CHAPTER 11

INTERNATIONAL FINANCIAL MANAGEMENT

LEARNING OUTCOMES

After going through the chapter student shall be able to understand

- International Capital Budgeting
- Raising funds from International Sources
- Sovereign Funds
- International Financial Centre (GIFT City)
- International Working Capital Management
  - (a) International Working Capital Management
  - (b) Multinational Cash Management
  - (c) Multinational Inventory Management
  - (b) Multinational Receivable Management

1. INTERNATIONAL CAPITAL BUDGETING

1.1 Complexities Involved

Multinational Capital Budgeting has to take into consideration the different factors and variables which affect a foreign project and are complex in nature than domestic projects. The factors crucial in such a situation are:

(a) Cash flows from foreign projects have to be converted into the currency of the parent organization.

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(b) Parent cash flows are quite different from project cash flows.

(c) Profits remitted to the parent firm are subject to tax in the home country as well as the host country.

(d) Effect of foreign exchange risk on the parent firm's cash flow.

(e) Changes in rates of inflation causing a shift in the competitive environment and thereby affecting cash flows over a specific time period.

(f) Restrictions imposed on cash flow distribution generated from foreign projects by the host country.

(g) Initial investment in the host country to benefit from the release of blocked funds.

(h) Political risk in the form of changed political events reduce the possibility of expected cash flows.

(i) Concessions/benefits provided by the host country ensures the upsurge in the profitability position of the foreign project.

(j) Estimation of the terminal value in multinational capital budgeting is difficult since the buyers in the parent company have divergent views on acquisition of the project.

1.2 Problems Affecting Foreign Investment Analysis

The various types of problems faced in International Capital Budgeting analysis are as follows:

(1) Multinational companies investing elsewhere are subjected to foreign exchange risk in the sense that currency appreciates/ depreciates over a span of time. To include foreign exchange risk in the cash flow estimates of any project, it is necessary to forecast the inflation rate in the host country during the lifetime of the project. Adjustments for inflation are made in the cash flows depicted in local currency. The cash flows are converted in parent country's currency at the spot exchange rate multiplied by the expected depreciation rate obtained from purchasing power parity.

(2) Due to restrictions imposed on transfer of profits, depreciation charges and technical specifications differences exist between project cash flows and cash flows obtained by the parent organization. Such restriction can be diluted by the application of techniques viz internal transfer prices, overhead payments. Adjustment for blocked funds depends on its opportunity cost, a vital issue in capital budgeting process.

(3) In Multinational Capital Budgeting, after tax cash flows need to be considered for project evaluation. The presence of two tax regimes along with other factors such as remittances to the parent firm in the form of royalties, dividends, management fees etc., withholding tax provisions with held in the host country, presence of tax treaties, tax discrimination pursued by the host country between transfer of realized profits vis-à-vis local re-investment of such profits cause serious impediments to multinational capital budgeting process. MNCs are in a position to reduce overall tax burden through the system of transfer pricing.

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For computation of actual after tax cash flows accruing to the parent firm, higher of home/ host country tax rate is used. If the project becomes feasible then it is acceptable under a more favourable tax regime. If not feasible, then, other tax saving aspects need to be incorporated in order to find out whether the project crosses the hurdle rate.

1.3 Project vis-a-vis Parent Cash Flows

There exists a big difference between the project and parent cash flows due to tax rules, exchange controls etc. Management and royalty payments are returns to the parent firm. The basis on which a project shall be evaluated depends on one's own cash flows, cash flows accruing to the parent firm or both.

Evaluation of a project on the basis of own cash flows entails that the project should compete favourably with domestic firms and earn a return higher than the local competitors. If not, the shareholders and management of the parent company shall invest in the equity/government bonds of domestic firms. A comparison cannot be made since foreign projects replace imports and are not competitors with existing local firms. Project evaluation based on local cash flows avoid currency conversion and eliminates problems associated with fluctuating exchange rate changes.

For evaluation of foreign project from the parent firm's angle, both operating and financial cash flows actually remitted to it form the yardstick for the firm's performance and the basis for distribution of dividends to the shareholders and repayment of debt/interest to lenders. An investment has to be evaluated on basis of net after tax operating cash flows generated by the project. As both types of cash flows (operating and financial) are clubbed together, it is essential to see that financial cash flows are not mixed up with operating cash flows.

1.4 Discount Rate and Adjusting Cash Flows

An important aspect in multinational capital budgeting is to adjust cash flows or the discount rate for the additional risk arising from foreign location of the project. Earlier MNCs adjusted the discount rate upwards for riskier projects as they considered uncertainties in political environment and foreign exchange fluctuations. The MNCs considered adjusting the discount rate to be popular as the rate of return of a project should be in conformity with the degree of risk. It is not proper to combine all risks into a single discount rate. Political risk/uncertainties attached to a project relate to possible adverse effects which might occur in future but cannot be foreseen at present. So adjusting discount rates for political risk penalises early cash flows more than distant cash flows. Also adjusting discount rate to offset exchange risk only when adverse exchange rate movements are expected is not proper since a MNC can gain from favourable currency movements during the life of the project on many occasions. Instead of adjusting discount rate while considering risk it is worthwhile to adjust cash flows. The annual cash flows are discounted at a rate applicable to the project either at that of the host country or parent country. Probability with certainty equivalent method along with decision tree analysis are used for economic and financial forecasting. Cash flows generated by the project and remitted to the parent during each period are adjusted for political risk, exchange rate and other uncertainties by converting them into certainty equivalents.

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1.5 Adjusted Present Value (APV)

APV is used in evaluating foreign projects. The APV model is a value additive approach to capital budgeting process i.e. each cash flow is considered individually and discounted at a rate consistent with risk involved in the cash flow.

Different components of the project's cash flow have to be discounted separately.

The APV method uses different discount rates for different segments of the total cash flows depending on the degree of certainty attached with each cash flow. The financial analyst tests the basic viability of the foreign project before accounting for all complexities. If the project is feasible no further evaluation based on accounting for other cash flows is done. If not feasible, an additional evaluation is done taking into consideration the other complexities.

The APV model is represented as follows.

$$-I_0 + \sum_{t=1}^{n} \frac{X_t}{(1+k^*)^t} + \sum_{t=1}^{n} \frac{T_t}{(1+i_d)^t} + \sum_{t=1}^{n} \frac{S_t}{(1+i_d)^t}$$

Where $I_0 \rightarrow$ Present Value of Investment Outlay

$\frac{X_t}{(1+k^*)^t} \rightarrow$ Present Value of Operating Cash Flow

$\frac{T_t}{(1+i_d)^t} \rightarrow$ Present Value of Interest Tax Shields

$\frac{S_t}{(1+i_d)^t} \rightarrow$ Present Value of Interest Subsidies

$k^* \rightarrow$ Unlevered Cost of Capital

$T_t \rightarrow$ Tax Saving in year t due to financial mix adopted

$S_t \rightarrow$ Before tax value of interests subsidies in year t due to project specific financing

$i_d \rightarrow$ Before tax cost of debt

The initial investment will be net of any 'Blocked Funds' that can be made use of by the parent company for investment in the project. 'Blocked Funds' are balances held in foreign countries that cannot be remitted to the parent due to Exchange Control regulations. These are 'Direct Blocked Funds'. Apart from this, it is quite possible that significant costs in the form of local taxes or withholding taxes arise at the time of remittance of the funds to the parent country. Such 'Blocked Funds' are indirect. If a parent company can release such 'Blocked Funds' in one country for the

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investment in a overseas project, then such amounts will go to reduce the 'Cost of Investment Outlay'.

The last two terms are discounted at the before tax cost of debt to reflect the relative cash flows due to tax and interest savings.

1.6 Scenarios

Following three illustrations are based on three different scenarios:

1.6.1 A foreign company is investing in India

Illustration 1

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).

Solution

Working Notes:

1. Estimated Exchange Rates (Using PPP Theory)

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

2. 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

3. 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

4. Tax Liability

(₹ Crore)

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

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5. Free Cash Flow

(₹ Crore)

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**

6. Remittance of Cash Flows

(₹ Crore)

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	7
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	3.84
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	3.84
Net Cash Flow ($ mn)	-43.86	6.24	11.92	10.47	11.84	20.02	7.18	-3.84
PVF @ 15%	1.000	0.870	0.756	0.658	0.572	0.497	0.432	0.376
Present Value ($ mn)	-43.86	5.43	9.01	6.89	6.77	9.95	3.10	-1.44
Net Present Value ($ mn)								= -4.15

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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

1.6.2 An Indian Company is investing in foreign country by raising fund in the same country

Illustration 2

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.

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.

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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.

Solution

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. $$1.106 = \text{Equity Beta} \times \frac{55}{55 + 45(1 - 0.20)}$$

Equity Beta = 1.83

Cost of Equity as per CAPM

Market Return 11.00%

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Risk free return 8.00%

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

= 8.00% + 1.83(11.00% - 8.00%) = 13.49%

WACC = 13.49% x 0.55 + 9%(1- 0.20) x 0.45 = 10.66%

2. Present Value Factors at the discount rate of 10.66%

Year	0	1	2	3	4	5
PVAF	1.000	0.904	0.817	0.738	0.667	0.603

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	334.27	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						

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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)			142.17	142.04	143.69	146.82
PBT (NPR crores)			10.64	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	19.82	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 crores)		-65.00	-3.25	-3.41	-3.58	75.25
Net cash Flow (NPR crores)	-225.00	-290.00	45.26	43.32	41.84	369.79
PVF at discount rate	1.00	0.904	0.817	0.738	0.667	0.603
Present Values (NPR crores)	-225.00	-262.16	36.98	31.97	27.91	222.98

Net Present Value (NPR crores) -167.32

Decision: Since NPV of the project is negative the Entertainment Ltd. should not undertake Water Park project in Nepal.

1.6.3 An Indian Company is investing in foreign country by raising fund in different country through the mode of Global Depository Receipts (GDRs)

Illustration 3

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

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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.

Solution

Working Notes:

1. Calculation of Cost of Capital (GDR)

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

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

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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

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(a) 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

(b) Evaluation of Project from Opus Point of View

(i) 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

(ii) 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 (₹/ CN¥)	9.50	9.85
Cash Flows (₹)	-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 ₹ it has positive NPV due to weakening of ₹ in comparison of CN¥. Thus, Opus can accept the project.

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2. INTERNATIONAL SOURCES OF FINANCE

Indian companies have been able to tap global markets to raise foreign currency funds by issuing various types of financial instruments which are discussed as follows:

2.1 Foreign Currency Convertible Bonds (FCCBs)

A type of convertible bond issued in a currency different than the issuer's domestic currency. In other words, the money being raised by the issuing company is in the form of a foreign currency. A convertible bond is a mix between a debt and equity instrument. It acts like a bond by making regular coupon and principal payments, but these bonds also give the bondholder the option to convert the bond into stock.

These types of bonds are attractive to both investors and issuers. The investors receive the safety of guaranteed payments on the bond and are also able to take advantage of any large price appreciation in the company's stock. (Bondholders take advantage of this appreciation by means of warrants attached to the bonds, which are activated when the price of the stock reaches a certain point.) Due to the equity side of the bond, which adds value, the coupon payments on the bond are lower for the company, thereby reducing its debt-financing costs.

Advantages of FCCBs

(i) The convertible bond gives the investor the flexibility to convert the bond into equity at a price or redeem the bond at the end of a specified period, normally three years if the price of the share has not met his expectations.

(ii) Companies prefer bonds as it leads to delayed dilution of equity and allows company to avoid any current dilution in earnings per share that a further issuance of equity would cause.

(iii) FCCBs are easily marketable as investors enjoy the option of conversion into equity resulting into capital appreciation. Further investor is assured of a minimum fixed interest earnings.

Disadvantages of FCCBs

(i) Exchange risk is more in FCCBs as interest on bonds would be payable in foreign currency. Thus, companies with low debt equity ratios, large forex earnings potential only opt for FCCBs.

(ii) FCCBs mean creation of more debt and a forex outgo in terms of interest which is in foreign exchange.

(iii) In the case of convertible bonds, the interest rate is low, say around 3–4% but there is exchange risk on the interest payment as well as re-payment if the bonds are not converted into equity shares. The only major advantage would be that where the company has a high rate of growth in earnings and the conversion takes place subsequently, the price at which shares can be issued can be higher than the current market price.

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2.2 American Depository Receipts (ADRs)

Depository receipts issued by a company in the United States of America (USA) is known as American Depository Receipts (ADRs). Such receipts must be issued in accordance with the provisions stipulated by the Securities and Exchange Commission of USA (SEC) which are very stringent.

An ADR is generally created by the deposit of the securities of a non-United States company with a custodian bank in the country of incorporation of the issuing company. The custodian bank informs the depository in the United States that the ADRs can be issued. ADRs are United States dollar denominated and are traded in the same way as are the securities of United States companies. The ADR holder is entitled to the same rights and advantages as owners of the underlying securities in the home country. Several variations on ADRs have developed over time to meet more specialized demands in different markets. One such variation is the GDR which are identical in structure to an ADR, the only difference being that they can be traded in more than one currency and within as well as outside the United States.

2.3 Global Depository Receipts (GDRs)

A depository receipt is basically a negotiable certificate, denominated in a currency not native to the issuer, that represents the company's publicly - traded local currency equity shares. Most GDRs are denominated in USD, while a few are denominated in Euro and Pound Sterling. The Depository Receipts issued in the US are called American Depository Receipts (ADRs), which anyway are denominated in USD and outside of USA, these are called GDRs In theory, though a depository receipt can also represent a debt instrument, in practice it rarely does. DRs (depository receipts) are created when the local currency shares of an Indian company are delivered to the depository's local custodian bank, against which the Depository bank (such as the Bank of New York) issues depository receipts in US dollar. These depository receipts may trade freely in the overseas markets like any other dollar-denominated security, either on a foreign stock exchange, or in the over-the-counter market, or among a restricted group such as Qualified Institutional Buyers (QIBs). Indian issues have taken the form of GDRs to reflect the fact that they are marketed globally, rather than in a specific country or market.

Through the issue of depository receipts, companies in India have been able to tap global equity market to raise foreign currency funds by way of equity. Quite apart from the specific needs that Indian companies may have for equity capital in preference to debt and the perceived advantages of raising equity over debt in general (no repayment of "principal" and generally lower servicing costs, etc.) the fact of the matter is quite simple, that no other form of term foreign exchange funding has been available. In addition, it has been perceived that a GDR issue has been able to fetch higher prices from international investors (even when Indian issues were being sold at a discount to the prevailing domestic share prices) than those that a domestic public issue would have been able to extract from Indian investors.

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- **Impact of GDRs on Indian Capital Market**

  Since the inception of GDRs a remarkable change in Indian capital market has been observed as follows:

  (i) Indian stock market to some extent is shifting from Bombay to Luxemburg.

  (ii) There is arbitrage possibility in GDR issues.

  (iii) Indian stock market is no longer independent from the rest of the world. This puts additional strain on the investors as they now need to keep updated with world wide economic events.

  (iv) Indian retail investors are completely sidelined. GDRs/Foreign Institutional Investors' placements + free pricing implies that retail investors can no longer expect to make easy money on heavily discounted rights/public issues.

  As a result of introduction of GDRs a considerable foreign investment has flown into India.

- **Markets of GDRs**

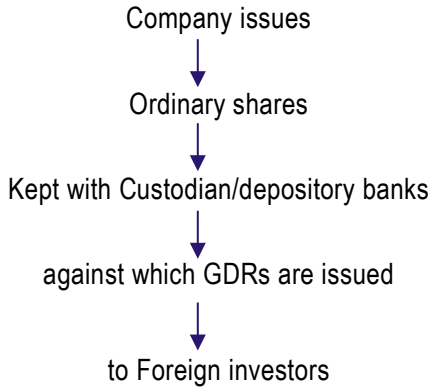
  (i) GDR's are sold primarily to institutional investors.

  (ii) Demand is likely to be dominated by emerging market funds.

  (iii) Switching by foreign institutional investors from ordinary shares into GDRs is likely.

  (iv) Major demand is also in UK, USA (Qualified Institutional Buyers), South East Asia (Hong Kong, Singapore), and to some extent continental Europe (principally France and Switzerland).

- **Mechanism of GDR:** The mechanics of a GDR issue may be described with the help of following diagram.



Characteristics

(i) Holders of GDRs participate in the economic benefits of being ordinary shareholders, though

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they do not have voting rights.

(ii) GDRs are settled through CEDEL & Euro-clear international book entry systems.

(iii) GDRs are listed on the Luxemburg stock exchange.

(iv) Trading takes place between professional market makers on an OTC (over the counter) basis.

(v) The instruments are freely traded.

(vi) They are marketed globally without being confined to borders of any market or country as it can be traded in more than one currency.

(vii) Investors earn fixed income by way of dividends which are paid in issuer currency converted into dollars by depository and paid to investors and hence exchange risk is with investor.

(viii) As far as the case of liquidation of GDRs is concerned, an investor may get the GDR cancelled any time after a cooling period of 45 days. A non-resident holder of GDRs may ask the overseas bank (depository) to redeem (cancel) the GDRs. In that case overseas depository bank shall request the domestic custodians bank to cancel the GDR and to get the corresponding underlying shares released in favour of non-resident investor. The price of the ordinary shares of the issuing company prevailing in the Bombay Stock Exchange or the National Stock Exchange on the date of advice of redemption shall be taken as the cost of acquisition of the underlying ordinary share.

Illustration 4

X Ltd. is interested in expanding its operation and planning to install manufacturing plant at US. For the proposed project it requires a fund of $ 10 million (net of issue expenses/ floatation cost). The estimated floatation cost is 2%. To finance this project it proposes to issue GDRs.

You as financial consultant is required to compute the number of GDRs to be issued and cost of the GDR with the help of following additional information.

(i) Expected market price of share at the time of issue of GDR is ₹ 250 (Face Value ₹ 100)

(ii) 2 Shares shall underly each GDR and shall be priced at 10% discount to market price.

(iii) Expected exchange rate ₹ 60/$.

(iv) Dividend expected to be paid is 20% with growth rate 12%.

Solution

Net Issue Size = $10 million

$$\text{Gross Issue} = \frac{\$10\text{ million}}{0.98} = \$\ 10.204\text{ million}$$

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Issue Price per GDR in ₹ (250 x 2 x 90%)	₹ 450
Issue Price per GDR in $ (₹ 450/ ₹ 60)	$ 7.50
Dividend Per GDR (D_1) (₹ 20 x 2)	₹ 40
Net Proceeds Per GDR (₹ 450 x 0.98)	₹ 441.00

(a) Number of GDR to be issued $\frac{\$10.204 \text{ million}}{\$7.50} = 1.3605 \text{ million}$

(b) Cost of GDR to X Ltd. $k_e = \frac{40.00}{441.00} + 0.12 = 21.07\%$

2.4 Euro-Convertible Bonds (ECBs)

A convertible bond is a debt instrument which gives the holders of the bond an option to convert the bond into a predetermined number of equity shares of the company. Usually, the price of the equity shares at the time of conversion will have a premium element. The bonds carry a fixed rate of interest. If the issuer company desires, the issue of such bonds may carry two options viz.

(i) Call Options: (Issuer's option) - where the terms of issue of the bonds contain a provision for call option, the issuer company has the option of calling (buying) the bonds for redemption before the date of maturity of the bonds. Where the issuer's share price has appreciated substantially, i.e. far in excess of the redemption value of the bonds, the issuer company can exercise the option. This call option forces the investors to convert the bonds into equity. Usually, such a case arises when the share prices reach a stage near 130% to 150% of the conversion price.

(ii) Put options - A provision of put option gives the holder of the bonds a right to put (sell)his bonds back to the issuer company at a pre-determined price and date. In case of Euro-convertible bonds, the payment of interest on and the redemption of the bonds will be made by the issuer company in US dollars.

2.5 Other Sources

- ***Euro-Convertible Zero Coupon Bonds:*** These bonds are structured as a convertible bond. No interest is payable on the bonds. But conversion of bonds takes place on maturity at a pre-determined price. Usually there is a 5 years maturity period and they are treated as a deferred equity issue.
- ***Euro-bonds with Equity Warrants*:** These bonds carry a coupon rate determined by the market rates. The warrants are detachable. Pure bonds are traded at a discount. Fixed income funds may like to invest in these bonds for the purposes of regular income.
- ***Syndicated bank loans:*** It is one of the earlier ways of raising funds in the form of large loans from banks with good credit rating, can be arranged in reasonably short time and with few formalities. The maturity of the loan can be for a duration of 5 to 10 years. The interest rate is generally set with reference to an index, say, LIBOR plus a spread which depends

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upon the credit rating of the borrower. Some covenants are laid down by the lending institution like maintenance of key financial ratios.

- ***Euro-bonds*:** These are basically debt instruments denominated in a currency issued outside the country of that currency for examples Yen bond floated in France. Primary attraction of these bonds is the refuge from tax and regulations and provide scope for arbitraging yields. These are usually bearer bonds and can take the form of

  (i) Traditional Fixed Rate Bonds.

  (ii) Floating Rate Notes (FRNs)

  (iii) Convertible Bonds.

- ***Foreign Bonds*:** Foreign bonds are denominated in a currency which is foreign to the borrower and sold at the country of that currency. Such bonds are always subject to the restrictions and are placed by that country on the foreigners funds.

- ***Euro Commercial Papers*:** These are short term money market securities usually issued at a discount, for maturities less than one year.

- ***Credit Instruments:*** The foregoing discussion relating to foreign exchange risk management and international capital market shows that foreign exchange operations of banks consist primarily of purchase and sale of credit instruments. There are many types of credit instruments used in effecting foreign remittances. They differ in the speed, with which money can be received by the creditor at the other end after it has been paid in by the debtor at his end. The price or the rate of each instrument, therefore, varies with extent of the loss of interest and risk of loss involved. There are, therefore, different rates of exchange applicable to different types of credit instruments.

3. INTERNATIONAL FINANCIAL CENTRE (GIFT CITY)

International Financial Centre (IFC) is the financial center that caters to the needs of the customers outside their own jurisdiction. Broadly, speaking IFC is a hub that deals with flow of funds, financial products and financial services even though in own land but with different set of regulations and laws.

Thus, these centers provide flexibility in currency trading, insurance, banking and other financial services. This flexible regime attracts foreign investors which is of potential benefit not only to the stakeholders but as well as for the country hosting IFC itself.

3.1 Benefits of IFC

There are numberless direct and indirect benefits of setting up IFC but some major benefits emanating from establishing IFC are as follows:

(i) Opportunity for qualified professionals working outside India come here and practice their profession.

(ii) A platform for qualified and talented professionals to pursue global opportunities without leaving their homeland.

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(iii) Stops Brain Drain from India.

(iv) Bringing back those financial services transactions presently carried out abroad by overseas financial institutions/entities or branches or subsidiaries of Indian Financial Market.

(v) Trading of complicated financial derivative can be started from India.

3.2 Constituents of IFC

Although there are many constituents for IFC but some of the important constituents are as follows:

(i) **Highly developed Infrastructure:** - A leading edge infrastructure is a prerequisite for creating a platform to offer internationally competitive financial services.

(ii) **Stable Political Environment: -** Destabilized political environment brings country risk for investment by foreign nationals. Hence, to accelerate foreign participation in growth of financial center, stable political environment is a prerequisite.

(iii) **Strategic Location: -** The geographical location of the finance center should be strategic such as near to airport, seaport and should have friendly weather.

(iv) **Quality Life: -** The quality of life at the center should be good as center retains highly paid professionals from own country as well from outside.

(v) **Rationale Regulatory Framework: -** Rationale legal regulatory framework is another prerequisite of international finance center as it should be fair and transparent.

(vi) **Sustainable Economy: -** The economy should be sustainable and should possess capacity to absorb all the shocks as it will boost investors' confidence.

3.3 GIFT City - India's International Financial Services Centre

To compete with its rival financial services centres situated in Dubai, Hong Kong etc. the idea of setting up an International Financial Center in India was coined in 2007. The main motive of setting up IFC in India was to retain the financial services businesses in India which moves out of India.

Since foreign investors normally remain hesitant to get registered in India GIFT city provides them a separate jurisdiction where it is easy to do business because of relaxed tax and other laws.

Accordingly, Government of India operationalized International Financial Services Centre (IFSC) at GIFT Multi Services SEZ in April 2015. The Union Budget 2016 provided competitive tax regime for the IFSC at GIFT SEZ.

With the objective of achieving sustainable growth and achieving above cited objective India's honorable Prime Minister in inaugurated India's first International Exchange – India INX, a wholly owned subsidiary of Bombay Stock Exchange on 9/1/2017. The India INX has stated trading in Index, currency, commodity and equity derivatives.

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On 5th June, 2017, National Stock Exchange (NSE) the competitor of Bombay Stock Exchange (BSE) also launched its trading at GIFT. Initially, it started trading in derivative products in equity, currency, interest rate futures and commodities.

GIFT IFSC provides very competitive cost of operations with very competitive tax regime, single window clearance; relax company law provisions, international arbitration centre with overall facilitation of doing business. GIFT IFSC is now moving toward unified regulatory mechanism.

GIFT City is a new Financial & Technology Gateway of India for the World. To be internationalized, exchange controls cannot apply. So, FEMA is not applicable at GIFT city.

Hence, with all these development more and more financial institutions are setting business units in GIFT as they will pay reduced taxes as valid for special economic zones and can easily offer foreign currency loans to Indian Companies abroad and foreign firm.

4. SOVEREIGN FUNDS

A Sovereign Wealth Fund (SWF) is a state-owned investment fund comprised of money generated by the government. This money generally derived by Government from country's own surplus reserves. SWFs provide a benefit for a country's economy and its citizens. Since it is created by the Government the legal basis on which these are created varies from Government to Government. The legal basis for a sovereign wealth fund can be Constitutive Law, Fiscal Law, Constitution, Company Law or any Other Laws and Regulations.

The popular sources for funding SWF are:

- Surplus reserves from state-owned natural resource revenues and trade surpluses,
- Bank reserves that may accumulate from budgeting excesses,
- Foreign currency operations,
- Money from privatizations, and
- Governmental transfer payments.

Generally, SWFs are created for a targeted purpose though some countries have created SWFs like venture capital for the private sector. Some of the common objectives of a sovereign wealth fund are as follows: -

- Protection & Stabilization of the budget and economy from excess volatility in revenues/exports
- Diversify from non-renewable commodity exports
- Earn better returns than returns on foreign exchange reserves
- Assist monetary authorities dissipate unwanted liquidity
- Increase savings for future generations

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- Fund social and economic development
- Ensuring Sustainable long term capital growth for target countries
- Political strategy

Like any other type of investment funds, SWFs can have their own objectives, risk tolerances, terms, and liquidity concerns etc. While some funds prefer returns over liquidity and some may prefer vice-versa. Depending on the assets and objectives, sovereign wealth funds' risk management can range from very conservative to a high tolerance for risk. Traditional classifications of SWFs include:

- ✓ Stabilization funds
- ✓ Savings or future generation funds
- ✓ Public benefit pension reserve funds
- ✓ Reserve investment funds
- ✓ Strategic Development Sovereign Wealth Funds (SDSWF)

Various types of Sovereign Investment Vehicles are:

- Sovereign Wealth Funds (SWFs)
- Public Pension Funds
- State-Owned Enterprises
- Sovereign Wealth Enterprises (SWEs)

5. INTERNATIONAL WORKING CAPITAL MANAGEMENT

The management of working capital in an international firm is much more complex as compared to a domestic one. The reasons for such complexity are:

(1) A multinational firm has a wider option for financing its current assets. A MNC has funds flowing in from different parts of international financial markets. Therefore, it may choose to avail financing either locally or from global financial markets. Such an opportunity does not exist for pure domestic firms.

(2) Interest and tax rates may vary from one country to another. A Treasurer associated with a multinational firm has to consider the interest/ tax rate differentials while financing current assets. This is not the case for domestic firms.

(3) A multinational firm is confronted with foreign exchange risk as the value of inflow/outflow of funds as well as the value of import/export are influenced by exchange rate variations.

(4) Restrictions imposed by the home or host country government towards movement of cash and inventory on account of political considerations affect the growth of MNCs. Domestic firms limit their operations within the country and do not face such problems.

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(5) With limited knowledge of the politico-economic conditions prevailing in different host countries, a Manager of a multinational firm often finds it difficult to manage working capital of different units of the firm operating in these countries. The pace of development taking place in the communication system has to some extent eased this problem.

(6) In countries which operate on full capital convertibility, a MNC can move its funds from one location to another and thus mobilize and 'position' the funds in the most efficient way possible. Such freedom may not be available for MNCs operating in countries that have not subscribed to full capital convertibility (like India).

A study of International Working Capital Management requires knowledge of Multinational Cash Management, International Inventory Management and International Receivables Management.

5.1 Multinational Cash Management

MNCs are very much concerned for effective cash management. International money managers follow the traditional objectives of cash management viz.

(1) Effectively managing and controlling cash resources of the company as well as

(2) Achieving optimum utilization and conservation of funds.

The former objective can be attained by improving cash collections and disbursements and by making an accurate and timely forecast of cash flow pattern. The latter objective can be reached by making money available as and when needed, minimising the cash balance level and increasing the risk adjusted return on funds that is to be invested.

International Cash Management requires Multinational firms to adhere to the extant rules and regulations in various countries that they operate in. Apart from these rules and regulations, they would be required to follow the relevant forex market practices and conventions which may not be practiced in their parent countries. A host of factors curtail the area of operations of an international money manager e.g. restrictions on FDI, repatriation of foreign sales proceeds to the home country within a specified time limit and the, problem of blocked funds. Such restrictions hinder the movement of funds across national borders and the manager has to plan beforehand the possibility of such situation arising on a country to country basis. Other complications in the form of multiple tax jurisdictions and currencies and absence of internationally integrated exchange facilities result in shifting of cash from one location to another to overcome these difficulties.

The main objectives of an effective system of international cash management are:

(1) To minimise currency exposure risk.

(2) To minimise overall cash requirements of the company as a whole without disturbing smooth operations of the subsidiary or its affiliate.

(3) To minimise transaction costs.

(4) To minimise country's political risk.

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(5) To take advantage of economies of scale as well as reap benefits of superior knowledge.

A centralized cash management group is required to monitor and manage parent subsidiary and inter-subsidiary cash flows. Centralization needs centralization of information, reports and decision making processes relating to cash mobilisation, movement and investment. This system benefits individual subsidiaries which require funds or are exposed to exchange rate risk.

A centralised cash management system helps MNCs as follows:

(a) To maintain minimum cash balance during the year.

(b) To manage judiciously liquidity requirements of the centre.

(c) To optimally use various hedging strategies so that MNC's foreign exchange exposure is minimised.

(d) To aid the centre to generate maximum returns by investing all cash resources optimally.

(e) To aid the centre to take advantage of multinational netting so that transaction costs and currency exposure are minimised.

(f) To make maximum utilization of transfer pricing mechanism so that the firm enhances its profitability and growth.

(g) To exploit currency movement correlations:

  (i) Payables & receivables in different currencies having positive correlations.

  (ii) Payables of different currencies having negative correlations.

  (iii) Pooling of funds allows for reduced holding – the variance of the total cash flows for the entire group will be smaller than the sum of the individual variances.

Consider an MNC with two subsidiaries in different countries. The two subsidiaries periodically send fees and dividends to the parent as well as send excess cash – all of them represent incoming cash to the parent while the cash outflows to the subsidiaries include loans and return on cash invested by them. As subsidiaries purchase supplies from each other they have cash flows between themselves.

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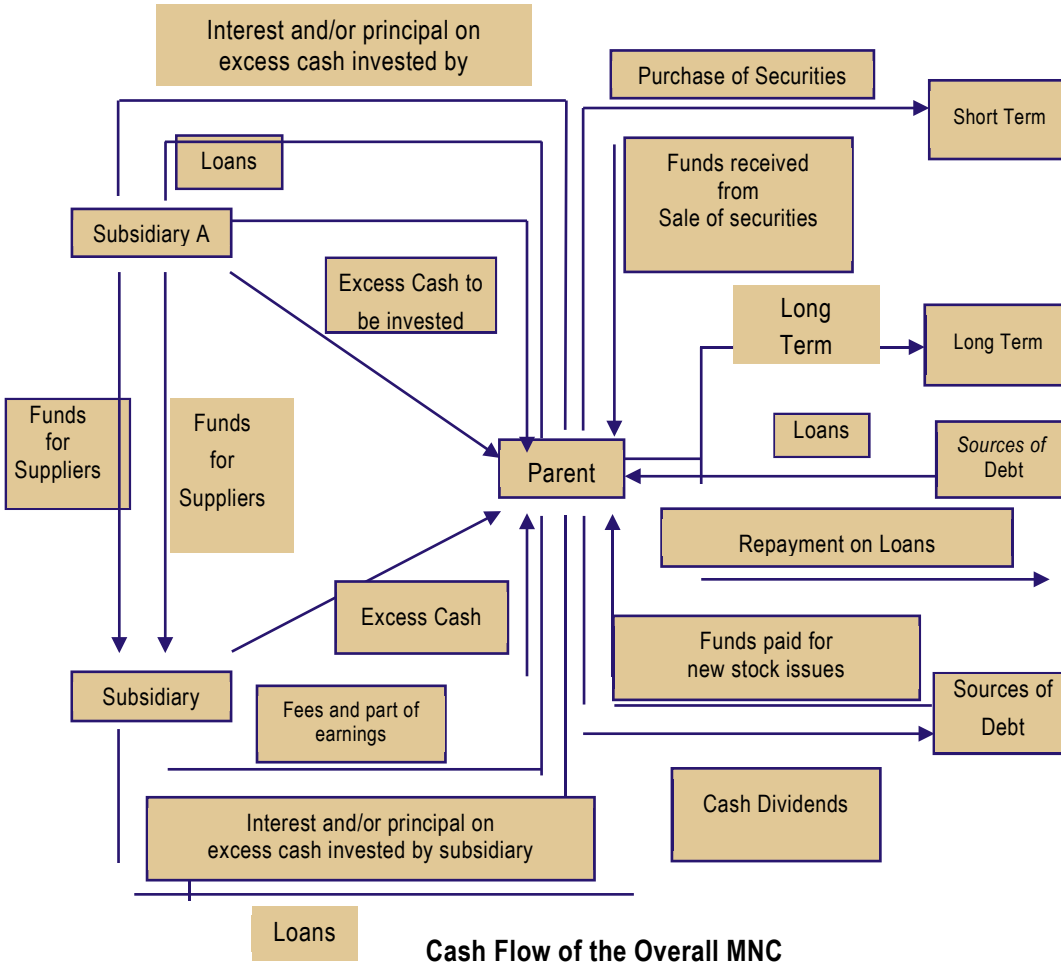

Cash Flow of the Overall MNC

International Cash Management has two basic objectives:

1. Optimising Cash Flow movements.
2. Investing excess cash.

As no single strategy of international cash management can help in achieving both these objectives together, its task on such aspects becomes very challenging.

There are numerous ways of optimising cash inflows:

1. Accelerating Cash Inflows.
2. Managing Blocked Funds.
3. Leading and Lagging strategy.
4. Minimising tax on cash flow through International Transfer Pricing.

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5. Using netting to reduce overall transaction costs by eliminating number of unnecessary conversions and transfer of currencies (Netting).
6. Investing Excess Cash

5.1.1 Accelerating Cash Inflows

Faster recovery of cash inflows helps the firm to use them whenever required or to invest them for better returns. Customers if using cheques for making payments, all over the world are instructed to send their payments to lockboxes set up at various locations, thereby reducing the time and transaction costs involved in collecting payments. Also, through pre-authorized payment, an organization may be allowed to charge the customer's bank account up to some limit.

5.1.2 Managing Blocked Funds

The host country may block funds of the subsidiary to be sent to the parent or make sure that earnings generated by the subsidiary be reinvested locally before being remitted to the parent so that jobs are created and unemployment reduced. The subsidiary may be instructed to obtain bank finance locally for the parent firm so that blocked funds may be utilised to pay off bank loans.

The parent company has to assess the potential of future funds blockage in a foreign country. MNCs have to be aware of political risks cropping up due to unexpected blockage of funds and devise ways to benefit their shareholders by using different methods for moving blocked funds through transfer pricing strategies, direct negotiations, leading and lagging and so on.

5.1.3 Leading and Lagging

This technique is used by subsidiaries for optimizing cash flow movements by adjusting the timing of payments to determine expectations about future currency movements. MNCs accelerate (lead) or delay (lag) the timing of foreign currency payments through adjustment of the credit terms extended by one unit to another. This technique helps to reduce foreign exchange exposure or to increase available working capital. Firms accelerate payments of hard currency payables and delay payments of soft currency payables in order to reduce foreign exchange exposure. Suppose an MNC in the USA has subsidiaries all over the world. The subsidiary in India purchases its supplies from another subsidiary in Japan. If the Indian subsidiary expects the rupee to fall against the yen, then it shall be the objective of that firm to accelerate the timing of its payment before the rupee depreciates. Such a strategy is called Leading. On the other hand, if the Indian subsidiary expects the rupee further to be stronger against the yen then it shall be the objective of that firm to delay the timing of its payment before the rupee appreciates. Such a strategy is called Lagging. MNCs should be aware of the government restrictions in such countries before availing such strategies.

5.1.4 Minimising Tax on Cash Flows through Transfer Pricing Mechanism

Large entities having many divisions require goods and services to be transferred frequently from one division to another. The profits of different divisions are determined by the price to be charged by the transferor division to the transferee division. The higher the transfer price, the larger will be

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the gross profit of the transferor division with respect to the transferee division. The position gets complicated for MNCs due to exchange restrictions, inflation differentials, import duties, tax rate differentials between two nations, quotas imposed by host country, etc.

5.1.5 Netting

It is a technique of optimising cash flow movements with the combined efforts of the subsidiaries thereby reducing administrative and transaction costs resulting from currency conversion. There is a co-ordinated international interchange of materials, finished products and parts among the different units of MNC with many subsidiaries buying /selling from/to each other. Netting helps in minimising the total volume of inter-company fund flow.

Advantages derived from netting system includes*:*

1) Reduces the number of cross-border transactions between subsidiaries thereby decreasing the overall administrative costs of such cash transfers

2) Reduces the need for foreign exchange conversion and hence decreases transaction costs associated with foreign exchange conversion.

3) Improves cash flow forecasting since net cash transfers are made at the end of each period

4) Gives an accurate report and settles accounts through co-ordinated efforts among all subsidiaries.

There are two types of Netting:

1. **Bilateral Netting System** – It involves transactions between the parent and a subsidiary or between two subsidiaries. If subsidiary X purchases $ 20 million worth of goods from subsidiary Y and subsidiary Y in turn buy $ 30 million worth of goods from subsidiary X, then the combined flows add up to $ 50 million. But in bilateral netting system subsidiary Y would pay subsidiary X only $10 million. Thus, bilateral netting reduces the number of foreign exchange transactions and also the costs associated with foreign exchange conversion. A more complex situation arises among the parent firm and several subsidiaries paving the way to multinational netting system.

2. **Multilateral Netting System** – Each affiliate nets all its inter affiliate receipts against all its disbursements. It transfers or receives the balance on the position of it being a net receiver or a payer thereby resulting in savings in transfer / exchange costs. For an effective multilateral netting system, these should be a centralised communication system along with disciplined subsidiaries. This type of system calls for the consolidation of information and net cash flow positions for each pair of subsidiaries.

Subsidiary P sells $ 50 million worth of goods to Subsidiary Q, Subsidiary Q sells $ 50 million worth of goods to Subsidiary R and Subsidiary R sells $ 50 million worth of goods to Subsidiary P. Through multilateral netting inter affiliate fund transfers are completely eliminated.

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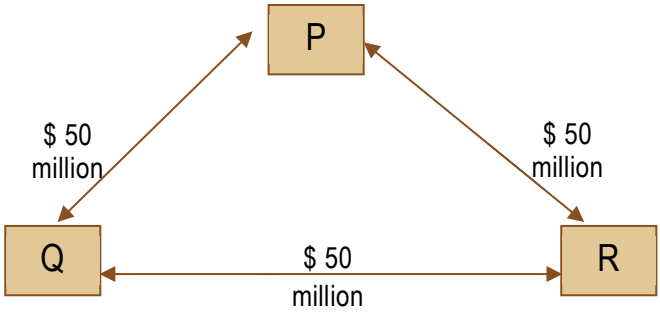

The netting system uses a matrix of receivables and payables to determine the net receipt / net payment position of each affiliate at the date of clearing. A US parent company has subsidiaries in France, Germany, UK and Italy. The amounts due to and from the affiliates is converted into a common currency viz. US dollar and entered in the following matrix.

Inter Subsidiary Payments Matrix (US $ Thousands)

		Paying affiliate				
		France	**Germany**	**UK**	**Italy**	**Total**
Receiving affiliate	France	---	40	60	100	200
	Germany	60	---	40	80	180
	UK	80	60	---	70	210
	Italy	100	30	60	---	190
	Total	240	130	160	250	**780**

Without netting, the total payments are $ 780 Thousands. Through multinational netting these transfers will be reduced to $ 100 Thousands, a net reduction of 87%. Also currency conversion costs are significantly reduced. The transformed matrix after consolidation and net payments in both directions convert all figures to US dollar equivalents to the below form:

Netting Schedule (US $ Thousands)

	Receipt	Payment	Net Receipt	Net Payments
France	200	240	---	40
Germany	180	130	50	---
UK	210	160	50	---
Italy	190	250	---	60
			100	**100**

5.1.6 Investing Excess Cash

Euro Currency market accommodates excess cash in international money market. Euro Dollar

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deposits offer MNCs higher yield than bank deposits in US. The MNCs use the Euro Currency market for temporary use of funds, purchase of foreign treasury bills / commercial paper. Through better telecommunication system and integration of various money markets in different countries, access to the securities in foreign markets has become easier.

Through a centralized cash management strategy, MNCs pool together excess funds from subsidiaries enabling them to earn higher returns due to the larger deposits lying with them. Sometimes a separate investment account is maintained for all subsidiaries so that short term financing needs of one can be met by the other subsidiary without incurring transaction costs charged by banks for exchanging currencies. Such an approach leads to excessive transaction costs. The centralized system helps to convert the excess funds pooled together into a single currency for investments thereby involving considerable transaction cost and a cost benefit analysis should be made to find out whether the benefits reaped are not offset by the transaction costs incurred. A question may arise as to how MNCs will utilise their excess funds once they have used them to meet short term financing needs. This is vital since some currencies may provide a higher interest rate or may appreciate considerably. So deposits made in such currencies will be attractive. Again MNCs may go in for foreign currency deposit which may give an effective yield higher than domestic deposit so as to overcome exchange rate risk. Forecasting of exchange rate fluctuations needs to be calculated in this respect so that a comparative study can be effectively made. Lastly an MNC can go for a diversification of its portfolio in different countries having different currencies because of the exchange rate fluctuations taking place and at the same time avoid the possibility of incurring substantial losses that may arise due to sudden currency depreciation.

5.2 International Inventory Management

An international firm possesses normally a bigger stock than EOQ and this process is known as stock piling. The different units of a firm get a large part of their inventory from sister units in different countries. This is possible in a vertical set up. Due to political disturbance there may be bottlenecks in import. If the currency of the importing country depreciates, imports will be costlier thereby giving rise to stock piling. To take a decision against stock piling the firm has to weigh the cumulative carrying cost vis-à-vis expected increase in the price of input due to changes in exchange rate. If the probability of interruption in supply is very high, the firm may opt for stock piling even if it is not justified on account of higher cost.

Also in case of global firms, lead time is larger on various units as they are located far off in different parts of the globe. Even if they reach the port in time, a lot of customs formalities have to be carried out. Due to these factors, re-order point for international firm lies much earlier. The final decision depends on the quantity of goods to be imported and how much of them are locally available. Relying on imports varies from unit to unit but it is very much large for a vertical set up.

5.3 International Receivables Management

Credit Sales lead to the emergence of account receivables. There are two types of such sales viz. Inter firm Sales and Intra firm Sales in the global aspect.

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In case of Inter firm Sales, the currency in which the transaction should be denominated and the terms of payment need proper attention. With regard to currency denomination, the exporter is interested to denominate the transaction in a strong currency while the importer wants to get it denominated in weak currency. The exporter may be willing to invoice the transaction in the weak currency even for a long period if he/she has debt in that currency. This is due to sale proceeds being used to retire debts without loss on account of exchange rate changes. With regard to terms of payment, the exporter does not provide a longer period of credit and ventures to get the export proceeds quickly in order to invoice the transaction in a weak currency. If the credit term is liberal the exporter is able to borrow currency from the bank on the basis of bills receivables. Also, credit terms may be liberal in cases where competition in the market is keen on compelling the exporter to finance a part of the importer's inventory. Such an action from the exporter helps to expand sales in a big way.

In case of Intra firm sales, the focus is on global allocation of firm's resources. Different parts of the same product are produced in different units established in different countries and exported to the assembly units leading to a large size of receivables. The question of quick or delayed payment does not affect the firm as both the seller and the buyer are from the same firm though the one having cash surplus will make early payments while the other having cash crunch will make late payments. This is a case of intra firm allocation of resources where leads and lags explained earlier will be taken recourse to.

TEST YOUR KNOWLEDGE

Theoretical Questions

1. Write a short note on Instruments of International Finance.
2. What is the impact of GDRs on Indian Capital Market?

Practical Questions

1. ABC Ltd. is considering a project in US, which will involve an initial investment of US $ 1,10,00,000. The project will have 5 years of life. Current spot exchange rate is ₹ 48 per US $. The risk free rate in US is 8% and the same in India is 12%. Cash inflow from the project is as follows:

Year	Cash inflow
1	US $ 20,00,000
2	US $ 25,00,000
3	US $ 30,00,000
4	US $ 40,00,000
5	US $ 50,00,000

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Calculate the NPV of the project using foreign currency approach. Required rate of return on this project is 14%.

2. 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 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	₹ 15,00,000
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.

3. 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 Indian ₹ (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 ₹ 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.

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(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

4. 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%.

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 (NPV) of the proposed project in India.

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

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5. 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 customers are 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

ANSWERS/ SOLUTIONS

Answers to Theoretical Questions

1. Please refer paragraph 2.

2. Please refer paragraph 2.3.

Answers to the Practical Questions

1. (1 + 0.12) (1 + Risk Premium) = (1 + 0.14)

Or, 1 + Risk Premium = 1.14/1.12 = 1.0179

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Therefore, Risk adjusted dollar rate is = 1.0179 x 1.08 = 1.099 – 1 = 0.099

Calculation of NPV

Year	Cash flow (Million) US$	PV Factor at 9.9%	P.V.
1	2.00	0.910	1.820
2	2.50	0.828	2.070
3	3.00	0.753	2.259
4	4.00	0.686	2.744
5	5.00	0.624	3.120
			12.013
		Less: Investment	11.000
		NPV	1.013

Therefore, Rupee NPV of the project is = ₹ (48 x 1.013) Million= ₹48.624 Million

2. 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.

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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.

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3. **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)

4. 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

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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

(b) Cash flow at the end of the 5 years (Release of Working Capital) 35.00

(c) 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

(d) 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.

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5. 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

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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

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

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