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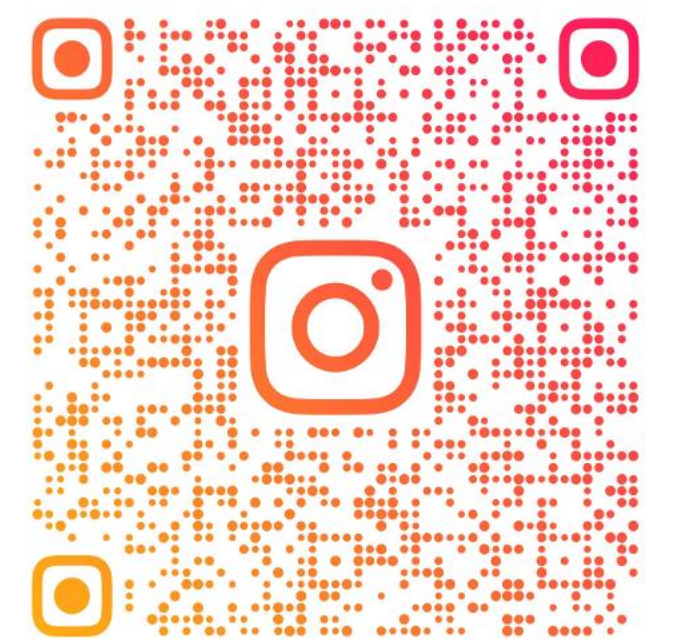


CA ADARSH JOSHI

CA , B.COM

FOUNDER

- 8+ years of teaching experience in CA education
- Subject Expert in:
CA Foundation – Paper 2: Business Laws
CA Intermediate – Paper 2: Corporate and Other Laws
- Has uploaded over 3000+ educational videos for CA Foundation and CA Inter students
- Known for his dynamic, conceptual and “fun-and-learn” teaching style
- Guided thousands of students across India to success in CA exams
- Strong academic background with B.Com (BMCC, Pune) and ACA qualification
- Widely appreciated for his clarity, energy, and practical approach to law subjects
- Through Shikshadwar, offers comprehensive classes, books, tests, and mentorship to CA students



CAADARSHJOSHI



CA DARSHAN JAIN

CA , CS , LLB , DISA , DIRM , B.COM

CO FOUNDER

- Chartered Accountant by profession & educator by passion
- Teaching Financial Accounting , Financial Management & Strategic Management to CA Students For 12 Years.
- Practicing Chartered Accountant For Past 13 years in The Field of Audit , Direct & Indirect Taxes & Management Consultancy
- Elected as Convenor of The Jalna CA CPE Chapter of WIRC of ICAI For 2 consecutive years 20-21 & 21-22.
- He Has Successfully Completed & Qualified Following Certificate Course Conducted By ICAI
 1. Forensic Accounting & Fraud Detection
 2. Concurrent Audit of Banks
 3. Goods & Service Tax (GST)
 4. Public Finance & Accounting
 5. Drafting & Pleading Before Authorities
 6. Wealth management & Financial Planning
 7. Artificial Intelligence

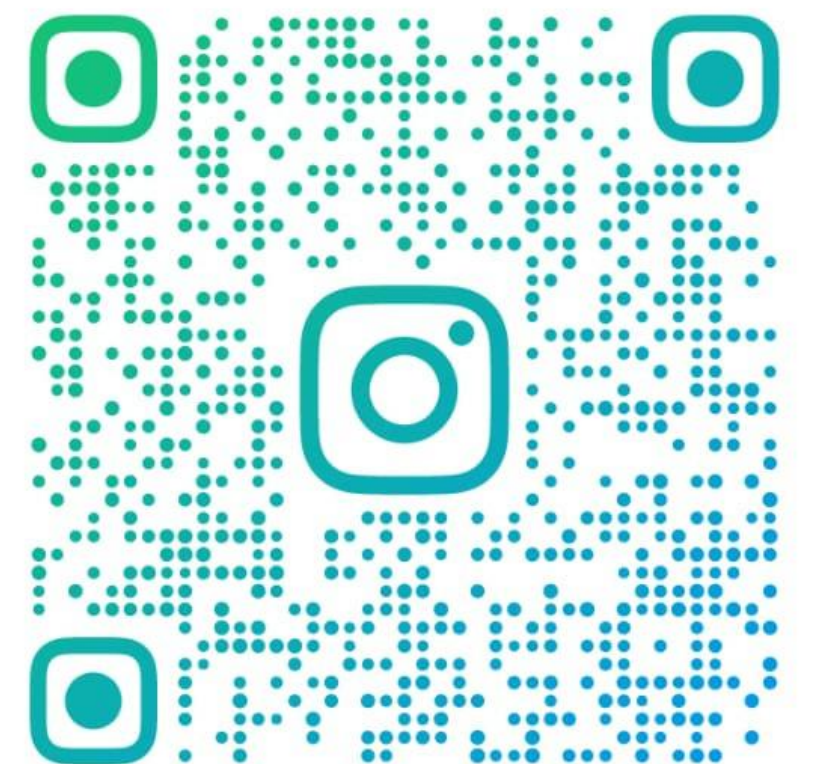


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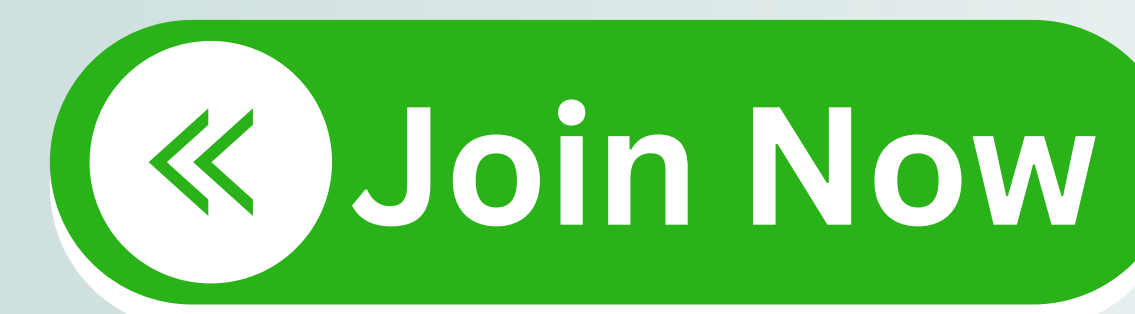
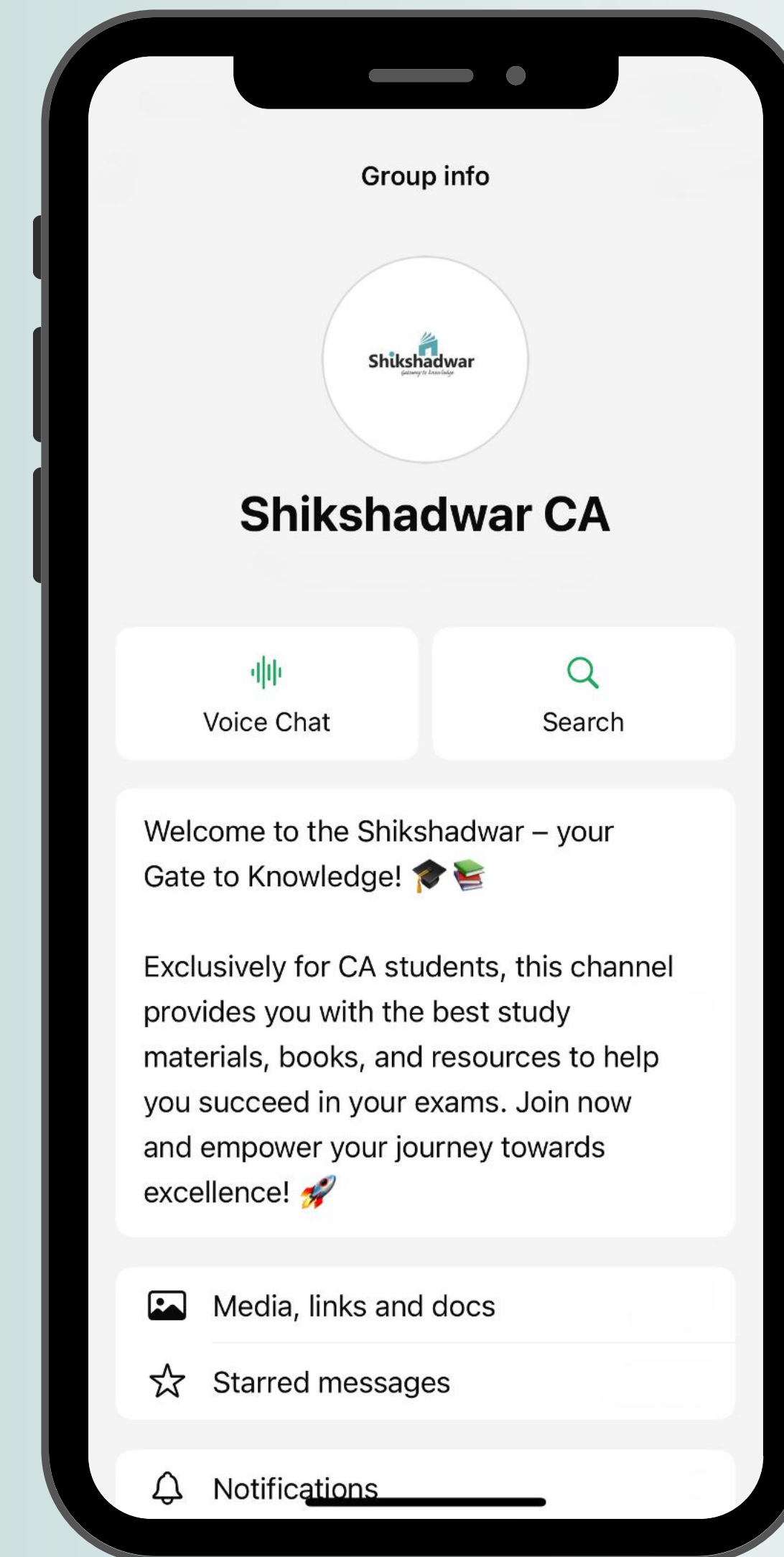
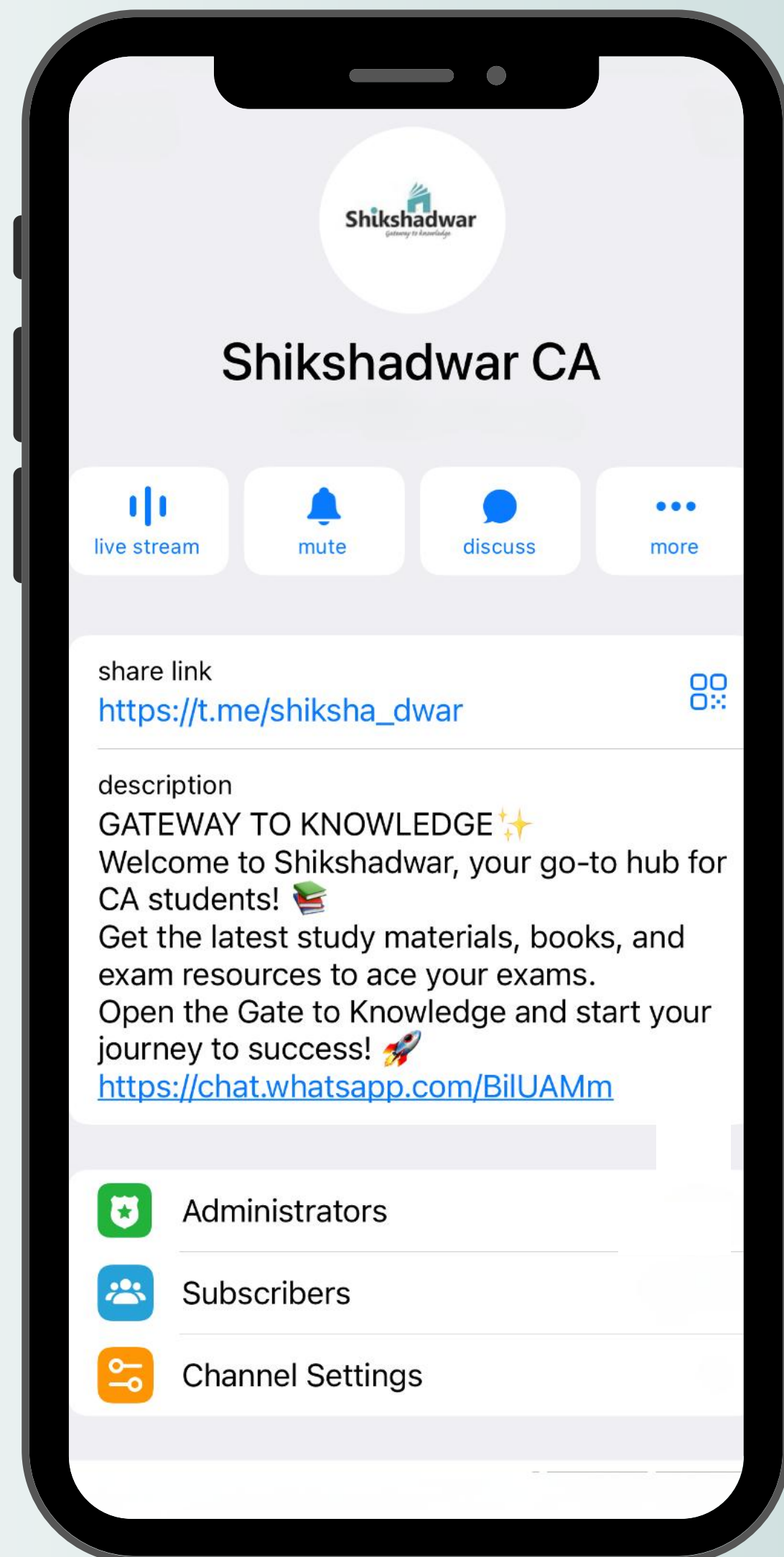
CA TUSHAR TAPARIA

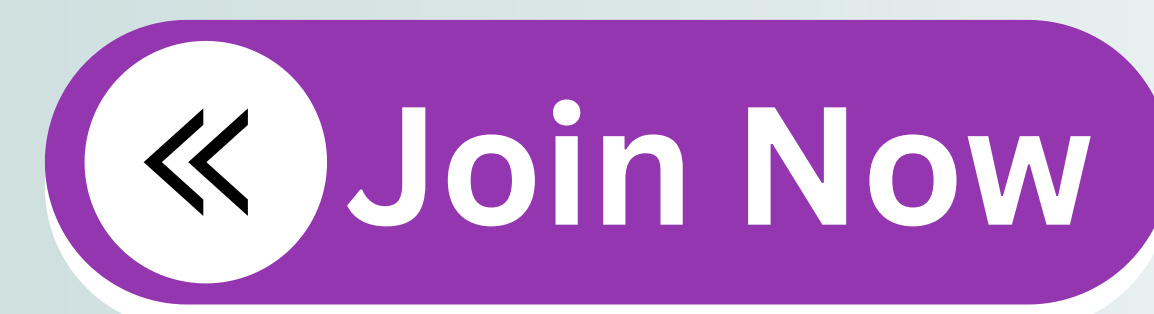
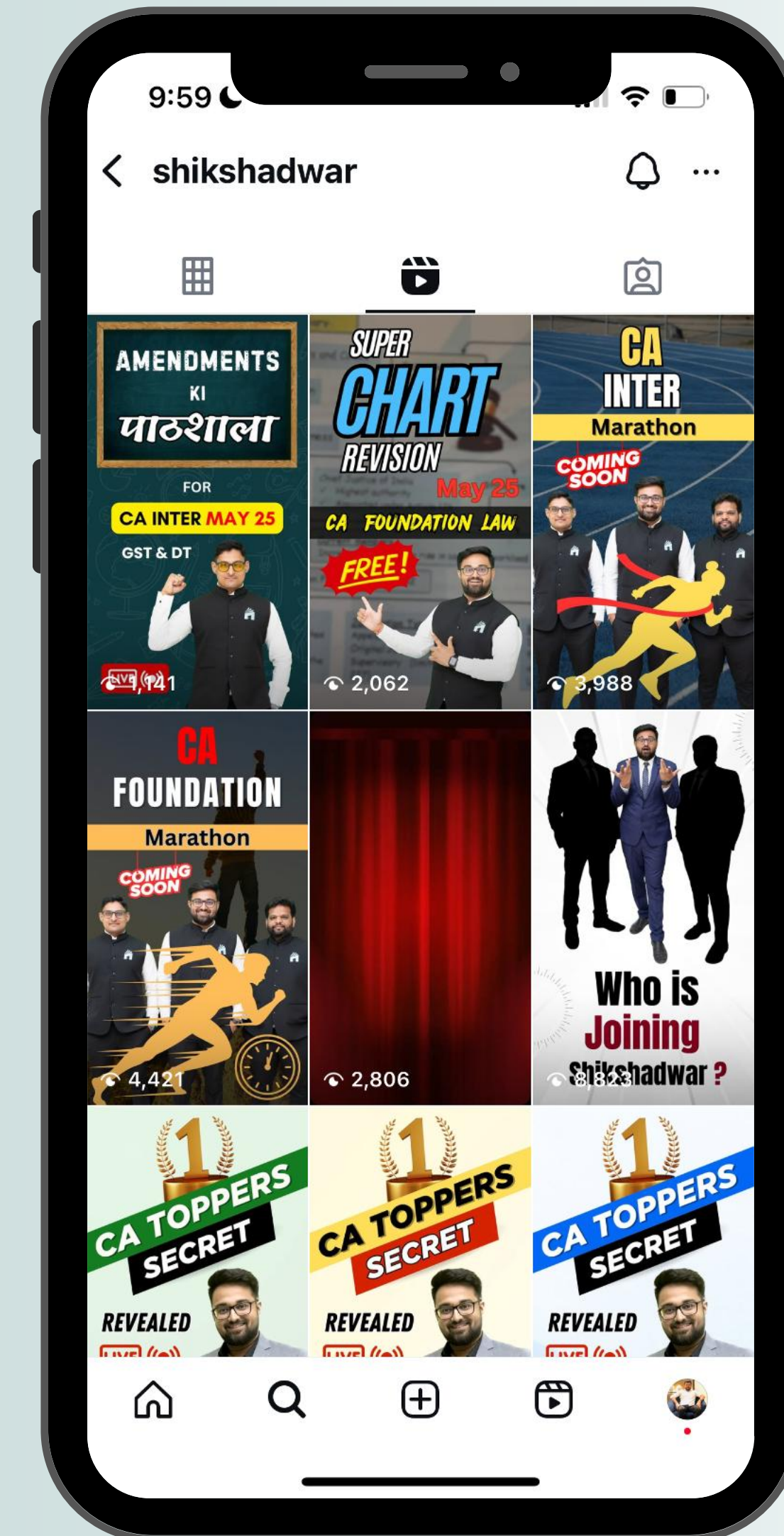
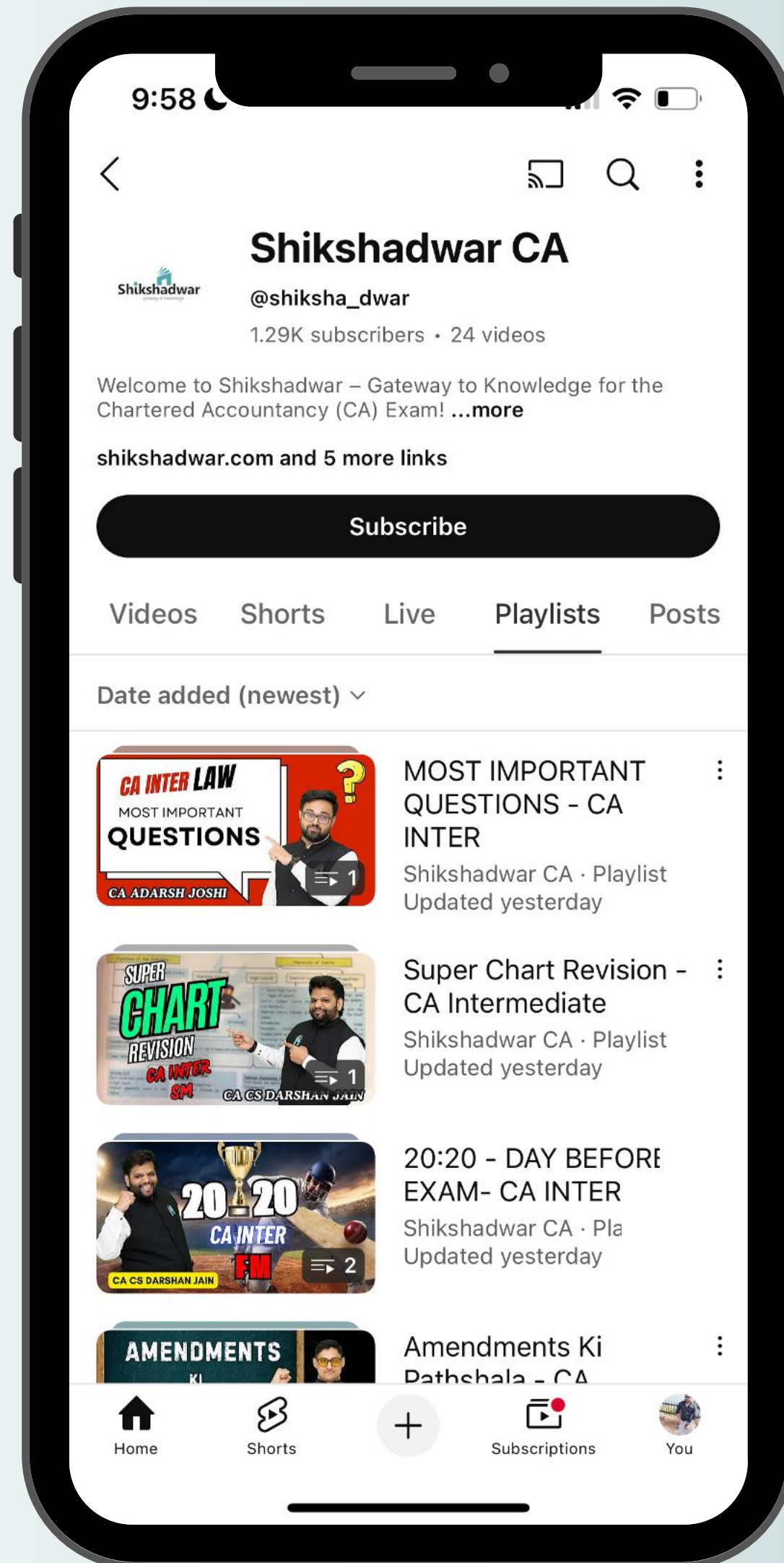
CA , LLB

- A multi-faceted professional with a Chartered Accountancy qualification and a Bachelor's degree in Law.
- Brings 7+ years of teaching experience across CA and CS professional courses.
- Specializes in:
 - Taxation at CA Intermediate and CS Executive levels
 - Economics at CA Foundation level
- Known for simplifying complex concepts with crystal-clear explanations and practical insights.
- Expert in delivering Fasttrack batches with proven accelerated learning techniques.
- Frequently invited as a visiting faculty for Taxation at reputed coaching institutes.
- Loved by students for his interactive teaching style, real-life examples, and exam-oriented approach.



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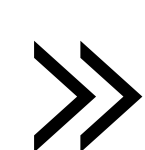
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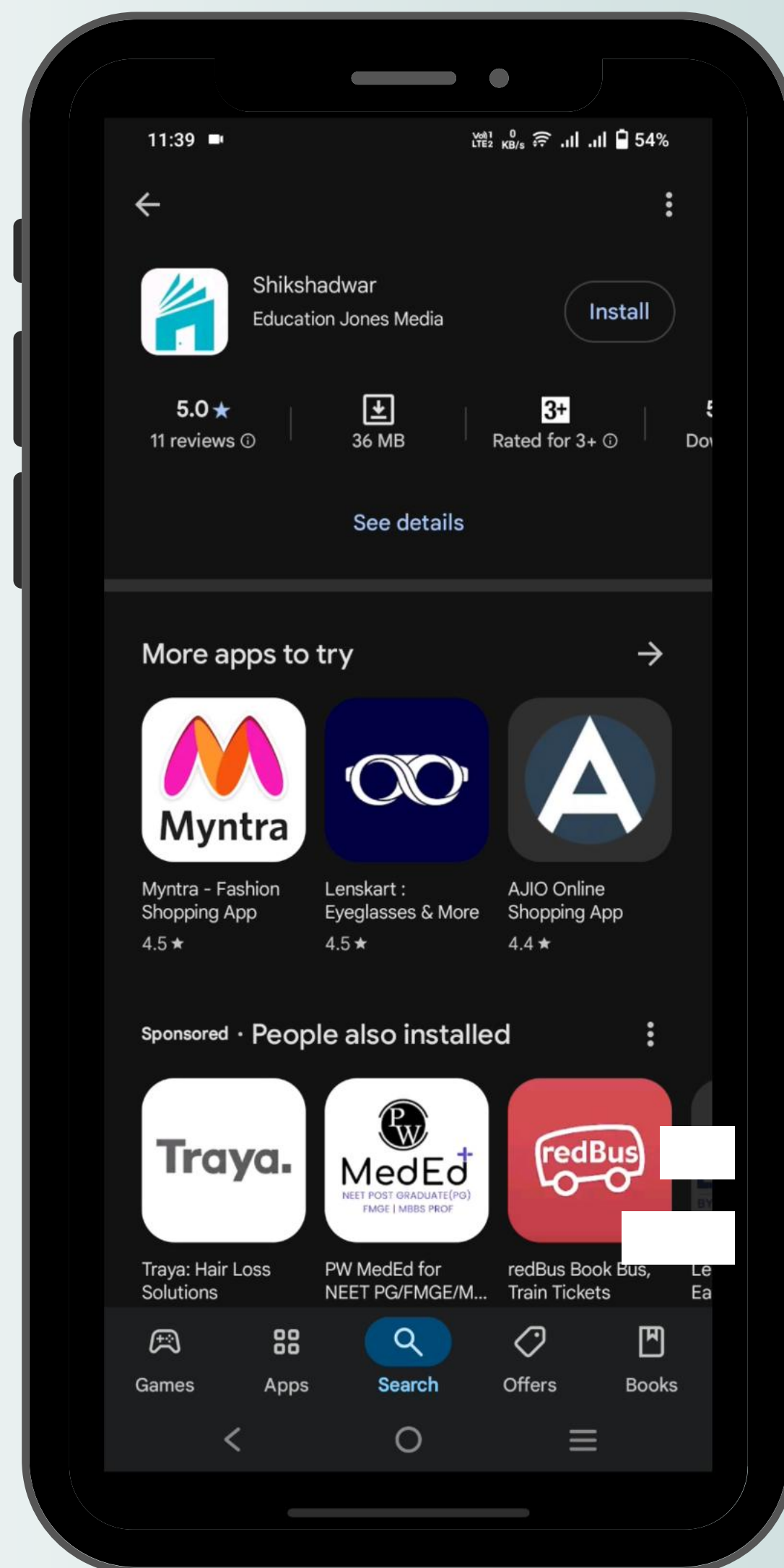
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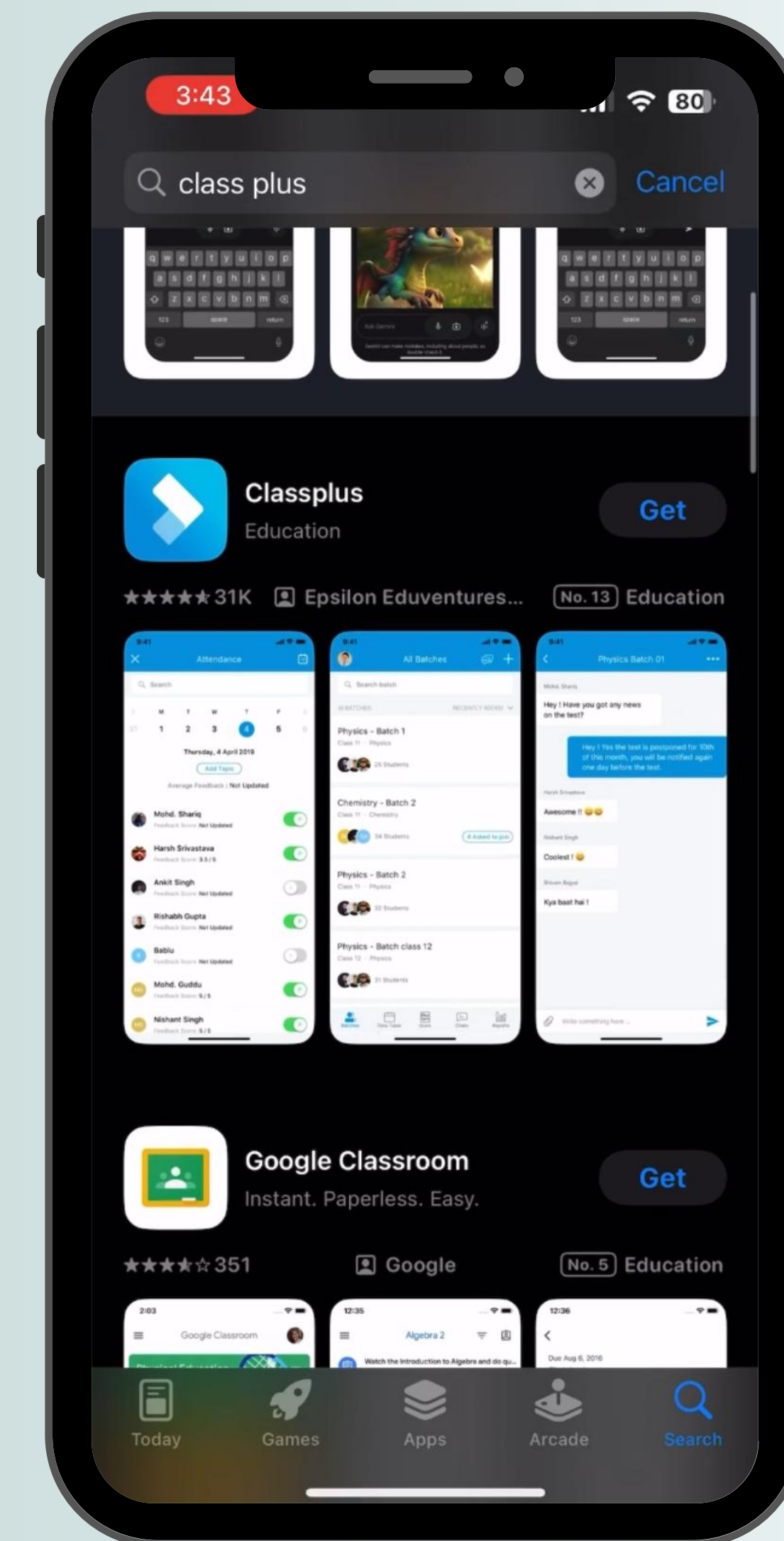
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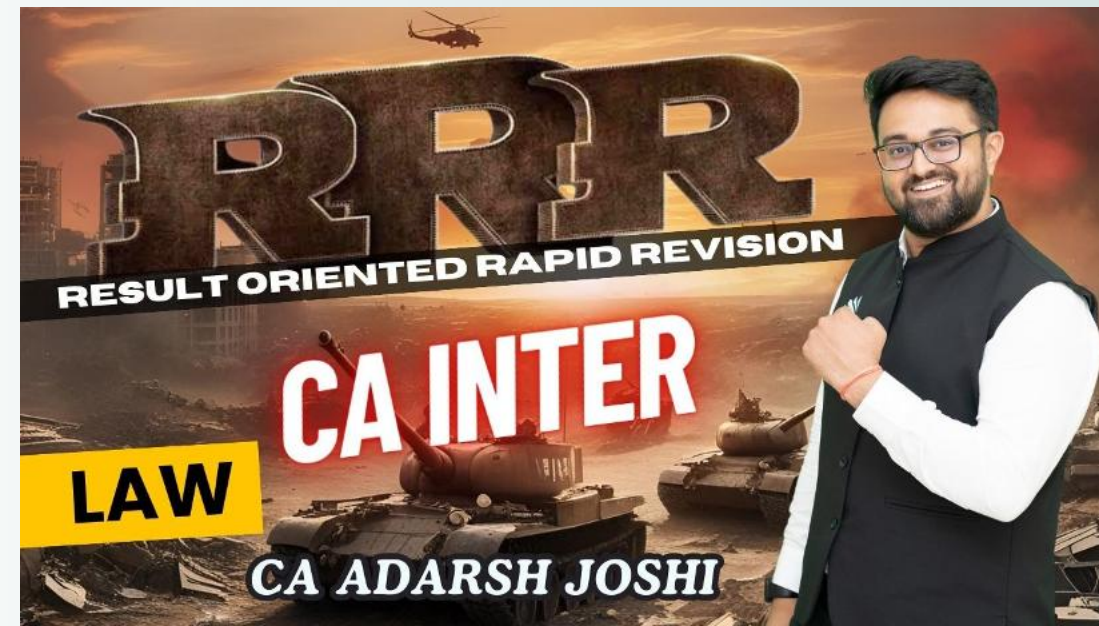
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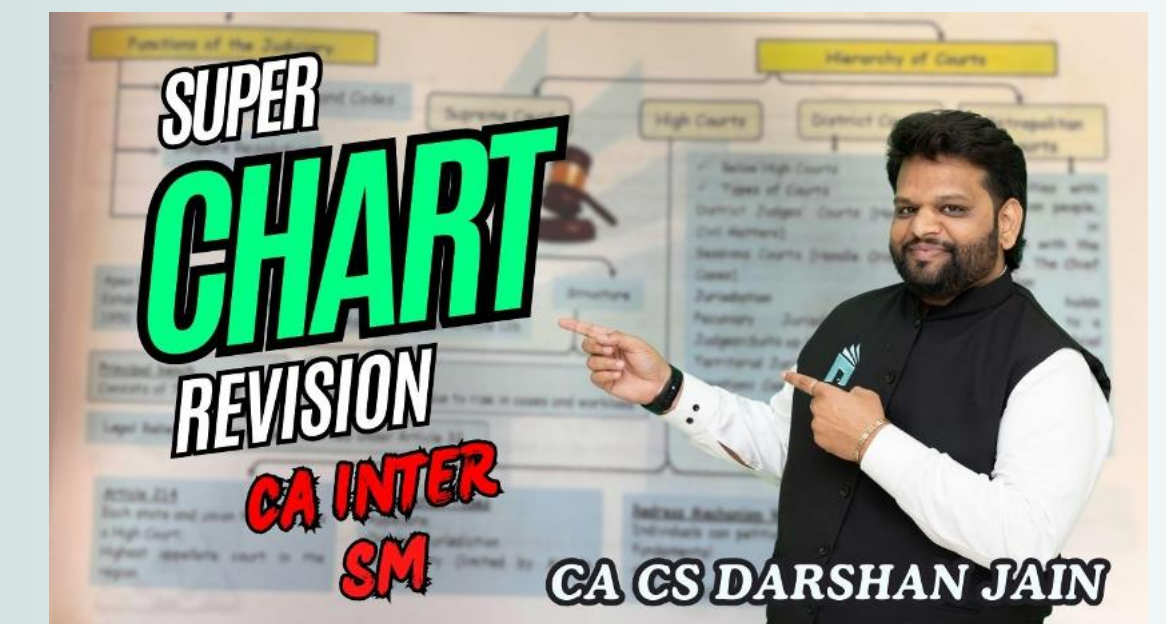
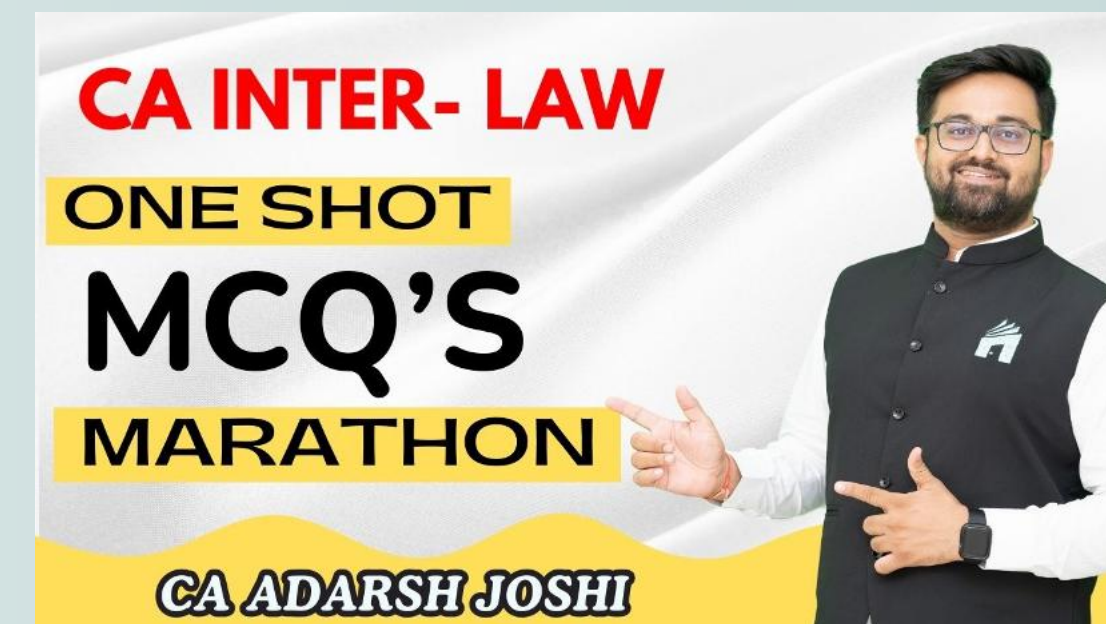
CA INTERMEDIATE MAY 25

Marathons Live Streams



RRR - Result Oriented Rapid Revision

Most Imp Questions



One Shot MCQ's Marathon

Super Chart Revision



Amendments Ki Pathshala

20 -20 Series

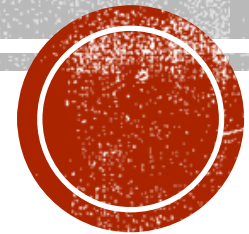
CA INTERMEDIATE MAY 25

Marathons Schedule With Links

DATE	TIME	EDUCATOR	SUBJECT	TOPICS	YOUTUBE LINK
17/4/2025	8.00 AM	CA ADARSH JOSHI	LAW	RRR	 WATCH NOW
18/4/2025	12.00 NOON	CA TUSHAR TAPARIA	GST	RRR	 WATCH NOW
19/4/2025	8.00 AM	CA CS DARSHAN JAIN	FM	RRR	 WATCH NOW
20/4/2025	8.00 AM	CA ADARSH JOSHI	LAW	ONE SHOT MCQ MARATHON	 WATCH NOW
21/4/2025	2.00 PM	CA TUSHAR TAPARIA	GST	GST AMENDMENTS & ITS IMPORTANT QUESTIONS	 WATCH NOW
23/4/2025	8.00 AM	CA CS DARSHAN JAIN	FM	ONE SHOT MCQ MARATHON	 WATCH NOW

DATE	TIME	EDUCATOR	SUBJECT	TOPICS	YOUTUBE LINK
24/4/2025	2.00 PM	CA TUSHAR TAPARIA	DT	DT AMENDMENTS & ITS IMPORTANT QUESTIONS	 WATCH NOW
27/4/2025	8.00 AM	CA CS DARSHAN JAIN	SM	ONE SHOT MCQ MARATHON	 WATCH NOW
4/5/2025	8.00 AM	CA ADARSH JOSHI	LAW	MOST IMPORTANT QUESTIONS	 WATCH NOW
6/5/2025	3.00 PM	CA TUSHAR TAPARIA	TAXATION	20-20	 WATCH NOW
12/5/2025	8.00 AM	CA CS DARSHAN JAIN	FM	20-20	 WATCH NOW
13/5/2025	8.00 AM	CA CS DARSHAN JAIN	SM	SUPER CHART REVISION	 WATCH NOW

LEVERAGE ANALYSIS



WEIGHTAGE ANALYSIS

SR.NO	NAME OF TOPIC	May 18	Nov 18	May 19	Nov 19	Nov 20	Jan 21	Jul 21	Dec 21	May 22	Nov 22	May 23	Nov 23
1	MEANING , SCOPE AND OBJECTIVES OF FM	4	2		3	4	4	2	2	2	2		4
2	TYPES OF FINANCING	6	8	6	4	4	2	4	4	2	4	6	8
3	LEVERAGE ANALYSIS	5	10	10	10	12	10	10	10	10	10	7	5
4	COST OF CAPITAL		10	5	14	5	10	10	5	10	11	10	10
5	CAPITAL STRUCTURE	10	5	10		10	10	5	10	10	6	10	10
6	CAPITAL BUDGETING	28	10	15	20	5	12	12	2	14	20	10	10
7	RISK ANALYSIS IN CAPITAL BUDGETING	4	7	6	3	12	5	5	14	5	5	5	5

Sr.No	Name of Topic	May 18	Nov 18	May 19	Nov 19	Nov 20	Jan 21	Jul 21	Dec 21	May 22	Nov 22	May 23	Nov 23
8	ESTIMATION & FINANCING OF WORKING CAPITAL	10		10		10	5			5		4	5
9	MANAGEMENT OF ACCOUNT RECIEVABLES		10					9	5			5	
10	MANAGEMENT OF CASH & MARKETABLE SECURITIES				10		4		5		9		
11	MANAGAMENT OF PAYABLES												
12	MANAGEMENT OF INVENTORY									5			
13	DIVIDEND DECISION		5	5	5	5	5	5	5	4		5	10
14	RATIO ANALYSIS	5	5	5	5	5	5	10	10	5	5	10	5
	TOTAL	72	72	72	74	72	72	72	72	72	72	72	72

- ❑ **Introduction**
- ❑ **Profitability Statement**
- ❑ **Types of Leverages**
- ❑ **Meaning & Significance of Operating Leverage**
- ❑ **Meaning & Significance of Financial Leverage**
- ❑ **Meaning & Significance of Combined Leverage**
- ❑ **Ideal Combination of Leverages**
- ❑ **Other Important Formulae's**
- ❑ **Summary**
- ❑ **Problems**

BIRD'S EYE VIEW



The term leverage in general, refers to advantage gained for any purpose. In Financial Management Leverage Analysis is study of relationship between two interrelated financial variables (Risk and Return). Study of leverage is essential to define the risk undertaken by the shareholders.

Earnings available to shareholders fluctuate on account of two risks.

- **Variability of EBIT – Operating Risk**
(arises due to variability of sales and variability of expenses)
- **Variability of EPS or ROE – Financial Risk**
(arises due to the impact of interest charges)

INTRODUCTION



FORMULA OF LEVERAGE

$$\text{leverage} = \frac{\% \text{Change in } \textit{Dependent variable}}{\% \text{change in } \textit{Independent variable}}$$

Terms Used –

$$\% \text{ change in a variable} = \frac{\text{Amount of } \textit{change}}{(\text{Amount of old } \textit{value})} \times 100$$

Important Points

- ❑ This formula indicates how much will be the change in dependent variable for 1% change in independent variable.

INTRODUCTION



Particulars	Rs.
Sales	XXX
Less : Variable cost	XXX
Contribution	XXX
Less : Fixed cost	XXX
Operating Profit or EBIT	XXX
Less : Interest	XXX
Earnings Before Tax (EBT)	XXX
Less : Tax	XXX
Earnings After Tax (EAT)	XXX
Less : Preference Dividend	XXX
Earnings available to Equity shareholders (A)	XXX
No. of Equity Shares (B)	XXX
EPS (A/B)	XXX

PROFITABILITY STATEMENT



TYPES OF LEVERAGES

Analysis of Leverage

```
graph TD; A[Analysis of Leverage] --> B[Business and Financial Risk]; A --> C[Types of Leverage]; C --> C1["(i) Operating Leverage"]; C --> C2["(ii) Financial Leverage"]; C --> C3["(iii) Combined Leverage"];
```

Business and Financial Risk

Types of Leverage

- (i) Operating Leverage
- (ii) Financial Leverage
- (iii) Combined Leverage

Meaning

Operating leverage is the firm's ability to use fixed operating costs to magnify effects of changes in sales on its earnings before interest and taxes". Operating Leverage measures Business Risk and risk of recovering Fixed Cost with contribution.

Explanation

A change in sales will lead to a More Than Proportional change in Earnings before interest and Taxes (EBIT) As Fixed Costs Shall remain constant. The effect of change in sales on EBIT is measured by operating leverage.



OPERATING LEVERAGE



$$OL = \frac{\% \text{Change in EBIT}}{\% \text{Change in Sales}}$$

Terms Used

$$\% \text{ Change in EBIT} = \frac{\text{Change in EBIT}}{\text{Original EBIT}}$$

$$\% \text{Change in Sales} = \frac{\text{Change in Sales}}{\text{Original Sales}}$$

Important Points

- In order to use above formula we need information about two levels of Sales.
- This formula gives degree of operating leverage at base level. i.e. original level considered in the Denominator.
- Degree of operating leverage indicates how much will be the expected change in EBIT for 1% change in Sales

TWO LEVEL FORMULA



$$OL = \frac{\text{Contribution}}{EBIT}$$

Terms Used

EBIT = Earning Before Interest and Taxes.

Important Points

- This formula requires information about one level of sales only.
- If sales increase OL comes down, indicating that business risk has decreased.
- Degree of operating leverage indicates how much will be change in EBIT for 1% change in sales.
- OL is expressed in times & not percentage.
- OL will be there only if there are Fixed operating costs in the cost structure of the company.
- If fixed cost is zero. OL will be 1 (No Operating leverage)

ONE LEVEL FORMULA



$$OL = \frac{\text{Contribution}}{\text{EBIT}}$$

$$= \frac{\text{Contribution}}{\text{Contribution} - \text{Fixed Cost}}$$

This is going to help you to find Contribution if OL & FC is given by assuming Contribution as x

- DOL measure the impact of change in sales on operating income. Suppose DOL of a firm is 1.67 times, it implies that 1 % change in sales will lead to 1.67% change in EBIT. Hence, if sales increases by 20%. EBIT increases by $20\% \times 1.67 = 33\%$. Also, if sales decreases by say 40% EBIT shall decrease by 66.8%.
- DOL depends on fixed costs. If fixed costs are higher, Business Risk is higher & Hence DOL is higher and vice- versa.
- If DOL is high it implies that fixed costs are high. Hence the Break-even point (no profit- no loss situation) would be reached at a higher level of sales. Due to the high Break-Even point, the margin of safety and profit would be low. This means that operating risk are higher. Hence a low DOL is preferred.
- A high DOL means that profits (EBIT) may be wiped off, even for a marginal reduction in sales.

SIGNIFICANCE OF OPERATING LEVERAGE



ANALYSIS OF OPERATING LEVERAGE

Situation	Nature of EBIT	Nature of Operating Leverage
Contribution below BEP	EBIT is Negative	DOL is negative.
Contribution at BEP	EBIT is Zero	DOL is Infinity/Undefined
Contribution Above BEP	EBIT is Positive	DOL is positive
Contribution is Zero	Zero or Negative	DOL is Zero
Positive Contribution But No Fixed Cost	EBIT is Positive	DOL is 1 (No operating leverage)

Note:

DOL will never be between 0 and 1 As Contribution can Never be less Than EBIT.



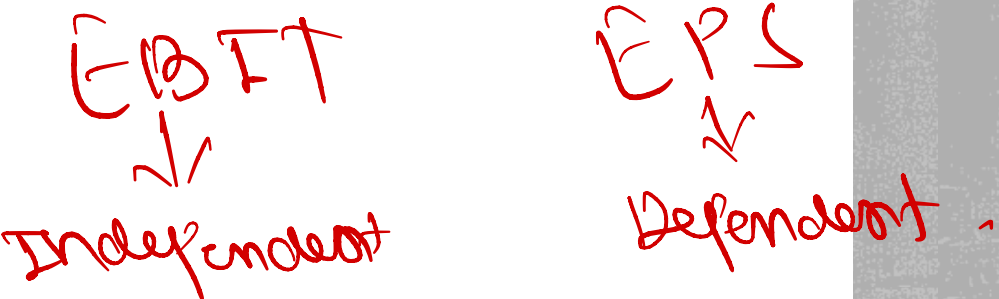
RELATIONSHIP BETWEEN OPERATING LEVERAGE & MARGIN OF SAFETY

1. Break Even Point is a Point Where Contribution = Fixed Cost that is No profit & No Loss.
2. Margin of Safety = $\frac{\text{Contribution} - \text{Fixed Cost}}{\text{Contribution}} = \frac{\text{EBIT}}{\text{Contribution}}$
3. DOL = $\frac{\text{Contribution}}{\text{EBIT}}$
4. Higher Margin of safety indicates lower business risk & Higher profit and vice versa. MOS is inversely related to OL.
5. DOL = 1/ MOS.



Meaning

Financial Leverage is defined as the ability of a firm to use fixed financial charges (interest) to magnify the effects of changes in E.B.I.T. (Operating profit) on the firm's Earning per share (EPS). Financial Leverage measures financial risk i.e. risk due to using of debt in cap structure.



Explanation

Financial Leverage occurs when a company has debt content in its capital structure and fixed financial charges e.g. interest on debentures. These fixed financial charges do not vary with the EBIT. They are fixed and are to be paid irrespective of level of EBIT. Hence an increase in EBIT will lead to higher percentage increase in Earnings per share (EPS). This is measured by the Financial Leverage.

FINANCIAL LEVERAGE



$$FL = \frac{\% \text{change in EPS}}{\% \text{change in EBIT}}$$

Terms Used

$$\% \text{ change in EPS} = \frac{\text{Change in EPS}}{\text{Original EPS}}$$

$$\% \text{ change in EBIT} = \frac{\text{Change in EBIT}}{\text{Original EBIT}}$$

Important Points

- It gives how much will be change in EPS for 1% change in EBIT
- Information at two levels is required to use this formula.
- We get Degree of financial leverage at base level i.e. sales level considered in the denominator. While calculating % change.

**TWO LEVEL
FORMULA**



$$FL = \frac{EBIT}{EBT - \frac{(PD)}{(1-t)}}$$

Terms Used

PD = Preference Dividend

T = Income Tax Rate (Not Tax Amount)

EBIT = Earnings before Interest and Taxes

EBT = Earnings before Tax

Important Points

- This formula can be used at one level of sales.
- If EBIT increases FL decreases indicating the decrease in Financial Risk.
- Financial Leverage is expressed in Times & not in Percentage.
- It gives how much will be change in EPS for 1% change in EBIT.

**ONE LEVEL
FORMULA**



$$FL = \frac{EBIT}{EBT}$$

only interest
& FL is
given

$$FL = \frac{EBIT}{EBIT - \text{Interest}}$$

How to
Calculate
EBIT & EBT

EBIT assume as x

SIGNIFICANCE OF FINANCIAL LEVERAGE

- DFL measures the impact of change in EBIT (operating Income) on EPS (earning per share) Suppose. DFL of a firm is 4 times. It implies that 1 % change in EBIT will lead to 4 % change in EPS Hence. If EBIT increases by 10 % then EPS shall increase by 40%. Also, if EBIT decreases by say 5 % EPS shall fall by 20%.
- If DFL is high, it implies that fixed interest charges are high. This means that the financial risks are higher. The DFL is considered to be favourable or advantageous to the firm When it earn more on its total investment that what it pays towards debt capital. In other words. DFL is advantage only if Return on Capital Employed (ROCE) are greater than rate of interest on Debt.



ANALYSIS OF FINANCIAL LEVERAGE

Situation	Nature of EPS	Nature of Financial Leverage
EBIT Below Fixed Financial Charges	EPS is negative.	DFL is – ve
EBIT = Fixed Financial Charges	EPS is Zero.	DFL is Infinity/Undefined.
EBIT Below Fixed Financial Charges	EPS is Positive.	DFL is + ve
EBIT is Zero	EPS is Zero or Negative	DFL is Zero
Positive EBIT But No Fixed Financial Charges	EPS is Positive	DFL is 1 (No Financial leverage)

Note:

DFL will never be between 0 and 1 As EBIT can Never be less Than EBT..



Meaning

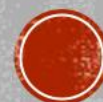
Combine Leverage is used to measure the total risk of a firm i.e. operating Risk Financial Risk.

Explanation

Effect of Fixed Operating Costs (i.e. operating Risks) is measured by Operating Leverage (DOL). Effect of Fixed Interest Charges (i.e. Financial Risks) is measured by Financial Leverage (DFL). The combined effect of these is measured by combined Leverage (DCL).

Sales
↓
Independent +
EPS
↓
Dependent

**COMBINED
LEVERAGE**



Two level Formula

$$CL = \frac{\% \text{change in } EPS}{\% \text{ change in } Sales}$$

One Level Formula

$$CL = OL \times FL$$

Or

$$CL = \frac{\text{Contribution}}{EBT - \frac{(PD)}{(1-t)}}$$

**TWO LEVEL
FORMULA
&
ONE LEVEL
FORMULA**



DOL measures impact of changes in Sales on EBIT. DFL measures the impact of changes in EBIT on EPS. DCL measures the combined impact. i.e. effect of change in Sales on EPS. If DCL is 2 times, it implies that a 10% increase in Sales will lead to 20% increase in EPS.

SIGNIFICANCE OF COMBINED LEVERAGE



DOL	DFL	Effect	Reasons and significance
High	High	Risky	High DOL = High Fixed cost & BEP = High Operating Risk High DFL = small fall in EBIT shall lead to great fall in EBT. Equity Shareholders are Most Affected
High	Low	Careful	High DOL'S impact is sought to be set off with low Financial risk. Hence Equity shareholder interest is safeguard.
Low	Low	Cautious and conservative	Low DOL= Low Fixed Costs & BEP = Low Operating Risk But Equity shareholders gained are not maximized , since DFL is low.
Low	High	preferable	Low DFL = Low Fixed costs & BEP = Low Operating Risk. Due to high DFL, small rise in EBIT leads to grater rise in EBT and EPS. Hence Equity shareholders gains are maximized.

IDEAL COMBINATION OF LEVERAGES



$$\text{PV Ratio} = \frac{\text{Total Contribution}}{\text{Total Sales}} \times 100$$

Terms Used

Contribution = Sales – Variable cost.

Important points

- This ratio can be calculated either with reference to per unit or total sales value.
- If PV Ratio is 40% it indicates that contribution is Rs. 40 and variable cost is Rs. 60 for Rs. 100 sales
- If selling Price and Variable cost both increase / decrease in same proportion then PV ratio remains same.

PV RATIO



$$\text{EPS} = \frac{\text{Earnings available to Equity Shareholders}}{\text{Number of Equity Shares}}$$

Terms Used

EAES = EAT – PD

Important Points

- EPS is different from Dividend Per Share.
- EPS is amount earned per Share where as Dividend per Share is amount actually distributed during the year by way of Dividend.
- EPS is calculated only for equity shareholders.

**EARNING
PER
SHARE**



$$\text{ROI/ROCE(Before Tax)} = \frac{\text{EBIT}}{\text{Total Capital Employed}}$$

Terms Used

Total Capital Employed = Amount of Equity + Preference Capital + Long term debt

Important Points

- It indicates overall return earned on total amount invested in the business.
- If ROI > Rate of Interest, then use of debt is beneficial.

**RETURN ON
INVESTMENT
/
RETURN ON
CAPITAL
EMPLOYED
(BEFORE TAX)**



$$ROE = \frac{\text{Earnings available to Equity Shareholders}}{\text{Amount of Equity}}$$

Terms Used

Amount of Equity = Equity Share Capital + Reserves & Surplus – Misc Expenditure

Important Points

- It gives after tax amount earned by equity shareholders.
- If ROE is less than expectation of the shareholders then market price will come down.

RETURN ON EQUITY



$$\text{Total Asset Turnover Ratio} = \frac{\text{Net Sales}}{\text{Total Assets}}$$

Terms Used

Total Assets = Fixed Assets + Current Assets.

Net Sales = Gross Sales – Sales Return

Important Points

- It gives Sales achieved with Rs. 1 of Total Assets.
- Total Asset does not include Miscellaneous Expenditure. Hence Don't take total of Asset side as Total Assets.

TOTAL ASSET TURNOVER RATIO



DOL	DFL	DCL
Show level of business risk.	Show level of financial risk.	Show level of total or combined risk.
It Measures Impact of Fixed operating Cost.	It measures impact of Fixed Financial Charges.	It Measures Impact of Fixed operating Cost & Fixed Financial Charges.
$DOL = \text{Contribution} / EBIT$	$DFL = EBIT / EBT$ Or $DFL = EBIT / EBT - \frac{PD}{(1-t)}$	$DCL = \text{Contribution} / EBT \sim \frac{PD}{(1-t)}$ Or $DCL = DOL * DFL$ $DCL = \text{Contri} / EBT$
Measure % change in EBIT which results from a 1 % change in sales.	Measure % change in EPS which results from a 1 % change in EBIT	Measure % change in EPS which results from a 1 % change in sales.
For example, if DOL is 3 & there is 8% increase in output then EBIT will increase by 24% & if there is a 8% decrease in output EBIT will decrease by 24%.	For example, if DFL is 2 & there is 5% increase in output then EBIT then EPS will increase by 10% & if there is a 5% decrease in EBIT, EPS will decrease by 10%.	For example, if DCL is 6 & there is 8% increase in sales then EPS will increase by 48% & if there is a 8% decrease in sale then EPS will decrease by 48%.
Low DOL is Preferred.	High DFL is Preferable only if ROCE > Rate of Interest.	A Combination of Low DOL & High DFL is Preferable.
It is undefined at B.E.P	It is undefined at Financial B.E.P.	It is undefined at Financial B.E.P.

SUMMARY



ILLUSTRATION 1

The following information is related to Yizi Company Ltd. for the year ended 31st March, 2021:

Equity share capital (of ₹ 10 each)	₹ 50 lakhs
12% Bonds of ₹ 1,000 each	₹ 37 lakhs
Sales	₹ 84 lakhs
Fixed cost (excluding interest)	₹ 6.96 lakhs
Financial leverage	1.49
Profit-volume Ratio	27.55%
Income Tax Applicable	40%

$$1.49 = \frac{EBIT}{EBT}$$

$$1.49 = \frac{1618200}{EBT}$$

$$\therefore EBT = 1086040$$

You are required to CALCULATE:

- (i) Operating Leverage; 1.43 times
- (ii) Combined leverage; and 2.13 times
- (iii) Earnings per share. 1.30

Show calculations up-to two decimal points.

Profitability Statement

Sr.No	Particulars	Amount
A	Sales	8400000
B	Wss - VC	6085800
C	Contributions (ATX 27.55%)	2314200
D	Wss - FC	696000
E	EBIT	1618200
F	Wss - Interest (BF)	532160
G	EBT	1086040
H	Wss - Tax @ 40%	434416
I	EAT	651624
J	NO. of Equity Shares	500000
K	EPS	1.30

$$FL = \frac{EBIT}{EBT}$$

$$1.49 = \frac{1618200}{EBT}$$

$$1.49 EBT = 1618200$$

$$EBT = \frac{1618200}{1.49} = 1086040$$

$$\begin{aligned}
 \textcircled{1} \quad \text{Operating leverage} &= \frac{\text{Contribution}}{\text{EBIT}} \\
 &= \frac{2314200}{1618200} \\
 &= 1.43 \text{ times}
 \end{aligned}$$

$$\begin{aligned}
 \textcircled{2} \quad \text{Combined leverage} &= \text{OL} \times \text{FL} \\
 &= 1.43 \times 1.49 \\
 &= 2.13 \text{ times}
 \end{aligned}$$

③ $\hat{EPS} \approx 1.30$ per share

ILLUSTRATION 2

From the following information extracted from the books of accounts of Imax Ltd., CALCULATE percentage change in earnings per share, if sales increase by 10% and Fixed Operating cost is ₹ 1,57,500.

Particulars	Amount in (₹)
EBIT (Earnings before Interest and Tax)	31,50,000
Earnings before Tax (EBT)	14,00,000

CL:

Contribución

EBT

EBT + FC

140000

330750

140000

23625

Sans 10 ↑

ELS

23625% ↑

$$\begin{aligned}\text{Combined Leverage} &= \text{Contribution/EBT} \\ &= \text{EBIT} + \text{Fixed Cost/EBT} \\ &= 3150000 + 157500/1400000 \\ &= 2.3625 \text{ Times}\end{aligned}$$

Thus , If Sales Increases by 10% , EPS Shall Increase By 23.625 % (10*2.3625)

ILLUSTRATION 3

Consider the following information for Mega Ltd.:

Production level	2,500 units
Contribution per unit	₹ 150
Operating leverage	6
Combined leverage	24
Tax rate	30%

Required:

COMPUTE its earnings after tax.

SOLUTION

$$\begin{aligned}\text{Combined Leverage} &= \text{Contribution/EBT} \\ 24 &= (2500 \times 6)/\text{EBT} \\ 24 &= 375000/\text{EBT} \\ \text{EBT} &= 375000/24 \\ \text{EBT} &= 15625\end{aligned}$$

$$\text{EAT} = \text{EBT} - \text{Tax Rate}$$

$$\text{EAT} = 15625 - 30\%$$

$$\text{EAT} = 10938$$

ILLUSTRATION 4

From the following information, prepare Income Statement of Company A & B:

Particulars	Company A	Company B
Margin of safety	0.20	0.25
Interest	₹ 3,000	₹ 2,000
Profit volume ratio	25%	33.33%
Financial Leverage	4	3
Tax rate	45%	45%

Solve (C/P ratio)

WS - VC

Center button

WS - FC

EBIT

WS - Int

EBT

WS - Tax

EAT

8000

6000

20000

16000

4000

3000

1000

450

550

$$FL = \frac{EBIT}{EBT}$$

$$4 = \frac{EBIT}{EBIT - \text{Interest}}$$

$$4 = \frac{x}{x - 3000}$$

$$4x - 12000 = x$$

$$\therefore 3x = 12000$$

$$x = 4000$$

$$OL = \frac{\text{Contribution}}{EBIT}$$

$$1/1905 = \frac{\text{Contribution}}{4000}$$

$$1/0.20 = \frac{\text{Contribution}}{4000}$$

$$5 = \frac{C}{4000} \quad \therefore \text{Contribution} = 20000$$

[illegible]

Sr.No	Particulars	Company A	Company B
A	Sales	86000	36000
B	less - VC	6000	2400
C	Contribution	20000	12000
D	less - FC	16000	9000
E	EBIT	4000	3000
F	less - Interest -	3000	2000
G	EBT	1000	1000
H	less - Tax	450	450
I	EAT	550	550

Company A

$$FL = \frac{EBIT}{EBT}$$

$$FL = \frac{EBIT}{EBIT - \text{Interest}}$$

$$4 = \frac{x}{x - 3000}$$

$$4x - 12000 = x$$

$$3x = 12000 \quad x = 4000$$

$$\begin{aligned}
 \text{Contribution} &= \frac{\text{EBIT}}{\text{MOS}} \\
 &= \frac{4000}{0.20} \\
 &= 20000
 \end{aligned}$$

OK

$$\text{OL} = \frac{\text{Contribution}}{\text{EBIT}}$$

$$\begin{aligned}
 1/\text{MOS} &= \frac{\text{Contribution}}{4000} \\
 1/0.20 &= \frac{1}{4000}
 \end{aligned}$$

$$\begin{aligned}
 \therefore 5 \times 4000 &= \text{Contri} \\
 \therefore \text{Contri} &= 20000
 \end{aligned}$$

$$\text{Sales} = \text{Conti} / \text{PV ratio}$$

$$= 20000 / 25\%$$

$$= \underline{\underline{80000}}$$

ILLUSTRATION 5

The capital structure of PS Ltd. for the year ended 31st March 2021 consisted as follows:

Particulars	Amount in (₹)
Equity share capital (face value ₹ 100 each)	10,00,000
10% debentures (₹ 100 each)	10,00,000

During the year 2020-21, sales decreased to 1,00,000 units as compared to 1,20,000 units in the previous year. However, the selling price stood at ₹ 12 per unit and variable cost at ₹ 8 per unit for both the years. The fixed expenses were at ₹ 2,00,000 p.a. and the income tax rate is 30%.

You are required to CALCULATE the following:

- The degree of financial leverage at 1,20,000 units and 1,00,000 units.
- The degree of operating leverage at 1,20,000 units and 1,00,000 units.
- The percentage change in EPS.

Profitability Statement			
Sr.No	Particulars	120000 Units	100000 Units
A	Sales (No. of Units * Rs. 12)	1440000	1200000
B	Less - variable Cost (No. of Units * Rs.8)	960000	800000
C	Contribution (A-B)	480000	400000
D	Less - Fixed Cost	200000	200000
E	EBIT (C-D)	280000	200000
F	Less - Interest	100000	100000
G	EBT (E-F)	180000	100000
H	Less - Tax (30%)	54000	30000
I	EAT (G-H)	126000	70000
J	No. of Shares	10000	10000
K	EPS (EAT/No. of Equity Shares)	12.6	7
L	Operating Leverage (Contribution/EBIT)	1.71 Times	2 Times
M	Financial Leverage (EBIT/EBT)	1.56 Times	2 Times
O	% Change in EPS 5.6 / 12.6 x 100	44.44% Decreased	

ILLUSTRATION 6

The Sale revenue of TM excellence Ltd. @ ₹ 20 Per unit of output is ₹ 20 lakhs and Contribution is ₹ 10 lakhs. At the present level of output, the DOL of the company is 2.5. The company does not have any Preference Shares. The number of Equity Shares are 1 lakh. Applicable corporate Income Tax rate is 50% and the rate of interest on Debt Capital is 16% p.a. CALCULATE the EPS (at sales revenue of ₹ 20 lakhs) and amount of Debt Capital of the company if a 25% decline in Sales will wipe out EPS.

Sale
WS - VC
Center button

200000
100000
100000

WS - FC
EBIT

60000

40000

WS - Int
EBT

15000

WS - Tax
EAT

25000

12500

12500

No. of shares (eq)

EPS

100000

1.25

$$CL = 0.25 \times PL$$

$$4 = 2.5 \times$$

$$1.6 = 1.6$$

$$1.6 =$$

$$EBIT$$

$$\underline{EBIT}$$

$$1.6 = \frac{EBIT}{250000}$$

150m

16%

= 937500

Profitability Statement		
Sr.No	Particulars	Amount
A	Sales	2000000
B	Less – Variable Cost	1000000
C	Contribution (A-B)	1000000
D	Less – Fixed Cost	600000
E	EBIT (C-D)	400000
F	Less – Interest	150000
G	EBT (E-F)	250000
H	Less – Tax at 50%	125000
I	EAT (G-H)	125000
J	Less – Preference Dividend	0
K	EAES (I-J)	125000
L	No. Of Equity Shares	100000
M	EPS (K/L)	1.25

$$OL = \frac{\text{Contribution}}{EBIT}$$

$$2.50 = \frac{1000000}{EBIT}$$

$$\therefore EBIT = \frac{1000000}{2.50}$$

$$= 400000$$

25% Decline in sales will wipe out EPS
means EPS shall change by 100%.

$$CL = \frac{\% \text{ change in EPS}}{\% \text{ change in Sales}}$$

$$= \frac{100}{25} = 4$$

$$\therefore CL = \frac{\text{Contribution}}{EBT}$$

$$4 = \frac{1000000}{EBT}$$

$$\therefore EBT = 250000$$

Summary

$$\text{EPS} = 1.25 \text{ Per Share}$$

$$\text{Debt} = \frac{\text{Interest}}{\text{Rate of Interest}}$$

$$= \frac{150000}{16\%}$$

$$= \underline{\underline{937500}}$$

ILLUSTRATION 7

A company had the following Balance Sheet as on 31st March, 2021:

Liabilities	Amount in crores (₹)	Assets	Amount in crores (₹)
Equity Share Capital (50 laks shares of ₹ 10 each)	5	Fixed Assets (Net)	12.5
Reserves and Surplus	1	Current Assets	7.5
15% Debentures	10		
Current Liabilities	4		
	20		20

The additional information given is as under:

Fixed cost per annum (excluding interest)	₹ 4 crores
Variable operating cost ratio	65%
Total assets turnover ratio	2.5
Income Tax rate	30%

Required:

CALCULATE the following and comment:

- (i) Earnings Per Share 16.80
- (ii) Operating Leverage 1.30
- (iii) Financial Leverage 1.13
- (iv) Combined Leverage 1.46

Total Assets = ₹ 20 crores

Total Asset Turnover Ratio = 2.5

Hence, Total Sales = $20 \times 2.5 = ₹ 50$ crores

Profitability Statement

Sr.No	Particulars	Amount
A	Sales	50.00
B	Less - variable Cost (65%)	32.50
C	Contribution (A-B)	17.50
D	Less - Fixed Cost	4.00
E	EBIT (C-D)	13.50
F	Less - Interest	1.50
G	EBT (E-F)	12.00
H	Less - Tax (30%)	3.60
I	EAT (G-H)	8.40

(i) Earnings per Share

$$\text{EPS} = \frac{\text{₹ 8.40 crores}}{\text{Number of Equity Shares}} = \frac{\text{₹ 8.40 crores}}{50,00,000} = \text{₹ 16.80}$$

It indicates the amount, the company earns per share. Investors use this as a guide while valuing the share and making investment decisions. It is also an indicator used in comparing firms within an industry or industry segment.

(ii) Operating Leverage

$$\text{Operating Leverage} = \frac{\text{Contribution}}{\text{EBIT}} = \frac{\text{₹ 17.50 crores}}{\text{₹ 13.50 crores}} = 1.296$$

It indicates the choice of technology and fixed cost in cost structure. It is level specific. When firm operates beyond operating break-even level, then operating leverage is low. It indicates sensitivity of earnings before interest and tax (EBIT) to change in sales at a particular level.

(iii) Financial Leverage

$$\text{Financial Leverage} = \frac{\text{EBIT}}{\text{PBT}} = \frac{\text{₹ 13.50 crores}}{\text{₹ 12.00 crores}} = 1.125$$

The financial leverage is very comfortable since the debt service obligation is small vis-à-vis EBIT.

(iv) Combined Leverage

$$\text{Combined Leverage} = \frac{\text{Contribution}}{\text{EBIT}} \times \frac{\text{EBIT}}{\text{PBT}}$$

Or,

$$= \text{Operating Leverage} \times \text{Financial Leverage}$$

$$= 1.296 \times 1.125 = 1.458$$

The combined leverage studies the choice of fixed cost in cost structure and choice of debt in capital structure. It studies how sensitive the change in EPS is vis-à-vis change in sales. The leverages, operating, financial and combined are used as measurement of risk.

ILLUSTRATION 8

Calculate the Operating leverage , Financial Leverage and combined Leverage from the following data under situation I and II and Financial Plan A and B

Installed Capacity	4,000 units
Actual Production and Sales	75% of the capacity
Selling Price	Rs. 30 per Units
Variable Cost	Rs. 15 per Units
Fixed Cost	
Under Situation I	Rs. 15,000
Under Situation II	Rs. 20,000

	Financial Plan	
	A	B
Capital Structure		
Equity	Rs. 10,000	Rs. 15,000
Debt (Rate of Interest at 20%)	10,000	5,000
Total	20,000	20,000

Profitability Statement and Computation of Leverages					
Sr.No	Particulars	Financial Plan A		Financial Plan B	
		Situation 1	Situation 2	Situation 1	Situation 2
A	Installed Capacity	4000	4000	4000	4000
B	Actual Sales (75% of A)	3000	3000	3000	3000
C	Selling Price	30	30	30	30
D	Sales (B*C)	90000	90000	90000	90000
E	Variable Cost (15*B)	45000	45000	45000	45000
F	Contribution (D-E)	45000	45000	45000	45000
G	Fixed Cost	15000	20000	15000	20000
H	EBIT (F-G)	30000	25000	30000	25000
I	Interest	2000	2000	1000	1000
J	EBT (H-I)	28000	23000	29000	24000
K	DOL (F/H)	1.50	1.80	1.50	1.80
L	DFL (H/J)	1.07	1.09	1.03	1.04
M	DCL (F/J)	1.61	1.96	1.55	1.88

ILLUSTRATION 9

The following details of a company for the year ended 31st March, 2021 are given below:

Operating leverage	2:1
Combined leverage	2.5:1
Fixed Cost excluding interest	₹ 3.4 lakhs
Sales	₹ 50 lakhs
8% Debentures of ₹ 100 each	₹ 30.25 lakhs
Equity Share Capital of ₹ 10 each	34 lakhs
Income Tax Rate	30%

CALCULATE:

- (i) Financial Leverage
- (ii) P/V ratio and Earning per Share (EPS)
- (iii) If the company belongs to an industry, whose assets turnover is 1.5, does it have a high or low assets turnover?
- (iv) At what level of sales, the Earning before Tax (EBT) of the company will be equal to zero?

$$FL = \frac{EBIT}{EBT}$$

$$1.25 = \frac{x}{x - \text{Interest}}$$

$$1.25 = \frac{x}{x - 242000}$$

$$1.25x - 302500 = x$$

$$\therefore x = 121000$$

$$\begin{aligned}
 \text{Financial leverage} &= CL / FL \\
 &= 2.50 / 2 \\
 &= 1.25 \text{ times}
 \end{aligned}$$

$$\begin{aligned}
 \text{Operating leverage} &= \frac{\text{Contribution}}{\text{EBIT}} \\
 &= \frac{\text{Contribution}}{\text{Contribution} - \text{fixed cost}}
 \end{aligned}$$

$$2 = \frac{x}{x - 34000}$$

$$2x - 68000 = x$$

$$\therefore x = 68000$$

$$\begin{aligned} \therefore P/V \text{ ratio} &= \frac{\text{Contribution}}{\text{Sales}} \times 100 \\ &= \frac{68000}{50000} \times 100 \\ &= 13.60\% \end{aligned}$$

$$EPS = \frac{(EBIT - \text{Interest}) (1 - 30)}{\text{No. of equity shares}}$$

No. of equity shares

$$EPS = \frac{(340000 - 242000) (1 - 30)}{340000}$$

340000

$\therefore$ 0.20 Per share

3)

$$\text{Asset turnover ratio} = \frac{\text{Sales}}{\text{Total Assets}}$$

$$\begin{array}{r} \text{11} \quad \underline{\text{\$0 00 000}} \\ \text{Amt of} + \text{Amt of} \\ \text{Sales} \quad \quad \quad \end{array}$$

$$\begin{array}{r} \text{11} \quad \underline{\text{\$000 000}} \\ 3400000 + 3025000 \end{array}$$

$$\begin{array}{r} \text{11} \quad \underline{\text{\$0 00 000}} \\ 6425000 \end{array}$$

$$\begin{array}{r} \text{11} \quad 0.78 \end{array}$$

As Asset turnover ratio is 0.78

which is low than industry's 1.50, we
can say that it has low asset turnover

4)

$$EBT = (\text{Sales} \times P/V \text{ ratio}) - \text{Fixed Cost} - \text{Interest}$$

$$\begin{aligned} \text{①} &= 27 \times 0.136 - 340000 - \\ & \quad 242000 \\ &= \underline{\underline{4279412}} \end{aligned}$$

ILLUSTRATION 10

Betatronics Ltd. has the following balance sheet and income statement information:

Balance Sheet as on March 31st 2021

Liabilities	(₹)	Assets	(₹)
Equity capital (₹ 10 per share)	8,00,000	Net fixed assets	10,00,000
10% Debt	6,00,000	Current assets	9,00,000
Retained earnings	3,50,000		
Current liabilities	1,50,000		
	19,00,000		19,00,000

Income Statement for the year ending March 31st 2021

Particulars	(₹)
Sales	3,40,000
Operating expenses (including ₹ 60,000 depreciation)	1,20,000
EBIT	2,20,000
<i>Less: Interest</i>	60,000
Earnings before tax	1,60,000
<i>Less: Taxes</i>	56,000
Net Earnings (EAT)	1,04,000

- (a) DETERMINE the degree of operating, financial and combined leverages at the current sales level, if all operating expenses, other than depreciation, are variable costs.
- (b) If total assets remain at the same level, but sales (i) increase by 20 percent and (ii) decrease by 20 percent, COMPUTE the earnings per share at the new sales level?

Profitability Statement of Betatronics Ltd and Computation of Leverages		
Sr.No	Particulars	Amount
A	Sales	340000
B	Variable Cost	60000
C	Contribution (A-B)	280000
D	Fixed Cost	60000
E	EBIT (C-D)	220000
F	Interest	60000
G	EBT (E-F)	160000
H	Tax	56000
I	EAT (G-H)	104000
J	No. of Shares	80000
K	EPS (EAT/No. of Equity Shares)	1.30
L	DOL (Contribution/EBIT)	1.27
M	DFL (EBIT/EBT)	1.38
N	DCL (Contribution/EBT)	1.75

DCL OF 1.75 INDICATES 1% CHANGE IN SALES WILL CHANGE EPS BY 1.75%

STATEMENT SHOWING EFFECT ON EPS ON CHANGE IN SALES			
SR.NO	PARTICULARS	SITUATION 1	SITUATION 2
A	% CHANGE IN SALES	20% UP	20% DOWN
B	DCL	1.75	1.75
C	TOTAL CHANGE IN EPS IN % (A*B)	35% UP	35% DOWN
D	EXISTING EPS	1.30	1.30
E	NEW EPS	1.76	0.85

ILLUSTRATION 11 (PYP NOV 2019) 10 MARKS

The Balance Sheet of Gitashree Ltd. is given below:

Liabilities		(₹)
<i>Shareholders' fund</i>		
<i>Equity share capital of ₹ 10 each</i>	<i>₹ 1,80,000</i>	
<i>Retained earnings</i>	<i>₹ 60,000</i>	<i>2,40,000</i>
<i>Non-current liabilities 10% debt</i>		<i>2,40,000</i>
<i>Current liabilities</i>		<i>1,20,000</i>
		<i>6,00,000</i>
Assets		
<i>Fixed Assets</i>		<i>4,50,000</i>
<i>Current Assets</i>		<i>1,50,000</i>
		<i>6,00,000</i>

The company's total asset turnover ratio is 4. Its fixed operating cost is ₹ 2,00,000 and its variable operating cost ratio is 60%. The income tax rate is 30%.

Calculate:

- (i)
 - (a) Degree of Operating leverage.
 - (b) Degree of Financial leverage.
 - (c) Degree of Combined leverage.
- (ii) Find out EBIT if EPS is (a) ₹ 1 (b) ₹ 2 and (c) ₹ 0.

$$18000 = 0.70x - 16800$$

$$\therefore 0.70x = 34800$$

$$x = \underline{\underline{49714}}$$

[illegible][illegible]

(a) Degree of Operating Leverage

$$\text{Degree of Operating leverage} = \frac{\text{Contribution}}{\text{EBIT}} = \frac{\text{₹ 9,60,000}}{\text{₹ 7,60,000}} = 1.263 \text{ (approx.)}$$

(b) Degree of Financial Leverage

$$\text{Degree of Financial Leverage} = \frac{\text{EBIT}}{\text{EBT}} = \frac{\text{₹ 9,60,000}}{\text{₹ 7,60,000}} = 1.033 \text{ (approx.)}$$

(c) Degree of Combined Leverage

$$\begin{aligned} \text{Degree of Combined Leverage} &= \frac{\text{Contribution}}{\text{EBIT}} \times \frac{\text{EBIT}}{\text{EBT}} = \frac{\text{Contribution}}{\text{EBT}} \\ &= \frac{\text{₹ 9,60,000}}{\text{₹ 7,60,000}} = 1.304 \text{ (approx.)} \end{aligned}$$

(a) If EPS is Re. 1

$$\text{EPS} = \frac{(\text{EBIT} - \text{Interest})(1 - \text{tax})}{\text{No of equity shares}}$$

$$\text{Or, } 1 = \frac{(\text{EBIT} - ₹ 24,000)(1 - 0.30)}{18,000}$$

$$\text{Or, EBIT} = ₹ 49,714 \text{ (approx.)}$$

(b) If EPS is ₹ 2

$$2 = \frac{(\text{EBIT} - ₹ 24,000)(1 - 0.30)}{18,000}$$

$$\text{Or, EBIT} = ₹ 75,429 \text{ (approx.)}$$

(c) If EPS is ₹ 0

$$0 = \frac{(\text{EBIT} - ₹ 24,000)(1 - 0.30)}{18,000}$$

$$\text{Or, EBIT} = ₹ 24,000$$

ILLUSTRATION 12 (PYP NOV 2020) 10 MARKS

The following data is available for Stone Ltd. :

	(₹)
Sales	5,00,000
(-) Variable cost @ 40%	<u>2,00,000</u>
Contribution	3,00,000
(-) Fixed cost	<u>2,00,000</u>
EBIT	1,00,000
(-) Interest	<u>25,000</u>
Profit before tax	<u>75,000</u>

Using the concept of leverage, find out

- (i) The percentage change in taxable income if EBIT increases by 10%.*
- (ii) The percentage change in EBIT if sales increases by 10%.*
- (iii) The percentage change in taxable income if sales increases by 10%.*

Also verify the results in each of the above case.

(i) Degree of Financial Leverage = $\frac{\text{EBIT}}{\text{EBT}} = \frac{\text{₹ } 1,00,000}{\text{₹ } 75,000} = 1.333 \text{ times}$

So, If EBIT increases by 10% then Taxable Income (EBT) will be increased by $1.333 \times 10 = 13.33\%$ (approx.)

Verification

Particulars	Amount (₹)
New EBIT after 10% increase (₹ 1,00,000 + 10%)	1,10,000
Less: Interest	25,000
Earnings before Tax after change (EBT)	85,000

Increase in Earnings before Tax = ₹ 85,000 - ₹ 75,000 = ₹ 10,000

So, percentage change in Taxable Income (EBT) = $\frac{\text{₹ } 10,000}{\text{₹ } 75,000} \times 100 = 13.333\%$, hence verified

(ii) Degree of Operating Leverage = $\frac{\text{Contribution}}{\text{EBIT}} = \frac{\text{₹ } 3,00,000}{\text{₹ } 1,00,000} = 3 \text{ times}$

So, if sale is increased by 10% then EBIT will be increased by $3 \times 10 = 30\%$

Verification

Particulars	Amount (₹)
New Sales after 10% increase (₹ 5,00,000 + 10%)	5,50,000
Less: Variable cost (40% of ₹ 5,50,000)	2,20,000
Contribution	3,30,000
Less: Fixed costs	2,00,000
Earnings before interest and tax after change (EBIT)	1,30,000

Increase in Earnings before interest and tax (EBIT) = ₹ 1,30,000 - ₹ 1,00,000 = ₹ 30,000

So, percentage change in EBIT = $\frac{\text{₹ } 30,000}{\text{₹ } 1,00,000} \times 100 = 30\%, \text{ hence verified.}$

$$(iii) \text{ Degree of Combined Leverage} = \frac{\text{Contribution}}{\text{EBT}} = \frac{\text{₹ } 3,00,000}{\text{₹ } 75,000} = \text{4 times}$$

So, if sale is increased by 10% then Taxable Income (EBT) will be increased by $4 \times 10 = 40\%$

Verification

Particulars	Amount (₹)
New Sales after 10% increase (₹ 5,00,000 + 10%)	5,50,000
Less: Variable cost (40% of ₹ 5,50,000)	2,20,000
Contribution	3,30,000
Less: Fixed costs	2,00,000
Earnings before interest and tax (EBIT)	1,30,000
Less: Interest	25,000
Earnings before tax after change (EBT)	1,05,000

Increase in Earnings before tax (EBT) = ₹ 1,05,000 - ₹ 75,000 = ₹ 30,000

So, percentage change in Taxable Income (EBT) = $\frac{\text{₹ } 30,000}{\text{₹ } 75,000} \times 100 = \mathbf{40\%, \text{ hence verified}}$

ILLUSTRATION 13 (PYP DEC 2021) 10 MARKS

Information of A Ltd. Is given below :

- Earning after tax : 5% on sales
- Income tax rate : 50%
- Degree of Operating Leverage : 4 times
- 10% Debenture in capital structure : ~~Rs~~ 3 lakhs
- Variable cost : Rs 6 lakhs

1) From the given data complete the following statement :

Sales	₹ 1200000	XXXX
Less : Variable cost	600000	Rs. 6,00,000
Contribution	₹ 600000	XXXX
Less : Fixed Cost	600000	XXXX
EBIT	₹ 0	XXXX
Less : Interest expenses	300000	XXXX 300000
EBT	₹ 0	XXXX
Less : Income tax	0	XXXX
EAT	0	XXXX

2) Calculate Financial Leverage & Combined Leverage.

3) Calculate the percentage change in earning per share, if sales increased by 5%

$$OL = \frac{c}{EBIT}$$

$$L = \frac{x - 60000}{0.16(1 + 30\%)}$$

$$0.4x + 12000 \geq x - 60000$$

$$\rightarrow 0.60x \geq -72000$$

$$\therefore x \geq 120000$$

Profitability Statement			
Sr.No	Particulars	Assumed	Actual
A	Sales	₹	120000
B	less - variable cost	60000	60000
C	Contribution	₹ - 60000	60000
D	less - fixed cost		45000
E	EBIT	0.10x + 30000	15000
F	less - interest	3000	3000
G	EBT	0.10x	12000
H	less - Tax @ 50%	0.05x	6000
I	EAT	0.05x	6000

$$\text{Operating leverage} = \frac{\text{Contribution}}{\text{EBIT}}$$

$$4 = \frac{x - 600 \text{ m}}{0.10x + 300 \text{ m}}$$

$$0.40x + 120 \text{ m} = x - 600 \text{ m}$$

$$0.60x = -720 \text{ m}$$

$$x = 720 \text{ m} / 0.60x$$

$$= 1200000$$

$$\text{financial leverage} = \frac{\text{EBIT}}{\text{EBT}} = \frac{15000}{12000} = 1.25 \text{ times}$$

$$\text{Combined leverage} = \frac{\text{Contribution}}{\text{EBT}} = \frac{60000}{12000} = 5 \text{ times}$$

If sales increases by 5%, EPC shall increase by 25%. As combined leverage is 5

ILLUSTRATION 14 (RTP MAY 2022)

Company P and Q are having same earnings before tax. However, the margin of safety of Company P is 0.20 and, for Company Q, is 1.25 times than that of Company P. The interest expense of Company P is ₹ 1,50,000 and, for Company Q, is $\frac{1}{3}$ rd less than that of Company P. Further, the financial leverage of Company P is 4 and, for Company Q, is 75% of Company P.

Other information is given as below:

Particulars	Company P	Company Q
Profit volume ratio	25%	33.33%
Tax rate	45%	45%

You are required to PREPARE Income Statement for both the companies.

$$\begin{aligned}
 \text{DOL} &= \frac{P_{\text{Ud}}}{\text{MOS}} \\
 &= \frac{1}{0.20} \\
 \text{DOL} &= 5 \text{ terms}
 \end{aligned}$$

$$\begin{aligned}
 \text{DOL} &= \frac{Q_{\text{Ud}}}{0.20 \times 1.25} \\
 &= \frac{1}{0.25} \\
 \text{DOL} &= 4 \text{ terms}
 \end{aligned}$$

P Utd

$$\text{Interest} = 150000$$

Q Utd

$$\begin{aligned}\text{Interest} &= 150000 - \frac{1}{3} \times 150000 \\ &= 150000 - 50000 \\ &= 100000\end{aligned}$$

P Utd

$$FL = 4 \text{ terms}$$

Q Utd

$$\begin{aligned}FL &= 4 \times 75\% \\ &= 3 \text{ terms}\end{aligned}$$

Income Statement

Particulars	Company P (₹)	Company Q (₹)
Sales	40,00,000	18,00,000
<i>Less: Variable Cost</i>	30,00,000	12,00,000
Contribution	10,00,000	6,00,000
<i>Less: Fixed Cost</i>	8,00,000	4,50,000
EBIT	2,00,000	1,50,000
<i>Less: Interest</i>	1,50,000	1,00,000
EBT	50,000	50,000
Tax (45%)	22,500	22,500
EAT	27,500	27,500

ILLUSTRATION 15 (PYP NOV 22) 10 MARKS

The following information is available for SS Ltd.

<i>Profit volume (PV) ratio</i>	<i>30%</i>
<i>Operating leverage</i>	<i>2.00</i>
<i>Financial leverage</i>	<i>1.50</i>
<i>Loan</i>	<i>₹ 1,25,000</i>
<i>Post-tax interest rate</i>	<i>5.6%</i>
<i>Tax rate</i>	<i>30%</i>
<i>Market Price per share (MPS)</i>	<i>₹ 140</i>
<i>Price Earnings Ratio (PER)</i>	<i>10</i>

You are required to:

- (1) Prepare the Profit-Loss statement of SS Ltd. and*
- (2) Find out the number of equity shares.*

No. of Equity shares

$$P/E \text{ ratio} = \frac{MPS}{EPS} \quad \therefore EPS = \frac{EAT}{\text{No. of eq. shares}}$$

$$10 = \frac{140}{EPS}$$

$$\therefore EPS = 14$$

$$14 = \frac{1400}{\text{No. of eq. shares}}$$

$$\therefore \text{No. of eq. shares} = 1400/14 = 100 \text{ shares}$$

$$\text{Pre-Tax Interest rate} = 5.60 / 70\% \\ = \underline{\underline{8\%}}$$

$$\therefore \text{Interest} = 125000 \times 8\% = 10000$$

Profit – Loss Statement

Particulars	₹
Sales	2,00,000
Less: Variable cost	1,40,000
Contribution	60000
Less: Fixed cost	30,000
EBIT	30,000
Less: Interest	10,000

EBT	20,000
Less: Tax @ 30%	6,000
EAT	14,000

$\therefore$ No. of Equity Shares = $14,000 / 14 = \mathbf{1000}$



ILLUSTRATION 16 (PYP MAY 23) 5 MARKS

Following information is given for X Ltd.:

Total contribution (₹) 4,25,000

Operating leverage 3.125

15% Preference shares (₹ 100 each) 1,000

Number of equity shares 2,500

Tax rate 50%

Calculate EPS of X Ltd., if 40% decrease in sales will result EPS to zero.

$$\text{Combined leverage} = \frac{\% \text{ change in EPS}}{\% \text{ change in sales}}$$

$$= \frac{100}{40}$$

$$\therefore \text{CL} = 2.50$$

$$\text{Combined leverage} = \frac{\text{Contribution}}{\text{EBT} - \frac{\text{PD}}{(1-t)}}$$

$$2.50 = \frac{425000}{X - \frac{15000}{(1-0.50)}}$$

$$2.50 = \frac{425000}{X - 30000}$$

$$2.50 X - 75000 = 425000$$

$$X = \frac{425000 + 75000}{2.50} = 200000$$

Calculation of EPS

Sr.No	Particulars	Amount
A	EBT	20000
B	less - Tax @ 50%	10000
C	EAT	10000
D	less - preference dividend	15000
E	Earnings available To equity Shareholders (C-D)	<u>85000</u>
F	NO. of equity shares	2500
G	EPS (E/F)	34

ILLUSTRATION 17 (MTP NOV 22 SERIES 1) 5 MARKS

Following information is provided relating to SVB Ltd.:

Sales price	₹ 21 per unit
Variable cost	₹ 13.50 per unit
Break-even point	30,000 units

You are required to CALCULATE operating leverage at sales volume 37,500 units and 45,000 units.

Break Even Point = 30 000 units ,

At Break Even Point

Contribution = Fixed Cost ,

No. of units (Sales - variable cost) = Fixed Cost ,

30 000 (21 - 13.50) = Fixed Cost

∴ Fixed Cost = 225 000

Profitability Statement

Sr.No	Particulars	37500 Units	45000 Units
A	Sales @ 21 per unit	787500	945000
B	Less - Variable cost @ 13.50 per unit	506250	607500
C	Contribution	281250	337500
D	Less - Fixed Cost	225000	225000
E	EBIT (C-D)	56250	112500
F	Operating leverage (Contribution / EBIT)	5 times	3 times

ILLUSTRATION 18 (MTP NOV 22 SERIES 2) 5 MARKS

Axar Ltd. has a Sales of ₹ 68,00,000 with a Variable cost Ratio of 60%.
The company has fixed cost of ₹16,32,000. The capital of the company comprises of 12% long term debt, ₹1,00,000 Preference Shares of ₹ 10 each carrying dividend rate of 10% and 1,50,000 equity shares.
The tax rate applicable for the company is 30%.
At current sales level, DETERMINE the Interest, EPS and amount of debt for the firm if a 25% decline in Sales will wipe out all the EPS.

Profitability Statement		
Sr.No	Particulars	Amount
A	Sales	6800000
B	Less – variable Cost (A*60%)	4080000
C	Contribution (A-B)	2720000
D	Less – Fixed Cost	1632000
E	EBIT (C-D)	1088000
F	Less - Interest (Debt Fig)	393714
G	EBT	694286
H	Less - Tax @ 30%	208286
I	EAT	486000

Sr.No	Particulars	Amount
J	Less - PD	10000
K	EAES	476000
L	No. of Equity Shares	150000
M	EPS	3.17

$$\text{Combined leverage} = \frac{\% \text{ Change in EPS}}{\% \text{ Change in Sales}}$$

$$= \frac{100}{25}$$

$$\text{Combined leverage} = 4 \text{ times}$$

$$\text{Combined leverage} = \frac{\text{Contribution}}{\text{EBT} - \frac{PD}{(1-t)}}$$

$$4 = \frac{2720000}{x - \frac{10000}{(1-0.30)}}$$

$$4 = \frac{2720000}{x - 14286}$$

$$4x - 57144 = 2720000$$

$$4x = 2777144$$

$$x = 694286$$

Summary

$$\text{Interest} = 393714$$

$$\begin{aligned} \text{Amount of Debt} &= 393714 / 12\% \\ &= 3280950 \end{aligned}$$

$$\text{EPS} = 3.17$$

ILLUSTRATION 19

A Firm sells its only product at Rs. 10 per unit. Its variable cost ratio is 70% while fixed costs are Rs. 1,000. Present sales are 1,000 units. Find By what % should sales fall before the firm starts incurring losses?

Profitability Statement

sr. no	Particulars	Amt
A	Sales $[1000 \times 10]$	10000
B	less - Variable Cost $(10 \times 70\%)$	7000
C	Contribution $(A - B)$	<u>3000</u>
D	Fixed Cost	1000
E	EBIT $(C - D)$	<u><u>2000</u></u>

$$DL = \frac{\text{Contribution}}{\text{EBIT}} = \frac{3000}{2000} = 1.5 \text{ times}$$

$$OL = \frac{\% \text{ change in EBIT}}{\% \text{ change in sales}}$$

$$1.5 = \frac{100}{x}$$

$$1.5 x = 100$$

$$x = 100 / 1.5$$

=

66.67 %

If sales drop by more than 66.67% from

will start incurring loss.

ILLUSTRATION 20

Following information have been provided by ABC Private Limited:

Sales	Rs. 80,00,000
Variable Cost	Rs. 46,00,000
Fixed Cost	Rs. 6,50,000
11 % Borrowed Capital	Rs. 50,00,000
Equity Capital	Rs. 45,00,000
Retained Earnings	Rs. 15,00,000

1. What is the Firm's Return on Investment (ROI)?
2. Does it have favorable Financial Leverage?
3. If the Firm belongs to an Industry whose Asset Turnover is 3, does it have a high or low Asset Leverage?
4. If the Sales drop to Rs. 60,00,000, what will the new EBIT be?
5. At what level of Sales, will the EBT of the Firm be equal to zero?

Profitability Statement -

Sr. No	Particulars	Am't
A	Sales	8000000
B	less - variable cost	4600000
C	Contribution (A-B)	3400000
D	less - Fixed cost	650000
E	EBIT (C-D)	2750000
F	less - Interest	550000
G	EAT	2200000

1. firm's ROI

$$ROI = \frac{EBIT}{\text{Capital employed}} \times 100$$

$$EBIT = 2750000$$

$$\begin{aligned} \text{Capital employed} &= \text{Equity Capital} + \text{Retained Earnings} + \text{long term loan} \\ &= 4500000 + 1500000 + 500000 \\ &= 11000000 \end{aligned}$$

$$\begin{aligned} \text{RO I} &= \frac{2750000}{11000000} \times 100 \\ &= 25\% \end{aligned}$$

2. Whether firm has favourable financial leverage

As $\text{ROCE}(25\%) > \text{Rate of interest}(11\%)$ it can be said that firm has favourable financial leverage.

3. Computation of Asset leverage.

$$\text{Asset Turnover Ratio} = \frac{\text{Sales}}{\text{Total Assets}}$$

$$= \frac{8000000}{11000000}$$

$$= 0.73$$

The firm has asset leverage of only 0.73 as compared to industry's 3, Thus it can be concluded that firm has low asset leverage

4. New EBIT if sales drop to 6000000

$$OL = \frac{\text{Contribution}}{\text{EBIT}}$$

$$= \frac{3400000}{2750000}$$

$$= 1.24 \text{ times}$$

OL of 1.24 times indicates that 1% change in sales shall lead 1.24% change in EBIT

If sales drops to 6000000 from 8000000 it means sales decreased by 25%. Thus EBIT shall fall by $25 \times 1.24 = 31\%$.

$$\begin{aligned}\therefore \text{New EBIT} &= \text{Existing EBIT} - 31\% \\ &= 2750000 - 31\% \\ &= \underline{\underline{1897500}}\end{aligned}$$

5. Sales level for $EBT = 0$

$$EBT = (\text{Sales} \times \text{PV ratio}) - \text{Fixed Cost} - \text{Interest}$$

$$\begin{aligned}\therefore \text{PV ratio of firm} &= \frac{\text{Contribution}}{\text{Sales}} \times 100 \\ &= \frac{3400000}{8000000} \times 100 \\ &= \underline{\underline{42.50\%}}\end{aligned}$$

$$0 = 0.425x - 650000 - 550000$$

$$- 0.425x = - 1200000$$

$$\therefore x = \frac{1200000}{0.425}$$

$$= 2823530$$

$\therefore$ Sales level of 2823530 shall lead
EBT to zero



thank you!

