



A Presentation to-

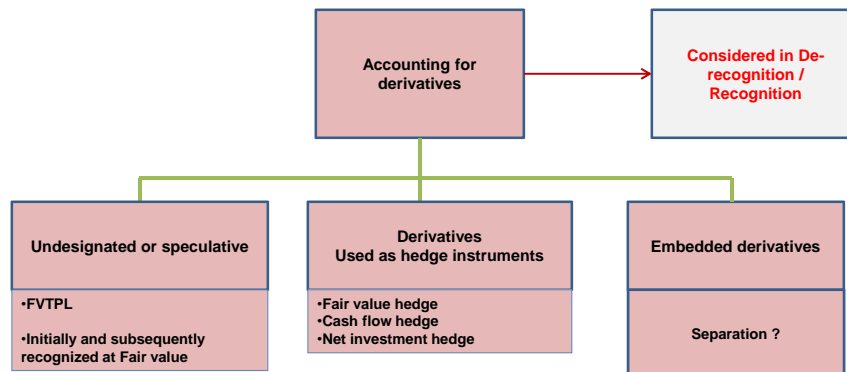
Derivatives & Hedge Accounting

09 November 2016

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Setting the stage



financial instrument or other contract with three characteristics

Definition of a Derivative

Value changes
with underlying
variable

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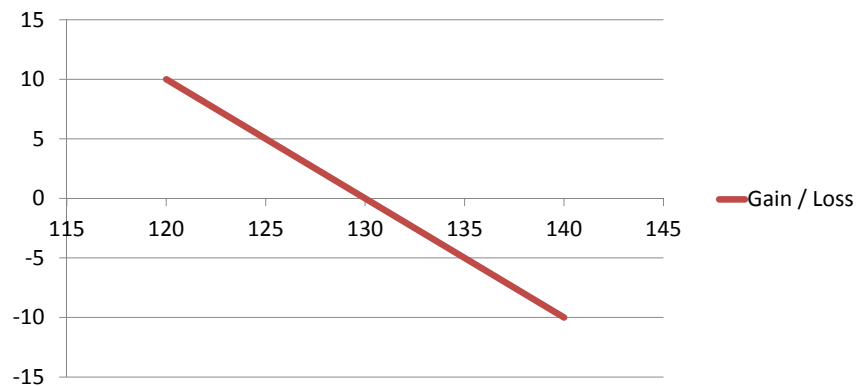
Requires little or
no initial net
investment

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Settled at
future date

Value changes with underlying variable

Forward contract to Sell 1 USD at Rs. 130



Underlying variables

- The standard refers to the following examples of underlying variables, but this is not an exhaustive list:
 - specified interest rate;
 - financial instrument price;
 - commodity price;
 - foreign exchange rate;
 - index of prices or rates;
 - credit rating; and
 - credit index.

Common derivative contracts and the identified underlying

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
Currency futures	Currency rates
Commodity futures	Commodity prices
Currency forward	Currency rates
Commodity forward	Commodity prices
Forward interest rate agreements	Interest rates
Currency options	Currency rates
Share options	Share price



Requires little or no initial net investment

- Investment in ABC Shares
- Initial share price = Rs. 150
- Closing share price = Rs. 170
- Gain = $170 - 150 = 20$
- Initial investment = 150
- Return % = $20/150 = 13\%$
- Forward contract to buy ABC shares at Rs. 155 /share
- Agreed price = Rs. 155
- Closing share price = Rs. 170
- Gain = $170 - 155 = 15$
- Initial investment = Nil
- Return % = $15/0 = \text{unlimited}$



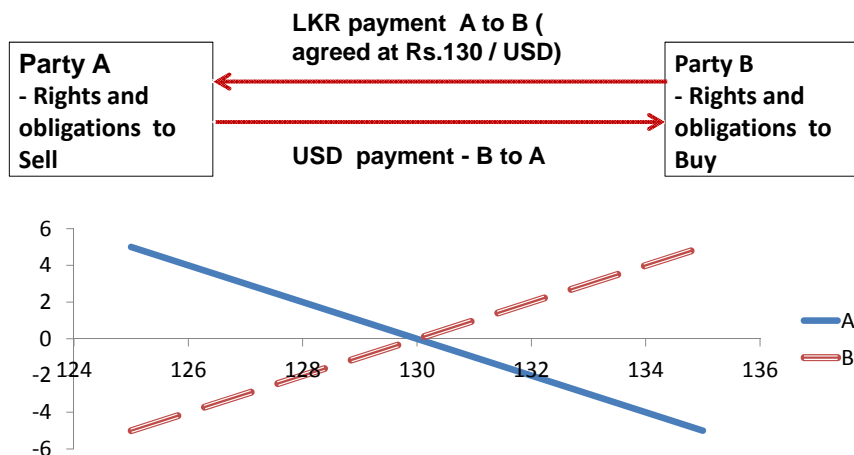
Accounting for speculative or undesignated derivatives

- Forwards
- Futures
- Options
- Swaps

Forwards

- A forward is an agreement entered into today, either to sell or to buy a certain quantity of a certain asset at a specified future date for a specified price.
- It is a tailor-made transaction and its terms are very flexible. (privately negotiated)
- The contracts are generally not assignable or capable of being closed out by offset without the agreement of both parties.

Forward Contracts



Futures

- A futures contract is an agreement buy or sell a specific amount of a commodity or financial instrument at a particular price on a stipulated future date.



- Futures contracts benefit from high liquidity, easy price discovery and very low credit risk. Contracts are at a standard format (usually 1,000 contracts, for settlement on quarter dates), and are 100% liquid

Forwards vs. Futures:

Forward Contracts	Futures Contracts
1) Forwards are traded in over-the-counter markets and are less liquid compared to futures.	1) Futures are exchange traded and are highly liquid.
2) Forward contracts may be custom-designed for specific applications.	2) Futures are traded in standardized contracts (standard amounts, maturity, etc.).
3) Cash does not change hands until a forward contract is settled.	3) Cash is required for daily settlement.
4) No margin requirements.	4) An upfront margin is required.
5) Investors are exposed to counterparty credit risk.	5) No counterparty credit risks.



Options

- Put options vs. Call options

PUT Options:

Holder has the right, but not the obligation, to sell an asset to the option writer at a specified price “at any time”* up to the stated expiration date of the contract

CALL Options:

Holder has the right, but not the obligation, to purchase an asset from the writer at a specified price “at any time”* up to the stated expiration date of the contract



Options (terminology)

- Party with obligation to buy / Sell
 - Writer
 - Seller
 - Short position
- Party with right to sell/ buy
 - Holder
 - Buyer
 - Long position
- **Premium:** Non-refundable purchase price for the option -paid by the holder to the writer of the option contract



Your position in a option contract

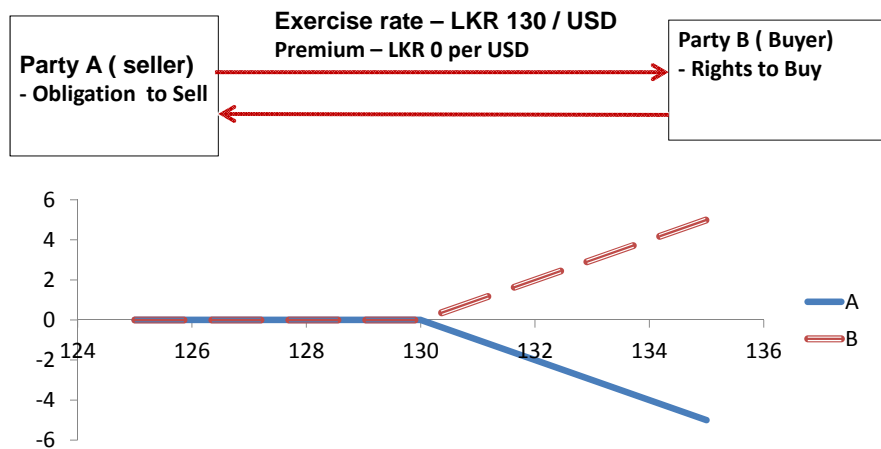
- Holder of a put option
- Holder of a call option
- Writer of a put option
- Writer of a call option



Options (terminology)

- **Strike Price:** the agreed selling price of the security covered by the option contract
- **Expiration Date:** the latest date by which the holder is allowed to exercise his/her rights under the option contract
- **Exercisable date / period :** Date or period within which the holder can exercise his/ her rights

CCY Options



In the money , Out of the money and at the money (exercise price = 100) Illustration only

Market price	Call option	Put option
200	Deep in the money	Deep out of the money
120	In the money	Out of the money
100	At the money	At the money
80	Out of the money	In the money
10	Deep out of the money	Deep in the money

Accounting for options

	Buyer	Seller
Premium	Derivative Asset	Derivative Liability
Subsequent Changes in Fair Value	Recognized in P&L	Recognized in P&L
If Fair value is positive	Derivative asset	Derivative liability
If fair value is negative	Restricted to Zero	Restricted to Zero

Swaps

- A swap is an agreement between two counterparties to exchange a series of payments over a specified period of time, based on reference rates (interest rates, currencies, commodities, indices) applied to a notional amount.



Types of Swaps

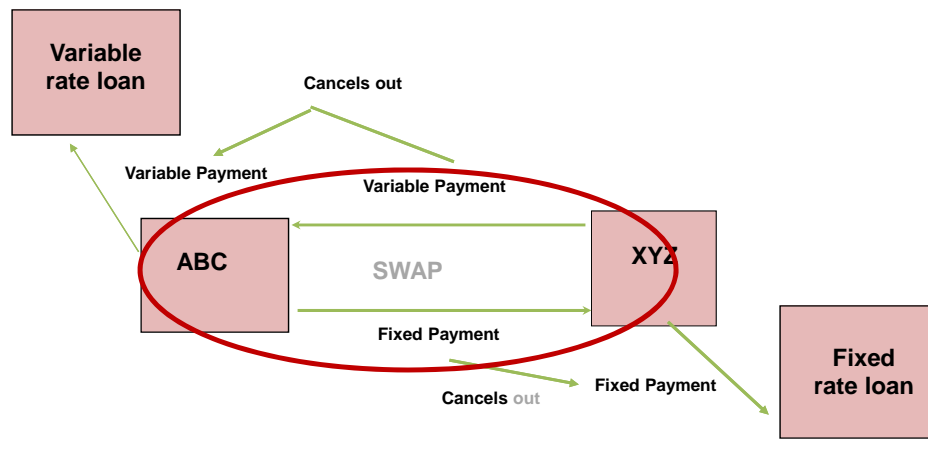
- **Interest Rate Swap** -Contractual agreement in which one party makes a fixed interest rate based on a notional and the other party makes a variable interest rate payment
- **Currency Swap** - Contractual agreement between two parties to exchange two different currencies and then to reverse the exchange at a later date at a specified exchange rate
- **Cross currency SWAP** –Contractual agreement between two parties to exchange interest payments and principals denominated in two different currencies



Types of Swap – Cont...

- **Total Return Swap** -Contractual agreement in which one party agrees to pay fixed or floating interest payment and receives an amount based on the total return of a security or index
- **Credit Default Swap** – Two parties enter into an agreement whereby one party pays the other a fixed periodic coupon for the specified life of the agreement. The other party makes no payments unless a specified credit event occurs.
- **Swaption** – Buyer receives the right to enter into a swap at a future date

Interest Rate Swap- Example



Accounting for Swap

- No initial accounting entry required unless upfront premium is paid by one of the parties
- Accrual for amounts due at end of current settlement period
- Fair value the swap at end of each reporting period and record the gain/loss in comprehensive income
- Example ; Interest rate swap valuations

The value of a swap at any period in time will be equal to the present value of remaining fixed payments less the present value of remaining floating payments. At the inception of the swap, the value should be zero.

The interest rate swap value = PV Fixed – PV Floating



Real life Scenarios



Case 1: Payment based on efficiency

- Company F, a manufacturing entity, entered in to an agreement with XYZ Plc. As per the agreement, Company F should pay XYZ Rs. 10m if Company F's efficiency measured as per the formula (stipulated in the agreement) is below 80%.
- Is this a derivative contract as per LKAS 39?



Case 2: Currency SWAP

- Company A and Bank B enter into a one year currency swap on LKR and US dollars. At the initiation Company A pay LKR 130 million and receive US\$ 1m .The current spot exchange rate is Rs. 130 per US\$.
- On termination of the swap, the two parties again exchange the original principal amounts at Rs. 140 per US\$. Company A receive LKR 140 million and Pay US\$ 1m.
- Is this a derivative contract as per LKAS 39?



Case 3: Payment on ABC's share price

- XYZ enters into a contract that requires payment of \$1,000 if ABC's share price increases by \$5 or more during a six-month period; XYZ will receive \$1,000 if the share price decreases by \$5 or more during the same six-month period; no payment will be made if the price swing is less than \$5 up or down.



Case 4 : Gross or Net

- Company ABC is considering entering into an interest rate swap with a counterparty, XYZ. The proposed terms are that ABC pays a fixed rate of 8% and receives a variable amount based on three month LIBOR, reset on a quarterly basis; the fixed and variable amounts are determined based on a €1,000 notional amount; ABC and XYZ do not exchange the notional amount and ABC pays or receives a net cash amount each quarter based on the difference between 8% and three month LIBOR.
 - Is this a derivative contract ?
- Alternatively, settlement may be on a gross basis. Will your determination change ?



Case 5 : Commodity derivative

- Entity XYZ enters into a fixed price forward contract to purchase one million kilograms of copper in accordance with its expected usage requirements.
- The contract permits XYZ to take physical delivery of the copper at the end of twelve months or to pay or receive a net settlement in cash, based on the change in fair value of copper.
- Is the contract accounted for as a derivative under LKAS 39?



Case 6 : Offsetting loan

- Entity A makes a five-year fixed rate loan to Entity B, while B at the same time makes a five-year variable rate loan for the same amount to A. There are no transfers of principal at inception of the two loans, since A and B have a netting agreement.
- Is this a derivative under LKAS 39?

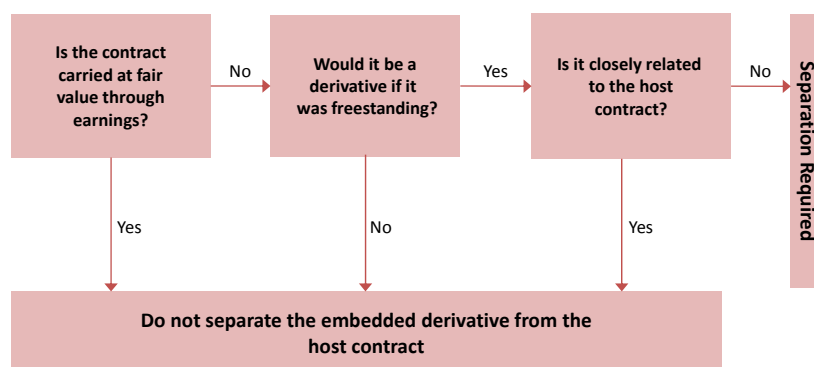


Embedded Derivatives

Embedded derivatives

An embedded derivative is a component of a hybrid or combined instrument that also includes a non-derivative host contract; it has the effect that some of the cash flows of the combined instrument vary in a similar way to a stand-alone derivative.

Embedded derivatives



Example 4: Caps and floor

- Rs. 100 m loan is granted at AWPLR + 2%
- Floor – 13% , Cap 17%
- At the grant date , AWPLR =
 - Case A - 13%
 - Case B - 10%
 - Case C - 16%

Example 5 : Dual currency deposits

- 1 Year USD 100,000 deposit is accepted @ 7% p.a. (Interest rate for other USD deposit with similar maturity – 4%)
- However , the bank can repay the loan in EUR at 1.4 USD/EUR , if at the maturity , the cross rate is below 1.4 USD / EUR
- The bank sold a currency option with similar futures and similar strike rate to a third party and receive USD 4,000
- Accounting treatment?



Example 6: Operating lease rentals

- ABC (functional currency is LKR) has an operating lease commitment of USD 1,000 per year for 5 years to PQR (Functional currency is LKR)
- ABC has two operating lease .
 - OP Le 1 : rental is adjusted for Sri Lankan Inflation rate
 - OP Le 2 : rental is adjusted for Inflation rate in UK



Example 7 : Lease payment

- Company X has Sri Lankan Rupees (LKR) as its functional currency. On 1 January 2014 Company X entered into a nine month lease over an item of PP&E which required payments of US\$100,000 on 31 March 2014, 30 June 2014 and 30 September 2014.
 - The functional currency of the lessor is not US dollars;
 - the price of such leases is not routinely denominated in US dollars and
 - US dollars is not a currency that is commonly used in the economic environment in which the lease took place .



Hedge Accounting



Why hedging ?

- Entities undertake hedge accounting to assist in managing and reducing the risks to which the entity is exposed (Market risk , credit risk and liquidity risk)
 - **Example 1:** a foreign-currency-denominated operating lease when the unrecognized contractual commitment to pay lease rentals in another currency is hedged by a series of forward currency contracts which is fixed in functional currency terms.
 - **Example 2:** a foreign-currency-denominated purchase of an item of machinery expected in the next few months which is hedged by a forward foreign currency contract.



What is hedge accounting ?

- ▶ Hedge Accounting is a method of linking instruments or transactions whose changes in fair values or cash flows are expected to offset each other.

For example, if you are going to hedge the interest rate of a loan that you are holding by using an interest rate swap, you would link the two and account for and disclose them as one net transaction.



What is Hedge accounting cont..

- Hedge accounting is often seen as 'correcting' deficiencies in the accounting requirements that would otherwise apply to each leg of the hedge relationship.
- These deficiencies are an inevitable consequence of using a mixed-measurement model of accounting.
- Typically, hedge accounting involves recognising gains and losses on a hedging instrument in the same period(s) and/or in the same place in the financial statements as gains or losses on the hedged position.

Hedge item vs. Hedging instruments

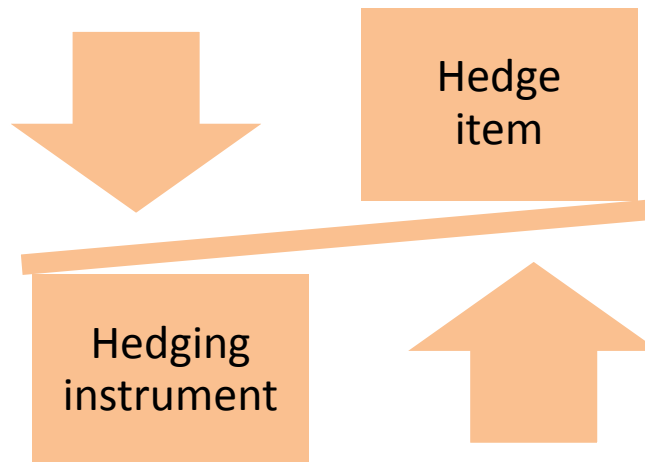
Hedge item

- Recognized asset or liability
- Firm commitment,
- Highly probable forecast transaction
- Net investment in a foreign operation that exposes the entity to risk of changes in fair value or future cash flows
- Designated as being hedged.

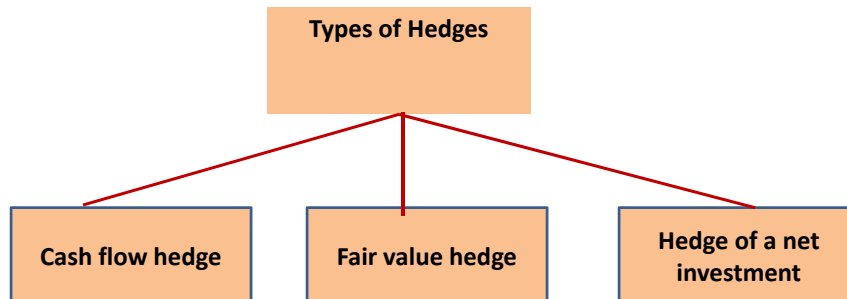
Hedging instruments

- Designated derivative or a designated non-derivative financial asset or non-derivative financial liability
- Fair value or cash flows are expected to offset changes in the fair value or cash flows of a designated hedged item.

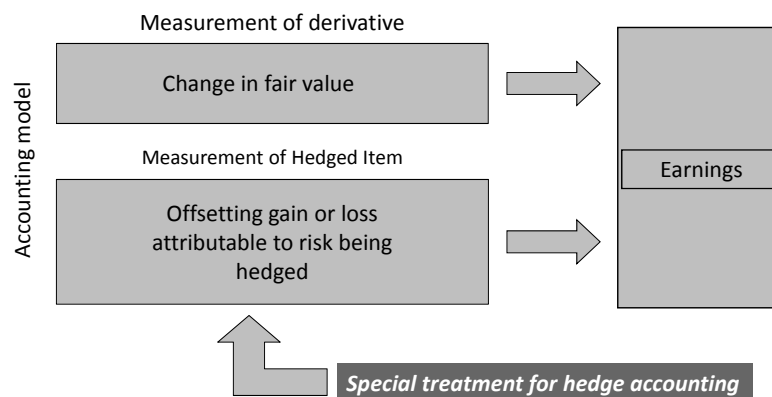
Hedge item vs. Hedging instrument



Types of hedges



Fair value hedge model



Fair value hedge example

Entity A issues 1,000,000 of 5-year 8% fixed-rate bonds on January 2, 2001.

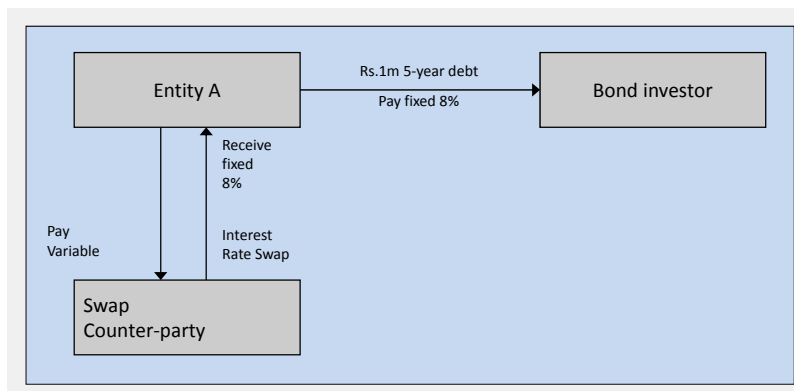
A fixed interest rate was offered to appeal to investors, but entity A is concerned that if market interest rates decline, the fair value of the liability will increase and the company will suffer an economic loss. To protect against the risk of loss, entity A decides to hedge the risk of a decline in interest rates by entering into a 5-year **interest rate swap** contract

- The terms of the swap contract to entity A are:
- Entity A will receive fixed payments at 8% (based on the \$1,000,000 amount).
- Entity A will pay variable rates, based on the market rate in effect throughout the life of the swap contract. The variable rate at the inception of the contract is 6.8%
- The settlement dates for the swap correspond to the interest payment dates on the debt (December 31).

Required

How do you account for such transaction?

Fair value hedge example



Example 8

- Assuming that the swap was entered into on January 2, 2001 (the same date as the issuance of the debt), the swap at this time has no value; therefore no entry is necessary.
- At the end of 2001, the interest payment on the bonds is made. The journal entry to record this transaction is as follows:

December 31, 2001

Interest Expense	80,000	
Cash (8% * Rs.1,000,000)		80,000

Example 8

At the end of 2001, market interest rates have declined substantially and therefore the value of the swap contract has increased. the swap, is to receive a fixed rate of 8% or Rs.80,000 (Rs.1,000,000*8%) and pay a variable rate (which in this case is 6.8%) or Rs.68,000. Entity A therefore receives Rs.12,000 (Rs.80,000 – Rs. 68,000) as a settlement payment on the swap contract on the first interest payment date. The entry to record this transaction is as follows:

December 31, 2001

Cash	Dr	12,000	
Interest Expense	Cr		12,000

Example 8- Continued

- In addition, a market appraisal indicates that the value of the interest rate swap has increased Rs.40,000. This increase in value is recorded as follows:

December 31, 2001

Swap Contract	40,000
Unrealized Holding Gain or Loss—Income	40,000

- This swap contract is reported in the balance sheet, and the gain on the hedging transaction is reported in the income statement. Because interest rates have declined, the company records a loss and a related increase in its liability as follows:

December 31, 2001

Unrealized Holding Gain or Loss—Income	40,000
Bonds Payable	40,000

Example 8- Continued

- The loss on the hedging activity is reported in net income, and bonds payable in the balance sheet is adjusted to fair value

Balance sheet Presentation

Entity A BALANCE SHEET (Partial) December 31, 2001

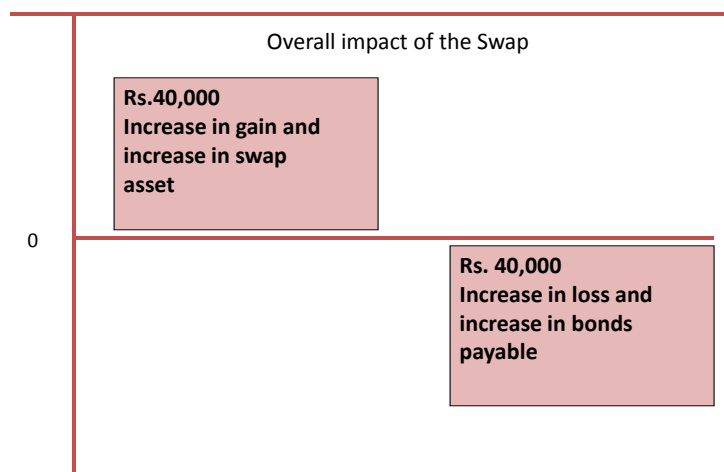
<u>Current assets</u>	Rs.
Swap contract	40,000
<u>Liabilities</u>	
Bonds payable	1,040,000

Example 8- Continued

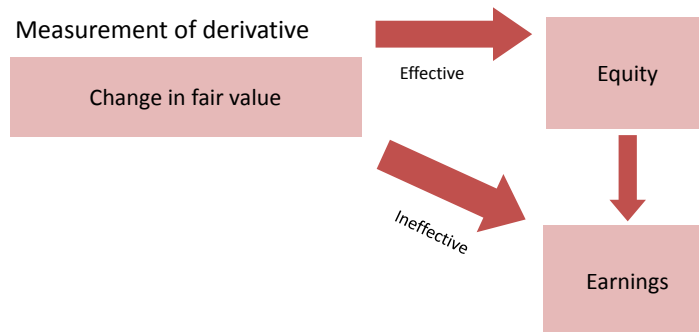
Entity A
INCOME STATEMENT (Partial)
For the Year Ended December 31, 2001

	Rs.	Rs.
Interest Expenses (80,000- 68,000)		12,000
Other income		
Unrealized Holding Gain—Swap	40,000	
Unrealized Holding Loss—Bonds Payable	(40,000)	
Net gain/ (loss)		0

Example 8- Continued



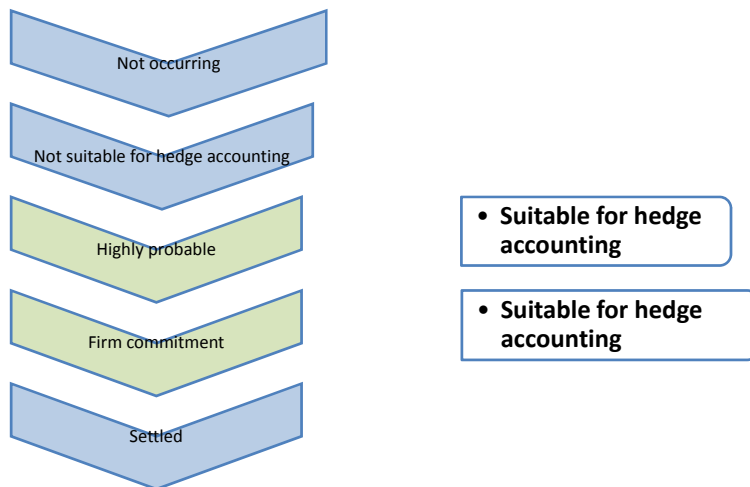
Cash flow hedge accounting model



Example 9: Hedging highly probable foreign sale with forward contract

- On 1 Oct 2011 ABC PLC, a company whose functional currency was LKR was expecting to sell finished goods to a US client.
- The sale was expected to occur on 31 Mar 2012 and the sale receivable was expected to be settled on 30 June 2012.
- Sale proceeds were expected to be USD 100,000
- Hedge by using forward contract to sell USD 100,000 and buy LKR 12,500,000 (agreed rate 125 LKR per USD) on 30 June 2012.

Transaction that qualify to be a hedge item



Exchange rates and fair valuation (ignoring the time value of money)

	Spot rate	Forward rate for 30 June 2012	Fair value of the forward contract
1-Oct-11	123.50	125.00	0
31-Dec-11	127.00	128.00	(300,000)
31-Mar-12	129.50	130.00	(500,000)
30-Jun-12	132.00	132.00	(700,000)

Example 9 :Accounting entries

- On 1 Oct 2011
 - No accounting entries – FV =zero
- On 31 Dec 2011 – recording forward contract at fair value
 - Cash flow hedges (Equity through OCI) DR 300,000
 - Derivative Financial Liability (forward contract) CR 300,000

Example 9 :Accounting entries Cont...

- On 31 March 2012
- Fair value changes for forward contract
 - Cash flow hedges (Equity through OCI) DR 200,000
 - Derivative Financial Liability (forward contract) CR 200,000
- Recognizing revenue
 - Account receivable DR 12,950,000
 - Revenue CR 12,950,000
- Releasing the deferred hedge reserve
 - Revenue DR 500,000
 - Cash flow hedges (Equity through OCI) CR 500,000

Example 9 : Accounting entries Cont...

- On 30 June 2012
- Foreign exchange gain on receivables
 - Accounts receivables DR 250,000
 - FX gains on receivables CR 250,000
- Fair value changes for forward contracts
 - Loss on derivatives DR 200,000
 - Derivative Financial Liability (forward contract) DR 200,000
- Settlement of the account receivable
 - Cash DR 12,500,000
 - Derivative financial liability DR 700,000
 - Account receivable CR 13,200,000

Hedging foreign currency liabilities using cross Currency SWAP

USD Liability	CCS type	Resulting LKR liability	Typical type of hedge
Floating	Receive USD floating , Pay LKR Floating	Floating	Fair value hedge
Floating	Receive USD floating , Pay LKR fixed	Fixed	Cash flow hedge
Fixed	Receive USD fixed , Pay LKR floating	Floating	Fair value hedge
Fixed	Receive USD fixed , Pay LKR fixed	Fixed	Cash flow hedge



Discussion : Revenue hedge with Currency borrowings

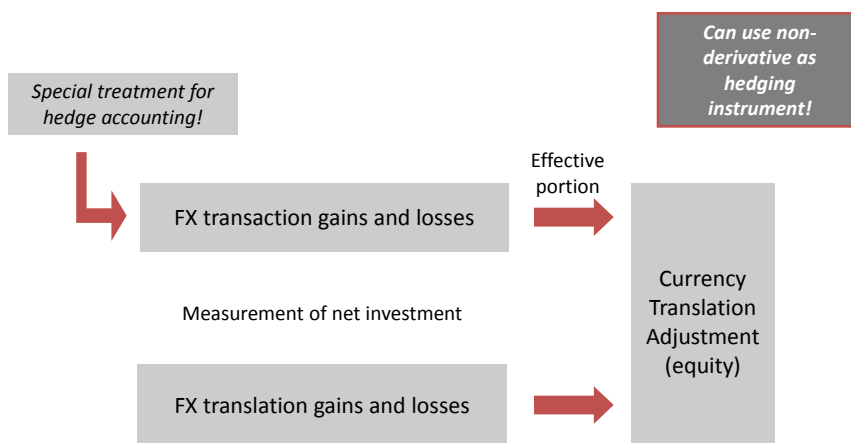
- Is hedge accounting permitted for a currency borrowing that hedges an expected but not contractual revenue stream in foreign currency?



Discussion : Revenue hedge with Currency borrowings

- Yes, if the revenues are highly probable.
- For example, an airline entity may use sophisticated models based on experience and economic data to project its revenues in various currencies. If it can demonstrate that forecast revenues for a period of time into the future in a particular currency are 'highly probable', as required by IAS 39.88,
- it may designate a currency borrowing as a cash flow hedge of the future revenue stream. The portion of the gain or loss on the borrowing that is determined to be an effective hedge is recognised in other comprehensive income until the revenues occur.
- It is unlikely that an entity can reliably predict 100 per cent of revenues for a future year. On the other hand, it is possible that a portion of predicted revenues, normally those expected in the short term, will meet the 'highly probable' criterion.

Hedge of a net investment in foreign operation



When hedge accounting can be applied?

- ▶ For an entity to qualify for hedge accounting under IAS 39, the following conditions must be met:
 - ▶ **Formal designation and documentation** of the hedging relationship and the entity's risk management objective and strategy for undertaking the hedge at inception.
 - ▶ The hedge is expected to be **highly effective** in achieving offsetting changes in fair value or cash flows attributable to the hedged risk.
 - ▶ For cash flow hedges, a **forecast transaction designated** as the hedged item must be **highly probable** and must present an exposure to variations in cash flows which could ultimately affect profit or loss.
 - ▶ **Hedge effectiveness can be reliably measured.**
 - ▶ The hedge is **assessed on an ongoing basis** and determined actually to have been highly effective throughout the financial reporting periods for which the hedge was designated.

At inception of the hedge, the formal hedge documentation must be contemporaneous (that is, there should be no retroactive implementation of documentation).



Hedge effectiveness

- Hedge relationship required to be formally documented
- Hedge must be assessed to be “highly effective” (80-125%)
 - i.e., Δ in FV of derivative / Δ in FV of hedged item
- Must expect that it will be highly effective at inception (prospective)
- Test periodically to determine it has been highly effective (retrospective and continued prospective)



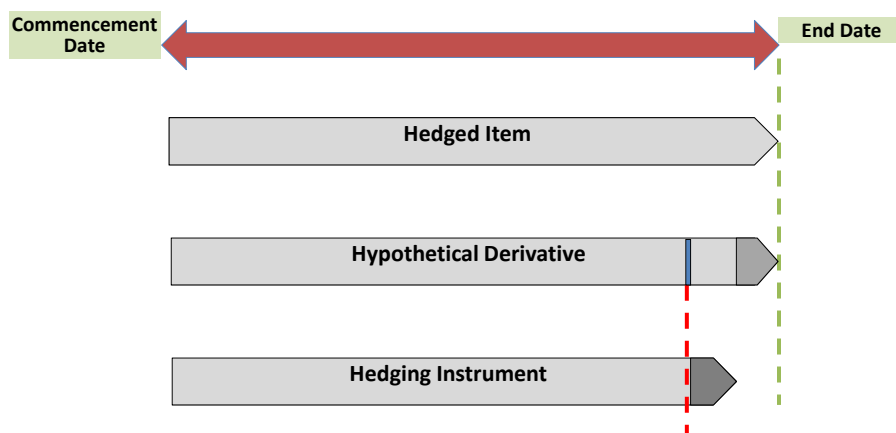
Hedge effectiveness, cont.

- Acceptable methods for assessment of hedge effectiveness :
 - Dollar offset / The ratio analysis
 - Statistical analysis (i.e., regression analysis)
 - Critical terms match
 - The scenario analysis method
 - The volatility risk reduction method
- In general, a quantitative method is likely to give rise to a lower risk of challenge than a qualitative method

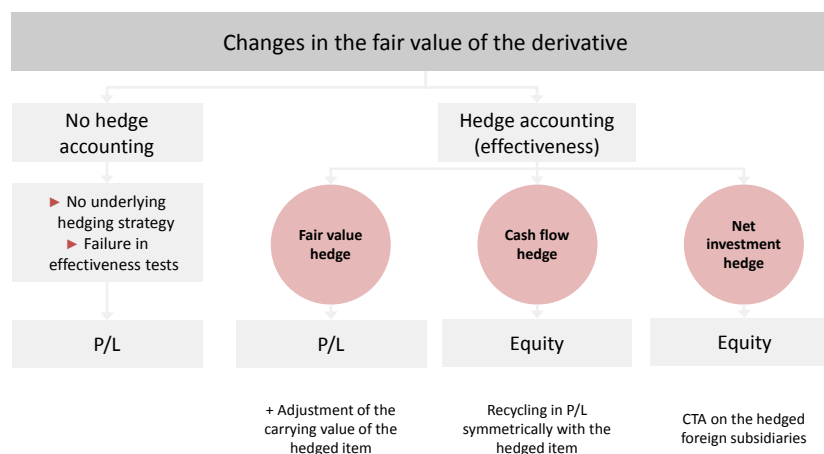
hypothetical derivative

- The **hypothetical derivative** is a derivative whose change in fair value offset perfectly the changes in fair value of the hedged item for variation in the risk being hedged.

Hypothetical derivative ?



General framework of hedge accounting

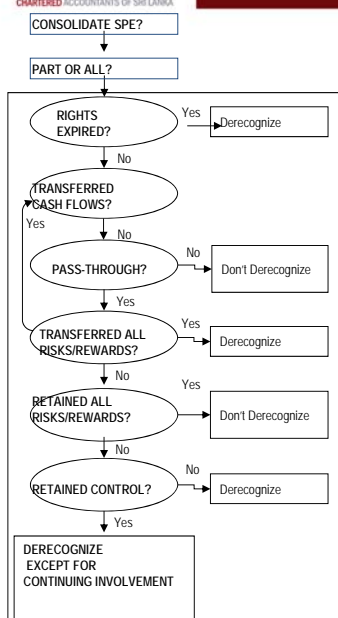


Summary - Hedge accounting disclosures

Disclosure	Fair value hedges	Cash flow hedges	Net investment hedges
Description of hedged risk and hedging instrument with related fair values	X	X	X
When hedged cash flows are expected to occur		X	
Forecast transactions no longer expected to occur		X	
Gain or loss recognized in equity and reclassifications to P&L		X	
Gain or loss from hedging instrument and hedged risk	X		
Ineffectiveness recognized in P&L		X	X

Case 7 : IRS used to reduce interest rate risk exposure

- Retail commercial bank
- Significant portion of bank's lending are at fixed rate and for average of 5 years
- Significant portion of bank's deposits are below 1 year
- Portfolio of IRS were used to mitigate the interest rate risk
- Bank enters in to Interest rate SWAP to pay fixed (15%) and receive variable (TB Rate + 6%)
- Discuss the accounting options available ?



De-recognition

- ▶ Setting the frame
 - ▶ Who is the entity?
 - ▶ What is the transferred asset?
- ▶ Transfer or pass-through of cash flows
 - ▶ Have the contractual rights expired?
 - ▶ Is there a transfer of rights to receive payments?
 - ▶ Is there a qualifying pass-through of cash flows?
- ▶ Risks and rewards
 - ▶ Has the entity transferred substantially all risks and rewards?
 - ▶ Has the entity retained substantially all risks and rewards?
- ▶ Control and continuing involvement
 - ▶ Has entity retained control of assets?
 - ▶ What is the continuing involvement?



De-recognition:

- Examples of when an entity has transferred substantially all the risks and rewards of ownership are:
 - an unconditional sale of a financial asset;
 - a sale of a financial asset together with an option to repurchase the financial asset at its fair value at the time of repurchase; and
 - a sale of a financial asset together with a put or call option that is deeply out of the money (i.e. an option that is so far out of the money it is highly unlikely to go into the money before expiry).



De-recognition:

- Examples of when an entity has retained substantially all the risks and rewards of ownership are:
 - a sale and repurchase transaction where the repurchase price is a fixed price or the sale price plus a lender's return;
 - a securities lending agreement;
 - a sale of a financial asset together with a total return swap that transfers the market risk exposure back to the entity;
 - a sale of a financial asset together with a deep in-the-money put or call option (i.e. an option that is so far in the money that it is highly unlikely to go out of the money before expiry); and
 - a sale of short-term receivables in which the entity guarantees to compensate the transferee for credit losses that are likely to occur.



Impact on Balance Sheet and Profit and Loss

- ▶ Transfers that do not qualify for derecognition:
 - ▶ continue to recognize asset, recognize any consideration received as a liability
 - ▶ recognize any income on the transferred asset and any expense on the financial liability
- ▶ Transfers that qualify for derecognition:
 - ▶ derecognize entire financial asset
 - ▶ recognize separately as financial assets or financial liabilities any rights or obligations retained
 - ▶ recognize in profit and loss difference between carrying amount and consideration received



Example 11 : Sale of financial asset

- ABC sold part of its financial asset portfolio to XYZ for the market price of 1,000
 - Case 1: Sale is unconditional
 - Case 2: ABC agreed to repurchase those financial asset after 1 year for 1,150
 - Case 3: ABC wrote a put option to XYZ for those shares . Exercise price is 1,150 within 1 year.
 - Case 4 ; ABC wrote a put option to XYZ for those shares . Exercise price is 1,500 .within 1 year.