loss

on maturity, skw/\$ is 1185, hence Gain on short position

$$(\text{SKW } 1190 - \text{SKW } 1185) \times \$10,000,000$$
$$= \text{SKW } 50,00,000$$

$$\text{Gain in \$} = \frac{\text{SKW } 50,00,000}{1185} = \$4219.4093$$

Buy SKW 1190 m at
1 month SR = ₹759.22 Lakh

(-) Sell \$4219.4093
at 1 month SR ₹3.1856 L

$$(\$4219.4093 \times 75.50)$$

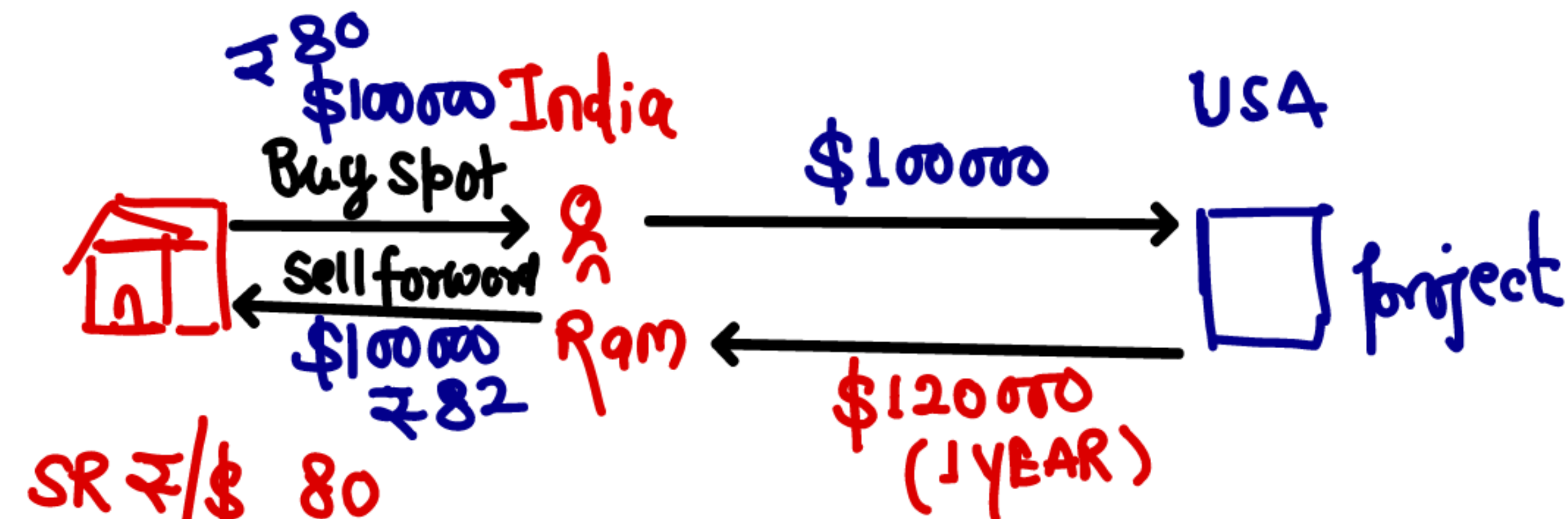
C.O. ₹756.0343 L

$$\text{Loss} = 756.0343 - 754.46$$
$$= 1.5743 \text{ L}$$

NDF contract is better due to less loss

fx-swap

Eg



SR ₹/\$ 80
1 YEAR FR 81.75

$$\begin{array}{r}
 \text{C.O.} = -8000000 \\
 \text{CI} \\
 (120000 \times 81.75) \quad + 9810000 \\
 \hline
 1810000
 \end{array}$$

Ram enters into Buy-Sell Swap in which buy \$100000 Now & sell \$100000 after 1 YEAR at Contracted Rate

$$\begin{array}{r}
 \text{Buy \$ } (\$100000 \times 80) = (₹8000000) \\
 \text{Sell \$ } (\$100000 \times 82) = 8200000 \\
 \text{Sell \$ } 20000 \text{ at } 81.75 = 1635000 \\
 \hline
 \text{Gain} = \underline{\underline{₹1835000}}
 \end{array}$$

QUESTION - 121

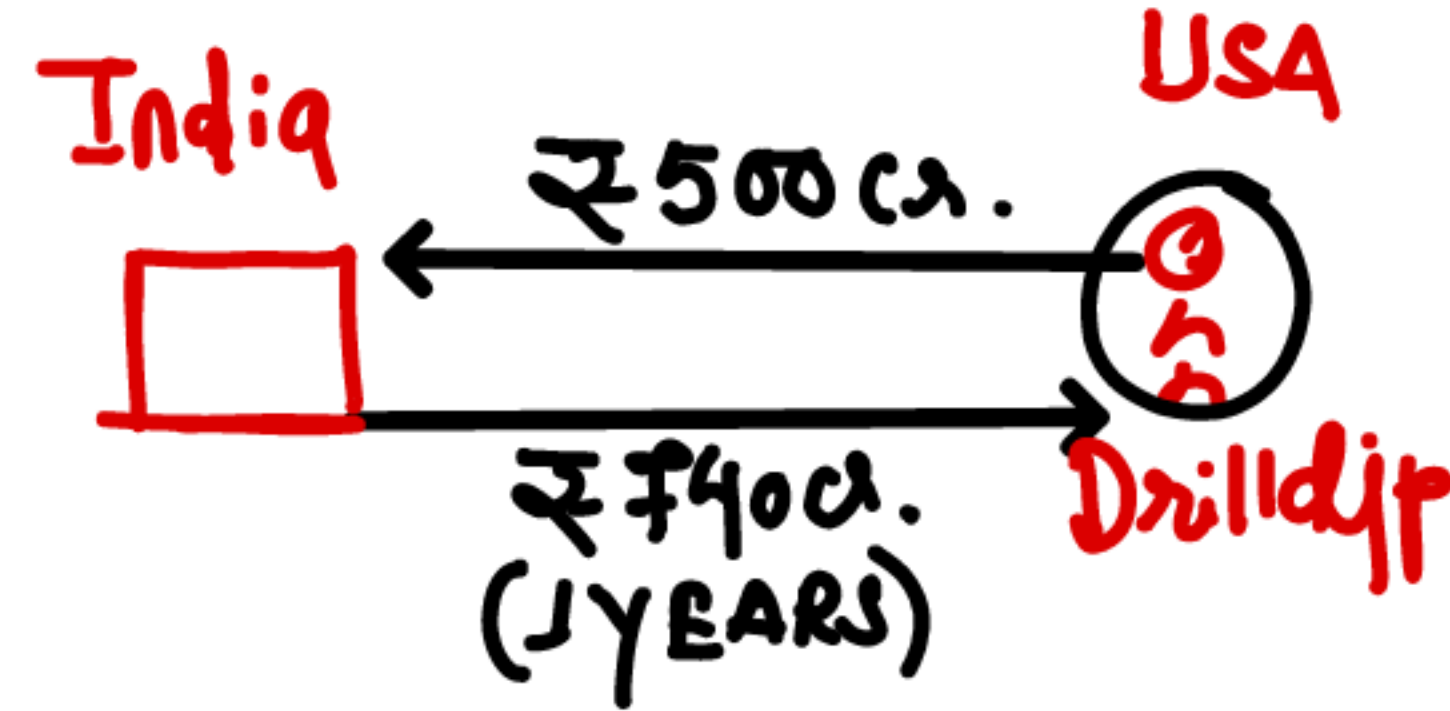
Drilldip Inc. a US based company has won a contract in India for drilling oil field. The project will require an initial investment of ₹ 500 crore. The oil field along with equipments will be sold to Indian Government for ₹ 740 crore in one year time. Since the Indian Government will pay for the amount in Indian Rupee (₹) the company is worried about exposure due exchange rate volatility.

You are required to:

- (a) Construct a swap that will help the Drilldip to reduce the exchange rate risk.
- (b) Assuming that Indian Government offers a swap at spot rate which is $1\text{US\$} = ₹ 50$ in one year, then should the company should opt for this option or should it just do nothing. The spot rate after one year is expected to be $1\text{US\$} = ₹ 54$. Further you may also assume that the Drilldip can also take a US\$ loan at 8% p.a.

(Study Material & PM)

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(a) Drilldip will enter into Buy-Sell Swap, in which Drilldip will buy ₹ 500 cr. Now & sell ₹ 500 cr. after 1 year

