Chapter - 01

AEC'S REVISIONERY PROBLEMS FOR FM (ASSIGNMENT – 01)

LEVERAGE ANALYSIS

AEC Q.1.

A firm has sales of Rs.10,00,000, variable cost of Rs.7,00,000 and fixed cost of Rs.2,00,000. Total capital included debt of Rs.5,00,000 at 10% rate of interest. Compute various leverages. If the firm wants to double EBIT, how much percentage rise in sales is needed.

[Ans.: DOL = 3; DFL = 2; DCL = 6; Percentage rise in sales 33 1/3%]

AEC Q.2.

XYZ Ltd. has an average selling price of Rs.10 per unit. Its variable cost is Rs.7 per unit and total fixed cost of Rs.1,70,000 p.a. It finances all its assets by equity funds. It pays 50% tax on its income. ABC Ltd. is identical to XYZ Ltd. except in respect of the pattern of financing. The latter finances its assets 50% by equity and 50% by debt, the interest on which amounts to Rs.20,000.

Determine the degree of operating, financial and combined leverage at sales of Rs.7,00,000 for both the firm.

[Ans.:

	XYZ Ltd.	ABC Ltd.
DOL	5.25	5.25
DFL	1	2
DCL	5.25	10.50]

AEC Q.3.

Sales = Rs.20,00,000; Variable cost = Rs.14,00,000.
Fixed cost = Rs.3,00,000; Interest = Rs.1,00,000.

Required :

(i) Calculate operating, financial and combined leverage *[Ans.: 2, 1.5 and 3]*

(ii) Determine the additional sales to double the EBIT. *[Ans. Rs.10,00,000].*

AEC Q.4.

Find out financial leverage form the following

(1) Net Worth (Equity Capital) Rs.25,00,000

(2) Debt/Equity is 3/1

(3) Interest rate is 12%

(4) Operating profit (EBIT) is Rs.20,00,000.

[Ans. : Rs.1.82]

AEC Q.5.

Capital employed is a company is mentioned below

Equity Capital	Rs.5 crores
13% Preference Capital	Rs. 1 crore
15% Debentures	Rs. 3 crores
Total	Rs.9 crores

Additional Information:

(1) EBIT = Rs.1.8 crores

(2) Tax Rate = 40%

(3) Combined leverage = 3

Compute operating leverage.

[Ans. :Rs.1.89]

AEC Q.6.

The following figures relate to two companies.

	P Ltd.	Q Ltd.
	(in Rs.Lakhs)	
Sales	500	1,000
Variable costs	200	300
Contribution	300	700
Fixed Costs	150	400
EBIT (*i.e.* operating profit) =	150	300
Interest	50	100
Profit before Tax	100	200

You are required to :

(i) Calculate the operating financial combined leverage for the two companies; and

(ii) Comment on the relative risk position of them.

Ans.	*P. Ltd.*	*Q. Ltd.*
DOL	2	2.33
DFL	1.5	1.5
DOL	3	3.5

AEC Q.7.

You are a finance manger in Big Pen Ltd. The degree of operating leverage of your company is 5.0. The degree of financial leverage of your company is 3.0. Your managing director has found that the degree of operating leverage and the degree of financial leverage of your nearest competitor Small Pen Ltd. are 6.0 and 4.0 respectively. In his opinion, the Small Pen Ltd is better than that of big Pen Ltd. because of higher value of degree of leverages. Do you agree with the opinion of your managing director? Given reasons.

AEC Q.8.

The Balance Sheet of Alpha Numeric Company is given below :

Liabilities	*Rs.*	*Assets*	*Rs.*
Equity capital (Rs.10 per share)	90,000	Net fixed assets	2,25,000
10% long term debt	1,20,000	Current assets	75,000
Retained earnings	30,000		
Current liabilities	60,000		
	3,00,000		3,00,000

The company's total assets turnover ratio is 3, its fixed operating cost is Rs.1,50,000 and its variable operating cost ratio is 50%. The income-tax rate is 50%.

You are required to –

(i) Calculate the different type of leverages for the company.

(ii) Determine the likely level of EBIT if EPS is :

(a) Re.1

(b) Re.2

(c) Re.0

Ans. (i) DOL 1.5, DFL 1.042, DCL 1.563 (ii) (a) Rs.30,000, (b) Rs.48,000, (c) Rs.12,000]

AEC Q.9.

A simplified Income Statement of Zenith Ltd. is given below. Calculate and interpret its degree of operating leverage, degree of financial leverage and degree of combined leverage.

ZENITH LTD.
Income Statement for the year ending 31st March, 2008

Sales	Rs.10,50,000
Variable Cost	7,67,000
Fixed Cost	75,000
EBIT	2,08,000
Interest	1,10,000
Taxes (30%)	29,400
Net Income	68,600

Ans. (i) Operating leverage 1.36, Financial leverage 2.12, Combined leverage 2.88)

AEC Q.10.

The following is the income statement of XYZ Ltd. for the year 2008:

Sales	Rs.50 lacs
– Variable cost	10 lacs
– Fixed cost	20 lacs
EBIT	20 lacs
– Interest	5 lacs
Profit before tax	15 lacs
– Tax at 40%	6 lacs
Profit after tax	9 lacs
– Preference dividend	1 lacs
Profit for equity shareholder	8 lacs

The company has 4 lacs equity shares issued to the shareholders. Find out the degree of (i) Operating leverage, (ii) Financial Leverage, and (iii) Combined leverage.

Ans. 2, 1.5 and 3.

AEC Q.11.

The ABC Co. has the following Balance sheet and Income statement:

Balance sheet

Liabilities	*Rs.*	*Assets*	*Rs.*
Equity capital (Rs.10 per share)	8,00,000	Fixed assets	10,,00,000
Retained earnings	3,50,000	Current assets	9,00,000
10% Debt	6,00,000		
Current liabilities	1,50,000		
	19,00,000		19,00,000

Income Statement

Sales	Rs.3,40,000
– Operating Expenses (including Dep.)	1,20,000
EBIT	2,20,000
– Interest	60,000
Profit before Tax	1,60,000
– Tax @ 50%	80,000
Profit after Tax	80,000

	(i) Determine the OL, FL and CL at the current sales level given that all operating expenses (excluding depreciation of Rs.52,000) are variable, and (iii) If total assets remaining at the same level but (a) sales increasing by 20% and (b) sales decreasing by 20%, what will be the EPS? **Ans. (i) 1.23, 1.38 and 1.70 (ii) 1.34 and 0.83.**	
AEC Q.12.	XYZ and Co. has three financial plans before it, Plan II and Plan III. Calculate operating and financial leverage for the firm on the basis on the basis of the following information and also find out the highest and lowest value of combined leverage: Production — 800 Units Selling Price per unit — Rs. 15 Variable cost per unit — Rs. 10 Fixed cost: Situation A — Rs.1,000 Situation B — Rs.2,000 Situation C — Rs.3,000 **Capital Structure** — **Plan I** / **Plan II** / **Plan III** Equity Capital — Rs.5,000 / Rs.7,5010 / Rs.2,500 12% Debt — 5,000 / 2,500 / 7,500	
AEC Q.13.	From the following information available for four companies, calculate : (i) EBIT (ii) EPS (iii) Operating Leverage (iv) Financial leverage	

Particulars		*P*	*Q*	*R*	*S*
Selling Price/Unit	Rs.	15	20	25	30
Variable Cost/Unit	Rs.	10	15	20	25
Quantity	(Nos.)	20,000	25,000	30,000	40,000
Fixed Costs	Rs.	30,000	40,000	50,000	60,000
Interest	Rs.	15,000	25,000	35,000	40,000
Tax Rate		40	40	40	40
No. of Equity Shares		5,000	9,000	10,000	12,000

AEC Q.14.	A Company produces and sells 1,200 units in the market. The following information is available:– Selling price is Rs.10 per unit. Variable cost is 60% of selling price. Fixed cost is Rs.3.600. Cost of debt 10%. Tax bracket 40%. Face value of share is Rs.10. Total capital employed is Rs. 12,000. **Compute:** 1. Operating leverage. 2. Financial leverage and EPS assuming. (a) debt equity 1 : 1, (b) Debt equity 1 : 2 and (c) debt equity 3 : 1.	

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Chapter - 02

FM – EBIT - EPS [CA - IPCC 2010-11]

(Assignment – 01)

AEC Q.1.

A company needs Rs.12 lakhs for the installation of a new factory which would yield an annual *EBIT* of Rs.2,00,000. The company has the objective of maximising the earnings per share. It is considering the possibility of issuing equity shares plus raising a debt of Rs.2,00,000, Rs.6,00,000 or Rs.10,00,000. The current market price per share is Rs.40 which is expected to drop to Rs.25 per share if the market borrowings were to exceed Rs.7,50,000. Cost of borrowings are indicated as under:

Upto Rs.2,50,000	- 10% p.a.
Between Rs.2,50,001 and Rs.6,25,000	- 14% p.a.
Between Rs.6,25,001 and Rs.10,00,000	- 16% p.a.

Assuming a tax rate of 50%, work out the *EPS* and the scheme which would meet the objective of the management. **[Ans.: Rs.3.60, Rs.4.20 and Rs.3.91]**

AEC Q.2.

Bhaskar Manufacturers Ltd. has equity share capital of Rs.5,00,000 (face value Rs.100). To meet the expenditure of an expansion programme, the company wishes to raise Rs.3,00,000 and is having following four alternative sources to raise the funds :

Plan A : To have full money from the equity shares.

Plan B : To have Rs.1 lakh from equity and Rs.2 lakhs from borrowing from the financial institutions @ 10% per annum.

Plan C : Full money from borrowing @ 10% per annum.

Plan D : Rs.1 lakhs in equity and, Rs.2 lakhs from preference shares @ 8% per annum dividend.

The company is expecting EBIT of Rs.1,50,000. The corporate tax is 50%. Suggest a suitable plan of the above four alterative sources to raise the required funds.

[Ans.: EPS of Plan A Rs.9.375; Plan B Rs.10.83; Plan C Rs.12; Plan D Rs.9.83]

AEC Q.3.

One-up Ltd. has equity share capital of Rs.5,00,000 divided into shares of Rs.100 each. It wishes to raise further Rs.3,00,000 for expansion-cum-modernisation scheme. The company plans the following financing alternatives

(i) By issuing equity shares only.

(ii) Rs.1,00,000 by issuing equity shares and Rs.2,00,000 through debentures or term loan @ 10% per annum.

(iv) By raising term loan only at 10% per annum.

(v) Rs.1,00,000 by issuing equity shares and Rs.2,00,000 by issuing 8% preference shares.

You are required to suggest the best alterative giving your comment assuming that the estimated 'earning before interest and taxes' (EBIT) after expansion is Rs.1,50,000 and corporate rate of tax is 35%.

[Ans.: EPS (i) Rs.12.19; (ii) Rs.14.08; (iii) Rs.15.60; (iv) Rs.13.58]

AEC Q.4.	The Eastern Limited requires Rs.50 lakhs for a new Plant. This Plant is expected to yield earnings before interest and Taxes of Rs.10 lakhs. At the time of deciding the financial plan, the Company considers the objective of maximising earnings per share. It has three alternatives to finance the project : (i) Debt of Rs.5 lakhs and balance through Equity. (ii) Debt of Rs.20 lakhs and balance as Equity. (ii) Debt of Rs.30 lakhs and balance as Equity. The funds can be borrowed at the rate of 10% for amount upto Rs.5 lakhs, at 15% over Rs.5 lakhs and up to Rs.20 lakhs and at 20% over Rs.20 lakhs. The Shares of the Company is currently selling at Rs.150, but is expected to decline to Rs.125 in case the Borrowed funds exceed Rs.20 lakhs. The tax rate applicable to the Company is 50%. Which form of financing should the Company choose ? **[Ans.: EPS (i) Rs.15.833 ; (ii) Rs.18.125 ; (iii) Rs.16.406]**	
AEC Q.5.	Goodshape Company has currently an ordinary share capital of Rs.25 lakhs, consisting of 2,500 shares of Rs.100 each. This management is planning to raise another Rs.20 lakhs to finance a major programme of expansion through one of four possible financing plans. This options are : (i) Entirely through ordinary shares. (ii) Rs.10 lakhs through Ordinary shares and Rs.10 lakhs through long-term borrowings at 8 per cent interest per annum. (iii) Rs.5 lakhs through Ordinary shares and Rs.15 lakhs through long-term borrowings at 9 per cent interest per annum. (iv) Rs.10 lakhs though Ordinary Shares and Rs.10 lakhs through preference shares with 5 per cent dividend. The company's expected Earnings before Interest and Tax (EBIT) will be Rs.8 lakhs. Assuming a corporate tax rate of 50 per cent determine the Earnings per Share (EPS) in each alternative, and given your comments. **[Ans.: (i) Rs.8.88; (ii) Rs.10.29; (iii) Rs.11.07; (iv) Rs.10.00]**	
AEC Q.6.	A firm requires total capital funds of Rs.25 lacs and has two options: All equity; and Half equity and Half 15% debt. The equity share can be currently issued at Rs.100 per share. The expected EBIT of the company is Rs.2,50,000 with tax rate at 40%. Find out the EPS under both the financial mix.	
AEC Q.7.	AB Ltd. needs Rs.10,00,000 for expansion. The expansion is expected to yield an annual EBIT of Rs.1,60,000. In choosing a financial plan, AB Ltd. has an objective of maximizing earnings per share. It is considering the possibility of issuing equity shares and raising debt of Rs.1,00,000 or Rs.4,00,000 or Rs.6,00,000. The current market price per share is Rs.25 and is expected to drop to Rs.20 if the funds are borrowed in excess of Rs.5,00,000. Funds can be borrowed at the rates indicated below: (a) up to Rs.1,00,000 at 8%; (b) over Rs.1,00,000 up to Rs.5,00,000 at 12% (c) over Rs.5,00,000 at 18%. Assume a tax rate of 50%. Determine the EPS for the three financing alternatives. **(Ans. Rs.2.11. 2.42 and 2.15)**	

AEC Q.8.

Three financing plans are being considered by ABC Ltd. which require Rs.10,00,000 for construction of a new plant. It wants to maximize the EPS and th current market price of the share is Rs.30. It has a tax rate of 50% and deb financing can be arranged as follows : Up to Rs.1,00,000 @ 10%; fror Rs.1,00,000 to Rs.5,00,000 @ 14%; and over Rs.5,00,000 @ 18%. The thre financing plans and the corresponding EBIT are as follows:

Plan I : Rs.1,00,000 debt; expected EBIT Rs.2,50,000

Plan II : Rs.3,00,000 debt; expected EBIT Rs.3,50,000

Plan III : Rs.6,00,000 debt; expected EBIT Rs.5,00,000

Find out the EPS for all the three plans and suggest which plan is better from the point of view of the company.

AEC Q.9.

Bhaskar Manufacturer Ltd. has Equity share capital of Rs.5,00,000 (face value Rs.100). To meet the expenditure of an expansion program, the company wishes to raise Rs.3,00,000 and is having following four alternative sources to raise the funds:

Plan A : To have full money from the issue of Equity shares.

Plan B : To have Rs.1,00,000 from Equity and Rs.2,00,000 from borrowings from the financial institutions @ 10% per annum.

Plan C : Full money from borrowings @ 10% per annum.

Plan D : Rs.1,00,000 in Equity and Rs.2,00,000 from 8% Preference shares.

The company is having present earnings of Rs.1,50,000. The corporate tax is 50%. Select a suitable plan out of the above four plans to raise the required funds.

Ans. EPS Rs.9.38, Rs.10.83, Rs.12 and 9.83.

AEC Q.10.

AB Ltd. provides you the following figures:

Profit	Rs.3,00,000
– Interest on debenture @ 12%	60,000
	2,40,000
Income tax @ 50%	1,20,000
	1,20,000
Number of Equity Shares (Rs.10 each)	40,000
EPS (Rs.)	3
Ruling price in market (Rs.)	30
PE Ratio (Price/EPS)	10

The company has undistributed reserves of Rs.6,00,000. The company needs Rs.2,00,000 for expansion. This amount will earn at the same rate as funds already employed. You are informed that a debt equity ratio *i.e.*, Debt (Debt + Equity) higher than 35% will push the PE ratio down to 8 and raise the interest rate on additional amount borrowed to 14%. You are required to ascertain the probable price of the share :

(i) If the additional funds are raised as debt; and **(Ans. Rs.25.20)**

(ii) If the amount is raised by issuing equity shares. **(Ans. Rs.30)**

AEC Q.11.

A company requires capital funds of Rs.5 crores and has two options: (i) To raise the amount by the issue of 15% debentures, and (ii) To issue equity shares at a rate of Rs.20 per share. It already has 40 lacs equity shares issued and debt financing of Rs.6 crores at the rate of 12%. Find out the expected EPS under both financing options at the given EBIT levels of Rs.2 crores and Rs.7.5 crores. What should be choice of the company given that the applicable tax rate is 50%.

Ans. **Debt Financing (EPS Rs.0.67 and Rs.7.54), Equity Financing (Re.0.98 and Rs.5.22).**

AEC Q.12.

East India Industries Ltd. is a profit-making company with a paid up capital of Rs.100 lacs consisting of 10 lacs ordinary shares of Rs.10 each. Currently, it is earning an annual pre-tax profit of Rs.60 lacs. The company's shares are listed and are quoted in the range of Rs.50 to Rs.80. The management wants to diversify production and has approved a project which will cost Rs.50 lacs and which is expected to yield a pre-tax income of Rs.40 lacs per annum. To raise this additional capital, the following options are under consideration of the management:

(a) To issue equity capital for the entire additional amount. It is expected that new shares (face value of Rs.10) can be sold at a premium of Rs.15.

(b) To issue 16% Non-convertible debentures of Rs.100 each for the entire amount.

(c) To issue equity capital for Rs.25,00,000 (face value of Rs.10) and 16% Non-convertible debentures for the balance amount. In this case, the company can issue shares at a premium of Rs.40 each.

The management wants to maximize the earning per share. The company is paying income-tax at 50%. Advise the management as to how the additional capital can be raised. Show workings.

Ans. EPS Rs.4.17, Rs.4.60 and Rs.4.57

AEC Q.13.

Paramount Products Ltd. wants to raise Rs.100 lacs for a diversification project. Current estimates of Earnings Before interest and taxes (EBIT) firm the new projects is Rs.22 lacs per annum.

Cost of debt will be 15% for amounts up to and including Rs.40 lacs, 16% for additional amounts up to and including Rs.50 lacs and 18% for additional amounts above Rs.50 lacs.

The equity shares (face value Rs.10) of the company have a current market value of Rs.40. This is expected to fall to Rs.32 if debts exceeding Rs.50 lacs are raised.

The following options are under consideration of the company:

Option	*Equity*	*Debt*
I	50%	50%
II	60%	40%
III	40%	60%

Determine the Earnings Per Share (EPS.) for each option and state which option the company should exercise. Tax rate applicable to the company is 50%.

Ans. EPS Rs.5.76, Rs.5.33 and Rs.5.04.

AEC Q.14.

A Company earns a profit of Rs.3,00,000 per annum after meeting its Interest liability of Rs.1,20,000 on 12% debentures. The Tax is 50%. The number of Equity Shares of Rs.10 each are 80,000 and the retained earnings amount to Rs.12,00,000. The company proposes to take up an expansion scheme for which a sum of Rs.4,00,000 is required. It is anticipated that after expansion, the company will be able to achieve the same return on investment as at present. The funds required for expansion can be raised either through debt at the rate of 12% or by issuing Equity Shares at par.

Required:

(i) Compute the Earnings Per Share (EPS), if:

1 the additional funds were raised as debt **(Ans. Rs.1.925)**

2 the additional funds were raised by issue of equity shares. **(Ans. Rs.1.48)**

(ii) Advise the company as to which source of finance is preferable.

AEC Q.15.

A company desires to take up a capital project under its expansion programme involving an outlay or investment of Rs.10,00,000. If it is financed through issue of Debentures (Debt) carrying 14% interest rate, the Price Earning Raito will be 6 times. However, if it is financed through Equity Capital issued at premium of Rs.15, then the Price Earning Raito is to be 7 times. This expansion programme is likely to enhance firm's sales by Rs.6,00,000 a year. The amount of EBIT is to increase by Rs. 90,000.

Firm's current financial position is given as below :

	Rs.
Total Debtors @ 10%	4,00,000
Equity Share Capital (Rs.10 each)	10,00,000
Retained Earnings	6,00,000
Total Capital employed	20,00,000
Present Sales	60,00,000
Less Total Expenses / Costs	(-) 53,60,000
EBIT	6,40,000
Interest on Debts	(-) 40,000
EBT	6,00,000
Less Tax @ 40%	(-) 2,40,000
EAT	3,60,000

Calculate market value of shares in each case. **(Ans. Rs.19.80 and Rs.20.70)**

AEC Q.16.

A company has 20,000 equity shares of Rs.50 each outstanding. The following is the income statement relating to the previous year as well as four-proforma statements reflecting different assumptions regarding a new project. The new project is expected to cost Rs.5,00,000 in each case.

Proforma

	Actual (previous year)	*Sell 10,000 equity shares*		*Sell 10% debentures*	
		Optimistic	*Pessimistic*	*Optimistic*	*Pessimistic*
		Rs.12,00,000	Rs.9,00,000	Rs.12,00,000	Rs.9,00,000
Sales	Rs.8,00,000				
Variable expenses	2,40,000				
	5,60,000				
Fixed costs	3,00,000				
EBIT	2,60,000				
Interest	Nil				
Earning after interest	2,60,000				
Taxes	91,000				
EAT	1,69,000				
EPS	8.45				

Assuming variable cost as per cent of sales remains constant and additional fixed cost with new project is likely to be Rs.1,00,000, complete the tabulation. Which plan would you recommend to finance the new project ?

Ans. **Equity Financing (EPS Rs.9.53 and Rs.4.98), Debit Financing (Rs.12.67 and Rs.5.85.**

Chapter - 03

FM – POINT OF INDIFFERENCE [CA - IPCC 2010-11]

(Assignment – 01)

AEC Q.1.

The following information is available in respect of XYZ Ltd.:

Number of shares (existing)	10,000
Market price per share	Rs.20
Interest rate	12%
Tax rate	46%
Expected EBIT	Rs.15,000

The firm needs Rs.50,000 for investment next year. Should the firm issue debt or equity to produce higher EPS. Also find out the indifference level of EBIT for the two alternatives? What is the EPS for that EBIT?

Ans. Debt Financing (EPS Re.0.49), Equity Financing (EPS Re.0.65), Indifference Point Rs.30,000).

AEC Q.2.

A company needs Rs.5,00,000 for construction of a new plant. The following three financial plans are feasible: (i) The company may issue 50,000 common shares at Rs.10 per share. (ii) The company may issue 50,000 common shares at Rs.10 per share. (ii) The company may issue 25,000 equity shares at Rs.10 per share and 2,500 debentures of Rs.100 bearing a 8% rte of interest, (iii) The company may issue 25,000 equity shares at Rs.10 per share and 2,500 preference shares at Rs.100 per share bearing a 8% rate of dividend. If the company's earnings before interest and taxes are Rs.10,000, Rs.20,000, Rs.40,000, Rs.60,000 and Rs.1,00,000 what are the earnings per share under each of the three financial plans? Which alterative would you recommend and why? Determine the indifference points. Assume a corporate tax rate of 50%.