FOREX CLASS 25

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.
95	Classic	CW Q BOOK	41
73	Classic	CW Q BOOK	30
74	Classic	CW Q BOOK	30
75	Classic	CW Q BOOK	31
76	Classic	CW Q BOOK	31
77	Classic	CW Q BOOK	32
78	Classic	CW Q BOOK	33
80	Classic	CW Q BOOK	34

PART VII: AMBIGUOUS

Question 95: SSEI CW Book Page 41.

NP and Co. has imported goods for US $ 7,00,000. The amount is payable after three months. The company has also exported goods for US $ 4,50,000 and this amount is receivable in two months. For receivable amount a forward contract is already taken at Rs. 48.90.

The market rates for Rupee and Dollar are as under:

Spot	Rs. 48.50/70
Two months	Rs. 48.25/30
Three months	Rs. 48.40/45

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 12%. Which option is preferable?

(*Source: ICAI*)

ANSWER:

A. To cover payable and receivable in forward Market

Amount payable after 3 months	$7,00,000
Forward Rate	Rs. 48.45
Thus Payable Amount (Rs.) (A)	Rs. 3,39,15,000
Amount receivable after 2 months	$ 4,50,000
Forward Rate	Rs. 48.90
Thus Receivable Amount (Rs.) (B)	Rs. 2,20,05,000
Interest @ 12% p.a. for 1 month (C)	Rs. 2,20,050
Net Amount Payable in (Rs.) (A) – (B) – (C)	Rs. 1,16,89,950

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 ($)	$ 7,00,000
Amount receivable after 3 months	$ 4,50,000
Net Amount payable	$ 2,50,000
Applicable Rate	Rs. 48.45
Amount payable in (Rs.) (A)	Rs. 1,21,12,500
Profit on cancellation of Forward cost (48.90 – 48.30) × 4,50,000 (B)	Rs. 2,70,000

Thus net amount payable in (Rs.) (A) + (B)	Rs. 1,18,42,500

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 73: SSEI CW Book Page 30.

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 per cent and a withholding tax of 10 per cent in India and will be eligible for tax credit in India. The software developed will be sold in the US market and many companies are ready to acquire the same. Other estimates are as follows:

Rent for fully furnished unit with necessary hardware in India ₹ 18,75,000
Manpower cost (80 software professional will be working for 10 hours each day) 500 per man hour
Administrative and other costs ₹ 15,00,000

Advise the US Company the minimum amount it should charge from the prospective buyer. The rupee-dollar rate is ₹ 60/$.

Note: Assume 365 days a year.

(Source: ICAI)

ANSWER:

Proforma profit and loss account of the Indian software development unit

		₹
Revenue		60,00,00,000
Less: Costs:		
Rent	18,75,000	
Manpower (500 x 80 x 10 x 365)	14,60,00,000	
Administrative and other costs	15,00,000	14,93,75,000
Earnings before tax		45,06,25,000
Less: Withholding Tax		4,50,62,500
Earnings after Withholding tax @ 10%		40,55,62,500

Less: Corporation Tax net of Withholding Tax		9,01,25,000
Repatriation amount (in rupees)		31,54,37,500
Repatriation amount (in dollars)		$ 52,57,292

Advise: The USA based Company should charge minimum $ 47,42,708 from prospective buyer.

Question 74: SSEI CW Book Page 30.

XY Limited is engaged in large retail business in India. It is contemplating for expansion into a country of Africa by acquiring a group of stores having the same line of operation as that of India.

The exchange rate for the currency of the proposed African country is extremely volatile. Rate of inflation is presently 40% a year. Inflation in India is currently 10% a year. Management of XY Limited expects these rates likely to continue for the foreseeable future.

Estimated projected cash flows, in real terms, in India as well as African country for the first three years of the project are as follows:

	Year – 0	Year – 1	Year – 2	Year – 3
Cash flows in India Rs. (000)	-50,000	-1,500	-2,000	-2,500
Cash flows in African Rands (000)	-2,00,000	+50,000	+70,000	+90,000

XY Ltd. assumes the year 3 nominal cash flows will continue to be earned each year indefinitely. It evaluates all investments using nominal cash flows and a nominal discounting rate. The present exchange rate is African Rand 6 to Rs. 1.

You are required to calculate the net present value of the proposed investment considering the following:

i. African Rand cash flows are converted into rupees and discounted at a risk adjusted rate.
ii. All cash flows for these projects will be discounted at a rate of 20% to reflect it's high risk.
iii. Ignore taxation.

	Year - 1	Year - 2	Year - 3
PVIF @ 20%	.833	.694	.579

(Source: ICAI)

ANSWER:

Calculation of NPV

Year	0	1	2	3
Inflation factor in India	1.00	1.10	1.21	1.331
Inflation factor in Africa	1.00	1.40	1.96	2.744
Exchange Rate (as per IRP)	6.00	7.6364	9.7190	12.3696

Cash Flows in ₹ '000				
Real	-50000	-1500	-2000	-2500
Nominal (1)	-50000	-1650	-2420	-3327.50
Cash Flows in African Rand '000				
Real	-200000	50000	70000	90000
Nominal	-200000	70000	137200	246960
In Indian ₹ '000 (2)	-33333	9167	14117	19965
Net Cash Flow in ₹ '000 (1)+(2)	-83333	7517	11697	16637
PVF@20%	1	0.833	0.694	0.579
PV	-83333	6262	8118	9633

NPV of 3 years = -59320 (₹ '000)

NPV of Terminal Value = $\frac{16637}{0.20} \times 0.579 = 48164$ (₹ 000)

Total NPV of the Project = -59320 (₹ '000) + 48164 (₹ '000) = -11156 (₹ '000)

Question 75: SSEI CW Book Page 31.

A US company wants to setup a manufacturing plant in India which requires an initial outlay of ₹ 8 Million. It is expected to have a useful life of 5 years with a salvage of ₹ 2 Million. The company follows straight line method of depreciation. To support additional level of activity, investment would require one time additional working capital of ₹ 1 Million.

Since the cost of production lower in India, the variable cost of production would be ₹ 30 per unit. Additional fixed cost per annum is estimated at ₹ 0.5 Million. The company is projecting its annual sales to 80000 units at the price of ₹ 100 per unit. Applicable tax rate to the company is 34% and its cost of capital is 8%.

Inflation rates in US and India are expected to be 8% and 9% respectively. The current exchange rate is ₹ 72 per US Dollar.

Assuming that all profit will be repatriated every year and there will be no withholding taxes, estimate the net present value of the proposed project in India and evaluate its feasibility.

PVF @ 8% for the five years are as under:

Rate	1 Year	2 Year	3 Year	4 Year	5 Year
8%	0.926	0.857	0.794	0.735	0.681

(Source: ICAI)

ANSWER:

Working Notes:

i. Initial Investment in US$

Particulars	Amount
Initial Outlay	₹ 80,00,000
Additional Working Capital	₹ 10,00,000
Total	₹ 90,00,000
Exchange Rate	₹ 72/US$
Initial Investment in US$	US$ 1,25,000

ii. Expected Exchange Rates

Year		₹ /USD
1	₹ 72.00 x $\frac{(1+0.09)}{(1+0.08)}$	72.67
2	₹ 72.67 x $\frac{(1+0.09)}{(1+0.08)}$	73.34
3	₹ 73.34 x $\frac{(1+0.09)}{(1+0.08)}$	74.02
4	₹ 74.02 x $\frac{(1+0.09)}{(1+0.08)}$	74.71
5	₹ 74.71 x $\frac{(1+0.09)}{(1+0.08)}$	75.40

iii. Annual Cash Inflows

Particulars	Amount (₹)
Sales (80000 X ₹ 100)	80,00,000
Less: Variable Cost (80000 x ₹ 30)	24,00,000
Additional Fixed Cost	5,00,000
Depreciation $\frac{(₹\ 80,00,000 - ₹\ 20,00,000)}{5}$	12,00,000
Profit Before Tax (PBT)	39,00,000
Less: Tax @ 34%	13,26,000
	25,74,000
Add: Depreciation	12,00,000
	37,74,000

iv. Amount repatriated each year in US$

Year		in ₹	Expected Exchange Rate (₹/ US$)	in US$
1	Annual Cash Flow	37,74,000	72.67	51,933.40
2	---do----	37,74,000	73.34	51,458.96
3	---do----	37,74,000	74.02	50,986.22
4	---do----	37,74,000	74.71	50,513.33
5	---do----	37,74,000	75.40	50,053.05

v. Release of Working Capital in US$ at the end (₹ 10,00,000/ ₹ 75.40) = US$ 13,262.60

vi. Salvage Value of Project in US$ (₹ 20,00,000/ / ₹ 75.40) = US$ 26,525.20

NPV of the proposed project

Particulars	Period	Cash Flows ($)	PVF @ 8%	PV ($)
Initial Outlay	0	(1,25,000.00)	1.000	(1,25,000.00)
Annual Cash Flow	1	51,933.40	0.926	48,090.33
---do----	2	51,458.96	0.857	44,100.33
---do----	3	50,986.22	0.794	40,483.06
---do----	4	50,513.33	0.735	37,127.30
---do----	5	50,053.05	0.681	34,086.13
Release of Working Capital	5	13,262.60	0.681	9,031.83
Salvage Value of the Project	5	26,525.20	0.681	18,063.66
				1,05,982.64

Since the NPV of the project is positive, it is feasible.

Question 76: SSEI CW Book Page 31.

DD Ltd. a company based in India manufactures good quality of leather bags and sells to retail outlets in India and USA. The cost of quality leather in India is very high, the company is reviewing the proposal of importing of leather in bulk from USA supplier. The estimate of net US $ and Indian ₹ Currency Cash Flows in nominal terms for this proposal is given below:

Year	Net Cash Flow (in Lakh)			
	0	1	2	3
In US $	(25)	5	7	8
In ₹	0	60	80	90
If not imported cost of leather to be purchased in India (in ₹)	400	450	500	600

Other information:

i. DD Ltd. evaluates all investments by using discount rate of 9% p.a.

ii. All US customers are invoiced in US $. US $ Cash flows converted into ₹ at the forward rate and discounted at Indian Rate.

iii. Inflation in USA and India are expected to be 9% and 8% respectively.

iv. The current exchange rate 1 US $ = ₹ 74

You are required to Calculate Net Present Value and recommend the decision. Present value factor @ 9% are as under:

1 Year	2 Year	3 Year
0.917	0.842	0.772

Note: Calculation to be made up to 2 decimal points.

(*Source: ICAI)*

ANSWER:

Expected Forward Exchange Rates

Year		₹ /USD
1	₹ 74.00 x $\frac{(1+0.08)}{(1+0.09)}$	73.32
2	₹ 73.32 x $\frac{(1+0.08)}{(1+0.09)}$	72.65
3	₹ 72.65 x $\frac{(1+0.08)}{(1+0.09)}$	71.98

NPV of the proposal if leather is imported from US

	0	1	2	3
Cash Flow is US$ (Lakh)	(25)	5	7	8
Expected Forward Rates ₹/ US$	74.00	73.32	72.65	71.98
Cash Flows in ₹ Lakh	(1,850.00)	366.60	508.55	575.84
Cost of leather if not imported	(400.00)	(450.00)	(500.00)	(600.00)
Cash Flows in ₹ Lakh	----	60.00	80.00	90.00
Total Cash Flow ₹ Lakh	(2,250.00)	(23.40)	88.55	65.84
PVF @ 9%	1.000	0.917	0.842	0.772
PV in ₹ Lakh	(2,250.00)	(21.46)	74.56	50.83
NPV				(2,146.07)

Decision: Proposal should not be accepted as NPV is negative.

ANSWER AS PER LOGIC(FOLLOW ICAI ANSWER IN EXAM)

Since in both the situations inflows are same in year 1 ,2,3, we can compare pv of rupee cost of purchasing leather in india with pv of dollar imports to find out better alternative

Pv of cost of leather if purchased in India

year	Cash outflow	pvif@9%	Pv of cash outflows
0	400	1	400
1	450	0.917	412.65
2	500	0.842	421
3	600	0.772	463.2
			Total = 1696.85

pv of cost of leather if imported from USA

= 25*74 = 1850

So it is better to purchase the leather in India itself.

Net present value of the project if leather is purchased in India

	0	1	2	3
Cash flow in us$		5	7	8
Forward rate		73.32	72.65	71.98
$ cash flow in rupee		366.6	508.55	575.84
Cost of leather	(400)	(450)	(500)	(600)
Rupee cash flow		60	80	90
Total cash flow	(400)	(23.40)	88.55	65.84
Present value	(400)	(21.46)	74.56	50.83

NPV = -296 LAKHS

So the project is not viable.

If on choosing the better option we are getting -296 lakh NPV, then we will get worst NPV if we import it from USA(try at home NPV= -500 LAKHS approx). So the company should not take up this project at all because in both the options we are getting negative NPV.

Question 77: SSEI CW Book Page 32.

A US based company is planning to set up a subsidiary company in India (where so far it was exporting) in view of growing demand for its product and competition from other US based companies. The initial project cost consisting of plant and machinery including installation is estimated to be US$ 490 million. The net working capital requirements are estimated at US$ 60 million. The company follows straight line method of depreciation. Currently, the company is exporting two million units every year at a unit price of US$ 90, its variable cost per unit being US$ 50.

The CFO of the Company has estimated the following operating cost and other data in respect of proposed project:

i. Variable operating cost will be US $ 30 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. Expected useful life of the proposed plant is five years with no salvage value;
iv. Production capacity of the proposed project in India will be 5 million units;
v. Existing working capital investment for production and sale of two million units through exports was US $ 25 million;
vi. Export of the product in the coming year will decrease to 1.5 million units, provided the company does not set up subsidiary company in India, in view of the presence of competing other US based companies 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%.

Assuming 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, Estimate Net Present Value of the proposed project in India and give your advice. Present Value Interest Factors (PVIF) @ 12% for five years is 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	490.00
Working Capital	60.00
Release of existing Working Capital	(25.00)
	525.00

ii.

1. Incremental Cash Inflow after Tax (CFAT) generated by investment in India for 5 years

	$ Million
Sales Revenue (5 Million x $90)	450.00
Less: Costs	
Variable Cost (5 Million x $30)	150.00
Fixed Cost	30.00
Depreciation ($490Million/5)	98.00
EBIT	172.00
Taxes @ 35%	60.20
EAT	111.80
Add: Depreciation	98.00
CFAT (1-5 years)	209.80

2. Cash flow at the end of the 5 years (Release of Working Capital) $35.00 Million

3. Cash generation by exports (Opportunity Cost)

	$ Million
Sales Revenue (1.5 Million x $90)	135.00
Less: Variable Cost (1.5 Million x $50)	75.00
Contribution before tax	60.00
Tax @ 35%	21.00
CFAT (1-5 years)	39.00

4. Additional CFAT:

	$ Million
Through setting up subsidiary in India	209.80
Through Exports in India	39.00
CFAT (1-5 years)	170.80

iii. Determination of NPV

Year	CFAT ($ Million)	PVF@12%	PV ($ Million)
1-5	170.80	3.6048	615.6998
5	35	0.5674	19.8590
			635.5588
Less: Initial Outflow			525.0000
		NPV	110.5588

Advice: Since NPV is positive the proposal should be accepted.

Question 78: SSEI CW Book Page 33.

A proposed foreign investment involves creation of a plant with an annual output of 1 million units. The entire production will be exported at a selling price of USD 10 per unit.

At the current rate of exchange dollar cost of local production equals to USD 6 per unit. Dollar is expected to decline by 10% or 15%. The change in local cost of production and probability from the expected current level will be as follows:

Decline in value of USD (%)	Reduction in local cost of production (USD/unit)	Probability
0	-	0.4
10	0.30	0.4
15	0.15 Additional reduction	0.2

The plant at the current rate of exchange will have a depreciation of USD 1 million annually. Assume local Tax rate as 30%.

You are required to find out:

i. Annual Cash Flow After Tax (CFAT) under all the different scenarios of exchange rate.

ii. Expected value of CFAT assuming no repatriation of profits.

iii. Viability of the investment proposal assuming an initial investment of USD 25 million on plant and working capital with a required rate of return of 11% on investment and on the basis of CFAT arrived under option (ii). The CFAT will grow @ 3% per annum in perpetuity.

(Source: ICAI)

ANSWER:

i. Calculation of Annual CFAT

	Scenario 1	Scenario 2	Scenario 3
Annual Sales (in units) (A)	10,00,000	10,00,000	10,00,000
	US $	**US $**	**US $**
Selling price p.u.	10.00	10.00	10.00
Cost p.u.	6.00	5.70	5.55

Profit p.u. (B)	4.00	4.30	4.45
Total Profit (A x B)	40,00,000	43,00,000	44,50,000
Less: Depreciation	10,00,000	9,00,000	8,50,000
PBT	30,00,000	34,00,000	36,00,000
Less: Tax @30%	9,00,000	10,20,000	10,80,000
PAT	21,00,000	23,80,000	25,20,000
Add: Depreciation	10,00,000	9,00,000	8,50,000
Expected CFAT (US$)	31,00,000	32,80,000	33,70,000

ii. Expected Value of CFAT

= US$ 31,00,000 x 0.4 + US$ 32,80,000 x 0.4 + US$ 33,70,000 x 0.2
= US$ 32,26,000

iii. Viability of proposal:

Expected CFAT = US $ 32,26,000
Expected Growth Rate = 3%

$$\text{Expected Value of inflow in perpetuity} = \frac{\text{US\$ 32,26,000 (1.03)}}{0.11 - 0.03}$$

$$= \frac{33,22,780}{0.08} = \text{US\$ 4,15,34,750}$$

	US $
Value of Inflows	4,15,34,750
Less: Initial Outlay	2,50,00,000
NPV of project	1,65,34,750

Since NPV is positive, project is viable.

Question 80: SSEI CW Book Page 34.

The Management of a multinational company TL Ltd. is engaged in construction of Infrastructure Project. A proposal to construct a Toll Road in Nepal is under consideration of the Management.

The following information is available:

The initial investment will be in purchase of equipment costing USD 250 lakhs. The economic life of the equipment is 10 years. The depreciation on the equipment will be charged on straight line method.

EBIDTA to be collected from the Toll Road is projected to be USD 33 lakhs per annum for a period of 20 years.

To encourage investment Nepalese government is offering a 15 year term loan of USD 150 lakhs at an interest rate of 6 per cent per annum. The interest is to be paid annually. The loan will be repaid at the end of 15 year in one tranche.

The required rate of return for the project under all equity financing is 12 per cent per annum.

Post tax cost of debt is 5.6 per cent per annum.

Corporate Tax Rate is 30 per cent.

All cash Flows will be in USD.

Ignore inflation.

You are required to advise the management on the viability of the proposal by using Adjusted Net Present Value method.

Given

PVIFA (12%, 10) = 5.650, PVIFA (12%, 20) = 7.469, PVIFA (8%,15) = 8.559, PVIF (8%,15) = 0.315.

(*Source: ICAI)*

ANSWER:

i. Net Present Value (All Equity Financed) – Base NPV

Particulars	Period	USD Lakhs	PVF @ 12%	PV (USD Lakhs)
Initial Investment	0	(250.00)	1.000	(250.000)
EBIDTA	1 to 20	33.00	7.469	246.477
Tax	1 to 20	(9.90)	7.469	(73.943)
Depreciation	1 to 10	(25.00)		
Tax Saving on Dep	1 to 10	7.50	5.650	42.375
NPV				(35.091)

ii. Present Value of Impact of Financing by Debt

Particulars	Period	USD Lakhs	PVF @ 8%	PV (USD Lakhs)
Loan	0	150.00	1.000	150.000
Interest	1 to 15	(9.00)	8.559	(77.031)
Tax Saving on Interest	1 to 15	2.70	8.559	23.109
Repayment of Principal	15	(150.00)	0.315	(47.250)
NPV				48.828

Adjusted Present Value of the Project
= Base NPV + PV of Impact of Financing
= - US$ 35.091 + US $ 48.828 lakh
= US$ 13.737 lakh

Advise: Since APV is positive, TL Ltd. should accept the project.

Alternatively, if instead of PV of overall impact of Financing the PV of impact of tax shield on Interest is considered then APV shall be computed as follows:
= Base NPV + PV of Tax Shield on Interest

= - US$ 35.091 + US $ 23.109 lakh

= - US$ 11.982 lakh

Advise: Since APV is negative, TL Ltd. should not accept the project.