RATIOS ANALYSIS

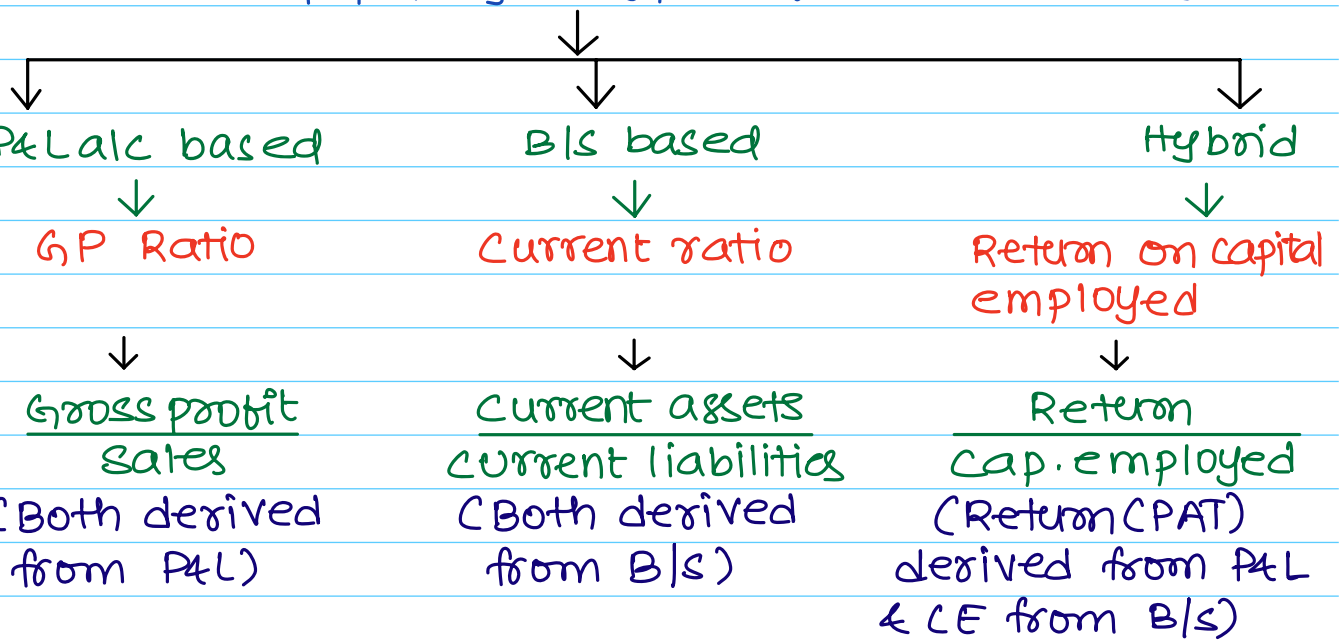
* Health of a company will be presented through the financial statements namely ——
  - P&L a/c
  - Balance sheet
  - Cash flow statement.
* The above said statement gives a clarity as to how a company performed in the last year/ for a given period.
* Reading & interpretation of P&L & B/S is an Art. P&L a/c & B/S is nothing but a set of numbers. Numbers by themselves don't speak anything unless they are compared with other numbers.

  Let us say for example ——

	X Ltd	Y Ltd
Capital employed	₹ 1Cr	₹ 3Cr
Profit earned	₹ 10L	₹ 15L

one cant just compare X Ltd & Y Ltd profits and conclude that Y Ltd is best because, that ₹15L is for 3Cr capital whereas X Ltd earned ₹10L for 1Cr capital. Here, X Ltd is only better and we used a ratio called as "Return on investment (ROI)".

* There are popularly 3 types of ratios namely ——



* There are 2 popular ways of comparison namely
  - Intra firm comparison and
  - Inter firm comparison
* In case of intra firm comparison, we compare current year ratio of company with the ratio of last year and interpret accordingly. on the other hand, in case of inter firm comparison, we compare ratio of our company with the ratio of another company doing similar business. Sometimes, comparison can also be benchmark comparison on overall industry base.
* In simple, ratios is a tool to diagnose the financial health of a company. When properly diagnosed, it helps in making necessary improvements.

FORMAT OF BALANCE SHEET

Sch III

Particulars	Amounts (₹)
I. EQUITY AND LIABILITIES	
1. Shareholders funds	
(a) Share Capital	x x x
(b) Reserves & Surplus	x x x
(c) money recd against share warrants	x x x
2. Share application money pending allotment.	x x x
3. Non-current Liabilities	
(a) Long-term borrowings	x x x
(b) Deferred Tax Liability (Net)	x x x
(c) Other Long-term liabilities	x x x
(d) Long-term provisions	x x x
4. Current Liabilities	
(a) Short-term borrowings	x x x
(b) Trade payables	x x x
(c) Other current liabilities	x x x
(d) short term provisions.	x x x
TOTAL (I)	
II. ASSETS	
1. Non-current assets	
(a) Property, plant & equipment	
(i) Tangible assets	x x x
(ii) Intangible assets	x x x
(iii) Capital w.i.p	x x x
(b) Non-current investments	x x x
(c) Deferred tax assets (net)	x x x
(d) Long-term loans & advances	x x x
(e) Other non-current assets.	x x x
2. Current assets	
(a) Current investments	x x x
(b) Inventories	x x x
(c) Trade receivables.	x x x

(d) Cash & equivalents	x	x	x
(e) Short term loans and advances	x	x	x
(f) Other current assets	x	x	x
TOTAL (II)	x	x	x
TOTAL (III) = (I) + (II)	x	x	x

Notes

* Balance sheet consists of liabilities and assets. Liability is the source of funds and assets are the application of funds. In simple,
  * Getting money = Liability
  * Putting money = Asset
* In the sources of funding, there are 2 popular ways • Owners money (SH) • Borrowed money (others)
* Owners money is called as "equity" and others money is called as "debt".
* Equity includes share capital cum reserves & surplus. Debt includes both long term & short term, secured/unsecured.
* Sources of funds are used to finance fixed assets, investments and current assets. That source of fund which is employed in assets is called as "capital employed".

FORMAT OF PROFIT AND LOSS

Particulars	Amounts (₹)
I. Revenue from operations	x x x
II. Other income	x x x
III. Total income / Revenue (I + II)	x x x
IV. Expenses	
Cost of materials consumed	x x x
Purchase of stock	x x x
Employee benefit expense	x x x
Finance costs	x x x
Depreciation and amortisation expense	x x x
Other expenses	x x x
Total expenses	x x x
V. Profit before exceptional items and extra-ordinary items, tax. (III − IV)	x x x
VI. Exceptional items	x x x
VII. Profit before extra-ordinary items and tax.	x x x
VIII. Extra-ordinary items	x x x
IX. Profit before tax (VII − VIII)	x x x
X. Tax expense	x x x
XI. Profit (Loss) for the period (IX − X)	x x x
XII. Earnings per share:	x x x
(1) Basic x x x	
(2) Diluted x x x	

RATIOS AND ITS ANALYSIS

Important Ratios

1. **Liquidity Ratios**
   1. Current ratio
   2. Acid test ratio/ Liquid ratio
2. **Cap. structure Ratios**
   1. Debt – equity Ratio
   2. Propriety ratio
   3. Capital gearing ratio
   4. Debt service coverage ratio.
3. **Activity Ratios**
   1. Capital T.O. ratio
   2. FA T.O
   3. W.Cap. T.O. ratio
   4. Debtors T.O ratio
   5. Inventory T.O ratio
   6. Creditor T.O ratio
4. **Sales profitab-ility ratios**
   1. GP ratio
   2. NP ratio
   3. Opg. profit ratio
   4. CGS to Sales ratio
   5. Opg. exp. ratio
5. **Capital profit-ability ratios**
   1. Return on Capital employed
   2. Return on Equity.
6. **Miscellaneous Ratios**
   1. EPS
   2. MPS
   3. PE ratio
   4. DPS
   5. Div. pay out ratio
   6. Retention ratio.

LIQUIDITY RATIOS

Ratio	Formula	Remarks
1. Current ratio	$\frac{\text{Current assets}}{\text{Current liabilities}}$	* Current assets are the assets kept for a period < 1year. * Current liabilities are those which become due in < 1year.
2. Liquid ratio	$\frac{\text{Liquid assets}}{\text{Current liabilities}}$	* Liquid assets = Current assets − stock − prepaid expenses

Notes on solvency ratios:

* People are always interested to know whether a co is solvent (or) not. solvency means, co should be in a position to settle its dues.
* There can be 2 types of solvency namely ——
  - Long term solvency
  - short term solvency.
* For eg:

mr. A
Bought a house with ₹ 1cr Loan payable in 3 months.
↓
To pay in short span, he need to sell house and repay (insolvent). Hence, moral is never buy FA with ST debts.

mr. B
Bought a house with ₹ 1cr Loan payable in 360 months.
↓
He is very stable since, he will pay LT debt taken for FA (LT purpo-se).

* CR says CL shall be paid out of CA not-by selling assets. That means, crs should be paid by selling stock not by selling assets.
* CR is expressed in no. of. times. Bigger the CR more solvent the company is and vice versa.
* IDEAL CR (generally) = 2:1.

* There is another attached ratio called as "Liquid ratio". (Cash + Debtors)
* Out of CA, stock will get converted into cash only after a long time periods. Hence, the numerator is not CA, instead it is CA − Stock. But until the stock is sold, CRs wont wait. So, the denominator is CL.
* IDEAL LR is 1:1.

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CAPITAL STRUCTURE RATIOS

Ratio	Formula	Remarks
A company should be solvent not only in short run, but also, long run, therefore cap. structure ratios are used. A.k.a. Long term solvency ratios.		
1. Debt-eq ratio	$\frac{\text{Debt}}{\text{Equity}}$ (Ideal ratio = 2:1)	* Debt means long term debt * Equity = S cap + R&S − misc. exp. * Equity a.k.a. net worth, SH funds (or) proprietor funds. * PSC is deemed as 'eq'.
2. Propriety ratio	$\frac{\text{Equity}}{\text{Total assets}}$	* Total assets is the appln of funds. Hence this ratio helps us to clearly know how much part of assets are financed by equity. * Equity = ESC + PSC + R&S
3. Capital gearing ratio.	$\frac{\text{Debt + Pref. Sh. Cap}}{\text{Equity}}$	* Gearing means leverage. * Any capital that gives leverage is included. * Debt magnifies profit due to interest and Pref shares magnifies with its pref. dividend. * Equity here does not include Pr. Sh. Cap
4. Debt service coverage ratio	$\frac{\text{EBIDTA}}{\text{Interest + instalment}}$	Profits available to pay debt commitment

ACTIVITY RATIOS

Ratio	Formula	Remarks
1. capital T.O. ratio	Turnover / Sales Capital employed (in our business)	* Capital employed means LT fund. * CE = Equity + Debt (or) CE = FA + CA − CL (or) CE = FA + W.Cap Capital employed shouldn't include investments made in other company's shares.
2. Fixed assets T.O ratio	Sales / Fixed assets	How effectively FA are used in company.
3. W.Cap T.O. ratio	Sales / working capital	How effectively W.Cap is utilised in company.
4. Debtors T.O. ratio	Sales / Debtors (or) Sales / Avg. Debtors (or) Debtors x 360 / sales	* Also called Debtors velocity. * Sales = credit sales * Expressed in times. * 3rd formula is expressed in periods (months/days)
5. Stock TO ratio	COGS / Stock (or) COGS / Avg. Stock (or) Stock / Avg. Stock x 360 / sales	* Also called stock velocity. * Expressed in times (generally) * 3rd formula is expressed in periods (months/days)

6. Creditors T.O. ratio	$\frac{\text{Purchases}}{\text{Creditors}}$ (or) $\frac{\text{Purchases}}{\text{Avg. Creditors}}$ (or) $\frac{\text{Creditors/Avg. Creditors}}{\text{Purchases}} \times 360/12$	* Purchases means credit purchases * Expressed in times * 3rd formula is expressed in periods (months/days)

PROFITABILITY RATIOS
(Expressed as a %)

Ratio	Formula	Remarks
1. Gross profit ratio	$\frac{\text{Gross profit}}{\text{sales}}$	* GP is accounting opg. profit. * NO FC & VC divisions
2. Net profit ratio	$\frac{\text{Net profit (PAT)}}{\text{sales}}$	* NP is accounting profit after tax.
3. Opg. profit ratio	$\frac{\text{Opg. profit (EBIT)}}{\text{sales}}$	* This is costing profit * considers FC, VC, contele.
4. COGS to Sales	$\frac{\text{COGS}}{\text{sales}}$	—
5. Return on capital employed	$\frac{\text{PAT + Interest}}{\text{Capital employed (CE + D)}}$	more explanation in notes below.
6. Return on Equity	$\frac{\text{Return (PAT)}}{\text{Equity}}$	more explanation in notes below.

Notes:

* Anyone making investment wants to know about return on investment. When a SH invests his money in the company, he wants to know for every ₹1 investment how much he earns. That in simple we call as return on investment/capital employed.
* As a formula ROCE = $\frac{\text{Return}}{\text{cap.emp}}$
  - cap.emp ↓ money invested in FA & WCap
  - Return: What is given as return. (Int & PAT)

  Capital employed is money invested in FA & WCap and return is what is generated out of those FA & WCap. Capital is given by both debt and equity. Return here represents interest for debt and PAT for owners fund.
* Further breakup is as under ——

$$\frac{\text{Return}}{\text{cap.emp}} = \frac{\text{PAT + Int}}{\text{CE}}$$

* This ROCE is further classified into 2 parts

Capital T.O. ratio → Sales / CE

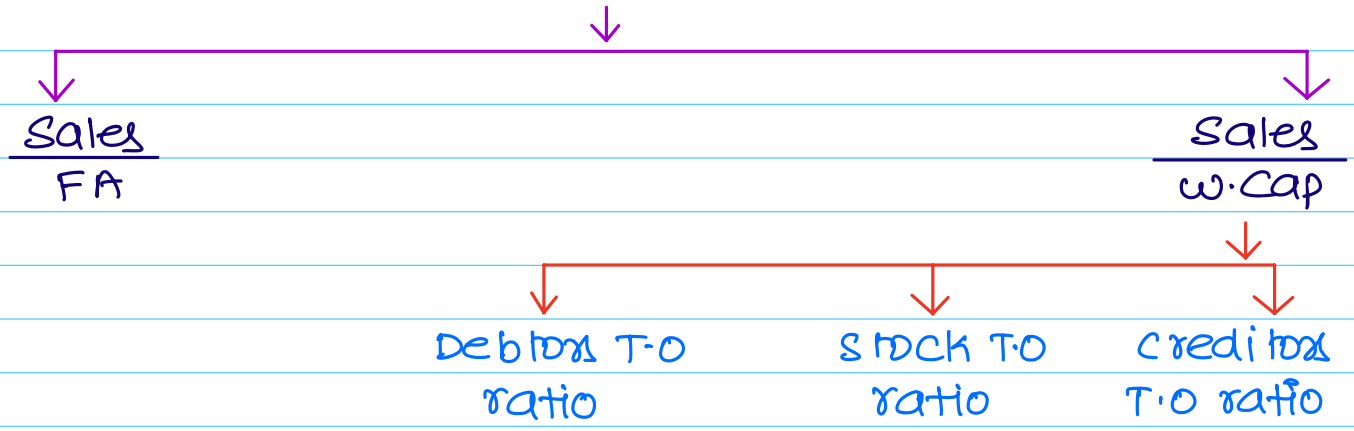
Profitability ratio → Return / sales

* How a company can improve its ROCE?
  - Let us say, a CA institute invested some capital in a premises worth ₹ 1cr. (in form of room, furniture, interiors, technology etc)
  - Now let us consider 2 different scenarios

Institute uses the premises for 1 batch throughout the year having 500 students with daily working hrs of 4 hours.	Institute uses the premises for 10 batches throughout the year having 250 students in each batch with daily 12 hrs.
In this case, the capital which is in the form of asset is used only once which means there is a under activity.	In this case, the capital which is in the form of asset is used 10 times which means there is a optimum utilisation.

  - In the 1st case, asset is not turned over to the extent required and in 2nd case the asset is turned over appropriately. (Turnover = activity). Activity is the 1st driver for generating profits.
  - Capital employed means FA & W.Cap. Both of them individually helps in generating sales. FA are used to generate Finished product and to sell them. W.cap also generate sales in the form of debtors.

- Sales to CE is further broken as under ——



- continuing the example, from all the batches, it generated ₹20cr sales. For CE of ₹1cr it generated sales worth ₹20cr which means the capital is turned over 20 times.
- Capital T.O. generate sales. But profitability is based on how efficiently the business is carried on. If the costs are very high though it generates heavy sales, it would not end up giving return to stakeholders. So, return on capital employed comes not only because of T.O ratio but also because of profitability ratios.
- Let us now extend this example to a manufacturing company. It has many activities like manufacturing, admnistration, selling & promotion etc.

manufacturing operations	Profit earned on product at factory exit	Profit earned after incurring all Admin & selling costs
↓	↓	↓
COGS / sales	Gross profit / sales	EBIT / sales

conclusion is entire pulse of business lies on how busy is the asset (activity ratio) and how much cost management is done to maintain profitability. (profitability ratios).

- It is not just enough to have good sales and profitability just on paper. Say, company's 90% sales are in form of debtors, then it affects the solvency of the company. Equally important is, how CE is placed between debt and equity.

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MISCELLANEOUS RATIOS

Concept	Formula	Remarks
1. Earnings per share	$\frac{\text{Earnings}}{\text{No. of shares}}$	* Earnings represents earnings available to equity SH. * It is after tax.
2. Dividend per share	$\frac{\text{Total Dividend}}{\text{No. of shares}}$	It considers equity dividend only.
3. MPS * (Note)	$\frac{\text{market value}}{\text{No. of shares}}$	M.V represents total market capitalisation
4. Dividend pay out ratio	$\frac{\text{DPS}}{\text{EPS}} \times 100$	—
5. Retention ratio	$\frac{\text{Retained EPS}}{\text{EPS}} \times 100$	Retained EPS = EPS - DPS (1 - Payout ratio)
6. PE Ratio	$\frac{\text{MPS}}{\text{EPS}}$	It is expressed in times.

Note:

If PE ratio and EPS is given, then, MPS can be calculated as under ——

EPS x PE

ILLUSTRATIONS

I1. (pg No. 3.45)

S1: Calculation of GP Ratio

$$\text{GP Ratio} = \frac{\text{GP}}{\text{Sales}} \times 100$$

Particulars	2021-22	2022-23
a. Gross profit	₹64,000	₹76,000
b. Sales	₹3,00,000	₹3,74,000
c. GP Ratio (a/b)	21.33%	20.32%

Comments

In the year 2021-22, COGS/sales is 78.67% where as the COGS./sales for 2022-23 raised to 79.68%. since, COP is increased, GP ratio has fall.

S2: Calc of op.exps to sales ratio

$$\text{Operating expenses to sales ratio} = \frac{\text{Op.exps}}{\text{Sales}} \times 100$$

Particulars	2021-22	2022-23
a) Operating expenses	₹49,000	₹57,000
b) Sales	₹3,00,000	₹3,74,000
c) Ratio (a/b x100)	16.33%	15.24%

Comments :-

In the year 2021-22, for every ₹1 sale we spent ₹0.1633 on operating expenses. whereas, in the year 2022-23 for generating ₹1 sale company spent only ₹0.1524. Hence, company generated higher sale with lower costs.

S3: Operating profit Ratio

$$\text{Opg. profit ratio} = \frac{\text{EBIT}}{\text{Sales}} \times 100$$

Particulars	2021-22	2022-23
a) EBIT*	₹15,000	₹19,000
b) Sales	₹3,00,000	₹3,74,000
c) opg. profit ratio (a/b x 100)	5%	5.08%

Comment :-

There is no significant change in EBIT/sales. That means, for increased sales, proportionately opg. exps are also increased.

* Notes on EBIT

In the given question, there is no interest & taxation. Therefore, EBIT & Net profit (PAT) both are same.

S4: Capital T.O. Ratio

$$\text{Capital turnover ratio} = \frac{\text{sales}}{\text{Cap. emp}} \times 100$$

Particulars	2021-22	2022-23
a) Capital employed	₹1,00,000	₹1,47,000
b) Sales	₹3,00,000	₹3,74,000
c) Capital T.O. Ratio (b/a x 100)	300%	254.42%
	(or) 3 times	(or) 2.54 times
	(or) 3:1	(or) 2.54:1

Comments :-

In the year 2021-22, for every ₹1 invested company generated a return of ₹3, whereas in the year 2022-23, for every ₹1 invested company could generate only ₹2.54. Hence, the company is not making best use of capital.

S5: Stock T.O. Ratio

$$\text{Stock T.O. Ratio} = \frac{\text{COGS}}{\text{Avg. Stock}}$$

Particulars	2021-22	2022-23
a) COGS	₹2,36,000	₹2,98,000
b) Avg. Stock*	₹ 50,000	₹ 77,000
c) Ratio (a/b)	4.72	3.87

* Avg Stock calcn

	2021-22	2022-23
1. opg stock	₹40,000	₹60,000
2. clg stock	₹60,000	₹94,000
3. Avg stock $\left[\frac{\text{opg} + \text{clg}}{2}\right]$	₹ 50,000	₹ 77,000

Comments :-

For year 2021-22, for every ₹1 of stock, the company manufactured goods worth ₹4.72 and in the year 2022-23, it is ₹3.87 and therefore company has not performed well in utilising its stock.

S6: Net profit to Net worth ratio

$$\text{Net profit to NW} = \frac{\text{NP}}{\text{NW}} \times 100$$

NP = PAT = EBIT in given question

NW = Equity = ESC + R&S

Particulars	2021-22	2022-23
a. PAT (NP)	₹15,000	₹19,000
b. NW (ESC+R&S)	₹1,00,000	₹1,17,000
c. Ratio = a/b	15%	16.24%

Comments :-

In the year 2021-22, for every ₹100 of equity

funds, company gave a return of ₹15, as against ₹16.24 in year 2022-23. company made best utilisation of equity funds.

Note: NP to NW is also known as "Return on equity".

S7: Receivables collection period

Receivables collection period = $\frac{\text{Debtors}}{\text{sales}} \times 360$

Particulars	2021-22	2022-23
a) Debtors	₹ 50,000	₹ 82,000
b) credit sales	₹ 2,70,000	₹ 3,42,000
c) Rec. collection period (a/b X360)	67 days	87 days

Comments:-

In the year 2021-22, cash conversion cycle is 67 days whereas it is increasing to 87 days in year 2022-23. Hence, it is not good indicator and company should revise its debtors collection policy.

I2. (pg No. 3.48)

Step 1: Calculation of capital structure after re-organisation

Since, it is said that share capital after re-organisation is same as before, ₹ 1L is the share capital even after the re-organisation. Therefore, values of various items of liabilities post reorganisation is as follows:

Item of Liability	%	Amount (₹)
1. Share Capital	50%	1,00,000 (given)
2. Other SH funds (R+S)	15%	30,000
3. 5% Debentures	10%	20,000
4. Current Liabilities	25%	50,000
	100%	2,00,000

↓

50% ⟶ 1,00,000

100% ⟶ ?

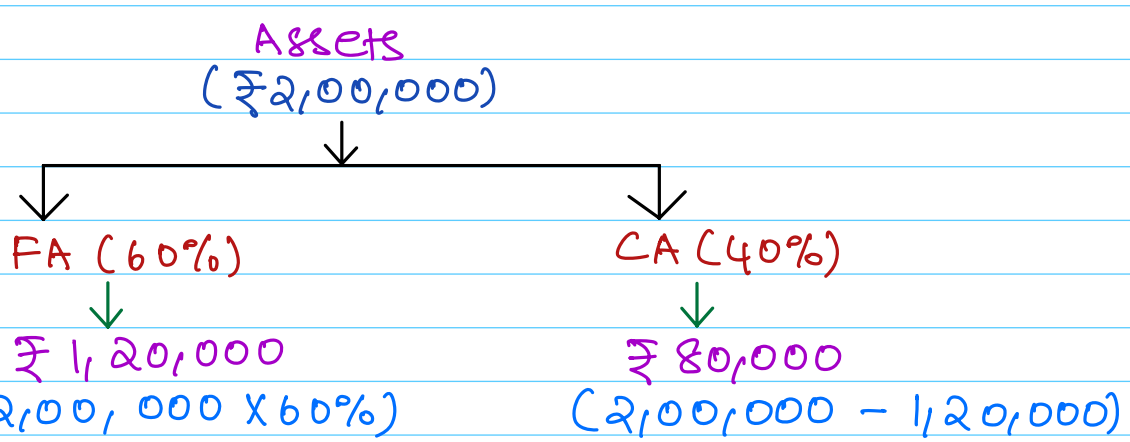
Recasted Balance Sheet-

Liabilities	Amount (₹)	Assets	Amount (₹)
Share Capital	1,00,000	Land & Building	80,000
Reserves & Surplus	30,000	Plant & machines	40,000
5% Debentures	20,000	Cash	10,000
Current liabilities	50,000	Stock	30,000
		Debtors	40,000
Total	2,00,000	Total	2,00,000

Total Assets = Total Liabilities

Step2: Calculation of fixed assets & current assets

It is given that, FA are 60% of total assets and balance will be CA.



Step3: Calc of additions made to P&M

A. Total Assets after re-orgn	=	₹ 2,00,000
(-) Current assets	=	(₹ 80,000)
Total FA (after re-orgn)	=	₹ 1,20,000
(-) Land & Building	=	(₹ 80,000)
Total FA being P&M (after RO)	=	₹ 40,000

B. P&M (before RO)	=	₹ 35,000
(-) Addl depn	=	(₹ 5,000)
Existing P&M after Addl depn	=	₹ 30,000
P&M (after addl depn & RO)	=	₹ 40,000
Additions to P&M	=	₹ 10,000 (₹40,000 - ₹30,000)

Step 4: Calculation of value of Stock

It is given that Quick ratio is 1:1, which means, to pay the CL, company has exactly same amount of Liquid assets being cash + debtors.

Quick ratio (given) 1 : 1

$$\frac{CA - Stock}{CL} = 1$$

$$\frac{₹80,000 \text{ (Calc in step 2)} - Stock}{₹50,000 \text{ (Step 1)}} = 1$$

$$\frac{₹80,000 - Stock}{₹50,000} = 1$$

$$₹80,000 - Stock = ₹50,000$$

$$Stock = ₹30,000$$

Step 5: Calculation of Receivables (Debtors)

1. It is given that receivables are 4/5th of the Quick Assets.
2. It is calculated that QA = ₹50,000 (Step 4)

∴ Debtors = ₹50,000 × 4/5

= ₹40,000.

Step 6: Calculation of sales.

It is given in the question that all sales are credit sales, Debtors velocity gives the value of sales.

Debtors velocity = 2 months.

$$\frac{Debtors}{Cr. Sales} \times 12 = 2$$

$$\frac{₹40,000 \times 12}{Sales} = 2$$

$$\frac{₹\,4,80,000}{\text{Sales}} = 2$$

$$\boxed{\text{Sales} = 2,40,000}$$

Step 7: Calc of Gross profit

It is given that GP is 15% of Sales.

∴ GP = 15% × ₹2,40,000

= ₹36,000

Step 8: Calc of COGS (Direct exps + Ind. exp)

Sales − GP = COGS

₹ 2,40,000 − ₹36,000 = ₹2,04,000

Step 9: Calculation of Net profit

It is given that RONW = 10%. RONW is also called as "ROE".

$$ROE = \frac{\text{Return}}{\text{Equity}} = \frac{EAT}{EQ} = \frac{EAT}{ESC + R\&S} = 0.10$$

$$\frac{EAT}{₹\,1,30,000} = 0.10 \;,\quad EAT = ₹\,13,000.$$

Step 10: Calc of Admn and selling exps

Gross profit	=	₹ 36,000
(-) Net profit	=	(₹ 13,000)
Other expenses	=	₹ 23,000
(-) Interest expense	=	(₹ 1,000)
Admn + selling exps	=	₹ 22,000

Recasted Trading and P&L a/c

Particulars	Debit (₹)	Particulars	Credit (₹)
COGS	2,04,000	Sales	2,40,000
Gross profit	36,000		
	2,40,000		2,40,000
Interest	1,000	Gross profit	36,000
Admn + selling	22,000		
Net profit	13,000		
	36,000		36,000

I3. pg No 3.52

Step 1: Calculation of sales

It is given that, sales is 150% of direct costs and direct costs are ₹ 4,80,000.

∴ Sales = 4,80,000 × 150% = ₹ 7,20,000.

Step 2: Income Statement

Particulars	Amount (₹)
Sales (step 1)	7,20,000
(-) Direct costs (given)	(4,80,000)
(-) opg. exps	(80,000)
EBIT (opg. profit)	1,60,000
(-) Interest cost (₹8,00,000 × 50% × 8%)	(32,000)
EBT	1,28,000
(-) Tax @ 50%	(64,000)
EAT	64,000

Step 3: Calculation of ratios

1. Opg profit margin

$$\frac{EBIT}{Sales} \times 100$$

$$= \frac{₹1,60,000}{₹7,20,000} \times 100$$

$$= 22.22\%$$

2. Net profit margin

$$\frac{EAT}{Sales} \times 100$$

$$= \frac{₹64,000}{₹7,20,000} \times 100$$

$$= 8.89\%$$

3. Return on assets (Op. profit after tax)

$$\frac{EBIT(1-t)}{Total\ assets} \times 100$$

$$= \frac{₹1,60,000\ (1-0.50)}{₹8,00,000} \times 100$$

$$= \frac{₹80,000}{₹8,00,000} \times 100$$

$$= 10\%$$

4. Asset T.O. Ratio

$$\frac{T.O}{T.A}$$

$$= \frac{₹7,20,000}{₹8,00,000}$$

$$= 0.90:1$$

5. Return on equity

$$\frac{EAT}{EQ}$$

$$= \frac{₹64,000}{₹4,00,000} \times 100$$

$$= 16\%.$$

(I4) pg. No. 3.53

Step 1: Trading and P&L a/c of Aebece Ltd

A. Trading a/c

Particulars	Debit (₹)	Particulars	Credit (₹)
Opg. Stock	80,000	Sales	32,00,000
COGS	24,00,000	Clg. Stock	4,00,000
(bal.f) other direct exp.	3,20,000		
Gross profit	8,00,000		
	36,00,000		36,00,000

B. P&L a/c

Particulars	Debit (₹)	Particulars	Credit (₹)
Indirect expenses (bal. fig)	1,60,000	Gross profit	8,00,000
Net profit	6,40,000		

C. Balance Sheet

Liabilities	Amount (₹)	Assets	Amount (₹)
Capital	32,00,000	Total FA.	40,00,000
Current Liabilities	64,00,000	Total CA (incl. stock)	56,00,000
	96,00,000		96,00,000

Step 2: Calculation of total current assets

$\frac{\text{Fixed assets}}{\text{Current assets}} = \frac{5}{7}$ (given)

$= \frac{₹\ 40,00,000}{CA} = \frac{5}{7}$

$\Rightarrow ₹\ 40,00,000 \times 7/5 = CA$

$\Rightarrow$ Current assets $= ₹\ 56,00,000$

Step 3: Calculation of total Capital

$\frac{\text{Fixed assets}}{\text{capital}} = \frac{5}{4}$ (given)

$= \frac{₹\ 40,00,000}{\text{Capital}} = \frac{5}{4}$

$\Rightarrow$ Capital $= ₹\ 40,00,000 \times 4/5$

$= ₹\ 32,00,000.$

Step 4: Capital to total liabilities

It is presumed that total liabilities here donot include capital.

$= \frac{\text{Capital}}{\text{total liabilities}} = \frac{1}{2}$

$\Rightarrow \frac{₹\ 32,00,000}{TL} = \frac{1}{2}$

$\Rightarrow$ Total Liabilities $= ₹\ 32,00,000 \times 2 = ₹\ 64,00,000.$

Step 5: Calculation of NP using NP ratio

Given Net profit to capital $= 1/5$ (or) 0.20

$\Rightarrow \frac{NP}{\text{Capital}} = 0.20$

$\Rightarrow \frac{NP}{₹32,00,000} = 0.20$

$\Rightarrow NP = ₹\ 6,40,000.$

Step6: Calculation of T.O (or) Sales

Given NP ratio = 0.20

$\therefore \frac{NP}{Sales} = 0.20$

$\Rightarrow \frac{₹6,40,000}{Sales} = 0.20$

$\Rightarrow$ Sales = ₹6,40,000 / 0.20

$\Rightarrow$ Sales = ₹32,00,000.

Step7: Calculation of GP using GP ratio

Given GP ratio = $\frac{GP}{Sales} = 0.25$

$= \frac{GP}{₹32,00,000} = 0.25$

$\Rightarrow$ GP = ₹8,00,000.

Step8: Calculation of COGS

Given the sales and GP, the COGS = Sales − GP

= ₹32,00,000 − ₹8,00,000

= ₹24,00,000

It is assumed that all manufacturing OH are charged to Trading a/c.

Step9: Calculation of average stock

Given ST.O. Ratio = 10 times

$\Rightarrow$ STO Ratio = $\frac{COGS}{Avg. stock}$

$\Rightarrow \frac{COGS}{A.S} = 10$

$\Rightarrow \frac{₹24,00,000}{Avg. stock} = 10$

$\Rightarrow$ Avg. stock = ₹2,40,000.

Step10: Calculation of opg. stock

$$\text{Avg. stock} = \frac{\text{opg.stk} + \text{clg.stk}}{2}$$

$$\Rightarrow ₹\,2,40,000 = \frac{\text{opg.stk} + ₹\,4,00,000}{2}$$

$$\Rightarrow ₹\,4,80,000 = \text{opg.stk} + ₹\,4,00,000$$

$$\Rightarrow \text{opg.stk} = ₹\,80,000.$$

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Sl. No	Ratio	Calculation	Bench mark	Comments
1.	Current ratio	Current assets / current liabilities = ₹ 52,80,000 / ₹ 19,80,000 = 2.67	2.50	In regard to CR, the company has out performed the market.
2.	Rec. T.O. ratio	= Sales / Debtors (assumed all sales are on credit) = ₹1,10,00,000 / ₹ 11,00,000 = 10 times	8	In regard to the Rec. T.O. ratio the company has out performed than the industry.
3.	Inv. T.O. Ratio	= Sales / Stock = ₹1,10,00,000 / ₹ 33,00,000 = 3.33 times	9	In regard to this ratio, the company is under performing than industry. The company shall look into entire prodn cycle to rectify the defect.

Sl. No	Ratio	Calculation	Bench mark	Comments
4.	Total assets T.O. ratio.	$\frac{\text{T.O}}{\text{T.A}}$ $= \frac{₹1,10,00,000}{₹\ 77,00,000}$ $= 1.43$ times.	2	In regard to this ratio, the company is under performing than the industry since industry is giving ₹2 sales for every ₹1 used as against ₹1.43 in the given case.
5.	Net profit ratio	$\frac{\text{Net profit}}{\text{sales}}$ $= \frac{₹2,31,000}{₹1,10,09000}$ $= 2.10\%$	3.50%	In regard to this ratio, company is under performing than the industry. co is giving ₹2.10 to ESH for every ₹100 sales as against ₹3.50 by industry.
6.	Return on total assets (EBIT)	$\frac{\text{EBIT}}{\text{Total assets}}$ $= \frac{₹5,54,000}{₹\ 77,00,000}$ $= 7.19\%$	7%	In regard to this ratio, the company is out performing the industry std.
7.	Return on Net worth (PAT)	$\frac{\text{PAT}}{\text{NW}}$ $= \frac{₹2,31,000}{₹\ 48,00,000}$ $= 4.81\%$	10.50%	In regard to this ratio, the company is under performing than industry.
8.	$\frac{\text{Total Debt}}{\text{Total assets}}$	$\frac{\text{LT + ST Debt}}{\text{FA + CA}}$ $= \frac{₹29,00,000}{₹\ 77,00,000}$ $= 37.67\%$	60%	In regard to this ratio, the company is out performing the industry.

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since, the ratios to be calculated is not clearly mentioned, all ratios as are treated to be indicators of financial health are calc and they are as follows ——

* Current Ratio
* Liquid Ratio
* Gross profit Ratio
* Net profit Ratio
* Stock T·O· Ratio
* Debtors T·O· Ratio
* Debt equity Ratio
* Total Debt to Equity Ratio
* Debt to total capital·
* Avg· collection period·

working Notes :-

1. Calculation of average stock

$$\text{Average Stock} = \left[\frac{\text{opg·stock} + \text{clg·stock}}{2}\right]$$

Particulars	2020-21	2021-22	2022-23
opg·stock	4,00,000	4,00,000	4,80,000
clg·stock	4,00,000	4,80,000	6,00,000
Avg·stock	4,00,000	4,40,000	5,40,000

2. Calculation of average debtors

$$\text{Average debtors} = \left[\frac{\text{opg·Drs} + \text{clg·Drs}}{2}\right]$$

Particulars	2020-21	2021-22	2022-23
opg· Drs	2,00,000	2,00,000	2,60,000
clg· Drs	2,00,000	2,60,000	2,90,000
Avg· Drs	2,00,000	2,30,000	2,75,000

3. Calculation of Equity

Equity / Networth = ESC + Reserves (common stock)

Particulars	2020-21	2021-22	2022-23
common stock	1,00,000	1,00,000	1,00,000
Reserves	5,00,000	5,50,000	5,50,000
Equity	6,00,000	6,50,000	6,50,000

4. calculation of Gross profit

Gross profit = Sales - COGS.

Particulars	2020-21	2021-22	2022-23
Sales	40,00,000	43,00,000	38,00,000
COGS	32,00,000	36,00,000	33,00,000
Gross profit	8,00,000	7,00,000	5,00,000

calculation of various indicators

1. current Ratio:- [CA / CL]

Year	value	Remarks.
a. 2020-21 $\left[\frac{6,30,000}{5,30,000}\right]$	1.19	since, the company is maintaining the CR > 1 in all cases, we can understand that CL can be safely paid out of CA and therefore the company is solvent in short run.
b. 2021-22 $\left[\frac{7,60,000}{6,10,000}\right]$	1.25	
c. 2022-23 $\left[\frac{8,95,000}{7,45,000}\right]$	1.20	

2. Liquid ratio :-

$$\frac{\text{Liquid Assets}}{\text{Current liab}} = \text{Cash} + \text{DR}$$

	Year	Value	Remarks
a.	2020-21		
	$\frac{2,30,000}{5,30,000}$	0.43	Having a LR<1 is bad indicator of financial health of a company. Reason for such low LR is, huge cash is blocked in form of stock and hence company shall maintain EOQ.
b.	2021-22		
	$\frac{2,80,000}{6,10,000}$	0.46	
c.	2022-23		
	$\frac{2,95,000}{7,45,000}$	0.40	

3. Gross profit Ratio :-

$$\frac{\text{Gross profit}}{\text{Sales}} \times 100$$

	Year	Value	Remarks
a.	2020-21		
	$\frac{8,00,000}{40,00,000}$	20%	over a period of 3 years, the company has a sharp fall in its GP ratio. the possible reason for this is, high fixed costs which don't augment the sales in any way.
b.	2021-22		
	$\frac{7,00,000}{43,00,000}$	16.28%	
c.	2022-23		
	$\frac{5,00,000}{38,00,000}$	13.16%	

4. **Net profit ratio :-**

$$NP\ Ratio = \frac{Net\ profit}{Sales} \times 100$$

Year	Value	Remarks
a. 2020-21 $\frac{3,00,000}{40,00,000}$	7.5%	Over a period of 3 years, the NP ratio has declined sharply indicating the adverse impact of companies heavy indirect costs like ——— * S&D exps * Interest cost etc
b. 2021-22 $\frac{2,00,000}{43,00,000}$	4.65%	
c. 2022-23 $\frac{1,00,000}{38,00,000}$	2.63%	

5. **Stock T.O. Ratio :-**

$$STO.\ Ratio = \frac{COGS}{Avg.\ Stock}$$

Year	Value	Remarks
a. 2020-21 $\frac{32,00,000}{4,00,000}$	8 times	From year 2021 to year 2022, the STO ratio has increased indicating more worth of goods with the stock and it sharply fell to 6.11 times indicating deficiencies in the production process in the year 2023.
b. 2021-22 $\frac{36,00,000}{4,40,000}$	8.18 times	
c. 2022-23 $\frac{33,00,000}{5,40,000}$	6.11 times	

6. Debtors T.O. ratio :-

$$\frac{\text{Sales}}{\text{Avg. Drs}}$$

Year	Value	Remarks
a. 2020-21 $\frac{40,00,000}{2,00,000}$	20 times	over a period of 3 years the DTO ratio has reduced sharply showing inefficient sales policy.
b. 2021-22 $\frac{43,00,000}{2,30,000}$	18.70 times	
c. 2022-23 $\frac{38,00,000}{2,75,000}$	13.82 times.	

7. Debt equity ratio :-

$$\text{Debt equity ratio} = \frac{\text{Debt} = \text{LT. Debt}}{\text{Equity} = \text{ESC} + \text{R\&S}}$$

Year	Value	Remarks
a. 2020-21 $\frac{3,00,000}{6,00,000}$	50%	The ideal DER is 2:1. Therefore, the company is having ideal DER. However, for year 22 & 23, the DER has fell to 46%. Advantage is lower fixed costs and disadvantage is lower financial leverage.
b. 2021-22 $\frac{3,00,000}{6,50,000}$	46%	
c. 2022-23 $\frac{3,00,000}{6,50,000}$	46%	

8. **Total Debt to Equity**

$$\text{Total Debt to Equity} = \frac{\text{LT Debt} + \text{ST Debt}}{\text{ESC} + \text{R\&S}}$$

Year	Value	Remarks
a. 2020-21		
$\frac{3,00,000 + 5,30,000}{6,00,000}$	1.38 times	The company has increased its total debt proprn to total owners funds. Advantage is increased FL and dis-adv is increased fixed commitments.
b. 2021-22		
$\frac{3,00,000 + 6,10,000}{6,50,000}$	1.40 times	
c. 2022-23		
$\frac{3,00,000 + 7,45,000}{6,50,000}$	1.61 times	

9. **Debt to total capital :-**

$$\text{Debt to total Capital} = \frac{\text{LT Debt}}{\text{Total Capital} = \text{Debt} + \text{Equity}}$$

Year	Value	Remarks
a. 2020-21		
$\frac{3,00,000}{9,00,000}$	0.33:1	company is maintai-ning same level of debt to total capital ratio.
b. 2021-22		
$\frac{3,00,000}{9,50,000}$	0.32:1	
c. 2022-23		
$\frac{3,00,000}{9,50,000}$	0.32:1	

10. Average collection period

Avg collection period = $\frac{\text{Dos}}{\text{Sales}} \times 365$

Year	Value	Remarks
a. 2020-21		
$\frac{2,00,000}{40,00,000} \times 365$	18.25 days	Higher the collect-ion period more no. of days the cash is blocked in the form of Debtors. It is poor indicator of liquidity.
b. 2021-22		
$\frac{2,30,000}{43,00,000} \times 365$	19.52 days	
c. 2022-23		
$\frac{2,75,000}{38,00,000} \times 365$	26.41 days	

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FUNDAMENTAL ANALYSIS ON FINANCIAL RESULTS OF TCS (31|3|2023)

1. Analysing the Liquidity ratios over 1 year

a. For the year 2021-22 (ending 31|3|22)

(i.) Current ratio

$$\frac{\text{Current assets}}{\text{current Liab}}$$

$$= \frac{₹\ 94,192\ cr}{₹\ 37,901\ cr}$$

$$= 2.49 : 1$$

The company is maintaining a very good CR of having ₹2.49 for every ₹1 current liability.

(ii.) Liquid ratio

$$\frac{\text{Liquid assets}}{\text{current Liab}}$$

$$= \frac{₹\ 55,447\ cr}{₹\ 37,901\ cr}$$

$$= 1.46 : 1$$

The company is maintaining a very good LR of having ₹1.46 for every ₹1 current liability.

This company for year 2021-22, is solvent in short run and can meet all its immediate ST liabilities.

b. For the year 2022-23 (ending 31/3/23)

(i) current ratio

$$= \frac{\text{current assets}}{\text{current liab}}$$

$$= \frac{₹\ 92,784}{₹\ 39,324} = 2.36 : 1$$

a. When compared to year 2021-22, the CR is slightly reduced by 0.13 but still it is maintaining a decent CR. (> 2:1)

b. This company has made a Buy back and has made payments out of cash, cash equivalents and bank balances. Due to this, there is a sharp fall in cash resulting in fall of CR.

(ii) Liquid ratio / Quick ratio / Acid test ratio

$$= \frac{\text{Liquid assets}}{\text{current liab}}$$

$$= \frac{₹\ 47,673}{₹\ 39,324}$$

$$= 1.21 : 1$$

Even after buy back, company is having a decent LR of > 1:1.

2. Capital Structure ratios

Particulars	2021-22	2022-23
A. Debt Equity = Debt (L.T) / Equity	= ₹5,397 / ₹77,173	= ₹5,038 / ₹74,538
	= 0.07:1	= 0.07:1

Company's business is substantially carried out using owned funds ratherthan Borrowed funds and hence, finance risk of the company is negligible.

B. Total Debt to Equity = Total Debt (ST + LT) / Equity

Particulars	2021-22	2022-23
(a) ST Debt	₹16,884	₹21,677
(b) LT Debt	₹5,397	₹5,038
Total Debt (1)	₹22,281	₹26,715
Equity (2)	₹77,173	₹74,538
Ratio (1/2)	0.29:1	0.36:1

Solvency Status Of TCS

Since, the company is having better than ideal liquidity & cap. structure ratios, TCS is absolutely solvent in short run as well as in long run.

3. Profitability ratios :-

(₹ in cr)

Particulars	2021-22	2022-23
A. Opg. profit ratio		
Opg. profit / Sales x100		
1. Opg. Revenues	1,60,341	1,90,354
2. Opg. expenses	(1,17,618)	(1,43,297)
3. EBIT / Opg. profit	42,723	47,057
4. % of EBIT/Sales	26.65%	24.72%
	[42,723 / 1,60,341]	47,057 / 1,90,354

As regards to opg. profit ratio, the co has very good % of profit recovery though there is a slight fall by ↓ 1.93%.

B. Net profit ratio :-

	2021-22	2022-23
NP ratio = PAT / OP Rev / Total Rev. x100		
1. Total Revenue (a)	1,67,827	1,95,682
2. PAT (b)	38,187	39,106
3. Ratio (b/a)	22.75%	19.98% ≃ 20%

4. miscellaneous :-

a) Return on Equity
= PAT / Equity

	2021-22	2022-23
a) PAT (a)	₹ 38,187	₹ 39,106
b) Equity (b)	₹ 77,173	₹ 74,538
c) Return % (a/b)	49.48%	52.46% ↑

b) Return on total assets
= PAT / TA

	2021-22	2022-23
a) PAT (a)	₹ 38,187	₹ 39,106
b) Total assets (b)	₹ 1,21,263	₹ 1,19,827
c) Return % (a/b)	31.49%	32.64% ↑