Chapter 4 : Financial Statements

Konkan textiles, is in the process of putting up a second unit and have approached their bank for a fresh term loan of Rs.60 lakh for purchase of plant and machinery costing Rs.80 lakh. At the inception of the unit, a couple of years back, they had availed of a term loan of Rs.48 lakh carrying an interest rate of 12 per cent, repayable in six equal annual instalments and the same is regular. The new loan is sought at the same interest rate, repayable in five years. The construction of the factory building for the second unit has been completed a month back and their plan is to avail of the fresh term loan in the beginning of June this year and start production there within the current year itself. On 30th April 2015, Konkan Textiles have submitted their balance sheet, as on 31st March 2015, and their MD has called the bank branch manager, in order to know the bank's response to their request before placing the order for the new machinery. Before a meeting with the bank manager in the afternoon It has been decided to make an own quick analysis of the balance sheets (shown below) to get a clear view on the following:

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a) Are their present solvency and liquidity positions satisfactory?

b) Konkan textilesclaim that all their expenditure on fixed assets during the previous year had been on construction of the new factory building and that the same had been financed entirely by their own funds, Do the balance sheets support that claim ?

c) Assuming that the operations of the firm during the current year would be at a level not less than the previous year, would they be in a position to meet all their financial commitments to the bank including putting up 25 per cent of the cost of the new plant and machinery upfront and paying off any outside borrowings that might have been resorted to in the previous year? Could he even ask for the repayment of the new loan to commence by the end of the current year itself?

Make a record of your analysis and observations for the bank's files.

Balance Sheets

(Rs.in million)

EQUITY AND LIABILITIES	31-3-2015	31-3-2014
· Shareholders' Funds	216	150
· Share capital (Par value Rs.10)	50	50
· Reserves and surplus	166	100
· Non-current Liabilities	81	80
· Long-term borrowings	32	40

· Deferred tax liabilities (net)	25	20
· Long-term provisions	24	20
· Current Liabilities	101	74
· Short-term borrowings	30	12
· Trade payables	56	46
· Other current liabilities	10	12
· Short-term provisions	5	4
	398	304
ASSETS		
· Non-current Assets	248	204
· Fixed assets	230	160
· Non-current investments	8	18
· Long-term loans and advances	10	26
· Current Assets	150	160
· Current investments	2	10
· Inventories	70	64
· Trade receivables	64	54
· Cash and cash equivalents	10	20
· Short-term loans and advances	4	12
	398	364

Statement of Profit and Loss for Year Ending March 31, 2015

(Rs.in million)

· Revenues from Operations	600
· Other Income	15
· Total Revenues	615
· Expenses	
· Material expenses	280
· Employee benefit expenses	160
· Finance costs	15
· Depreciation and amortisation expenses	25
· Other expenses	55
· Total Expenses	535
· Profit before Exceptional and Extraordinary Items and Tax	80
· Exceptional Items	
· Profit before Extraordinary Items and Tax	80
· Extraordinary Items	
· Profit Before Tax	80
· Tax Expense	11

· Profit (Loss) for the period 69

Solution:

a) Current ratio = 150 / 101 = 1.49

Acid-test ratio = (150 – 70) / 101 = 0.79

Debt- equity ratio = (81 + 101) / 216 = 0.84

Times interest earned ratio = (80 + 15) / 15 = 6.3

Both the solvency and liquidity positions are satisfactory.

b)

Cash Flow Statement for the Period 1.4. 2014 to 31.3.2015

(*Rs.in million)*

A. Cash Flow from Operating Activities	
Profit Before Tax	80
Adjustments for :	
· Depreciation and amortisation expenses	25
· Finance costs	15
· Interest income*	-15
Operating Profit Before Working Capital Changes	105
Adjustments for changes in working capital :	
· Trade receivables and short-term loan and advances	-10
· Inventories	-6
· Trade payables, short-term provisions, and other current liabilities	10
Cash Generated from Operations	99
· Direct taxes paid	-11
Net Cash From Operating Activities	88
B. Cash Flow From Investing Activities	
· Purchase of fixed assets	-95
· Increase of non-current investments	10
· Reduction in long-term loans and advances	16
· Interest income	15
Net Cash Used in Investing Activities	-54

C. Cash Flow from Financing Activities	
· Increase in long term borrowings	-8
· Increase in short-term borrowings	18
· Increase in deferred tax liabilities	5
· Increase in long-term provisions	4
· Dividend paid	-3
· Finance costs	-15
Net Cash From Financing Activities	1
Net Cash Generated(A +B+C)	35
Cash And Cash Equivalents At Beginning Of Period	20
Cash And Cash Equivalents At The End Of Period	10

(b)

Net cash generated from operations = Rs.88 lakh. As the purchase of fixed assets is seen to be for Rs. 95 lakh, it is clear that the firm has resorted to some outside borrowing, viz., by way of short-term loans to complete their new building.

(c) Financial commitments for the current year:

Interest on the existing term loan = 32 x 0.12 =3.84

Interest on the proposed term loan = 60 x 0.12 x (10/12) = 6

Instalments of the existing and new term loans = 8 + 12 =20

Margin money at 25 % of the plant cost = 80 x 0.25 = 20

Repayment of the outside short-term loans raised during the previous year = 18

Total = Rs.67.84 lakh

With a cash-generating capacity of not less than Rs.88 lakh, the firm should be able to meet all the needed financial commitments within the current year, including payment of the first instalment of the proposed term loan if asked for by the bank.

Chapter 11 : Techniques of Capital Budgeting

Suresh, a recently retired teacher, has requested you to help him select one from the following two proposals before him:

Proposal A: **To establish and run a primary school**

From the coming month, he could start a LKG class from a small vacant building owned by one of his relatives, by modifying the same at a cost of Rs.5 lakh. Thereafter at the end of each year, beginning from the first year, a fresh room would be added to the existing building to house the students of KG, first standard, second standard, , till the fifth standard. The estimated expenses for the same would be Rs.4 lakh at the end of the first year which would be rising per year by Rs.1 lakh. For all the years, the average net income per student would be Rs.10, 000 per annum as reckoned at the end of the year and their strength per class would be 20. Suresh is assured of getting a bank loan for all his project expenses at an interest rate of 12 percent. Once the fifth standard completes its first year, Suresh could sell the school to his relative and get cash compensation at twice the net annual school income at that time.

Proposal B: **Investment in commercial space**

Hitesh Builders, owned by one of his ex-students, are planning to start a commercial building project and have made a special pre-launch offer of 650 sq ft. to Suresh on the following terms: He needs to invest Rs.10 lakh at the end of each year with the first payment due at the end of the same month. The building would be ready for the business in just one year and he could expect an annual rent of Rs.3.6 lakh by letting out his space there. Moreover, from the beginning of the second year he would be appointed as the building supervisor at an annual remuneration of Rs.120, 000. An annual increase of 10 per cent could be expected in both the rent and the salary. At the end of the seventh year the commercial space could be sold back to the builders at Rs.120 lakh. Entire financing would be arranged by the builder through their bank at an interest rate of 13 percent.

Which of the above proposals, according to you, is financially more attractive to Suresh and why?

Solution: (All amounts in Rs. Lakh)

Proposal A:

Year ending	0	1	2	3	4	5	6	7

Investment	5	4	5	6	7	8	9	
Cash inflow		2	4	6	8	10	12	42
Net cash flow	-5	-2	-1	0	1	2	3	42

Cost of capital = 12 percent

PV of costs = $5 + 2/1.12 + 1/ (1.12)^2 = 7.58$

Terminal value of cash inflows = $1 \times (1.12)^3 + 2 \times (1.12)^2 + 3 \times 1.12 + 42 = 49.27$

Modified Internal Rate of Return (*MIRR*) is the *r* in the following equation:

$7.58(1+r)^7 = 49.27$

$r = (49.27/7.58)^{1/7} - 1 =$ 30.66 percent.

Proposal B:

Year ending	0	1	2	3	4	5	6	7
Investment	10	10	10	10				
Cash inflow			4.8	5.28	5.81	6.39	7.03	127.73
Net cash flow	-10	-10	- 5.2	- 4.72	5.81	6.39	7.03	127.73

Cost of capital = 13 percent

PV of costs = $10 + 10/1.13 + 5.2/ (1.13)^2 + 4.72 / (1.13)^3 = 26.19$

Terminal value of cash inflows = $5.81 \times (1.13)^3 + 6.39 \times (1.13)^2 + 7.03 \times 1.13 + 127.73 = 152.22$

MIRR is the *r* in the following equation:

$26.19(1+i)^7 = 152.22$

$r = (152.22 /26.19)^{1/7} - 1 = 28.59$ percent.

Conclusion: Running the school is the better option as its MIRR is higher.

Chapter 12 : Estimation of Project Cash Flows

Arush is all set to take over the management of the two-year old Ayurvedic division of their family firm Shakti Pharma from Rajeev, who has to leave the job in a hurry to go abroad. Currently, this division has only one product, named *Sanjeevani*, which has a remaining economic life of five years after which it would be withdrawn. Immediately on taking over, Arush plans to sell the existing main machinery, originally bought at Rs.40 lakh, and install a new one costing Rs.70 lakh whose better efficiency would ensure a 5 percent increase in the annual sales of *Sanjeevani* over the present projections. While the total annual manufacturing costs (other than depreciation) would remain unchanged throughout because of cost efficiencies, it would be necessary to make a fresh one-time investment of Rs.8 lakh to purchase a costlier variety of herbal raw material stock. For financing, he plans to raise a term loan of Rs.50 lakh and additional working capital loan of Rs.5 lakh from their bank. The term loan would be at an interest rate of 12 percent compounded quarterly and repayable in 5 equal annual instalments without any holiday period. To ensure safety of the costly raw materials, he plans to utilise free of cost, a solid room in the backyard of the factory, which is about to be leased out by another division to a neighboring unit at a rental of Rs. 1 lakh per annum.

The current annual sale of *Sanjeevani* is at Rs.300 lakh and as per the present projections the annual sales would increase by 20% in the next two years and decline by 10 % thereafter. While Rajeev's current annual remuneration is Rs.4.8 lakh, Arush's would be Rs.6 lakh and his annual increment 25 percent as against the 5 percent of the outgoing officer.

To ensure that the changes to be effected by him are worthwhile, Arush seeks your help in calculating the incremental internal rate of return of the Ayurvedic division under his management. At your request he also furnishes the following additional related information: At the end of any year the net salvage values of both the existing and the new machinery would be equal to their respective book values at that time and the working capital could be recovered at par. Depreciation is calculated under Written Down Value (WDV) method on both the existing and proposed new machinery at 25 %. Income tax rate for the firm is 30 %. Please show your detailed calculations.

Solution

(*Rs.in thousands*)

Year	0	1	2	3	4	5
Investment Outlay						

Cost of the new machinery to be purchased	7000.00					
Salvage value of the existing machinery to be sold	2250.00					
Increase in net working capital	800.00					
Total net investment	5550.00					
Revenues before the proposed changes	30000.00	36000.00	43200.00	38880.00	34992.00	31492.80
Revenues after the proposed changes		37800.00	45360.00	40824.00	36741.60	33067.44
Increase in revenues		1800.00	2160.00	1944.00	1749.60	1574.64
Depreciation on the new machinery to be purchased		1750.00	1312.50	984.38	738.28	553.71
Depreciation on the existing machinery to be sold		562.50	421.88	316.41	237.30	177.98
Incremental Depreciation		1187.50	890.63	667.97	500.98	375.73
Rajeev salary		480.00	504.00	529.20	555.66	583.44
Arush salary		600.00	750.00	937.50	1171.88	1464.84
Additional salary cost		120.00	246.00	408.30	616.22	881.40
Opportunity cost of extra storage space		100.00	100.00	100.00	100.00	100.00
Increase in net operating profit		392.50	923.38	767.73	532.41	217.51
Post-tax increase in net operating profit		274.75	646.36	537.41	372.69	152.25
Increase in operating cash flow		1462.25	1536.99	1205.38	873.66	527.99
Terminal cash flow						
Net terminal value of new machinery to be purchased						1661.00
Net terminal value of the existing machinery to be sold						534.00
Recovery of incremental working capital						800.00
Total terminal cash flow						1927.00
(a) Net increase in cash flow	-5550.00	1462.25	1536.99	1205.38	873.66	2454.99
IRR of the net increase in cash flow	0.11					
Depreciation rate	25%					

Tax rate	30%					

*The incremental IRR of the Ayurvedic division would be 11 percent.

Chapter 14 : The Cost of Capital

The Managing Director of Kuber and company has called you, his special assistant, to discuss an expansion project that is under his active consideration. The project with an initial investment of Rs.800 million is expected to bring incremental net cash flow of Rs.300 million per annum from the end of the first year itself for the next six years. Their bankers have already assured him of their willingness to part finance the project with a fresh term loan of Rs. 100 million at a reduced interest rate of 11percent. As the share market is extremely buoyant,he is fully confident of raising the entire balance-needed funds through a rights issue of equity at the prevailing market price itself. He has made available to you the following financial information on the company and the market and asked you to work out the net benefit cost ratio of the project to satisfy himself of its financial viability before asking for a detailed appraisal. He is very particular that the present debt equity ratio of the company (at market values) should be continued to be maintained in the future also.

No.of outstanding equity shares of face value Rs.10 and market value Rs.160 each = 10 million.
Beta of the company's equity shares = 1.25
No. of 8 year 12 % non-convertible Rs.100 par debentures of current market price of Rs.110 each issued 5 years back = 2 million
Outstanding in the existing term loan from bank availed of three years back carrying an interest rate of 12 per cent per annum = Rs. 100 million
Annualised return on Nifty at present = 18 %
Present and expected income tax rate = 30 %
Equity dividend payment details for the past 10 years:

Year	*T-9*	*T-8*	*T-7*	*T-6*	*T-5*	*T-4*	*T-3*	*T-2*	*T-1*	*Year just ended (T)*
Dividend per share (Rs.)	2	3	1	4	NIL	NIL	2	NIL	2	NIL

Prevailing yield on 10 year treasury bonds = 8.5 %

Prepare a brief and succinct report to your MD showing all your calculations.

Solution:

Market value of equity = 10 x 160 = Rs.1600 million

Market value of debentures = 2 x 110 = Rs. 220 million

Market value of loan = Rs.100

Present debt equity ratio = 320/1200 = 0.2

Cost of equity = 8.5 + 1.25(18 – 8.5) = 20.38 %

Cost of debenture = (12 + (100 -110)/3) / (0.4 x 100 + 0.6 x 110) = 8.18 %

Cost of bank loan =11 %

Average cost of debt = (220/320) x 8.18 + (100 /320) x 11 = 9.06

Post tax average cost of debt = 9.06 x 0.70 = 6.34 %

Cost of capital = 0.2 x 6.34 + 20.38 = 21.65 %

Present value of benefits = $300(1/1.2165 + 1/1.2165^2 + 1/1.2165^3 + 1/1.2165^4 + 1/1.2165^5 + 1/1.2165^{6)}$

= 300 x 3.194 = Rs.958.2

Net benefit cost ratio of the expansion project = 958.2/800 -1 = 0.2

Chapter 19 : Capital Structure and Firm Value

The Managing Director (MD) of your company had received two important calls that morning. The first one was from the company's bankers agreeing to finance the entire amount of Rs.100 million needed for the firm's expansion project to be completed within this year. They were offering a term loan at a lucrative 12 percent interest repayable in 5 equated annual instalments. The second call from Mumbai was from a well-known merchant bank which offered to arrange the entire needed funds through an equity issue of Rs.10 par shares at a price of Rs.20 per share and also offered to send their man to make a presentation before the directors the next day morning. The MD was well aware that you, the finance manager were very much in favour of accepting the bank offer and thus requested you to make use of the occasion by making your own presentation on the merits of the bank offer. You decide to use the following data to come up with some simple calculations to counter the likely suave talk by the merchant banker.

Present capital of the firm is made up of an equity of Rs.300 million out of Rs.10 par equity shares and Rs.100 million of debentures carrying an interest rate of 14 percent. For the next year, the company's fixed costs would amount to Rs.400 million and the variable costs would be at 20 percent of the sales. Annual depreciation under WDV method would be Rs.80 million; the normal tax rate 30 per cent and MAT would be at Rs. 1.91 million. As per the opinion obtained from an eminent industry and market expert long associated with your company, the applicable *P/E* ratio for the company would continue to be 8 and the sales scenario for next year would most probably be as follows:

State of the economy	Probability (*p*)	Sales (*Rs.in million*)
Super Boom	0.2	1000
Boom	0.3	800
Normal	0.3	650
Recession	0.2	520

You decide to show by your calculations why for the coming year, from a purely earnings point of view:

(a) The bank loan option would be better than the equity option.

(b) The business operations would be adequate in generating sufficient cash to service the proposed loan in addition to the existing annual interest payment on debentures, annual sinking fund investment of Rs.20 million and maintaining the existing dividend payout at Rs.1 per share .

(c) How the loan option would add more to shareholder value than the equity option?

Solution

(a) Currently, the no. of equity shares is 30 million and debenture interest is Rs. 14 million.

Equating the formula for EPS of the equity option with that of the bank loan to get the PBIT indifference point:

$$[\ (PBIT - 14) \times 0.7] / 35 = [(PBIT - 26) \times 0.7] / 30$$

$$30 \times PBIT - 14 \times 30 = 35 \times PBIT - 35 \times 26$$

$$PBIT = (35 \times 26 - 14 \times 30) / 5 = \text{Rs. } 98 \text{ million}$$

The expected PBIT for next year would be as per the following calculations:

State of the economy	Probability (p)	Sales	Variable operating costs	Fixed operating costs	PBIT	Probability x PBIT
Super Boom	0.2	1000	200	400	400	80
Boom	0.3	800	160	400	240	72
Normal	0.3	650	130	400	120	36
Recession	0.2	520	104	400	16	3.2
					Expected PBIT	Rs.191.2 million

As the expected PBIT next year would be nearly twice as much as the PBIT indifference value, the bank loan would indeed be a better option than the equity one. This is because for the same PBIT, EPS under the loan option would be higher than that under the equity option.

(b)

PBIT in recessionary period	Interest on debentures	Profit before tax	MAT	Profit after tax	Depreciation	Cash flow from operations
16	14	2	1.91	0.09	80	Rs.80.09 million

Equated annual instalments on the bank loan = 100/PVIFA(12%, 5yrs) = 100/3.605
= Rs. 27.74 million
Sinking fund deposit = 20
Dividend at Re.1 on 30 million shares = 30
Total annual cash commitment = Rs.77.74 million

It is seen that even in a recession, the operational cash flow (even without considering tax shield on loan interest) alone would be sufficient to service the bank loan besides dividend and sinking fund deposit.

(c)

	Expected PBIT	Interest	PBT	Tax	PAT	EPS	P/E	Price per share
Equity option	191.2	14	177.2	53.16	124.04	3.54	8	Rs.28.35
Loan option	191.2	26	165.2	49.56	115.64	3.85	8	Rs.30.84

The higher share price under the loan option would increase shareholders' wealth.

Chapter 25: Credit Management

Your friend Ms. Shraddha had recently been appointed as the first full time manager at The Auxiliary Store at Melville Park, which exclusively catered to the needs of the residents of that condo. The owners of the store had been so impressed by her intelligence that they had given the young lady full discretion to change any credit norm as she deemed fit.

The first thing she did was to put a ceiling of Rs.10, 000 per customer during the seven days credit period allowed. As a result, the sales for the first month decreased from Rs.25 lakh to Rs.22 lakh but so also were the bad debts figures which halved to just 2 percent of the sales. On that month end, a Saturday, she got a surprise invite for a meeting with the members of the executive committee of the residents' association in the morning of the next day. While happy to get an opportunity to know the people who mattered most among her customers, she was also slightly apprehensive of the sudden invitation. In the meeting the committee requested her to give a 10 per cent discount to all the customers on all their purchases. She then impromptu suggested that it would help matters if the association could undertake to promptly recover and remit to them any unpaid residents' dues if the store's normal efforts at recovery fail. When they agreed to do so, as a quid pro quo, she agreed to a five percent discount on all purchases by the residents with immediate effect, if the payments were made within 7 days of the purchase. Further down during the meeting when the committee exerted sufficient pressure, she also agreed to extend the total credit period on purchases to 10 days after one month from that day.

Before making the discount decision, she had made a rough estimate that half the customers would avail the discount and the sales for the month would rise to Rs.30 lakh and the month-end receivables figure which had come down from Rs.14 lakh to Rs.11 lakh would increase by Rs.1 lakh. Also according to her estimates if the credit period was raised to 10 days after a month, the monthly sales would increase by yet another Rs.8 lakh and the month end receivables would touch Rs.20 lakh. She already knew that the store's tax rate was 30 per cent, the contribution margin was 20 per cent and the cost of capital was 12 per cent per annum.

After the meeting she promptly calls you giving all the above details and lets you know how eager she is to know how her snap decisions are going to affect the store's profitability. Ever ready to oblige, you decide to work out the likely residual profits of the store during the first three months of her management, based on the information received. Show your detailed calculations.

Solution:			(*Rs. in lakh)*	
End of month	0	1	2	3
Sales	25	22	30	38
Receivables	14	11	12	20
Bad debts	4%	2 %	0	0
ACP	14 x 30/25	11 x 30/22	12 x 30/30	20 x 30/38
	= 16.8	= 15	= 12	= 15.8

First month:

ΔS = -3 lakh, V = 80%, b_{n1} = 2%, t = 30%, k = 1%, ACP = 15 days

$\Delta RI = [-\Delta S(1-V) - \Delta S\, b_n]\,(1 - t) - k\,[\Delta S/30 \times ACP \times V]$

= (- 3 x 0.20 + 3 x 0.02)x 0.7 – 0.1 x (-3/30 x 15 x 0.80)

= -0.258

i.e. a decrease in residual profits by Rs.25,800

Second month:

ΔS = 8 lakh, V = 80%, b_{n2}= 0%, t = 30%, k = 1 %, ACP = 12 days

$\Delta RI = [\Delta S(1-V) - \Delta DIS]\,(1 - t) + k\,[So/30(ACPo - ACPn) - \Delta S/30 \times ACPn \times V]$

=[8x 0.20 -0.5 x 30 x 0.05]x 0.70 + 0.1[22/30 x 3 - 8/30 x 12 x 0.8]

= 0.559

i.e. an increase in residual profits by Rs.55,900 over the first month.

Third month:

ΔS = 8 lakh, V = 80%, b_{n1} = 0%, t = 30%, k = 1 %, ACP = 15.8 days

$\Delta RI = [\Delta S(1-V) - \Delta S\, b_n]\,(1 - t) - k\,[So/30(ACPn - ACPo) + \Delta S/30 \times ACPn \times V]$

= [8 x 0.2 -8 x 0] x 0.7 - 0.1[30/30 (15.8 – 12) + 8/30 x 15.8 x 0.8]

= 0.403

i.e. an increase in residual profits by Rs.40,300 over the second month.