Business Valuations

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Part 7 Introduction to Business Valuations

Meaning of Business Valuations

It is a process of determining the value of business for various purposes like merger & Acquisitions, sale of Business, strategic decision making etc.

(Issue wala data hai)

Basis of Business Valuations

(1) Value of firm (Enterprise value or Value of Business)

Value of firm = Value of equity + Value of debt (−) surplus funds

(There are various methods to calculate value of equity)

(2) Value of equity

Value of Equity = Value of firm − Value of Debt + surplus funds (cash & cash equivalents)

(There are various methods to cal. value of firm)

(3) Value of Equity per share

$$\frac{\text{Value of equity}}{\text{No of equity shares}}$$

(4) If there is no debt & surplus funds (cash & cash eq.) then

Value of firm = Value of equity

(5) Cost of capital of company (WACC)

$K_o = K_e \times W_e + K_d \times W_d$

- K_e = cost of equity (CAPM)
- K_d – post tax cost of debt – Interest Rate on Debt (1−tax)
- W_e → weight of Eq = $\frac{E}{E+D}$
- W_d = weight of Debt = $\frac{D}{E+D}$ (latest)
- E = Eq share cap + Reserve & surplus + Int Amount which is not mentioned in Books

Note:- If there is Long term Debt but cost of Debt (K_d) is not given in Question, then calculate WACC using CAPM as follows:-

$$WACC = R_f + \beta(R_m - R_f)$$

Here β_A = Assets beta

(4) In general we do not Apply CAPM formula to calculate WACC since WACC will not be same from both the formula.

Part II Approaches of valuation

[1] Market Based models

(1) **Market-price method**

Value of Eq (VOE) = MPS × No of Eq shares

(2) **P/E Ratio method**

Value of Eq (per share) = P/E Ratio × EPS

OR

VOE (Total) = P/E Ratio × EATESH.

[2] Assets based models

(1) **Net Assets value method (BV method)**

Value of equity = Net Assets at BV

Eq sh cap	xxx
(+) Reserves & surplus	xxx
(-) cont. liab (if any)	(xxx)
VOE =	xxx

(2) **Net Realizable value method (Liquidation value method)**

VOE = Net Assets at Realizable value

Net assets at book value

+ Extra amt realizing from an assets than its BV

(-) less amt realizing from an assets than its BV

(3) Income (earning) Based models

(1) **Dividend growth model**

$$VOE = \frac{D_1}{Ke - g}$$

Here $D_1 = D_0 + g$

g = growth rate after merger

ke → cost of eq.

1st priority (CAPM) ⇓ $Rf + \beta e(Rm - Rf)$

2nd priority ⇓ $ke = \left[\frac{D_1 (D_0 + g) \times 100}{CMP} + g\right]$

Here g = current growth rate

Note - If Dividend is taken per share in the formula then it will give value of eq (per share) & If total Dividend is taken in the formula then it will give VOE (Total)

(4) Cash Flow based models

① DGM

② ECM - PTO

(1) FCFF

(2) FCFE - PTO 2

(1) **FCFF method** (free cash flow to firm)

Step ① calculate FCFF

EBIT	xxx
(-) Tax	(xxx)
NOPAT	xxx
(-) Net cap exp (capexp - dep)	(xxx)
(+/-) Dec/(Inc) in WC	xx/(xx)
FCFF	xxx

Step ② Calculate value of firm by discounting FCFF using WACC (Ko)

If there is perpetual FCFF with constant growth

$$VOF = \frac{FCFF_1}{Ko - g}$$

Here $FCFF_1$ = Expected FCFF at End of the year $FCFF_0(1+g)$

→ If there is perpetual FCFF with variable growth

PV of uneven FCFF by Ko (table)	xxx
(+) PV of perpetual FCFF by Ko (terminal value)	xxx
value of firm	xxx

(5) Relative valuation based model

PTO 3

Income Earning Based model.

[2] Earning Capitalization method.

Value of Business (EV of the Co) is calculated using following steps.

Step ① calculate FMP.

PBT	xxx
(−) Extraordinary income included	(xxx)
(+) Ext loss included	xxx
(+) Profit from launch of NP. (sale − MC − LC − FC − Any other cost)	xxx
(−) taxes	(xxx)
FMP.	xxx

Step ② capitalization rate

- 1st priority → specifically given in ques
- 2nd priority → we WACC

Step ③ Value of Business.

$\frac{FMP}{\text{capitalization rate}}$

Step ④ Per share Earning value of company (If asked in Ques)

$= \frac{\text{Value of business as calculated in step 3}}{\text{No of Eq shares.}}$

FCFF method (Free cash flow to equity)

↓

step ①

calculate FCFF

↓

Profit After Tax (PAT)	xxx
(-) Net capex (capexp - dep) × (1 - debt ratio)	(xxx)
(+/-) decrease/(increase) in WC × (1 - Debt ratio)	xxx/(xxx)
FCFF	xxx

Note (i) If there is No debt then

PAT = NOPAT

&

FCFF = FCFF.

(ii) Incremental value due to adoption of New strategy :-

Value of firm after adoption of New strategy (using FCFF method)	xxx
(-) Existing value of firm before strategy (Existing NOPAT / ko)	(xxx)
	xxx

Step ② calculate value of equity by discounting the FCFF using ke (cost of equity)

→ If there is perpetual FCFF with constant growth.

Value of equity = FCFF1 / (Ke - g)

Here FCFF1 = Expected FCFF at End of 1st Year FCFF0 (1+g)

→ If there is perpetual FCFF with variable growth.

PV of uneven FCFF for certain period by Ke (calculated using PV Table) xxx.

(-) PV of uneven FCFF by ke (calculate PV of TV) xxx

Value of Equity = xxx

Relative valuation models.

(1) Sales (Revenue) multiple method:-
In this VOF is calculated using sales (Revenue) multiple of a similar company

Sales multiple = Enterprise value / sales

EV (own) = sales multiple (similar co) × sales (own)

(2) EBITDA multiple Method
In this method VOF is calculated using EBITDA multiple of a similar Co

EBITDA multiple = EV / EBITDA

EV (own) = EBITDA multiple (similar co) × EBITDA (own)

Note:- EBITDA (own) should be adjusted figure in above formula as follows

EBITDA (as given in Q.)	xxx
(-) Extraordinary gain	(xxx)
(+) Extraordinary loss	xxx
(-) Expense pending to be written off	(xxx)
(+) Income pending to be recognised	xxx
Adjusted EBITDA	xxx

(3) Comparable companies multiple (CCM) Method:-
In this method value of Equity is calculated using following 4 Ratios of a similar company

Step ①
(i) MV to BV = MV / BV
(2) MV to Replacement cost = MV / Rep cost
(3) MV to sales = MV / sales
(4) MV to Net Income = MV / Net Income

Step ② Value of own Equity = Average of all 4 market values as calculated in step ①

Valued firm is cal using following steps
Step ① same as comparable companies multiple method (NLI in place of EBITDA)
Step ② value of own firm = Avg of all 3

(4) Chop Shop Approach (Break up value Approach)

This method is used to calculate value of firm having various business segments

- In this method VOF is calculated using following 3 Ratios of each business segment of a similar Co.

(i) Capitalisation to sales = Capitalization / sales
(ii) Capitalisation to Assets = capitalisation / Assets
(iii) Capitalisation to operating income = capitalisation / operating inc

Part III EVA & MVA →

Economic value added

① Meaning of EVA :-
It measures company's financial performance based on excess return earned by comp over min req return

'EVA' calculated was invented & registered by a US consulting firm (Stern Stewart & Co)

(*) • Invested capital is calculated as follows

Liab side approach ⇓

ESC	xxx
(+) RES	xxx
(+) LTD (eq deb, LTL(B))	xxx
(+) Intangible assets which is not recorded	xxx
(+) Non cash adj done in NOPAT	xxx
Invested cap ⇒	xxx

Assets side approach ⇓

Total Assets	xxx
(−) CL	xxx
(+) IA	xxx
(+) Non cash adj	xxx
Invested cap ⇒	xxx

• Other points Related to EVA

Company having Higher EVA will be considered for best investment

→ (Agar div nahi hai to valued firm ...)

EVA dividend = $\frac{EVA}{\text{No of Eq sh}}$

② Calculation of EVA :-

EVA = NOPAT − (Invested cap × WACC)

• NOPAT (Net op Pf After Tax) needs to be adjusted for EVA cal as follows:-

EBIT	xxx
(−) Tax on EBIT	(xxx)
NOPAT	xxx
(+) Non cash exp (eg transfer baddebts)	xxx
Adjusted NOPAT	xxx

Note ⇒ If EBIT is not Given in Question.

PAT (Net income) is available then EBIT

PBT $\left(\frac{PAT}{1-\text{Tax rate}}\right)$	xxx
(+) Interest expenses	xxx
	xxx

Financial leverage is available then EBIT

$\frac{FL \times \text{Int Exp}}{FL - 1}$

✓ $\left(FL = \frac{EBIT}{EBIT - Int}\right)$

Part III (2) Market value added

(1) Meaning of MVA
↓
It measures the wealth that comp. is able to create for its stakeholders since its foundation

(2) calculation of MVA
If MV of firm is given in Ques
↓
MV of firm ×××
(-) invested capital (×××)
×××

• If MV of eq shares is given in Ques:-
MV of Eq (MPS × No of eq shares) ×××
(-) share holder's wealth (×××)
(-SC + RAS) ×××

(3) Calculation of value of firm using MVA
↓
Value of firm
MVA
(+) invested cap
Here MVA = PV of all future cash flows
EVA
WACC.

Part IV others topics

1 Valuation of digital platforms.

(1) Meaning of digital platforms
• Digital platform is a software based online infrastructure for interactions of transactions between users.
Eg :- of Digital platforms
Amazon, ebay, google, Youtube, whatsapp, Telegram, LinkedIn, Flipkart, Meesho etc

(2) Methods for valuation of Digital Platforms.
↓
Income (Earning) Based models.
same as for other companies except
→ find cash flows/profit by estimating share of our digital platforms (SAM) in TAM.

cash flow based models.
same as for other companies

Relative valuation models
same as for other companies

cost Approach
valuation of Digital Platform

is based on total cost of building the platform (ie development coding cost of platform)

Valuation of distressed companies

(i) Meaning of distressed companies

↓

- Distressed companies is a company which is unable to meet its financial obligation (ie debt payments a operap) that may lead to a bankruptcy
- It does not mean that distressed co is worthless, it may also have some value.

(ii) methods for valuation of distressed co

↓

- modified discounted cash flow method

↓

same as cash flow models of other companies except that expected future cash flows are calculated as follows.

Expected future cash flows t = Cash flow$_t$ × (1 − prob of default)

- cash flow based valuation + distress sale value method

Value as per cash flow based models (same as for others) *
(1 − Prob of default) xx
(±) distress sale value
× Prob of def. xxx
xxx

- Adjusted present value method (APV) Method:-

Value of company without debt (calculate PAT and discount by ke) xxx
(±) Effect of debt (PV of Tax shield on interest − Expected Bankruptcy cost) xxx
xxx

Here,
expected Bankruptcy cost
(Value of Co without Debt − distress sale value) × Prob of distress

- Relative valuation models.
same as for other companies.

Valuation of startups

- **cost-to duplicate Approach**

→ value of startup is based on total costs & exp of startup and its product development including purchase of assets

- **Berkus Approach**

value of startup is based on total Estimated value of 5 key success factors

(ie basic value, Technology, Execution, strategic relationship, Production & sale)

- **comparable Transaction method**

value of startup is based on valuation of similar startup.

Ex A Ltd is a startup having 10 lac users
B Ltd (similar business startup)
has 2 crore users & its valued at 26 crores

Sol: value per user in B Ltd (similar startup)
$\frac{26\ Cr}{2\ Cr}$ = ₹13 per user

∴ Value of A Ltd ⇒ 10 lac users × ₹13 per user
→ ₹1.3 crores

- **scorecard valuation methods**

step ① calculate scorecard multiplier (%)

Qualities of startup	Assign Quality (%) for company over similar startup [1]	Weights of each qualities. [2]	[1 X 2]
Strength of team	✓	0.30	✓
size of oppt	✓	0.25	✓
product or service	✓	0.15	✓
size of opportunity	✓	0.25	✓
Product or service	✓	0.15	✓
competitive envt	✓	0.10	✓
marketing	✓	0.10	✓
Additional investment need	✓	0.05	✓
others	✓	0.05	✓
		multiplier (%) →	✓

step ② value of startup = valuation of similar startup × multiplier (%)

- **First chicago methods**

same as cash flow based models for other companies except the expected future cash flows are calculated as follows:-

Expected future cash flows →
Worst scenario cash flow$_t$ × Prob of WS — 10%

Normal scenario cash flows$_t$ × Prob of NS — 70%

Best scenario cash flows$_t$ × Prob of BS$_t$ — 20%

- Venture capital method

Step ① Estimate value of startup at the time of Exit

Step ② Value of startup = PV of estimated value at the time of exit using investor's required rate of return.

$\frac{\text{Enterprise value}}{\text{Shares o/s}}$ →

x amp