UNIT 4:
DERIVATIVES AND EMBEDDED DERIVATIVES

4.1 INTRODUCTION

Derivatives may exist as standalone financial instruments or may be embedded in other financial or non-financial instruments.

In Unit 3 of this chapter, we analysed the definitions of financial liability and equity. Both these definitions envisage situations in which an instrument is settled by exchange of own equity instruments which are derivatives. To be specific, let's reproduce the relevant portion of these definitions and set the context of discussion for this paragraph in terms of this situation.

Financial liability

A financial instrument that fulfils **either** of (A) or (B) below:

(A) .....

(B) An instrument that will or may be settled in the entity's own equity instruments and is:

(i) .....

(ii) **a derivative** that will or may be settled **other than by** the exchange of a fixed amount of cash or another financial asset for a fixed number of the entity's own equity instruments.

Equity

A financial instrument that fulfils both (A) and (B) below:

(A) .....

(B) An instrument that will or may be settled in the entity's own equity instruments and is:

(i) .....

(ii) **a derivative** that will or may be settled **only by** the exchange of a fixed amount of cash or another financial asset for a fixed number of the entity's own equity instruments.

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4.2 DEFINITION

4.2.1 Derivatives

Ind AS 109.Appendix A defines a derivative as a financial instrument or other contract with all of the following three characteristics:

i. **Value changes due to an underlying**: 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');

Examples of common derivative contracts and the identified underlying variable:

Type of contract	Main pricing-settlement variable (underlying variable)
Interest rate swap	Interest rates
Currency swap (foreign exchange swap)	Currency rates
Commodity swap	Commodity prices
Equity swap	Equity prices (equity of another entity)
Credit swap	Credit rating, credit index or credit price
Total return swap	Total fair value of the reference asset and interest rates
Purchased or written treasury bond option (call or put)	Interest rates
Purchased or written currency option (call or put)	Currency rates
Purchased or written commodity option (call or put)	Commodity prices
Purchased or written stock option (call or put)	Equity prices (equity of another entity)
Interest rate futures linked to government debt (treasury futures)	Interest rates
Currency futures	Currency rates
Commodity futures	Commodity prices

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Interest rate forward linked to government debt (treasury forward)	Interest rates
Currency forward	Currency rates
Commodity forward	Commodity prices
Equity forward	Equity prices (equity of another entity)

The definition of derivative excludes contracts which fulfil following two conditions:

- Value of the contract changes with reference to one or more non-financial variables; and
- That non-financial variable is specific to one of the parties to the contract.

As per paragraph BA.5 of Ind AS 109, a change in the fair value of a non-financial asset is specific to the owner if the fair value reflects not only changes in market prices for such assets (a financial variable) but also the condition of the specific non-financial asset held (a non-financial variable).

Examples of non-financial variables that are not specific to a party to the contract are an index of earthquake losses in a particular region and an index of temperatures in a particular city.

Non-financial variables specific to a party to the contract include:

- the occurrence or non-occurrence of a fire that damages or destroys an asset of a party to the contract
- residual value of an asset which changes in response to changes in the asset's physical condition

Derivatives give one party a contractual right to exchange financial assets or financial liabilities with another party under conditions that are potentially favourable, or a contractual obligation to exchange financial assets or financial liabilities with another party under conditions that are potentially unfavourable. Because the terms of the exchange are determined at inception, as prices in the financial markets change, those terms may become favourable or unfavourable.

A derivative usually has a notional amount, which can be an amount of currency, a number of shares, a number of units of weight or volume or other units specified in the contract. The changes in value of a derivative are measured corresponding to the notional amount. Refer illustration 1 and 2 below.

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ii. **No or little initial net investment**: 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.

Illustration 1: Prepaid interest rate swap (fixed rate payment obligation prepaid at inception)

Entity S enters into a ₹ 100 crores notional amount five-year pay-fixed, receive-variable interest rate swap with Counterparty C.

- *The interest rate of the variable part of the swap is reset on a quarterly basis to three-month Secured Overnight Financing Rate (SOFR).*
- *The interest rate of the fixed part of the swap is 10% p.a.*
- *Entity S prepays its fixed obligation under the swap of ₹ 50 crores (₹ 100 crores × 10% × 5 years) at inception, discounted using market interest rates*
- *Entity S retains the right to receive interest payments on the ₹ 100 crores reset quarterly based on three-month SOFR over the life of the swap.*

Analyse.

Solution

The initial net investment in the interest rate swap is significantly less than the notional amount on which the variable payments under the variable leg will be calculated. The contract requires 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, such as a variable rate bond.

Therefore, the contract fulfils the condition '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'.

Even though Entity S has no future performance obligation, the ultimate settlement of the contract is at a future date and the value of the contract changes in response to changes in the Secured Overnight Financing Rate (SOFR) index. Accordingly, the contract is regarded as a derivative contract.

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Illustration 2: Prepaid pay-variable, receive-fixed interest rate swap

- *Entity S enters into a ₹ 100 crores notional amount five-year pay-variable, receive-fixed interest rate swap with Counterparty C.*
- *The variable leg of the swap is reset on a quarterly basis to three-month SOFR.*
- *The fixed interest payments under the swap are calculated as 10% of the swap's notional amount, i.e. ₹ 10 crores p.a.*
- *Entity S prepays its obligation under the variable leg of the swap at inception at current market rates. Say, that amount is ₹ 36 crores.*
- *It retains the right to receive fixed interest payments of 10% on ₹ 100 crores every year.*

Analyse.

Solution

In effect, this contract results in an initial net investment of ₹ 36 crores which yields a cash inflow of ₹ 10 crores every year, for five years. By discharging the obligation to pay variable interest rate payments, Entity S in effect provides a loan to Counterparty C.

Therefore, all else being equal, the initial investment in the contract should equal that of other financial instruments that consist of fixed annuities. Thus, the initial net investment in the pay-variable, receive-fixed interest rate swap is equal to the investment required in a non-derivative contract that has a similar response to changes in market conditions.

For this reason, the instrument fails the condition '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'. Therefore, the contract is not accounted for as a derivative contract.

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Illustration 3: Prepaid forward

Entity XYZ enters into a forward contract to purchase 1 million ordinary shares of Entity T in one year

- *The current market price of T is ₹ 50 per share*
- *The one-year forward price of T is ₹ 55 per share*

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- *XYZ is required to prepay the forward contract at inception with a ₹ 50 million payment.*

Analyse.

Solution

Purchase of 1 million shares for current market price is likely to have the same response to changes in market factors as the contract mentioned above. Accordingly, the prepaid forward contract does not meet the initial net investment criterion of a derivative instrument.

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iii. Future settlement: it is settled at a future date.

However, it is not relevant whether the derivative is settled gross or not. For example, an interest rate swap is a derivative instrument, whether the counterparties pay interest to each other or settle it on a net basis.

Further, an option, say a call option i.e. a right to purchase shares at a fixed price at a certain date in future, may expire unexercised at maturity because it is 'out of money'. Such a contract is still a derivative contract because expiry at maturity is also a form of settlement even though there is no exchange of consideration eventually.

Illustration 4

Entity ABC Ltd., whose functional currency is Indian Rupees, sells products in France denominated in Euro. ABC enters into a contract with an investment bank to convert Euro to Indian Rupees at a fixed exchange rate. The contract requires ABC to remit Euro based on its sales volume in France in exchange for Indian Rupees at a fixed exchange rate of 80.00. Is that contract a derivative?

Solution

Yes. The contract has two underlying variables (the foreign exchange rate and the volume of sales); 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, and a payment provision.

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Illustration 5

The definition of a derivative requires that the instrument "is settled at a future date". Is this criterion met even if an option is expected not to be exercised, for example, because it is out of the money?

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Solution

Yes. An option is settled upon exercise or at its maturity. Expiry at maturity is a form of settlement even though there is no additional exchange of consideration.

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Accounting for derivatives

All derivatives are measured at fair value with changes in fair value being recognized in profit and loss for the period, except derivatives that qualify as hedging instruments. Accounting for derivatives that qualify as hedging instruments is dealt with in the Hedge Accounting chapter.

Illustration 6

Silver Ltd. has purchased 100 ounces of gold on 10 March 20X1. The transaction provides for a price payable which is equal to market value of 100 ounces of gold on 10 April 20X1 and shall be settled by issue of such number of equity shares as is required to settle the aforementioned transaction price at ₹ 10 per share on 10 April 20X1. Whether this is classified as liability or equity? Own use exemption does not apply.

Solution

In the above scenario, there is a contract for purchase of 100 ounces of gold whose consideration varies in response to changing value of gold. Analysing this contract as a derivative –

(a) Value of contract changes in response to change in market value of gold;

(b) There is no initial net investment

(c) It will be settled at a future date, i.e. 10 April 20X1.

Since the above criteria are met, this is a derivative contract.

Now, a derivative contract that is settled in own equity other than exchange of fixed amount of cash for fixed number of shares is classified as 'liability'. In this case, since the contract results in issue of variable number of shares based on transaction price to be determined in future, hence, this shall be classified as 'derivative financial liability'.

Per Ind AS 109.4.2.1 – A derivative financial liability shall be carried at fair value through profit or loss.

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Illustration 7 : Derivative contract:

Entity – B Ltd writes an option contract for sale of shares of Target Ltd. at a fixed price of ₹ 100 per share to C Ltd. This option is exercisable anytime for a period of 90 days ('American option'). Evaluate this under the definition of financial instrument.

Solution

In the above case – B Ltd has written an option, which if exercised by C Ltd. will result in B Ltd. selling equity shares of Target Ltd. for fixed price of ₹ 100 per share. Such option will be exercised by C Ltd. only if the market price of shares of Target Ltd. increases beyond ₹ 100, thereby resulting in contractual obligation over B Ltd. to settle the contract under potential unfavorable terms.

If the market price goes to ₹ 120 then the option will be exercised by C Ltd. So, B Ltd has to buy shares from the market at ₹ 120 per share and sell at ₹ 100, thereby resulting in a loss or exchange at unfavorable terms to B Ltd. Hence, the option will meet the definition of financial liability in the books of B Ltd.

The additional question that arises here is the nature of this financial liability and whether it meets the definition of derivative. A derivative is a financial instrument that meets following conditions:

(a) Its value changes in response to change in specified variable like interest rate, equity index, commodity price, etc. If the variable is non-financial, it is not specific to party to the contract

(b) It requires no or little initial net investment

(c) It is settled at a future date.

Evaluating the above instrument, B Ltd. has written an option whose value changes based on change in market price of equity share, it requires no initial net investment and is settled at a future date (anytime in 90 days). Hence, it meets definition of derivative financial liability in books of B Ltd.

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Illustration 8: Derivative contract to be settled in own equity instruments

A Ltd. issues warrants to all existing shareholders entitling them to purchase additional equity shares of A Ltd. (with face value of ₹100 per share) at an issue price of ₹150 per share. Evaluate whether this constitutes an equity instrument or a financial liability?

Solution

In this case, Company A Ltd. has issued warrants entitling the shareholders to purchase equity shares of the Company at a fixed price. Hence, it constitutes a contractual arrangement for issuance of fixed number of shares against fixed amount of cash.

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Now, evaluating this contract under definition of derivative –

(i) The value of warrant changes in response to change in value of underlying equity shares;

(ii) This involves no initial net investment

(iii) It shall be settled at a future date.

Hence, this warrant meets the definition of derivative.

Applying definition of equity under Ind AS 32, a derivative contract that will be settled by exchange of fixed number of equity shares for fixed amount of cash meets definition of equity instrument. The above contract is derivative contract that will be settled by issue of fixed number of own equity instruments by A Ltd. for fixed amount of cash and hence meets definition of equity instrument.

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4.2.2 Embedded derivatives

Paragraph 4.3.1 of Ind AS 109 defines an embedded derivative as:

"An embedded derivative is:

- a **component** of a hybrid contract
- that also includes a **non-derivative host**
- with the effect that **some** of the **cash flows** of the combined instrument **vary** in a way **similar to a stand-alone derivative**.

An embedded derivative **causes**:

- some or all of the **cash flows** that otherwise would be **required by the contract**
- to be **modified** according to 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.

A derivative that is attached to a financial instrument but is contractually transferable independently of that instrument, or has a different counterparty, is not an embedded derivative, but a separate financial instrument."

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Examples 1 - 3 of embedded derivatives:

1. Company MNL Ltd. holds a bond which is convertible into the ordinary shares of Company Z Ltd. The hybrid contract is the convertible bond; the host contract is the bond asset; the embedded derivative is the conversion option.

2. Company ABC Ltd. enters into a lease with an inflation factor, such that each year rentals are adjusted for changes in risk price index. The hybrid contract is the entire lease; the host is the lease contract, the embedded derivative is the adjustment to the risk price index.

3. Company PQR Ltd. sells furniture to Company XYZ Ltd. in USD. Both companies are located in India. The hybrid contract is the entire sale contract which will be settled in USD; the host contract is the Rupee sale contract; the embedded derivative is the foreign exchange ₹/USD forward.

Illustration 9

A lease contract contains a provision that rentals increase each year by ₹ 3 million. Is there an embedded derivative in this contract?

Solution

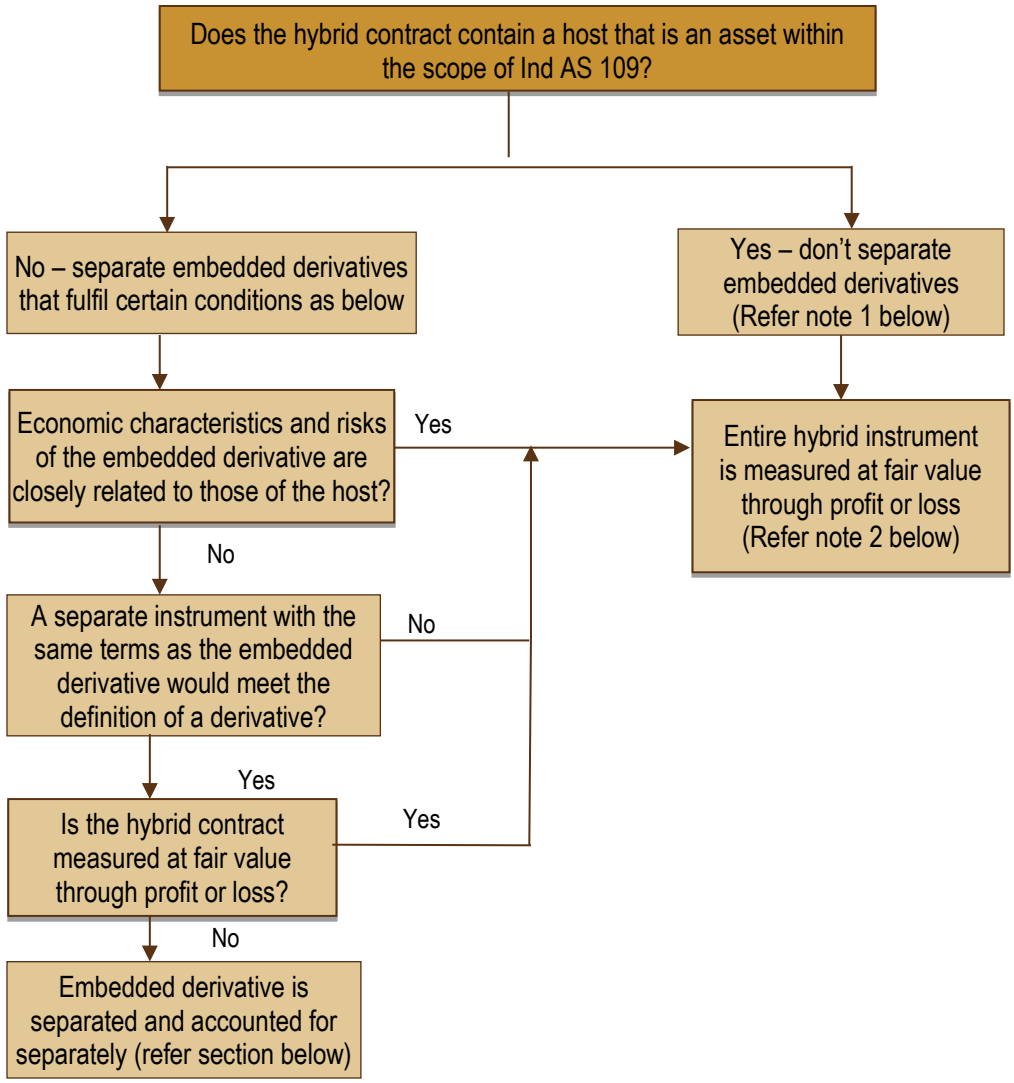
The price adjustment feature does not meet the definition of a derivative on a stand-alone basis since its value does not change in response to changes of some underlying. There is no underlying in this case; hence there is no embedded derivative in the lease contract.

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4.2.2.1 Separation of embedded derivatives from host contract

In certain circumstances, an embedded derivative is required to be separated from the host contract and accounted for separately as a financial instrument. The flowchart at the next page analyses those circumstances.

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Note 1: This implies that embedded derivatives are permitted to be separated from only such hybrid contracts that contain a host which is either a (a) financial instrument classified as financial liability or equity or compound; or (b) contract for purchase or sale of a non-financial item.

Note 2: If both the host and embedded derivative have economic characteristics of an equity instrument, the hybrid instrument is not carried at fair value through profit or loss. In other words, this measurement category is applicable only for host contracts which are financial liabilities.

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4.2.2.2 Economic characteristics and risks of the embedded derivative – whether closely related to those of the host?

Paragraphs B4.3.5 and B4.3.8 of Ind AS 109 provide examples of situations in which economic characteristics of the embedded derivative are considered to be closely related or not closely related to those of the host.

Some of these examples are explained below, though students are advised to understand all the examples given in the application guidance of the standards.

1. Underlying indices

Illustration 10: Debt instrument with indexed repayments

Entity X issues a redeemable fixed interest rate debenture to Entity Y. Amount of interest and principal is indexed to the value of equity instruments of Entity X.

Analyse

Solution

In the given case, the host is a fixed interest rate debt instrument. The economic characteristics and risks of a debt instrument are not closely related to those of an equity instrument.

Hence, the exposure of this hybrid instrument to changes in value of equity instruments is an embedded derivative which is required to be separated.

The response above will not change even if the interest payment and principal repayments are indexed to a commodity index or similar underlying.

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Illustration 11: Lease contracts dependent on inflation index

A lease contract, between two Indian companies of an asset in India, includes contingent lease rentals that are dependent upon an US inflation index. Can the entity treat inflation linked features as closely related?

Solution

For inflation linked features, an embedded derivative in a lease contract is considered as closely related to the host if it is an inflation—related index related to inflation in the entity's own economic environment.

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In this case, whilst the asset and the lessor and lessee are located in India, lease payment are linked to US index. Hence, embedded derivative is not closely related and needs to be separated.

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Illustration 12: Lease contracts dependent on inflation index

As per the contract entered between lease and lessor, lease rentals will increase by ₹ 3 million, if profit after tax is over ₹ 200 million. Can the entity treat inflation linked features as closely related?

Solution

No. Whilst contingent rentals based on sales are closely related to a host lease contract, the same is not true of contingent rentals based on profit after tax.

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2. *Prepayment options in debt instruments*

It is very common to have debt prepayment options in ordinary borrowing arrangements. Paragraph B4.3.5(e) of Ind AS 109 provides the guidance in this respect:

"A call, put, or prepayment option embedded in a host debt contract or host insurance contract is not closely related to the host contract unless:

i. the option's exercise price is approximately equal on each exercise date to the amortised cost of the host debt instrument or the carrying amount of the host insurance contract;

or

ii. the exercise price of a prepayment option reimburses the lender for an amount up to the approximate present value of lost interest for the remaining term of the host contract. Lost interest is the product of the principal amount prepaid multiplied by the interest rate differential. The interest rate differential is the excess of the effective interest rate of the host contract over the effective interest rate the entity would receive at the prepayment date if it reinvested the principal amount prepaid in a similar contract for the remaining term of the host contract.

The assessment of whether the call or put option is closely related to the host debt contract is made before separating the equity element of a convertible debt instrument in accordance with Ind AS 32."

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Ind AS 109 does not interpret the term "approximately equal". Management of entities will need to adopt a consistent accounting policy to apply this principle in general.

Illustration 13: Debt instrument with prepayment option

Entity PQR borrows ₹ 100 crores from CFDH Bank on 1 April 20X1. Interest is payable at 12% p.a. and there is a bullet repayment of principal at the end of the term.

Term of the loan is 6 years.

The loan includes an option to prepay the loan at 1st April each year with a prepayment penalty of 3%. There are no transaction costs. Without the prepayment option, the interest rate quoted by bank is 11% p.a.

Analyse

Solution

Step 1: Identify the host contract and embedded derivative, if any

In the given case,

- Host is a debt instrument comprising annual interest payment at 12% p.a. and bullet principal repayment at the end of 6 years.
- Option to prepay the debt at ₹ 103 crores is an embedded derivative

Step 2: Determine the amortised cost of the host debt instrument

Whether the prepayment option is likely to be exercised or not, the amortised cost of the host debt instrument should be calculated as present value (PV) of expected cash flows using a fair market interest rate for a debt without the prepayment option (11% p.a. in this case). This is calculated below as ₹ 104.23 crores:

Year	Cash outflow	PV @ 11% p.a.	Finance cost	Amortised cost
	₹ crores			
1	12.00	10.81	11.46	103.68
2	12.00	9.74	11.41	103.09
3	12.00	8.77	11.34	102.43
4	12.00	7.90	11.27	101.70
5	12.00	7.12	11.20	100.90
6	112.00	59.88	11.10	-
		104.22	**67.78**	

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Step 3: Compare the exercise price of the prepayment option with the amortised cost of the host debt instrument

Year	Amortised cost	Exercise price of prepayment option	Difference
	₹ Crores		
1	103.68	103.00	0.7%
2	103.09	103.00	0.1%
3	102.43	103.00	-0.6%
4	101.70	103.00	-1.3%
5	100.90	103.00	-2.1%
6	-	N/A	

The management of Entity PQR may formulate an appropriate accounting policy to determine what constitutes "approximately equal". In this case, if the management determines that a difference of more than 2% will indicate that the option's exercise price is not approximately equal to the amortised cost of the host debt instrument, it will need to separate the embedded derivative and account for it as per principles given in the subsequent sub-section.

It may be questioned as to why an option to repay a fixed rate loan early meets the definition of embedded derivative. Let us revisit an important phrase from the definition of embedded derivative:

"…some or all of the cash flows that otherwise would be required by the contract to be modified…"

In the context of a fixed rate debt, it may be interpreted that:

- the option affects cash flows only if exercised; and
- the cash flows of a fixed rate debt do not vary with interest rates.

However, in this context, a variation in cash flows should be interpreted as a possible change in the fair value of expected cash flows. Accordingly, the option's expected cash flows vary according to interest rates in a similar way as a separate option to purchase a fixed rate debt asset at a fixed price. A fixed price option to prepay a fixed rate loan will increase in value as interest rates decline (and vice versa).

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3. Foreign currency derivative embedded in contract for purchase or sale of non-financial items

Another common situation in trade and commerce in today's world is a contract for the purchase or sale of a non-financial item where the price is denominated in a foreign currency. Paragraph B4.3.8(d) provides following guidance in this respect.

"An embedded foreign currency derivative in a host contract that is an insurance contract or not a financial instrument is closely related to the host contract provided it is not leveraged, does not contain an option feature, and requires payments denominated in one of the following currencies:

i. the functional currency of any substantial party to that contract;

ii. the currency in which the price of the related good or service that is acquired or delivered is routinely denominated in commercial transactions around the world (such as the US dollar for crude oil transactions); or

iii. a currency that is commonly used in contracts to purchase or sell non-financial items in the economic environment in which the transaction takes place (eg a relatively stable and liquid currency that is commonly used in local business transactions or external trade)."

The functional currencies of the parties should be determined in accordance with the definition and guidance in Ind AS 21.9 to 13.

Unless the above exceptions apply, the embedded foreign currency derivative should be separated from the host contract. Certain guidance on how to carry out the separation are enumerated below in detail:

1. the host contract is a sale or purchase contract denominated in the functional currency of the reporting entity

2. the amount of functional currency is determined using the relevant forward exchange rate (to the date of delivery) at the date the contract is entered into

3. the embedded derivative is a forward currency contract to buy or sell the applicable amount of the contract currency for the functional currency, at the same forward exchange rate. The effect is that the fair value of the embedded derivative is initially zero

4. subsequent changes in the fair value of the embedded derivative are recorded in profit or loss

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5. on delivery of the non-financial item, the host contract is fulfilled and the embedded derivative is effectively settled. A foreign currency debtor or creditor is recognised for the contract amount, translated at the spot rate in accordance with Ind AS 21.23(a). The closing carrying amount of the embedded derivative is added to the functional currency amount of the host contract to give the initial carrying amount of the debtor or creditor.

4. Option and non-option based derivatives

A. Non-option based derivatives

The terms of an embedded non-option derivative, such as a forward or swap, must be determined so as to result in the embedded derivative having a fair value of zero at the inception of the hybrid contract. Non-option based derivatives represent obligations of the counterparties to a contract.

Fair value of a financial instrument is a combination of its intrinsic value and time value. In a fair and perfect market, it would be inappropriate to conclude that immediately at the inception of a contract, it results in creation of rights and obligations for two independent parties i.e. the contract has no intrinsic value at inception. Also, the time value starts accumulating only after the first day of the contract.

The standard specifies that if it were permitted to separate embedded non-option derivatives on other terms, a single hybrid contract could be decomposed into an infinite variety of combinations of host debt instruments and embedded derivatives, for example, by separating embedded derivatives with terms that create leverage, asymmetry or some other risk exposure not already present in the hybrid contract. Therefore, it is inappropriate to separate an embedded non-option derivative on terms that result in a fair value other than zero at the inception of the hybrid contract.

Further, in the case of non-option based derivatives, terms of the host debt instrument reflect the (a) stated or (b) implied substantive terms of the hybrid contract. In the absence of implied or stated terms, the entity makes its own judgement of the terms.

B. Option based derivatives

The economic behaviour of a hybrid contract with an option-based embedded derivative depends critically on the strike price (or exercise price) specified for the option feature in the hybrid contract. Therefore, the separation of an option-based embedded derivative (including any embedded put, call, cap, floor, options or swap feature in a hybrid contract) should be based on the stated terms of the option feature documented in the hybrid contract (unlike a non-option based derivative which is separated on the basis of implied terms also). As a result, the embedded derivative would not necessarily have a fair value or intrinsic value equal to zero at the initial recognition of the hybrid contract.

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If an entity were required to identify the terms of an embedded option-based derivative so as to achieve a fair value of the embedded derivative of zero, the strike price generally would have to be determined so as to result in the option being infinitely out of the money. This would imply a zero probability of the option feature being exercised. However, since the probability of the option feature in a hybrid contract being exercised generally is not zero, it would be inconsistent with the likely economic behaviour of the hybrid contract to assume an initial fair value of zero. Similarly, if an entity were required to identify the terms of an embedded option-based derivative so as to achieve an intrinsic value of zero for the embedded derivative, the strike price would have to be assumed to equal the price (or rate) of the underlying variable at the initial recognition of the hybrid contract. In this case, the fair value of the option would consist only of time value. However, such an assumption would not be consistent with the likely economic behaviour of the hybrid contract, including the probability of the option feature being exercised, unless the agreed strike price was indeed equal to the price of the underlying variable at the initial recognition of the hybrid contract.

The economic nature of an option-based embedded derivative is fundamentally different from a forward-based embedded derivative (including forwards and swaps), because the terms of a forward are such that a payment based on the difference between the price of the underlying and the forward price will occur at a specified date, while the terms of an option are such that a payment based on the difference between the price of the underlying and the strike price of the option may or may not occur depending on the relationship between the agreed strike price and the price of the underlying at a specified date or dates in the future. Adjusting the strike price of an option-based embedded derivative, therefore, alters the nature of the hybrid contract. On the other hand, if the terms of a non-option embedded derivative in a host debt instrument were determined so as to result in a fair value of any amount other than zero at the inception of the hybrid contract, that amount would essentially represent a borrowing or lending. Accordingly, it is not appropriate to separate a non-option embedded derivative in a host debt instrument on terms that result in a fair value other than zero at the initial recognition of the hybrid contract.

4.2.2.3 Accounting for embedded derivatives

If the flowchart given in paragraph "Separation of embedded derivatives" results in the conclusion that the embedded derivatives are required to be separated, an entity shall measure the derivatives at fair value at initial recognition and subsequently at fair value through profit or loss. *[Paragraph 4.3.4 of Ind AS 109]*

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The initial carrying amount of the host instrument is the residual amount after separating the embedded derivative. *[Paragraph B4.3.3 of Ind AS 109]*

As per paragraph 4.3.5 of Ind AS 109, if a contract contains one or more embedded derivatives and the host is not a financial asset, an entity may designate the entire hybrid contract as at fair value through profit or loss unless:

i. the embedded derivative does not significantly modify the cash flows that otherwise would be required by the contract; or

ii. it is clear with little or no analysis when a similar hybrid instrument is first considered that separation of the embedded derivative is prohibited, such as a prepayment option embedded in a loan that permits the holder to prepay the loan for approximately its amortised cost.

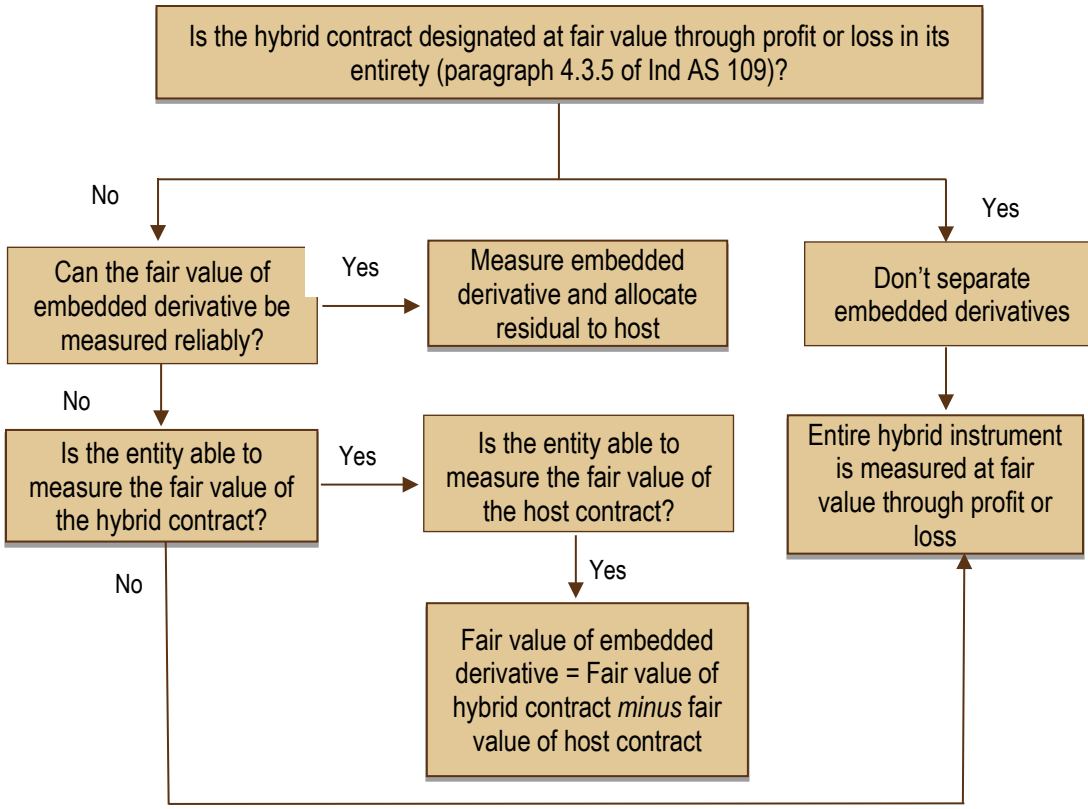
These are two exceptions to the general principle that hybrid contracts can be measured at fair value in their entirety, without separation of embedded derivatives. *Refer explanation below for interpretation of the phrase "significantly modify cash flows" mentioned above*.

Further, as per paragraph 4.3.6 of Ind AS 109, if an entity is required to separate an embedded derivative from its host (as per flowchart presented earlier in this paragraph), but is unable to measure the embedded derivative separately either at acquisition or at the end of a subsequent financial reporting period, it shall designate the entire hybrid contract as at fair value through profit or loss.

If an entity is unable to measure reliably the fair value of an embedded derivative on the basis of its terms and conditions, the fair value of the embedded derivative is the difference between the fair value of the hybrid contract and the fair value of the host. If the entity is unable to measure the fair value of the embedded derivative using this method, the hybrid contract is designated as at fair value through profit or loss.

To conclude, picking up from the flowchart presented earlier in this paragraph, the accounting implications are demonstrated in the flow chart at next page.

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Reassessment of Embedded Derivatives

An entity should assess whether an embedded derivative is required to be separated from the host contract and accounted for as a derivative when the entity first becomes a party to the contract.

Subsequent reassessment is prohibited unless there is a change in the terms of the contract that significantly modifies the cash flows that otherwise would be required under the contract, in which case reassessment is required. An entity determines whether a modification to cash flows is significant by considering the extent to which the expected future cash flows associated with the embedded derivative, the host contract or both have changed and whether the change is significant relative to the previously expected cash flows on the contract.

Illustration 14: Contracts for purchase or sale of non-financial item

Key terms of contracts to buy/sell non-financial items

Company Z is engaged in the business of importing oil seeds for further processing as well as trading purposes. It enters into the following types of contracts as on 1 October 20X1:

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Particulars	Contract 1	Contract 2	Contract 3
Nature of Contract	Import of oil seeds from a foreign supplier	Purchase of oil seeds from a domestic producer / supplier	Contract to sell oil seeds on the commodity exchange
Quantity and rate	100 MT at USD 400 per MT to be delivered as on 31 March 20X2	50 MT at ₹ 30,000 per MT to be delivered as on 31 January 20X2	50 MT at USD 450 per MT, maturing as on 15 January 20X2
Net settlement clause included in the contract	Yes	Yes	Yes
Net settlement in practice for similar contracts	There have also been several instances of the oil seeds being sold prior to or shortly after taking delivery. These instances of net settlement constitute approximately 30 per cent of the value of total import contracts.	Yes – company Z has net settled some of the domestic purchase contracts. However, these instances constitute only 1 per cent of the total domestic purchase contracts in value. The remaining contracts are settled by taking delivery of oil seeds which are used for further processing.	Yes – these contracts are required to be net settled with the exchange on the maturity date. Company Z enters into these types of derivative contracts to hedge the risks on its domestic oil seeds purchase contracts

Company Z is required to determine if the contracts entered into for purchase and sale of oil seeds are derivatives within the scope of Ind AS 109 or are executory contracts outside the scope of Ind AS 109.

Solution

Contract 1:

The following factors indicate that this contract does not meet the 'own use' exemption:

- The contract permits net settlement, and
- There is a past practice of a significant proportion (30 per cent in this illustration) of similar contracts being settled on a net basis either in cash or by sale of the oil seeds prior to delivery/shortly after taking delivery.

Therefore, this contract would fall within the scope of Ind AS 109 and should be recognised as a derivative instrument as on 1 October 20X1. The contract would be in the nature of a forward contract to buy 100 MT of oil seeds as on 31 March 20X2 at USD 400 per MT. Company Z would

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have to recognise the fair value changes (based on change in forward purchase rate) on this contract in the statement of profit and loss at each reporting date.

Contract 2

Contract 2 also permits net settlement in cash. Further, there have been some instances of similar domestic purchase contracts being settled net in cash in the past. However, these have been infrequent in nature and insignificant in proportion to the total value of similar contracts (i.e.1 percent in this illustration).

Company Z is in the practice of taking delivery of the oil seeds purchased under similar contracts and using them for further processing in its plants.

This indicates that the domestic purchase contract meets the criteria for the 'own-use' exemption and should be considered as an executory contract.

Therefore, this contract would not fall within the scope of Ind AS 109.

Contract 3

This contract is in the nature of a derivative contract transacted on a commodity exchange and is required to be net settled in cash on maturity. Therefore, this derivative contract would be covered by Ind AS 109 and required to be classified and measured at FVTPL.

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Illustration 15: Foreign currency embedded derivatives

Company A, an Indian company whose functional currency is ₹, enters into a contract to purchase machinery from an unrelated local supplier, company B. The functional currency of company B is also ₹. However, the contract is denominated in USD, since the machinery is sourced by company B from a US based supplier. Payment is due to company B on delivery of the machinery.

Key terms of the contract:

Contractual features	Details
Contract/order date	9 September 20X1
Delivery/payment date	31 December 20X1
Purchase price	USD 1,000,000
USD/₹ Forward rate on 9 September 20X1 for 31 December 20X1 maturity	67.8
USD/₹ Spot rate on 9 September 20X1	66.4

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USD/₹ Forward rates for 31 December, on:	
30 September	67.5
31 December (spot rate)	67.0

Company A is required to analyse if the contract for purchase of machinery (a capital asset) from company B contains an embedded derivative and whether this should be separately accounted for on the basis of the guidance in Ind AS 109. Also give necessary journal entries for accounting the same.

Solution

Based on the guidance above, the USD contract for purchase of machinery entered into by company A includes an embedded foreign currency derivative due to the following reasons:

- The host contract is a purchase contract (non-financial in nature) that is not classified as, or measured at FVTPL.
- The embedded foreign currency feature (requirement to settle the contract by payment of USD at a future date) meets the definition of a stand-alone derivative – it is akin to a USD-₹ forward contract maturing on 31 December 20X1.
- USD is not the functional currency of either of the substantial parties to the contract (i.e., neither company A nor company B).
- Machinery is not routinely denominated in USD in commercial transactions around the world. In this context, an item or a commodity may be considered 'routinely denominated' in a particular currency only if such currency was used in a large majority of similar commercial transactions around the world. For example, transactions in crude oil are generally considered routinely denominated in USD. A transaction for acquiring machinery in this illustration would generally not qualify for this exemption.
- USD is not a commonly used currency for domestic commercial transactions in the economic environment in which either company A or B operate. This exemption generally applies when the business practice in a particular economic environment is to use a more stable or liquid foreign currency (such as the USD), rather than the local currency, for a majority of internal or cross-border transactions, or both. In the illustration above, companies A and B are companies operating in India and the purchase contract is an internal/domestic transaction. USD is not a commonly used currency for internal trade within this economic environment and therefore the contract would not qualify for this exemption.

Accordingly, company A is required to separate the embedded foreign currency derivative from the host purchase contract and recognise it separately as a derivative.

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The separated embedded derivative is a forward contract entered into on 9 September 20X1, to exchange USD 10,00,000 for ₹ at the USD/₹ forward rate of 67.8 on 31 December 20X1. Since the forward exchange rate has been deemed to be the market rate on the date of the contract, the embedded forward contract has a fair value of zero on initial recognition.

Subsequently, company A is required to measure this forward contract at its fair value, with changes in fair value recognised in the statement of profit and loss. The following is the accounting treatment at quarter-end and on settlement:

Accounting treatment:

Date	Particulars	Amount (₹)	Amount (₹)
09-Sep-X1	***On initial recognition of the forward contract***		
	(No accounting entry recognised since initial fair value of the forward contract is considered to be nil)	Nil	Nil
30-Sep-X1	***Fair value change in forward contract***		
	Derivative asset (company B) Dr.	3,00,000	
	[(67.8-67.5) x10,00,000]		
	To Profit or loss		3,00,000
31-Dec-X1	***Fair value change in forward contract***		
	Forward contract asset (company B) Dr.	5,00,000	
	[{(67.8-67) x 10,00,000} - 3,00,000]		
	To Profit or loss		5,00,000
31-Dec-X1	***Recognition of machinery acquired and on settlement***		
	Property, plant and equipment Dr.	6,78,00,000	
	(at forward rate)		
	To Forward contract asset (company B)		8,00,000
	To Creditor (company B) / Bank		6,70,00,000

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