FOREX CLASS 25

HOME WORK SUPPORT

COVERAGE

Question			Answer			Lecture Time
Q. No	Page no.	Book	Q. No	Page no.	Book	
EXTRA Q	82	HW ANS BOOK	EXTRA Q	82	HW ANS BOOK	00:00:35 - 00:03:18
50	19	HW Q BOOK	50	32	HW ANS BOOK	00:03:19 - 00:51:50
51	20	HW Q BOOK	51	34	HW ANS BOOK	00:51:51 - 00:54:45
52	21	HW Q BOOK	52	35	HW ANS BOOK	00:54:46 - 01:50:29
53	22	HW Q BOOK	53	37	HW ANS BOOK	01:50:30 - 02:07:30
54	22	HW Q BOOK	54	39	HW ANS BOOK	02:07:31 - 02:16:19
55	23	HW Q BOOK	55	40	HW ANS BOOK	02:16:20 - 02:19:20
57	24	HW Q BOOK	57	42	HW ANS BOOK	02:19:21 - 03:21:59

PART VII: AMBIGUOUS

EXTRA QUESTION

Question: HW ANS BOOK PAGE 82

XYZ ltd has imported goods from London worth GBP 8,40,000. The amount is payable after three months. The company has also exported goods for GBP 4,80,000 and this amount is receivable in two months. For receivable amount a forward contract is already taken at Rs. 81.20

The market rates for Rupee and pound are as under:

Spot	Rs. 80.70/80.90
Two months	40/50
Three months	50/65

The company wants to cover the risk and it has two options as under:

A. To cover payables in the forward market and

B. To lag the receivables by one month and cover the risk only for the net amount. No interest for delaying the receivables is earned. Evaluate both the options if the cost of Rupee Funds is 9%. Which option is preferable?

(Source: FOD)

ANSWER: HW ANS BOOK PAGE 82

A. To cover payable and receivable in forward Market

Amount payable after 3 months	GBP8,40,000
Forward Rate	Rs. 81.55
Thus Payable Amount (Rs.) (A)	Rs. 6,85,02,000
Amount receivable after 2 months	GBP 4,80,000
Forward Rate	Rs. 81.20
Thus Receivable Amount (Rs.) (B)	Rs. 3,89,76,000
Interest @9% p.a. for 1 month (C)	Rs. 2,92,320
Net Amount Payable in (Rs.) (A) – (B) – (C)	Rs. 2,92,33,680

B. Assuming that since the forward contract for receivable was already booked it shall be cancelled if we lag the receivables. Accordingly any profit/ loss on cancellation of contract shall also be calculated and shall be adjusted as follows:

Amount Payable GBP	GBP 8,40,000
Amount receivable after 3 months	GBP 4,80,000
Net Amount payable	GBP3,60,000
Applicable Rate	Rs. 81.55
Amount payable in (Rs.) (A)	Rs. 2,93,58,000

Loss on cancellation of Forward cost (81.20 – 81.40) × 4,80,000 (B)	Rs. 96,000
Thus net amount payable in (Rs.) (A) + (B)	Rs. 2,94,54,000

Since net payable amount is least in case of first option, hence the company should cover payable and receivables in forward market

PART V: DECISIONS INVOLVING CFO

Topic 25 INTERNATIONAL PROJECT APPRAISAL

Question 50: SSEI HW Book Page No. 19

Perfect Inc., a U.S. based Pharmaceutical Company has received an offer from Aidscure Ltd., a company engaged in manufacturing of drugs to cure Dengue, to set up a manufacturing unit in Baddi (H.P.), India in a joint venture.

As per the Joint Venture agreement, Perfect Inc. will receive 55% share of revenues plus a royalty @ US $0.01 per bottle. The initial investment will be ₹ 200 crores for machinery and factory. The scrap value of machinery and factory is estimated at the end of five (5) year to be ₹ 5 crores. The machinery is depreciable @ 20% on the value net of salvage value using Straight Line Method. An initial working capital to the tune of ₹ 50 crores shall be required and thereafter ₹ 5 crores each year.

As per GOI directions, it is estimated that the price per bottle will be ₹ 7.50 and production will be 24 crores bottles per year. The price in addition to inflation of respective years shall be increased by ₹ 1 each year. The production cost shall be 40% of the revenues.

The applicable tax rate in India is 30% and 35% in US and there is Double Taxation Avoidance Agreement between India and US. According to the agreement tax credit shall be given in US for the tax paid in India. In both the countries, taxes shall be paid in the following year in which profit have arisen/ remittance received.

The Spot rate of $ is ₹ 57. The inflation in India is 6% (expected to decrease by 0.50% every year) and 5% in US.

As per the policy of GOI, only 50% of the share can be remitted in the year in which they are realised and remaining in the following year.

Though WACC of Perfect Inc. is 13% but due to risky nature of the project it expects a return of 15%.

Determine whether Perfect Inc. should invest in the project or not (from subsidiary point of view).

(Source: ICAI)

ANSWER:

Working Notes:

i. Estimated Exchange Rates (Using PPP Theory)

Year	0	1	2	3	4	5	6
Exchange rate *	57	57.54	57.82	57.82	57.54	56.99	56.18

ii. Share in sales

Year	1	2	3	4	5
Annual Units in crores	24	24	24	24	24
Price per bottle (₹)	7.50	8.50	9.50	10.50	11.50
Price fluctuating Inflation Rate	6.00%	5.50%	5.00%	4.50%	4.00%
Inflated Price (₹)	7.95	8.97	9.98	10.97	11.96
Inflated Sales Revenue (₹ Crore)	190.80	215.28	239.52	263.28	287.04
Sales share @55%	104.94	118.40	131.74	144.80	157.87

iii. Royalty Payment

Year	1	2	3	4	5
Annual Units in crores	24	24	24	24	24
Royalty in $	0.01	0.01	0.01	0.01	0.01
Total Royalty ($ Crore)	0.24	0.24	0.24	0.24	0.24
Exchange Rate	57.54	57.82	57.82	57.54	56.99
Total Royalty (₹ Crore)	13.81	13.88	13.88	13.81	13.68

iv. Tax Liability

Year	1	2	3	4	5
Sales Share	104.94	118.40	131.74	144.80	157.87
Total Royalty	13.81	13.88	13.88	13.81	13.68
Total Income	118.75	132.28	145.61	158.61	171.55
Less: Expenses					
Production Cost (Sales share x 40%)	41.98	47.36	52.69	57.92	63.15
Depreciation (195 x 20%)	39.00	39.00	39.00	39.00	39.00
PBT	37.77	45.92	53.92	61.69	69.40
Tax on Profit @30%	11.33	13.78	16.18	18.51	20.82
Net Profit	26.44	32.14	37.74	43.18	48.58

v. Free Cash Flow

Year	0	1	2	3	4	5	6
Sales Share	0.00	104.94	118.40	131.74	144.80	157.87	0.00
Total Royalty	0.00	13.81	13.88	13.88	13.81	13.68	0.00
Production Cost	0.00	-41.98	-47.36	-52.69	-57.92	-63.15	0.00
Initial Outlay	-200.00	0.00	0.00	0.00	0.00	0.00	0.00
Working Capital	-50.00	-5.00	-5.00	-5.00	-5.00	70.00	0.00
Scrap Value	0.00	0.00	0.00	0.00	0.00	5.00	0.00
Tax on Profit	0.00	0.00	-11.33	-13.78	-16.18	-18.51	-20.82
Free Cash Flow	**-250.00**	**71.77**	**68.59**	**74.15**	**79.51**	**164.89**	**-20.82**

vi. Remittance of Cash Flows

Year	0	1	2	3	4	5	6
Free Cash Flow	-250.00	71.77	68.59	74.15	79.51	164.89	-20.82
50% of Current Year Cash Flow	0.00	35.89	34.29	37.07	39.76	82.45	0.00
Previous year remaining cash flow	0.00	0.00	35.88	34.30	37.08	39.75	82.44
Total Remittance	**-250.00**	**35.88**	**70.17**	**71.37**	**76.84**	**122.20**	**61.62**

NPV of Project under Appraisal

Year	0	1	2	3	4	5	6
Total Remittance (₹ Crore)	-250.00	35.88	70.17	71.37	76.84	122.20	61.62
Exchange Rate	57.00	57.54	57.82	57.82	57.54	56.99	56.18
Remittance ($mn)	-43.86	6.24	12.14	12.34	13.35	21.44	10.97
US Tax @35% ($mn)	0.00	0.00	2.18	4.25	4.32	4.67	7.50
Indian Tax ($mn)	0.00	0.00	1.96	2.38	2.82	3.25	3.71
Net Tax ($mn)	0.00	0.00	0.22	1.87	1.51	1.42	3.79
Net Cash Flow ($mn)	-43.86	6.24	11.92	10.47	11.84	20.02	7.18
PVF @ 15%	1.000	0.870	0.756	0.658	0.572	0.497	0.432
Present Value ($mn)	-43.86	5.43	9.01	6.89	6.77	9.95	3.10
Net Present Value ($mn)							**-2.71**

Decision: Since NPV of the project is negative, Perfect inc. should not invest in the project.

* Estimated exchange rates have been calculated by using the following formula:

Expected spot rate = Current Spot Rate x expected difference in inflation rates

$$E(S_1) = S_0 \times \frac{(1+I_d)}{(1+1_f)}$$

Where

$E(S_1)$ is the expected Spot rate in time period 1

S_0 is the current spot rate (Direct Quote)

I_d is the inflation in the domestic country (home country)

I_f is the inflation in the foreign country

PART V: DECISIONS INVOLVING CFO

Topic 25 INTERNATIONAL PROJECT APPRAISAL

Question 51: SSEI HW Book Page No. 20

TG Ltd., a multinational company is planning to set up a subsidiary company in India (where hitherto it was exporting) in view of growing demand for its product and competition from other MNCs. The initial project cost (consisting of plant and machinery including installation) is estimated to be US $ 500 million. The net working capital requirements are estimated at US $ 100 million. The company follows straight line method of depreciation. Presently, the company is exporting 2 million units every year at a unit price of US $ 100, its variable cost per unit being US $ 50.

The Chief Financial Officer has estimated the following operating cost and other data in respect of the proposed project:

i. Variable operating cost will be US $ 25 per unit of production.
ii. Additional cash fixed cost will be US $ 40 million per annum.
iii. Production and Sales capacity of the proposed project in India will be 5 million units.
iv. Expected useful life of the proposed plant is 5 years with no salvage value.
v. Existing working capital investment for production and sale of 2 million units throughexports was US $ 20 million.
vi. Export of the product in the coming year will decrease to 1.5 million units in case the company does not open subsidiary company in India, in view of the presence of competing MNCs that are in the process of setting up their subsidiaries in India.
vii. Applicable Corporate Income Tax rate is 30%.
viii. Required rate of return for such project is 12%.

Assume that there will be no variation in the exchange rate of two countries, all profits willbe repatriated and there will be no withholding tax.

Estimate the Net Present Value (NPV) of the proposed project in India.

Present Value Interest Factors (PVIF) @ 12% for 5 years are as under:

Year	1	2	3	4	5
PVIF	0.8929	0.7972	0.7118	0.6355	0.5674

(Compute your workings to 4 decimals)

(Source: ICAI)

ANSWER:

Financial Analysis whether to set up the manufacturing units in India or not may be carried using NPV technique as follows:

I. Incremental Cash Outflows

	$ Million
Cost of Plant and Machinery	500.00
Working Capital	100.00
Saving of existing Working Capital employed in Export Business	(20.00)
	580.00

II. Incremental Cash Inflow after Tax (CFAT)

a. Generated by investment in India for 5 years

	$ Million
Sales Revenue (5 Million x $100)	500.00
Less: Costs	
Variable Cost (5 Million x $25)	125.00
Fixed Cost	40.00
Depreciation ($500Million/5)	100.00
EBIT	235.00
Taxes@30%	70.50
EAT	164.50
Add: Depreciation	100.00
CFAT (1-5 years)	264.50
Cash flow at the end of the 5 years (Release of Working Capital)	80.00

b. Cash generation by exports

	$ Million
Sales Revenue (1.5 Million x $100)	150.00
Less: Variable Cost (1.5 Million x $50)	75.00
Contribution before tax	75.00
Tax @ 30%	22.50
CFAT (1-5 years)	52.50

c. Additional CFAT attributable to Foreign Investment

	$ Million
Through setting up subsidiary in India	264.50
Through Exports in India	52.50
CFAT (1-5 years)	212.00

III. Determination of NPV

Year	CFAT ($ Million)	PVF@12%	PV ($ Million)
1-5	212	3.6048	764.2176
5	80	0.5674	45.3920
			809.6096
Less: Initial Outflow			580.0000
			229.6096

Decision: Since NPV is positive the proposal should be accepted

PART V: DECISIONS INVOLVING CFO

Topic 25 INTERNATIONAL PROJECT APPRAISAL

Question 52: SSEI HW Book Page No. 21

Opus Technologies Ltd., an Indian IT company is planning to make an investment through a wholly owned subsidiary in a software project in China with a shelf life of two years. The inflation in China is estimated as 8 percent. Operating cash flows are received at the year end.

For the project an initial investment of Chinese Yuan (CN¥) 30,00,000 will be in land. The land will be sold after the completion of project at estimated value of CN¥ 35,00,000. The project also requires an office complex at cost of CN¥ 15,00,000 payable at the beginning of project. The complex will be depreciated on straight-line basis over two years to a zero salvage value. This complex is expected to fetch CN¥ 5,00,000 at the end of project.

The company is planning to raise the required funds through GDR issue in Mauritius. Each GDR will have 5 common equity shares of the company as underlying security which are currently trading at ₹ 200 per share (Face Value = ₹10) in the domestic market. The company has currently paid the dividend of 25% which is expected to grow at 10% p.a. The total issue cost is estimated to be 1 percent of issue size.

The annual sales is expected to be 10,000 units at the rate of CN¥ 500 per unit. The price of unit is expected to rise at the rate of inflation. Variable operating costs are 40 percent of sales. Fixed operating costs will be CN¥ 22,00,000 per year and expected to rise at the rate of inflation.

The tax rate applicable in China for income and capital gain is 25 percent and as per GOI Policy no further tax shall be payable in India. The current spot rate of CN¥ 1 is ₹ 9.50. The nominal interest rate in India and China is 12% and 10% respectively and the international parity conditions hold

You are required to

a. Identify expected future cash flows in China and determine NPV of the project in CN¥.
b. Determine whether Opus Technologies should go for the project or not assuming that there neither there is restriction on the transfer of funds from China to India nor any charges/taxes payable on the transfer of funds.

(Source: ICAI)

ANSWER:

Working Notes:

1. Calculation of Cost of Capital (GDR)

Current Dividend (D_0)	2.50
Expected Divedend (D_1)	2.75
Net Proceeds (Rs. 200 per share – 1%)	198.00
Growth Rate	10.00%

$$k_e = \frac{2.75}{198} + 0.10 = 0.1139 \text{ i.e. } 11.39\%$$

2. Calculation of Expected Exchange Rate as per Interest Rate Parity

Year	Expected Rate
1	$9.50 \times \frac{(1+0.12)}{(1+0.10)} = 9.67$
2	$9.50 \times \frac{(1+0.12)^2}{(1+0.10)^2} = 9.85$

3. Realization on the disposal of Land net of Tax

	CN¥
Sale value at the end of project	3500000.00
Cost of Land	3000000.00
Capital Gain	500000.00
Tax paid	125000.00
Amount realized net of tax	3375000.00

4. Realization on the disposal of Office Complex

	(CN¥)
Sale value at the end of project	500000.00
WDV	0.00
Capital Gain	500000.00
Tax paid	125000.00
Amount realized net of tax (A)	375000.00

5. Computation of Annual Cash Inflows

Year	1	2
Annual Units	10000	10000
Price per bottle (CN¥)	540.00	583.20
Annual Revenue (CN¥)	5400000.00	5832000.00

Less: Expenses		
Variable operating cost (CN¥)	2160000.00	2332800.00
Depreciation (CN¥)	750000.00	750000.00
Fixed Cost per annum (CN¥)	2376000.00	2566080.00
PBT (CN¥)	114000.00	183120.00
Tax on Profit (CN¥)	28500.00	45780.00
Net Profit (CN¥)	85500.00	137340.00
Add: Depreciation (CN¥)	750000.00	750000.00
Cash Flow	835500.00	887340.00

i. Computation of NPV of the project in CN¥

(CN¥)

Year	**0**	**1**	**2**
Initial Investment	-4500000.00		
Annual Cash Inflows		835500.00	887340.00
Realization on the disposal of Land net of Tax			3375000.00
Realization on the disposal of Office Complex			375000.00
Total	**-4500000.00**	**835500.00**	**4637340.00**
PVF @11.39%	1.000	0.898	0.806
PV of Cash Flows	-4500000.00	750279.00	3737696.00
NPV			**-12,025**

ii. Evaluation of Project from Opus Point of View

a. Assuming that inflow funds are transferred in the year in which same are generated i.e. first year and second year.

Year	**0**	**1**	**2**
Cash Flows (CN¥)	-4500000.00	835500.00	4637340.00
Exchange Rate (₹/ CN¥)	9.50	9.67	9.85
Cash Flows (₹)	-42750000.00	8079285.00	45677799.00
PVF @ 12%	1.00	0.893	0.797
	-42750000.00	**7214802.00**	**36405206.00**
NPV			**870008.00**

b. Assuming that inflow funds are transferred at the end of the project i.e. second year.

Year	**0**	**2**
Cash Flows (CN¥)	-4500000.00	5472840.00
Exchange Rate (Rs./ CN¥)	9.50	9.85
Cash Flows (Rs.)	-42750000.00	53907474.00

PVF	1.00	0.797
	-42750000.00	**42964257.00**
NPV		**214257.00**

Though in terms of CN¥ the NPV of the project is negative but in Rs. it has positive NPV due to weakening of Rs. in comparison of CN¥. Thus Opus can accept the project.

PART V: DECISIONS INVOLVING CFO

Topic 25 INTERNATIONAL PROJECT APPRAISAL

Question 53: SSEI HW Book Page No. 22

A USA based company is planning to set up a software development unit in India. Software developed at the Indian unit will be bought back by the US parent at a transfer price of US $10 millions. The unit will remain in existence in India for one year; the software is expected to get developed within this time frame.

The US based company will be subject to corporate tax of 30 % and additional withholding tax of 10% in India and will not be eligible for tax credit in the US. The software developed will be sold in the US market for US $ 12.0 millions. Other estimates are as follows:

Rent for fully furnished unit with necessary hardware in India	₹ 1500000
Man power cost (80 software professional will be working for 10 hours each day)	₹ 400 per man hour
Administrative and other costs	₹ 12,00,000

Advise the US Company on the financial viability of the project. The rupee-dollar rate is ₹48/$.

Note: Assume 365 days a year.

(Source: ICAI)

ANSWER:

Proforma profit and loss account of the Indian software development unit

	₹	₹
Revenue		48,00,00,000
Less: Costs:		
Rent	15,00,000	
Manpower (₹400 x 80 x 10 x 365)	11,68,00,000	
Administrative and other costs	12,00,000	11,95,00,000
Earnings before tax		36,05,00,000
Less: Tax		10,81,50,000
Earnings after tax		25,23,50,000
Less: Withholding tax(TDS)		2,52,35,000
Repatriation amount (in rupees)		22,71,15,000
Repatriation amount (in dollars)		$4.7 million

Advise: The cost of development software in India for the US based company is $5.268 million. As the USA based Company is expected to sell the software in the US at $12.0 million, it is advised to develop the software in India.

Alternatively, if is assumed that since foreign subsidiary has paid taxes it will not pay withholding taxes then solution will be as under:

	₹	₹
Revenue		48,00,00,000
Less: Costs:		
Rent	15,00,000	
Manpower (₹400 x 80 x 10 x 365)	11,68,00,000	
Administrative and other costs	12,00,000	11,95,00,000
Earnings before tax		36,05,00,000
Less: Tax		10,81,50,000
Earnings after tax		25,23,50,000
Repatriation amount (in rupees)		25,23,50,000
Repatriation amount (in dollars)		$ 5,257,292

Advise: The cost of development software in India for the US based company is $4.743 million. As the USA based Company is expected to sell the software in the US at $12.0 million, it is advised to develop the software in India.

Alternatively, if it assumed that first the withholding tax @ 10% is being paid and then its credit is taken in the payment of corporate tax then solution will be as follows:

	₹	₹
Revenue		48,00,00,000
Less: Costs:		
Rent	15,00,000	
Manpower (₹400 x 80 x 10 x 365)	11,68,00,000	
Administrative and other costs	12,00,000	11,95,00,000
Earnings before tax		36,05,00,000
Less: Withholding Tax		3,60,50,000
Earnings after Withholding tax @ 10%		32,44,50,000
Less: Corporation Tax net of Withholding Tax		7,21,00,000
Repatriation amount (in rupees)		25,23,50,000
Repatriation amount (in dollars)		$ 5,257,292

Advise: The cost of development software in India for the US based company is $4.743 million. As the USA based Company is expected to sell the software in the US at $12.0 million, it is advised to develop the software in India.

PART V: DECISIONS INVOLVING CFO

Topic 25 INTERNATIONAL PROJECT APPRAISAL

Question 54: SSEI HW Book Page No. 22

XYZ Ltd., a company based in India, manufactures very high quality modem furniture and sells to a small number of retail outlets in India and Nepal. It is facing tough competition. Recent studies on marketability of products have clearly indicated that the customer is now more interested in variety and choice rather than exclusivity and exceptional quality. Since the cost of quality wood in India is very high, the company is reviewing the proposal for import of woods in bulk from Nepalese supplier.

The estimate of net Indian (₹) and Nepalese Currency (NC) cash flows in Nominal terms for this proposal is shown below:

	Net Cash Flow (in millions)			
Year	**0**	**1**	**2**	**3**
NC	-25.000	2.600	3.800	4.100
Indian (₹)	0	2.869	4.200	4.600

The following information is relevant:

i. XYZ Ltd. evaluates all investments by using a discount rate of 9% p.a. All Nepalese customers are invoiced in NC. NC cash flows are converted to Indian (₹) at the forward rate and discounted at the Indian rate.
ii. Inflation rates in Nepal and India are expected to be 9% and 8% p.a. respectively. The current exchange rate is ₹ 1= NC 1.6

Assuming that you are the finance manager of XYZ Ltd., calculate the net present value (NPV) and modified internal rate of return (MIRR) of the proposal.

You may use following values with respect to discount factor for ₹ 1 @ 9%.

	Present Value	Future Value
Year 1	0.917	1.188
Year 2	0.842	1.090
Year 3	0.772	1

(Source: ICAI)

ANSWER:

Working Notes:

i. Computation of Forward Rates

End of Year	NC	NC/₹
1	$NC1.60 \times \left(\frac{(1+0.09)}{(1+0.08)}\right)$	1.615
2	$NC1.615 \times \left(\frac{(1+0.09)}{(1+0.08)}\right)$	1.630
3	$NC1.630 \times \left(\frac{(1+0.09)}{(1+0.08)}\right)$	1.645

ii. NC Cash Flows converted in Indian Rupees

Year	NC (Million)	Conversion Rate	₹ (Million)
0	-25.00	1.600	-15.625
1	2.60	1.615	1.61
2	3.80	1.630	2.33
3	4.10	1.645	2.49

Net Present Value

(₹ Million)

Year	Cash Flow in India	Cash Flow in Nepal	Total	PVF @ 9%	PV
0	---	-15.625	-15.625	1.000	-15.625
1	2.869	1.61	4.479	0.917	4.107
2	4.200	2.33	6.53	0.842	5.498
3	4.600	2.49	7.09	0.772	5.473
					-0.547

Modified Internal Rate of Return

	Year			
	0	**1**	**2**	**3**
Cash Flow (₹ Million)	-15.625	4.479	6.53	7.09
Year 1 Cash Inflow reinvested for 2 years (1.188 x 4.479)				5.32
Year 2 Cash Inflow reinvested for 1 years (1.090 x 6.53)				7.12
				19.53

$$MIRR = \sqrt[n]{\frac{\text{Terminal Cash Flow}}{\text{Initial Outlay}}} - 1 = \sqrt[3]{\frac{19.53}{15.625}} - 1 = 0.0772 \text{ say } 7.72\%$$

PART V: DECISIONS INVOLVING CFO

Topic 25 INTERNATIONAL PROJECT APPRAISAL

Question 55: SSEI HW Book Page No. 23

A multinational company is planning to set up a subsidiary company in India (where hitherto it was exporting) in view of growing demand for its product and competition from other MNCs. The initial project cost (consisting of Plant and Machinery including installation) is estimated to be US$ 500 million. The net working capital requirements are estimated at US$ 50 million. The company follows straight line method of depreciation. Presently, the company is exporting two million units every year at a unit price of US$ 80, its variable cost per unit being US$ 40.

The Chief Financial Officer has estimated the following operating cost and other data in respect of proposed project:

i. Variable operating cost will be US $ 20 per unit of production;
ii. Additional cash fixed cost will be US $ 30 million p.a. and project's share of allocated fixed cost will be US $ 3 million p.a. based on principle of ability to share;
iii. Production capacity of the proposed project in India will be 5 million units;
iv. Expected useful life of the proposed plant is five years with no salvage value;
v. Existing working capital investment for production & sale of two million units through exports was US $ 15 million;
vi. Export of the product in the coming year will decrease to 1.5 million units in case the company does not open subsidiary company in India, in view of the presence of competing MNCs that are in the process of setting up their subsidiaries in India.
vii. Applicable Corporate Income Tax rate is 35%, and
viii. Required rate of return for such project is 12%.

Assume that there will be no variation in the exchange rate of two currencies and all profits will be repatriated, as there will be no withholding tax.

ADVISE whether the proposed project in India should be accepted or not.

Present Value Interest Factors (PVIF) @ 12% for five years are as below:

Year	1	2	3	4	5
PVIF	0.8929	0.7972	0.7118	0.6355	0.5674

(Source: ICAI)

ANSWER:

Financial Analysis whether to set up the manufacturing units in India or not may be carried using NPV technique as follows:

i. Incremental Cash Outflows

	$ Million
Cost of Plant and Machinery	500.00
Working Capital	50.00
Release of existing Working Capital	(15.00)
	535.00

ii. Incremental Cash Inflow after Tax (CFAT)

a. Generated by investment in India for 5 years

	$ Million
Sales Revenue (5 Million x $80)	400.00
Less: Costs	
Variable Cost (5 Million x $20)	100.00
Fixed Cost	30.00
Depreciation ($500Million/5)	100.00
EBIT	170.00
Taxes@35%	59.50
EAT	110.50
Add: Depreciation	100.00
CFAT (1-5 years)	210.50
Cash flow at the end of the 5 years (Release of Working Capital)	35.00

b. Cash generation by exports (Opportunity Cost)

	$ Million
Sales Revenue (1.5 Million x $80)	120.00
Less: Variable Cost (1.5 Million x $40)	60.00
Contribution before tax	60.00
Tax@35%	21.00
CFAT (1-5 years)	39.00

c. Additional CFAT attributable to Foreign Investment

	$ Million
Through setting up subsidiary in India	210.50
Through Exports in India	39.00
CFAT (1-5 years)	171.50

iii. Determination of NPV

Year	CFAT ($ Million)	PVF@12%	PV($ Million)
1-5	171.50	3.6048	618.2232
5	35	0.5674	19.8590
			638.0822
Less: Initial Outflow			535.0000
			103.0822

Since NPV is positive the proposal should be accepted.

PART V: DECISIONS INVOLVING CFO

Topic 25 INTERNATIONAL PROJECT APPRAISAL

Question 57: SSEI HW Book Page No. 24

Its Entertainment Ltd., an Indian Amusement Company is happy with the success of its Water Park in India. The company wants to repeat its success in Nepal also where it is planning to establish a Grand Water Park with world class amenities. The company is also encouraged by a marketing research report on which it has just spent ₹ 20,00,000 lacs.

The estimated cost of construction would be Nepali Rupee (NPR) 450 crores and it would be completed in one years time. Half of the construction cost will be paid in the beginning and rest at the end of year. In addition, working capital requirement would be NPR 65 crores from the year end one. The after tax realizable value of fixed assets after four years of operation is expected to be NPR 250 crores. Under the Foreign Capital Encouragement Policy of Nepal, company is allowed to claim 20% depreciation allowance per year on reducing balance basis subject to maximum capital limit of NPR 200 crore. The company can raise loan for theme park in Nepal @ 9%.

The water park will have a maximum capacity of 20,000 visitors per day. On an average, it is expected to achieve 70% capacity for first operational four years. The entry ticket is expected to be NPR 220 per person. In addition to entry tickets revenue, the company could earn revenue from sale of food and beverages and fancy gift items. The average sales expected to be NPR 150 per visitor for food and beverages and NPR 50 per visitor for fancy gift items. The sales margin on food and beverages and fancy gift items is 20% and 50% respectively. The park would open for 360 days a year.

The annual staffing cost would be NPR 65 crores per annum. The annual insurance cost would be NPR 5 crores. The other running and maintenance costs are expected to be NPR 25 crores in the first year of operation which is expected to increase NPR 4 crores every year. The company would apportion existing overheads to the tune of NPR 5 crores to the park.

All costs and receipts (excluding construction costs, assets realizable value and other running and maintenance costs) mentioned above are at current prices (i.e. 0 point of time) which are expected to increase by 5% per year.

The current spot rate is NPR 1.60 per rupee. The tax rate in India is 30% and in Nepal it is 20%.

The average market return is 11% and interest rate on treasury bond is 8%. The company's current equity beta is 0.45. The company's funding ratio for the Water Park would be 55% equity and 45% debt.

Being a tourist Place, the amusement industry in Nepal is competitive and very different from its Indian counterpart. The company has gathered the relevant information about its nearest

competitor in Nepal. The competitor's market value of the equity is NPR 1850 crores and the debt is NPR 510 crores and the equity beta is 1.35.

State whether Its Entertainment Ltd. should undertake Water Park project in Nepal or not.

(Source: ICAI)

ANSWER:

Working Notes:

1. Calculation of Cost of Funds/ Discount Rate

Competing Company's Information	
Equity Market Value	1850.00
Debt Market Value	510.00
Equity Beta	1.35

Assuming debt to be risk free i.e. beta is zero, the beta of competitor is un-geared as follows:

$$\text{Asset Beta} = \text{Equity Beta} \times \frac{E}{E + D(1-t)} = 1.35 \times \frac{1850}{1850 + 510(1-0.20)} = 1.106$$

Equity beta for Its Entertainment Ltd. in Nepal

Assets beta in Nepal	1.106
Ratio of funding in Nepal	
Equity	55.00%
Debt	45.00%

1. $1.106 = \text{Equity Beta} \times \frac{55}{55 + 45(1- 0.30)}$

Equity Beta = 1.74

Cost of Equity as per CAPM

Market Return 11.00%

Risk free return 8.00%

Cost of Equity = Risk free return + β (Market Return - Risk free return)

= 8.00% + 1.74(11.00% - 8.00%) = 13.22%

WACC = 13.22% x 0.55 + 9%(1- 0.20) x 0.45 = 10.51%

2. Present Value Factors at the discount rate of 10.51%

Year	0	1	2	3	4	5
PVAF	1.000	0.905	0.819	0.741	0.670	0.607

3. Calculation of Capital Allowances

Year	1	2	3	4
Opening Balance (NPR Crore)	200.00	160.00	128.00	102.40
Less: Depreciation (NPR Crore)	40.00	32.00	25.60	20.48
Closing Balance (NPR Crore)	160.00	128.00	102.40	81.92

Calculation of Present of Free Cash Flow

Year	0	1	2	3	4	5
Expected Annual visitors			5040000	5040000	5040000	5040000
Entry ticket price per visitor (NPR)			242.55	254.68	267.41	280.78
Profit from sale of Food and Beverages per visitor (NPR)			33.08	34.73	36.47	38.29
Profit from sale of Fancy Gift Items per visitor (NPR)			27.56	28.94	30.39	31.91
Revenue per visitor (NPR)			303.19	318.35	334.26	350.98
Total Revenue (NPR crores)			152.81	160.45	168.47	176.89
Less: Annual Staffing Cost (NPR crores)			71.66	75.25	79.01	82.96
Annual Insurance Costs (NPR crores)			5.51	5.79	6.08	6.38
Other running and maintenance costs (NPR crores)			25.00	29.00	33.00	37.00
Depreciation Allowances (NPR crores)			40.00	32.00	25.60	20.48
Total Expenses (NPR crores)			142.18	142.03	143.69	146.82
PBT (NPR crores)			10.63	18.41	24.78	30.07
Tax on Profit (NPR crores)			2.13	3.68	4.96	6.01
Net Profit (NPR crores)			8.51	14.73	19.83	24.06
Add: Depreciation Allowances (NPR crores)			40	32	25.6	20.48
Park Construction Cost (NPR crores)	-225	-225				
After tax assets realisation value (NPR crores)						250
Working capital (NPR		-65.00	-3.25	-3.41	-3.58	75.25

crores)						
Net cash Flow (NPR crores)	-225.00	-290.00	45.26	43.32	41.84	369.78
PVF at discount rate	1.00	0.90	0.82	0.74	0.67	0.61
Present Values (NPR crores)	-225.00	-262.42	37.06	32.10	28.06	224.35

Net Present Value (NPR crores) **-165.86**