

The Theoretical Framework

IAS 39 *Financial Instruments: Recognition and Measurement* is a complex standard. It establishes accounting principles for recognising, measuring and disclosing information about financial assets and financial liabilities. In this chapter we provide an overview of the main IAS 39 guidelines, highlighting some of the practical issues surrounding hedge accounting.

The general principles of IAS 39 are:

- The classification and accounting of financial instruments as assets or liabilities are based on management intent.
- Derivative instruments are recognised on the balance sheet and measured at fair value.
- Changes in fair value of derivatives are accounted for depending on whether the derivative is designated as a hedging instrument, and if so, the nature of the item being hedged.
- In order to apply for hedge accounting a derivative must prove it is effective in offsetting the changes in value of the hedged item.

IAS 39 is very wide in scope and interacts with several other standards (see Figure 1.1). When addressing hedging there are primarily two standards that have an impact on the way a hedge is structured: IAS 21 (*The Effects of Changes in Foreign Exchange Rates*) and IAS 32 (*Financial Instruments: Disclosure and Presentation*).

1.0.1 EU's IAS 39 versus IASB's IAS 39

European Union ("EU") entities must apply the version of IAS 39 standard approved by the EU. This version might differ from the IFRS' IAS 39 standard.

1.0.2 US Gaap FAS 133

In this book there are some references to the US Gaap (US generally accepted accounting principles), in particular to its FAS 133 standard. FAS 133 *Accounting for Derivative Instruments and Hedging Activities* is the US Gaap equivalent to IAS 39. Although FAS 133 follows similar principles to IAS 39, there are some differences. We have found it interesting to highlight some of the FAS 133 guidelines that may be useful to justify unclear accounting treatments by IAS 39.

1.1 ACCOUNTING CATEGORIES FOR FINANCIAL ASSETS AND LIABILITIES

Under IAS 39, a financial instrument is any contract that gives rise to both a financial asset in one entity and a financial liability or equity instrument of another entity.

IAS 39 does not cover the accounting treatment of some financial instruments. For example, own equity instruments, insurance contracts, leasing contracts, specific financial guarantees,

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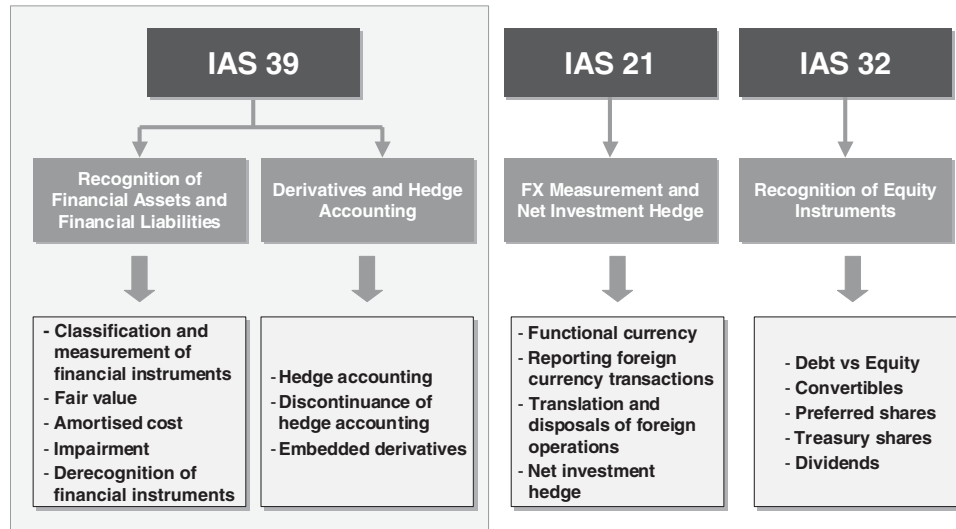


Figure 1.1 Scope of IAS 21, IAS 32 and IAS 39.

weather derivatives, loans not settled in cash (or in another financial instrument), interests in subsidiaries/associates/joint ventures, employee benefit plans, share-based payment transactions, contracts to buy/sell an acquiree in a business combination, contracts for contingent consideration in a business combination, some financial guarantee contracts and some commodity contracts are outside the scope of IAS 39.

1.1.1 Financial Assets Categories

A financial asset is any asset that is cash, a contractual right to receive cash or another financial asset, a contractual right to exchange financial instruments with another entity under conditions that are potentially favourable, or an equity instrument of another entity. Financial assets include derivatives with a fair value favourable to the entity.

IAS 39 considers four categories of financial assets:

- 1) Financial assets held-to-maturity are non-derivative financial assets with fixed or determinable payments and fixed maturity so that the entity has the positive intention and ability to hold to maturity. The assets classified in this category are subject to severe restrictions, so in reality entities are quite reluctant to include assets in this category.
 - This category includes: non-callable debt, callable debt (provided that if it is called the holder would recover substantially all of debt's carrying amount), mandatorily redeemable preferred shares, etc.
 - This category excludes: originated loans, equity securities (because of their indefinite life), puttable debt (because the entity may not hold it to maturity if option is exercised), perpetual debt (because of their indefinite life), etc. It also excludes financial assets that the issuer has the right to settle at an amount significantly below its amortised cost.
 - The intention and ability to hold the asset to maturity is assessed at initial recognition and at each balance sheet date.

- 2) Loans and receivables originated by the entity.
 - It includes loan assets, trade receivables and deposits held in banks. It also includes purchased loans and other debt investments that are not quoted in an active market.
- 3) Financial assets at fair value through P&L (also called financial assets held for trading) are financial assets that: (i) are acquired or originated principally for the purpose of selling them in the short term, or (ii) are part of a portfolio of identified financial instruments that are managed together and for which there is evidence of a recent actual pattern of short-term profit taking; or (iii) a derivative not designated in a hedging relationship, or the ineffective part if designated.
- 4) Investments available-for-sale. This category includes all debt and equity financial assets not classified in any of the previous categories.

Financial assets held-to-maturity are subject to severe sale restrictions. There is a two full year tainting provision if a held-to-maturity asset is sold or reclassified unless an isolated unanticipated event beyond the entity's control (e.g., a significant deterioration in credit worthiness, a change in tax law relating to interest on asset, a major business combination that requires the sale of the asset, or a certain regulatory change that significantly modifies the capital requirements of holding the asset) takes place, or unless the amount sold or reclassified is insignificant or the maturity/call date is very near. Additionally, the entity must also reclassify all its held-to-maturity assets as available-for-sale assets. In such a case, a transfer back to held-to-maturity is possible after the end of the tainting period.

1.1.2 Financial Assets Recognition

An entity recognises a financial asset when and only when the entity becomes a party to the contractual provisions of a financial instrument. The initial measurement of the financial asset is its fair value, which normally is the consideration given, including directly related transaction costs. The diagram below gives an overview of the accounting treatment of each category of financial assets:

Asset Category	Measurement	Fair Value Changes
Held-to-maturity	Amortised cost less impairment. Any premium or discount is amortised to P&L	Not relevant unless impaired. Impairment can be reversed through P&L.
Available for sale	Fair value (unless fair value cannot be measured reliably)	Changes in fair value recorded in equity (unless impaired or FX gains/losses) until disposal or collection of the asset. Impairment of equity instruments cannot be reversed through P&L. Impairment of debt can be reversed through P&L.
Loans and receivables	Amortised cost less impairment. Any premium or discount is amortised to P&L	Not relevant unless impaired. Impairment can be reversed through P&L.
At fair value through P&L	Fair value	Changes in fair value recorded in P&L.

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1.1.3 Financial Liabilities

A financial liability is any liability that is a contractual obligation to deliver cash or another financial asset to another entity or to exchange financial instruments with another entity under conditions that are potentially unfavourable.

Under IAS 39 there are only two categories of financial liabilities: at fair value through profit and loss, and other financial liabilities. The following table summarises the accounting treatment of each category of financial liabilities:

Liability Category	Measurement	Fair Value Changes
At fair value through profit and loss	Fair value	Changes in fair value recorded in P&L
Other financial liabilities	Amortised cost	Not relevant as liabilities not valued at fair value

The category of financial liabilities at fair value through profit and loss has two sub-categories: liabilities held for trading and those designated to the category at their inception. Financial liabilities classified as held for trading include:

- financial liabilities acquired or incurred principally for the purpose of generating a short-term profit;
- a derivative not designated in a hedging relationship, or the ineffective part if designated;
- obligations to deliver securities or other financial assets borrowed by a short seller;
- financial liabilities that are part of a portfolio of identified financial instruments that are managed together and for which there is evidence of a recent actual pattern of short-term profit taking.

1.1.4 The Fair Value Option

Sometimes entities try to record financial assets and liabilities at fair value through P&L to benefit from the natural offsetting of a particular risk affecting the asset and the liability, even if the movements in the value of the asset and the liability are only partially correlated. The fair value option allows an entity to designate a financial asset or a financial liability to be measured at fair value with changes in value recognised in P&L.

Under IAS 39, the usage of the fair value option is severely restricted. In our view, this limitation is aimed to avoid its inappropriate use by financial institutions. An entity can designate an item to be recorded at fair value through P&L if it meets one of two main criteria:

- 1) It eliminates or significantly reduces a measurement or recognition inconsistency (i.e., an accounting mismatch) that would otherwise arise from measuring assets or liabilities, or recognising the gains and losses on them on different bases. For example:
 - where the cash flows of liabilities are contractually based on the performance of assets that would otherwise be classified as available-for-sale;
 - where liabilities under insurance contracts are related to assets that would otherwise be classified as available-for-sale or measured at amortised cost;
 - where financial assets and/or financial liabilities held by an entity share a risk such as an interest rate risk, but only one of the two would otherwise be measured at fair value (for instance because it is a derivative), or whether the arrangement does not meet

the requirements for hedge accounting because, for instance, effectiveness cannot be demonstrated, or hedge accounting is not possible because none of the instruments are derivatives. An example of this would be where an entity has a portfolio of fixed-rate assets that would otherwise be classified as available-for-sale, plus fixed rate liabilities that would otherwise be recorded at amortised cost.

- 2) A group of financial assets and/or financial liabilities is managed and its performance is evaluated on a fair value basis, in accordance with a documented risk management or investment strategy, and this is the basis on which information about the assets and/or liabilities is provided internally to the entity's key management personnel. For example:
- where management evaluates and manages a portfolio of assets and liabilities that share similar risks on a fair value basis in accordance with a documented risk management policy. This would include structured products containing multiple embedded derivatives.

If a contract contains one or more embedded derivatives, under some circumstances, it may be simplest to use the fair value option to value the entire contract, eliminating the burden of identifying all of the embedded derivatives, determining which are required to be separated under IAS 39 and valuing those that are required to be separated. This is specially helpful for structured debt issues hedged with other derivatives. An entity may apply the fair value option to the entire combined contract unless:

- that embedded derivative does not significantly modify the cash flows that otherwise would be required by the contract; or
- it is clear with little or no analysis that separation of the embedded derivative is prohibited.

IAS 39 does not allow for the designation at fair value through P&L of:

- financial assets and financial liabilities whose fair value cannot reliably measured; or
- investments in equity instruments that do not have a quoted market price in an active market and whose fair value cannot be reliably measured.

The option to record at fair value is only available on initial recognition of the financial asset or liability. This requirement may create a problem if the entity enters into offsetting contracts on different dates. A first financial instrument may be acquired in the anticipation that it will provide a natural offset to another instrument that has yet to be acquired. If the natural hedge is not in place at the outset, IAS 39 would not allow to record the first financial instrument at fair value through P&L, as it would not eliminate or significantly reduce a measurement or recognition inconsistency. Additionally, to impose discipline, an entity is precluded from reclassifying financial instruments in or out of the fair value category.

1.2 THE AMORTISED COST CALCULATION: THE EFFECTIVE INTEREST RATE

We saw earlier that some assets and liabilities are measured at amortised cost. The amortisation is calculated using the effective interest rate. This rate is applied to the carrying amount at each reporting date to determine the interest expense for the period. The effective interest rate is the rate that exactly discounts the stream of principal and interest cash flows to the initial net proceeds. In this way, the contractual interest expense in each period is adjusted to amortise any premium, discount or transaction costs over the life of the instrument.

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The carrying amount of an instrument accounted for at amortised cost is computed as:

- the amount to be repaid at maturity (usually the principal amount); plus
- any unamortised original premium, net of transaction costs; or less
- any unamortised original discount including transaction costs; less
- principal repayments; less
- any reduction for impairment or uncollectibility.

Transaction costs include fees, commissions and taxes paid to other parties. Transaction costs do not include internal administrative costs.

1.2.1 Example of Effective Interest Rate Calculation

Let us assume that an entity issues a bond with the following terms:

Nominal amount:	€ 1,250
Maturity:	5 years
Issue proceeds:	€ 1,250
Coupons:	6 % (first year)
	8 % (second year)
	10 % (third year)
	12 % (fourth year)
	16.3 % (fifth year)

The effective interest rate (IRR) is computed as the rate that discounts exactly estimated future cash payments through the expected life of the financial instrument:

$$1,250 = \frac{75}{1 + IRR} + \frac{100}{(1 + IRR)^2} + \frac{125}{(1 + IRR)^3} + \frac{150}{(1 + IRR)^4} + \frac{(1,250 + 204)}{(1 + IRR)^5}$$

Solving this equation we get an IRR = 10%. The amortised cost of the liability at each accounting date is computed as follows:

Year	Amortised Cost beginning Year (a)	Interest (b) = (a) * 10%	Cash Flow (c)	Amortised Cost End of Year (d) = (a) + (b) - (c)
1	1,250	125	75	1,300
2	1,300	130	100	1,330
3	1,330	133	125	1,338
4	1,338	134	150	1,322
5	1,322	132	1,250 + 204	—

1.3 HEDGE ACCOUNTING – RECOGNISING DERIVATIVE INSTRUMENTS

1.3.1 Derivative Definition

Under IAS 39, a derivative is a financial instrument (or other contract within the scope of IAS 39) with all of the following characteristics:

- 1) Whose value changes in response to changes in an “underlying” price or index: an interest rate, a FX rate, a commodity price, a security price, a credit rating, or an index of any of the above; and
- 2) That requires no initial investment, or significantly less than the investment required to purchase the underlying instrument; and
- 3) That is settled at a future date.

Some commodity-based derivatives are not considered a derivative under IAS 39. In Chapter 8 there is a detailed discussion regarding which commodity contracts can be treated as an IAS 39 instrument.

1.3.2 Hedge Accounting

Hedge accounting is a technique that modifies the normal basis for recognising gains and losses (or revenues and expenses) associated with a hedged item or a hedging instrument to enable gains and losses on the hedging instrument to be recognised in P&L in the same period as off-setting losses and gains on the hedged item. Hedge accounting takes two forms under IAS 39:

- Fair value hedge: Recognising gains or losses (or revenues or expenses) in respect of both the hedging instrument and hedged item in earnings in the same accounting period.
- Cash flow or net investment hedge: Deferring recognised gains and losses in respect of the hedging instrument on the balance sheet until the hedged item affects earnings.

The following example highlights the timing of the impacts on P&L when using, or not, hedge accounting. Assume that an entity enters in 20X0 into a derivative to hedge a risk exposure of an item that is already recognised in the balance sheet. The derivative matures in 20X1 and the hedged item settles in 20X2. It can be observed that only the fair value hedge provided a perfect synchronisation between the hedging instrument and hedged item recognitions.

Without hedging

	20X1	20X2	Total
Hedging instrument	1,000		1,000
Hedged item (realised gain)		<1,000>	<1,000>
Net profit/(loss)	1,000	<1,000>	-0-

With fair value hedge

	20X1	20X2	Total
Hedging instrument	1,000		1,000
Hedged item (unrealised gain)	<1,000>		<1,000>
Net profit/(loss)	-0-	-0-	-0-

With cash flow hedge

	20X1	20X2	Total
Hedging instrument (after deferral in equity)		1,000	1,000
Hedged item (realised gain)		<1,000>	<1,000>
Net profit/(loss)	-0-	-0-	-0-

To be able to apply hedge accounting, very strict criteria including the existence of formal documentation and the achievement of effectiveness tests, must be met at inception and throughout the life of the hedging relationship:

- The hedging relationship must be documented in detail.
- The hedge must be expected to be highly effective.
- For cash flow hedges, the forecasted transaction must be highly probable.
- The effectiveness of the hedge must be measured reliably.
- The effectiveness of the hedging relationship must be assessed on an ongoing basis, and the relationship must be deemed to be highly effective throughout the entire hedge relationship term.

1.3.3 Accounting for Derivatives

As we mentioned earlier, all derivatives are recognised at fair value on the balance sheet, no matter whether they qualify for hedge accounting or not. There are two exceptions to this requirement: (i) derivatives whose underlying is an unquoted equity instrument (they are carried at cost until settlement), or (ii) any other derivatives whose fair value cannot be measured reliably (they are carried at cost or amortised cost until settlement).

Accounting for fluctuations on the derivative's fair value can be recognised in four different ways, depending on the type of hedge relationship:

- Undesignated or speculative.
- Fair-value hedge.
- Cash flow hedge.
- Net investment hedge.

1.3.4 Undesignated or Speculative

Some derivatives are termed “undesignated” or “speculative”. They include derivatives that do not qualify for hedge accounting. They also include derivatives that the entity may decide to treat as undesignated even though they could qualify for hedge accounting. These derivatives are recognised as assets or liabilities for trading. The gain or loss arising from their fair value fluctuation is recognised directly in P&L.

1.3.5 Fair-value Hedge

The objective of the fair value hedge is to reduce the exposure to changes in the fair value of an asset or liability already recognised in the Balance Sheet, or a previously unrecognised firm commitment (or an identified portion of such an asset, liability or firm commitment), that is attributable to a particular risk and could affect reported P&L. Therefore, the aim of the fair value hedge is to offset in P&L the change in fair value of the hedged item with the change in fair value of the derivative (see Figure 1.2).

The recognition of the hedging instrument is as follows:

- If the hedging instrument is a derivative, losses or gains from remeasuring the derivative at fair value are recognised in P&L.

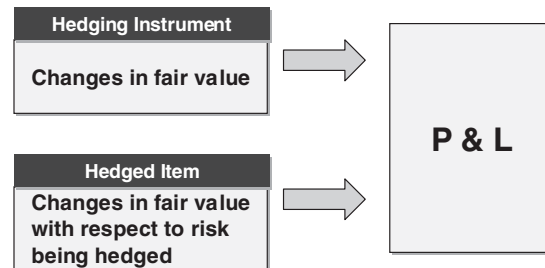


Figure 1.2 Accounting for Fair Value Hedge.

- If the hedging instrument is a non-derivative, the amount recognised in P&L related to the hedged item is the gain or loss from remeasuring, in accordance with IAS 21, the foreign currency component of its carrying amount.

The recognition of the hedged item is as follows:

- If the hedge item is otherwise measured at cost, the carrying amount of the hedged item is adjusted for the loss or gain attributable to the hedged risk with the corresponding gain or loss recognised in P&L. This also applies if the hedged item is an available-for-sale financial asset measured at fair value.
- If the hedged item is measured at amortised cost, the adjustment of the carrying amount affects the effective interest rate calculation for the hedged item. In practice, to ease the administrative burden of amortising the adjustment while the hedged item continues to be adjusted for changes in fair value attributable to the hedged risk, it may be easier to defer amortising the adjustment until the hedged item ceases to be adjusted for the designated hedged risk. An entity must apply the same amortisation policy for all of its debt instruments. However, an entity cannot defer amortising on some items and not on others.
- If the hedged item is an unrecognised firm commitment, the subsequent cumulative change in the fair value of the unrecognised firm commitment attributable to the hedged risk is recognised as an asset or a liability with a corresponding gain or loss recognised in P&L. If the firm commitment is to acquire an asset or assume a liability, the initial carrying amount of the asset or liability that results from the entity meeting the firm commitment is adjusted to include the cumulative change in the fair value of the commitment attributable to the hedged risk that was recognised in the Balance Sheet.

1.3.6 Cash Flow Hedge

A cash flow hedge is a hedge of the exposure to variability in cash flows that:

- is attributable to a particular risk associated with a recognised asset or liability, or a highly probable external forecasted transaction; and
- could affect reported P&L.

The portion of the gain or loss on the hedging instrument (e.g., the derivative) that is determined to be an effective hedge is recognised directly in a separate reserve in equity. Any ineffective

portion of the fair value movement on the hedging instrument is recorded immediately in P&L.

- The ineffective part includes specific components excluded, as documented in the entity's risk management strategy, from the assessment of hedge effectiveness (e.g., the time value of an option). Other common sources of ineffectiveness for a cash flow hedge are (i) structured derivative features embedded in the hedging instrument, (ii) changes in timing of the highly probable forecast transaction and (iii) differences between the risk being hedged and the underlying of the hedging instrument.
- When ineffectiveness is present, the amount of gains or losses on the hedging instrument that can be deferred in the accumulated reserve is limited to the lesser of either the cumulative change from the inception of the hedge in the fair value of the actual hedging instrument or the cumulative change from the inception of the hedge in the fair value of the hedged item.

The Under-Hedging Temptation

An entity may be tempted to under-hedge its cash flow exposure to increase the likelihood that the cumulative change in value of the hedged item for the risk being hedged does not exceed the cumulative change in fair value of the hedged item for the risk being hedged, and consequently lessen the possibility of recording ineffectiveness. IAS 39 precludes the voluntary use of under-hedging, however it is quite difficult to detect it when the hedging instrument is a highly structured derivative.

This temptation does not make sense for fair value hedges because both gains and losses on the hedged item and the hedging instrument are recognised in P&L. Therefore, both the effective part and the ineffective part are going to be recorded in P&L.

This gain or loss deferred in equity is reclassified, or "recycled", to P&L in the same period or periods the hedged item affects P&L, therefore offsetting to the extent that the hedge is effective (see Figure 1.3). For example:

- if the hedged item is a variable rate borrowing, the reclassification to P&L is recognised in P&L within "finance costs";
- if the hedged item is an export sale, the reclassification to P&L is recognised in the P&L statement within "sales";
- if the hedged item is a forecast transaction that will result in the recognition of a non-financial asset or non-financial liability (e.g., a raw purchase material, or a purchase of inventory), the

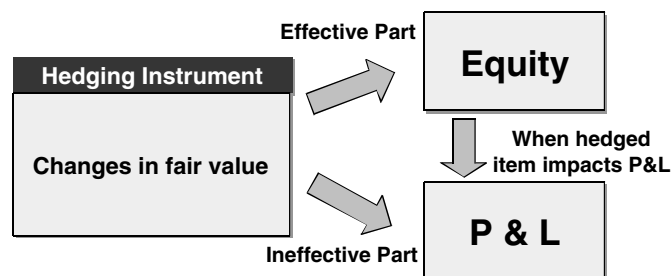


Figure 1.3 Accounting for Cash-Flow Hedge.

entity may choose to adjust the initial carrying amount of the recorded asset or liability (e.g., within “inventories”) by the amount deferred in equity, or to keep the amount deferred in equity and gradually transferring it into P&L in the same periods during which the asset or liability affects P&L (i.e., when the depreciation expense or cost of sales is recognised). The choice has to be applied consistently to all such hedges. However, such a basis adjustment is not permitted where a financial asset or liability (e.g., accounts payable) results from the hedged forecast transaction.

A hedge of the FX risk of a firm commitment may be accounted for as a fair value hedge or as a cash flow hedge.

1.3.7 Net Investment Hedge

A net investment hedge is a hedge of the foreign currency exposure arising from the reporting entity’s interest in the net assets of a foreign operation. The hedging instrument may be either a derivative or a non-derivative (e.g., a borrowing denominated in the same currency as the net investment). Figure 1.4 highlights the accounting treatment of net investment hedges.

- The effective portion of the gain or loss on the hedging instrument is recognised in equity. As the exchange difference arising on the net investment is also recognised in equity, the objective is to match both exchange rate differences. Gains or losses relating to the ineffective portion of the hedge are recognised immediately in P&L.
- On disposal or liquidation of the foreign operation, the hedge equity balance and the net investment exchange differences are transferred simultaneously to P&L.

1.3.8 Embedded Derivatives

Sometimes, a derivative is “embedded” in a financial instrument in combination with a host contract. The combination of a host contract and an embedded derivative is called *hybrid contract*. The embedded derivative causes the contractual cash flows to be modified based on a specified interest rate, a security price, a commodity price, a foreign exchange rate, index of prices or rates, or other variables. The principle under IAS 39 is that an embedded

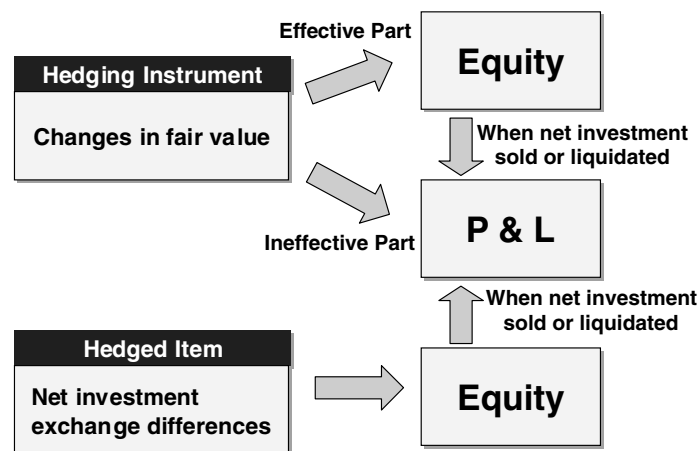


Figure 1.4 Accounting for Net Investment Hedge.

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derivative should be split (except in specific situations) from the host contract and accounted for separately.

For example, an entity might issue a low coupon bond that is exchangeable for shares in another listed company. Under IAS 39, the amount received for the exchangeable bond is split between the receipt for the fair value of the debt security and the fair value of the equity conversion option.

IAS 39 does not require the separation of the embedded derivative (see Figure 1.5):

- 1) if the host contract is accounted for at fair value, with changes in fair value recorded in profit and loss; or
- 2) if the derivative does not qualify as a derivative if it were freestanding; or
- 3) if the economic characteristics and risks of the embedded derivative are closely related to those of the host contract.

The principle of “clearly and closely related” is explained in IAS 39 only by providing examples of contracts that pass and fail the test. As a consequence, it is likely that some subjective interpretation may arise for contracts not covered in the examples. Contracts with embedded derivatives to be separated include:

- options to extend the maturity date of fixed rate debt, except when interest rates are reset to market rates;
- any derivative that “leverages” the payments that would otherwise take place under the host contract;
- Credit-linked notes, convertible bonds, equity or commodity indexed notes, notes with embedded currency options.

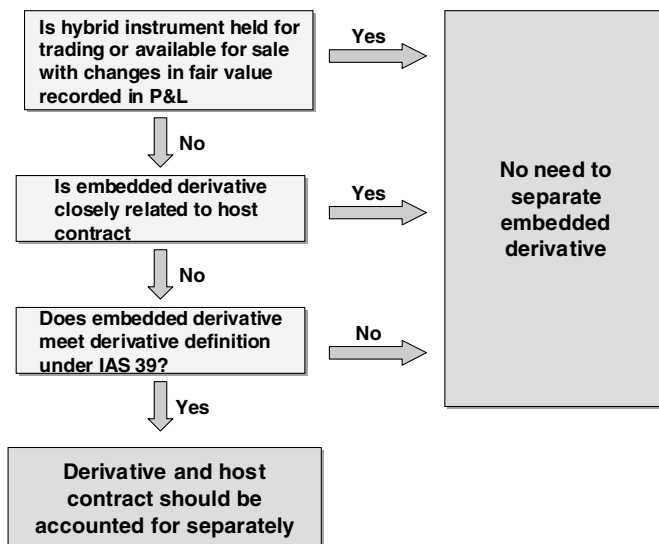


Figure 1.5 Separation of Embedded Derivative – Decision Tree.

Examples of contracts not requiring separation include:

- debt without leveraged interest rates;
- debt without leveraged inflation (although this is questionable);
- debt with vanilla interest rate options;
- debt with cash flows linked to the creditworthiness of a debtor.

A derivative that is attached to a host contract but is contractually transferable independently of the host contract, or has a different counterparty from the host contract, is not an embedded derivative but a separate one.

1.4 HEDGING RELATIONSHIP TERMINATION EVENTS

In certain circumstances, it is necessary for an entity to discontinue prospectively hedge accounting. A hedging relationship may be terminated due to any of the following:

- The hedging instrument expires or is sold, terminated or exercised. It is not a termination or expiration if the hedging instrument is replaced or rolled-over into another hedging instrument, if such replacement or roll-over is part of the entity's documented hedging strategy; or
- The hedge fails the highly effective test or its effectiveness is no longer measurable; or
- The entity voluntarily decides so. The entity may de-designate the hedging relationship by designating a new hedging accounting relationship with the same hedging instrument; or
- The hedged item ceases to exist as a result of either (i) the recognised hedged item matures, is sold or terminated, or (ii) the forecast transaction is no longer expected to occur.

In total there are six different accounting treatments depending upon the kind of hedge and the cause of discontinuance:

- 1) Hedging instrument of a cash flow hedge expires or is sold. The hedging gains or losses that were previously recognised in equity remain in equity and are transferred to P&L when the hedged item is ultimately recognised in P&L.
- 2) The fair value hedge fails the highly effective test. Adjustments to the carrying amount of the hedged item previously recorded as of the last assessment (which was highly effective) remain part of the hedged item's carrying value. If the entity can demonstrate exactly when the test failed, it can record the change in fair value of the hedged item up to the last moment the hedge was highly effective. From this moment there is no further fair valuing of the hedged item. The adjustments to the carrying value of the hedged item to date are amortised over the life of the hedged item. When the hedged item is carried at amortised cost, the amortisation is performed by recalculating its effective interest rate.
- 3) The firm commitment of a fair value hedge is no longer firm or the fair value hedged item no longer exists. Any amounts recorded on the balance sheet related to the change in fair value of the hedged item are reversed out to P&L.
- 4) The cash flow hedge fails the highly effective test or the hedging instrument expires or is sold. The hedging gains or losses that were previously recorded in equity as of the last test (which was highly effective) remain deferred and are transferred from equity to P&L when the forecast transaction is ultimately recognised in P&L. If the entity can demonstrate exactly when the cash flow hedge failed the highly effective test, it can record the change in fair value on the hedged item in equity up to the last moment it was highly effective.

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- 5) The forecasted transaction of a cash flow hedge is either no longer highly probable or no longer expected to take place. Two different treatments are possible: (i) if the forecasted transaction is no longer highly probable but it is still expected to occur, the cumulative hedge gains or losses that were previously recorded in equity remain deferred in equity until the hedged cash flow is recognised in P&L, or (ii) if the forecasted transaction is no longer expected to take place, the cumulative hedge gains or losses that had been deferred up to that point in equity are reclassified immediately to P&L.
- 6) Voluntary termination by the entity of the fair value or cash flow hedge. For fair value hedges, the adjustments to the carrying value of the hedged item to date are amortised over the life of the hedged item. When the hedged item is carried at amortised cost, the amortisation is performed by recalculating its effective interest rate. For cash flow hedges, the amounts previously recorded in equity remain in equity until the underlying hedged item impacts P&L. For net investment hedges, the amounts previously recorded in equity remain there until the related “translation adjustments” amount is reversed.

In any type of termination, if any derivatives from the terminated hedges are still outstanding, then they should continue to be fully marked-to-market on the balance sheet, with any subsequent change in fair value recorded in P&L.

If a hedging instrument fails the retrospective test it can subsequently be redesignated in a hedge relationship with the same hedged item as long as the hedge accounting requirements are met, including prospective hedge effectiveness. However, the entity will need a robust basis for concluding that the new hedge will be highly effective.

The following table summarises the accounting treatment of the different hedging termination events:

Termination Event	Fair Value Hedge	Cash flow Hedge
Hedging instrument expires, is sold, terminated or exercised	No further fair valuing of the hedged item. Any previous adjustments to the carrying amount of the hedged item are amortised over the remaining maturity of the hedged item	Deferred equity balance remains deferred in equity until forecast transaction impacts P&L
Hedge fails highly effective test	Same as above	Same as above
Voluntary termination by entity	Same as above	Same as above
Forecast transaction still expected to occur, although not highly expected	Not applicable	Same as above
Forecast transaction no longer expected to occur	Not applicable	Deferred equity balance is reclassified immediately to P&L

1.5 HEDGED ITEM CANDIDATES

In a hedging relationship there are two elements: a hedged item and a hedging instrument. A hedged item is the element that is designated as being hedged. The fundamental principle is that the hedged item creates an exposure to risk that could affect the income statement.

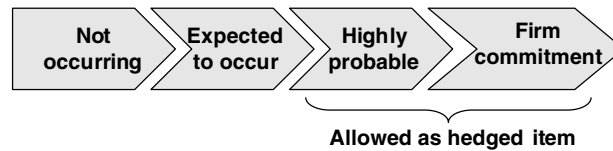


Figure 1.6 Scale of Probability of a Forecasted Transaction.

The hedged item can be:

- a recognised asset or a liability;
- an unrecognised firm commitment. A firm commitment is a legally binding agreement for the exchange of a specified quantity of resources at a specified price on a specified future date or dates;
- a highly probable forecasted external transaction (see Figure 1.6). A forecast transaction is an anticipated transaction that is not yet legally committed. In assessing “highly probable” the entity must consider among others the frequency of similar past transactions.
- a net investment in a foreign operation (on a consolidated basis only);
- a group of assets, liabilities, firm commitments, highly probable forecasted external transactions, or net investments in foreign operations, as long as they share the risk exposure that is designated as being hedged. This “sharing” condition is very restrictive: “the change in fair value attributable to the hedged risk for each individual item in the group shall be expected to be approximately proportional to the overall change in fair value of the group of items attributable to the hedged risk”. It does not qualify for hedge accounting comparing a hedging instrument with an overall net position (e.g., the net of all fixed rate assets and fixed rate liabilities with similar maturities), rather than with a specific hedged item.

This would preclude for example the use of hedge accounting if a put option on the DAX index is purchased to hedge the fair value of a portfolio of shares members of the DAX index. Even though the hedge is perfect from an economic point of view, the portfolio cannot be designated as a hedged item because the fair value of the individual shares does not move in an approximately proportional manner to the fair value of the portfolio as a whole;

- a non-financial asset (e.g. inventory) or a non-financial liability for the risk of changes in the fair value “in its entirety” for all risks, or for a hedge of FX risk only, because of the difficulty of isolating other risks;
- one or more selected contractual cash flows, or portions of them or a percentage of the fair value, of a financial asset or a financial liability, provided that effectiveness can be measured. For example, it is possible to hedge only part of the life of a loan or only to hedge the Euribor interest rate in a loan paying Euribor plus a margin;
- an amount of assets or an amount of liabilities (rather than as individual assets or liabilities) in a fair value hedge of the interest rate exposure of a *portfolio* of financial assets and/or financial liabilities. Designation of a net amount including assets and liabilities is not permitted;
- an intragroup monetary item (e.g., a payable/receivable between two subsidiaries) in the consolidated financial statements if it results in an exposure to FX gains or losses that are

not fully eliminated on consolidation (i.e., the item is transacted between two group entities that have different functional currencies);

- A highly probable forecast intragroup transaction, in consolidated statements and in a FX cash flow hedge, provided that:
 - 1) the transaction is highly probable and meets all the other hedge accounting criteria (with the exception of the requirement that it involves a party external to the group), and
 - 2) the hedged FX transaction is denominated in a currency other than the functional currency of the entity entering into it and the FX risk affects consolidated P&L. The entity can be a parent, subsidiary, associate, joint venture or branch. An example of this sort of transactions is a forecast sale or purchase of inventory between members of the same group if there is an onward sale of inventory to party external to the group. Another example is a forecast intragroup sale of equipment from the group entity that manufactured it to a group entity that will use the equipment in its operation (it affects P&L because the equipment will be depreciated by the purchasing entity, and the amount initially recognised may change if it is denominated in a currency other than the functional currency of the purchasing entity).

IAS 39 imposes the following restrictions or conditions regarding the hedge item:

- Held-to-maturity instruments cannot be hedged items with respect to interest rate risk or prepayment risk because held-to-maturity investments require an intention to hold to maturity without regard to changes in fair value or cash flows due to changes in interest rates. Held-to-maturity instruments can be hedged items with respect to credit risk or FX risk.
- A derivative cannot be designated as a hedging item. The only exception is an embedded purchased option that is hedged with a written option.
- The other counterparty has to be a party external to the entity. The only exceptions are intragroup monetary items that can be hedged items with respect to FX risk in the consolidated financial statements if it results in an exposure to FX gains or losses that are not fully eliminated on consolidation (i.e., monetary items transacted between two group entities that have different functional currencies).
- An entity's transaction in its own equity cannot be a hedged item because it does not expose the entity to a particular risk that could impact P&L. Similarly, a forecast dividend payment by the entity cannot be a hedged item as its distribution to equity holders is debited directly to equity and therefore does not impact P&L.
- An equity method investment cannot be the hedge item in a fair value hedge, as the equity investor does not recognise changes in fair value in P&L, but accounts for its share of the investee's P&L.

1.6 HEDGING INSTRUMENT CANDIDATES

The following can be designated as hedging instruments:

- A derivative that involves an external party, except for most written options. A written option can only be designated as hedging instrument in combination with a purchased option and under certain conditions.
- An external non-derivative financial asset or liability, but only for hedges of FX risk.

- A portion of the entire hedging instrument. The portion must be a percentage of the entire derivative (for example, 40 % of the notional). It is not possible to designate a hedging instrument only for a portion of its life.
- Two or more derivatives, or portions of their nominal, can be viewed in combination as the hedging instrument if none of them is a written option. A combination of a purchased and a written option can be a hedging instrument if the written option meets certain requirements.
- A single hedging instrument may be designated as a hedge for more than one type of risk provided that: (i) the risks being hedged can be identified clearly, (ii) the effectiveness of the hedge can be demonstrated, and (iii) it is possible to ensure that there is specific designation of the hedging instrument and the different risk positions.

1.7 HEDGING RELATIONSHIP DOCUMENTATION

One of the fundamental requirements for a hedging relationship to qualify for hedge accounting is that formal hedge documentation be prepared at inception of the hedging relationship. The formal documentation must identify the following:

- The entity's risk management objective and strategy for undertaking the hedge: an explanation of the rationale for contracting the hedge. It should include evidence that the hedge is consistent with the entity's risk management objectives and strategies.
- The type of hedge: fair value, cash flow, or net investment hedge.
- The specific risk being hedged: foreign exchange risk, interest rate risk, equity price risk, commodity price risk or credit risk.
- The hedging instrument: its terms and how it will be fair valued.
- The hedged item: a sufficiently detailed explanation of the hedged item.
 - For fair value hedges, the document must include the method for recognising in earnings the gains or losses in the fair value of the hedged item.
 - If the hedged item is a forecasted transaction, the documentation should also include references to the timing (i.e., the estimated date), the nature and amount of the forecasted transaction. It also should include the rationale for the forecasted transaction being highly probable to occur and the method for reclassifying into P&L amounts deferred in equity.
- How effectiveness will be assessed, both prospectively and retrospectively. It includes the method to be used and the frequency of the tests. The entity should also disclose if the tests will be performed on a cumulative basis or on a period-by-period basis.

The following is an example of a hedge documentation for a highly expected foreign currency export transaction hedged with a FX forward.

Hedging Relationship Documentation	
Risk management objective and strategy for undertaking the hedge	The objective of the hedge is to protect the EUR value of the USD 100 million highly expected sale of finished goods against unfavourable movements in the USD/EUR FX rate. This hedging objective is consistent with ABC's overall FX risk management strategy of reducing the variability of its Profit and Loss statement.
Type of hedge	Cash flow hedge.
Risk being hedged	FX risk. The variability in EUR value of the highly expected transaction.

(Continued)

Hedging Relationship Documentation	
Hedging instrument	The FX forward contract with reference number 012345. The counterparty to the forward is XYZ Bank and the credit risk associated with this counterparty is considered to be very low.
Hedged item	USD 100 million sale of finished goods expected to take place on 31 March 20X5
Assessment of effectiveness testing	<p>Hedge effectiveness will be assessed by comparing changes in the fair value of the hedging instrument to changes in the fair value of the expected cash flow.</p> <p>Hedge effectiveness assessment will be performed on a forward-forward basis. In other words, the forward points of both the hedging instrument and the expected cash flow are included in the assessment.</p> <p>Prospective test A prospective test will be performed at each reporting date. Due to the fact that the terms of the hedging instrument and those of the expected cash flow match, the hedge is expected to be highly effective. The credit risk of the counterparty of the hedging instrument will be monitored continuously.</p> <p>Retrospective test A retrospective test will be performed at each reporting date using the “ratio analysis method”. The ratio will compare the cumulative change since hedge inception in the fair value of the expected cash flow arising from the forecast sale with the cumulative change since hedge inception in the fair value of the hedging instrument. The hedge will be assumed to be highly effective on a retrospective basis if the ratio is between 80 % and 125 %.</p>

1.8 EFFECTIVENESS TESTS

IAS 39 requires hedging strategies to be tested for effectiveness in order to apply hedge accounting. Effectiveness is probably the most challenging aspect of achieving hedge accounting. Effectiveness is simply the extent to which changes in the fair value or cash flows of the hedged item that are attributable to a hedged risk are offset by changes in the fair value or cash flows of the hedging instrument. IAS 39 requires that hedge effectiveness be evaluated at the inception of the hedge and then monitored at each balance-sheet date, including interim financial statements. IAS 39 requires two separate tests to be applied (see Figure 1.7):

- A prospective test, that shows that the hedge is expected to be highly effective looking forward. This test must be performed at inception and at least at each balance-sheet date.
- A retrospective test, that shows that the actual hedge results to have been effective during the accounting period. This test must be performed at least at each balance-sheet date.

1.8.1 Prospective test

The objective of the prospective test is to prove that the hedge is expected to be highly effective during the life of the hedge. The prospective test must be performed at inception and at least at each balance-sheet date. IAS 39 states that to pass the prospective effectiveness test, changes in fair value or cash flows of the hedging instrument must effectively offset changes in the fair

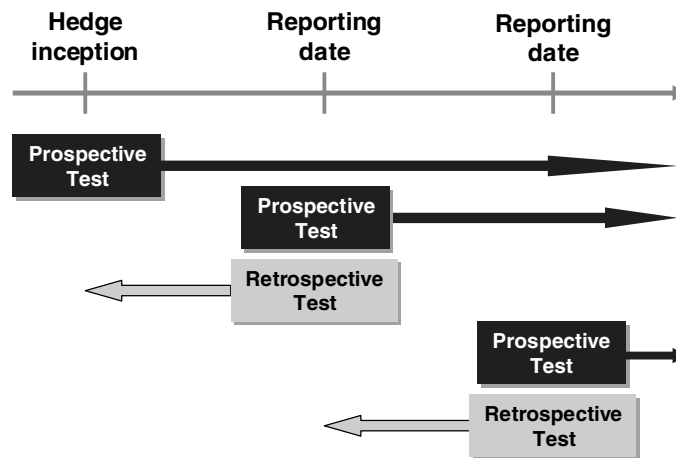


Figure 1.7 Effectiveness Tests.

value or cash flows of the hedged item. IAS 39 does specify an 80%–125% range required for the results of a test to be considered highly effective.

Although IAS 39 does not specify a single method for assessing prospective hedge effectiveness, in general it is done in one of three ways:

- Using a qualitative assessment if the terms of the hedging instrument and hedged item match exactly. This method is called the “critical terms” method. If notional amounts, terms, pricing dates, timing and currency of cash flows match then the hedge relationship is expected to be perfectly effective. This expectation is valid while the credit risk associated with the counterparty to the hedging instrument is considered to be very low; or
- Assessing how effective the hedging relationship was, or would have been, in prior periods using historical information. This testing is usually performed using the linear regression method; or
- Applying scenario analysis: modelling how effective the hedging relationship would be under several possible scenarios. This testing is usually performed using the Monte Carlo simulation method.

A thorough review of the prospective test method is usually needed if the retrospective test does not pass. Giving special attention to reviewing the prospective test may also be needed if a significant part of the change in fair value of the derivative or hedged item is due to counterparty credit risk. For this reason, assessment of credit risk forms a crucial part of the prospective tests.

1.8.2 Restrospective Test

Periodically, IAS 39 requires a retrospective test so the entity can prove whether the actual hedging relationship was effective in the last period (i.e., since the last test was performed). As a minimum, the retrospective test should be completed at each reporting date (each time annual or interim financial statements are prepared).

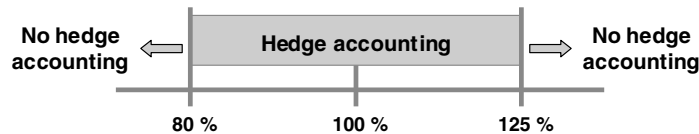


Figure 1.8 Retrospective Test Effectiveness.

In order to pass the test, the hedge instrument must be within the range of 80%–125% in terms of effectively offsetting the changes in value of the hedged item. In other words, if the change in fair value or cash flows of the hedged item is 100, the hedging instrument must change between 80 and 125 (see Figure 1.8).

Although IAS 39 does not specify a single method for assessing retrospective hedge effectiveness, in general it is done using the “*ratio analysis*” method.

A key choice in calculating the retrospective test is whether the changes in fair value are calculated over the current test period or cumulatively since the hedge inception. The cumulative basis is recommended since the change in fair value over a longer period should be more stable than over a shorter period and thus less likely to fall outside the 80%–125% range.

1.8.3 Restrospective Test Failure

If the hedge does not pass the restrospective test, hedge accounting may not be applied as of the end of the previous accounting period (i.e., the last time the hedging relationship was highly effective). The entity must determine whether the hedge will continue to be highly effective:

- The entity may conclude that the test failure was the result of an isolated event that is very unlikely to repeat itself. After reviewing the prospective test, the entity still considers that the hedging relationship is expected to be highly effective in the future. In this case, the hedging relationship continues to be in place and hedge accounting can be applied in the next period if both the next prospective and retrospective test pass.
- The entity may conclude that the test failure was the result of an event likely to be repeated. After reviewing the prospective test, the entity concludes that it does not expect the hedging relationship to be highly effective in the future. In this case, hedge accounting is discontinued.
- The entity cannot identify the event or change in circumstances that caused the hedge relationship to fail. In this case, hedge accounting is discontinued.

The European Airlines Dilemma

When hedging their exposure to jet fuel prices, airlines most of the time use crude oil derivatives instead of jet fuel derivatives as the former is a much more liquid market. Jet fuel and crude oil prices are approximately 90% correlated in the long-term, but there are periods in which correlation falls below the 80% minimum. As a consequence, airlines may find that the prospective test is passed while in some periods the retrospective test may fail.

1.9 METHODS FOR TESTING EFFECTIVENESS

IAS 39 does not prescribe a specific method to evaluate hedge effectiveness prospectively or retrospectively. However, IAS 39 requires an entity to specify at hedge inception, in the hedge documentation, the method it will apply to assess the hedge effectiveness and to apply that method consistently during the life of the hedging relationship. The method chosen by the entity has to be applied consistently to all similar hedges unless different methods are justified explicitly.

1.9.1 The Critical Terms Method

The “critical terms” method is the simplest way to assess hedge effectiveness prospectively. Under IAS 39, an entity has a valid expectation that the hedge will be highly effective if the terms of the derivative hedge are such that the changes in the derivative’s fair value are expected to completely offset the expected changes in cash flows of the hedged risk on an ongoing basis.

At a minimum, the following critical terms must be the same:

- The notional amount of the derivative is equal to the notional amount of the hedged item.
- The maturity of the derivative equals the maturity of the hedged position.
- The underlying of the derivative matches the underlying hedged risk.
- The fair value of the derivative is zero at inception.

If the critical terms are met, the hedge can be justified as highly effective on a prospective basis. However, even if the critical terms method is used to pass the prospective test, the entity is still required to perform the retrospective effectiveness test. Nevertheless, if the critical terms are the same it is unlikely the retrospective test will fail unless there is a sudden deterioration in the creditworthiness of the derivative counterparty not detected in the assessment of the prospective test.

1.9.2 The Ratio Analysis or Dollar-Offset Method

The most commonly method used in retrospective tests is the “ratio analysis” method, also called the “dollar-offset” method. This method is the simplest and compares changes in fair values of the hedging instrument and hedged item over a given period. The retrospective test is deemed to be highly effective if the ratio is within the range 80 %–125 %.

$$\text{Ratio} = \frac{-\text{Change in fair value of hedging instrument}}{\text{Change in fair value of hedged item}}$$

The main weakness of the ratio analysis method is that the test may fail if fair value changes are relatively small. Consider for example a € 500 million bond hedged with an interest rate swap. A € 100 change in the value of the bond and a € 30 opposite change in the value of the swap will result in a ratio of 30 %. Thus, the hedge will be deemed ineffective even though the net change is insignificant compared to the size of the hedge. The best way to remedy this weakness is to use the cumulative change since the hedge inception in the fair values of both the hedging instrument and the hedged item.

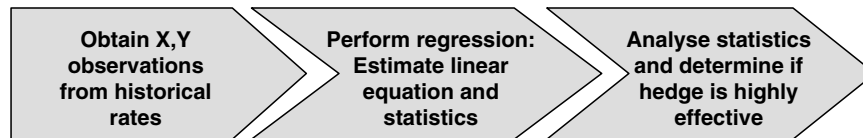


Figure 1.9 Stages of the Regression Analysis Method.

1.9.3 The Regression Analysis Method

The regression analysis method is the most commonly used method in prospective tests, when the critical terms method cannot be used. The idea is to analyse the behaviour of the hedging relationship using historical market rates. Regression analysis is a statistical technique that assesses the level of correlation between one variable (the dependent variable) and one or more other variables (known as independent variables). In the context of hedge effectiveness testing, the primary objective is to determine if changes in fair value of the hedged item and the hedging instrument attributable to a particular risk were highly correlated in the past and, thus, supportive of the assertion that there will be a high degree of offset in changes in fair value of the hedged item and the hedging instrument in the future. The regression analysis is a process that can be divided into three major steps, as shown in Figure 1.9.

The first step in the regression analysis is to obtain the inputs to the analysis: the X and Y observations. Figure 1.10 outlines this process. This step is quite complex and requires a computer program to perform it. The idea is to go back to a specific date (the simulation period start date), assume that the hedge relationship started on that date and observe the behaviour of the hedging relationship using the historical market data of the simulation period. The simulation period ends on a date such that the term of the simulation is equal to the term of the actual hedge. This process is repeated several times.

The second step of the regression analysis is to plot the values of the X and Y variables and to estimate a best “fitting” line. A pictorial representation of the variables in the standard regression equation is illustrated in Figure 1.11.

Regression analysis uses the “least squares” method to fit a line through the set of X and Y observations. This technique determines the slope and intercept of the line that minimises the size of the squared differences between the actual Y observations and the predicted Y values. The linear equation estimated is commonly expressed as:

$$Y = \alpha + \beta * X + \varepsilon, \text{ where}$$

X: Change in fair value (or cash flow) of the hedging instrument attributable to the risk to be hedged

Y: Change in fair value (or cash flow) of the hedged item attributable to the risk to be hedged

α : The intercept (where the line crosses the Y axis)

β : The slope of the line

ε : The random error term

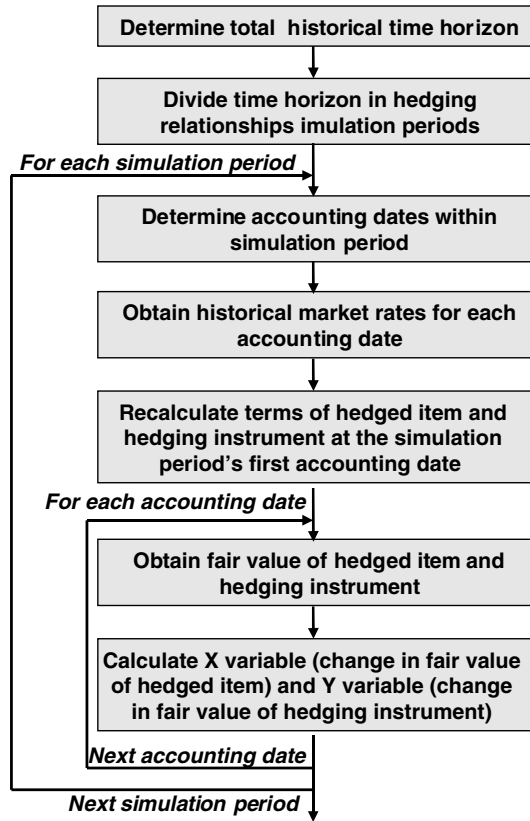


Figure 1.10 Process to Obtain X,Y Observations.

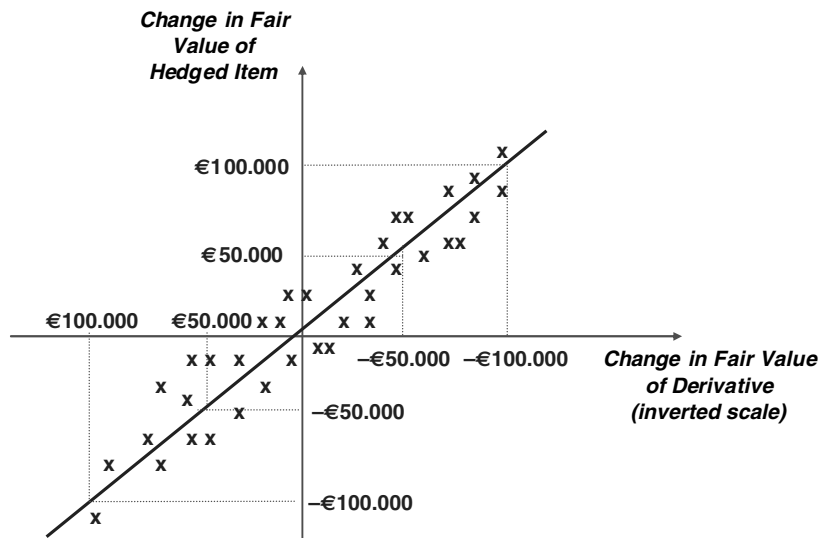


Figure 1.11 Regression Best Fitting Line.

The third step of the regression process is to interpret the statistical results of the regression and determine if the regression suggests that the hedging relationship is expected to be highly effective. All the following three statistics must achieve acceptable levels to provide sufficient evidence for the expectation that the hedge will be highly effective in the future:

- The R-squared. The R-squared must be greater or equal to 80%. R-squared, or coefficient of determination, measures the degree of explanatory power or correlation between the dependent and the independent variables in the regression. The R-squared indicates the proportion of variability in the dependent variable that can be explained by variation in the independent variable. By way of illustration, an R-squared of 95% indicates that 95% of the movement in the dependent variable is “explained” by variation in the independent variable. R-squared can never exceed 100% as it is not possible to explain more than 100% of the movement in the independent variable. The R-squared by itself is an insufficient indicator of hedge performance.
- The slope β of the regression line. Usually a slope between -0.80 and -1.25 is accepted.
- The t-statistic or F-statistic. These two statistics measure whether the regression results are statistically significant. The t-statistic or the F-statistic must be compared to “t-tables” or “F-tables” to determine statistical significance. A 95% or higher confidence level is generally accepted as appropriate for evaluating the statistical validity of the regression.

1.9.4 The Scenario Analysis Method

The scenario analysis method is another method of performing prospective tests. The goal of this method is to reveal the behaviour of changes in fair value of both the hedging item and the hedging instrument under specific scenarios. Each scenario assumes that the risk being hedged will move in a specific way over a certain period of time.

For example, a structured swap hedging the interest rate risk of a floating rate liability may be tested under the following scenarios:

- 1) A parallel shift of +200 basis points (bps) and -200 bps in the interest rate curve.
- 2) A steepening move of 200 bps in the interest rate curve.
- 3) An inversion move of 200 bps in the interest rate curve.

When a reduced number of scenarios are used, the main drawback of the scenario analysis method is the subjectivity in selecting the scenarios. The scenarios chosen may not be followed by the underlying hedged risk once the hedge is in place, and therefore the analysis conclusions may not depict a realistic expectation of hedge effectiveness.

One way to draw meaningful conclusions to the analysis is to test the behaviour of the changes in fair value of both the hedging item and the hedging instrument under a very large number of scenarios of the underlying risk. The Monte Carlo simulation is a tool that provides multiple scenarios by repeatedly estimating thousands of different paths of the risk being hedged, based on the probability distribution of the risk. In our view, a well-performed Monte Carlo simulation can be very appropriate to assess prospective effectiveness, as there is a high likelihood that one of the paths will become the actual path of the underlying risk.

1.9.5 The Volatility Risk Reduction Method (VRR)

The volatility risk reduction method (VRR) compares the risk of the combined position (hedged item plus hedging instrument) to the risk of the hedged item taken separately. In other words, the method assesses how small is the combined position risk relative to the hedged item risk. The VR is calculated by comparing the standard deviation of the combined position to the standard deviation of the hedged item only, as follows:

$$\text{VRR} = \frac{1 - \text{Standard deviation (hedged item + hedge instrument)}}{\text{Standard deviation (Hedged item)}}$$

$$\text{VRR} = \frac{1 - \text{Standard deviation } (X_i + Y_i)}{\text{Standard deviation } (Y_i)}$$

X_i : Change in fair value (or cash flow) of the hedging instrument attributable to the risk to be hedged

Y_i : Change in fair value (or cash flow) of the hedged item attributable to the risk to be hedged

If the VRR statistic is greater than some agreed-upon parameter, say 40 %, then the hedge relationship would pass the effectiveness test. It is considered that a VRR of 40 % is equivalent to a correlation of 80 %. This is the major drawback of the VR method: the threshold to consider high effectiveness may be different to IAS 39's 80 %–125 % benchmark. If, on the other hand, the entity decides to use a minimum VRR of 80 % to conclude that the hedge is expected to be highly effective, it may set a limit too unrealistic to be achieved. This is probably the reason why few entities use the VRR method for testing hedge effectiveness. Telecom Italia was one of the few entities adopting this method (see Figure 1.12).

The VRR method has three main advantages: Firstly, it takes into account the overall volatility. Secondly, it is consistent with the Value at Risk, or VaR approach, a risk measure that is used by a substantial number of entities. Finally, it can be determined with the outcome of only one statistic if the effectiveness test has passed.



“The selected method to test effectiveness, retrospectively and prospectively, of Fair Value Hedge instruments and Cash Flow Hedge instruments is the Volatility Risk Reduction Method (VRR)”

Figure 1.12 Telecom Italia – Annual Report 2005.

The VRR method can be used to determine the notional of the hedging instrument that optimises the effectiveness of the hedging relationship, as follows:

$$\text{NOMINAL}_{\text{INSTRUMENT}} = \text{NOMINAL}_{\text{ITEM}} * (-\rho) * \sigma_{\text{ITEM}} / \sigma_{\text{INSTRUMENT}}$$

Where,

ρ : correlation between the changes in fair value (or cash flow) of the hedged item and the hedging instrument

σ_{ITEM} : Standard deviation of the change in fair value (or cash flow) of the hedged item attributable to the risk to be hedged

$\sigma_{\text{INSTRUMENT}}$: Standard deviation of the change in fair value (or cash flow) of the hedging instrument attributable to the risk to be hedged

1.9.6 The Short-Cut Method for Interest Rate Swaps

The US Gaap's FAS 133 allows a method, called the "short-cut" method, for hedges of interest rate risk involving a recognised interest bearing asset or liability and an interest rate swap. The short-cut method can be applied to both fair value and cash flow hedges of debt. In the case of plain vanilla interest swaps (cross-currency swaps are thus not included), perfect effectiveness can be assumed if certain restrictive requirements are met, and therefore no periodic effectiveness testing is required. For time being, IAS 39 does not allow applying the short-cut method, and instead it allows the critical terms method which in a way can be considered a "light" short-cut method.

There are severe requirements in order to be able to use the short-cut method to make sure that the hedged item and the interest rate swap are perfectly matched and there is no chance of any ineffectiveness. These requirements include, for example, that notionals, maturities, interest periods, currency, and underlying interest rates in the swap and the hedged item coincide.

1.9.7 Concluding Remarks

All the methods demonstrate whether or not the hedging relationship is expected to be (or was) highly effective. However, we think that some methods are preferable to others (see Figure 1.13).

When assessing prospective effectiveness, we prefer the critical terms method as it is a qualitative assessment which is very easy to apply. However, the critical terms method can only be used in limited circumstances, so other methods may need to be considered. Our second favoured method is the regression analysis using a robust set of historical data, as the past has probably witnessed most of the extreme movements that will be experienced in the future.

When assessing retrospective effectiveness, we strongly prefer the ratio analysis method. From an accounting perspective, only the ratio analysis method calculates the amount of ineffectiveness, and thus, the amounts necessary for the accounting entries.

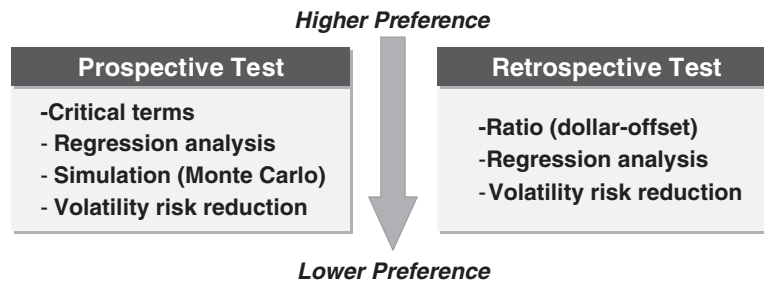


Figure 1.13 Effectiveness Test Methods – Recommendations.

1.10 THE HYPOTHETICAL DERIVATIVE SIMPLIFICATION

The hypothetical derivative approach is a useful simplification when assessing hedge effectiveness. IAS 39 allows for performing effectiveness tests in which the changes in the fair value of the hedged item are modelled as if the hedged item were a hypothetical derivative perfectly matching the terms of the hedged item. The hypothetical derivative is a derivative whose changes in fair value offset perfectly the changes in fair value of the hedged item for variations in the risk being hedged. The changes in the fair value of both the hypothetical derivative and the real derivative (i.e., the hedging instrument) are then used to test the hedge effectiveness. If the hedge is highly effective, then the hedge ineffectiveness is the difference between the two fair value changes.

The use of the hypothetical derivative method can simplify the process of effectiveness testing, particularly of cash flow hedges. For example:

- When hedging a recognised interest bearing debt with an interest rate swap. The change in fair value of the derivative may not sufficiently offset the change in the fair value of the underlying debt, because fair valuing the debt would involve fair valuing the principal repayment. The derivative, of course, has no principal repayment. IAS 39 allows the substitution of the hedged debt by a hypothetical interest rate swap that mirrors all of the terms of the debt, but without the principal repayment cash flow. The use of the hypothetical interest rate swap eliminates the artificial ineffectiveness caused by the principal cash flow.
- When hedging the FX exposure of a highly expected foreign currency cash flow. The hedge effectiveness can be tested assuming a hypothetical forward with the same maturity of the exposure with a forward rate that gives the hypothetical forward an initial zero cost.
- When hedging the FX exposure of a highly expected foreign currency cash flow with options. The hedge effectiveness can be tested assuming a hypothetical option (or combination of options) that replicates exactly the fair value changes of the forecasted cash flow within the range of the risk being hedged.

1.11 EFFECTS OF DERIVATIVES IN THE P&L STATEMENT

Qualifying for hedge accounting does not imply that the hedging strategy will have no volatility impact in earnings. If highly effective, the change in fair value of the hedging instrument is allocated, in accordance with the hedge documentation, into three possible components: the

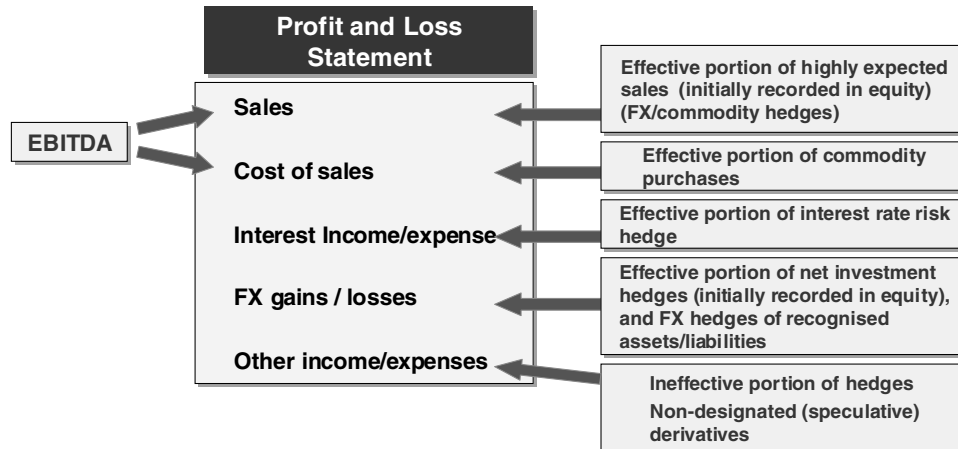


Figure 1.14 Derivatives – Impact in P&L.

“effective” component, the “ineffective” component, and the “excluded” component. IFRS does not prescribe where gains and losses from derivatives should be shown in the P&L statement. The most common practice (see Figure 1.14) is the following:

- The effective portion of the hedge will show up in P&L (after being recycled from equity in case of cash flow and net investment hedges) in the same line item as the hedged item.
- The ineffective portion of the hedge is usually recorded in the “other income and expenses” line of P&L. Sometimes, if the ineffective portion is related to movements in interest rates, entities record the hedge ineffective part in “interest income or expense”.
- The excluded portion of the hedge is usually recorded in the “other income and expenses” line of P&L.