

Mergers & Acquisitions

Concept ① Swap Ratio / Exchange Ratio / Share Exchange Ratio.

Swap Ratio $\Rightarrow$ Acquirer Company's $\div$ Target Company's
Share offered Share taken up.

or

$\Rightarrow$ Shares given $\div$ Shares taken up

ex: Swap Ratio

$$\frac{A}{3} \div \frac{B}{2}$$

3 Shares of Acquirer Company $\div$ 2 Shares of Target Company (B) taken up.
A will be given

ex: Swap Ratio

$$\frac{x}{1} \div \frac{y}{5}$$

1 Share of Acquirer Company 'x' will be given

5 Shares of Target Company 'y' will be taken up.

Concept 2

How Swap Ratio is Calculated

Based on Positive Indicators

ex: MPS, EPS, Book Value per Share, Net Asset Value etc
P/E ratio etc.

$$\text{Swap Ratio} = \frac{\text{--- of Target Co.}}{\text{--- of Acquirer Co.}}$$

Based on Negative Indicators

ex: Non performing assets, Bad debt, Losses etc.

$$\text{Swap Ratio} = \frac{\text{--- of Acquirer Co.}}{\text{--- of Target Co.}}$$

P_o
Positive

T A

↓
Target/Acquirer

N_e
Negative

A T

↓
Acquirer/Target

→ If we calculate **Multiple swap Ratios** in a question.

Calculate Simple Average
of all Swap Ratio.

(if question is silent)

Calculate weighted Average
of all Swap Ratios

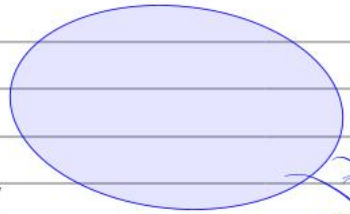
(if question specify)

A



1.5

B



$$40,000 \times \frac{1}{5} = 8000$$

108000

Concept (3) No of shares before & after merger

- Case (a) when paid by shares only
Case (b) when paid by cash only.
Case (c) when paid by cash & shares both.

Example:

	Pre merger (Before)	
	A (Acquirer)	B (Target)
Shares	1,00,000 (NA)	40,000 (NB)

Case (a) when A company Acquires B by shares only & swap ratio is 1:5.

Post merger Total shares of A+B merged
A's original shareholders + B's shareholders
 $1,00,000 + 40,000 \times \frac{1}{5}$

$$\Rightarrow 1,00,000 + 8,000$$

$\Rightarrow 1,08,000$ Shares

$$\text{Post merger Total shares} = NA + NB \times \text{swap Ratio}$$

Case (b) when Target company is paid off only by cash.

Then no shares are issued to B's shareholders.

$$\begin{aligned}\text{Post merger Total shares} &= NA + \cancel{NB \times \text{SR}} \\ &= 1,00,000\end{aligned}$$

Show

①

$$E_A + E_B + S_4 E$$

$$N_A + N_B \times SR$$

Cash

②

$$E_A + E_B + S_4 E - \text{Cash Paid} \times \text{opportunity} (1-t)$$

$$N_A + \cancel{(N_B \times SR)}$$

Case (C) when partial payment by cash and partial by shares:

→ If A did paid 50% by shares & 50% by cash.

$$\begin{aligned} \text{Total No. of shares post merger} &= \frac{N_A + N_B \times R \times 50\%}{1,00,000 + (40,000 \times \frac{1}{5}) \times 50\%} \\ &= \boxed{1,04,000} \end{aligned}$$

Concept (4) Calculate Postmerger EPS (Combined EPS)

Case (A) when acquired by shares only

$$\begin{aligned} \text{EPS}_{(A+B)} &= \frac{\text{Earning of A} + \text{Earning of B} + \text{Synergy gain of Earning}}{N_A + N_B \times R} \\ &= \frac{E_A + E_B + \text{dg of Earning}}{N_A + N_B \times R} \\ &= \frac{\text{Total Earning post acquisition.}}{\text{Total shares post acquisition.}} \end{aligned}$$

Case (B) when acquired by only cash.

$$\text{EPS}_{(A+B)} = \frac{E_A + E_B + \text{dg of Earning}}{N_A + 0} - \text{Cash Paid} \times \text{Rate of return} (1-t)$$

→ (Agar cash pay krte ho toh us amount ka Net of tax return waste ho jata hai)

Case C) when acquired partially by cash & partially by shares.

ex: 50% paid by shares & 50% by cash.

$$EPS_{(A+B)} = \frac{EA + EB + \Delta \text{year earning} - \frac{\text{Cash Paid} \times \text{Rate of Debt} (1-t)}{NA + NB \times \text{Swap Ratio} \times 20\%}}{NA + NB \times \text{Swap Ratio} \times 20\%}$$

Amount Paid for 50% Shares
↓
Cash Paid
Rate of Debt
(1-t)

Shares issued for only 50% Purchase Consideration

Concept 5) Equivalent EPS & MPS for Target Co. Shareholders

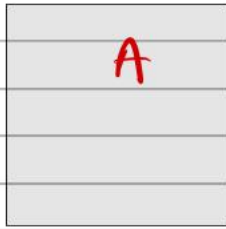
	(A) Acquirer	(B) Target
N	10000	4000
EPS	₹5	₹2
MPS	₹80	₹20
Swap Ratio	1:5	

$$\text{Combined EPS} = \frac{(5 \times 10000 + 2 \times 4000)}{(10000 + 4000 \times \frac{1}{5})} = \frac{58000}{10800} = ₹5.37$$

$$\text{Combined MPS (Post merger MPS)} = ₹120$$

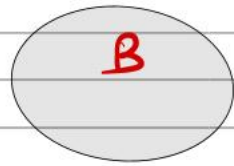
Equivalent EPS for Target Co Shareholders = $EPS_{(A+B)} \times \text{Swap Ratio}$

Equivalent MPS for Target Co Shareholders = $MPS_{(A+B)} \times \text{Swap Ratio}$



A $n = 100000$

$EPS_A = ₹20$



$B_n = 40,000$

$EPS_B = ₹5$

Swap ratio **1:5**

$$\Rightarrow MPS_{A+B} = ₹140^*$$

$$\Rightarrow EPS_{A+B} = ₹20^*$$

$$\frac{\text{Equivalent}}{EPS} = \frac{20 \times 1}{5} = \textcircled{24} \text{ per old share}$$

$$\text{Equivalent MPS} = MPS_{(A+B)} \times \frac{\text{Swap}}{\text{Ratio}}$$

$$\text{Equivalent EPS} = EPS_{(A+B)} \times \frac{\text{Swap}}{\text{Ratio}}$$

Concept (6) Gain or Loss from Merger/Acquisition.

(more preferred)

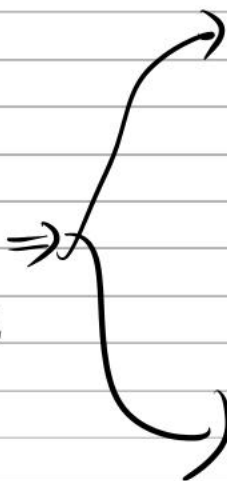
Type (1) Impact on Total Market Value basis.

Particulars	Acqd Acquiree	Btd Target	Total
Post Acquisition Market Value	$(NA) \times MPS(A+B)$	$(NB \times SR) \times MPS(A+B)$	Total(A+B)
- Pre Acquisition Market Value	$(NA) \times (MPSA)$	$(NB) \times (MPSB)$	$-(Total(A) + Total(B))$
Gain/Loss	✓	✓	✓

Type (2) Impact on Total EPS basis (less Preferred)

Particulars	Acqd (Acquiree)	Btd (Target)	merged entity
EPS after merger	$EPS(A+B)$	$EPS(A+B) \times SR = \checkmark$	
- EPS Pre merger	$- EPS A$	$- EPS B$	
Gain/Loss	✓	✓	

MPS
Post
merger



$$\frac{MVA + MVB + \text{Synergy Valuation}}{N_A + N_B \times SR}$$

$$N_A + N_B \times SR$$

$$(EPS_{A+B}) \times P/E_{(A+B)}$$

Concept (7) Calculate Post Merger Market Value

Method (1) when P/E ratio post merger $\rightarrow$ is given
 $\rightarrow$ is hinted in question
 $\rightarrow$ is assumed in question

$$\frac{MV(A+B)}{MV \text{ post merger}} = \left[\underset{\substack{\downarrow \\ \text{Post merger MPS}}}{P/E(A+B)} \times \underset{\substack{\downarrow \\ \text{Post merger shares}}}{EPS(A+B)} \right] \times (NA + NB \times SR)$$

Method (2)

$$MPS(A+B) = \frac{MVA + MVB + \text{Synergy gain of Valuation}}{NA + NB \times \text{Swap Ratio}}$$

Concept (8) Decide Maximum Swap Ratio to be offered or Minimum

Case (a) From Acquirer Co point of view

① If you want to maintain MPS.

$$MPS_A = MPS(A+B)$$

② If you want to maintain EPS.

$$EPS_A = EPS(A+B)$$

Case (b) From Target Co point of view.

① If target Co wants to maintain MPS.

$$MPS_B = MPS(A+B) \times SR \quad *$$



② If Target Co wants to maintain EPS:

$$EPS_B = EPS_{(A+B)} \times SR^*$$

Concept ⑨ How to Know **Point of View**
for maximum/ Minimum Swap Ratio.

If questions asks

Maximum Swap Ratio



from **Acquirer** Viewpoint

If question asks

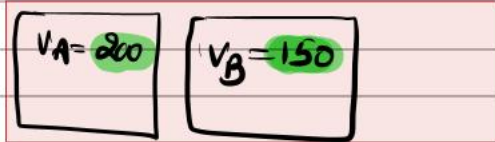
Minimum Swap Ratio



from **Target** View point

Value of Acquisition:

Concept ⑩ Gain from Acquisition for whole Business.



Value of
Merged entity (V_{A+B})
500m

① Gain from Acquisition for whole firm

Value of Merged firm (Post Merger) = 500m
- Value of Acquirer before Merger = -200m
Value of Acquisition = 300
- Value of Target before Merger = -150m
Gain from Acquisition (Merger) = 150m

Gain for Acquirer

120m (81%)

Gain for Target Co.

30m

$$\begin{aligned}
 &\text{Value given to target} = 180 \text{ m} \\
 &\text{(Purchase Consideration)} \\
 &- V_B \text{ (Premerger)} = -150 \text{ m} \\
 &\text{Gain from Merger to Target Co.} = \boxed{30 \text{ m}}
 \end{aligned}$$

$$\text{Value of merged entity} = V_{(A+B)} = \text{MPS}_{(A+B)} \times (N_A + N_B \times SR) = * 500 \text{ m}$$

$$\begin{aligned}
 - \text{Value of Acquirer Premerger} \Rightarrow V_A &= \text{MPS}_A \times N_A = -200 \text{ m} \\
 \text{Value of Acquisition} &= 300 \text{ m}
 \end{aligned}$$

$$- \text{Value of Target Premerger} \Rightarrow V_B = \text{MPS}_B \times N_B = -150 \text{ m}$$

$$\text{Gain from Acquisition} = 150 \text{ m}$$

Concept (1) Cost of Acquisition.

True Cost of Merger (from Acquirer's point of view)

Gain from Merger (from Target's point of view)

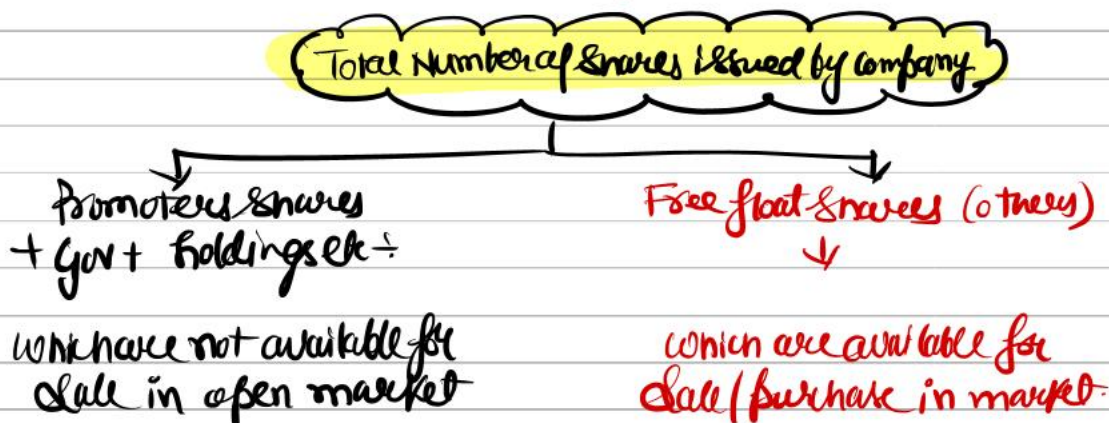
→ Kitna Extra apne Target Company ko pay kiya hai.

$$\begin{aligned}
 &\text{Value offered to Target Company} = \text{Purchase Consideration} = 180 \text{ m} \\
 &\quad (\text{by shares \& cash \& both}) \\
 &- \text{Value of Target Co (Premerger)} = * \\
 &\text{Cost of Acquisition} = \checkmark
 \end{aligned}$$

Concept (12) Total Market Capitalization vs Free Float Market Capitalization

o Total Market Capitalization = Total Number of Shares $\times$ MPS.

o Free Float Market Capitalization = Free float Number $\times$ MPS of shares



Concept (13) Stock Split

- OTTC Khule Karana
- Share Khule Karana.

⇒ When a company breaks down paid up value of share into smaller paid up value shares. for example

	originally	Now
Paid up value of share	₹ 100	₹ 5
Number of share	1	20

Company must have issued 20 shares for each original 1 share

Concept (14) Goodwill & Capital Reserve.

• when you acquire a business/firm/company



If you pay more than ESHF

Purchase > ESHF
Consideration

⇒ Excess amount is shown
as Goodwill purchased.

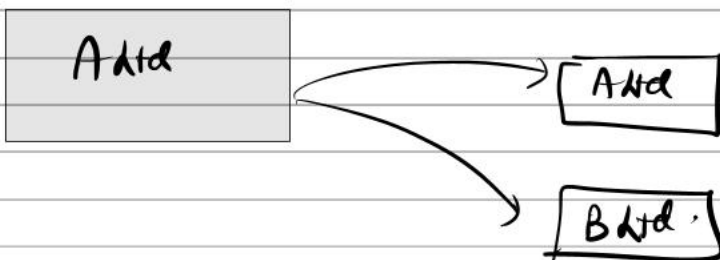
If you pay less than ESHF

Purchase < ESHF
Consideration

⇒ Deficit amount is shown
as Capital Reserve.

Concept (15) Demerger.

when a company splits into two or more parts it's called demerger.



Concept (16) Financial Restructuring

- Financial restructuring (Internal Reconstruction) includes events like →
- Reducing debt
 - Securing additional debt & Equity
 - Reducing claims of shareholders/PSC/debt/other.
 - Revaluation of assets.

All this is done with a view to revive a failing company.

→ At end of Capital restructuring if

- ⇒ we have net benefit impact ⊕ it is shown as Capital Reserve.
- ⇒ we have net outflow impact ⊖ it is shown as Goodwill (not generally possible in financial restructuring)

Concept (17) Hidden Synergy Gain

If the target company's growth rate changes from Pre-merger to Post-merger

Target Company's Premerger $g = 6\%$, Postmerger $g = 8\%$



By using this derive value which shareholders of Target Co will expect.
Postmerger
P_{re}expected = ₹300

Premerger
 $P_0 = ₹200$

Q12

Q25

$$P_0 = 250$$

$$\text{Price expected} = 275$$



These increased prices should be used for valuation.

Concept 18 Concept of Asset Beta & Equity Beta

This is same as Concept 6 of Business Valuation

It is for whole firm
(for the company)
(not just equity)

It is for only
Equity shares
(not for Debt)
(not for whole company)

To calculate K_e
we use Equity Beta

Asset Beta = Equity β $\times$ weight of E + Debt β $\times$ weight of Debt

$$\beta_a = \beta_e \times \frac{E}{E + D(1-t)} + \beta_d \times \frac{D(1-t)}{E + D(1-t)}$$

If β_d is not given we may assume it to be zero
(as Debt is risk free usually)
(Thus this fraction is usually not shown in formulae.)

$\Rightarrow$ If two companies work in same business then they have same Asset Beta

(Comparable companies have same asset beta, not same equity beta)

- Asset beta = unlevered Beta. (It is same for comparable Co's)
- Equity Beta = levered Beta (It is different because of different Debt: Equity ratio.)

If two companies do same business, then

$$\text{Asset Beta of A} = \text{Asset Beta of B}$$

(unlevered Beta) (unlevered Beta of B)

$$\frac{\text{Equity} \times E_A}{\text{Beta}_A E_A + D_A(1-t)} + \frac{\text{Debt} \times D_A(1-t)}{\text{Beta}_A E_A + D_A(1-t)} = \frac{\text{Equity} \times E_B}{\text{Beta}_B E_B + D_B(1-t)} + \frac{\text{Debt} \times D_B(1-t)}{\text{Beta}_B E_B + D_B(1-t)}$$