

COMPREHENSIVE ILLUSTRATIONS

Illustration 1

A Ltd. issued redeemable preference shares to a Holding Company – Z Ltd. The terms of the instrument have been summarized below. Account for this in the books of Z Ltd.

Nature	Non-cumulative redeemable preference shares
<i>Repayment:</i>	<i>Redeemable after 5 years</i>
<i>Date of Allotment:</i>	<i>1-Apr-20X1</i>
<i>Date of repayment:</i>	<i>31-Mar-20X6</i>
<i>Total period:</i>	<i>5.00 years</i>
<i>Value of preference shares issued:</i>	<i>100,000,000</i>
<i>Dividend rate</i>	<i>0.0001%</i>
<i>Market rate of interest</i>	<i>12% per annum</i>
<i>Present value factor</i>	<i>0.56743</i>

Solution

Applying the guidance in Ind AS 109, a 'financial asset' shall be recorded at its fair value upon initial recognition. Fair value is normally the transaction price. However, sometimes certain type of instruments may be exchanged at off market terms (ie, different from market terms for a similar instrument if exchanged between market participants).

For example, a long-term loan or receivable that carries no interest while similar instruments if exchanged between market participants carry interest, then fair value for such loan receivable will be lower from its transaction price owing to the loss of interest that the holder bears. In such cases where part of the consideration given or received is for something other than the financial instrument, an entity shall measure the fair value of the financial instrument.

In the above case, since A Ltd has issued preference shares to its Holding Company – Z Ltd, the relationship between the parties indicates that the difference in transaction price and fair value is akin to investment made by Z Ltd. in its subsidiary.

Following is the table summarising the computations on initial recognition:

Market rate of interest	12%
Present value factor	0.56743
Present value	56,742,686

Loan component	56,742,686
Investment in subsidiary	43,257,314

Subsequently, such preference shares shall be carried at amortised cost at each reporting date. The computation of amortised cost at each reporting date has been done as follows:

Year	Date	Opening Asset	Days	Interest @ 12%	Closing balance
	1-Apr-20X1				56,742,686
1	31-Mar-20X2	56,742,686	365	6,809,122	63,551,808
2	31-Mar-20X3	63,551,808	365	76,26,217	71,178,025
3	31-Mar-20X4	71,178,025	365	85,41,363	79,719,388
4	31-Mar-20X5	79,719,388	365	95,66,327	89,285,715
5	31-Mar-20X6	89,285,715	365	10,714,285	100,000,000

Journal Entries to be done at every reporting date

Particulars	Amount	Amount
Date of transaction		
Investment - Equity portion	Dr. 43,257,314	
Loan receivable	Dr. 56,742,686	
To Bank		100,000,000
Interest income - March 31, 20X2		
Loan receivable	Dr. 6,809,122	
To Interest income		6,809,122
Interest income - March 31, 20X3		
Loan receivable	Dr. 76,26,217	
To Interest income		76,26,217
Interest income - March 31, 20X4		
Loan receivable	Dr. 85,41,363	
To Interest income		85,41,363
Interest income - March 31, 20X5		
Loan receivable	Dr. 95,66,327	
To Interest income		95,66,327

Interest income - March 31, 20X6			
Loan receivable	Dr.	10,714,285	
To Interest income			10,714,285
Settlement of transaction			
Bank	Dr.	100,000,000	
To Loan receivable			100,000,000

Illustration 2

A Limited issues ₹ 1 crore optionally convertible bonds on 1 April 20X1. The bonds have a life of eight years and a face value of ₹ 10 each, and they offer interest, payable at the end of each financial year, at a rate of 6 per cent annum. The bonds are issued at their face value and each bond can be converted into one ordinary share in A Limited at any time in the next eight years. Companies of a similar risk profile have recently issued debt with similar terms, without the option for conversion, at a rate of 8 per cent per annum.

Required:

- Provide the appropriate accounting entries for initial recognition.
- Calculate the stream of interest expenses across the eight years of the life of the bonds.
- Provide the accounting entries if the holders of the bonds elect to convert the bonds to ordinary shares at the end of the third year (after receiving interest for the third year).

Solution

- Applying the guidance for compound instruments, the present value of the bond is computed to identify the liability component and then difference between the present value of these bonds & the issue price of ₹ 1 crore shall be allocated to the equity component. In determining the present value, the rate of 8 per cent will be used, which is the interest rate paid on debt of a similar nature and risk that does not provide an option to convert the liability to ordinary shares.

Present value of bonds at the market rate of debt

Present value of principal to be received in eight years discounted at 8%

$$(10,000,000 \times 0.5403) = 5,403,000$$

Present value of interest stream discounted at 8% for 8 years

(6,00,000 X 5.7466) = 3,447,960

Total present value = 8,850,960

Equity component = 1,149,040

Total face value of convertible bonds = 10,000,000

The accounting entries will be as follows:

	Dr. Amount (₹)	Cr. Amount (₹)
1 April, 20X1		
Bank Dr. 10,000,000		
To Convertible bonds (liability)		8,850,960
To Convertible bonds (equity component)		1,149,040
(Being entry to record the convertible bonds and the recognition of the liability and equity components)		
31st March, 20X2		
Interest expense Dr. 708,077		
To Bank		600,000
To Convertible bonds (liability)		108,077
(Being entry to record the interest expense, where the expense equals the present value of the opening liability multiplied by the market rate of interest).		

- (b) The stream of interest expense is summarised below, where interest for a given year is calculated by multiplying the present value of the liability at the beginning of the period by the market rate of interest, this is being 8 per cent.

Date	Payment	Interest expense at 8%	Increase in bond liability	Total bond liability
1 April, 20X1				8,850,960
31 March 20X2	600,000	708,077	108,077	8,959,037
31 March 20X3	600,000	716,723	116,723	9,075,760
31 March 20X4	600,000	726,061	126,061	9,201,821

31 March 20X5	600,000	736,146	136,146	9,337,967
31 March 20X6	600,000	747,037	147,037	9,485,004
31 March 20X7	600,000	758,800	158,800	9,643,804
31 March 20X8	600,000	771,504	171,504	9,815,308
31 March 20X9	600,000	784,692*	184,692	10,000,000

*difference is due to rounding off

- (c) If the holders of the bonds elect to convert the bonds to ordinary shares at the end of the third year (after receiving their interest payments), the entries in the third year would be:

		Dr. Amount (₹)	Cr. Amount (₹)
31 March 20X4			
Interest expense	Dr.	726,061	
To Bank			600,000
To Convertible bonds (liability)			126,061
(Being entry to record interest expense for the period)			
31 March 20X4			
Convertible bonds (liability)	Dr.	9,201,821	
Convertible bonds (equity component)	Dr.	1,149,040	
To Ordinary share capital A/c			10,000,000
To Securities Premium A/c			350,861
(Being entry to record the conversion of bonds into shares of A Limited recognised in equity share capital account at face value of the shares and there being no premium on equity shares, the balance has been transferred to retained earnings.)			

Illustration 3

On 1st January 20X1, SamCo. Ltd. agreed to purchase USD (\$) 20,000 from JT Bank in future on 31st December 20X1 for a rate equal to ₹68 per USD. SamCo. Ltd. did not pay any amount upon entering into the contract. SamCo Ltd. is a listed company in India and prepares its financial statements on a quarterly basis.

Following the principles of recognition and measurement as laid down in Ind AS 109, you are required to record the entries for each quarter ended till the date of actual purchase of USD.

For the purposes of accounting, please use the following information representing marked to market fair value of forward contracts at each reporting date:

As at 31st March 20X1 – ₹ (25,000)

As at 30th June 20X1 - ₹ (15,000)

As at 30th September 20X1 - ₹ 12,000

Spot rate of USD on 31st December 20X1 - ₹ 66 per USD

Solution

(i) **Assessment of the arrangement using the definition of derivative included under Ind AS 109**

Derivative is a financial instrument or other contract within the scope of this Standard with all three of the following characteristics:

- a) its value changes in response to the change in a specified interest rate, financial instrument price, commodity price, foreign exchange rate, index of prices or rates, credit rating or credit index, or other variable, provided in the case of a non-financial variable that the variable is not specific to a party to the contract (sometimes called the 'underlying').
- b) it requires no initial net investment or an initial net investment that is smaller than would be required for other types of contracts that would be expected to have a similar response to changes in market factors.
- c) it is settled at a future date.

Upon evaluation of contract in question it is noted that the contract meets the definition of a derivative as follows:

- a) the value of the contract to purchase USD at a fixed price changes in response to changes in foreign exchange rate.
- b) the initial amount paid to enter into the contract is zero. A contract which would give the holder a similar response to foreign exchange rate changes would have required an investment of USD 20,000 on inception.

- c) the contract is settled in future

The derivative is a forward exchange contract.

As per Ind AS 109, derivatives are measured at fair value upon initial recognition and are subsequently measured at fair value through profit and loss.

(ii) Accounting on 1st January 20X1:

As there was no consideration paid and without evidence to the contrary the fair value of the contract on the date of inception is considered to be zero. Accordingly, no accounting entries shall be recorded on the date of entering into the contract.

(iii) Accounting on 31st March 20X1:

Particulars	Dr. Amount (₹)	Cr. Amount (₹)
Profit and loss A/c Dr. To derivative financial liability (Being mark to market loss on forward contract recorded)	25,000	25,000

(iv) Accounting on 30th June 20X1:

The change in value of the derivative forward contract shall be recorded as a derivative financial liability in the books of SamCo Ltd. by recording the following journal entry:

Particulars	Dr. Amount (₹)	Cr. Amount (₹)
Derivative financial liability A/c Dr. To Profit and loss A/c (being partial reversal of mark to market loss on forward contract recorded)	10,000	10,000

(v) Accounting on 30th September 20X1:

The value of the derivative forward contract shall be recorded as a derivative financial asset in the books of SamCo Ltd. by recording the following journal entry:

Particulars	Dr. Amount (₹)	Cr. Amount (₹)
Derivative financial liability A/c Dr.	15,000	
Derivative financial asset A/c Dr.	12,000	
To Profit and loss A/c		27,000
(being gain on mark to market of forward contract booked as derivative financial asset and reversal of derivative financial liability)		

(vi) **Accounting on 31st December 20X1:**

The settlement of the derivative forward contract by actual purchase of USD 20,000 shall be recorded in the books of SamCo Ltd. by recording the following journal entry:

Particulars	Dr. Amount (₹)	Cr. Amount (₹)
Bank (USD Account) @ 20,000 x 66 Dr.	13,20,000	
Profit and loss A/c Dr.	52,000	
To Bank @ 20,000 x 68		13,60,000
To Derivative financial asset A/c		12,000
(being loss on settlement of forward contract booked on actual purchase of USD)		

Illustration 4

Entity A (an ₹ functional currency entity) enters into a USD 1,000,000 sale contract on 1 January 20X1 with Entity B (an ₹ functional currency entity) to sell equipment on 30 June 20X1.

Spot rate on 1 January 20X1: ₹/ USD	45
Spot rate on 31 March 20X1: ₹/ USD	57
Three-month forward rate on 31 March 20X1: ₹/ USD	45
Six-month forward rate on 1 January 20X1: ₹/ USD	55
Spot rate on 30 June 20X1: ₹/ USD	60

Assume that this contract has an embedded derivative that is not closely related and requires separation. Please provide detailed journal entries in the books of Entity A for accounting of such embedded derivative until sale is actually made.

Solution

The contract should be separated using the 6 month USD / ₹ forward exchange rate, as at the date of the contract (₹/USD = 55). The two components of the contract are therefore:

- ◆ A sale contract for ₹ 55 Million
- ◆ A six-month currency forward to purchase USD 1 Million at 55
- ◆ This gives rise to a gain or loss on the derivative, and a corresponding derivative asset or liability.

On delivery

1. Entity A records the sales at the amount of the host contract = ₹ 55 Million
2. The embedded derivative is considered to expire.
3. The derivative asset or liability (i.e. the cumulative gain or loss) is settled by becoming part of the financial asset on delivery.
4. In this case the carrying value of the currency forward at 30 June 20X1 on maturity is = ₹ (1,000,000 x 60 – 55 x 1,000,000) = ₹ 5,000,000 (profit/asset)

The table summarising the computation of gain/ loss to be recorded at every period end -

Date	Transaction	Sales	Debtors	Derivative Asset (Liability)	(Profit) Loss
		₹	₹	₹	₹
1-Jan-20X1	Embedded Derivative	Nil Value			
31-Mar-20X1	Change in Fair Value of Embedded Derivatives MTM (55-45) x 1 Million			(10,000,000)	10,000,000
30-Jun-20X1	Change in Fair Value of Embedded Derivatives (60-45) x 1 Million			15,000,000	(15,000,000)
30-Jun-20X1	Recording sales at forward rate	(55,000,000)	55,000,000		
30-Jun-20X1	Embedded derivative-settled against debtors		5,000,000	(5,000,000)	

Journal Entries to be recorded at every period end

a. 01 January 20X1 – No entry to be made

b. 31 March 20X1 –

Particulars	Dr. Amount (₹)	Cr. Amount (₹)
Profit and loss A/c Dr. To Derivative financial liability A/c (being loss on mark to market of embedded derivative booked)	10,000,000	10,000,000

c. 30 June 20X1 –

Particulars	Dr. Amount (₹)	Cr. Amount (₹)
Derivative financial asset A/c Dr.	5,000,000	
Derivative financial liability A/c Dr.	10,000,000	
To Profit and loss A/c (being gain on embedded derivative based on spot rate at the date of settlement booked)		15,000,000

d. 30 June 20X1 –

Particulars	Dr. Amount (₹)	Cr. Amount (₹)
Trade receivable A/c Dr.	55,000,000	
To Sales A/c (being sale booked at forward rate on the date of transaction)		55,000,000

e. 30 June 20X1 –

Particulars	Dr. Amount (₹)	Cr. Amount (₹)
Trade receivable A/c Dr.	5,000,000	
To Derivative financial asset A/c (being derivative asset re-classified as a part of trade receivables, bringing it to spot rate on the date of sale)		5,000,000

Illustration 5

On 1st January 20X1, SamCo. Ltd. entered into a written put option for USD (\$) 20,000 with JT Corp to be settled in future on 31st December 20X1 for a rate equal to ₹ 68 per USD at the option of JT Corp. SamCo. Ltd. did not receive any amount upon entering into the contract. SamCo Ltd. is a listed company in India and prepares its financial statements on a quarterly basis.

Following the classification principles of recognition and measurement as laid down in Ind AS 109, you are required to record the entries for each quarter ended till the date of actual purchase of USD.

For the purposes of accounting, please use the following information representing marked to market fair value of put option contracts at each reporting date:

As at 31st March 20X1 – ₹ (25,000)

As at 30th June 20X1 - ₹ (15,000)

As at 30th September 20X1 - ₹ NIL

Spot rate of USD on 31st December 20X1 - ₹ 66 per USD

Solution

i. **Assessment of the arrangement using the definition of derivative included under Ind AS 109**

Derivative is a financial instrument or other contract within the scope of this Standard with all three of the following characteristics:

- a. its value changes in response to the change in a specified interest rate, financial instrument price, commodity price, foreign exchange rate, index of prices or rates, credit rating or credit index, or other variable, provided in the case of a non-financial variable that the variable is not specific to a party to the contract (sometimes called the 'underlying').
- b. it requires no initial net investment or an initial net investment that is smaller than would be required for other types of contracts that would be expected to have a similar response to changes in market factors.
- c. it is settled at a future date.

Upon evaluation of contract in question it is noted that the contract meets the definition of a derivative as follows:

- (a) the value of the contract to purchase USD at a fixed price changes in response to changes in foreign exchange rate.

- (b) the initial amount received to enter into the contract is zero. A contract which would give the holder a similar response to foreign exchange rate changes would have required an investment of USD 20,000 on inception.
- (c) the contract is settled in future

The derivative liability is a written put option contract.

As per Ind AS 109, derivatives are measured at fair value upon initial recognition and are subsequently measured at fair value through profit and loss.

ii. Accounting on 1st January 20X1

As there was no consideration paid and without evidence to the contrary the fair value of the contract on the date of inception is considered to be zero. Accordingly, no accounting entries shall be recorded on the date of entering into the contract.

iii. Accounting on 31st March 20X1

The value of the derivative put option contract shall be recorded as a derivative financial liability in the books of SamCo Ltd. by recording the following journal entry:

Particulars	Dr. Amount (₹)	Cr. Amount (₹)
Profit and loss A/c Dr. To derivative financial liability (Being mark to market loss on the put option contract recorded)	25,000	25,000

iv. Accounting on 30th June 20X1

The change in value of the derivative put option contract shall be recorded as a derivative financial liability in the books of SamCo Ltd. by recording the following journal entry:

Particulars	Dr. Amount (₹)	Cr. Amount (₹)
Derivative financial liability A/c Dr. To Profit and loss A/c (Being partial reversal of mark to market loss on the put option contract recorded)	10,000	10,000

v. Accounting on 30th September 20X1

The change in value of the derivative option contract shall be recorded as a zero in the books of SamCo Ltd. by recording the following journal entry:

Particulars	Dr. Amount (₹)	Cr. Amount (₹)
Derivative financial liability A/c Dr. To Profit and loss A/c (Being gain on mark to market of put option contract booked to make the value the derivative liability as zero)	15,000	15,000

vi. Accounting on 31st December 20X1

The settlement of the derivative put option contract by actual purchase of USD 20,000 shall be recorded in the books of SamCo Ltd. upon exercise by JT Corp. by recording the following journal entry:

Particulars	Dr. Amount (₹)	Cr. Amount (₹)
Bank (USD Account) @ 20,000 x 66 Dr. Profit and loss A/c Dr. To Bank @ 20,000 x 68 (being loss on settlement of put option contract booked on actual purchase of USD)	13,20,000 40,000	13,60,000

Illustration 6

ABC Company issued 10,000 compulsory cumulative convertible preference shares (CCCPS) as on 1 April 20X1 @ ₹ 150 each. The rate of dividend is 10% payable every year. The preference shares are convertible into 5,000 equity shares of the company at the end of 5th year from the date of allotment. When the CCCPS are issued, the prevailing market interest rate for similar debt without conversion options is 15% per annum. Transaction cost on the date of issuance is 2% of the value of the proceeds.

Key terms:

Date of Allotment	01-Apr-20X1
Date of Conversion	01-Apr-20X6
Number of Preference Shares	10,000
Face Value of Preference Shares	150
Total Proceeds	15,00,000
Rate of dividend	10%

Market Rate for Similar Instrument	15%
Transaction Cost	30,000
Face value of equity share after conversion	10
Number of equity shares to be issued	5,000
Effective interest rate	15.86%

You are required to compute the liability and equity component and pass journal entries for entire term of arrangement i.e. from the issue of preference shares till their conversion into equity shares keeping in view the provisions of relevant Ind AS.

Solution

This is a compound financial instrument with two components – liability representing present value of future cash outflows and balance represents equity component.

a. Computation of Liability & Equity Component

Date	Particulars	Cash Flow	Discount Factor	Net present Value
01-Apr-20X1		0	1	0.00
31-Mar-20X2	Dividend	150,000	0.869565	130,434.75
31-Mar-20X3	Dividend	150,000	0.756144	113,421.6
31-Mar-20X4	Dividend	150,000	0.657516	98,627.4
31-Mar-20X5	Dividend	150,000	0.571753	85,762.95
31-Mar-20X6	Dividend	150,000	0.497177	<u>74,576.55</u>
Total Liability Component				502,823.25
Total Proceeds				<u>1,500,000.00</u>
Total Equity Component (Bal fig)				<u>997,176.75</u>

b. Allocation of transaction costs

Particulars	Amount	Allocation	Net Amount
Liability Component	502,823	10,056	492,767
Equity Component	<u>997,177</u>	<u>19,944</u>	<u>977,233</u>
Total Proceeds	<u>1,500,000</u>	<u>30,000</u>	<u>1,470,000</u>

c. Accounting for liability at amortised cost:

- Initial accounting = Present value of cash outflows less transaction costs
- Subsequent accounting = At amortised cost, ie, initial fair value adjusted for interest and repayments of the liability.

	Opening Financial Liability A	Interest B	Cash Flow C	Closing Financial Liability A+B-C
01-Apr-20X1	492,767	-	-	4,92,767
31-Mar-20X2	492,767	78,153	150,000	4,20,920
31-Mar-20X3	420,920	66,758	150,000	3,37,678
31-Mar-20X4	337,678	53,556	150,000	2,41,234
31-Mar-20X5	241,234	38,260	150,000	1,29,494
31-Mar-20X6	129,494	20,506	150,000	-

d. Journal Entries to be recorded for entire term of arrangement are as follows:

Date	Particulars	Debit	Credit
01-Apr-20X1	Bank A/c Dr. To Preference Shares Liability A/c To Equity Component of Preference shares A/c (Being compulsorily convertible preference shares issued. The same are divided into equity component and liability component as per the calculation)	1,470,000	492,767 977,233
31-Mar-20X2	Preference shares Liability A/c Dr. To Bank A/c (Being Dividend at the coupon rate of 10% paid to the shareholders)	150,000	150,000
31-Mar-20X2	Finance cost A/c Dr. To Preference Shares Liability A/c (Being interest as per EIR method recorded)	78,153	78,153
31-Mar-20X3	Preference shares Liability A/c Dr. To Bank A/c (Being Dividend at the coupon rate of 10% paid to the shareholders)	150,000	150,000
31-Mar-20X3	Finance cost A/c Dr. To Preference Shares Liability A/c (Being interest as per EIR method recorded)	66,758	66,758

31-Mar-20X4	Preference shares Liability A/c Dr. To Bank A/c (Being Dividend at the coupon rate of 10% paid to the shareholders)	150,000	150,000
31-Mar-20X4	Finance cost A/c Dr. To Preference Shares Liability A/c (Being interest as per EIR method recorded)	53,556	53,556
31-Mar-20X5	Preference shares Liability A/c Dr. To Bank A/c (Being Dividend at the coupon rate of 10% paid to the shareholders)	150,000	150,000
31-Mar-20X5	Finance cost A/c Dr. To Preference Shares Liability A/c (Being interest as per EIR method recorded)	38,260	38,260
31-Mar-20X6	Preference shares Liability A/c Dr. To Bank A/c (Being Dividend at the coupon rate of 10% paid to the shareholders)	150,000	150,000
31-Mar-20X6	Finance cost A/c Dr. To Preference Shares Liability A/c (Being interest as per EIR method recorded)	20,506	20,506
31-Mar-20X6	Equity Component of Preference shares A/c Dr. To Equity Share Capital A/c To Securities Premium A/c (Being Preference shares converted in equity shares and remaining equity component is recognised as securities premium)	977,233	50,000 927,233

EXTRACTS OF FINANCIAL STATEMENTS OF LISTED ENTITIES

A. Disclosure of Preference Shares under Liabilities (and not Shareholders' Funds) in the Annual Report of Tata Capital Ltd. For the year 2022-2023:



Annual Report 2022-23

NOTES FORMING PART OF STANDALONE FINANCIAL STATEMENTS

NOTE "14"

		(₹ in lakh)
SUBORDINATED LIABILITIES	As at March 31, 2023	As at March 31, 2022
At Amortised cost		
UNSECURED		
(a) Preference Shares other than those that qualify as equity		
(i) Cumulative Redeemable Preference Shares [Face Value ₹ 1,06,972 lakh (As at March 31, 2022 ₹ 1,10,992 lakh)]	1,07,013	1,10,983
Total (A)	1,07,013	1,10,983
Subordinated Liabilities in India	1,07,013	1,10,983
Subordinated Liabilities outside India	-	-
Total (B)	1,07,013	1,10,983

No default has been made in repayment of any Debt securities, Subordinated liabilities and interest thereon for the year ended March 31, 2023 and March 31, 2022.

(Source: Annual reports for 2022-2023 of Tata capital Ltd.)

B. Accounting Policy and OCI Extracts from the annual reports of Reliance Industries Ltd. For the year 2021-2022-Presentation of movements in Fair Values of Financial Instruments through OCI

Notes

to the Standalone Financial Statements for the year ended 31st March, 2022

	2021-22	2020-21
27.1 Other Comprehensive Income - Items that will not be Reclassified to Profit and Loss		
Remeasurement gain / (loss) of Defined Benefit Plan	(42)	21
Equity instruments through OCI	283	329
Total	241	350

	2021-22	2020-21
27.2 Other Comprehensive Income - Items that will be reclassified to Profit and Loss		
Government Securities	(121)	(152)
Debenture or Bonds	(146)	83
Debt Income Fund	(686)	(491)
Fixed Maturity Plan	(344)	84
Commodity Hedge	91	504
Cash flow Hedge	(1,499)	2,727
Total	(2,705)	2,755

38. Financial Instruments

A. Fair Value Measurement Hierarchy

(₹ in crore)

Particulars	As at 31st March, 2022				As at 31st March, 2021			
	Carrying Amount	Level of input used in			Carrying Amount	Level of input used in		
		Level 1	Level 2	Level 3		Level 1	Level 2	Level 3
Financial Assets								
At Amortised Cost								
Investments *	30,874	-	-	-	38,222	-	-	-
Trade Receivables	14,394	-	-	-	4,159	-	-	-
Cash and Cash Equivalents	21,714	-	-	-	5,573	-	-	-
Loans	42,112	-	-	-	65,066	-	-	-
Other Financial Assets	55,428	-	-	-	58,933	-	-	-
At FVTPL								
Investments	28,098	24,825	3,023	250	31,810	27,235	4,325	250
Other Financial Assets	1,720	-	1,720	-	2,245	-	2,245	-
At FVTOCI								
Investments	1,80,655	68,724	33,191	78,740	1,45,484	64,944	2,268	78,272
Other Financial Assets	-	-	-	-	7	-	7	-
Financial Liabilities								
At Amortised Cost								
Borrowings	1,94,563	-	-	-	2,21,698	-	-	-
Trade Payables	1,34,005	-	-	-	86,999	-	-	-
Lease Liabilities	2,876	-	-	-	2,985	-	-	-
Other Financial Liabilities	31,034	-	-	-	30,790	-	-	-
At FVTPL								
Other Financial Liabilities	4,951	-	4,951	-	3,463	-	3,463	-
At FVTOCI								
Other Financial Liabilities	450	-	450	-	-	-	-	-

* Exclude Group Company investments ₹ 1,69,170 crore (Previous Year ₹1,31,769 crore) measured at cost (Refer Note 2.1).

A.1 Reconciliation of fair value measurement of the investment categorised at level 3:

(₹ in crore)

Particulars	As at 31st March, 2022		As at 31st March, 2021	
	At FVTPL	At FVTOCI	At FVTPL	At FVTOCI
Opening Balance	250	78,272	965	77,910
Addition during the year	-	232	-	84
Sale/Reduction during the year	-	94	715	-
Total Gain/(Loss)	-	330	-	278
Closing Balance	250	78,740	250	78,272
Line item in which gain/(loss) recognised		Other Comprehensive Income- Items that will not be reclassified to Profit or Loss		Other Comprehensive Income-Items that will not be reclassified to Profit or Loss

A.2 Sensitivity of level 3 financial instrument's fair value to changes in significant unobservable inputs used in their fair valuation:

(₹ in crore)

Particulars	Valuation Technique	Significant Unobservable Input	Change in %	Sensitivity of the fair value to change in input	
				31st March, 2022	31st March, 2021
Investment in OCPS (FVTOCI)	Discounting Cash Flow	Discounting rate - 14.51% (Previous Year -13.12%)	+0.10%	(1,547)	(1,436)
			-0.10%	1,573	1,463

A.3 The below table summarises the fair value of borrowings which are carried at amortised cost:

(₹ in crore)

Particulars	Level	31st March, 2022	31st March, 2021
Non-current borrowings (including current maturities)	Level 1	1,03,546	1,11,025
	Level 2	79,857	82,180
	Level 3	3,137	3,796

For current borrowings, the carrying amounts approximates fair value due to the short maturity of these instruments.

The financial instruments are categorised into three levels based on the inputs used to arrive at fair value measurements as described below

Level 1: Quoted prices (unadjusted) in active markets for identical assets or liabilities;

Level 2: Inputs other than the quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly; and

Level 3: Inputs based on unobservable market data.

Valuation Methodology

All financial instruments are initially recognised and subsequently re-measured at fair value as described below:

- The fair value of investment in quoted Equity Shares, Bonds, Government Securities, Treasury Bills, Certificate of Deposit and Mutual Funds is measured at quoted price or NAV.
- The fair value of Interest Rate Swaps is calculated as the present value of the estimated future cash flows based on observable yield curves.
- The fair value of Forward Foreign Exchange contracts and Currency Swaps is determined using observable forward exchange rates and yield curves at the balance sheet date.
- The fair value of over-the-counter Foreign Currency Option contracts is determined using the Black Scholes valuation model.
- Commodity derivative contracts are valued using available information in markets and quotations from exchange, brokers and price index developers.
- The fair value for level 3 instruments is valued using inputs based on information about market participants assumptions and other data that are available.
- The fair value of the remaining financial instruments is determined using discounted cash flow analysis.
- All foreign currency denominated assets and liabilities are translated using exchange rate at reporting date.

B. Financial Risk Management

The company's activities expose it to variety of financial risks: market risk, credit risk, interest rate risk and liquidity risk. Within the boundaries of approved Risk Management Policy framework The Company uses derivative instruments to manage the volatility of financial markets and minimize the adverse impact on its financial performance.

i) Market Risk

Market risk is the risk that the fair value of future cash flows of a financial instrument will fluctuate because of changes in market prices. Market risk comprises three types of risk: interest rate risk, currency risk and other price risk, such as equity price risk and commodity risk.

a) Foreign Currency Risk

Foreign currency risk is the risk that the Fair Value or Future Cash Flows of an exposure will fluctuate because of changes in foreign currency rates. Exposures can arise on account of the various assets and liabilities which are denominated in currencies other than Indian Rupee.

The following table shows foreign currency exposures in US Dollar, Euro and Japanese Yen on financial instruments at the end of the reporting period. The exposure to all other foreign currencies are not material.

Particulars	Foreign Currency Exposure					
	As at 31st March, 2022			As at 31st March, 2021		
	USD	EUR	JPY	USD	EUR	JPY
Borrowings	1,15,850	11,993	10,731	96,823	12,634	11,555
Trade and Other Payables	1,30,415	1,154	-	81,227	2,528	-
Trade and Other Receivables	(13,639)	(244)	(13)	(3,692)	(110)	(13)
Derivatives						
- Forwards & Futures	(54,958)	(12,500)	(10,927)	(55,461)	(13,970)	(11,528)
- Currency Swap	-	-	-	2,655	-	-
- Options	(2,877)	126	(319)	(19,347)	(472)	727
Exposure	1,74,791	529	(528)	1,02,205	610	741

Sensitivity analysis of 1% change in exchange rate at the end of reporting period net of hedges *

(₹ in crore)

Particulars	Foreign Currency Sensitivity					
	As at 31st March, 2022			As at 31st March, 2021		
	USD	EUR	JPY	USD	EUR	JPY
1% Depreciation in INR						
Impact on Equity	(165)	-	-	(260)	(11)	(28)
Impact on P&L	(114)	(5)	5	(240)	11	28
Total	(279)	(5)	5	(500)	-	-
1% Appreciation in INR						
Impact on Equity	165	-	-	260	11	28
Impact on P&L	114	5	(5)	240	(11)	(28)
Total	279	5	(5)	500	-	-

* Includes natural hedges arising from foreign currency denominated earnings, for which hedge accounting may be implemented.

b) Interest Rate Risk

The Company is also exposed to interest rate risk, changes in interest rates will affect future cash flows or the fair values of its financial instruments, principally debt. The Company issues debt in a variety of currencies based on market opportunities and it uses derivatives to hedge interest rate exposures.

The exposure of the company's borrowings and derivatives to interest rate changes at the end of the reporting period are as follows:

(₹ in crore)

Interest Rate Exposure		
Particulars	As at 31st March, 2022	As at 31st March, 2021
Borrowings		
Non-Current - Floating (includes Current Maturities)*	86,216	88,618
Non-Current - Fixed (includes Current Maturities)*	99,978	1,00,721
Current #	9,418	33,301
Total	1,95,612	2,22,640
Derivatives		
Foreign Currency Interest Rate Swaps		
- Receive Fix	5,647	2,924
- Pay Fix	1,516	29,606
Rupees Interest Rate Swaps		
- Receive Fix	32,495	7,975
- Pay Fix	14,525	11,475
Currency Swaps		
- INR to USD Swap ^	-	2,655

* Include ₹ 1,029 crore (Previous Year ₹ 793 crore) as Prepaid Finance Charges.

* Include ₹ 20 crore (Previous Year ₹ 149 crore) as Commercial Paper Discount.

^ Receive fix in INR and pay floating in USD

Sensitivity analysis of 1% change in interest rate

(₹ in crore)

Particulars	Interest rate Sensitivity			
	As at 31st March, 2022		As at 31st March, 2021	
	Up Move	Down Move	Up Move	Down Move
Impact on Equity	(187)	182	(123)	123
Impact on P&L	(976)	920	(665)	665
Total Impact	(1,163)	1,102	(788)	788

ii) Commodity Price Risk

Commodity price risk arises due to fluctuation in prices of crude oil, other feed stock and products. The company has a risk management framework aimed at prudently managing the risk arising from the volatility in commodity prices and freight costs.

The Company's commodity risk is managed centrally through well-established trading operations and control processes. In accordance with the risk management policy, the Company enters into various transactions using derivatives and uses over-the-counter as well as Exchange Traded Futures, Options and Swap contracts to hedge its commodity and freight exposure.

iii) Credit Risk

Credit risk is the risk that a customer or counterparty to a financial instrument fails to perform or pay the amounts due causing financial loss to the company. Credit risk arises from company's activities in investments, dealing in derivatives and receivables from customers. The Company ensure that sales of products are made to customers with appropriate creditworthiness. Investment and other market exposures are managed against counterparty exposure limits. Credit information is regularly shared between businesses and finance function, with a framework in place to quickly identify and respond to cases of credit deterioration.

The company has a prudent and conservative process for managing its credit risk arising in the course of its business activities. Credit risk is actively managed through Letters of Credit, Bank Guarantees, Parent Company Guarantees, advance payments and factoring & forfaiting without recourse to the company to avoid concentration of risk. The company restricts its fixed income investments to liquid securities carrying high credit rating.

iv) Liquidity Risk

Liquidity risk arises from the Company's inability to meet its cash flow commitments on the due date. The company maintains sufficient stock of cash, marketable securities and committed credit facilities. The company accesses global and local financial markets to meet its liquidity requirements. It uses a range of products and a mix of currencies to ensure efficient funding from across well-diversified markets and investor pools. Treasury monitors rolling forecasts of the company's cash flow position and ensures that the company is able to meet its financial obligation at all times including contingencies.

The company's liquidity is managed centrally with operating units forecasting their cash and liquidity requirements. Treasury pools the cash surpluses from across the different operating units and then arranges to either fund the net deficit or invest the net surplus in a range of short-dated, secure and liquid instruments including short-term bank deposits, money market funds, reverse repos and similar instruments. The portfolio of these investments is diversified to avoid concentration risk in any one instrument or counterparty.

(₹ in crore)

Particulars ^	Maturity Profile as at 31st March, 2022						
	Below 3 Months	3-6 Months	6-12 Months	1-3 Years	3-5 Years	Above 5 Years	Total
Borrowings							
Non-Current * ^o	2,169	6,416	9,517	74,969	32,724	60,399	1,86,194
Current * ^s	9,328	90	-	-	-	-	9,418
Total	11,497	6,506	9,517	74,969	32,724	60,399	1,95,612
Lease Liabilities (Gross)	85	79	148	552	552	4,577	5,993
Derivative Liabilities							
Forwards	3,033	601	677	390	-	-	4,701
Options	151	2	20	-	-	-	173
Interest Rate Swaps	-	-	4	43	30	-	77
Total	3,184	603	701	433	30	-	4,951

^ Does not include Trade Payables (Current) ₹ 1,34,005 crore.

* Include ₹ 1,029 crore as Prepaid Financial Charges.

^o Does not include interest thereon (For Interest rate refer Note 16.2).

^s Include ₹ 20 crore of Commercial Paper Discount.

^t Interest rate on current borrowings ranges from 2.5% to 8.6%.

(₹ in crore)

Particulars ^	Maturity Profile as at 31st March, 2021						
	Below 3 Months	3-6 Months	6-12 Months	1-3 Years	3-5 Years	Above 5 Years	Total
Borrowings							
Non-Current * ^o	3,048	4,606	20,447	65,641	61,593	34,004	1,89,339
Current * ^s	30,638	2,663	-	-	-	-	33,301
Total	33,686	7,269	20,447	65,641	61,593	34,004	2,22,640
Lease Liabilities (Gross)	88	88	175	587	552	4,853	6,343
Derivative Liabilities							
Forwards	1,476	349	176	1,097	-	-	3,098
Options	178	-	33	-	-	-	211
Interest Rate Swaps	10	1	22	45	76	-	154
Total	1,664	350	231	1,142	76	-	3,463

^ Does not include Trade Payables (Current) ₹ 86,999 crore.

* Include ₹ 793 crore as Prepaid Financial Charges.

^o Does not include interest thereon.

^s Include ₹ 149 crore as Commercial Paper Discount.

^t Interest rate on current borrowings ranges from 3.4% to 8.6%.

C. Hedge Accounting

The Company's business objective includes safe-guarding its earnings against adverse price movements of crude oil and other feedstock, refined products, freight costs as well as foreign exchange and interest rates. The Company has adopted a structured risk management policy to hedge all these risks within an acceptable risk limit and an approved hedge accounting framework which allows for Fair Value and Cash Flow hedges. Hedging instruments include exchange traded futures and options, over-the-counter swaps, forwards and options as well as non-derivative instruments to achieve this objective.

There is an economic relationship between the hedged items and the hedging instruments. The Company has established a hedge ratio of 1:1 for the hedging relationships. To test the hedge effectiveness, the Company uses the hypothetical derivative method and Dollar offset method.

The hedge ineffectiveness can arise from:

- Differences in the timing of the cash flows.
- Different indexes (and accordingly different curves).
- The counterparties' credit risk differently impacting the fair value movements.

The table below shows the position of hedging instruments and hedged items as on the balance sheet date:

Disclosure of effects of hedge accounting

A. Fair Value Hedge

Hedging Instrument

(₹ in crore)

Particulars	Nominal Value	Quantity (Kbbl)	Carrying Amount		Changes in Fair Value	Hedge Maturity	Line Item in Balance Sheet
			Assets	Liabilities			
As on 31 st March, 2022							
Foreign Currency Risk							
Derivative Contracts	-	-	-	-	-	-	-
Commodity Price Risk							
Derivative Contracts	33,663	1,58,884	1,274	2,114	(1,094)	April 2022 to December 2023	Other Financial Assets / Liabilities
As on 31 st March, 2021							
Foreign Currency Risk							
Derivative Contracts	2,557	-	-	86	(72)	April 2021 to May 2021	Other Financial Liabilities
Commodity Price Risk							
Derivative Contracts	30,478	3,85,566	1,524	597	20	April 2021 to December 2023	Other Financial Assets / Liabilities

Hedged Items

(₹ in crore)

Particulars	Carrying Amount		Changes in Fair Value	Line Item in Balance Sheet
	Assets	Liabilities		
As on 31 st March, 2022				
Foreign Currency Risk				
Import Firm Commitments	-	-	-	
Commodity Price Risk				
Firm Commitments for purchase of feedstock and freight	-	1,010	(943)	Other Current Assets / Liabilities
Firm Commitments for sale of products	2,114	-	2,301	Other Current Assets
Inventories	3807	-	(264)	Inventories
As on 31 st March, 2021				
Foreign Currency Risk				
Import Firm Commitments	86	-	72	Other Financial Assets
Commodity Price Risk				
Firm Commitments for purchase of feedstock and freight	-	306	(656)	Other Current Assets / Liabilities
Firm Commitments for sale of products	-	1,218	(446)	Other Current Assets
Inventories	2,136	-	1,082	Inventories

B. Cash Flow Hedge

Hedging Instruments

(₹ in crore)

Particulars	Nominal Value	Carrying amount		Changes in Fair Value	Hedge Maturity	Line Item in Balance Sheet
		Assets	Liabilities			
As on 31st March, 2022						
Foreign Currency Risk						
Foreign Currency Risk Component – Trade Payables	22,301	-	22,738	(437)	1 st April, 2022 to 31 st March, 2025	Trade Payables
Foreign Currency Risk Component–Borrowings	1,20,017	-	1,23,697	(3,685)	30 th September, 2022 to 30 th September, 2033	Non-Current Liabilities–Financial Liabilities–Borrowings
Interest Rate Risk						
Interest Rate Swaps	-	-	-	-	-	-
As on 31st March, 2021						
Foreign Currency Risk						
Foreign Currency Risk Component – Trade Payables	-	-	-	-	-	-
Foreign Currency Risk Component–Borrowings	7,218	-	7,311	256	June 2022	Non-Current Liabilities–Financial Liabilities–Borrowings
Interest Rate Risk						
Interest Rate Swaps	33,590	82	-	141	April 2021 to March 2025	Other Financial Assets

Hedged Items

(₹ in crore)

Particulars	Nominal Value	Changes in Fair Value	Hedge Reserve	Line Item in Balance Sheet
As on 31st March, 2022				
Foreign Currency Risk				
Highly Probable Forecasted Exports	1,42,318	4,122	(4,810)	Other Equity
Interest Rate Risk				
Borrowings	-	-	-	-
As on 31st March, 2021				
Foreign Currency Risk				
Highly Probable Forecasted Exports	7,218	(256)	(3,059)	Other Equity
Interest Rate Risk				
Borrowings	33,590	(141)	(97)	Other Equity

C. Movement in Cash Flow Hedge

(₹ in crore)

Sr. No.	Particulars	2021-22	2020-21	Line Item in Balance Sheet / Statement of Profit and Loss
1	At the beginning of the year	(3,156)	(5,883)	
2	Gain/ (loss) recognised in other comprehensive income during the year.	(4,334)	914	Items that will be reclassified to Profit & Loss
3	Amount reclassified to Profit and Loss during the year	2,835	1,813	Value of Sale
4	At the end of the year	(4,655)	(3,156)	Other Comprehensive Income

Extract of Accounting Policy in respect of Financial Instruments: Page 319-320

(q) Financial Instruments

i. Financial Assets

A. Initial Recognition and Measurement

All Financial Assets are initially recognised at fair value. Transaction costs that are directly attributable to the acquisition or issue of Financial Assets, which are not at Fair Value Through Profit or Loss, are adjusted to the fair

value on initial recognition. Purchase and sale of Financial Assets are recognised using trade date accounting.

B. Subsequent Measurement

a) Financial Assets measured at Amortised Cost (AC)

A Financial Asset is measured at Amortised Cost if it is held within a business model whose objective is to hold the asset in order to collect contractual cash flows and the contractual terms of the Financial Asset give rise to cash flows on specified dates that represent solely payments of principal and interest on the principal amount outstanding.

b) Financial Assets measured at Fair Value Through Other Comprehensive Income (FVTOCI)

A Financial Asset is measured at FVTOCI if it is held within a business model whose objective is achieved by both collecting contractual cash flows and selling Financial Assets and the contractual terms of the Financial Asset give rise on specified dates to cash flows that represents solely payments of principal and interest on the principal amount outstanding.

c) Financial Assets measured at Fair Value Through Profit or Loss (FVTPL)

A Financial Asset which is not classified in any of the above categories are measured at FVTPL. Financial assets are reclassified subsequent to their recognition, if the Company changes its business model for managing those financial assets. Changes in business model are made and applied prospectively from the reclassification date which is the first day of immediately next reporting period following the changes in business model in accordance with principles laid down under Ind AS 109 – Financial Instruments.

C. Investment in Subsidiaries, Associates and Joint Ventures

The Company has accounted for its investments in Subsidiaries, associates and joint venture at cost less impairment loss (if any). The investments in preference shares with the right of surplus assets which are in nature of equity in accordance with Ind AS 32 are treated as separate category of investment and measured at FVTOCI.

D. Other Equity Investments

All other equity investments are measured at fair value, with value changes recognised in Statement of Profit and Loss, except for those equity investments for which the Company

has elected to present the value changes in 'Other Comprehensive Income'. However, dividend on such equity investments are recognised in Statement of Profit and Loss when the Company's right to receive payment is established.

E. Impairment of Financial Assets

In accordance with Ind AS 109, the Company uses 'Expected Credit Loss' (ECL) model, for evaluating impairment of Financial Assets other than those measured at Fair Value Through Profit and Loss (FVTPL).

Expected Credit Losses are measured through a loss allowance at an amount equal to:

- The 12-months expected credit losses (expected credit losses that result from those default events on the financial instrument that are possible within 12 months after the reporting date); or
- Full lifetime expected credit losses (expected credit losses that result from all possible default events over the life of the financial instrument).

For Trade Receivables the Company applies 'simplified approach' which requires expected lifetime losses to be recognised from initial recognition of the receivables.

The Company uses historical default rates to determine impairment loss on the portfolio of trade receivables. At every reporting date these historical default rates are reviewed and changes in the forward-looking estimates are analysed.

For other assets, the Company uses 12 month ECL to provide for impairment loss where there is no significant increase in credit risk. If there is significant increase in credit risk full lifetime ECL is used.

ii. Financial Liabilities

A. Initial Recognition and Measurement

All Financial Liabilities are recognised at fair value and in case of borrowings, net of directly attributable cost. Fees of recurring nature are directly recognised in the Statement of Profit and Loss as finance cost.

B. Subsequent Measurement

Financial Liabilities are carried at amortised cost using the effective interest method. For trade and other payables maturing within one year from the balance sheet date, the carrying amounts approximate fair value due to the short maturity of these instruments.

iii. Derivative Financial Instruments and Hedge Accounting

The Company uses various derivative financial instruments such as interest rate swaps, currency swaps, forwards & options and commodity contracts to mitigate the risk of changes in interest rates, exchange rates and commodity prices. At the inception of a hedge relationship, the Company formally designates and documents the hedge relationship to which the Company wishes to apply hedge accounting and the risk management objective and strategy for undertaking the hedge. Such derivative financial instruments are initially recognised at fair value on the date on which a derivative contract is entered into and are also subsequently measured at fair value.

Derivatives are carried as Financial Assets when the fair value is positive and as Financial Liabilities when the fair value is negative. Any gains or losses arising from changes in the fair value of derivatives are taken directly to Statement of Profit and Loss, except for the effective portion of cash flow hedge which is recognised in Other Comprehensive Income and later to Statement of Profit and Loss when the hedged item affects profit or loss or is treated as basis adjustment if a hedged forecast transaction subsequently results in the recognition of a Non-Financial Assets or Non-Financial liability.

Hedges that meet the criteria for hedge accounting are accounted for as follows:

A. Cash Flow Hedge

The Company designates derivative contracts or non-derivative Financial Assets/ Liabilities as hedging instruments to mitigate the risk of movement in interest rates and foreign exchange rates for foreign exchange exposure on highly probable future cash flows attributable to a recognised asset or liability or forecast cash transactions.

When a derivative is designated as a cash flow hedging instrument, the effective portion of changes in the fair value of the derivative is recognised in the cash flow hedging reserve being part of Other Comprehensive Income. Any ineffective portion of changes in the fair value of the derivative is recognised immediately in the Statement of Profit and Loss. If the hedging relationship no longer meets the criteria for hedge accounting, then hedge accounting is discontinued prospectively. If the hedging instrument expires or is sold or terminated or exercised, the cumulative gain or loss on the hedging instrument recognised in cash flow hedging reserve till the period

the hedge was effective remains in cash flow hedging reserve until the underlying transaction occurs. The cumulative gain or loss previously recognised in the cash flow hedging reserve is transferred to the Statement of Profit and Loss upon the occurrence of the underlying transaction. If the forecasted transaction is no longer expected to occur, then the amount accumulated in cash flow hedging reserve is reclassified in the Statement of Profit and Loss.

B. Fair Value Hedge

The Company designates derivative contracts or non-derivative Financial Assets/Liabilities as hedging instruments to mitigate the risk of change in fair value of hedged item due to movement in interest rates, foreign exchange rates and commodity prices.

Changes in the fair value of hedging instruments and hedged items that are designated and qualify as fair value hedges are recorded in the Statement of Profit and Loss. If the hedging relationship no longer meets the criteria for hedge accounting, the adjustment to the carrying amount of a hedged item for which the effective interest method is used is amortised to Statement of Profit and Loss over the period of maturity.

iv. Derecognition of Financial Instruments

The Company derecognises a Financial Asset when the contractual rights to the cash flows from the Financial Asset expire or it transfers the Financial Asset and the transfer qualifies for derecognition under Ind AS 109. A Financial liability (or a part of a Financial liability) is derecognised from the Company's Balance Sheet when the obligation specified in the contract is discharged or cancelled or expires.

v. Offsetting

Financial Assets and Financial Liabilities are offset and the net amount is presented in the balance sheet when, and only when, the Company has a legally enforceable right to set off the amount and it intends, either to settle them on a net basis or to realise the asset and settle the liability simultaneously.

(r) Non-current Assets Held for Sale

Non-current assets are classified as held for sale if their carrying amount will be recovered principally through a sale transaction rather than through continuing use and sale is considered highly probable.

A sale is considered as highly probable when decision has been made to sell, assets are available for immediate sale in its present condition, assets

(Source: Annual reports for 2022-2023 of Reliance Industries Ltd.)