

CHAPTER - 29

Ind AS 113: Fair Value Measurement

Question 1

An asset is sold in 2 different active markets at different prices. An entity enters into transactions in both markets and can access the price in those markets for the asset at the measurement date.

In Market A:

The price that would be received is ₹ 26, transaction costs in that market are ₹ 3 and the costs to transport the asset to that market are ₹ 2.

In Market B:

The price that would be received is ₹ 25, transaction costs in that market are ₹ 1 and the costs to transport the asset to that market are ₹ 2.

You are required to calculate:

- (i) The fair value of the asset, if market A is the principal market, and
- (ii) The fair value of the asset, if none of the markets is principal market.

Answer

(i) If Market A is the principal market

If Market A is the principal market for the asset (i.e., the market with the greatest volume and level of activity for the asset), the fair value of the asset would be measured using the price that would be received in that market, after taking into account transport costs.

Fair Value will be

	₹
Price receivable	26
Less: Transportation cost	(2)
Fair value of the asset	24

(ii) If neither of the market is the principal market

If neither of the market is the principal market for the asset, the fair value of the asset would be measured using the price in the most advantageous market. The most advantageous market is the market that maximises the amount that would be received to sell the asset, after taking into account transaction costs and transport costs (i.e., the net amount that would be received in the respective markets).

	₹	₹
	Market A	Market B
Price receivable	26	25
Less: Transaction cost	(3)	(1)
Less: Transportation cost	(2)	(2)
Net Proceeds of the asset	21	22

Since the entity would maximise the net amount that would be received for the asset in Market B

i.e. ₹ 22, the fair value of the asset would be measured using the price in Market B.

Fair value

	₹
Price receivable	25
Less: Transportation cost	(2)
Fair value of the asset	23

Question 2

An asset is sold in two different active markets at different prices. Manor Ltd. enters into transactions in both markets and can access the price in those markets for the asset at the measurement date.

In Mumbai market, the price that would be received is ₹ 290, transaction costs in that market are ₹ 40 and the costs to transport the asset to that market are ₹ 30. Thus, the net amount that would be received is ₹ 220.

In Kolkata market the price that would be received is ₹ 280, transaction costs in that market are ₹ 20 and the costs to transport the asset to that market are ₹ 30. Thus, the net amount that would be received in Kolkata market is ₹ 230.

- (i) What should be the fair value of the asset if Mumbai Market is the principal market? What should be fair value if none of the markets is principal market?
- (ii) If the net realization after expenses is more in export market, say ₹ 280, but Government allows only 15% of the production to be exported out of India. Discuss what would be fair value in such case.

Answer

(i) (a) If Mumbai Market is the principal market

If Mumbai Market is the principal market for the asset (i.e., the market with the greatest volume and level of activity for the asset), the fair value of the asset would be measured using the price that would be received in that market, after taking into account transportation costs.

Fair value will be

	₹
Price receivable	290
Less: Transportation cost	(30)
Fair value of the asset	260

(b) If neither of the market is the principal market

If neither of the market is the principal market for the asset, the fair value of the asset would be measured using the price in the most advantageous market. The most advantageous market is the market that maximizes the amount that would be received to sell the asset, after taking into account transaction costs and transportation costs (i.e., the net amount that would be received in the respective markets).

	₹	₹
	Mumbai Market	Kolkata Market
Fair value of the asset as per the question	220	230

Since the entity would maximize the net amount that would be received for the asset in Kolkata Market i.e. ₹ 230, the fair value of the asset would be measured using the price in Kolkata Market.

Fair value in such a case would be

	₹
Price receivable	280
Less: Transportation cost	(30)
Fair value of the asset	250

- (ii) Export prices are more than the prices in the principal market and it would give highest return comparing to the domestic market. Therefore, the export market would be considered as most advantageous market. But since the Government has capped the export, maximum upto 15% of total output, maximum sale activities are being done at domestic market only i.e. 85%. Since the highest level of activities with highest volume is being done at domestic market, principal market for asset would be domestic market. Therefore, the prices received in domestic market would be used for fair valuation of assets.

Question 3

ABC Ltd. acquired 5% equity shares of XYZ Ltd. for ₹ 10 crore in the year 20X1-X2. The company is in process of preparing the financial statements for the year 20X2-X3 and is assessing the fair value at subsequent measurement of the investment made in XYZ Ltd. Based on the observable input, the ABC Ltd. identified a similar nature of transaction in which PQR Ltd. acquired 20% equity shares in XYZ Ltd. for ₹ 60 crore. The price of such transaction was determined on the basis of Comparable Companies Method (CCM) - Enterprise Value (EV)/EBITDA which was 8. For the current year, the EBITDA of XYZ Ltd. is ₹ 40 crore. At the time of acquisition, the valuation was determined after considering 5% of liquidity discount and 5% of non-controlling stake discount. What will be the fair value of ABC Ltd.'s investment in XYZ Ltd. as on the balance sheet date?

Note: Show all calculations in ₹ crore

Answer

Determination of Enterprise Value of XYZ Ltd.

Particulars	₹ in crore
EBITDA as on the measurement date	40
EV/EBITDA multiple as on the date of valuation	8
Enterprise value of XYZ Ltd.	320

Determination of subsequent measurement of XYZ Ltd.

Particulars	₹ in crore
Enterprise Value of XYZ Ltd.	320
ABC Ltd.'s share based on percentage of holding (5% of 320)	16
Less: Liquidity discount & Non-controlling stake discount (5% + 5% = 10%)	(1.6)
Fair value of ABC Ltd.'s investment in XYZ Ltd.	14.4

Question 4

- (i) Entity A owns 250 ordinary shares in company XYZ, an unquoted company. Company XYZ has a total share capital of 5,000 shares with nominal value of ₹ 10. Company XYZ's after-tax maintainable profits are estimated at ₹ 70,000 per year. An appropriate price/earnings ratio determined from published industry data is 15 (before lack of marketability adjustment). Entity A's management estimates that the discount for the lack of marketability of company XYZ's shares and restrictions on their transfer is 20%. Entity A values its holding in company XYZ's shares based on earnings. Determine the fair value of Entity A's investment in XYZ's shares.
- (ii) Based on the facts given in the aforementioned part (i), assume that, Entity A estimates the fair value of the shares it owns in company XYZ using a net asset valuation technique. The fair value of company XYZ's net assets including those recognised in its balance sheet and those that are not recognised is ₹ 8,50,000. Determine the fair value of Entity A's investment in XYZ's shares.

Answer

- (i) An earnings-based valuation of Entity A's holding of shares in company XYZ could be calculated as follows:

Particulars	Unit
Entity XYZ's after-tax maintainable profits (A)	₹ 70,000
Price/Earnings ratio (B)	15
Adjusted discount factor (C) (1 - 0.20)	0.80
Value of Company XYZ [(A) x (B) x (C)]	₹ 8,40,000

Value of a share of XYZ = ₹ 8,40,000 ÷ 5,000 shares = ₹ 168

The fair value of Entity A's investment in XYZ's shares is estimated at ₹ 42,000 (that is, 250 shares x ₹ 168 per share).

- (ii) Share price = ₹ 8,50,000 ÷ 5,000 shares = ₹ 170 per share

The fair value of Entity A's investment in XYZ shares is estimated to be ₹ 42,500 (250 shares x ₹ 170 per share).

Question 5

UK Ltd. is in the process of acquisition of shares of PT Ltd. as part of business reorganization plan. The projected free cash flow of PT Ltd. for the next 5 years are as follows:

(₹ in crore)

Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
Cash flows	187.1	187.6	121.8	269	278.8
Terminal Value					3,965

The weightage average cost of capital of PT Ltd. is 11%. The total debt as on measurement date is ₹ 1,465 crore and the surplus cash & cash equivalent is ₹ 106.14 crore.

The total numbers of shares of PT Ltd. as on the measurement date is 8,52,84,223 shares. Determine value per share of PT Ltd. as per Income Approach.

Note: Show all calculations in ₹ crore upto 2 decimals and consider PV Factor upto 4 decimals.

Answer

Determination of equity value of PT Ltd.

(₹ in crore)

Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
Cash flows	187.1	187.6	121.8	269	278.8
Terminal Value					3,965
	187.1	187.6	121.8	269	4243.8
Discount rate	0.9009	0.8116	0.7312	0.6587	0.5935
Free Cash Flow available to the firm	168.56	152.26	89.06	177.19	2,518.69
Total of all years					3,105.76
Less: Debt					(1,465)
Add: Surplus Cash & Cash equivalent					106.14
Equity Value of PT Ltd.					1,746.90
No. of Shares					8,52,84,223
Per Share Value					204.83

Question 6

You are a senior consultant of your firm and are in process of determining the valuation of KK Ltd. You have determined the valuation of the company by two approaches i.e. Market Approach and Income approach and selected the highest as the final value. However, based upon the discussion with your partner you have been requested to assign equal weights to both the approaches and determine a fair value of shares of KK Ltd. The details of the KK Ltd. are as follows:

Particulars	₹ in crore
Valuation as per Market Approach	5,268.2
Valuation as per Income Approach	3,235.2
Debt obligation as on measurement date	1,465.9
Surplus cash & cash equivalent	106.14

Fair value of surplus assets	312.4
Number of shares of KK Ltd.	8,52,84,223 shares

Determine the Equity value of KK Ltd. as on the measurement date on the basis of above details.

Note: Show all calculations in ₹ crore upto 2 decimals

Answer

Equity Valuation of KK Ltd.

Particulars	Weights	(₹ in crore)
As per Market Approach	50	5,268.2
As per Income Approach	50	3,235.2
Enterprise Valuation based on weights (5,268.2 x 50%) + (3,235.2 x 50%)		4,251.7
Less: Debt obligation as on measurement date		(1,465.9)
Add: Surplus cash & cash equivalent		106.14
Add: Fair value of surplus assets		312.40
Equity value of KK Ltd.		3,204.33
No. of shares		8,52,84,223
Value per share		375.72

Question 7

Investment 1 is a contractual right to receive ₹ 800 in 1 year. There is an established market for comparable assets, and information about those assets, including price information, is available. Of those comparable assets:

- Investment 2 is a contractual right to receive ₹ 1,200 in 1 year and has a market price of ₹ 1,083.
- Investment 3 is a contractual right to receive ₹ 700 in 2 years and has a market price of ₹ 566.

All three assets are comparable with respect to risk (that is, dispersion of possible payoffs and credit).

You are required to measure the fair value of Asset 1 on the basis of above information.

Note: Consider PV Factor upto 4 decimals

Answer

On the basis of the timing of the contractual payments to be received for Investment 1 relative to the timing for Investment 2 and Investment 3 (that is, one year for Investment 2 versus two years for Investment 3), Investment 2 is deemed more comparable to Investment 1. Using the contractual payment to be received for Investment 1 (₹ 800) and the 1-year market rate derived from Investment 2, the fair value of Investment 1 is calculated as under:

Investment 2 Fair Value = ₹ 1,083

Contractual Cash flows in 1 year = ₹ 1,200

IRR = ₹ 1,083 x (1 + r) = ₹ 1,200

$$= (1 + r) = (\text{₹ } 1,200 / \text{₹ } 1,083) = 1.108$$

$$r = 1.108 - 1 = 0.108 \text{ or } 10.8\%$$

$$\text{Value of Investment } 1 = \text{₹ } 800 / 1.108 = \text{₹ } 722$$

Question 8

On 1st January, 20X1, A Ltd assumes a decommissioning liability in a business combination. The reporting entity is legally required to dismantle and remove an offshore oil platform at the end of its useful life, which is estimated to be 10 years. The following information is relevant:

If A Ltd was contractually allowed to transfer its decommissioning liability to a market participant, it concludes that a market participant would use all of the following inputs, probability weighted as appropriate, when estimating the price it would expect to receive:

a. Labour costs

Labour costs are developed based on current marketplace wages, adjusted for expectations of future wage increases, required to hire contractors to dismantle and remove offshore oil platforms. A Ltd. assigns probability to a range of cash flow estimates as follows:

Cash Flow Estimates:	100 Cr	125 Cr	175 Cr
Probability:	25%	50%	25%

b. Allocation of overhead costs:

Assigned at 80% of labour cost

c. The compensation that a market participant would require for undertaking the activity and for assuming the risk associated with the obligation to dismantle and remove the asset. Such compensation includes both of the following:

i. Profit on labour and overhead costs:

A profit mark-up of 20% is consistent with the rate that a market participant would require as compensation for undertaking the activity.

ii. The risk that the actual cash outflows might differ from those expected, excluding inflation:

A Ltd. estimates the amount of that premium to be 5% of the expected cash flows. The expected cash flows are 'real cash flows' / 'cash flows in terms of monetary value today'.

d. Effect of inflation on estimated costs and profits

A Ltd. assumes a rate of inflation of 4% over the 10 year period based on available market data.

e. Time value of money, represented by the risk-free rate: 5%

f. Non-performance risk relating to the risk that Entity A will not fulfill the obligation, including A Ltd.'s own credit risk: 3.5%

A Ltd. concludes that its assumptions would be used by market participants. In addition, A Ltd. does not adjust its fair value measurement for the existence of a restriction preventing it from transferring the liability.

You are required to calculate the fair value of the asset retirement obligation.

Note: Show all calculations in Cr upto 2 decimals and consider FVIF & PVIF upto 4 decimals.

Answer

Particulars	Workings	Amount (in Cr)
Expected Labour Cost (Refer W.N.)		131.25
Allocated Overheads	$(80\% \times 131.25 \text{ Cr})$	105.00
Profit markup on Cost	$(131.25 + 105) \times 20\%$	47.25
Total Expected Cash Flows before inflation		283.50
Inflation factor for next 10 years (4%)	$(1.04)^{10} = 1.4802$	
Expected cash flows adjusted for inflation	283.50×1.4802	419.65
Risk adjustment - uncertainty relating to cash flows	$(5\% \times 419.65)$	20.98
Total Expected Cash Flows	$(419.65 + 20.98)$	440.63
Discount rate to be considered = risk-free rate + entity's non-performance risk	$5\% + 3.5\%$	8.5%
Expected present value at 8.5% for 10 years	$[440.63 / (1.085)^{10}]$	194.89

Working Note:

Expected labour cost:

Cash Flows Estimates	Probability	Expected Cash Flows
100 Cr	25%	25.00 Cr
125 Cr	50%	62.50 Cr
175 Cr	25%	43.75 Cr
Total		131.25 Cr