Question – 11

Mr. Vishwas, a friend of Mr. Pramod who is one of the Directors of Ashirwad Limited, is a citizen of Mauritius. His immediate family members including his parents, born in India are residing in India. He has many friends in different parts of India, due to which he happens to visit India on frequent basis. He along with Mr. Pramod evince interest in setting up business in India and formally incorporate a company to commence their operations. Accordingly, a company is called "Aerious Private Ltd." got incorporated in Mumbai.

To start with he received a business proposal from one of his friends Nimish a consultant. It is estimated that in equivalent terms the business shall require an initial investment of MUR 100 Million and thereafter MUR 2 Million each year will be needed as working capital fund.

He wished to evaluate whether the business proposal is viable or not. The information related to exchange rate and inflation rate is as follows:

Spot Rate for 1 Mauritian Dollar (MUR) = 1.88 Indian Rupee (INR)

The inflation in India is 6% and in Mauritius is 5%.

It is expected that this inflation rate will remain unchanged for the next 4 years.

INR 8 Crore out of initial investment shall be required for setting up a plant. The useful life of the plant is 4 years. At the end of 4th year estimated salvage value of this plant shall be INR 80 lakhs. Depreciation of the plant shall be charged on the basis of straight-line method.

40 % of the investment shall be through debt funds from Mauritius at the cost of 10% (post tax) while remaining funds shall be arranged by him and his friends. They expect a rate of return of 12% on their funds.

Expected revenues & costs (excluding depreciation) in real term are as under:

Year	1	2	3	4
Revenues (₹ Crore)	6.00	7.00	8.00	8.00
Costs (₹ Crore)	3.00	4.00	4.00	4.00

Assume that applicable tax rate in India is 30%. Since there is Double tax avoidance agreement between India and Mauritius, the company is not required to pay tax in Mauritius if tax has been paid in India.

The applicable inflation rates for revenues & costs are as follows:

Year	Revenues	Costs
1	10%	12%
2	9%	10%
3	8%	9%
4	7%	8%

He wants an expert opinion for the same investment proposal.

Demonstrate whether investment in this project is viable option or not.

Note:

1. Round off calculations upto 4 decimal points.

2. Show INR calculations in Crore and MUR calculations in Million.

Solution:

(i) Forward Rate

1. $= ₹ 1.88 \times \frac{1.06}{1.05} = 1.8979$

2. $= ₹ 1.8979 \times \frac{1.06}{1.05} = 1.9160$

3. $= ₹ 1.9160 \times \frac{1.06}{1.05} = 1.9342$

4. $= ₹ 1.9342 \times \frac{1.06}{1.05} = 1.9526$

(ii) Nominal Cash Flows

Revenue:

1. 6×1.10 = 6.60 Cr.

2. $7 \times 1.10 \times 1.09$ = 8.393 Cr.

3. $8 \times 1.10 \times 1.09 \times 1.08$ = 10.3594 Cr.

4. $8 \times 1.10 \times 1.09 \times 1.08 \times 1.07$ = 11.0845 Cr.

Cost:

1. 3 × 1.12 = 3.36 Cr.

2. 4 × 1.12 × 1.10 = 4.928 Cr.

3. 4 × 1.12 × 1.10 × 1.09 = 5.3715 Cr.

4. 4 × 1.12 × 1.10 × 1.09 × 1.08 = 5.8012 Cr.

(iii) Calculation of CFAT (₹)

	1	2	3	4
Revenue	6.60	8.393	10.3594	11.0845
(-) Cost	3.36	4.928	5.3715	5.8012
CFBT (i)	3.24	3.465	4.9879	5.2833
(-) Depreciation $\frac{8-0.8}{4}$	1.80	1.80	1.80	1.80
PBT	1.44	1.665	3.1879	3.4833
Tax @ 30% (ii)	0.4320	0.4995	0.9564	1.0450
CFAT [(i) – (ii)]	2.808	2.9655	4.0315	4.2383

(iv) Calculation of Working Capital (₹)

1st Year MUR 2m × 1.8979 = 0.3796 Cr.

2nd Year MUR 2m × 1.9160 = 0.3832 Cr.

3rd Year MUR 2m × 1.9342 = 0.3868 Cr.

4th Year MUR 2m × 1.9526 = 0.3905 Cr.

Total Working Capital = 1.5401 Cr.

(v) WACC

WACC = (0.4 × 10) + (0.6 × 12)

= 11.2%

(vi) Calculation of NPV

	0	1	2	3	4
Initial investment	- 18.80	---	---	---	---
Working capital	---	-0.3796	- 0.3832	- 0.3868	- 0.3905
WC recovered	---	---	---	---	+ 1.5401
Salvage	---	---	---	---	+ 0.8000

CFAT	---	2.808	2.9655	4.0315	4.2383
Total (₹)	-18.80	2.4284	2.5823	3.6447	6.1879
Exchange rate	1.88	1.8979	1.9160	1.9342	1.9526
Total CF (MUR)	-100	12.7952	13.4776	18.8434	31.6906
PVT @ 11.2%	1	0.8993	0.8087	0.7273	0.6540

NPV = - 43.1635 Reject

Question – 12

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.

(Exam January – 2021)

Solution:

(i) Calculation of CFAT

	I	II	III
Sales (10,00,000 × 10)	1,00,00,000	1,00,00,000	1,00,00,000
(-) Cost of Production	60,00,000	57,00,000	55,50,000
CFBT (i)	40,00,000	43,00,000	44,50,000
- Depreciation	10,00,000	9,00,000	8,50,000
PBT	30,00,000	34,00,000	36,00,000
Tax @ 30%(ii)	9,00,000	10,20,000	10,80,000
CFAT (i – ii)	31,00,000	32,80,000	33,70,000

(ii) Expected CFAT

= (31,00,000 × 0.4) + (32,80,000 × 0.4) + (33,70,000 × 0.2)

= $ 32,26,000

(iii) Calculation of NPV

$$\text{PVCI} = \frac{\text{CFAT 1}}{K_e - g}$$

$$= \frac{\$\ 32{,}26{,}000\ (1.03)}{0.11 - 0.03}$$

= $ 4,15,34,750

NPV = 4,15,34,750 – $ 25,00,000

= $ 1,65,34,750

Since NPV is positive hence Project should be accepted.

PART II: ADR & GDR

Question – 13

Odessa Limited has proposed to expand its operations for which it requires funds of $ 15 million, net of issue expenses which amount to 2% of the issue size. It proposed to raise the funds though a GDR issue. It considers the following factors in pricing the issue:

(i) The expected domestic market price of the share is ₹ 300

(ii) 3 shares underly each GDR

(iii) Underlying shares are priced at 10% discount to the market price

(iv) Expected exchange rate is ₹ 60/$

You are required to compute the number of GDR's to be issued and cost of GDR to Odessa Limited, if 20% dividend is expected to be paid with a growth rate of 20%.

(Exam Nov – 2014)

Solution:

Net Issue Size = $15 million

Gross Issue = $\frac{\$15 \text{ million}}{0.98}$ = $15.306 million

Issue Price per GDR in ₹ (300 × 3 × 90%)	₹ 810
Issue Price per GDR in $ (₹ 810/ ₹ 60)	$13.50
Dividend Per GDR (D1) = ₹ 2* × 3 =	₹ 6

* Assumed to be on based on Face Value of ₹ 10 each share.

Net Proceeds Per GDR = ₹ 810 × 0.98 = ₹ 793.80

(a) Number of GDR to be issued

$$\frac{\$15.306 \text{ million}}{\$13.50} = 1.1338 \text{ million}$$

(b) Cost of GDR to Odessa Ltd

$$K_e = \frac{6.00}{793.80} + 0.20 = 20.76\%$$

Question – 14

M/s. Raghu Ltd. is interested in expanding its operation and planning to install manufacturing plant at US. It requires 8.82 million USD (net of issue expenses/ floatation cost) to fund the proposed project. GDRs are proposed to be issued to finance this project. The estimated floatation cost of GDRs is 2%.

Additional information:

(i) Expected market price of share at the time of issue of GDR is ₹ 360 (Face Value ₹ 100)

(ii) Each GDR will represent two underlying Shares.

(iii) The issue shall be priced at 10% discount to the market price.

(iv) Expected exchange rate is INR/USD 72.

(v) Dividend is expected to be paid at the rate of 20% with growth rate of 12%.

Requirement:

(1) You, as a financial consultant, are required to compute the number of GDRs to be issued and cost of the GDR.

(2) What is your suggestion if the company receives an offer from a US Bank willing to provide an equivalent loan with an interest rate of 12%?

(3) How much company can save by choosing the option as recommended by you?

(RTP May – 2022, MTP April – 2022 & Exam July - 2021)

Solution:

(1) No. of GDR & Cost of GDR

Gross Issues $= \frac{\$\ 8.82\ m}{0.98}$

$= 9$ Million

Price of GDR $= 360 \times 20 \times 90\%$

$= ₹\ 648$

$= \frac{648}{72} = \$\ 9$

No. of GDR $= \frac{\$9\ million}{\$9} = 1$ million

Cost of GDR $= \frac{₹\ 100 \times 20\% \times 2}{648 \times 98\%} + 0.12$

$= 18.30\%$

(2) Since equivalent loan Interest is 12% i.e. less than Cost of GDR (18.30%) then it is better to accept US Bank Offer

(3) Savings

= 18.30% – 12%

= 6.30%

PART III: ADJUSTED PRESENT VALUE

Question – 15

XYZ Ltd. is presently all equity financed. The directors of the company have been evaluating investment is a project which will require ₹ 270 lakhs capital expenditure on new machinery. They expect the capital investment to provide annual cash flows of ₹ 42 lakhs indefinitely which is net of all tax adjustments. The discount rate which it applies to such investment decisions is 14% net.

The directors of the company believe that the current capital structure fails to take advantage of tax benefits of debt, and propose to finance the new project with undated perpetual debt secured on the company's assets. The company intends to issue sufficient debt to cover the cost of capital expenditure and the after tax cost issue.

The current annual gross rate of interest required by the market on corporate undated debt of similar risk is 10%. The after tax costs of issue are expected to be ₹ 10 lakh. Company's tax rate is 30%.

Your are required to calculate The adjusted present value of the investment.

Solution:

Calculation of Adjusted Present Value of Investment (APV)

Adjusted PV

= Base Case PV + PV of financing decisions associated with the project

Base Case NPV for the project:

(-) ₹ 270 lakhs + (₹ 42 lakhs/0.14)	= (-) ₹ 270 lakhs + ₹ 300 lakhs
	= ₹ 30
Issue costs	= ₹ 10 lakhs
Thus, the amount to be raised	= ₹ 270 lakhs + ₹ 10 lakhs

= ₹ 280 lakhs

Annual tax relief on interest payment = ₹ 280 × 0.1 × 0.3

= ₹ 8.4 lakhs in perpetuity

The value of tax relief in perpetuity = ₹ 8.4 lakhs/0.1

= ₹ 84 lakhs

Therefore, APV

= Base case PV – Issue Costs + PV of Tax Relief on debt interest

= ₹ 30 lakhs – ₹ 10 lakhs + 84 lakhs

= ₹ 104 lakhs

Question – 16

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.

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

Given

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

Note: Make calculations in USD Lakhs and round off them upto 3 decimal points.

(RTP November – 2024)

Solution:

(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)
Tax Saving on Interest	1 to 15	2.70	8.559	23.109

Adjusted Present Value of the Project

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.