PricewaterhouseCoopers

International Financial Reporting Standards

IAS 39 – Achieving hedge accounting in practice

December 2005

www.pwc.com/ifrs

PricewaterhouseCoopers (www.pwc.com) is the world's largest professional services organisation. Drawing on the knowledge and skills of 125,000 people in 142 countries, we build relationships by providing services based on quality and integrity.

Other publications on IFRS

PricewaterhouseCoopers has published the following publications on International Financial Reporting Standards and corporate practices; they are available from your nearest PricewaterhouseCoopers office.

Acquisitions – Accounting and transparency under IFRS 3

Adopting IFRS – A step-by-step illustration of the transition to IFRS

Applying IFRS – Finding the right solution (available on Comperio IFRS[1])

Financial instruments under IFRS

IFRS Disclosure Checklist 2005

IFRS Measurement Checklist 2005

IFRS Pocket Guide 2005

Illustrative Consolidated Financial Statements 2004 – Banks

Illustrative Consolidated Financial Statements 2004 – Insurance

Illustrative Consolidated Financial Statements 2004 – Investment Property

Illustrative Corporate Consolidated Financial Statements 2005

Illustrative Financial Statements 2004 – Investment Funds

Illustrative Interim Consolidated Financial Statements 2005 – For first-time adopters of IFRS

Impact of improvements, amendments and new standards for continuing users of IFRS

Share-based Payment – A practical guide to applying IFRS 2

SIC-12 and FIN 46 R – The substance of control

Similarities and Differences – A comparison of IFRS and US GAAP

Understanding IAS 29 – Financial Reporting in Hyperinflationary Economies

Audit Committees – Good Practices for Meeting Market Expectations

Building the European Capital Market – Common Principles for a Capital Market

IFRS News – Shedding light on the IASB's activities

Making the Change to International Financial Reporting Standards

Ready to take the plunge? IFRS readiness survey 2004

World Watch – Governance and Corporate Reporting

These publications and the latest news on IFRS can be found at www.pwc.com/ifrs

[1] Comperio IFRS can be purchased from the website – www.pwc.com/ifrs

Contacting PricewaterhouseCoopers

Please contact your local PricewaterhouseCoopers office to discuss how we can help you make the change to International Financial Reporting Standards or with technical queries. See inside back cover for further details of IFRS products and services.

Preface

Many companies have now largely completed their transition to International Financial Reporting Standards (IFRS). One of the most challenging standards for many of those companies to understand and apply is IAS 39 on financial instruments.

IAS 39 is far-reaching – its requirements extend to virtually every area of business. Its application may require changes to systems, processes and documentation and, in some cases, to the way companies view and manage risk. It also requires companies to communicate their results in a new way.

IAS 39 brings greater transparency, in particular in the reporting of derivatives and their use in risk management. The increased transparency and greater number of disclosures will attract more attention and mean closer questioning of underlying risk management strategies – both by boards and by capital market participants.

This does not necessarily mean that risk management strategies will need to change, even if they do not obtain hedge accounting under IAS 39. However, management cannot dismiss the new numbers as merely a technical change in the accounting requirements; such an approach can rebound in uncomfortable questions about what the new numbers reveal. Management also needs to be aware of the impact the change in numbers will have on the market and decide how best to manage the message.

One major challenge has been getting to grips with the new regime. As ever, the devil is in the detail, and IAS 39 certainly has a lot of detail.

The process of applying IAS 39 across the complexity of business has thrown up some surprises. For many, this challenge is only just beginning as they embed IFRS-based numbers in their internal management and reporting processes, rather than creating them as an 'add-on' exercise carried out by head office at the end of the reporting chain.

The challenge is compounded by the fact that IAS 39 has changed significantly in recent years and continues to change. In addition, it is only as IAS 39 is applied widely in practice that certain issues have come to light. Some of these application issues will be addressed formally by the IFRIC. In some cases, companies that thought they had resolved the problems raised by IAS 39 are having to readdress their solutions as practice develops. So, while much experience has been gained, much remains to be learned.

This publication focuses on just one topic in IAS 39: hedge accounting. This is regarded by many as the most complex of all. We answer the questions we are asked most often by companies applying IAS 39, and illustrate how to achieve hedge accounting for a range of hedging strategies commonly used in practice. Our aim is to illuminate one of the least-understood and most-feared aspects of IFRS. Along the way, we hope to demonstrate that companies can achieve hedge accounting more often and with less pain than they may have anticipated.

The strategies and solutions set out in this publication are not exhaustive. They do not illustrate all of the ways to achieve hedge accounting; nor do they answer all of the questions that arise in practice. But the pages that follow will answer many of your questions and show how you can achieve hedge accounting in a wide range of situations.

Pauline Wallace
Financial Instruments Leader,
Accounting Consulting Services,
PricewaterhouseCoopers

How to use this publication

This publication focuses on the issues affecting non-financial entities and, in particular, the treasurers and accountants that work in them. Much of what is covered applies equally to banks and other financial institutions and will be of interest to anyone dealing with hedging issues.

Section 1 contains a high-level summary of the IAS 39 requirements. This sets the scene, particularly for those readers who are less familiar with the standard. It does not cover all matters of detail and should not be regarded as a substitute for referring to IAS 39.

Section 2 covers, in question and answer form, the issues that we are most frequently asked. The questions and answers in this section are relatively brief. An index is provided as a quick reference guide.

Section 3 sets out six detailed illustrations of how to apply hedge accounting to a range of common hedging strategies. We present the mechanics of applying IAS 39's requirements for hedge accounting, starting with the entity's risk management policy, working through the necessary designation and effectiveness testing, and culminating with the accounting entries. A summary of the issues addressed is given at the start of this section.

Contents

Section 1

Hedging theory

Contents

Hedge accounting at a glance

Introduction

Most companies hedge risk – that is, they take actions to mitigate or offset the risks that arise from their activities. For financial risk – such as interest rate risk, currency risk, equity price risk and commodity price risk – such hedging often involves the use of derivatives.

Hedge accounting seeks to reflect the results of hedging activities, in particular hedging using derivatives, by reporting the effects of the derivative and the risk being hedged in the same period. Hedge accounting allows entities to override the normal accounting treatment for derivatives (fair value through profit or loss) or to adjust the carrying value of assets and liabilities. It is therefore a privilege, not a right, and has to be earned. Entities can only obtain the right to achieve hedge accounting if they meet the requirements set out in IAS 39. These requirements are numerous and complex.

What is hedge accounting?

IAS 39 deals with all financial assets and financial liabilities, including derivatives, loans, borrowings, receivables and payables, and equity investments in other entities. It requires all financial assets and financial liabilities to be classified into one of the five categories set out in the table below. These categories determine how the financial instrument is measured subsequent to its recognition (at fair value or amortised cost) and where any changes in fair value are reported (in the income statement or equity).

Category	Measured at	Changes in carrying amount (unless part of a designated hedge relationship)	Impairment test required?
Financial assets and liabilities at fair value through profit or loss (including held-for-trading, those designated to this category at inception and all derivatives)	Fair value	Income statement	No
Loans and receivables (financial assets)	Amortised cost	Income statement	Yes
Held-to-maturity investments (financial assets)	Amortised cost	Income statement	Yes
Available-for-sale financial assets	Fair value	Equity	Yes
Other financial liabilities	Amortised cost	Income statement	N/A

The basic principle in IAS 39 is that all derivatives are carried at fair value with gains and losses in the income statement. However, derivatives are commonly used to hedge recognised assets and liabilities that are measured at cost, amortised cost or at fair value with gains and losses recognised in equity or items such as forecast transactions or firm commitments that are not recognised in the balance sheet. This creates a mismatch in the timing of gain and loss recognition.

Hedge accounting seeks to correct this mismatch by changing the timing of recognition of gains and losses on either the hedged item or the hedging instrument. This avoids much of the volatility that would arise if the derivative gains and losses were recognised in the income statement, as required by normal accounting principles.

What is fair value?

A fundamental principle in IAS 39 is that all derivatives, including those designated as hedging instruments, are measured at fair value. It is therefore important to understand what is meant by 'fair value' and how that amount is determined.

The fair value of a financial asset or liability is the amount for which the financial asset could be exchanged, or the financial liability settled, between knowledgeable, willing parties in an arm's length transaction.

Underlying this definition of fair value is the presumption that an entity is a going concern without any intention or need to liquidate or curtail materially the scale of its operations or to undertake a transaction on adverse terms.

When determining the fair value of a financial instrument, IAS 39 sets out a hierarchy to be applied to the valuation.

- If quoted prices or rates exist in an active market for the instrument, they must be used to determine the fair value. Under IAS 39, the appropriate quoted market price for an asset held is the bid price, and for a liability held, the offer price.
- Where there is no active market available from which to draw quoted prices, a valuation technique should be used. Valuation techniques include:
  - recent market prices or rates where available, adjusted for relevant subsequent events;
  - reference to the current fair value of another instrument that is substantially the same;
  - discounted cash flow analysis;
  - option pricing models; and
  - a standard industry valuation technique that has been demonstrated to provide reliable estimates of prices obtained in actual market transactions.

Fair value should reflect the credit quality of the instrument. For those items traded in an open market, this is likely to be incorporated in the price. For over-the-counter derivatives, the standard approach is to value the derivative using the AA rated curve in the valuation model. Where the credit quality of the derivative counterparty is below AA rated, the market quoted rates used in the valuation model should be adjusted for credit risk. Any changes in the credit quality will need to be considered when re-measuring fair value.

Helpful hint

Where non-optional derivatives (such as swaps, forward contracts and futures) are transacted at current market rates, their initial fair value is nil. If a non-optional derivative is transacted at off market rates, it will have a positive or negative fair value at inception.

Helpful hint

The fair value of most non-optional over-the-counter derivatives will be determined using discounted cash flow analysis, with quoted market rates as an input into the valuation model. The fair value of such a derivative may be expressed as the net present value of the cash flows on the derivative.

Why hedge accounting?

Hedging aims to mitigate the impact of economic risks on an entity's performance. Many businesses will engage in hedging activities to limit exposure to economic risk. This can be as simple as borrowing in a foreign currency where an entity has an anticipated revenue stream in that currency. Many hedging strategies, to reduce economic risk, meet the criteria to qualify for the special accounting treatment identified in IFRS as hedge accounting. Other equally valid economic hedging strategies may not do so.

Hedge accounting modifies the usual accounting treatment of a hedging instrument and/or a hedged item to enable gains and losses on the hedging instrument to be recognised in the income statement in the same period as offsetting losses and gains on the hedged item. This is a matching concept. A pre-requisite for hedge accounting is that a hedging instrument, normally a derivative, is designated as an offset to changes in the fair value or cash flows of a hedged item. 'Hedged items and hedging instruments' on the next page deals with what can qualify as hedged items and hedging instruments.

Strict criteria, including the existence of formal documentation and the achievement of effectiveness tests, must be met at inception and throughout the term of the hedge relationship in order for hedge accounting to be applied. This can be achieved only if entities have appropriate systems and procedures to monitor each hedging relationship.

If one of the criteria for hedge accounting is no longer met (for example, failing the effectiveness test), hedge accounting must be discontinued prospectively. The hedging instrument, normally a derivative, is accounted for as a held-for-trading instrument and measured at fair value with changes in value reported in profit or loss.

Hedged items and hedging instruments

What items can be designated as hedged items?

Hedge accounting requires the item being hedged to be identified and designated at the inception of the hedge. The hedged item can be an asset, liability, firm commitment, highly probable forecast transaction or net investment in a foreign operation, or a group of any such items.

Helpful hint

For a financial asset or financial liability, a portion of the risk or cash flows can be designated as a hedged item. For example, an entity may designate only the LIBOR portion of a debt instrument and not the credit spread. Designating the hedged item in this way can significantly improve hedge effectiveness if the credit risk of the instrument is not hedged. However, the designated portion must be less than the total cash flows on the asset or liability. For example, an entity could not designate a LIBOR portion of a liability whose effective interest rate is below LIBOR, leaving a negative residual portion.

This ability to designate a portion does not extend to hedges of non-financial assets and liabilities (such as inventory). These may be hedged only in their entirety for all risks, or for foreign exchange risk.

The hedged item must expose the entity to risk of changes in fair value or future cash flows that could affect the income statement, currently or in future periods. An entity's own equity instruments may not therefore be designated as a hedged item. The types of risk that are hedged most often include foreign currency risk, interest rate risk, equity price risk, commodity price risk and credit risk. An exposure to general business risks cannot be hedged – including the risk of obsolescence of plant or the risk of unseasonable weather – because these risks cannot be reliably measured. For similar reasons, a commitment to acquire another entity in a business combination cannot be a hedged item, other than for foreign exchange risk.

IAS 39 sets out the following additional restrictions on what may be designated as a hedged item:

- Interest rate risk and prepayment risk of a held-to-maturity investment cannot qualify as the hedged item because the classification of an asset as held to maturity indicates that the entity has the positive intent to hold the instrument to maturity without regard to changes in the fair value or cash flows attributable to changes in interest rates. However, a held-to-maturity investment can be hedged for either foreign currency risk or credit risk.
- A net open position (for example a portfolio including both financial assets and financial liabilities) cannot be designated as a hedged item. However, approximately the same effect can be achieved by designating part of one of the gross positions, equal in amount to the net position.
- An investment in a subsidiary or associate that is consolidated, proportionately consolidated or measured using the equity method, cannot be a hedged item in a fair value hedge.

Some common examples of qualifying hedged items (and the risk being hedged) are:

- fixed or floating rate borrowings (interest rate risk);
- highly probable forecast sales or purchases in a foreign currency (foreign currency risk);
- foreign currency receivables, payables, borrowings and investments (foreign currency risk);
- available-for-sale equity investments (equity price risk);
- loans and receivables (interest rate risk or credit risk); and
- highly probable forecast purchase or sale of commodities (commodity price risk).

What instruments can be designated as hedging instruments?

Hedge accounting requires the hedging instrument to be identified and designated at the inception of the hedge.

Derivatives

Most derivative financial instruments may be designated as hedging instruments provided they are with an external party. Intra-group derivatives do not qualify as a hedging instrument in consolidated financial statements, although they may qualify in the separate financial statements of individual entities in the group. A written option cannot be designated as a hedging instrument because the potential loss on an option that an entity writes could be significantly greater than the potential gain in value of a related hedged item.

A derivative may be designated as a hedging instrument only in its entirety or as a proportion (ie, a percentage of the notional amount). Any other portion of a derivative (for example, the interest rate component of a cross-currency interest rate swap, or the first three years of a five-year derivative) cannot be designated as a hedging instrument. IAS 39 allows two exceptions to this rule: the forward points of a forward contract, and the time value of an option may be excluded from the designation. Excluding these components will improve the effectiveness of the hedge relationship for some hedging strategies.

A single derivative with several risks, such as a cross-currency interest rate swap, can be designated as a hedge of more than one type of risk (for example, interest rate and foreign currency risk), provided the separate risks are clearly identifiable and effectiveness can be measured.

Two or more derivatives (or proportions of them) may be jointly designated as a hedging instrument, including where the risks arising from some derivatives offset those arising from others. This is useful when an entity wants to reduce the amount of a hedge; for example, because of a decrease in the hedged item or because the entity has taken on a new item that partly offsets the previously designated hedged item. The entity may take out a new derivative that partly offsets an existing hedging derivative and jointly designate them both as the hedging instrument.

Helpful hint

An entity may not designate a written option as a hedging instrument. If an entity wants to jointly designate two or more separate derivatives as a hedging instrument, none of the derivatives can be a written option. An entity that manages risk with a portfolio of hedging derivatives must exclude any written options from the portfolio in order to achieve hedge accounting (see Section 2.17).

A derivative need not be designated as a hedging instrument at the time it is first entered into. However, designating a derivative other than at its inception may give rise to some ineffectiveness.

Non-derivatives

Non-derivative financial instruments can be designated as hedging instruments only for foreign currency risk. A foreign currency borrowing, for example, may be designated as a hedge of the currency risk of a net investment in a foreign entity. As with derivatives, the non-derivative must be with an external party in order to qualify; inter-company loans are not permissible hedging instruments in consolidated financial statements.

Helpful hint

In addition to the criteria described above, the following instruments cannot be designated as a hedging instrument:

- Investments in an unquoted equity instrument and derivatives that are linked to and must be settled by delivery of such unquoted equity instruments that are not carried at fair value because their fair value cannot be reliably measured;
- An entity's own equity instruments.

Criteria for obtaining hedge accounting

Hedge accounting is an exception to the usual accounting principles for financial instruments. IAS 39 therefore requires hedge relationships to meet certain criteria in order to qualify for hedge accounting. Management must identify, document and test the effectiveness of those transactions for which it wishes to use hedge accounting. The specific requirements are:

- The hedging relationship must be formally designated and documented at the inception of the hedge. This must include identifying and documenting the risk management objective, the hedged item, the hedging instrument, the nature of the risk being hedged and how the effectiveness of the hedge will be assessed;
- The hedge must be expected to be highly effective at the inception of the hedge;
- The effectiveness of the hedge must be tested regularly throughout its life. Effectiveness must fall within a range of 80%-125% over the life of the hedge. This leaves some scope for small amounts of ineffectiveness, provided that overall effectiveness falls within this range; and
- In the case of a hedge of a forecast transaction, the forecast transaction must be 'highly probable'.

The criteria for hedge accounting are onerous and have systems implications for all entities. Hedge accounting is optional, and management should consider the costs and benefits when deciding whether to use it. Much of the burden and cost associated with using hedge accounting arises from the effectiveness testing requirement. These requirements are considered in the next section.

Hedge effectiveness

Prospective and retrospective effectiveness tests

IAS 39 requires two kinds of effectiveness tests:

- A prospective effectiveness test. This is a forward-looking test of whether a hedging relationship is expected to be highly effective in future periods. It is required, at a minimum, at the inception of the hedge and at the time an entity prepares its interim or annual financial statements.
- A retrospective effectiveness test. This is a backward-looking test of whether a hedging relationship has actually been highly effective in a past period. It is required, at a minimum, at the time an entity prepares its interim or annual financial statements.

Both tests need to be met for hedge accounting to be available.

A hedge is regarded as highly effective only if both of the following conditions are met:

- At the inception of the hedge and in subsequent periods, the hedge is expected to be highly effective in achieving offsetting changes in fair value or cash flows attributable to the hedged risk during the period for which the hedge is designated (prospective effectiveness test); and
- The actual results of the hedge are within a range of 80%-125 % (retrospective effectiveness test).

Hedge ineffectiveness can arise for a number of reasons, including when the hedged item and the hedging instrument:

- are in different currencies;
- have different maturities;
- use different underlying interest or equity indices;
- use commodity prices in different markets;
- are subject to different counter-party risks; or
- where the hedging instrument has a fair value other than zero at inception.

Hedge effectiveness can often be improved by careful designation of the hedge relationship. In a hedge relationship of a financial asset or financial liability, designating the hedged item as a portion of the asset or liability can improve effectiveness. Excluding the forward points or time value respectively from a hedge relationship using a forward contract or an option can improve effectiveness.

When a hedge fails one of the effectiveness tests set out above, hedge accounting is discontinued prospectively. This is considered in detail in ‘Discontinuing hedge accounting on p20.

Even if a hedge passes the effectiveness tests set out above, it may not be perfectly effective. Any ineffectiveness is recognised in the income statement of the current period.

Which methods can be used to assess hedge effectiveness?

IAS 39 does not specify a single method for assessing hedge effectiveness prospectively or retrospectively. The method an entity adopts depends on its risk management strategy and should be included in the documentation at the inception of the hedge. The most common methods used are:

- critical terms comparison;
- dollar offset method; and
- regression analysis.

Each of these methods is described below.

Critical terms comparison

This method consists of comparing the critical terms of the hedging instrument with those of the hedged item. The hedge relationship is expected to be highly effective where all the principal terms of the hedging instrument and the hedged item match exactly – for example, notional and principal amounts, credit risk (AA), term, pricing, re-pricing dates (aligned to test date), timing, quantum and currency of cash flows – and there are no features (such as optionality) that would invalidate an assumption of perfect effectiveness. This method does not require any calculations.

This method may only be used in the limited cases described above, but in such cases it is the simplest way to demonstrate that a hedge is expected to be highly effective (prospective effectiveness testing). A separate assessment is required for the retrospective effectiveness test, as ineffectiveness may arise even when critical terms match; for example, because of a change in the liquidity of a hedging derivative or in the creditworthiness of the derivative counterparty.

Dollar offset method

This is a quantitative method that consists of comparing the change in fair value or cash flows of the hedging instrument with the change in fair value or cash flows of the hedged item attributable to the hedged risk. Depending on the entity's risk management policies, this test can be performed either (1) on a cumulative basis (ie, with the comparison performed from the inception of the hedge), or (2) on a period-by-period basis (ie, with the comparison performed from the last testing date). A hedge is highly effective if the results are within the range of 80%-125%.

The dollar offset method can be performed using different approaches, including the following:

- The hypothetical derivative approach. The hedged risk is modelled as a derivative called a 'hypothetical derivative' (as it does not exist). The hypothetical derivative approach compares the change in the fair value or cash flows of the hedging instrument with the change in the fair value or cash flows of the hypothetical derivative.
- The benchmark rate approach. This is a variant of the hypothetical derivative approach. The benchmark rate is a 'target' rate established for the hedge. In an interest rate hedge of a variable rate debt instrument using an interest rate swap, the benchmark rate is usually the fixed rate of the swap at the inception of the hedge. The benchmark rate approach first identifies the difference between the actual cash flows of the hedging item and the benchmark rate. It then compares the change in the amount or value of this difference with the change in the cash flow or fair value of the hedging instrument (see Section 2, Q&A 3.8).
- The sensitivity analysis approach. This approach is applied to assess the effectiveness of a hedge prospectively. This method consists of measuring the effect of a hypothetical shift in the underlying hedged risk (for example, a 10% shift in the foreign currency exchange rate being hedged) on both the hedging instrument and the hedged item.

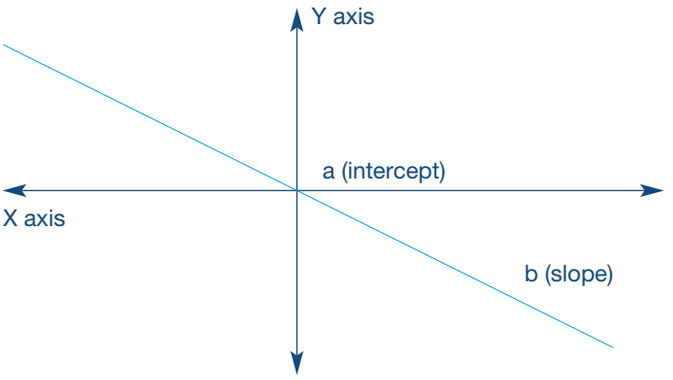
When the dollar offset method is used for assessing retrospectively the effectiveness of a hedge, it has the advantage of determining the amount of ineffectiveness that has occurred and of generating the numbers required for the accounting entries.

Regression analysis

This statistical method investigates the strength of the statistical relationship between the hedged item and the hedging instrument. Regression analysis involves determining a 'line of best fit' and then assessing the 'goodness of fit' of this line. It provides a means of expressing, in a systematic fashion, the extent by which one variable, 'the dependent', will vary with changes in another variable, 'the independent'. In the context of assessing hedge effectiveness, it establishes whether changes in the hedged item and hedging derivative are highly correlated. The independent variable reflects the change in the value of the hedged item, and the dependent variable reflects the change in the value of the hedging instrument.

Regression analysis may be expressed as follows:

Y = a + bX + e



Y = dependent variable: derivative change in fair value

a = y-axis intercept

b = slope of line (coefficient): change in Y/change in X

X = independent variable: hedged item change in value for the designated risk

e = random error

There are three critical test statistics to determine an effective hedge relationship when using regression analysis:

1) Slope of line must be negative: $-0.8 < b < -1.25$;

2) $R^2 > 0.96$; and

3) Statistical validity of the overall regression model (the F-statistic) must be significant.

Slope of line: the slope of the line represents the variance-minimising hedge ratio, as this analysis determines the line of best fit. If the regression analysis is performed using equal units of the hedging instrument and the hedged item, the slope of the line can be used to determine the optimal hedge ratio (ie, the optimal volume of derivative that should be transacted to maximise expected effectiveness). This ratio can then be used by the entity to determine how many units of the hedging instrument it should transact to best mitigate the risk for the particular position being hedged.

Once the hedge ratio has been determined and the hedge transacted, the regression analysis is re-performed using the actual quantities of the hedging instrument and the hedged item. The slope is used when assessing the effectiveness of the actual hedge relationship. The slope must be negative and fall within the range of -0.8 to -1.25. If the slope is positive, there is no hedge relationship (ie, the hedging instrument does not mitigate the hedged risk). If the slope is negative but outside of the range of -0.8 to -1.25, there is some hedge relationship but it is not strong enough to pass the effectiveness test. Hedge accounting is not permitted in either case.

Coefficient of determination (R^2): R^2 indicates the extent of the correlation. Best practice is that it should have a value greater than 0.96, since this is equivalent to a dollar offset of between 80% and 125%. R^2 represents the proportion of variability in the derivative that can be explained by the change in the hedged item. For example, if $R^2 = 0.98$, this means that 98% of the movement in the derivative is explained by the variation in the hedged item (for the designated hedged risk).

F-statistic: the F-statistic is a standard output from the statistical model. It is a measure of the statistical significance of the relationship between the dependent variable and the independent variable (ie, whether the derivative relationship, relative to the hedged risk, is a statistically valid relationship). The better the relationship, the higher the F-statistic will be. The F-statistic varies with the number of data points used. It can be obtained from statistical tables. The F-statistic should be significant at a 95% or greater confidence level.

From an accounting perspective, regression analysis proves whether or not the relationship is sufficiently effective to qualify for hedge accounting. It does not calculate the amount of any ineffectiveness, nor does it provide the numbers necessary for the accounting entries where the analysis demonstrates that the 'highly effective' test has been passed.

The accounting entries are based on changes in the fair values of the derivative and in the hedged risk of the hedged item, both calculated using actual rates at the test date as described in 'Accounting for hedges' on the following page.

Accounting for hedges

Three types of hedge accounting are recognised by IFRS. These are fair value hedges, cash flow hedges and hedges of the net investment in a foreign operation. Each has specific requirements on accounting for the fair value changes.

Fair value hedges

The risk being hedged in a fair value hedge is a change in the fair value of an asset or liability or unrecognised firm commitment, or an identified portion of an asset, liability or firm commitment that is attributable to a particular risk and could affect the income statement.

An example of a fair value hedge is a fixed-rate loan whose interest rate exposure is converted to floating rates with an interest-rate swap. Another example is mitigating a potential fall in the value of an available-for-sale equity investment with an equity forward or option.

Changes in fair value may arise through changes in interest rates (for fixed-rate loans), foreign exchange rates, equity prices or commodity prices. The impact on the income statement can be immediate or expected to happen in future periods. For example, a foreign currency borrowing that is translated at the closing rate would have an immediate impact on the income statement. An available-for-sale equity security, where gains and losses are deferred in equity, would affect the income statement when sold or impaired.

The hedged asset or liability is adjusted for fair value changes attributable to the risk being hedged, and those fair value changes are recognised in the income statement. The hedging instrument is measured at fair value with changes in fair value also recognised in the income statement.

Cash flow hedges

The risk being hedged in a cash flow hedge is the exposure to variability in cash flows that:

1) is attributable to a particular risk associated with a recognised asset or liability, an unrecognised firm commitment (currency risk only), or a highly probable forecast transaction, and
2) could affect the income statement.

Future cash flows might relate to existing assets and liabilities such as future interest payments or receipts on floating rate debt. Future cash flows can also relate to forecast sales or purchases in a foreign currency. Volatility in future cash flows will result from changes in interest rates, exchange rates, equity prices or commodity prices.

Helpful hint
The hedge of a firm commitment is accounted for as a fair value hedge, provided that all the criteria for hedge accounting are met. A hedge of the foreign currency risk associated with firm commitments may be designated as a cash flow hedge or as a fair value hedge, as such a foreign currency risk affects both the cash flows and the fair value of the hedged item.

Examples of common cash flow hedges are an interest-rate swap converting a floating-rate loan to fixed-rate, and a forward foreign exchange contract hedging forecast future sales of inventory in a foreign currency or a forecast future purchase of inventory or equipment in a foreign currency.

Provided the hedge is effective, changes in the fair value of the hedging instrument are initially recognised in a 'hedging reserve' in equity. They are transferred (recycled) to the income statement when the hedged transaction affects profit or loss. The ineffective portion of the change in the fair value of the hedging instrument (if any) is recognised directly in profit or loss.

Helpful hint

The amount recognised in equity in the 'hedging reserve' should be the lower of:

1) the cumulative gain or loss on the hedging instrument from the inception of the hedge, and
2) the cumulative change in the fair value (present value) of the expected cash flows on the hedged item from the inception of the hedge.

If the change in the hedging instrument exceeds the change in the hedged item (sometimes referred to as an 'over-hedge'), ineffectiveness will arise. If the change in the hedging instrument is less than the change in the hedged item (sometimes referred to as an 'under-hedge'), no ineffectiveness will arise. This is different from a fair value hedge, in which ineffectiveness arises on both over- and under-hedges.

If a hedged forecast transaction (such as a hedged future purchase of inventory or equipment) results in the recognition of a non-financial asset or liability, the entity has a choice. It can either:

1) Adjust the carrying amount of the asset or liability by the hedging gain or loss previously deferred in equity (sometimes referred to as 'basis adjustment'). The hedging gain or loss is 'automatically' recycled to the income statement when the hedged asset or liability is depreciated, impaired or sold; or
2) Leave the hedging gain or loss in equity and transfer it to the income statement when the hedged asset or liability affects profit and loss.

The choice should be applied consistently to all such hedges. However, basis adjustment (Approach 1) is not permitted when the hedged forecast transaction results in a financial asset or liability.

Hedges of net investment in a foreign operation

An entity may have overseas subsidiaries, associates, joint ventures or branches ('foreign operations'). It may hedge the currency risk associated with the translation of the net assets of these foreign operations into the group's presentation currency. IAS 39 permits hedge accounting for such a hedge of a net investment in a foreign operation, provided the usual hedging requirements are met.

The amount of a net investment in a foreign operation under IAS 21 is the reporting entity's interest in the net assets of that operation, including any recognised goodwill. Exchange differences arising on the consolidation of these net assets are deferred in equity until the foreign operation is disposed of or liquidated. They are recognised in the income statement on disposal or liquidation as part of the gain or loss on disposal.

A hedge of a net investment with a foreign currency borrowing or a derivative can qualify for hedge accounting. The foreign currency gains or losses on the hedging instrument are deferred in equity, to the extent the hedge is effective, until the subsidiary is disposed of or liquidated, when they become part of the gain or loss on disposal.

The hedging instrument in a net investment hedge will almost always need to be denominated in the foreign operation's functional currency in order to be effective.

Discontinuing hedge accounting

Hedge accounting ceases prospectively when any of the following occurs:

- a hedge fails an effectiveness test;
- the hedged item is sold or settled;
- the hedging instrument is sold, terminated or exercised;
- management decides to revoke the designation; or
- for a hedge of a forecast transaction, the forecast transaction is no longer highly probable.

If a hedge relationship fails an effectiveness test, hedge accounting ceases from the last date on which the hedge was demonstrated to be effective, which will usually be the beginning of the period in which the hedge fails the effectiveness test. If the entity determines the event or change in circumstances that caused the hedging relationship to fail the effectiveness criteria and demonstrates that the hedge was effective before the event or change in circumstances occurred, hedge accounting ceases from the date of the event or change in circumstances. All future fair value changes in a derivative hedging instrument are recognised in the income statement. Future changes in the fair value of the hedged item, and any non-derivative hedging instruments, are accounted for as they would be without hedge accounting. For example, if the hedged item is an available-for-sale asset, future changes in fair value other than impairment and currency differences on monetary items are recognised in equity; if the hedged item is a loan or receivable, future changes in fair value other than impairment are not recognised unless the item is sold.

IAS 39 prescribes how any existing hedge accounting gains/losses already recorded in previous reporting periods should be treated. The objective is to ensure that hedging gains and losses that arose in a period when hedge accounting was used continue to be matched with the hedged item. In particular:

- In the case of a fair value hedge, the carrying value of the hedged item will have been adjusted for changes in the hedged risk. If the hedged item is a debt instrument, the accumulated hedging adjustment is amortised over the remaining life of the instrument by recalculating the effective interest rate. If the hedged item is an equity instrument classified as available for sale, the accumulated hedging adjustment is not amortised but will affect the amount of any impairment loss, or gain or loss on sale.
- In the case of a cash flow hedge, gains or losses arising in the effective period of a cash flow hedge will have been recognised in equity. These gains remain in equity until the related cash flows occur. Where a forecast transaction is no longer highly probable but still expected to occur, hedging gains and losses previously deferred in equity remain in equity until the transaction affects profit or loss. Once a forecast transaction is no longer expected to occur, any gain or loss is released immediately to the income statement.

Presentation in the income statement of gains and losses from derivatives

The standards are not prescriptive about where gains and losses from derivatives should be shown in the income statement. However, they do set out some guiding principles.

IAS 1 describes the line items required to be included, as a minimum, on the face of the income statement. Additional line items may be presented to comply with other standards or to present fairly an entity's financial performance.

The income statement presentation of gains and losses from hedging instruments should be consistent with the entity's risk management strategy and accounting policies. Best practice is that:

- Gains and losses from designated and effective hedging instruments are presented in the same line item as the gains and losses from hedged items. Ineffectiveness is presented separately, for example, in other operating income and expense.
- Gains and losses on derivatives held for trading (including both derivatives that are not designated as hedging instruments and those that do not qualify for hedge accounting, for example because they fail an effectiveness test) are not presented as part of the entity's revenue, cost of sales or specific operating expenses. They are usually presented either in a separate line item in the income statement (if significant) or within other operating income and expense.

IAS 32 and its successor, IFRS 7, require extensive and detailed disclosures when hedge accounting is used.

Section 2

Frequently asked questions

Introduction

This section sets out, in question and answer format, the questions we are most frequently asked when companies are seeking to achieve hedge accounting under IAS 39. This section is designed as a quick reference guide for those seeking a short answer on a particular point. The questions and answers in this section are relatively brief; many of the issues are covered in further detail in the illustrations in Section 3.

We have organised the questions and answers under individual topics. Where questions cover more than one point they have been classified under the main topic covered. An index of all the questions and answers is provided on the following pages.

Warning: hedge accounting can be obtained only if all of the conditions in IAS 39 are met. While individual questions and answers may focus on only one aspect of a hedge relationship, this does not imply that the other requirements are unimportant.

Contents

1 Hedged item and hedged risk

1.1 Net position

Question

Can a net position be designated as a hedged item?

Background

Company K, whose functional currency is the euro, has a global treasury centre that is responsible for collecting and assessing the group's foreign currency risks and offsetting the net position using derivative instruments with an external party. For example, it forecasts sales of USD 2.5 million and purchases of USD 1 million in June and has therefore entered into a forward contract to sell USD 1.5 million against euros in that month.

Solution

No. IAS 39.84 prohibits the designation of a net position as the hedged item. It is possible to achieve a similar effect by designating the hedged item as part of one of the gross positions – ie, as one or more individual assets, liabilities or forecast transactions that are equal in amount to the net position (IAS 39.AG.101). Company K can therefore designate the forward contract as a hedge of highly probable forecast sales of USD 1.5 million in June.

1.2 Held-to-maturity investments

Question

Can an investment classified as held to maturity be designated as a hedged item for interest rate risk?

Background

Company L invests in a fixed-rate bond denominated in a foreign currency. It classifies the investment as held to maturity. The entity also enters into a swap under which it pays fixed and receives floating interest rates in the same currency, in order to offset its exposure to fair value interest rate risk on the bond.

Solution

No. IAS 39.79 prohibits hedge accounting for a hedge of the interest-rate risk on a held-to-maturity investment. This is because the fair value changes that arise from interest-rate movements on a held-to-maturity investment will not have an impact on the income statement, as the entity has committed itself to retaining the investment until maturity. Prepayment risk is viewed as a sub-set of interest-rate risk, as prepayment rates are often influenced by interest rates, and therefore any prepayment risk in a held-to-maturity investment also cannot be hedged.

A held-to-maturity investment may be designated as a hedged item with respect to foreign exchange and credit risk.

1.3
Forecast purchase of an item of equipment

Question

Can a forecast purchase of a machine (that will be classified as property, plant and equipment) be designated as a hedged item?

Background

Company M is planning to buy a large piece of machinery from a foreign supplier. The forecast purchase will be denominated in a foreign currency, so the company enters into a forward contract to hedge the risk of movements in the relevant foreign exchange rate. Can this forecast purchase be designated as the hedged item in a cash flow hedge of foreign currency risk?

Solution

Yes, provided that the forecast purchase is highly probable and the other conditions for hedge accounting are met. The forecast purchase can be designated as a hedged item in a cash flow hedge of foreign currency risk, as movements in exchange rates will affect the amount paid for the machine and will therefore affect profit or loss as the machine is depreciated.

1.4
Portfolio of similar items

Question

Can a portfolio of similar items be designated as a hedged item?

Background

Company N has a large number of individually small receivables denominated in the same currency and wants to hedge them using a single derivative instrument.

Solution

Yes. A group of similar items, such as a group of receivables denominated in the same currency, may be designated as the hedged item provided that the fair value movements of each individual item that are attributable to the hedged risk are expected to be approximately proportional to the fair value movements of the group of assets that are attributable to the hedged risk (IAS 39.83).

When a group of similar items is designated, the hedge is tested for effectiveness on a group basis. Prepayments or impairment may affect the effectiveness of the hedge.

1.5
Portfolio of different available-for-sale equity investments

Question

Can management designate a portfolio of different available-for-sale equity investments as a hedged item in a hedge of equity price risk?

Background

Company O acquires a portfolio of French CAC 40 shares, in the same proportions as are used to calculate the French CAC 40 index. Management classifies the investments as available-for-sale.

At the same time, management purchases a number of CAC 40 put options to hedge changes in the fair value of the portfolio. The options constitute a near perfect hedge of decreases in the value of the portfolio, in economic terms. Any decline in the portfolio's fair value below the options' strike price will be offset by an increase in the intrinsic value of the options.

Solution

No. Management cannot designate the portfolio of shares as the hedged item in a hedge of equity price risk.

The hedged risk is the total change in value of each share in the portfolio. Some share prices may increase and others may decrease. The relationship will not qualify for hedge accounting because changes in individual prices are not 'approximately proportional' to the overall change in the fair value of the portfolio (IAS 39.83).

Management should continue to defer the changes in the fair value of the shares in equity (unless impaired) and should recognise the changes in the fair value of the options in the income statement.

Management may alternatively choose to designate the shares on acquisition as at fair value through profit or loss, as doing so would significantly reduce an accounting mismatch.

1.6
Hedging of foreign currency risk for available-for-sale investments

Question

Can an entity hedge the currency risk of an available-for-sale equity investment using a forward contract?

Background

Company E, whose functional currency is the Swiss franc, buys an equity investment in Company Y, which it classifies as available-for-sale. Company Y's shares are listed both in the US in US dollars and in Switzerland in Swiss francs. Dividends are paid in US dollars. The transaction was carried out on the US market and the shares are held in a custodian account in the US.

Management enters into a forward contract to hedge the currency risk of the investment and wants to apply hedge accounting (See Q&A 4.1)

Solution

It depends. The currency risk of an available-for-sale investment can be hedged if there is a clear and identifiable exposure to changes in the foreign rates.

Company E, however, cannot apply hedge accounting for the investment in Company Y, as it is also traded in the functional currency of Company E (IAS 39.IG.F2.19).

1.7
Entity's own shares

Question

Can an entity's own shares be designated as a hedged item?

Background

Company P has repurchased some of its own shares (treasury shares). It plans to resell the shares in the market in six months to finance a new investment. The entity purchases a cash-settled put option on its own shares to protect itself against the risk that the proceeds from the future sale of the treasury shares will decrease because of a fall in the share price.

Solution

No. A forecast transaction qualifies as a hedged item only if it exposes the entity to a particular risk that can affect profit or loss (IAS 39.86). A purchase, sale, issue or cancellation of an entity's own equity instruments is recorded in equity and hence does not affect profit or loss (ie, no gain or loss is reported in the income statement).

1.8
Intra-group forecast transactions

Question

Can intra-group forecast transactions be designated as a hedged item in the consolidated accounts?

Background

Group X comprises a French parent, whose functional currency is the euro, and a number of subsidiaries. A UK subsidiary whose functional currency is the British pound is proposing to hedge the following transactions:

(a) Highly probable forecast sales of inventory to a US sister company whose functional currency is the US dollar. The sister company markets and sells the inventory to external customers in the US. The intra-group sales are denominated in US dollars and the UK subsidiary proposes to hedge the associated currency risk with a USD/GBP forward contract.

(b) Highly probable forecast payments of royalties to its French parent company, whose functional currency is the euro. The royalty payments are for the use of a patent, owned by the parent, in the subsidiary's production process. The intra-group royalties are denominated in euros, and the UK subsidiary proposes to hedge the associated currency risk with a EUR/GBP forward contract.

Can these forecast transactions be designated as hedged items in a cash flow hedge in the group's consolidated accounts?

Solution

(a) Yes. The forecast intra-group sales of inventory that will be sold to external parties can be the hedged item in a cash flow hedge. The transaction is denominated in a currency (USD) other than the functional currency of the entity entering into it (GBP); and the onward sale of the inventory to external parties means that the foreign currency risk arising from the intra-group sale will affect consolidated profit or loss. The gain or loss deferred in equity on the derivative is reclassified to the consolidated income statement when the external sale is recognised.

(b) No. The forecast intra-group royalty payments cannot be designated as a hedged item on consolidation unless a clear link to an external transaction can be made. Although the transaction is denominated in a currency (EUR) other than the functional currency of the entity entering into it (GBP), it does not result in a foreign currency risk that will affect consolidated profit or loss (IAS 39.80 and AG.99A as amended in April 2005).

1.9
Intra-group receivables and payables

Question

Can intra-group receivables or payables be designated as hedged items in the consolidated financial statements?

Background

Subsidiary A, whose functional currency is the euro, has an intra-group receivable from Subsidiary B, whose functional currency is the Swiss franc. The receivable is denominated in Swiss francs, and Subsidiary A enters into a forward contract with an external party to hedge the resulting foreign currency risk.

In its separate financial statements, Subsidiary A translates the receivable into euros using the spot rate at the balance sheet date, and recognises a foreign currency gain or loss in accordance with IAS 21. Subsidiary B, in its separate financial statements, records the payable to Subsidiary A in its own functional currency and does not recognise any gain or loss. On consolidation, the gain or loss recognised by Subsidiary A is translated into the group's presentation currency and is recognised in the group's income statement. There is no offsetting loss or gain arising from Subsidiary B.

Solution

Yes. As the receivable gives rise to an exposure to foreign currency gains or losses that is not fully eliminated on consolidation, IAS 39.80 allows the entity to designate the intra-group receivable as the hedged item in consolidated accounts.

1.10
Inter-company dividends denominated in a foreign currency

Question

Can a parent entity designate forecast inter-company dividends as the hedged item in consolidated financial statements?

Background

Company Q, whose functional currency is the British pound, has a subsidiary in the US, whose functional currency is the US dollar. On 1 January 20X3, Company Q's management forecasts that it will receive a USD 100m dividend from its US subsidiary in six months. The inter-company dividend was declared on 30 April 20X3, at which time both Company Q and its subsidiary recognised the dividend as a receivable or payable respectively.

The foreign currency dividend receivable in Company Q's balance sheet was retranslated at the reporting period end, 31 May 20X3, resulting in a foreign currency loss. The subsidiary paid the dividend on 30 June 20X3.

Company Q's management designated the highly probable inter-company dividend as the hedged item in a cash flow hedge from 1 January 20X3 to 30 June 20X3, in order to hedge the exposure to changes in the GBP/USD exchange rate.

Solution

No. Inter-company dividends are not foreign currency transactions that can be hedged, because they do not affect the consolidated income statement. They are distributions of earnings.

The foreign currency exposure arising from the receivable in US dollars recognised on 30 April 20X3 can be designated as a hedged item because it gives rise to foreign currency gains and losses that do not fully eliminate on consolidation and therefore affect the consolidated income statement. Company Q's management can therefore apply hedge accounting from that date until 30 June 20X3 when the cash is received.

1.11
Forecast cash flows in associates

Question

Can a forecast cash flow of an associate be designated as a hedged item in consolidated financial statements?

Background

Company R has a 25% investment in a foreign entity over which it has significant influence. It therefore accounts for the foreign entity as an associate using the equity method (IAS 28). The associate's functional currency, in which most of its sales and costs are denominated, differs from the entity's functional currency. In Company R's consolidated financial statements its share of the associate's net results will fluctuate with the changes in the exchange rate. Can the entity designate a portion of the forecast cash flows in the associate as the hedged item in a hedge of foreign currency risk?

Solution

No. Under the functional currency concept in IAS 21, a cash flow that is denominated in the functional currency of an associate does not give rise to a foreign currency (transaction) exposure for the associate in its separate financial statements. The variability in Company R's share of its associate's net results arises only in its consolidated financial statements and arises from the translation of the associate's financial statements into the group's presentation currency. This is a translation rather than a transaction exposure. IAS 39 permits an entity to apply hedge accounting to a hedge of the translation risk on its existing net investment, but this does not extend to forecast future cash flows or profits of the investee.

1.12
Shares in subsidiaries, associates or joint ventures

Question

Can a parent's equity investment in a subsidiary, associate or joint venture be designated as a hedged item in its separate financial statements?

Background

Company S, the parent company of a group, has entered into a foreign currency forward contract to hedge the net investment in one of its foreign subsidiaries. It applies net investment hedge accounting in its consolidated financial statements. Management would also like to designate its equity investment in the subsidiary as the hedged item in Company S's separate financial statements.

Solution

Yes. Although net investment hedge accounting can only be applied in the consolidated financial statements, Company S can designate its equity investment in the foreign subsidiary as the hedged item in a fair value hedge of the currency risk associated with the shares, provided that all of the conditions for hedge accounting are met. These conditions include the need to designate a clear and identifiable exposure to changes in foreign exchange rates in the shares held (IAS 39.IG.F2.19).

Equity investments in associates and joint ventures can similarly be designated as hedged items in fair value hedges in the investee's separate financial statements.

1.13
Assessment of whether a transaction is 'highly probable'

Question

How does an entity assess whether a forecast transaction is 'highly probable'?

Background

Company X hedges both similar ongoing forecast transactions (such as forecast sales in foreign currencies) and individual one-off forecast transactions (such as the forecast issuance of a debt). Management wants to apply hedge accounting to both kinds of hedge. To achieve hedge accounting, IAS 39.88(c) requires a forecast transaction that is the subject of a cash flow hedge to be highly probable.

Solution

The assessment of whether a forecast transaction is highly probable should be based on observable data.

Examples of facts that can be taken into consideration for a hedge of ongoing similar transactions include a history of similar transactions (for example, there has been no individual month in which sales in a specified foreign currency have been less than x million), the current size of order books and economic data relevant to the period of the forecast transaction.

In general, the further into the future the forecast transaction is expected to occur, the more difficult it will be to demonstrate that the transaction is highly probable. For example, the proportion of forecast future sales that are highly probable may be relatively high in the short term but decrease as the period to the future sales increases. A sales budget is normally not persuasive evidence of a forecast transaction being highly probable unless there are other supporting circumstances, such as the entity having a history of always selling at least the budgeted amount where there have been no recent changes to the budgeting process.

Where the forecast transaction is a single, one-off transaction (such as the forecast issuance of debt), the assessment of whether the transaction is highly probable will need to address other factors such as the availability of alternative sources of finance, the status of negotiations with the counter-party and the business purpose for which the finance is being raised.

1.14
Hedging cash flows in specific time buckets

Question

Can management designate forecast sales as the hedged item if it is unable to link the forecast future cash flows to specific individual sales transactions?

Background

Company T manufactures and sells ice cream. Its functional currency is the euro, and 30% of its sales are made in the UK and denominated in British pounds.

Management forecasts highly probable sales in the UK for the next summer season on a monthly basis. Using these forecasts, the entity enters into forward contracts to sell GBP in exchange for euros.

Due to the nature of its business, Company T is not able to forecast or track individual sales transactions.

Solution

Yes. Management can designate the forecast sales as the hedged item.

Management should designate the hedged item as the first GBP X million of highly probable cash flows in specific time buckets (for example, in each month). To qualify for hedge accounting, the designation must be sufficiently specific to ensure that when a forecasted transaction occurs, it is possible to determine objectively whether that transaction is or is not one that is hedged.

If the hedged cash flows do not occur in the designated time bucket, management cannot continue to defer the related hedging gains/losses in equity and must transfer them to the income statement.

1.15
Hedging share price risk of an available-for-sale investment

Question

How should management designate a hedge of decreases in the share price of an available-for-sale equity investment where the hedging instrument is a purchased option?

Background

Company U holds shares in a listed entity, which it purchased some time ago. The shares are classified as available for sale. The acquisition cost of the shares was USD 80. To hedge against a decrease in the share price, management purchases an option to sell the shares, at any time in the next two years, for today's market price of USD 100. The cost of the option is USD 10.

Management designates the option as a hedge of the risk that the price of the shares will decrease below 100 USD.

During the first year, the share price fluctuates significantly. At the year end, the share price is USD 90 and the option's fair value has increased to USD 17. Management determines that the fall in the shares' value does not reflect an impairment, as it does not represent a significant or prolonged decline below its cost.

Six months later the share price has fallen to USD 60 and the fair value of the option is USD 43; management concludes that the investment is impaired.

Solution

In order to maximise hedge effectiveness, Company U's management should designate:

(a) only changes in the intrinsic value of the option as part of the hedge relationship; and

(b) the hedged risk as being decreases in the share price below USD 100, rather than all changes in the share price.

As the time value of the option is not designated as part of the hedge relationship, it is measured at fair value with changes in value recorded in the income statement.

If all criteria for hedge accounting are met, management will recognise the gain on the derivative in the income statement together with the corresponding part of loss on the available-for-sale investment, which would otherwise be deferred in equity (ie, the loss of USD 10 in the first year and USD 10 of the loss of USD 30 in the next six months).

1.16
Translation risk vs. transaction risk

Question

If the functional currency of a foreign subsidiary differs from that of the parent, can the parent hedge the subsidiary's foreign currency forecast transactions into the parent's functional currency?

Background

Company V's functional currency is the euro. It has a US subsidiary, Subsidiary C, whose functional currency is the US dollar. Subsidiary C has highly probable forecast sales denominated in Japanese yen.

Company V has hedged Subsidiary C's forecast Japanese yen inflows using external foreign currency forward contracts (Japanese yen/EUR) to hedge the exposure back into euros (Company V's functional currency). Company V's management intends to designate, in the consolidated financial statements, the forward contracts as hedging instruments in a cash flow hedge of the forecast transactions denominated in Japanese yen.

Solution

No. The Japanese yen/EUR forward contracts taken out by Company V do not qualify for cash flow hedge accounting on consolidation.

There is no Japanese yen/EUR cash flow exposure in the consolidated income statement. The income statement will be exposed to Japanese yen/USD movements, as Subsidiary C will translate its Japanese yen sales into its own functional currency (USD). The exposure to movements in USD/EUR constitutes a translation risk rather than a cash flow exposure and therefore cannot be the subject of a cash flow hedge.

It is possible for the subsidiary C to use a yen/USD forward contract to designate a cash flow hedge of its yen/USD transaction exposure. Parent Company V can designate the net investment in Subsidiary C using a EUR/USD forward. This would, however, not include the forecast transaction.

1.17
What may be included in a net investment and qualify as a hedged item

Question

What amount of a net investment in a foreign operation qualifies as a hedged item?

Background

Company W, whose functional currency is the euro, has a wholly-owned US subsidiary, Subsidiary D, whose functional currency is US dollars. The carrying value of D's net assets is USD 70 million.

In addition, Subsidiary D has an inter-company borrowing of USD 10 million from Company W, which is not expected to be settled in the foreseeable future.

Subsidary D's management predicts that it is highly probable that it will:

(a) earn a profit of at least USD 8 million; and

(b) pay a dividend of USD 5 million to Company W.

Solution

Company W may hedge USD 80 million of its net investment in Subsidiary D at the date of hedge designation. The USD 80m is represented by:

(a) USD 70 million equity investment; and

(b) USD 10 million inter-company loan. This may be designated as a hedged item because it is not expected to be settled in the foreseeable future and therefore, in substance, forms part of an entity's net investment (IAS 21.15).

Subsidary D's forecast profits (USD 8 million) and inter-company dividend payments (USD 5 million) cannot be included in the hedged item because they do not form part of entity X's existing net investment. The inter-company dividend payments (USD 5 million) do not qualify as hedged items because they will not affect reported net profit or loss (IAS 39.86). As the profits are earned, they increase the net investment and can then be included in the hedged item. When dividends are paid the amount covered in the net investment hedge may need to be reduced correspondingly.

1.18
De-designation and re-designation of a cash flow hedge relationship

Question

Can management periodically de-designate and re-designate a cash flow hedge relationship?

Background

Company X has highly probable forecast sales denominated in a foreign currency.

X re-assesses periodically the proportion of the exposure that should be hedged in accordance with its strategy. It decides to reduce the hedged level from 70% to 40% of the forecast sales. The hedging instruments are foreign currency forward contracts.

Following this change to its strategy, Company X's management:

(a) de-designates the existing hedge relationship;

(b) enters into a new forward contract with the same maturity as the original hedge, partially offsetting the original hedging instrument, so that the combination of the two forward contracts reflects its new position (ie, a hedge of 40% of forecast sales); and

(c) re-designates a new hedge relationship in which the hedging instrument is a combination of the previous hedging instrument and the new forward contract.

Solution

Yes. Company X's management can periodically de-designate and re-designate the cash flow hedge relationship.

The mechanism of de-designation and re-designation must be properly documented and be consistent with the entity's risk management policy.

The accounting treatment at the date of de-designation and re-designation is as follows:

(a) Cash flow hedge accounting may be applied to the original hedge relationship until the date of its de-designation. The change in the fair value of the original hedging instrument that was recognised in equity remains in equity as the forecast transaction is still expected to occur; and

(b) Cash flow hedge accounting may be applied to the second hedge relationship starting from the date of re-designation.

2 Hedging instruments

2.1 Non-derivative hedging instrument

Question

In what circumstances can a non-derivative financial instrument be designated as a hedging instrument?

Background

Company A, the French parent company of a group that presents its consolidated financial statements in euros, has a euro functional currency. Company A's management wishes to designate the following non-derivative instruments issued by the parent company as hedges in its consolidated financial statements:

(a) a US dollar borrowing as a hedge of a net investment in a US operating subsidiary;

(b) a Swiss franc borrowing as a hedge of a highly probable future Swiss franc revenue stream arising in a German operating subsidiary with a euro functional currency; and

(c) a euro fixed rate bond as a hedge of a euro available-for-sale fixed rate debt investment that is measured at fair value.

Solution

Management can designate the foreign currency borrowings in cases (a) and (b) as hedging instruments, as a non-derivative instrument can be designated as a hedging instrument in a hedge of a foreign exchange risk (IAS 39.72). In (a), the borrowing creates an exposure to the group presentation currency, which offsets the foreign currency exposure in the net investment. In (b) the borrowing creates an exposure to the functional currency of the German subsidiary, which offsets the foreign currency exposure on the highly probable Swiss franc revenue stream.

Management cannot designate the bond in situation (c) as a hedging instrument. This is because a non-derivative instrument cannot be designated as a hedge of a risk other than foreign exchange risk (such as interest rate risk) (IAS 39.72). The issued bond will be measured at amortised cost; the investment will be measured at fair value with interest income recognised on an effective interest rate method in profit and loss and other fair value gains and losses recognised in equity.

2.2 Inter-company loans as hedging instruments

Question

Can an inter-company loan be designated as a hedging instrument at group level?

Background

A Swiss group, whose presentation currency is the Swiss franc (CHF), has a substantial investment in Subsidiary A, whose functional currency is the USD. The parent company, whose functional currency is the CHF, also has an inter-company borrowing denominated in USD from subsidiary B (whose functional currency is the USD). Although the inter-company borrowing will be eliminated on consolidation, the currency gain or loss that arises in the parent company from translating the borrowing into CHF will affect the consolidated income statement. The entity wants to designate the inter-company borrowing as the hedging instrument in a hedge of the net investment in subsidiary A.

Solution

No. IAS 39.73 states that only instruments that involve a party external to the group can be designated as a hedging instrument. IAS 39.73 applies irrespective of whether a proposed hedging instrument, such as an inter-company borrowing, will affect consolidated profit or loss.

2.3
Using a borrowing in one currency to hedge a net investment in a different currency

Question

Can management designate a borrowing denominated in one currency as a hedge of a net investment in another currency?

Background

Company B has a net investment in a Hong Kong subsidiary, whose functional currency is Hong Kong dollars. As the HKD is pegged against the US dollar, management wishes to designate a USD borrowing as a hedging instrument in a hedge of this net investment.

Solution

It depends. There is no specific prohibition on designating a borrowing in one currency as a hedge of a net investment in another. However, hedge accounting may be used only if the hedge is expected to be highly effective and actual results are in the range of 80%-125%. This requirement will not be met for most currency pairs, in which case hedge accounting cannot be used.

Hedge effectiveness may be achieved if there is high correlation between two currencies (for example, if these are formally pegged to each other) and it is reasonable to assume that this correlation will continue. However, unless the currencies are perfectly correlated, some ineffectiveness will arise. In this case, it is likely that the hedge will be effective as long as the peg between HKD and USD is not changed.

2.4
Internal derivatives as hedging instruments

Question

Can an internal derivative be designated as a hedging instrument at the group level?

Background

Company C uses internal derivative contracts to transfer risk exposures between different legal entities within the group or between divisions within a single legal entity. For example, a subsidiary's foreign exchange risk may be transferred to the central treasury unit through an internal foreign exchange forward contract.

Solution

No, only instruments external to the reporting entity can be designated as hedging instruments (IAS 39.73). Internal derivatives can be used to document the link between an external hedging instrument (held, for example, by the parent company or a treasury unit) and a hedged item in another group entity, such as an operating subsidiary, provided that all gains and losses arising on the internal derivative are eliminated on consolidation (IAS 39 IG F1.6).

2.5
Combinations of derivatives and non-derivatives as hedging instruments

Question

Can a combination of a derivative and a non-derivative be designated as the hedging instrument?

Background

Company D, whose functional currency is the Russian rouble, has a highly probable forecast future purchase of raw materials denominated in US dollars. As the liquidity of the rouble/USD forward market for the maturity is thin, the entity wishes to use a combination of an investment in a zero-coupon euro bond that matures on the date of the forecast transaction, and a EUR/USD foreign currency forward contract to hedge the forecast purchase.

Solution

Yes. IAS 39.77 specifically states that a combination of a derivative instrument and a non-derivative instrument can be designated as a hedging instrument, provided that the derivative is not a written option. However, the non-derivative can only be used to hedge foreign currency exposure (IAS 39.72).

2.6
Pre-existing derivatives as hedging instruments

Question

Can a pre-existing derivative, which the entity has held for some time, be designated as the hedging instrument in a new hedge relationship?

Background

Company E has a portfolio of foreign exchange derivatives that it classifies as held for trading. The company enters into a new firm commitment that exposes it to foreign currency risk. Management wants to designate one of its existing trading derivatives as a hedge of this exposure.

Solution

Yes, provided that the hedge is expected to be highly effective. Hedge accounting for the derivative is applied from the inception of the hedge relationship.

2.7
Derivatives on an entity's own equity instruments

Question

Can a derivative on an entity's own equity instruments be designated as a hedging instrument?

Background

Company F has several share-based compensation schemes for employees and is also using share-based payments to pay consultants providing services to the entity. Company F is exposed to movements in the fair value of its own equity instruments, either through cash payments based on the fair value movements or through being required to issue (or alternatively acquire and deliver) its own equity instruments to the employee or consultant.

Management of Company F considers entering into derivative contracts, for example an option to purchase its own ordinary shares at a fixed price, to hedge the risk.

Solution

It depends on both the classification of the derivative and the accounting treatment of the item being hedged.

If the derivative is classified as an equity instrument, then it may not be designated as a hedging instrument. For example, an option for the entity to purchase a fixed number of its own shares for a fixed price with no cash settlement alternative is an equity instrument under IAS 32 and cannot therefore be designated as a hedging instrument. Conversely, a net cash settled option is classified and accounted for as a derivative and may be designated as a hedging instrument, provided the conditions in the next paragraph are met.

For a hedge to qualify for hedge accounting, the hedged item must expose the entity to a risk that could affect profit or loss. For example, if the hedged item is a forecast future repurchase of its own shares by the entity, it will never have an impact on the income statement and cannot qualify for hedge accounting (IAS 39.IG.F2.7). If the hedged item is a cash-settled share-based payment, changes in the fair value of the hedged item will have an impact on the income statement and can therefore qualify for hedge accounting (IFRS 2.30) if all other requirements for hedge accounting are fulfilled, including that it is highly probable that some payment will be made on the cash-settled share-based plan.

2.8
Forward points of forward contracts and time value of options

Question

Can the forward points of a forward contract or the time value of an option be excluded from the hedge designation?

Background

Company G uses forward contracts and options to hedge highly probable cash flows from sales in US dollars. In order to improve effectiveness, management wants to designate the hedge relationship in terms of only changes in the spot rate (for the forward contracts) or only changes in the intrinsic value (for the options).

The fair value of a foreign exchange forward contract is affected by changes in the spot rate and by changes in the forward points. The latter derives from the interest rate differential between the currencies specified in the forward contract. Changes in the forward points may give rise to ineffectiveness if the hedged item is not similarly affected by interest rate differentials.

The fair value of an option can be divided into two portions: the intrinsic value, which is often determined as the difference between the strike price and the current market price of the underlying; and the time value, which is the option's remaining value and depends on the expected volatility of the price of the underlying, interest rates and the time remaining to maturity. When the option is used to hedge a non-optional position, changes in the option's time value will not be offset by an equivalent change in the value or cash flows of the hedged item.

Solution

Yes, the forward points of a forward contract and the time value of an option can be excluded from the designated hedging relationship (IAS 39.74). While this can improve effectiveness, it will lead to some volatility in the income statement. This is because the forward points or time value are not subject to hedge accounting; any changes in their fair value will therefore be recognised as gains or losses in the income statement as they occur.

2.9
Definition of a forward contract

Question

IAS 39.74 states that there is normally a single fair value measure for a hedging instrument in its entirety. A designated hedging relationship therefore needs to reflect the whole of its fair value changes. IAS 39.74 permits two exceptions, one of which is separating the interest element (forward points) and the spot price of a forward contract.

Given that IAS 39 does not include a definition of a 'forward contract', what type of derivative instrument constitutes a forward contract for the purposes of applying IAS 39.74?

Background

For hedging purposes, Company H enters into the following derivative instruments:

(a) a fixed to fixed cross-currency swap;

(b) a floating to floating cross-currency swap;

(c) a floating to fixed cross-currency swap; and

(d) a commodity contract where a series of fixed cash payments are exchanged for a series of fixed amounts of a commodity on predetermined dates.

Management wants to designate only the spot element of these derivatives as hedging instruments in separate hedging relationships.

Solution

A simple forward contract is a contract to exchange a fixed amount of a financial or non-financial asset on a fixed future value date or dates. For the purposes of applying IAS 39.74, the term 'forward contract' should be interpreted as being any derivative instrument that is a simple forward contract, or that may be constructed using only a series of simple forward contracts. Forward contracts may be settled by gross physical delivery of the financial or non-financial asset in return for cash, or on a net basis at each settlement date.

The fixed to fixed cross-currency swap (instrument (a)) constitutes a series of foreign currency forward contracts under IAS 39.74, provided that the settlements on each leg of the swap occur on the same dates in the future (ie, there is no timing mismatch between the two legs of the swap). The commodity contract (instrument (d)) constitutes a forward contract under IAS 39.74, as it comprises a series of exchanges of fixed cash payments for fixed amounts of a commodity on predetermined dates. Company H's management may therefore choose to designate only the spot elements of these two derivatives as hedging instruments in a specified hedging relationship.

However, the other instruments (b) and (c) are not forward contracts, as they do not have fixed cash flows. Management is therefore required to designate the entirety of these derivatives as the hedging instrument.

2.10
Maturity of the hedging instrument and the hedged item

Question

Should the maturity of a hedging instrument exactly match the maturity of the hedged item?

Background

Company J enters into cash flow hedges of highly probable forecast sales in a foreign currency (USD) in June 20x6. It is not possible to determine exactly when in June the individual sales will occur. Company J therefore decides to hedge the first X million of sales in USD in June 20x6. The hedging instrument, however, will mature on a specified day (for example, 15 June 20x6).

Solution

There is no requirement for the maturity date of the hedged item to match exactly the maturity of the hedging instrument. However, timing mismatches may give rise to ineffectiveness. In addition, if the derivative matures after the hedged item, it cannot be designated only for the time until the hedged item occurs, as a hedging relationship cannot be designated for only a portion of the time period during which a hedging instrument remains outstanding (IAS 39.75).

2.11
Proportions of derivatives as hedging instruments

Question

Can a proportion of a derivative be designated as a hedging instrument?

Background

Company K, whose functional currency is the euro, enters into a USD 10 million forward contract to hedge forecast future USD-denominated sales. At the time of entering into the forward contract, only USD 8 million of forecast sales are considered to be highly probable. Company K's management wants to designate 80% of the forward contract as a hedge of the highly probable future sales of USD 8 million.

Solution

Yes. IAS 39.75 allows an entity to designate a proportion of a derivative as the hedging instrument. Company K can therefore designate 80% of the forward contract as the hedging instrument. However, an entity may not designate only a portion of the remaining life of a derivative as the hedging instrument (IAS 39.75).

2.12
Using a single derivative to hedge an asset and a liability

Question

Can an entity use a cross-currency interest rate swap to hedge a combination of a fixed rate asset and a floating rate liability?

Background

Company L, whose functional currency is the Swiss franc (CHF), has issued a 10-year fixed rate debt denominated in US dollars and acquired a 10-year floating rate loan denominated in euros. The entity entered into a receive USD fixed/pay EUR floating cross-currency interest rate swap that management intends to designate as a hedge of both its USD liability and its EUR asset.

Solution

Yes. There are two ways in which the derivative may be designated in order to achieve hedge accounting:

(1) Designate the swap as (a) a fair value hedge of both the interest rate and currency risk on the USD debt, and (b) a cash flow hedge of the foreign currency risk on the EUR floating rate loan. This would require the entity to analyse the swap into two separate derivatives by imputing a notional CHF floating leg into the swap. This would effectively create (a) a receive USD fixed/pay CHF floating swap and (b) a receive CHF floating/pay EUR floating swap.

(2) Designate the swap as (a) a cash flow hedge of the currency risk on the USD debt, and (b) a cash flow hedge of the interest rate and foreign currency risk exposure on the EUR floating rate loan. This would require the entity to analyse the swap differently by imputing a notional CHF fixed leg into the swap. This would effectively create (a) a receive USD fixed/pay CHF fixed swap, and (b) a receive CHF fixed/pay EUR floating swap.

A single swap may be analysed into its separate risk components for hedging purposes by imputing a notional leg denominated in the entity's functional currency. The additional leg may be either fixed or floating, provided the chosen alternative qualifies for hedge accounting for both of the exposures hedged and effectiveness can be reliably measured for both elements. The criteria in IAS 39.88 must be met for hedge accounting to be achieved. Prospective and retrospective effectiveness testing must be performed on both elements of the hedge relationship as well as for the instrument as a whole. Both elements must be highly effective in order for the hedge relationship to qualify for hedge accounting (IAS 39.IG.F1.12).

2.13
More than one derivative as a hedging instrument in a fair value hedge

Question

Can management designate a combination of derivatives as a hedging instrument in a fair value hedge?

Background

Company M issues a 7%, five-year fixed-rate bond and enters into a receive-fixed (7%), pay-floating (LIBOR) five-year interest rate swap to hedge the bond against changes in fair values resulting from changes in interest rates.

At the same time, the entity enters into a zero-cost collar to limit variability in cash flows arising from the combination of the fixed-rate debt and interest rate swap. The collar is a single contract comprising a written floor at 5% and a purchased cap at 10%. There is no net premium received for the collar; it is not therefore a net written option.

Solution

Yes. To hedge the changes in fair value of the bond arising from changes in interest rates, H's management can designate as a hedging instrument the combination of:

(a) the interest rate swap; and

(b) the collar.

Management should specify in the hedging documentation that:

(a) the hedged risk is the risk of changes in the fair value of the bond arising from changes in the risk-free rate within the range from 5% to 10%; and

(b) only changes in the intrinsic value of the collar are included in the hedge relationship.

Specifying the hedge in the ways described above will improve hedge effectiveness.

If management had entered into a separate purchased cap and a separate written floor instead of a single collar, it could not designate the combination of the interest rate swap, the purchased cap and the written floor as the hedging instrument. This is because a written option cannot be designated as a hedging instrument even when combined with other derivatives (IAS 39.77).

2.14
Offsetting derivatives

Question

Can a combination of offsetting derivatives be designated as the hedging instrument?

Background

Company N periodically reassesses its hedging relationships and decides to reduce the volume of a hedge because the exposure on the item originally hedged has been reduced by a new offsetting position. Company N acquires a new derivative to offset part of the original derivative and to reduce the amount hedged. Management proposes to designate the two offsetting derivatives as the hedging instrument in a new hedge relationship.

Solution

Yes. Two or more offsetting derivatives can be jointly designated as the hedging instrument provided that none of the instruments is a written option and the hedge is highly effective (IAS 39.77). However, some ineffectiveness may arise from the fact that the offsetting derivative was entered into at a different time from the original derivative, and they will therefore have different fair values.

2.15
Purchased options as hedging instruments in fair value hedges

Question

Can a purchased option (such as a purchased floor) be designated as the hedging instrument in a hedge of changes in the fair value of a financial asset or liability (such as a fixed-rate debt)?

Background

Company P has issued a five-year EUR 100 million debt that bears interest at a fixed rate of 3%. It wishes to hedge the risk of fair value changes of the debt if interest rates decrease. It enters into a EUR 100 million five-year floor on three-month EURIBOR with a strike rate of 3%.

Solution

Yes. IAS 39.81 states that a financial item may be hedged with respect to the risks associated with only a portion of its cash flow or fair value, provided that effectiveness can be measured. It is therefore possible to designate the hedge as the risk of changes in the fair value if interest rates fall below 3% (IAS 39.74 (b)). The effectiveness of the hedge will be improved if management designates only the intrinsic value of the floor as the hedging instrument. In this case, the floor's time value is excluded from the hedge relationship, and changes in its value are recognised in the income statement as they occur.

2.16
Written options

Question

Can a written option be designated as a hedging instrument?

Background

Company Q uses written options as part of its risk management strategy to increase the yield of an investment. Its management would like to obtain hedge accounting for these written options, either as standalone hedging instruments or in combination with others.

Solution

No. The potential loss on an option that an entity writes could be significantly greater than the potential gain in value of a related hedged item. In other words, a written option is not effective in reducing the profit or loss exposure of a hedged item. A written option does not therefore qualify as a hedging instrument, either on its own or in combination with other derivatives, unless it is designated as an offset to a purchased option, including one that is embedded in another financial instrument (for example, a written call option used to hedge a callable liability).

A purchased option has a potential gain equal to or greater than the potential loss on a related hedged item and therefore has the potential to reduce profit or loss exposure from changes in fair values or cash flows. A purchased option may be designated as a hedge (IAS 39.AG.94).

2.17
Collars as a hedging instrument

Question

Can a collar be designated as a hedging instrument?

Background

Company R has a floating rate debt and wants to hedge the risk that interest rates rise above 6%. In order to reduce the cost of the hedging strategy, management enters into a collar that has a cap at 6% and a floor at 3%.

A collar is a single instrument that comprises a purchased option and a written option. A collar allows an entity to limit its exposure to changes in interest rates, foreign exchange rates or other market prices outside an acceptable range. (A similar economic effect to a collar can be achieved by two separate instruments – a written option and a purchased option – see Q&A 2.18.)

Solution

Yes. A collar may be designated as a hedging instrument provided that it is not a net written option (ie, the entity does not receive a net premium for the collar) (IAS 39.77).

2.18
Combinations of options

Question

Can a combination of a bought and sold option be designated as a hedging instrument?

Background

Company S purchases a call option from Bank A and sells a put option to Bank B. The contracts are entered into on the same day, with the purpose of creating a collar. The premium paid on the purchased call equals the received premium on the sold put; no net premium is therefore received. Can these two options be designated as the hedging instrument?

Solution

No, the combination of these two instruments cannot be designated as a hedging instrument, as one of the options is a sold (written) option for which a premium is received (IAS 39.77). A collar can only be designated as a hedging instrument if the purchased and written option are combined in a single instrument, and the collar is not a net written option (ie, no net premium is received).

If the two instruments have the same counterparty and are entered into simultaneously, and in contemplation of one another with the intent of creating a collar, the two instruments should be viewed as one transaction. The solution in Q&A 2.17 can be applied.

2.19
'Cap spread' strategy and hedge accounting

Question

Can a 'cap spread' hedging strategy qualify for hedge accounting?

Background

Company T holds a variable interest rate debt and wishes to hedge the risk of the interest rate increasing above 3%. Management's assessment of the risk of the interest rate increasing above 4% is remote, and management is prepared to bear that excess risk. Management therefore enters into a 'cap spread' structure, which is a single instrument, consisting of:

(a) the purchase of an interest rate cap whose strike rate is 3% (purchased option); and

(b) the sale of an interest rate cap whose strike rate is 4% (written option).

The cap spread is structured as a single contract entered into with the same counterparty. Management of Company T wants to designate the hedged risk as the risk that the interest rate rises to between 3% and 4%.

Solution

Yes, provided that the cap spread does not constitute a net written option (ie, the entity does not receive a net premium for the cap spread). In this case the entity is permitted to apply hedge accounting if the strategy is in line with the company's risk management strategy and all other conditions for hedge accounting in IAS 39.88 are met (eg, documentation, effectiveness tests, etc).

If the entity had entered into two separate options (a purchased interest rate cap and a written interest rate cap), it could not designate both options as the hedging instrument. This is because two or more derivatives may be jointly designated as the hedging instrument only when none of them is a written option.

2.20
Derivatives with knock-in and knock-out features as hedging instruments

Question

Can a derivative with a knock-in or a knock-out feature be designated as a hedging instrument?

Background

Management of Company U wishes to reduce the cost of various hedging strategies by entering into derivatives with knock-in or knock-out features. For example, in order to hedge the payments due on its variable rate debt, management is considering purchasing an interest rate floor with a strike rate of 3% that is contingent on a specified interest rate falling below 2.5% at some time during its life (knock-in). Alternatively, management is considering purchasing an interest floor that is contingent on a specified interest rate not falling below 2.5% at some time during its life (knock-out).

Solution

It depends. There is no specific prohibition on designating a derivative with a knock-in or a knock-out feature as a hedging instrument, provided that the derivative is not a net written option (ie, the entity does not receive a net premium for it). However, it is unlikely that such a derivative will be an effective hedge unless the hedged item contains a matching knock-in or knock-out feature, as the full fair value of the derivative must be taken into account in determining effectiveness. It is not possible to designate the hedged risk as including a knock-in or knock-out feature unless there is such a feature in the hedged item.

3 Effectiveness testing

3.1 Timing of effectiveness testing

Question

When should the effectiveness of a hedge be tested?

Background

Company A has entered into a floating-to-fixed-rate swap to hedge the interest rate payments of a floating rate debt. It issues financial statements semi-annually. IAS 39.88(e) requires the effectiveness of a hedge to be assessed on an ongoing basis.

Solution

IAS 39 requires both prospective and retrospective effectiveness tests. A prospective effectiveness test assesses whether the hedge is expected to be highly effective in future periods. A retrospective effectiveness test assesses whether the hedge actually has been effective in a past period.

The timing of the tests is as follows:

(a) At the inception of the hedge, a prospective test is required to assess whether the hedge is expected to be highly effective during the period for which the hedge is designated. If this test is not passed, hedge accounting cannot be used.

(b) As a minimum, a retrospective test is required at every reporting date (whether interim or full year) to assess whether a hedge has actually been highly effective in the period under review. If this test is not passed for a particular period, hedge accounting cannot be used for that period.

(c) A further prospective test is also required at every reporting date (whether interim or full year) to assess whether the hedge is still expected to be highly effective during the remaining period for which the hedge is designated. If this test is not passed, hedge accounting must be discontinued prospectively.

3.2 Retrospective effectiveness testing using regression analysis

Question

Is it possible to use regression analysis as the method for assessing effectiveness on a retrospective basis?

Background

Jet fuel is approximately 15% of Airline B's operational costs. Management wants to hedge highly probable future purchases of jet fuel. However, there is no market for long-dated jet fuel derivatives, so management enters into derivatives contracts for heating oil (no.2) to hedge the future purchases of jet fuel. Airline B wants to use regression analysis to test retrospective effectiveness.

IAS 39.AG.105 details the characteristics of both prospective and retrospective hedge effectiveness tests. For prospective testing, statistical methods are specifically mentioned. For retrospective testing, the standard states 'the actual results of the hedge are within a range of 80-125 per cent'.

Does this mean that statistical methods may not be used for retrospective testing and that only a dollar-offset method is acceptable?

Solution

Regression analysis is an acceptable method for testing effectiveness retrospectively. IAS 39.AG.107 recognises that the standard does not specify a single method to assess hedge effectiveness. In the case of a hedge of a non-financial item, IAS 39.AG100 mentions the feasibility of performing a regression analysis to establish a statistical relationship between the hedged item and the hedging instrument.

When using regression analysis, effectiveness is assessed using several statistical measures. The slope of the regression curve should be between -0.8 and -1.25. The correlation should also be supported by high R^2s and F-statistics or similar measures.

Regression analysis does not generate the numbers required to make the necessary accounting entries, so a separate calculation is required. For a cash flow hedge, IAS 39.96(a) requires the amount deferred in equity to be the lesser (in absolute amounts) of (i) the cumulative gain or loss on the hedging instrument from the inception of the hedge, and (ii) the cumulative change in fair value (present value) of the expected future cash flows on the hedged item from inception of the hedge (see 'Hedging theory on p16).

3.3
Testing effectiveness prospectively when principal terms match

Question

Is it necessary to do a quantitative test to hedge effectiveness prospectively when the principal terms of the hedging instrument match those of the hedged item?

Background

Company C enters into a five-year fixed-rate borrowing. On the same date, it enters into a receive-fixed/pay-floating interest rate swap on which the floating leg is reset every three months. The principal terms of the swap and the debt match (start date, end date, fixed payment dates, calendar basis, fixed interest rate), and there are no features or conditions (such as optionality) that would invalidate an assumption of perfect effectiveness.

Solution

No, provided that management can demonstrate that the floating leg of the swap will not give rise to material ineffectiveness.

The objective of the prospective effectiveness test is to demonstrate that Company C has a valid expectation that the hedge will be highly effective, as required by IAS 39.88. If the principal terms of the debt and the fixed leg of the swap match, and if management is able to demonstrate and document that changes in fair value of the floating leg of the swap is not likely to give rise to material ineffectiveness, this is sufficient to demonstrate that the hedge is expected to be highly effective. In such a case, a numerical test is not required to demonstrate prospective effectiveness.

The fixed leg of the swap exactly matches the interest payments on the hedged fixed-rate debt. The floating-rate leg is not likely to give rise to material ineffectiveness, given the short interval between the re-pricing dates of this leg (three months). Company C can therefore perform only a qualitative prospective effectiveness test.

3.4
Testing effectiveness retrospectively when principal terms match

Question

Is it necessary to test hedge effectiveness retrospectively when the principal terms of the hedging instrument match those of the hedged item?

Background

Company D enters into a five-year fixed-rate borrowing. On the same date, it enters into a receive-fixed/pay-floating interest rate swap on which the floating leg is reset every three months. The principal terms of the swap and the debt match (start date, end date, fixed payment dates, calendar basis, principal amount, fixed interest rate), and there are no features or conditions (such as optionality) that would invalidate an assumption of perfect effectiveness.

Solution

Yes. The objective of the retrospective effectiveness test is to determine that the hedge actually has been highly effective throughout the financial reporting period for which it was designated. It is necessary to perform a retrospective effectiveness tests to assess this effectiveness.

If the principal terms of the hedging instrument match those of the hedged item, ineffectiveness may still arise, for example if:

(a) the floating rate leg is not reset on the testing date;

(b) there is a change in the liquidity of the swap; or

(c) there is a change in the creditworthiness of the swap counterparty.

3.5
Hypothetical derivative method

Question

Can an entity apply the hypothetical derivative method to test effectiveness?

Background

Company E hedges the foreign currency risk of highly probable forecast transactions using forward contracts. Management wants to measure the effectiveness of the hedge by modelling the hedged risk of the forecast transaction as a hypothetical derivative. Is this an acceptable method under IAS 39?

Solution

Yes. This method is specifically mentioned in IAS 39.IG.F5.5. The hypothetical derivative method is a method of measuring the changes in fair value of a hedged item in a cash flow hedge that are attributable to the hedged risk. A derivative is constructed whose terms reflect the relevant terms of the hedged item. Since Company E hedges the foreign currency risk of highly probable sales, the relevant hypothetical derivative is a forward foreign currency contract for the hedged amount maturing at the date on which the cash flows are anticipated, at the relevant forward rate at inception of the hedge. The change in the fair value of the hypothetical derivative is then compared with the change in the fair value of the hedging instrument to determine effectiveness.

3.6
Change in timing of cash flows

Question

In a hedge of a forecast transaction, what are the implications for hedge accounting when there is a change in the timing of the forecast cash flows?

Background

Company F hedges the foreign currency risk of highly probable forecast transactions using forward contracts. Management has chosen to designate the hedged risk as being of changes in the forward rate and to measure the effectiveness of the hedge by modelling the hedged risk of the forecast transaction as a hypothetical derivative. Subsequently, the expected timing of the forecast cash flows changes.

Solution

If the timing of the forecast cash flows changes, a new hypothetical derivative reflecting the revised timing of the cash flows must be established. This will give rise to ineffectiveness and, if the ineffectiveness is so great that the hedge is no longer highly effective, hedge accounting must be discontinued.

3.7
Cash flow hedge effectiveness testing – 'change in variable cash flow method'

Question

The 'change in variable cash flow method' is sometimes proposed as a method to test the effectiveness of a cash flow hedge. Is it an acceptable method under IAS 39?

Background

Company G issues a variable rate bond. On the same date, it enters into an interest rate swap under which it will receive a variable rate of interest and pay a fixed rate of interest. Management designates the swap as a cash flow hedge of the bond. All the criteria for hedge accounting in IAS 39.88 are met.

Company G's management proposes to test effectiveness both prospectively and retrospectively by comparing:

(a) the present value of the cumulative change in expected future cash flows on the floating rate leg of the swap; with

(b) the present value of the cumulative change in the expected future interest cash flows on the floating rate liability.

Solution

The 'change in variable cash flow method' is an acceptable method for performing prospective effectiveness testing, but not for retrospective effectiveness testing.

The justification for using this method for prospective effectiveness testing is that it is consistent with the cash flow hedge objective of effectively offsetting the changes in cash flows attributable to the hedged risk. It is the floating rate leg of the swap that achieves this offset.

However, the method is not permitted for retrospective testing because it has the effect of measuring ineffectiveness on only a portion of the derivative (ie, only the floating rate leg). IAS 39 does not permit effectiveness to be assessed retrospectively using only a portion of a derivative (IAS 39.74).

3.8
Cash flow hedge effectiveness testing –'fixed benchmark method'

Question

The 'fixed benchmark method' is sometimes proposed as a method to test the effectiveness of a cash flow hedge. Is it an acceptable method under IAS 39?

Background

As in the previous example, Company H issues a variable rate bond. On the same date, the Company enters into an interest rate swap under which it will receive variable and pay a fixed rate of interest. An equivalent fixed rate debt instrument with the same maturity could have been issued at 8%.

Company H's management designates the swap as a cash flow hedge of the bond. All the criteria for hedge accounting in IAS 39.88 are met.

Management proposes to test effectiveness both prospectively and retrospectively by comparing:

(a) the present value of the cumulative change in expected future cash flows on the swap; with

(b) the present value of the cumulative change in the expected future interest cash flows on the variable leg less the fixed rate (8%).

Solution

Yes. Company H can use the 'fixed benchmark method' in a cash flow hedge relationship for both prospective and retrospective effectiveness testing.

This method reflects the risk management objective of the hedging relationship –, that is, to swap a series of future variable cash flows to a fixed rate. It is in line with IAS 39.AG.107, which states that the method an entity adopts for assessing hedge effectiveness depends on its risk management strategy.

Company H should define the hedged risk as the change in the fair value of the variable cash flows, less the change in the fair value of a fixed rate of interest that could have been achieved at the inception of the underlying debt instrument (8%). It therefore measures the variability against a specified fixed rate. Effectiveness testing should be performed based on the ability of the hedging instrument to deliver that specified set of cash flows, and should therefore measure variability from that fixed rate.

The principles in this method are supported by IAS 39.IG.F5.5, method B.

3.9
Exclusion of credit risk from an interest rate hedge

Question

Can credit risk be excluded from the measurement of effectiveness on a debt instrument?

Background

On 1 January 20X5, Company J issues a fixed-interest note at 8% for 1,000. On the same day, the Company enters into an interest rate swap to pay LIBOR and receive interest at 7% based on the same payment terms and with a notional principal of 1,000.

At inception Company J designates the swap as a hedge of the variability in fair value of the issued note.

Fair values	1 January 20X5	31 December 20X5	Change
Note	(1,000)	(1,048)	(48)
Swap	–	102	102
Difference			54

The following fair value information is available to management.

The effectiveness of the hedge relationship is: 48/102 = 47%.

Hedge accounting is not permitted, as the results of the effectiveness test are significantly below the minimum required effectiveness of 80%. The main reason for the difference in fair value movements leading to the ineffectiveness is Company J's deteriorating creditworthiness. Management therefore wants to exclude its own credit risk from its assessment of effectiveness.

Solution

IAS 39 permits an entity to designate any portion of risk in a financial asset or liability as the hedged item. Hedge effectiveness is generally significantly easier to achieve if the designated hedged risk matches the hedging instrument as closely as possible. In this case, Company J's management should re-designate the risk being hedged in order to improve the hedge effectiveness for future periods. As the Company's deteriorating creditworthiness is the major cause of the hedge ineffectiveness, management should exclude this risk going forward and hedge only the changes in the bond's fair value attributable to changes in the risk-free interest rate. The new designation to exclude the bond's credit risk from the hedge relationship will improve hedge effectiveness, because the bond's credit risk is not reflected in the hedge.

3.10
Failed retrospective test with a successful prospective test

Question

Can a hedge relationship that fails a retrospective test be re-designated for the next period if the prospective test is successful?

Background

A hedge relationship designated by Company K fails the retrospective test for a given period; management therefore ceases to apply hedge accounting from the last date on which it demonstrated effectiveness (IAS 39.AG.113). Management performs a successful prospective effectiveness test with the same hedging instrument and the same hedged item at the start of the following period. Management wishes to re-designate the hedge relationship for the remaining life of the instrument.

Solution

Yes. Management can re-designate a hedge relationship following a successful prospective effectiveness test. IAS 39 does not preclude an entity from designating the same derivative as a hedge of the same item in a subsequent period, provided the hedge relationship meets the criteria for hedge accounting (including effectiveness) in that subsequent period (April 2005 *IFRIC Update*).

Management must de-designate the initial hedging relationship and re-designate a new hedge relationship for the subsequent periods.

4 Hedge accounting and presentation

4.1 Hedging foreign currency risk of an available-for-sale investment

Question

How should management account for a hedge of the currency risk of an available-for-sale equity investment using a forward contract?

Background

Company A, a Swiss company, buys an equity investment in Company X, which it classifies as available-for-sale. Company X's shares are listed in the US in US dollars, and it pays dividends in USD. The acquisition cost is USD 10 million.

Company A's management does not want to be exposed to the potential for future losses if the USD weakens against the Swiss franc (CHF). Management intends to hold the investment for at least two years and enters into a forward contract to sell USD and receive CHF in two years, with a notional amount of USD 9 million to hedge USD 9 million of the fair value of the investment in Company A.

Company A's management decides to test the effectiveness of the hedge by comparing the change in fair value of the derivative arising from changes in the spot rate with the change in fair value of the of the hedged portion of the fair value of the shares attributable to changes in the USD/CHF spot rates.

The element of the forward contract that relates to the forward points is excluded from the hedge relationship and is measured at fair value with changes in value recognised in the income statement. Designating in this way improves the effectiveness of the hedge.

Solution

If all the criteria for hedge accounting are met, Company A's management should account for the changes in fair values as follows:

(a) Forward contract: management should recognise the gains/losses arising from the changes in the fair value of the forward contract in the income statement. This includes both the spot component (which is part of the hedging relationship) and the forward points component (which is not).

(b) Investment: management should recognise the portion of the change in fair value that relates to gains/losses from retranslating the hedged amount of the investment (ie, the lower of USD 9 million and the fair value in USD) into CHF in the income statement. The remaining portion of the change in fair value is deferred in equity in accordance with the subsequent measurement rules for available-for-sale investments. If the fair value of the investment in USD decreases below the hedged amount of USD 9 million, ineffectiveness will arise (IAS 39.IG.F2.19).

4.2 Basis adjustment

Question

In a hedge of the forecast acquisition of a non-financial asset, can the hedging gain or loss that is initially recognised in equity be included in the carrying amount of the acquired asset?

Background

Company B has hedged the foreign exchange risk of a forecast acquisition of a major piece of machinery. The effective portion of the fair value movements of the hedging instrument has been deferred in equity. The machinery has now been acquired and management would like to include this amount in the carrying amount of the asset.

Solution

Yes, if that is Company B's chosen accounting policy.

For hedges of the forecast acquisition of a non-financial asset or the forecast issuance of a non-financial liability, IAS 39 permits entities an accounting policy choice at the time the non-financial asset or non-financial liability is initially recognised. The entity may either:

(a) include the hedging gain or loss previously deferred in equity in the initial carrying amount of the non-financial asset or non-financial liability (basis adjustment). The hedging gain or loss will affect the income statement 'automatically' when the hedged item is depreciated (for property plant and equipment) or sold (for inventory); or

(b) leave the hedging gain or loss in equity and transfer it to the income statement when the hedged item affects profit or loss.

The net effect on the income statement will be the same, but treatment (a) eliminates the requirement to track and amortise the amount deferred in equity.

The entity must choose either (a) or (b) as its accounting policy and apply it consistently to all hedges of a forecast transaction that will result in the recognition of a non-financial asset or non-financial liability.

If the hedged item is a financial asset or financial liability, basis adjustment is not permitted, and approach (b) must be followed.

4.3
Capitalised borrowing costs and hedge accounting

Question

Can management capitalise the changes in the fair value of an interest rate swap used to hedge a borrowing that finances the construction of an asset?

Background

Company C borrows 10 million to finance construction of a power plant. It pays a floating rate on the borrowing but hedges the resulting variability in interest payments with a pay-fixed, receive-variable interest rate swap. Company C uses the allowed alternative treatment under IAS 23 and capitalises the eligible borrowing costs as part of the cost of the power plant.

Solution

Yes, if the hedge accounting criteria are met. The changes in fair value of the effective portion of the swap will be capitalised as part of the cost of the power plant because Company C elected to capitalise the eligible borrowing costs.

If the hedge accounting criteria are not met, Company C's management is required to account for the derivative as a trading instrument. The change in fair value of the swap is recognised in the income statement and may not be capitalised as part of the cost of the power plant.

4.4
Impact of group hedge accounting on segment reporting

Question

How should the following derivatives be dealt with in the segment reporting note?

(a) external derivatives that qualify for hedge accounting in consolidated financial statements; and

(b) inter-company derivatives between segments that are not eligible for hedge accounting in the consolidated financial statements.

Background

Group E is composed of two main segments (Segments 1 and 2) to which the various operating subsidiaries belong. Group treasury is included in a third segment.

Group E hedges forecast sales in foreign currencies on a net basis using external derivatives (foreign currency forward contracts) entered into centrally by group treasury. In view of the prohibition on hedge accounting for hedges of net positions, management allocates the external net hedge to a portion of the gross exposure of Segment 1. This approach enables the group to obtain hedge accounting in its consolidated financial statements.

Internal derivatives with group treasury are used to create hedges at the operating subsidiary level. As operating subsidiaries do not report under IAS 39 in their own separate financial statements, IAS 39's hedge documentation requirements have not been applied to these internal derivatives.

Solution

(a) Since the external derivatives are documented as hedges of a portion of the exposures of Segment 1, this documentation provides a reasonable basis for allocation to Segment 1 for the purposes of segment reporting.

(b) Inter-company derivatives are recorded in the segments to which they relate at fair value through profit or loss, as they are not part of a hedge relationship that qualifies for hedge accounting under IAS 39. Such accounting will create volatility in profit or loss at the segment level. However, the gains and losses on these internal derivatives will offset against each other once segments are consolidated and the inter-company transactions eliminated.

5 Discontinuance of hedge accounting

5.1
Discontinuance of a fair value hedge of a bond

Question

How should the discontinuance of a fair value hedge be accounted for when hedge accounting is discontinued because the hedge fails an effectiveness test?

Background

Two years ago, Company A issued at par a EUR 4 million, five-year fixed interest rate bond. At the same time, it entered into a five-year fixed-to-floating interest rate swap that it designated as a fair value hedge of the bond. After two years, the hedge fails a retrospective test. At the date the hedge last passed an effectiveness test, the carrying value of the bond included a cumulative adjustment of EUR 0.2 million, reflecting the change in the fair value of the hedged risk.

Solution

Company A discontinues hedge accounting prospectively (ie, previous accounting entries are not reversed). If the reason for discontinuance is that the hedge failed an effectiveness test, hedge accounting is discontinued from the last date when the hedge was demonstrated to be effective (IAS 39.AG.113).

The adjustments to the carrying amount of the hedged item to reflect the changes in fair value that are attributable to the hedged risk remain as part of the item's carrying value, but no further such adjustments are made in future periods. When the hedged item is carried at amortised cost, these previous hedging adjustments are amortised over the remaining life of the item by recalculating its effective interest rate.

The adjusted carrying value of EUR 4.2 million will be the basis for calculating a new effective interest rate, starting from the last date the hedge passed an effectiveness test. The hedging adjustment of EUR 0.2 million is therefore recognised in profit or loss over the remaining life of the bond.

5.2
Discontinuance of a fair value hedge of an available-for-sale investment

Question

How should the discontinuance of a fair value hedge of an available-for-sale investment be accounted for when hedge accounting is discontinued because the hedge designation is revoked?

Background

Company B is a Swiss company whose functional currency is the Swiss franc (CHF). Company B buys an equity investment in Company X, which is classified as available-for-sale. Company X's shares are listed only in the US in US dollars and it pays dividends in USD. The fair value at the date of purchase including transaction costs is USD 10 million.

Company B's management does not want to be exposed to the risk of future losses if the USD weakens against the CHF. Management intends to hold the investment for two years and enters into a forward contract to sell USD and receive CHF in two years, with a notional amount of USD 9 million to hedge USD 9 million of the fair value of the investment in Company B.

Management designates the forward contract as a fair value hedge of the currency risk on USD 9 million of its investment in Company X. This designation allows Company B to take the foreign exchange movements on USD 9 million of the investment to the income statement to offset the fair value changes in the derivative. The rest of the fair value movements in CHF for the instrument are retained in equity until the instrument is sold.

One year later, management decides that the USD is not likely to decline further and decides to discontinue the hedge and revoke the hedge designation. The hedge is demonstrated to have been highly effective up to the time it is discontinued.

Solution

Company B discontinues hedge accounting prospectively (ie, previous accounting entries are not reversed).

When the hedged item is an equity instrument classified as available for sale, all future changes in the fair value of the instrument, including all changes related to exchange rate movements, are deferred in equity until the instrument is sold or impaired.

5.3
Discontinuance of cash flow hedge accounting – transaction no longer highly probable

Question

How should the discontinuance of a cash flow hedge of a highly probable forecast transaction be accounted for when hedge accounting is discontinued because the transaction is no longer highly probable?

Background

Company D, a Swedish company whose functional currency is Swedish kronor (SEK), builds luxury sailing boats that it sells primarily to US customers. In April, Company D determines that it has a highly probable forecast sale of a boat for USD 1 million to an American customer with whom negotiations are far advanced. The boat is expected to be delivered in October and paid in full in November. Company D enters into a forward contract to sell USD 1 million for SEK 8 million in November, and designates the forward contact as a cash flow hedge of the highly probable sale to the US customer.

The Company is informed by the customer in June that he is having some difficulties in raising the finance to pay for the boat. The customer believes that the issue will be resolved in December. Due to the financing difficulties, management concludes that the transaction is no longer highly probable. However, management still expects the transaction to occur. As the transaction is no longer highly probable, hedge accounting is discontinued.

Solution

Company D discontinues hedge accounting prospectively (ie, previous accounting entries are not reversed).

As the hedged item is a forecast transaction, the hedging gains and losses that were previously recognised in equity remain in equity until the hedged transaction occurs. However, if at any time the transaction is no longer expected to occur, the gains and losses that were previously recognised in equity are recognised immediately in the income statement.

5.4
Discontinuance of cash flow hedge accounting – variable interest rate payments

Question

How should the discontinuance of a cash flow hedge of variable interest rate payments be accounted for when hedge accounting is discontinued because the hedge fails an effectiveness test?

Background

Two years ago, Company E issued a five-year variable rate bond. At the same time, it entered into a five-year floating-to-fixed interest rate swap that it designated as a cash flow hedge of the variability in interest payments on the bond. After two years, the hedge fails the effectiveness test, and hedge accounting is discontinued.

Solution

Company E discontinues hedge accounting prospectively (ie, previous accounting entries are not reversed). If the reason for discontinuance is that the hedge failed an effectiveness test, hedge accounting is discontinued from the last date when the hedge was demonstrated to be effective. However, if the entity identifies the event or change in circumstances that caused the hedge to fail the effectiveness criteria and demonstrates that the hedge was effective before the date when the event or change in circumstances occurred, the entity discontinues hedge accounting from that date (IAS 39.AG.113).

The hedging gains and losses that were previously recognised in equity remain in equity until the hedged transaction occurs. Consequently, Company E transfers the hedging reserve to profit or loss over the remaining life of the bond.

5.5
Discontinuance of cash flow hedge accounting – forecast sales in time buckets

Question

How should the discontinuance of a cash flow hedge of highly probable forecast cash flows defined in time buckets be accounted for when revised forecast cash flows are less than the hedged amount?

Background

In April, Company E designates a foreign currency forward contract as a hedge of the first USD 5 million sales in October. As sales are normally USD 8 million per month, the forecast sales are considered highly probable.

In June, the order book indicates that October sales are likely to be significantly less than originally expected. Management now expects sales of approximately USD 2.8 million, of which only USD 1.5 million is highly probable. Management intends to take measures to increase sales but expects that these will not have an effect until November. Company E de-designates the original hedge relationship and re-designates USD 1.5 million of the derivative as a hedge of the highly probable sales in October (ie, a portion of the hedging instrument is used in the new hedge relationship).

Solution

Company E discontinues hedge accounting for the USD 5.0 million of hedged sales. Hedging gains and losses that were previously recognised in equity on the USD 2.2 million no longer expected to occur should be recognised in the income statement immediately.

As regards the USD 2.8 million of sales that are still expected to occur, the hedging gains and losses that were previously recognised in equity remain in equity until the sales occur (or are no longer expected to occur).

In future periods, new hedging gains and losses relating to USD 1.5 million of sales (the amount that remains highly probable) are recognised in equity under the new hedge relationship. Any remaining future gains and losses on the forward contracts are recognised in profit or loss as they occur.

Section 3

Illustrations

Introduction

This section sets out six detailed illustrations of how hedge accounting can be applied in practice. The objective is to present the mechanics of applying the IAS 39 requirements, starting with the company's risk management and effectiveness testing policies, working through the necessary designation and effectiveness testing and culminating with the accounting entries.

The six fact patterns we have chosen illustrate some of the most common hedging strategies used in practice. They cover:

- hedges of interest rate risk and foreign currency risk;
- the three types of hedges recognised for accounting purposes by IAS 39 (fair value hedges, cash flow hedges and net investment hedges);
- a range of hedging instruments (including simple swaps and forward contracts, and more complex instruments such as options and forward starting swaps);
- a variety of hedge designations (for example, excluding the time value of an option or changes in the credit risk of the hedged item from the hedge relationship); and
- different methods of effectiveness testing.

The issues addressed are summarised below.

	Type of hedge and hedged risk	Hedged item and hedging instrument	Effectiveness testing		Other key points of the illustration
			Prospective	Retrospective	
Illustration 1 'Conversion' of fixed rate debt into variable rate debt using an interest rate swap	Fair value hedge – Interest rate risk	Fixed rate debt – Interest rate swap	Dollar offset using clean market values, sensitivity analysis approach	Dollar offset on a cumulative basis using clean market values, benchmark approach	Credit risk not hedged
Illustration 2 Partial 'conversion' of variable rate debt into fixed rate debt using an interest rate cap	Cash flow hedge – Interest rate risk	Interest cash flows – Interest rate cap (purchased option)	Dollar offset using clean market values, sensitivity analysis approach	Dollar offset on a period-by-period basis using clean market values, benchmark approach	Exclusion of the time value of the option from the hedge relationship – Credit risk not hedged
Illustration 3 Hedge of highly probable foreign currency forecast purchases	Cash flow hedge – Foreign exchange risk	Highly probable forecast transaction – Forward contract	Dollar offset, sensitivity analysis approach	Dollar offset on a cumulative basis, hypothetical derivative approach	Spot/spot rate designation – Change in timing of cash flows – Basis adjustment
Illustration 4 Hedge of foreign currency firm commitment to sell cars	Fair value hedge – Foreign exchange risk	Firm commitment – Forward contract	Comparison of critical terms	Dollar offset on a cumulative basis	Spot/spot rate designation

	Type of hedge and hedged risk	Hedged item and hedging instrument	Effectiveness testing		Other key points of the illustration
			Prospective	Retrospective	
Illustration 5 Locking in the interest rate for a forecast future floating rate borrowing with a forward starting swap	Cash flow hedge – Interest rate risk	Future variable rate borrowing – Forward starting swap	Dollar offset using dirty market values, sensitivity analysis approach	Dollar offset on a cumulative basis using dirty market values, benchmark approach	Credit risk not hedged – Change in timing of debt issuance
Illustration 6 Foreign currency hedge of a net investment in a foreign operation	Net investment hedge – Foreign exchange risk	Net investment – Borrowing	Dollar offset using dirty market values, sensitivity analysis approach	Dollar offset on a cumulative basis using dirty market values, benchmark approach	Credit risk in borrowing excluded – Effect of losses

Despite the range of approaches covered, these illustrations do not set out all of the ways of complying with IAS 39's hedging requirements. Other approaches to hedge accounting may meet the requirements of IAS 39.

One issue not covered in the illustrations is the discontinuance of hedge accounting. We cover this issue in the 'Frequently asked questions' section.

Helpful hint

The underlying calculations in some of the illustrations have been performed using more decimal places for interest rates and discount factors than are presented. If the calculations are reperformed using the data presented, some minor differences in the numbers may arise.

Finally, at various points we have included 'helpful hint' boxes. These highlight important issues, give additional guidance and contain tips relating to the illustrations.

Illustration 1: 'Conversion' of fixed rate debt into variable rate debt using an interest rate swap – fair value hedge

Background and assumptions

Company A is a UK company with a GBP functional currency. Company A's reporting dates are 30 June and 31 December.

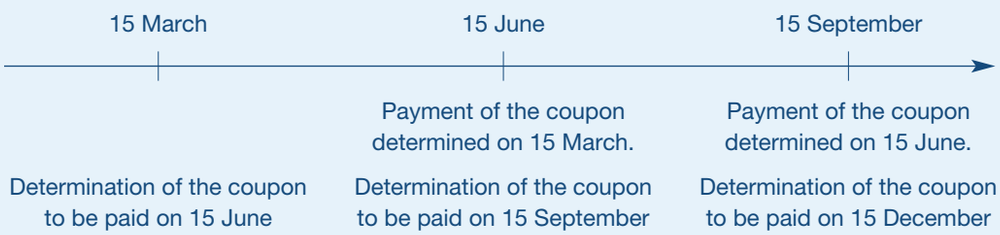
On 15 March 20x5, Company A issues at par a GBP 10m four-year debt with the following characteristics:

Type	Issued debt
Principal amount	GBP 10m
Start date	15 March 20x5
Maturity date	15 March 20x9
Interest rate	7%
Settlement date	15 March, 15 June, 15 September and 15 December each year

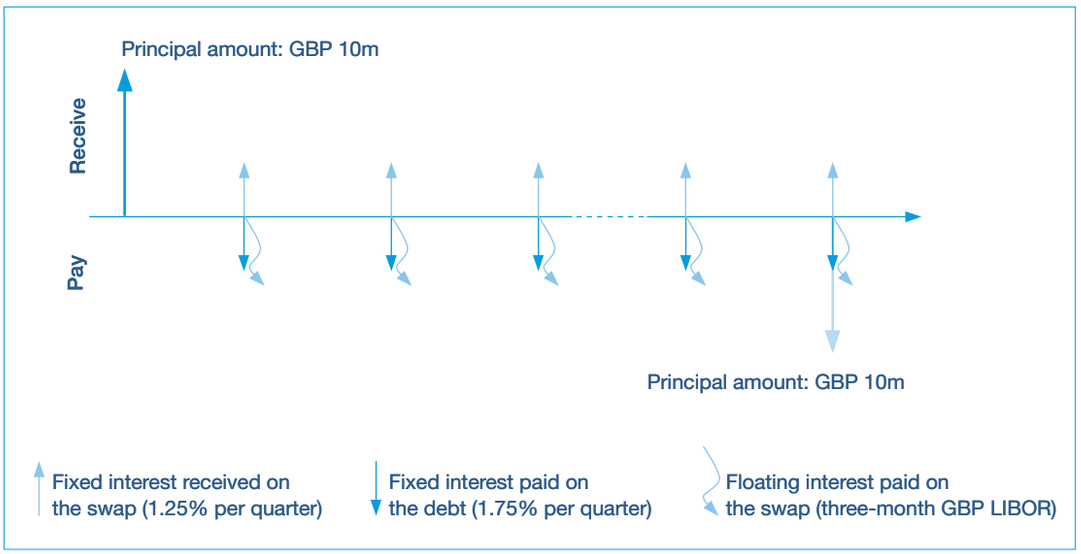
No transaction costs are incurred relating to the debt issuance. On the date on which the debt was issued, consistent with its risk management policies, Company A enters into a four-year pay three-month GBP LIBOR receive 5% interest rate swap. The variable leg of the swap is pre-fixed/post-paid on 15 March, 15 June, 15 September and 15 December each year. The fixing of the variable leg for the first three-month period is 4.641%.

Helpful hint

A pre-fixed/post-paid interest rate swap is an interest rate swap in which the variable coupon is determined based on the market interest rate at the beginning of each period and is paid at the end. The variable coupon on the interest rate swap determined on 15 March is paid on 15 June, and so on.



The cash flows on the debt and the swap can be represented as follows:



Three-month GBP LIBOR rate at various dates when the swap is reset is as follows:

15/3/20x5	4.562%
15/6/20x5	5.080%
15/9/20x5	5.280%
15/12/20x5	5.790%

The forward rates derived from the GBP LIBOR swap yield curve and the implied zero coupon rates at the dates of testing effectiveness are as follows:

	Forward rates for testing dates			Zero coupon rates for testing dates		
	15/3/20x5 (YC1)	30/6/20x5 (YC2)	31/12/20x5 (YC3)	15/3/20x5 (ZC1)	30/6/20x5 (ZC2)	31/12/20x5 (ZC3)
15/6/20x5	4.562%	–	–	4.641%	–	–
15/9/20x5	4.623%	5.069%	–	4.672%	5.172%	–
15/12/20x5	4.684%	5.130%	–	4.704%	5.204%	–
15/3/20x6	4.744%	5.191%	5.705%	4.735%	5.235%	5.835%
15/6/20x6	4.805%	5.251%	5.767%	4.766%	5.266%	5.866%
15/9/20x6	4.865%	5.311%	5.827%	4.798%	5.298%	5.898%
15/12/20x6	4.926%	5.371%	5.887%	4.829%	5.329%	5.929%
15/3/20x7	4.986%	5.432%	5.947%	4.860%	5.360%	5.960%
15/6/20x7	5.046%	5.492%	6.007%	4.892%	5.392%	5.992%
15/9/20x7	5.107%	5.552%	6.067%	4.923%	5.423%	6.023%
15/12/20x7	5.167%	5.612%	6.127%	4.954%	5.454%	6.054%
15/3/20x8	5.228%	5.673%	6.187%	4.986%	5.486%	6.086%
15/6/20x8	5.288%	5.733%	6.246%	5.017%	5.517%	6.117%
15/9/20x8	5.348%	5.793%	6.306%	5.048%	5.548%	6.148%
15/12/20x8	5.409%	5.853%	6.366%	5.080%	5.580%	6.180%
15/3/20x9	5.469%	5.913%	6.426%	5.111%	5.611%	6.211%

Helpful hint

The forward rates are used to calculate the projected cash flows. The zero-coupon rates are used to discount the projected cash flows to the testing date.

Extracts of risk management policies for interest rate risk

Company A is exposed to market risk, primarily related to foreign exchange, interest rates and the market value of the investments of liquid funds.

Company A manages its exposure to interest rate risk through the proportion of fixed and variable rate net debt in its total net debt portfolio. Such a proportion is determined twice a year by Company A's financial risk committee and approved by the board of directors. The benchmark duration for net debt is 12 months.

To manage this mix, Company A may enter into a variety of derivative financial instruments, such as interest rate swap contracts.

Extracts of hedge effectiveness testing policies

Strategy 1A Hedges of interest rate risk using interest rate swaps for fair value hedges

Prospective effectiveness testing

Prospective effectiveness testing should be performed at the inception of the hedge and at each reporting date. The hedge relationship is highly effective if the changes in fair value or cash flow of the hedged item that are attributable to the hedged risk are expected to be offset by the changes in fair value or cash flows of the hedging instrument.

Prospective effectiveness testing should be performed by comparing the numerical effects of a shift in the hedged interest rate (GBP LIBOR zero coupon curve) on both the fair value of the hedging instrument and the fair value of the hedged item.

This comparison should normally be based on at least three interest rate scenarios. However, for hedges where the critical terms of the hedging instrument perfectly match the critical terms, including reset dates of the hedged item, one scenario is sufficient.

$$\text{Effectiveness} = \frac{\text{Change in clean fair value of hedging instrument when zero coupon curve is shifted}}{\text{Change in clean fair value of hedged item when zero coupon curve is shifted}}$$

Change in the clean fair value of a swap is the difference between the clean fair value of the projected cash flows of the swap discounted using the zero coupon curve derived from the swap yield curve at the date of testing, and the clean fair value of the projected shifted cash flows discounted using the shifted zero-coupon rates.

Change in the clean fair value of a bond is the difference between the clean fair value of the cash flows on the bond excluding the credit spread discounted using the zero coupon curve derived from the swap yield curve at the date of testing, and the clean fair value of the same cash flows discounted using the shifted zero coupon rates.

The scenarios that should be used in the effectiveness test are:

1) a parallel shift (upwards) of 100 basis points of the zero coupon curve;
2) a change in the slope of the zero coupon curve of a 5% increase in the rate for one year cash flows, a 10% increase in the rate for two year cash flows, and a 15% increase in the rate for three and more year cash flows; and
3) a change to a flat zero coupon curve at present three-month LIBOR.

Helpful hint

The number of scenarios needed to assess prospectively the effectiveness of a hedge when using the dollar offset method will vary depending on the terms of the hedge. When the critical terms of the hedging instrument (start date, end date, currency, fixed payment date, interest rate re-set date, fixed interest rate, principal amount) do not match those of the hedged item, or the hedged item contains a feature – such as optionality – that is likely to cause ineffectiveness, several scenarios should be used, including scenarios that reflect the mismatch in terms or optionality.

The pre-fixed/post-paid feature of the swap that is not present in the bond prevents the use of the critical terms method, as there will be some ineffectiveness. Three scenarios should be used to test effectiveness prospectively, consistent with the entity's policy. The example below shows only the first of these three scenarios.

The dirty fair value is the fair value including accrued interest. The clean fair value excludes accrued interest. Using the clean fair value in effectiveness testing often decreases the ineffectiveness, as it excludes the accrued interest on the variable leg of the swap that will not have any offsetting component in the bond.

Retrospective effectiveness testing

Retrospective effectiveness testing should be performed at each reporting date using the dollar offset method on a cumulative basis. Hedge effectiveness is demonstrated by comparing the cumulative change in the clean fair value of the hedging instrument with the cumulative change in the clean fair value of the hedged item attributable to the hedged risk and showing that it falls within the required range of 80%-125%.

$$\text{Effectiveness} = \frac{\text{Cumulative change in clean fair value of hedging instrument}}{\text{Cumulative change in clean fair value of hedged item}}$$

Change in the clean fair value of a swap is the difference between:

a) the clean fair value of the projected cash flows of the swap based on the original yield curve discounted using the zero coupon curve derived from the yield curve at the beginning of the hedge; and

b) the clean fair value of the projected cash flows of the swap based on the yield curve at the date of testing discounted using the zero coupon curve derived from the yield curve at the date of testing.

Change in the clean fair value of a bond is the difference between:

a) the clean fair value of the cash flows on the bond, excluding the credit spread discounted using the zero coupon curve derived from the yield curve at the beginning of the hedge; and

b) the clean fair value of the same cash flows discounted using the zero coupon curve derived from the yield curve at the date of testing.

Helpful hint

In a fair value hedge, the carrying amount of the hedged item, in this case the debt, is adjusted for changes in value attributable to the hedged risk only. This might not be the same as the total changes in the fair value of the debt. Fair value changes attributable to credit or other risks that are not hedged are not included in the adjustment of the carrying amount of the hedged item.

Hedge designation

Company A's hedge documentation is shown below.

1) Risk management objective and strategy

For the current period, Company A's approved strategy in accordance with its risk management policies is to maintain a ratio of fixed:floating rate net debt of between 40:60 and 50:50. In order to achieve this ratio, management has selected this debt to be swapped from fixed to floating.

2) Type of hedging relationship

Fair value hedge: swap of fixed to floating interest rates.

3) Nature of risk being hedged

Interest rate risk: change in the fair value of debt number C426M attributable to movements in the GBP LIBOR zero coupon curve. Credit risk on the debt is not designated as being hedged.

4) Identification of hedged item

Transaction number: reference number C426M in the treasury management system.

The hedged item is a four-year, GBP 10m, 7% fixed rate debt, which pays interest quarterly.

5) Identification of hedging instrument

Transaction number: reference number L1815E in the treasury management system.

The hedging instrument is a four-year interest rate swap, notional value GBP 10m, under which fixed interest of 5% is received quarterly and actual three-month LIBOR is paid with a three-month reset.

Hedge designation: the fair value movements on the full notional GBP 10m of the swap L1815E is designated as a hedge of fair value movements in the debt C426M attributable to movements in GBP LIBOR zero coupon curve (see point (3)).

6) Effectiveness testing

Testing shall be performed using hedging effectiveness testing strategy 1A in the effectiveness testing policy.

Description of prospective test

Dollar offset method, being the ratio of the change in the clean fair value of the swap L1815E, divided by the change in clean fair value of the bond C426M attributable to changes in GBP LIBOR zero coupon curve.

The critical terms of the swap do not perfectly match the critical terms of the hedged debt. The prospective tests will therefore, as required by the risk management policies, be performed based on three scenarios. (Only scenario 1, the 100 basis point increase, is illustrated below; all three would be performed in practice.)

Frequency of testing: at inception of the hedge and at each reporting date (30 June and 31 December).

Description of retrospective test

Dollar offset method, being the ratio of the change in the clean fair value of swap L1815E, divided by the change in the clean fair value of the bond C426M attributable to changes in the GBP LIBOR zero coupon curve on a cumulative basis.

Frequency of testing: at every reporting date (30 June and 31 December) after inception of the hedge.

Effectiveness tests and accounting entries

1) Prospective effectiveness test on 15 March 20x5

Company A's management should assess prospectively the effectiveness of the hedge, as required by IAS 39.

Based on the hedge documentation, the prospective effectiveness test consists of comparing the effects of a 100 basis points shift upwards of the zero coupon curve on the clean fair value of the swap and the clean fair value of the hedged item.

A coupon of 7% per annum is paid on the debt (ie, GBP 175,000 per quarter), which can be split into an AA interest rate of 5% and a credit spread of 2%. For effectiveness testing purposes, only the cash flows relating to the AA interest rate (ie, GBP 125,000 per quarter) are taken into account. The credit risk associated with the debt is not part of the hedge relationship; the credit spread of 2% in the coupon is therefore excluded from the tests.

Prospective effectiveness test on 15 March 20x5

	15/6/20x5	15/9/20x5	15/12/20x5	…	15/12/20x8	15/3/20x9	TOTAL
Cash flows on the swap							
Fixed leg	125,000	125,000	125,000	…	125,000	125,000	
Variable leg*	(114,059)	(115,573)	(117,088)	…	(135,221)	(136,729)	
Net cash flows	10,941	9,427	7,912	…	(10,221)	(11,729)	
Discounted CF @ ZC1	10,818	9,214	7,644	…	(8,488)	(9,609)	**0**
Shifted zero coupon curve							
Fixed leg	125,000	125,000	125,000	…	125,000	125,000	
Variable leg+1%	(114,059)	(139,640)	(141,144)	…	(159,148)	(160,646)	
Net cash flows	10,941	(14,640)	(16,144)	…	(34,148)	(35,646)	
Discounted CF @ ZC1+1%	10,792	(14,242)	(15,486)	…	(27,368)	(28,117)	**(315,574)**
							(315,574)
Cash flows on the debt							
Cash flows	(125,000)	(125,000)	(125,000)	…	(125,000)	(10,125,000)	
Discounted CF at ZC1**	(123,590)	(122,178)	(120,764)	…	(103,804)	(8,294,694)	**(10,000,000)**
Discounted CF @ ZC1+1%	(123,297)	(121,599)	(119,906)	…	(100,182)	(7,986,407)	**(9,660,676)**
							339,324
						Effectiveness	**-93.0%**

* The variable leg of the swap is the projected cash flow according to forward rates derived from the swap yield curve. As an example, the 15/9 projected cash flow is calculated as 10 million GBP * 4.623%/4, as the swap has quarterly reset and settlement.

** The discounted cash flows are calculated using the zero coupon rate for the relevant point on the implied zero coupon curve (see table on page 65) using the normal discounting formula cf/(1+r)^(d/360), where cf is the undiscounted cash flow, r is the relevant zero coupon rate and d is the number of days remaining to the cash flow (on 360 day basis). As an example, the discounted cash flow on 15/9 is calculated as 125,000/(1,0467)^(180/360)=122,178.

Conclusion: The hedge is expected to be highly effective.

Helpful hint
The ineffectiveness in the prospective test comes from the change in the fair value of the variable leg of the swap that occurs when projected cash flows are changed. The change in fair value of the fixed leg of the swap perfectly offsets changes in the fair value of the bond.

2) Accounting entries on 15 March 20x5

The debt is recognised at the proceeds received by Company A, which represents its fair value on the issuance date. The debt is classified as other financial liabilities and will subsequently be measured at amortised cost.

(In GBP)	DR	CR
Cash	10,000,000	
Other financial liabilities – debt		10,000,000
Issuance at par of a GBP 10m four-year debt with a fixed coupon of 7%		

The swap entered into by Company A is recognised at fair value on the balance sheet. The fair value of the swap is nil at inception, as it is issued at market rate. The floating rate for the first period is set to 4.562%, which is the three-month swap rate.

(In GBP)	DR	CR
Derivative instruments	Nil	
Cash		Nil
Recognition of the interest rate swap at fair value (Nil)		

3) Accounting entries on 15 June 20x5

On 15 June, the first coupon on the loan is paid and the first period of the swap is settled.

Recognition of interest on the debt

(In GBP)	DR	CR
Finance costs – interest expense	175,000	
Cash		175,000
Interest on the debt at 7% for three months		

Cash settlement of the swap

(In GBP)	DR	CR
Finance costs – interest expense	114,059	
Finance costs – interest expense		125,000
Cash	10,941	
Settlement of the swap: receive 5% and pay 4.562% for three months		

These two transactions result in a total charge of GBP 164,059 to finance cost, which is equivalent to 6.562% interest for the period (ie, the rate on the variable leg of the swap of 4.562% + 2% credit spread). The variable rate on the swap for the following quarter is set at the three-month swap rate of 5.080%.

Helpful hint

In order to increase clarity, we have chosen to show the entry gross (ie, with the effects of the pay and receive legs of the swap shown separately). This entry is often made on a net basis.

The charge to interest expense has been made without performing an effectiveness test, as no effectiveness test is required until 30 June. In the event that the next effectiveness test is failed, the entries will have to be reversed out of interest expense, as hedge accounting is not permitted for the period after the last successful test. The entries could be to 'other operating income and expense'.

4) Retrospective effectiveness test on 30 June 20x5

IAS 39 requires the effectiveness of a hedging relationship to be assessed retrospectively as a minimum at each reporting date. Based on Company A's risk management policies, the effectiveness of the hedge must be assessed using the dollar offset method.

The dollar offset method consists of comparing the effects of the change in GBP LIBOR swap yield curve between 15 March and 30 June (in this case, a parallel shift of 0.5%) on the clean fair values of the hedged item and the hedging instrument.

Retrospective effectiveness test on 30 June 20x5

	15/9/20x5	15/12/20x5	15/3/20x6	…	15/12/2008	15/3/20x9	TOTAL
Cash flows on the swap							
Fixed leg	104,167	125,000	125,000	…	125,000	125,000	
Variable leg at YC2	(105,833)*	(128,257)	(129,765)	…	(146,327)	(147,830)	
Net cash flows	(1,667)	(3,257)	(4,765)	…	(21,327)	(22,830)	
Discounted CF at ZC2	(1,649)	(3,182)	(4,596)	…	(17,676)	(18,646)	**(161,184)**
					Clean fair value at original yield curve		**0**
					Change in clean fair value (cumulative)		**(161,184)**
Cash flows on the debt							
Cash flows	(104,167)**	(125,000)	(125,000)	…	(125,000)	(10,125,000)	
Discounted CF at ZC2	(103,078)	(122,127)	(120,563)	…	(103,600)	(8,269,357)	**(9,839,030)**
					Clean fair value at original yield curve		**(10,000,000)**
							160,970
						Effectiveness	**-100.1%**

* The variable rate for the first period is set to 5.08%. The rest of the variable cash flows are projected according to the forward rates derived from the current swap yield curve (YC2), as they have not yet been set.

** The effect of accruals needs to be removed, as the test is based on the clean fair value. 75 days of the next coupon have not yet been accrued; the amount of the first coupon included in the test is therefore the cash flow 125,000*75/90.

Conclusion: The hedge has been highly effective for the period ended 30 June 20x5.

Helpful hint

Based on Company A's risk management policies, the retrospective effectiveness test above uses the clean fair values of the swap and the debt. Accrued interest for the current period as well as the fair value changes due to the passage of time on the original swap yield curve are excluded from the tests.

The relationship is ineffective because the variable leg of the swap is pre-fixed and post paid. As the interest on the variable leg of the swap is determined at the beginning of the period (15 June) it is fixed until the next repricing date and therefore has an exposure to changes in its fair value. If the variable leg of the swap had been post-fixed/post-paid, then the ineffectiveness would have been lower.

5) Accounting entries on 30 June 20x5

Recognition of accrued interest on the bond

Accrued interest for 15 days on the loan is recognised.

(In GBP)	DR	CR
Finance costs – interest expense	29,167	
Accrued interest		29,167
Interest on the debt at 7% for 15 days		

Recognition of fair value changes of the swap

The recorded change in dirty fair value of the swap can be reconciled to the clean fair value of the swap as follows:

Clean fair value on 30/6/20x5	(161,184)
Accrued interest on receive fixed 5% for 15 days (discounted)	20,617
Accrued interest on pay variable 5.080% for 15 days (discounted)	(20,947)
Dirty fair value	**(161,514)**

The swap is recorded at the dirty fair value (ie, including the accrued interest).

(In GBP)	DR	CR
Other operating income and expense – ineffectiveness	161,184	
Finance costs – interest expense	330	
Derivative instruments		161,514
Fair value hedge – change in fair value of the swap including accrued interest		

Fair value adjustment to the hedged item

All the criteria for hedge accounting are met for the period ended 30 June 20x5, and fair value hedge accounting can be applied. The carrying amount of the debt is adjusted for the fair value change of the hedged risk (ie, the changes in the clean fair value of the debt attributable to changes in the zero coupon curve). The entry is as follows:

(In GBP)	DR	CR
Other operating income and expense – ineffectiveness		160,970
Other financial liabilities – debt	160,970	
Fair value hedge – change in fair value of the debt attributable to the hedged risk		

As the hedge is not 100% effective, the ineffectiveness of GBP 214 (GBP 161,184 – GBP 160,970) is recognised in profit or loss. Best practice is to present the ineffectiveness in 'other operating income and expense', as illustrated above.

6) Prospective effectiveness test on 30 June 20x5

The same method is used as at the inception of the hedge.

Prospective effectiveness test on 30 June 20x5

	15/9/20x5	15/12/20x5	15/3/20x6	…	15/12/20x8	15/3/20x9	TOTAL
Cash flows on the swap							
Fixed leg	104,167	125,000	125,000	…	125,000	125,000	
Variable leg @ YC2	(105,833)	(128,257)	(129,765)	…	(146,327)	(147,830)	
Net cash flows	(1,667)	(3,257)	(4,765)	…	(21,327)	(22,830)	
Discounted CF @ ZC2	(1,649)	(3,182)	(4,596)	…	(17,676)	(18,646)	**(161,184)**
Shifted zero coupon curve							
Fixed leg	104,167	125,000	125,000	…	125,000	125,000	
Variable leg @ YC2+1%	(105,833)	(152,234)	(153,731)	…	(170,177)	(171,669)	
Net cash flows	(1,667)	(27,234)	(28,731)	…	(45,177)	(46,669)	
Discounted CF @ ZC2+1%	(1,646)	(26,493)	(27,526)	…	(36,241)	(36,807)	**(451,850)**
							(290,666)
Cash flows on the debt							
Cash flows	(104,167)	(125,000)	(125,000)	…	(125,000)	(10,125,000)	
Discounted CF @ ZC2	(103,078)	(122,127)	(120,563)	…	(103,600)	(8,269,357)	**(9,839,030)**
Discounted CF @ ZC2+1%	(102,875)	(121,599)	(119,758)	…	(100,277)	(7,985,352)	**(9,528,668)**
							310,362
						Effectiveness	**-93.7%**

Conclusion: The hedge is expected to be highly effective.

7) Accounting entries on 1 July 20x5

The accrual of the interest on the debt is reversed.

(In GBP)	DR	CR
Finance costs – interest expense		29,167
Accrued interest	29,167	
Interest on the debt reversed at 7% for 15 days		

The accrual on the swap is reversed.

(In GBP)	DR	CR
Finance costs – interest expense		330
Other operating income and expense – ineffectiveness	330	
Accrued interest on the swap reversed for 15 days		

8) Accounting entries on 15 September 20x5

On 15 September the coupon on the loan is paid and the second period of the swap is settled.

Recognition of interest on the debt

(In GBP)	DR	CR
Finance costs – interest expense	175,000	
Cash		175,000
Interest on the debt at 7% for three months		

Cash settlement of the swap

(In GBP)	DR	CR
Finance costs – interest expense	127,000	
Finance costs – interest expense		125,000
Cash		2,000
Settlement of the swap: receive 5% and pay 5.080% for three months		

These two transactions result in a total charge of GBP 177,000 to finance cost, which is equivalent to 7.08% interest for the period (ie, the variable rate of 5.08% plus 2% credit spread).

The floating rate on the swap for the following quarter is set at the three-month swap rate of 5.28%.

9) Accounting entries on 15 December 20x5

On 15 December the coupon on the loan is paid and the third period of the swap is settled.

Recognition of interest on the debt

(In GBP)	DR	CR
Finance costs – interest expense	175,000	
Cash		175,000
Interest on the debt at 7% for three months		

Cash settlement of the swap

(In GBP)	DR	CR
Finance costs – interest expense	132,000	
Finance costs – interest expense		125,000
Cash		7,000
Settlement of the swap: receive 5% and pay 5.28% for three months		

These two transactions result in a total charge of GBP 182,000 to finance cost, which is equivalent to 7.28% interest for the period (ie, the variable rate of 5.28% plus 2% credit spread).

The floating rate on the swap for the following quarter is set at the three-month swap rate of 5.79%.

10) Retrospective effectiveness test on 31 December 20x5

The same method for retrospective testing is used as on 30 June 20x5. As required in Company A's risk management policies, the effectiveness test is done using the dollar offset method on a cumulative basis.

Retrospective effectiveness test on 31 December 20x5

	15/3/20x6	15/6/20x6	15/9/20x6	...	15/12/20x8	15/3/20x9	TOTAL
Cash flows on the swap							
Fixed leg	104,167	125,000	125,000	...	125,000	125,000	
Variable leg at YC3	(120,625)	(144,165)	(145,666)	...	(159,157)	(160,654)	
Net cash flows	(16,458)	(19,165)	(20,666)	...	(34,157)	(35,654)	
Discounted CF at ZC3	(16,265)	(18,671)	(19,844)	...	(28,605)	(29,386)	**(308,922)**
					Clean fair value at original yield curve		**0**
					Change in clean fair value (cumulative)		**(308,922)**
Cash flows on the debt							
Cash flows	(104,167)	(125,000)	(125,000)	...	(125,000)	(10,125,000)	
Discounted CF at ZC3	(102,943)	(121,776)	(120,028)	...	(104,681)	(8,345,128)	**(9,692,833)**
					Clean fair value at original yield curve		**(10,000,000)**
					Change in clean fair value (cumulative)		**307,167**
						Effectiveness	**-100.6%**

Conclusion: The hedge has been highly effective for the period ended 31 December 20x5.

11) Accounting entries on 31 December 20x5

Recognition of accrued interest on the bond

Accrued interest for 15 days on the loan is recognised.

(In GBP)	DR	CR
Finance costs – interest expense	29,167	
Accrued interest		29,167
Interest on the debt at 7% for 15 days		

Recognition of fair value changes of the swap

	GBP
Clean fair value of the swap	(308,922)
Accrued interest on receive fix 5% for 15 days	20,589
Accrued interest on pay variable 5.79% for 15 days	(23,842)
Dirty fair value of the swap on 31 December 20x5	(312,175)
Dirty fair value of the swap on 30 June 20x5:	(161,514)
Change in fair value to be recognised on 31 December 20x5	**(150,661)**

The swap is recorded at the dirty fair value (ie, including the accrued interest).

(In GBP)	DR	CR
Other operating income and expense – ineffectiveness	147,408	
Finance costs – interest expense	3,253	
Derivative instruments		150,661
Fair value hedge – change in fair value of the swap		

Fair value adjustment to the hedged item

All the criteria for hedge accounting are met for the period ended 31 December 20x5, and fair value hedge accounting can be applied.

	GBP
Fair value adjustment on debt on 30 June 20x5	160,970
Fair value adjustment on debt on 31 December 20x5	307,167
Change in the clean fair value of the debt	**146,197**

The carrying amount of the debt is adjusted for the fair value change of the hedged risk (ie, the clean fair value changes of the swap yield curve). The entry is as follows:

(In GBP)	DR	CR
Other financial liabilities – debt	146,197	
Other operating income and expense – ineffectiveness		146,197
Fair value hedge – change in fair value of the debt attributable to the hedged risk		

As the hedge is not 100% effective, the ineffectiveness of GBP 1,211 (GBP 147,408 – GBP 146,197) is recognised in profit or loss. Best practice is to present the ineffectiveness in 'other operating income and expense', as illustrated above.

12) Prospective effectiveness test on 31 December 20x5

The same method is used as at the inception of the hedge.

Prospective effectiveness test on 31 December 20x5

	15/3/20x6	15/6/20x6	15/9/20x6	...	15/12/20x8	15/3/20x9	TOTAL
Cash flows on the swap							
Fixed leg	104,167	125,000	125,000	...	125,000	125,000	
Variable leg at YC3	(120,625)	(144,165)	(145,666)	...	(159,157)	(160,654)	
Net cash flows	(16,458)	(19,165)	(20,666)	...	(34,157)	(35,654)	
Discounted CF at ZC3	(16,265)	(18,671)	(19,844)	...	(28,605)	(29,386)	**(308,922)**
Shifted zero coupon curve							
Fixed leg	104,167	125,000	125,000	...	125,000	125,000	
Variable leg at YC3+1%	(120,625)	(168,030)	(169,520)	...	(182,917)	(184,403)	
Net cash flows	(16,458)	(43,030)	(44,520)	...	(57,917)	(59,403)	
Discounted CF at ZC3+1%	(16,233)	(41,740)	(42,466)	...	(47,176)	(47,511)	**(556,044)**
							(247,122)
Cash flows on the debt							
Cash flows	(104,167)	(125,000)	(125,000)	...	(125,000)	(10,125,000)	
Discounted CF at ZC3	(102,943)	(121,776)	(120,028)	...	(104,681)	(8,345,128)	**(9,692,833)**
Discounted CF at ZC3+1%	(102,742)	(121,253)	(119,231)	...	(101,818)	(8,097,959)	**(9,426,135)**
							266,698
						Effectiveness	**-92.7%**

Conclusion: The hedge is expected to be highly effective.

The testing and accounting entries are carried out in the same manner throughout the remaining life of the hedge relationship.

Summary of accounting entries

	Balance sheet								Income statement			
	Derivative instruments		Accrued interest		Other financial liabilities – debt		Cash		Finance cost – interest expense		Other operating income and expense – ineffectiveness	
15/3/20x5												
Debt						10,000,000	10,000,000					
Swap	–							–				
15/6/20x5												
Interest on debt								175,000	175,000			
Settlement of swap							10,941		114,059	125,000		
30/6/20x5												
Accrued interest on debt				29,167					29,167			
Fair value change of swap		161,514							330		161,184	
Hedge adjustment to debt					160,970							160,970
1/7/20x5												
Accruals reversed on debt			29,167							29,167		
Accruals reversed on swap										330	330	
15/9/20x5												
Interest								175,000	175,000			
Settlement of swap								2,000	127,000	125,000		
15/12/20x5												
Interest								175,000	175,000			
Settlement of swap								7,000	132,000	125,000		
31/12/20x5												
Accrued interest on debt				29,167					29,167			
Fair value change of swap		150,661							3,253		147,408	
Hedge adjustment to debt					146,197							146,197

Illustration 2: Partial 'conversion' of variable rate debt into fixed rate debt using an interest rate cap – cash flow hedge

Background and assumptions

Company Z is a French company with a EUR functional currency. Company Z's reporting dates are 30 June and 31 December.

On 1 January 20x5, Company Z issues at par a EUR 100m three-year debt. The debt bears interest at a variable rate calculated as six-month EURIBOR plus 80 basis points set semi-annually on 1 January and 1 July. The rate for the first coupon is set at 3.80%. Interest is paid semi-annually on 30 June and 31 December. No transaction costs are incurred on issuing the debt.

Helpful hint

Transaction costs are incremental costs that are directly attributable to the acquisition, issue or disposal of a financial asset or financial liability. The issuance of debt usually incurs transaction costs. These costs are included in the carrying amount of the liability when the debt is first recognised in the issuer's balance sheet. They affect the calculation of the effective interest rate on the debt but, as they are fixed, they do not modify the issuer's exposure to variability in cash flows.

On 1 January 20x5, Company Z buys a three-year interest rate cap on six-month EURIBOR with a strike rate of 3%. The purchased cap is settled on 30 June and 31 December of each year based on the six-month EURIBOR at settlement date. Company Z pays an upfront premium for the cap of EUR 150,000.

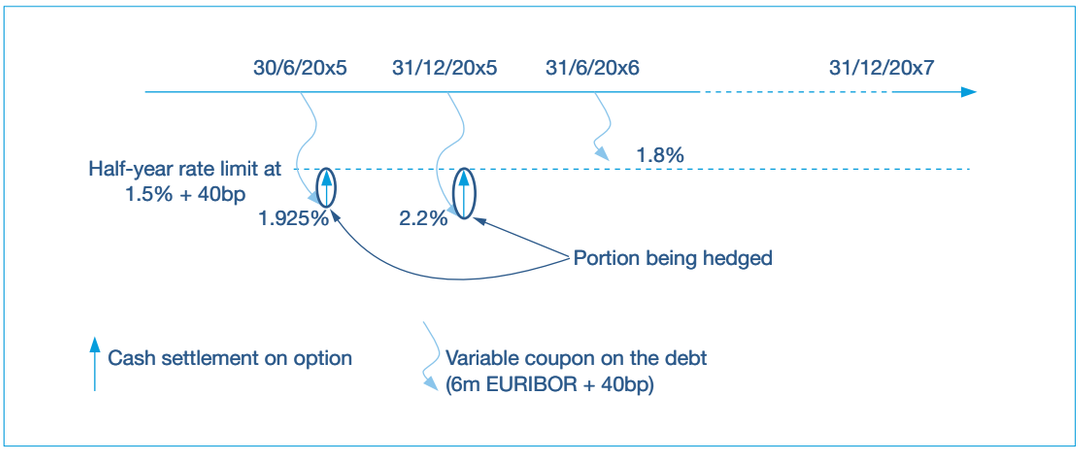
The zero-coupon curves derived from EURIBOR on various dates during the hedge are as follows:

Zero coupon rates	30/6/20x5	31/12/20x5	30/6/20x6	31/12/20x6	30/6/20x7	31/12/20x7
1/1/20x5 (ZC1)	3.00%	3.02%	3.04%	3.06%	3.08%	3.10%
30/6/20x5 (ZC2)	3.05%	3.07%	3.09%	3.11%	3.13%	3.15%
31/12/20x5 (ZC3)		3.60%	3.62%	3.64%	3.66%	3.68%
30/6/20x6 (ZC4)			2.80%	2.82%	2.84%	2.86%

Helpful hint

The yield curves represent the interest rates that would be applicable for cash flows on various dates in the future. For example, in the table above, the first row shows the market rates at 1 January for cash flows on the dates in the column headings (ie, a loan from 1 January 20x5 to 30 June 20x5 will have a rate of 3.00%, and a loan from 1 January 20x5 to 30 June 20x6 will have a rate of 3.04%).

As the coupons are paid semi-annually, the hedged cash flows are only those relating to coupons in excess of 1.90%. The hedged portion is calculated as cash flows in excess of 50% x [strike of the cap of 3% + credit spread on the debt of 80 basis points], as illustrated below:



Extracts of risk management policies for interest rate risk

Company Z is exposed to interest rate risk on interest bearing debt and investments.

Company Z manages its exposure to interest rate risk through the proportion of fixed and variable rate net debt in its total net debt portfolio. This proportion is determined twice a year by Company Z's board of directors on the recommendation of its financial risk committee.

To manage this proportion of fixed and variable rate net debt, Company Z may enter into the following derivative financial instruments: interest rate swaps; purchased interest rate caps; and interest rate collars, provided that, in the case of a collar, either a net premium is paid or the value at inception is nil. For the purpose of determining the proportion of fixed and variable rate debt, caps and collars are regarded as 'converting' debt to fixed rate. However, the proportion of debt that is subject to a cap or collar may not exceed 10% of the total net debt outstanding.

Extracts of effectiveness testing policies for interest rate risk

Strategy 1B: Interest rate hedges using purchased interest rate caps and collars

Prospective effectiveness testing for cash flow hedge relationships

Prospective effectiveness testing should be performed at the inception of the hedge and at each reporting date. The hedge relationship is highly effective if the changes in fair value or cash flow of the hedged item that are attributable to the hedged risk are expected to be offset by the changes in fair value or cash flows of the hedging instrument.

Prospective effectiveness testing should be performed by comparing the numerical effects of a shift (increase) in the relevant interest rate on both the present value of cash flows being hedged and the fair value of the hedging instrument.

This test should normally be based on at least three interest rate scenarios. However, for hedges where the critical terms of the hedging instrument perfectly match the critical terms of the hedged item, one scenario is sufficient (assuming a shift of 100 basis points up or down).

When the hedging instrument is an option (a cap or a collar), the time value is not included in the hedge relationship and is excluded from prospective effectiveness testing.

Retrospective effectiveness testing for cash flow hedge relationships

Retrospective effectiveness testing should be performed at each reporting date using the dollar offset method on a period-by-period basis. The hedge is tested for effectiveness by comparing the change in the clean present value of the hedged item attributable to the risk being hedged with the change in the clean fair value of the hedging instrument for the period. The hedge is effective if this amount falls within a range of 80%-125%. Accrued interest is not taken into account in such tests.

$$\text{Effectiveness} = \frac{\text{Change in clean fair value of hedging instrument}}{\text{Change in clean fair value (present value) of hedged cash flows}}$$

When the hedging instrument is an option (a cap or a collar), the option's time value is not included in the hedge relationship and is therefore excluded from retrospective effectiveness testing.

Change in intrinsic value of the cap is the difference between the intrinsic value of the cap at the beginning and end of the testing period. The cap's cash flows are calculated using the current spot rate and discounted using the zero-coupon rates derived from the relevant swap yield curve.

Change in present value of the coupons paid on debt is the difference between the present value of the projected coupons paid on debt (excluding the credit spread) at the beginning and end of the testing period, attributable to movements in six-month EURIBOR for rates of six-month EURIBOR above the hedged rate. The coupons are calculated using the current spot rate and discounted using the zero-coupon rates derived from the swap yield curve.

Helpful hint
When effectiveness is tested on a period-by-period basis, the fair value changes from the last testing date to the current testing date of the hedged item and the hedging instrument are compared. A cumulative test, on the other hand, uses the fair value change from inception of the hedge to the testing date.

Helpful hint
IAS 39 does not specify how the intrinsic value of an option (such as the cap in this illustration) is determined. Intrinsic value is defined in this example based on the spot rate. All future cash flows on the cap are projected at the current spot rate and discounted using the zero-coupon curve. If the current spot rate is below the market rate, the cap is 'out of the money' in all periods.

Alternatively, the intrinsic value could be defined using the forward rate curve. The projected cash flows would be calculated using the forward rates. In that case the cap may be in the money in some periods, even when the current spot rate is below the strike price.

Hedge designation

Company Z's hedge documentation is as follows:

1) Risk management objective and strategy

For the current period, Company Z's approved strategy in accordance with its risk management policies is to maintain a ratio of fixed:floating rate net debt of between 40:60 and 50:50. In order to meet this chosen ratio, management has decided to cap the floating rate of this debt.

2) Type of hedging relationship

Cash flow hedge: cap floating interest rate at 3% + 80 basis points.

3) Nature of risk being hedged

Interest rate risk: variability in coupons paid on the debt number Q512G attributable to movements in six-month EURIBOR when six-month EURIBOR is above 3%. Credit risk on the debt is not designated as being hedged.

4) Identification of hedged item

Transaction number: reference number Q512G in the treasury management system.

The hedged item is a three-year, EUR 100m debt with a coupon of six-month EURIBOR + 80 basis points, paid semi-annually on 30 June and 31 December.

5) Identification of hedging instrument

Transaction number: reference number H177D in the treasury management system.

The hedging instrument is a purchased three-year interest rate cap with the following characteristics:

Type	Purchased cap
Notional amount	EUR 100m
Strike	3%
Underlying	Six-month EURIBOR (at settlement date)
Start date	1 January 20x5
Maturity date	31 December 20x7
Settlement dates	30 June and 31 December
Premium paid	EUR 150,000

Hedge designation: the change in the intrinsic value of the cap H177D is designated as a hedge of the change in the present value of the coupons on the debt Q512G attributable to movements in six-month EURIBOR when six-month EURIBOR is above 3% (see point (3) above). The time value of the cap is excluded from the designation.

6) Effectiveness testing

Hedge accounting strategy 1B shall be applied (see hedge effectiveness testing policy).

Description of prospective test

Dollar offset method, being the ratio of the change in the intrinsic value of the cap H177D, divided by the change in the present value of the coupons paid on the debt Q512G attributable to changes in six-month EURIBOR interest rate (ie, excluding the credit spread on the debt).

The critical terms of the cap perfectly match the critical terms of the portion of the debt designated as the hedged item. As permitted in the risk management polices, the prospective tests will therefore be performed using only one scenario (a 100 basis points shift upwards in six-month EURIBOR).

Frequency of testing: at the inception of the hedge and then at each reporting date (30 June and 31 December).

Description of retrospective test

Dollar offset method, being the ratio of the change in the intrinsic value of the cap H177D, divided by the change in the present value of the coupons paid on the debt Q512G attributable to changes in six-month EURIBOR interest rate (excluding the credit spread) for rates of six-month EURIBOR above 3%.

Frequency of testing: at every reporting date (30 June and 31 December) after the inception of the hedge.

Effectiveness tests and accounting entries

1) Prospective effectiveness test on 1 January 20x5

Six-month EURIBOR is 3% at inception of the hedge. Company Z's management must assess prospectively the effectiveness of the hedge, as required by IAS 39.

Based on the hedge documentation, the prospective effectiveness test consists of comparing the effects of a 100 basis points shift of the six-month EURIBOR on the intrinsic value of the cap and the present value of the hedged cash flows.

Helpful hint
The repayment of the principal amount of the debt is not part of the designated hedged item as it does not expose Company Z to a risk of variability in cash flows.

A coupon of six-month EURIBOR + 80 basis points is paid on the debt. For effectiveness testing purposes, only the cash flows relating to six-month EURIBOR are taken into account. The credit risk associated with the debt (80 basis points) is not part of the hedge relationship; it is therefore excluded from the tests.

Prospective effectiveness test on 1 January 20x5

	30/6/20x5	31/12/20x5	30/6/20x6	31/12/20x6	30/6/20x7	31/12/20x7	TOTAL
Cash flows on the cap							
Expected cash flows at 3.00%	0	0	0	0	0	0	
Discounted CF at ZC1	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected cash flows at 4.00%	500,000	500,000	500,000	500,000	500,000	500,000	
Discounted CF at ZC1+1%	490,290	480,677	471,161	461,745	452,430	443,218	**2,799,522**
							2,799,522
Cash flows on the debt							
Expected cash flows at 3.00%	(1,500,000)	(1,500,000)	(1,500,000)	(1,500,000)	(1,500,000)	(1,500,000)	
Benchmark rate*	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	
Portion being hedged	0	0	0	0	0	0	
Discounted CF (ZC1)	0	0	0	0	0	0	**0**
Expected cash flows at 4.00%	(2,000,000)	(2,000,000)	(2,000,000)	(2,000,000)	(2,000,000)	(2,000,000)	
Benchmark rate	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	
Portion being hedged	(500,000)	(500,000)	(500,000)	(500,000)	(500,000)	(500,000)	
Discounted CF at ZC1 + 1%	(490,290)	(480,677)	(471,161)	(461,745)	(452,430)	(443,218)	**(2,799,522)**
							(2,799,522)
						Effectiveness	**-100%**

* Intrinsic value of the cap only

Conclusion: The hedge is expected to be highly effective.

Helpful hint

As the critical terms of the cap perfectly match the critical terms of the debt, a quantitative test is not necessarily required. A qualitative test consisting of a comparison of the critical terms of the hedging instrument and the hedged item is sufficient as long as it is consistent with Company Z's risk management policies.

2) Accounting entries on 1 January 20x5

The debt is recognised at the proceeds received by Company Z, which represents its fair value on the issuance date. The debt is classified as other financial liabilities and will be subsequently measured at amortised cost.

(In EUR)	DR	CR
Cash	100,000,000	
Other financial liabilities – debt		100,000,000
Issuance at par of a EUR 100m three-year variable rate debt		

The cap entered into by Company Z is recognised at fair value in the balance sheet, which is the premium paid by Company Z.

(In EUR)	DR	CR
Derivative instrument – cap	150,000	
Cash		150,000
Recognition of the interest rate cap at fair value		

Helpful hint

As the strike of the cap and six-month EURIBOR are both 3%, the cap has no intrinsic value at inception. The premium paid by Company Z represents only time value.

3) Retrospective effectiveness test on 30 June 20x5

IAS 39 requires the effectiveness of a hedging relationship to be assessed retrospectively as a minimum at each reporting date. Based on Company Z's risk management policies, the effectiveness of the hedge is assessed using the dollar offset method on a period-by-period basis.

The dollar offset method consists of comparing the effects of the change in six-month EURIBOR (from 3% to 3.05%) on the intrinsic value of the hedging instrument and the on the present value of the hedged cash flows, as presented opposite.

Retrospective effectiveness test on 30 June 20x5

	30/6/20x5	31/12/20x5	30/6/20x6	31/12/20x6	30/6/20x7	31/12/20x7	TOTAL
Cash flows on the cap							
Expected cash flows at 3.00%	0	0	0	0	0	0	
Discounted CF at ZC1	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Expected cash flows at 3.05%	already received	25,000	25,000	25,000	25,000	25,000	
Discounted CF at ZC2	N/A	24,625	24,251	23,877	23,506	23,135	**119,393**
							119,393
Cash flows on the debt							
Expected cash flows at 3.00%	(1,500,000)	(1,500,000)	(1,500,000)	(1,500,000)	(1,500,000)	(1,500,000)	
Benchmark rate	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	
Portion being hedged	0	0	0	0	0	0	
Discounted CF at ZC1	0	0	0	0	0	0	**0**
Expected cash flows at 3.05%	already paid	(1,525,000)	(1,525,000)	(1,525,000)	(1,525,000)	(1,525,000)	
Benchmark rate	N/A	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	
Portion being hedged	N/A	(25,000)	(25,000)	(25,000)	(25,000)	(25,000)	
Discounted CF at ZC2	N/A	(24,625)	(24,251)	(23,877)	(23,506)	(23,135)	**(119,393)**
							(119,393)
						Effectiveness	**-100%**

Conclusion: The hedge has been highly effective for the period ended 30 June 20x5.

Helpful hint

The hedge was 100% effective, as the critical terms of the cap match those of the debt and the time value of the cap is excluded from the hedge relationship. If the time value was not excluded from the hedge relationship, the hedge would not be highly effective, as shown below, with the result that hedge accounting could not be applied:

	EUR	
Intrinsic value	119,393	
Time value	(30,000)	
Change in fair value of the cap		89,393
Change in present value of the hedged cash flows		119,393
Effectiveness ratio		**75%**

The fair value of the derivative before cash settlement (EUR 264,393) includes the accrual on the cap for the first period of EUR 25,000 and time value of EUR 120,000. The total intrinsic value before settlement is EUR 144,393. The effectiveness testing is performed on clean fair values, ie, without any accruals.

4) Accounting entries on 30 June 20x5

The six-month EURIBOR at 30 June 20x5 is 3.05%. The floating rate coupon for the first six months is paid, cash flow hedge accounting is applied and the first coupon of the cap is settled.

Recognition of interest paid on the debt

(In EUR)	DR	CR
Finance costs – interest expense	1,925,000	
Cash		1,925,000
Interest on the debt for six months		

Cash flow hedge accounting

As presented in the table below, the change in the fair value of the cap (before cash settlement of the first coupon) amounts to EUR 114,393 for the period ended 30 June 20x5.

Hedging instrument	Fair value 1/1/20x5	Change	Value before settlement 30/6/20x5	Cash settlement	Clean fair value 30/6/20x5
Fair value of the cap	**150,000**	**114,393**	**264,393**	**-25,000**	**239,393**
Intrinsic value	0	144,393	144,393	-25,000	119,393
Time value	150,000	(30,000)	120,000	–	120,000

*The time value has been assumed rather than calculated for the purpose of this example. In practice, the time value would be established using an option pricing model and would vary with factors such as interest rates, the remaining term of the cap and the volatility of interest rates.

Only the change in the intrinsic value of the cap amounting to EUR 144,393 is part of the hedge relationship. Based on the retrospective effectiveness test performed on 30 June 20x5, the hedge is 100% effective. The change in the intrinsic value of the cap is therefore recognised in equity. The change in the time value of the cap (EUR -30,000) is not part of the hedge and must therefore be recognised directly in profit or loss.

(In EUR)	DR	CR
Derivative instrument – cap	114,393	
Other operating income and expenses	30,000	
Cash flow hedge reserve (equity)		144,393
Cash flow hedge – change in fair value of the cap		

Recognition of cash settlement on the cap

(In EUR)	DR	CR
Cash	25,000	
Derivative instrument		25,000
Interest on the cap for six months 100,000,000 x (3.05%-3.00%) x 6/12 is received		

Recycling of gain on cap that relates to this period

(In EUR)	DR	CR
Cash flow hedge reserve (equity)	25,000	
Finance cost – interest expense		25,000
Interest on the cap for six months 100,000,000 x (3.05%-3%) x 6/12 is recycled		

The overall effect is that Company Z pays a net coupon of EUR 1.9m for the period ended 30 June 20x5, representing a rate of 3.8% per annum (strike of cap of 3% + 80 bp).

Helpful hint

Best practice is that, unless hedge accounting is applied, all fair value movements on derivatives, including cash settlements, are presented in the income statement as 'other operating income or expense'. When hedge accounting is applied, the effective part of the fair value movement of the hedging instrument is presented on the same line as the hedged item.

5) Prospective effectiveness test on 30 June 20x5

The same method is used as at the inception of the hedge.

Prospective effectiveness test on 30 June 20x5

	30/6/20x5	31/12/20x5	30/6/20x6	31/12/20x6	30/6/20x7	31/12/20x7	TOTAL
Cash flows on the cap							
Expected cash flows at 3.05%	already received	25,000	25,000	25,000	25,000	25,000	
Discounted CF at ZC2	N/A	24,625	24,251	23,877	23,506	23,135	**119,393**
Expected cash flows at 4.05%	already received	525,000	525,000	525,000	525,000	525,000	
Discounted CF at ZC2+1%	N/A	514,632	504,371	494,220	484,181	474,254	**2,471,658**
							2,352,265
Cash flows on the debt							
Expected cash flows at 3.05%	already paid	(1,525,000)	(1,525,000)	(1,525,000)	(1,525,000)	(1,525,000)	
Benchmark rate	N/A	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	
Portion being hedged	N/A	(25,000)	(25,000)	(25,000)	(25,000)	(25,000)	
Discounted CF at ZC2	N/A	(24,625)	(24,251)	(23,877)	(23,506)	(23,135)	**(119,393)**
Expected cash flows at 4.05%	already paid	(2,025,000)	(2,025,000)	(2,025,000)	(2,025,000)	(2,025,000)	
Benchmark rate	N/A	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	
Portion being hedged	N/A	(525,000)	(525,000)	(525,000)	(525,000)	(525,000)	
Discounted CF at ZC2+1%	N/A	(514,632)	(504,371)	(494,220)	(484,181)	(474,254)	**(2,471,658)**
							(2,352,265)
						Effectiveness	**-100%**

Conclusion: The hedge is expected to be highly effective.

6) Retrospective effectiveness test on 31 December 20x5

The six-month EURIBOR on 31 December 20x5 is 3.60%.

The same method is used as at 30 June 20x5. As required in Company Z's risk management policies, the effectiveness test is performed on a period-by-period basis.

Retrospective effectiveness test on 31 December 20x5

	31/12/20x5	30/6/20x6	31/12/20x6	30/6/20x7	31/12/20x7	TOTAL
Cash flows on the cap						
Expected cash flows at 3.05%	25,000	25,000	25,000	25,000	25,000	
Discounted CF at ZC2	24,625	24,251	23,877	23,506	23,135	**119,393**
Expected cash flows at 3.60%	already received	300,000	300,000	300,000	300,000	
Discounted CF at ZC3	N/A	294,713	289,464	284,253	279,082	**1,147,511**
						1,028,118
Cash flows on the debt						
Expected cash flows at 3.05%	(1,525,000)	(1,525,000)	(1,525,000)	(1,525,000)	(1,525,000)	
Benchmark rate	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	
Portion being hedged	(25,000)	(25,000)	(25,000)	(25,000)	(25,000)	
Discounted CF at ZC2	(24,625)	(24,251)	(23,877)	(23,506)	(23,135)	**(119,393)**
Expected cash flows at 3.60%	already paid	(1,800,000)	(1,800,000)	(1,800,000)	(1,800,000)	
Benchmark rate	N/A	1,500,000	1,500,000	1,500,000	1,500,000	
Portion being hedged	N/A	(300,000)	(300,000)	(300,000)	(300,000)	
Discounted CF at ZC3	N/A	(294,713)	(289,464)	(284,253)	(279,082)	**(1,147,511)**
						(1,028,118)
					Effectiveness	**-100%**

Conclusion: the hedge has been highly effective for the period ended 31 December 20x5.

7) Accounting entries on 31 December 20x5

The six-month EURIBOR at 31 December 20x5 is 3.60%. The floating rate coupon for the six-month period is paid, cash flow hedge accounting is applied and the payment on the cap is settled.

Recognition of interest paid on the debt

(In EUR)	DR	CR
Finance costs – interest expense	2,200,000	
Cash		2,200,000
Interest on the debt for six months		

Cash flow hedge accounting

As presented in the table below, the change in the fair value of the cap (before cash settlement) amounts to EUR 1,298,118 for the period ended 31 December 20x5.

Hedging instrument	Clean fair value 30/6/20x5	Change	Value before settlement 31/12/20x5	Cash settlement	Clean fair value 31/12/20x5
Fair value of the cap	**239,393**	**1,298,118**	**1,537,511**	**(300,000)**	**1,237,511**
Intrinsic value	119,393	1,328,118	1,447,511	(300,000)	1,147,511
Time value	120,000	(30,000)	90,000	0	(90,000)

Only the change in the intrinsic value of the cap amounting to EUR 1,328,118 is part of the hedge relationship. Based on the retrospective effectiveness test performed on 31 December 20x5, the hedge is 100% effective. The change in the intrinsic value of the cap is therefore recognised in equity. The change in the time value of the cap (EUR 30,000) is not part of the hedge and is therefore recognised directly in profit or loss.

(In EUR)	DR	CR
Derivative instrument – cap	1,298,118	
Other operating income and expenses	30,000	
Cash flow hedge reserve (equity)		1,328,118
Cash flow hedge – change in fair value of the cap		

Recognition of cash settlement of the cap

(In EUR)	DR	CR
Cash	300,000	
Derivative instrument – cap		300,000
Interest on the cap for six months 100,000,000 x (3.60%-3.00%) x 6/12 is received		

Recycling of gain on cap that relates to this period

(In EUR)	DR	CR
Cash flow hedge reserve (equity)	300,000	
Finance cost – interest expense		300,000
Interest on the cap for six months 100,000,000 x (3.60%-3,00%) x 6/12 is recycled		

The overall effect is that Company Z pays a net coupon of EUR 1.9m for the period ended 31 December 20x5, representing a rate of 3.8% per annum (strike of cap of 3% + 80 bp).

8) Prospective effectiveness test on 31 December 20x5

The same method is used as at the inception of the hedge.

Prospective effectiveness test on 31 December 20x5

	31/12/20x5	30/6/20x6	31/12/20x6	30/6/20x7	31/12/20x7	TOTAL
Cash flows on the cap						
Expected cash flows at 3.60%	already received	300,000	300,000	300,000	300,000	
Discounted CF at ZC3	N/A	294,713	289,464	284,253	279,082	**1,147,511**
Expected cash flows at 4.60%	N/A	800,000	800,000	800,000	800,000	
Discounted CF at ZC3+1%	N/A	782,211	764,818	747,812	731,184	**3,026,026**
						1,878,515
Cash flows on the debt						
Expected cash flows at 3.60%	already paid	(1,800,000)	(1,800,000)	(1,800,000)	(1,800,000)	
Benchmark rate	N/A	1,500,000	1,500,000	1,500,000	1,500,000	
Portion being hedged	N/A	(300,000)	(300,000)	(300,000)	(300,000)	
Discounted CF at ZC3	N/A	(294,713)	(289,464)	(284,253)	(279,082)	**(1,147,511)**
Expected cash flows at 4.60%	already paid	(2,300,000)	(2,300,000)	(2,300,000)	(2,300,000)	
Benchmark rate	N/A	1,500,0000	1,500,000	1,500,000	1,500,000	
Portion being hedged	N/A	(800,000)	(800,000)	(800,000)	(800,000)	
Discounted CF at ZC3+1%	N/A	(782,211)	(764,818)	(747,812)	(731,184)	**(3,026,026)**
						(1,878,515)
					Effectiveness	**-100%**

Conclusion: the hedge is expected to be highly effective.

9) Retrospective effectiveness test on 30 June 20x6

The six-month EURIBOR on 30 June 20x6 is 2.80%, below the strike price of the cap.

As the strike price of the cap is above the market rate, there is no intrinsic value. A detailed calculation is not necessary, as it is obvious that the hedged portion of the debt (ie, the cash flows when interest rates are below 3%) is zero in this period and that the portion of the derivative that hedges this risk (ie, the intrinsic value of the cap) is also zero.

Conclusion: the hedge has been highly effective for the period ended 30 June 20x6.

Helpful hint

Although six-month EURIBOR is below the strike price of the cap, the hedge has still been highly effective; cash flow hedge accounting can therefore still be applied as long as all the conditions for hedge accounting are met.

10) Accounting entries on 30 June 20x6

The six-month EURIBOR on 30 June 20x6 is 2.80%, below the strike price of the cap. The floating rate coupon for the six-month period is paid. There is no cash settlement for the cap, as it is out of the money (ie, the cap is not exercised because the six-month EURIBOR is below its strike price).

Recognition of paid interest on the debt

(In EUR)	DR	CR
Finance costs – interest expense	1,800,000	
Cash		1,800,000
Interest on the debt for six months		

Cash flow hedge accounting

As presented in the table below, the change in the fair value of the cap amounts to EUR -1,167,511 for the period ended 30 June 20x6. As six-month EURIBOR is below the strike price of the cap, the intrinsic value of the cap is nil.

Hedging instrument	Clean fair value 31/12/20x5	Change	Value before settlement 30/6/20x6	Cash settlement	Clean fair value
Fair value of the cap	**1,237,511**	**(1,167,511)**	**70,000**	**–**	**70,000**
Intrinsic value	1,147,511	(1,147,511)	Nil	–	Nil
Time value	90,000	(20,000)	70,000	–	70,000

The change in the time value of the cap (EUR -20,000) is not part of the hedge and therefore must be recognised directly in profit or loss.

(In EUR)	DR	CR
Other operating income and expenses	20,000	
Cash flow hedge reserve (equity)	1,147,511	
Derivative instrument – cap		1,167,511
Cash flow hedge – change in fair value of the cap		

11) Prospective effectiveness test on 30 June 20x6

The same method is used as is described at inception of the hedge.

Prospective effectiveness test on 30 June 20x6

	30/6/20x6	31/12/20x6	30/6/20x7	31/12/20x7	TOTAL
Cash flows on the cap					
Expected cash flows at 2.8%	N/A	0	0	0	
Discounted CF at ZC3%	N/A	0	0	0	**0**
Expected cash flows at 3.8%	N/A	400,000	400,000	400,000	
Discounted CF at ZC4	N/A	392,572	385,208	377,909	**1,155,689**
					(1,555,689)
Cash flows on the debt					
Expected cash flows at 2.8%	already paid	(1,400,000)	(1,400,000)	(1,400,000)	
Benchmark rate	N/A	1,500,000	1,500,000	1,500,000	
Portion being hedged	N/A	0	0	0	
Discounted CF at ZC3	N/A	0	0	0	**0**
Expected cash flows at 3.8%	N/A	(1,900,000)	(1,900,000)	(1,900,000)	
Benchmark rate	N/A	1,500,000	1,500,000	1,500,000	
Portion being hedged	N/A	(400,000)	(400,000)	(400,000)	
Discounted CF at ZC4	N/A	(392,572)	(385,208)	(377,909)	**(1,155,689)**
					(1,155,689)
				Effectiveness	**-100%**

Conclusion: the hedge is expected to be highly effective.

The testing and accounting entries are carried out in the same manner throughout the remaining life of the hedge relationship.

Summary of accounting entries

	Balance sheet								Income statement			
	Derivative instruments		Other financial liabilities – debt		Cash		Cash flow hedge reserve (equity)		Finance cost – interest expense		Other operating income and expense	
1 January 20x5												
Recognition of the debt				100,000,000	100,000,000							
Recognition of the cap	150,000					150,000						
30 June 20x5												
Interest on the debt						1,925,000			1,925,000			
CFH accounting	114,393							144,393			30,000	
Settlement on cap		25,000			25,000							
Recycling on cap							25,000			25,000		
31 December 20x5												
Interest on the debt						2,200,000			2,200,000			
CFH accounting	1,298,118							1,328,118			30,000	
Settlement on cap		300,000			300,000							
Recycling on cap							300,000			300,000		
30 June 20x6												
Interest on the debt						1,800,000			1,800,000			
CFH accounting		1,167,511					1,147,511				20,000	

Illustration 3: Hedge of highly probable foreign currency forecast purchases – cash flow hedge

Background and assumptions

Company C is a Swedish company with a SEK functional currency. Its reporting dates are 30 June and 31 December.

Company C produces and sells electronic components for the automotive industry and is planning to launch a new electronic component that it expects to be more reliable and cheaper than the existing alternatives.

Production is scheduled to start in June 20x6. Company C's management expects to purchase a significant amount of raw material in May 20x6 for the start of production. An external company based in Spain will supply the raw material. Based on C's production plans and the prices that the supplier is currently charging, Company C's management forecasts that 500,000 units of raw material will be received and invoiced on 1 May 20x6 at a price of EUR 50 per unit. The invoice is expected to be paid on 31 August 20x6.

On 1 January 20x5, Company C's management decides to hedge the foreign currency risk arising from its highly probable forecast purchase. C enters into a forward contract to buy EUR against SEK. On that date, the forecast purchase is considered as highly probable, as the board of directors has approved the purchase, and negotiations with the Spanish supplier are far advanced.

The foreign currency forward contract entered into as a hedge of the highly probable forecast purchase is as follows:

Type	European forward contract
Amount purchased	EUR 25,000,000
Amount sold	SEK 192,687,500
Forward rate	EUR 1 = SEK 7.7075
Start date	1 January 20x5
Maturity date	31 August 20x6

Exchange rates on various dates during the hedge are as follows:

	1/1/20x5	30/6/20x5	31/12/20x5	30/6/20x6	31/7/20x6	31/8/20x6	31/10/20x6
SEK/EUR spot rate	7.6900	7.6500	7.7500	7.8100	7.9000	8.1500	8.0500
SEK/EUR forward rate*	7.7075	7.6622	7.7574	7.8118	7.9008	8.1500	
Forward points	**0.0175**	**0.0122**	**0.0074**	**0.0018**	**0.0008**	**0.0000**	

* For a forward maturing on 31 August 20x6.

Annualised interest rates applicable for discounting a cash flow on 31 August 20x6 at various dates during the hedge are as follows:

	1/1/20x5	30/6/20x5	31/12/20x5	30/6/20x6	31/7/20x6	31/8/20x6
SEK interest rate	1.3550%	1.3850%	1.3670%	1.3850%	1.4240%	1.4030%
EUR interest rate	1.4916%	1.5213%	1.5100%	1.5200%	1.5470%	1.5170%

Extracts of risk management policies for foreign currency risk

Foreign currency risk

Company C's functional and presentation currencies are the SEK (Swedish krona). Company C is exposed to foreign exchange risk because some of its purchases and sales are denominated in currencies other than SEK. It is therefore exposed to the risk that movements in exchange rates will affect both its net income and financial position, as expressed in SEK.

Company C's foreign currency exposure arises from:

1) highly probable forecast transactions (sales/purchases) denominated in foreign currencies;

2) firm commitments denominated in foreign currencies; and

3) monetary items (mainly trade receivables, trade payables and borrowings) denominated in foreign currencies.

Company C is mainly exposed to EUR/SEK and GBP/SEK risks. Transactions denominated in foreign currencies other than EUR and GBP are not material.

Company C's policy is to hedge all material foreign exchange risk associated with highly probable forecast transactions, firm commitments and monetary items denominated in foreign currencies.

Company C's policy is to hedge the risk of changes in the relevant spot exchange rate.

Hedging instruments

Company C uses only forward contracts to hedge foreign exchange risk. All derivatives must be entered into with counterparties with a credit rating of AA or higher.

Extracts of effectiveness testing policies for interest rate risk

Strategy 2A: Cash flow hedges of foreign currency exposure in highly probable forecast transactions

Prospective effectiveness testing for cash flow hedges

Prospective effectiveness testing should be performed at the inception of the hedge and at each reporting date. The hedge relationship is highly effective if the changes in fair value or cash flow of the hedged item that are attributable to the hedged risk are expected to be offset by the changes in fair value or cash flows of the hedging instrument.

Prospective effectiveness testing should be performed by comparing the numerical effects of a shift in the exchange rate (for example EUR/SEK rate) on: the fair value of the hedged cash flows measured using a hypothetical derivative; and the fair value of the hedging instrument. Consistent with Company C's risk management policy, the hedged risk is defined as the risk of changes in the spot exchange rate. Changes in interest rates are excluded from the hedge relationship (for both the hedging instrument and the hedged forecast transaction) and do not affect the calculations of effectiveness. Only the spot component of the forward contract is included in the hedge relationship (ie, the forward points are excluded).

At least three scenarios should be assessed unless the critical terms of the hedging instrument perfectly match the critical terms of the hedged item, in which case one scenario is sufficient.

Retrospective effectiveness testing for cash flow hedges

Retrospective effectiveness testing must be performed at each reporting date using the dollar offset method on a cumulative basis. The hedge is demonstrated to be effective by comparing the cumulative change in the fair value of the hedged cash flows measured using a hypothetical derivative; and the fair value of the hedging instrument. A hedge is considered to be highly effective if the results of the retrospective effectiveness tests are within the range 80%-125%.

$$\text{Effectiveness} = \frac{\text{Cumulative change in fair value of hedging instrument}}{\text{Cumulative change in fair value of hedged item (hypothetical derivative)}}$$

Change in the fair value of the spot component of the hedging instrument (the forward contract) is the difference between the fair value of the spot component at the inception of the hedge, and the end of the testing period based on translating the foreign exchange leg of the forward contract at the current spot rate and discounting the net cash flows on the derivative using the zero-coupon rates curve derived from the swap yield curve.

Change in fair value of the hedged cash flows of the hedged item (hypothetical derivative) is the difference between the value of the hypothetical derivative at the inception of the hedge, and the end of the testing period based on translating the foreign exchange leg of the hypothetical derivative at the current spot rate and discounting the net cash flows on the hypothetical derivative using the zero-coupon rates curve derived from the swap yield curve.

Helpful hint
The fair value of a foreign exchange forward contract is affected by changes in the spot rate and by changes in the forward points. The latter derives from the interest rate differential between the currencies specified in the forward contract. Changes in the forward points may give rise to ineffectiveness if the hedged item is not similarly affected by interest rate differentials (see FAQ 2.8).

Hedge designation

Company C's hedge documentation is as follows:

1) Risk management objective and strategy

In order to comply with Company C's foreign exchange risk management strategy, the foreign exchange risk arising from the highly probable forecast purchase detailed in (5) below is hedged.

2) Type of hedging relationship

Cash flow hedge: hedge of the foreign currency risk arising from highly probable forecast purchases.

3) Nature of risk being hedged

EUR/SEK spot exchange rate risk arising from a highly probable forecast purchase denominated in EUR that is expected to occur on 1 May 20x6 and to be settled on 31 August 20x6.

4) Identification of hedged item

Purchase of 500,000 units of raw material for EUR 50 per unit.

5) Forecast transactions

Hedged amount: EUR 25,000,000

Nature of forecast transaction: purchase of 500,000 units of raw material

Expected timescale for forecast transaction to take place:

- delivery: 1 May 20x6
- cash payment: 31 August 20x6

Expected price: EUR 50 per unit.

Rationale for forecast transaction being highly probable to occur:

- production of electronic component is scheduled to start in June 20x6;
- purchase has been approved by the board of directors; and
- negotiations with supplier are far advanced.

Method of reclassifying into profit and loss amounts deferred through equity: in accordance with Company C's chosen accounting policy, the gains or losses recognised in equity will be included in the carrying amount of the inventory acquired (ie, basis adjustment).

6) Identification of hedging instrument

Transaction number: reference number K1121W in the treasury management system.

The hedging instrument is a forward contract to buy EUR 25,000,000 with the following characteristics:

Type	European forward contract
Amount purchased	EUR 25,000,000
Amount sold	SEK 192,687,500
Forward rate	EUR 1 = SEK 7.7075
Spot rate at inception	EUR 1 = SEK 7.6900
Spot component of notional amount	SEK 192,250,000
Start date	1 January 20x5
Maturity date	31 August 20x6

Hedge designation: the spot component of forward contract K1121W is designated as a hedge of the change in the present value of the cash flows on the forecast purchase identified in (5) on the previous page that is attributable to movements in the EUR/SEK spot rate, measured as a hypothetical derivative.

7) Effectiveness testing

Hedge accounting strategy 2A should be applied (see hedge effectiveness testing policy).

The hypothetical derivative that models the hedged cash flows is a forward contract to pay EUR 25,000,000 on 31 August 20x6 in return for SEK. The spot component of this hypothetical derivative is SEK 192,250,000 (ie, EUR 25,000,000 at the spot rate on 1 January 20x5 of 7.6900).

Description of prospective testing

Dollar offset method, being the ratio of the change in the fair value of the spot component of forward contract K1121W, divided by the change in present value of the hedged cash flows (hypothetical derivative) attributable to changes in spot EUR/SEK rate.

Frequency of testing: at inception of the hedge and then at each reporting date (30 June and 31 December).

Description of retrospective testing

Dollar offset method, being the ratio of the change in fair value of the spot component of the forward contract, divided by the change in present value of the hedged cash flows (hypothetical derivative) attributable to changes in spot EUR/SEK rate, on a cumulative basis.

Frequency of testing: at every reporting date (30 June and 31 December) after inception of the hedge.

Effectiveness tests and accounting entries

1) Prospective effectiveness test on 1 January 20x5

On 1 January 20x5, the forward EUR/SEK exchange rate is 7.7075. On that date, the spot EUR/SEK exchange rate is 7.6900. Company C's management should assess prospectively the effectiveness of the hedge, as required in IAS 39.

Based on the hedge documentation, the prospective effectiveness test consists of comparing the effects of a 10% shift of the spot EUR/SEK exchange rate on both the fair value of the spot component of the hedging instrument and on the hedged cash flows (hypothetical derivative).

Hedged item and hedging instrument (spot components)

The EUR leg of both the hypothetical derivative (hedged item) and the forward contract (hedging instrument) are translated into SEK using the shifted spot exchange rate (8.459), then discounted back using the current SEK interest rate (1.3550%) for a cash flow due on 31 August 20x6. The SEK leg is discounted back using the current SEK interest rate. The difference between the present values of each leg represents the fair value of the spot component. As the fair value of this spot component is nil at inception, the change in fair value is equal to its fair value.

Hedged item Hypothetical derivative – spot component			**Hedging instrument** Spot component		
Notional amount	(25,000,000)	EUR	25,000,000	EUR	Notional amount
Spot rate + 10%	8.4590		8.4590		Spot rate + 10%
Notional amount in SEK	(211,475,000)	SEK	211,475,000	SEK	Notional amount in SEK
Discount factor*	0.9776		0.9776		Discount factor
FV of the EUR leg (spot) (A)	(206,729,957)	EUR	206,729,957	SEK	FV of the EUR leg (spot) (A)
Spot component of notional	192,250,000	SEK	(192,250,000)	SEK	Spot component of notional
Discount factor	0.9776		0.9776		Discount factor
FV of SEK leg (spot) (B)	187,936,324	SEK	(187,936,324)	SEK	FV of SEK leg (spot) (B)
(A-B) FV of the hypothetical derivative (spot)	**(18,793,632)**	**SEK**	**18,793,632**	**SEK**	**(A-B) FV of the derivative (spot)**
	-100%				

* The discount factor has been derived from the annualised SEK interest rate on 1 January for cash flows on 31 August 20x6 and has been calculated as 1/(1.0355)^(607days/360).

Conclusion: the hedge is expected to be highly effective.

Helpful hint

As the critical terms of the forward perfectly match the critical terms of the forecast purchase, a quantitative test is not necessarily required. A qualitative test consisting of a comparison of the critical terms of the hedging instrument and the hedged item may be used as long as it is consistent with Company C's risk management policies.

2) Accounting entries on 1 January 20x5

No entry, as the fair value of the forward contract is nil, as shown below:

Derivative		
Notional amount in EUR	25,000,000	EUR
Forward rate	7.7075	
Notional amount in SEK	192,687,158	SEK
Discount factor	0.9776	
FV of the EUR leg	188,363,673	SEK
Notional amount in SEK	(192,687,158)	SEK
Discount factor	0.9776	
FV of the SEK leg	(188,363,673)	SEK
FV of the derivative	**0**	**SEK**

3) Retrospective effectiveness test on 30 June 20x5

IAS 39 requires the effectiveness of a hedging relationship to be assessed retrospectively as a minimum at each reporting date. Based on Company C's risk management policies, the effectiveness of the hedge is assessed using the dollar offset method on a cumulative basis.

The dollar offset method consists of comparing the effects of the change in spot EUR/SEK exchange rate (from 7.69 to 7.65) on the fair value of the spot component of the hedging instrument and the hypothical derivative (hedged cash flows).

Hedged item Hypothetical derivative – spot component			**Hedging instrument** Spot component		
Notional amount	(25,000,000)	EUR	25,000,000	EUR	Notional amount
Spot rate at test date	7.6500		7.6500		Spot rate at test date
Notional amount in SEK	(191,250,000)	SEK	191,250,000	SEK	Notional amount in SEK
Discount factor	0.9838		0.9838		Discount factor
FV of the EUR leg (spot) (A)	(188,155,087)	EUR	188,155,087	SEK	FV of the EUR leg (spot) (A)
Spot comp of notional at inception	192,250,000	SEK	(192,250,000)	SEK	Spot comp of notional at inception
Discount factor	0.9838		0.9838		Discount factor
FV of SEK leg (spot) (B)	189,138,905	SEK	(189,138,905)	SEK	FV of SEK leg (spot) (B)
(A-B) FV of the derivative (spot)	**983,817**	**SEK**	**(983,817)**	**SEK**	**(B-A) FV of the derivative (spot)**
	-100%				

Conclusion: the hedge has been highly effective for the period ended 30 June 20x5.

Helpful hint

Ineffectiveness can arise from a number of causes, including changes in the date of the forecast transaction and changes in the credit risk or liquidity of the forward contract.

4) Accounting entries on 30 June 20x5

All the criteria for hedge accounting are met for the period ended 30 June 20x5. Cash flow hedge accounting can therefore be applied. The hedge is 100% effective; the change in the fair value of the spot component of the hedging instrument is therefore recognised in equity. The full fair value of the hedging instrument includes the forward points. The change in the fair value of the forward points component is recognised in the income statement.

Derivative		
Notional amount in EUR	25,000,000	EUR
Forward rate	7.6622	
Notional amount in SEK	191,554,154	SEK
Discount factor	0.9838	
FV of the EUR leg	188,454,319	SEK
Notional amount in SEK	(192,687,158)	SEK
Discount factor	0.9838	
FV of the SEK leg	(189,568,988)	SEK
FV of the derivative	**(1,114,669)**	**SEK**

The entry is as follows:

(In SEK)	**DR**	**CR**
Derivative (financial liability)		1,114,669
Cash flow hedge reserve (equity)	983,817	
Interest expense (income statement)	130,852	
Cash flow hedge – change in fair value of the forward contract		

Helpful hint

The forward points represent the interest rate differential between the currencies of the forward contract. It is common to recognise fair value movements on the forward points component as interest income or expense, although they could also be recognised as ‘operating income and expense’.

5) Prospective effectiveness test on 30 June 20x5

The same method is used as at the inception of the hedge.

Hedged item Hypothetical derivative – spot component			**Hedging instrument** Spot component		
Notional amount	(25,000,000)	EUR	25,000,000	EUR	Notional amount
Spot rate + 10%	8.4150		8.4150		Spot rate + 10%
Notional amount in SEK	(211,475,000)	SEK	210,375,000	SEK	Notional amount in SEK
Discount factor	0.9838		0.9838		Discount factor
FV of the EUR leg (spot) (A)	(206,970,596)	EUR	206,970,596	SEK	FV of the EUR leg (spot) (A)
Spot component of notional	191,250,000	SEK	(191,250,000)	SEK	Spot component of notional
Discount factor	0.9838		0.9838		Discount factor
FV of SEK leg (spot) (B)	188,155,087	SEK	(188,155,087)	SEK	FV of SEK leg (spot) (B)
(A-B) FV of the hypothetical derivative (spot)	**(18,815,509)**	**SEK**	**18,815,509**	**SEK**	**(A-B) FV of the derivative (spot)**
	-100%				

Conclusion: the hedge is expected to be highly effective.

6) Retrospective effectiveness test on 31 December 20x5

Change in timing of expected cash flow

In December 20x5, management decides to delay the start of production by two months, due to the late delivery of an essential machine. The production will now start in August 20x6, and the raw materials will be purchased in July. The invoice for the raw materials is expected to be paid on 31 October 20x6.

Annualised interest rates applicable for discounting a cash flow on 31 October 20x6 at various dates during the hedge are as follows:

	31/12/20x5	**30/6/20x6**	**31/7/20x6**	**31/8/20x6**
SEK interest rate	1.3920%	1.4060%	1.4420%	1.4030%

The dollar offset method consists of comparing the effects of the cumulative change in spot EUR/SEK exchange rate (from 7.69 to 7.75) on the fair value of the spot component of the hedging instrument and the hedged cash flow (hypothetical derivative). As the hedged cash flow has been delayed, it is discounted from the revised payment date. The payment date on the hedging instrument and the associated discount factor remain unchanged.

Hedged item Hypothetical derivative – spot component			**Hedging instrument** Spot component		
Notional amount	(25,000,000)	EUR	25,000,000	EUR	Notional amount
Spot rate at test date	7.6500		7.7500		Spot rate at test date
Notional amount in SEK	(193,750,000)	SEK	193,750,000	SEK	Notional amount in SEK
Discount factor*	0.9884		0.9909		Discount factor**
FV of the EUR leg (spot) (A)	(191,501,389)	EUR	191,982,442	SEK	FV of the EUR leg (spot) (A)
Spot comp of notional at inception	192,250,000	SEK	(192,250,000)	SEK	Spot comp of notional at inception
Discount factor*	0.9884		0.9909		Discount factor**
FV of SEK leg (spot) (B)	190,018,798	SEK	(190,496,126)	SEK	FV of SEK leg (spot) (B)
(A-B) FV of the derivative (spot)	**(1,482,591)**	**SEK**	**1,486,316**	**SEK**	**(A-B) FV of the derivative (spot)**
	-100.25%				

* Discount factor calculated based on changed timing of cash flows

** Discount factor calculated based on original timing of cash flows

Conclusion: the hedge has been highly effective for the period ended 31 December 20x5.

7) Accounting entries on 31 December 20x5

The full fair value of the hedging instrument is as follows:

Derivative		
Notional amount in EUR	25,000,000	EUR
Forward rate	7.7574	
Notional amount in SEK	193,934,664	SEK
Discount factor	0.9909	
FV of the EUR leg	192,165,421	SEK
Notional amount in SEK	(192,687,158)	SEK
Discount factor	0.9909	
FV of the SEK leg	(190,929,296)	SEK
FV of derivative	**1,236,126**	**SEK**

All the criteria for hedge accounting are met for the period ended 31 December 20x5. Cash flow hedge accounting can therefore be applied. The hedge is not, however, 100% effective and therefore the amount recognised in equity is adjusted to the lesser of (a) the cumulative change in the fair value of the spot component of the hedging instrument, and (b) the cumulative change in the fair value of the spot component of the hypothetical derivative.

Fair values (SEK)	Derivative (full fair value)	Hedging instrument (spot component)	Hedged item hypothetical derivative (spot component)	Effective portion	Ineffective portion
30/6/20x5	(1,114,669)	(983,817)	983,817	983,817	–
31/12/20x5	1,236,126	1,486,316	(1,482,591)	1,482,591	3,725
Change	2,350,795	2,470,133	(2,466,409)	2,466,409	3,725

The difference between the full fair value of the forward contract and the amount deferred in equity is charged to the income statement. The portion relating to the forward points is recognised in 'interest expense' and the ineffectiveness (of SEK 1,486,316 – SEK 1,482,591 = SEK 3,725) is recognised in 'other operating income and expense'.

Helpful hint

The forward points reflect an interest element and can therefore be included in interest income and expense. Alternatively all fair value movements in excess of the effective portion may be recognised in 'other operating income and expense'.

The entry is as follows:

(In SEK)	DR	CR
Derivative (financial asset)	2,350,795	
Cash flow hedge reserve (equity)		2,466,409
Interest expense (income statement)	119,339	
Other operating income and expense		3,725
Cash flow hedge – change in fair value of the forward contract		

8) Prospective effectiveness test on 31 December 20x5

The same method is used as at the inception of the hedge.

Hedged item Hypothetical derivative – spot component			**Hedging instrument** Spot component		
Notional amount	(25,000,000)	EUR	25,000,000	EUR	Notional amount
Spot rate + 10%	8.5250		8.5250		Spot rate + 10%
Notional amount in SEK	(213,125,000)	SEK	213,125,000	SEK	Notional amount in SEK
Discount factor	0.9884		0.9909		Discount factor
FV of the EUR leg (spot) (A)	(191,501,389)	EUR	211,180,686	SEK	FV of the EUR leg (spot) (A)
Spot component of notional	193,750,000	SEK	(193,750,000)	SEK	Spot component of notional
Discount factor	0.9884		0.9909		Discount factor
FV of SEK leg (spot) (B)	210,651,528	SEK	(191,982,442)	SEK	FV of SEK leg (spot) (B)
(A-B) FV of the hypothetical derivative (spot)	**(19,150,139)**	**SEK**	**19,198,244**	**SEK**	**(A-B) FV of the derivative (spot)**
	-100.25%				

Conclusion: the hedge is expected to be highly effective.

9) Retrospective effectiveness test on 30 June 20x6

The dollar offset method consists of comparing the effects of the change in spot EUR/SEK exchange rate (from 7.69 to 7.81) on the fair value of the spot component of the hedging instrument, and the hypothetical derivative (hedged cash flows). As the hedged cash flow has been delayed, it is discounted from the revised payment date. The payment date on the hedging instrument and the associated discount factor remain unchanged.

Hedged item Hypothetical derivative – spot component			**Hedging instrument** Spot component		
Notional amount	(25,000,000)	EUR	25,000,000	EUR	Notional amount
Spot rate at test date	7.8100		7.8100		Spot rate at test date
Notional amount in SEK	(195,250,000)	SEK	195,250,000	SEK	Notional amount in SEK
Discount factor	0.9952		0.9976		Discount factor
FV of the EUR leg (spot) (A)	(194,320,802)	EUR	194,775,116	SEK	FV of the EUR leg (spot) (A)
Spot comp of notional at inception	192,250,000	SEK	(192,250,000)	SEK	Spot comp of notional at inception
Discount factor	0.9952		0.9976		Discount factor
FV of SEK leg (spot) (B)	191,335,079	SEK	(191,782,413)	SEK	FV of SEK leg (spot) (B
(A-B) FV of the derivative (spot)	**(2,985,723)**	**SEK**	**2,992,703**	**SEK**	**(A-B) FV of the derivative (spot)**
	-100.23%				

Conclusion: the hedge has been highly effective for the period ended 30 June 20x6.

10) Accounting entries on 30 June 20x6

The full fair value of the hedging instrument is as follows:

Notional amount in EUR	25,000,000	EUR
Forward rate	7.8118	
Notional amount in SEK	195,293,907	SEK
Discount factor	0.9976	
FV of the EUR leg	194,820,007	SEK
Notional amount in SEK	(192,687,158)	SEK
Discount factor	0.9976	
FV of the SEK leg	(192,218,507)	SEK
FV of the derivative	**2,601,500**	**SEK**

All the criteria for hedge accounting are met for the year ended 30 June 20x6. Cash flow hedge accounting can therefore be applied. The hedge is not however 100% effective; the amount recognised in equity is therefore adjusted to the lesser of (a) the cumulative change in the fair value of the spot component of the hedging instrument, and (b) the cumulative change in the fair value of the spot component of the hypothetical derivative.

Fair values (SEK)	Derivative (full fair value)	Hedging instrument (spot component)	Hedged item hypothetical derivative (spot component)	Effective portion	Ineffective portion
31/12/20x5	1,236,126	1,486,316	(1,482,591)	1,482,591	3,725
30/6/20x6	2,601,851	2,992,703	(2,985,723)	2,985,723	6,980
Change	1,365,374	1,506,387	(1,503,132)	1,503,132	3,255

The difference between the full fair value of the forward contract and the amount deferred in equity is charged to the income statement. The portion relating to the forward points is recognised in 'interest income' and the ineffectiveness is recognised in 'other operating income and expense'.

The entry is as follows:

(In SEK)	DR	CR
Derivative (financial asset)	1,365,374	
Cash flow hedge reserve (equity)		1,503,132
Interest expense (income statement)	141,013	
Other operating income and expense		3,255
Cash flow hedge – change in fair value of the forward contract		

11) Prospective effectiveness test on 30 June 20x6

The same method is used as at the inception of the hedge.

Hedged item Hypothetical derivative – spot component			**Hedging instrument** Spot component		
Notional amount	(25,000,000)	EUR	25,000,000	EUR	Notional amount
Spot rate + 10%	8.5910		8.5910		Spot rate + 10%
Notional amount in SEK	(214,775,000)	SEK	214,775,000	SEK	Notional amount in SEK
Discount factor	0.9952		0.9976		Discount factor
FV of the EUR leg (spot) (A)	(213,752,882)	EUR	214,252,628	SEK	FV of the EUR leg (spot) (A)
Spot component of notional	195,250,000	SEK	(195,250,000)	SEK	Spot component of notional
Discount factor	0.9952		0.9976		Discount factor
FV of SEK leg (spot) (B)	194,320,802	SEK	(194,775,116)	SEK	FV of SEK leg (spot) (B)
(A-B) FV of the hypothetical derivative (spot)	**(19,432,080)**	**SEK**	**19,477,512**	**SEK**	**(A-B) FV of the derivative (spot)**
	-100.23%				

Conclusion: the hedge is expected to be highly effective.

12) Retrospective effectiveness test on 31 July 20x6

The dollar offset method consists of comparing the effects of the change in spot EUR/SEK exchange rate (from 7.69 to 7.90) on the fair value of the spot component of the hedging instrument, and the hedged cash flows (hypothetical derivative). As the hedged cash flow has been delayed, it is discounted from the revised payment date. The payment date on the hedging instrument and the associated discount factor remain unchanged.

Hedged item Hypothetical derivative – spot component			**Hedging instrument** Spot component		
Notional amount	(25,000,000)	EUR	25,000,000	EUR	Notional amount
Spot rate at test date	7.9000		7.9000		Spot rate at test date
Notional amount in SEK	(197,500,000)	SEK	197,500,000	SEK	Notional amount in SEK
Discount factor	0.9963		0.9988		Discount factor
FV of the EUR leg (spot) (A)	(196,778,708)	EUR	197,259,676	SEK	FV of the EUR leg (spot) (A)
Spot comp of notional at inception	192,250,000	SEK	(192,250,000)	SEK	Spot comp of notional at inception
Discount factor	0.9963		0.9988		Discount factor
FV of SEK leg (spot) (B)	191,547,882	SEK	(192,016,064)	SEK	FV of SEK leg (spot) (B)
(A-B) FV of the derivative (spot)	**(5,230,826)**	**SEK**	**5,243,612**	**SEK**	**(A-B) FV of the derivative (spot)**
	-100.24%				

Conclusion: the hedge has been highly effective for the period ended 31 July 20x6.

Helpful hint

Although IAS 39 does not explicitly require it, an effectiveness test is performed when the hedged highly probable forecast transaction occurs in order to determine the amount to be reclassified into the carrying amount of the hedged item.

13) Accounting entries on 31 July 20x6

Recognition of the purchase

(In SEK)	**DR**	**CR**
Inventory	197,500,000	
Trade payable		197,500,000
Purchase of EUR 25m at spot rate of 7.90		

As the trade payable is short-term and EUR interest rates are low, Company C has determined that the effect of discounting is not material. The trade payable is therefore recognised at its face value, as permitted in IAS 39.

Recognition of the change in the fair value of the derivative

The full fair value of the hedging instrument is as follows:

Derivative		
Notional amount in EUR	25,000,000	EUR
Forward rate	7.9008	
Notional amount in SEK	197,520,232	SEK
Discount factor	0.99878	
FV of the EUR leg	197,279,883	SEK
Notional amount in SEK	(192,687,158)	SEK
Discount factor	0.99878	
FV of the SEK leg	(192,452,690)	SEK
FV of the derivative	**4,827,194**	**SEK**

All the criteria for hedge accounting are met as at 31 July 20x6. Cash flow hedge accounting can therefore be applied. The hedge is not however 100% effective; the amount recognised in equity is therefore adjusted to the lesser of (a) the cumulative change in the fair value of the spot component of the hedging item, and (b) the cumulative change in the fair value of the spot component of the hypothetical derivative.

Fair values (SEK)	Derivative (full fair value)	Hedging instrument (spot component)	Hedged item hypothetical derivative (spot component)	Effective portion	Ineffective portion
30/6/20x6	2,601,851	2,992,703	(2,985,723)	2,985,723	6,980
31/7/20x6	4,827,194	5,243,612	(5,230,826)	5,230,826	12,786
Change	2,226,343	2,250,909	(2,245,103)	2,245,103	5,806

The difference between the full fair value of the forward contract and the amount deferred in equity is charged to the income statement. The portion relating to the forward points is recognised in 'interest expense' and the ineffectiveness is recognised in 'other operating income and expense'.

The entry is as follows:

(In SEK)	DR	CR
Derivative (financial asset)	2,226,343	
Cash flow hedge reserve (equity)		2,245,103
Interest expense (income statement)	24,566	
Other operating income and expense		5,806
Cash flow hedge – change in fair value of the forward contract		

Basis adjustment

Company C's accounting policy is that the gain on the hedging derivative is included in the carrying amount of the inventory acquired. The gain is reclassified to profit or loss when the inventory affects profit or loss (ie, on sale of the goods containing the hedged components or impairment of the inventory).

(In SEK)	DR	CR
Cash flow hedge reserve (equity)	5,230,826	
Inventory		5,230,826
Reclassification of gains recognised in equity into the carrying amount of the inventory acquired by Company C		

Helpful hint

The 'basis adjustment' approach is not required. It can be used only if the hedged item is non-financial (for example, a forecast purchase of inventory) and only if its use is consistent with the Company's chosen accounting policy. If Company C's management had chosen not to adjust the carrying amount of the inventory acquired, the amount accumulated in the cash flow hedge reserve would have remained in equity until the inventory affects the income statement (for example, when it is sold or impaired).

14) Retrospective effectiveness test on 31 August 20x6

The spot EUR/SEK exchange rate is 8.15. Company C's management assesses the effectiveness of the hedge retrospectively. The same method is used as at 30 June 20x6. As required in Company C's risk management policies, the effectiveness test uses the dollar offset method on a cumulative basis.

Hedged item Hypothetical derivative – spot component			**Hedging instrument** Spot component		
Notional amount	(25,000,000)	EUR	25,000,000	EUR	Notional amount
Spot rate at test date	8.1500		8.1500		Spot rate at test date
Notional amount in SEK	(203,750,000)	SEK	203,750,000	SEK	Notional amount in SEK
Discount factor	0.9976		1.0000		Discount factor
FV of the EUR leg (spot) (A)	(203,265,719)	EUR	203,750,000	SEK	FV of the EUR leg (spot) (A)
Spot comp of notional at inception	192,250,000	SEK	(192,250,000)	SEK	Spot comp of notional at inception
Discount factor	0.9976		1.0000		Discount factor
FV of SEK leg (spot) (B)	191,793,053	SEK	(192,250,000)	SEK	FV of SEK leg (spot) (B)
(A-B) FV of the derivative (spot)	**(11,472,666)**	**SEK**	**11,500,000**	**SEK**	**(A-B) FV of the derivative (spot)**
	-100.24%				

Conclusion: the hedge has been highly effective for the period ended 31 August 20x6.

15) Accounting entries on 31 August 20x6

Translation of the trade payable at the spot rate

The trade payable is a monetary item denominated in a foreign currency that must be retranslated at the spot rate under IAS 21, with the resulting currency gain or loss recognised in profit or loss.

The calculation of the gain or loss is as follows:

	SEK
Trade payable translated at 31 July at 7.90	197,500,000
Trade payable translated at 31 August at 8.15	203,750,000
Foreign exchange loss to be recognised in profit or loss	**6,250,000**

The accounting entry is as follows:

(In SEK)	DR	CR
Other operating income and expenses – foreign exchange loss	6,250,000	
Trade payable		6,250,000
To recognise the foreign exchange loss on retranslating the trade payable		

All the criteria for hedge accounting are met as at 31 August 20x6. Cash flow hedge accounting can therefore be applied. The hedge is not however 100% effective; the amount recognised in equity is therefore adjusted to the lesser of:

(a) the cumulative change in the fair value of the spot component of the hedging instrument less the basis adjustment recognised in the previous period; and

(b) the cumulative change in the fair value of the spot component of the hypothetical derivative (hedged item) less the basis adjustment recognised in the previous period.

Fair values (SEK)	Derivative (full fair value)	Hedging instrument (spot component)	Hedged item hypothetical derivative (spot component)	Effective portion (recognised as basis adjustment)	Ineffective portion
31/7/20X6	4,827,194	5,243,612	(5,230,826)	5,230,826	12,786
31/8/20x6	11,062,500	11,500,000	(11,472,666)	11,472,666	27,334
Change	6,235,306	6,256,388	(6,241,840)	6,241,840	14,548

The difference between the full fair value of the forward contract and the amount deferred in equity is charged to the income statement.

The entry is as follows:

(In SEK)	DR	CR
Derivative (financial asset)	6,235,306	
Cash flow hedge reserve (equity)		6,241,840
Interest expense (income statement)	21,082	
Other operating income and expense		14,548
Cash flow hedge – change in fair value of the forward contract		

Settlement of derivative

Under the terms of the forward contract, Company C receives EUR 25m at 7.7075 (SEK 203,750,000) and pays SEK 192,687,500. The difference is the fair value of the derivative (SEK 11,062,842).

The accounting entry is as follows:

(In SEK)	DR	CR
Cash in EUR	203,750,000	
Cash in SEK		192,687,500
Derivative (financial asset)		11,062,500
Settlement of the derivative in cash		

Reclassification of gains and losses from equity to profit or loss

The amount deferred in equity is recycled to the income statement

(In SEK)	DR	CR
Other operating income and expenses – foreign exchange gain		6,241,840
Cash flow hedge reserve (equity)	6,241,840	
Reclassification of gains recognised in equity to profit or loss		

Company C decides to keep the euro amount received in a euro account until payment of the invoice.

Helpful hint

Hedge accounting is not always necessary when a company is hedging the foreign currency risk arising from short-term monetary items such as foreign currency payables and receivables. A similar result to that achieved under hedge accounting would have been achieved had Company C de-designated the hedge relationship when the purchase was recognised, as:

1) the derivative, not being designated as a hedging instrument, would have been measured at fair value through profit or loss; and
2) the receivable, which is a monetary item, would have been revalued using the spot exchange rate at the balance sheet date.

16) Accounting entries on 31 October 20x6

The trade payable and the euro bank account are revalued using the closing rate (8.05).

(In SEK)	DR	CR
Trade payable	2,500,000	
Other operating income and expenses – foreign exchange gain		2,500,000
Euro bank account		2,500,000
Other operating income and expenses – foreign exchange gain	2,500,000	
Revaluation of trade payable and bank account (both EUR 25m)		

Finally the trade payable is settled.

(In SEK)	DR	CR
Trade payable	201,250,000	
Euro bank account		201,250,000
Reclassification of gains recognised in equity to profit or loss		

Summary of accounting entries

	Balance sheet										Income statement			
	Derivative instrument		Equity		Payable		Inventory		Bank account (SEK and EUR)		Interest expense		Other operating income and expense – foreign exchange gains and losses	
1/1/20x5 No entry														
30/6/20x5 CFH accounting		1,114,669	983,817								130,852			
31/12/20x5 CFH accounting	2,350,795			2,466,409							119,339			3,725
30/6/20x6 CFH accounting	1,364,725			1,503,132							141,662			3,255
31/7/20x6 Purchase of inventory CFH accounting Basis adjustment	2,226,343		5,230,826	2,245,103		197,500,000	197,500,000	5,230,826			24,566			5,806
31/8/20x6 Foreign currency reval. of payable CFH accounting Reclassification Settlement of derivative	6,235,649	11,062,842	6,241,840	6,241,840		6,250,000			11,062,842		21,082		6,250,000	14,548 6,241,840
31/10/20x6 Revaluation Settlement of payable					2,500,000 201,250,000					2,500,000 201,250,000				

Illustration 4: Hedge of foreign currency firm commitment to sell cars – fair value hedge

Background and assumptions

Company W is a Swiss car manufacturer with a Swiss franc (CHF) functional currency. Company W's reporting dates are 30 June and 31 December.

On 18 October 20x5, Company W enters into a contract to sell cars to an Italian client. Company W is contractually committed to deliver 2,500 cars at a price of EUR 20,000 per car on 30 September 20x6. The contract contains a detailed description of the characteristics of the cars to be delivered (engine, colours, tyres, etc).

The invoice is payable on 30 November 20x6. Based on the terms of the contract, Company W will pay a penalty of EUR 5m if (1) it fails to deliver the cars on time, or (2) the cars delivered are not as specified in the contract.

The costs incurred by Company W in producing the cars are expected to be CHF 65m, and all such costs are denominated in CHF.

On the date it enters into the sale contract, Company W's management decides to hedge the resulting foreign currency risk. It enters into a forward contract to sell EUR 50m against CHF, whose characteristics are as follows:

Type	European forward contract
Amount sold	EUR 50,000,000
Amount purchased	CHF 76,568,622
Forward rate	EUR 1 = CHF 1.5314
Start date	18 October 20x5
Maturity date	30 September 20x6

Helpful hint

A hedge of the foreign currency risk of a firm commitment may be treated as either a fair value hedge or a cash flow hedge because the foreign currency risk affects both the fair value and the cash flows of the hedged item. Company W's management can choose to apply either cash flow hedge accounting or fair value hedge accounting when hedging the foreign currency risk of a firm commitment. The chosen method must be applied consistently for all similar hedges.

Company W's management wishes to apply fair value hedge accounting for this hedging relationship.

Foreign currency exchange rates on various dates during the hedge are as follows:

	18/10/20x5	31/12/20x5	30/6/20x6	30/9/20x6	30/11/20x6
CHF/EUR spot rate	1.5000	1.5800	1.6000	1.6500	1.6300
CHF/EUR forward rate for maturity of 30/9/20x6	1.5314	1.6068	1.6091	1.6500	N/A
Forward points	**0.0314**	**0.0268**	**0.0091**	**0.0000**	

Annual interest rates applicable for discounting a cash flow on 30 September 20x6 at various dates during the hedge are as follows:

	18/10/20x5	31/12/20x5	30/6/20x6	1/8/20x6	30/9/20x6
CHF interest rate	3.5500%	3.6200%	3.6500%	3.5750%	3.6450%
EUR interest rate	1.3500%	1.3500%	1.3750%	1.3250%	1.3550%

Extracts of risk management policies for foreign currency risk

Foreign currency risk

Company W's functional currency is the Swiss franc. Company W is exposed to foreign exchange risk because some of its purchases and sales are denominated in currencies other than the CHF. It is therefore exposed to the risk that movements in exchange rates will affect both its net income and financial position, as expressed in CHF.

Company W is exposed to foreign currency risk on transactions denominated in currencies other than the CHF. Company W's foreign currency exposure arises from:

1) highly probable forecast transactions (sales/purchases) denominated in foreign currencies;

2) firm commitments denominated in foreign currencies; and

3) monetary items (mainly trade receivables, trade payables) denominated in foreign currencies.

Company W is mainly exposed to USD/CHF and EUR/CHF foreign exchange risks. Transactions denominated in foreign currencies other than USD and EUR are not material. Company W's policy is to hedge all material foreign exchange risk associated with highly probable forecast transactions, firm commitments and monetary items denominated in foreign currencies.

Hedging instruments

Company W uses forward contracts to hedge foreign exchange risk. All derivatives must be entered into with counterparties with a credit rating of AA or higher.

Extracts of effectiveness testing policies for interest rate risk

Strategy 2B: Hedge of a firm commitment for foreign currency risk

Prospective effectiveness testing for foreign exchange hedge relationships

Prospective effectiveness testing should be performed at inception of the hedge and at each reporting date. Prospective effectiveness testing is performed by comparing the critical terms of the hedging instrument with those of the hedged item.

If any of the critical terms of the hedging instrument do not match the critical terms of the hedged item, a numerical prospective test is required. This consists of comparing the numerical effects of a shift of the exchange rate (for example EUR/CHF rate) on both the fair value of the hedged cash flows and the fair value of the hedging instrument. This should be performed using at least three scenarios.

Retrospective effectiveness testing for fair value hedges

Retrospective effectiveness testing must be performed at each reporting date using the dollar offset method on a cumulative basis. Under this method, the hedge is demonstrated to be effective by comparing the cumulative change in the fair value of the spot component of the hedging instrument with the cumulative change in the fair value of the hedged firm commitment attributable to the hedged risk. A hedge is considered to be highly effective if the results of the retrospective effectiveness tests are within the range 80%-125%.

$$\text{Effectiveness} = \frac{\text{Cumulative change in fair value of hedging instrument}}{\text{Cumulative change in fair value of the firm commitment}}$$

Change in the fair value of the spot component of the hedging instrument (the forward contract) is the difference between the fair value of the spot component at the inception of the hedge and the end of the testing period, based on translating the foreign exchange leg of the forward contract at the current spot rate and discounting the net cash flows on the derivative using the zero-coupon rates derived from the swap yield curve.

Change in fair value of the firm commitment is the difference between the present value of the hedged cash flow at inception of the hedge and the end of the testing period, translated at the current spot rate for the remaining maturity and discounted using the zero-coupon rates derived from the swap yield curve.

Helpful hint

The fair value of a foreign exchange forward contract is affected by several factors including changes in the spot rate and by changes in the forward points. The latter derives from the interest rate differential between the currencies specified in the forward contract. Changes in the forward points may give rise to ineffectiveness if the hedged item is not similarly affected by interest rate differentials. In this case, hedge effectiveness can be improved by excluding the forward points component of the forward contract from the designated hedge relationship (see FAQ 2.8).

Company W documents the hedge as follows:

Hedge designation

1) Risk management objective and strategy

In order to comply with Company W's foreign exchange risk management strategy, the foreign exchange risk arising from this firm commitment denominated in EUR is hedged.

2) Type of hedging relationship

Fair value hedge.

3) Nature of risk being hedged

EUR/CHF spot exchange rate risk arising from a firm commitment in EUR for which delivery is due on 30 September 20x6 and payment is expected on 30 November 20x6.

4) Identification of hedged item

Contract No 150902 signed on 18 October 20x5: a firm commitment to sell 2,500 cars for EUR 50m on 30 September 20x6.

5) Identification of hedging instrument

Transaction number: reference number R2403D in the treasury management system.

The hedging instrument is a forward contract to sell EUR 50m with the following characteristics:

Type	European forward contract
Amount sold	EUR 50,000,000
Amount purchased	CHF 76,568,622
Forward rate	EUR 1 = CHF 1.5314
Spot rate at inception	EUR 1 = CHF 1.5000
Start date	18 October 20x5
Maturity date	30 September 20x6

Hedge designation: the spot component of the forward contract R2403D is designated as a hedge of the change in the fair value of the firm commitment to sell 2,500 cars for EUR 50m (see (4) above) attributable to movements in EUR/CHF spot rate.

6) Effectiveness testing

Effectiveness testing strategy 2B fair value hedges of firm commitments (foreign currency).

Description of prospective testing

Comparison of critical terms: the critical terms of the hedged item are compared to the critical terms of the hedging instrument:

- amount of the firm commitment (in EUR) versus the notional amount of the EUR leg of the hedging instrument;
- expected maturity date (of the firm commitment) versus maturity date of the hedging instrument; and
- EUR/CHF exchange rate used to determine the fair value of (a) the hedging instrument and (b) the hedged item.

Frequency of testing: at inception of the hedge and then at each reporting date (31 December and 30 June).

Description of retrospective testing

Dollar offset method, being the ratio of the change in the fair value of the spot component of the forward contract R2403D, divided by the change in fair value of the firm commitment attributable to changes in the EUR/CHF spot rate, on a cumulative basis.

Frequency of testing: at every reporting date (31 December and 30 June) after the inception of the hedge.

Effectiveness tests and accounting entries

1) Prospective effectiveness test on 18 October 20x5

Company W's management must assess prospectively the effectiveness of the hedge, as required by IAS 39. Based on the hedge documentation, the prospective effectiveness test consists of comparing the critical terms of the hedging instrument with the critical terms of the hedged item.

	Hedged item	Hedging instrument
Amount	Buy EUR 50,000,000	Sell EUR 50,000,000
Maturity date/payment date	30 September 20x6	30 September 20x6
EUR/CHF exchange rate	EUR/CHF spot exchange rate	EUR/CHF spot exchange rate

Conclusion: all the critical terms of the hedging instrument match the critical terms of the hedged item; the hedge is therefore expected to be highly effective.

Helpful hint
IAS 39 does not require numerical tests to be performed to assess prospectively the effectiveness of a hedge, provided the critical terms of the hedging instrument match those of the hedged item and there are no other features (such as optionality) that would invalidate an assumption of perfect effectiveness. A quantitative prospective effectiveness test is required when the critical terms of the hedging instrument do not match the critical terms of the hedged item.

2) Accounting entries on 18 October 20x5

Although it is designated as a hedged item in a fair value hedge, the hedged firm commitment is not recognised in the balance sheet at inception of the hedge because it is an executory contract for the future delivery of cars. Only the subsequent changes in its fair value that are attributable to the hedged risk will be accounted for in the balance sheet. The forward contract is not recognised in the balance sheet at inception, as its fair value is nil, as shown below.

Hedging instrument		
Notional amount	(50,000,000)	EUR
Forward rate at inception	1.5314	
EUR leg translated into CHF	(76,568,622)	CHF
Discount factor (CHF)	0.9669	
FV of the EUR leg (spot)	(74,036,830)	
Notional amount	76,568,622	CHF
Discount factor (CHF)	0.9669	
FV of CHF leg (spot)	74,036,830	CHF
FV of the derivative	**0**	**CHF**

Hedged firm commitment			Hedging instrument Spot component		
Firm commitment in EUR	50,000,000	EUR	(50,000,000)	EUR	Notional amount
Spot rate at inception	1.5000		1.5000		Spot rate at inception
Firm commitment in CHF	75,000,000	CHF	(75,000,000)	CHF	EUR leg translated into CHF
			0.9669		Discount factor (CHF)
			(72,520,075)	CHF	FV of the EUR leg (spot)
FV of cars to be delivered	(75,000,000)	CHF			
Difference	0	CHF			Spot comp of notional at
			75,000,000	CHF	inception
			0.9669	CHF	Discount factor (CHF)
Discount factor (CHF)	0.9669		72,520,075	CHF	FV of CHF leg (spot)
FV of the hedged item (spot)	**0**	**CHF**	**0**	**CHF**	**FV of the derivative (spot component)**
	100%				

3) Retrospective effectiveness test on 31 December 20x5

IAS 39 requires the effectiveness of a hedging relationship to be assessed retrospectively as a minimum at each reporting date. Based on Company W's risk management policies, the effectiveness

Hedged firm commitment			Hedging instrument Spot component		
Firm commitment in EUR	50,000,000	EUR	(50,000,000)	EUR	Notional amount
Spot rate at test date	1.5800		1.5800		Spot rate at test date
Firm commitment in CHF	79,000,000	CHF	(79,000,000)	CHF	EUR leg translated into CHF
			0.9734		Discount factor (CHF)
			(76,898,117)	CHF	FV of the EUR leg (spot)
FV of cars to be delivered	(75,000,000)	CHF			
Difference	4,000,000	CHF	75,000,000	CHF	Spot comp of notional at inception
			0.9734	CHF	Discount factor (CHF)
Discount factor (CHF)	0.9734		73,004,541		FV of CHF leg (spot)
FV of the hedged item (spot)	**3,893,576**	**CHF**	**(3,893,576)**	**CHF**	**FV of the derivative (spot component)**
	-100%				

of the hedge is assessed using the dollar offset method.

Helpful hint

The hedge is 100% effective, as the spot component of the forward contract matches that of the firm commitment. Ineffectiveness could arise from a number of causes, including a change in the terms of the hedged firm commitment (for example, a change in the amount contracted to be received, or the timing of the receipt).

Conclusion: the hedge has been highly effective for the period ended 31 December 20x5.

4) Accounting entries on 31 December 20x5

All the criteria for hedge accounting are met for the period ended 31 December 20x5. Fair value hedge accounting can therefore be applied.

The fair value of the derivative can be calculated as follows:

Hedging instrument		
Notional amount	(50,000,000)	EUR
Forward rate at test date	1.6068	
EUR leg translated into CHF	(80,338,207)	CHF
Discount factor (CHF)	0.9734	
FV of the EUR leg (spot)	(78,200,719)	
Notional amount	76,568,622	CHF
Discount factor (CHF)	0.9734	
FV of CHF leg (spot)	74,531,428	CHF
FV of the derivative	**(3,669,291)**	**CHF**

	CHF
Fair value of the hedging derivative at 31 December 20x5	(3,669,291)
Fair value of the hedging derivative at inception	Nil
Change in fair value of the derivative to be recognised	**(3,669,291)**

The change in the fair value of the hedged firm commitment attributable to the hedged risk is calculated as follows:

	CHF
Fair value of the hedged firm commitment at 31 December 20x5	3,893,576
Fair value the hedged firm commitment at inception	Nil
Change in fair value of the hedged item attributable to the hedged risk to be recognised	**3,893,576**

The entries are as follows:

(In CHF)	**DR**	**CR**
Other operating income and expenses	3,669,291	
Derivative (financial liability)		3,669,291
Fair value hedge – change in fair value of the forward contract		

(In CHF)	**DR**	**CR**
Firm commitment (other assets)	3,893,576	
Other operating income and expenses		3,893,576
Fair value hedge – change in fair value of the hedged firm commitment attributable to the hedged risk		

Helpful hint

The change in the fair value of the derivative attributable to the forward points is excluded from the hedge relationship. This forward points component does not therefore give rise to any ineffectiveness. However, it is recognised in profit or loss as 'other operating income and expense'. Alternatively, the forward points can be considered an interest element and may be recognised as 'interest income and expense'.

5) Prospective effectiveness test on 31 December 20x5

The same method (critical terms comparison) is used as at the inception of the hedge.

	Hedged item	Hedging instrument
Amount	Buy EUR 50,000,000	Sell EUR 50,000,000
Maturity date/payment date	30 September 20x6	30 September 20x6
EUR/CHF exchange rate	EUR/CHF spot exchange rate	EUR/CHF spot exchange rate

Conclusion: the hedge is expected to be highly effective.

6) Retrospective effectiveness test on 30 June 20x6

IAS 39 requires the effectiveness of a hedging relationship to be assessed retrospectively as a minimum at each reporting date. Based on Company W's risk management policies, the effectiveness of the hedge is assessed using the dollar offset method, on a cumulative basis.

Hedged firm commitment Hypothetical derivative spot component			**Hedging instrument** Spot component		
Firm commitment in EUR	50,000,000	EUR	(50,000,000)	EUR	Notional amount
Spot rate at test date	1.6000		1.6000		Spot rate at test date
Firm commitment in CHF	80,000,000	CHF	(80,000,000)	CHF	EUR leg translated into CHF
			0.9909		Discount factor (CHF)
			(79,270,421)	CHF	FV of the EUR leg (spot)
FV of cars to be delivered	(75,000,000)	CHF			
Difference	5,000,000	CHF	75,000,000	CHF	Spot comp of notional at inception
			0.9909		Discount factor (CHF)
Discount factor (CHF)	0.9909		74,316,020	CHF	FV of CHF leg (spot)
FV of the hedged item (spot)	**4,954,401**	**CHF**	**(4,954,401)**	**CHF**	**FV of the derivative (spot component)**
	-100%				

Conclusion: the hedge has been highly effective for the period ended 30 June 20x6.

7) Accounting entries on 30 June 20x6

All the criteria for hedge accounting are met for the period ended 30 June 20x6. Fair value hedge accounting can therefore be applied.

The fair value of the derivative can be calculated as follows:

Hedging instrument		
Notional amount	(50,000,000)	EUR
Forward rate at test date	1.6091	
EUR leg translated into CHF	(80,455,020)	CHF
Discount factor (CHF)	0.9909	
FV of the EUR leg (spot)	(79,721,291)	CHF
Notional amount	76,568,622	CHF
Discount factor (CHF)	0.9909	
FV of CHF leg (spot)	75,870,336	CHF
FV of the derivative	**(3,850,955)**	**CHF**

	CHF
Fair value of the hedging derivative at 31 December 20x5	(3,669,291)
Fair value of the hedging derivative at 30 June 20x6	(3,850,955)
Change in fair value of the derivative to be recognised	**(181,664)**

The change in the fair value of the hedged firm commitment attributable to the hedged risk is calculated as follows:

	CHF
Fair value of the hedged firm commitment at 31 December 20x5	3,893,576
Fair value of the hedged firm commitment at 30 June 20x6	4,954,401
Change in fair value of the hedged item attributable to the hedged risk	**1,060,825**

The accounting entries are as follows:

(In CHF)	**DR**	**CR**
Other operating income and expenses	181,664	
Derivative (financial liability)		181,664
Fair value hedge – change in fair value of the forward contract		

(In CHF)	**DR**	**CR**
Firm commitment (other assets)	1,060,825	
Other operating income and expenses		1,060,825
Fair value hedge – change in fair value of the hedged firm commitment attributable to the hedged risk		

8) Prospective effectiveness test on 30 June 20x6

The same method (critical terms comparison) is used as at the inception of the hedge.

	Hedged item	Hedging instrument
Amount	Buy EUR 50,000,000	Sell EUR 50,000,000
Maturity date/payment date	30 September 20x6	30 September 20x6
EUR/CHF exchange rate	EUR/CHF Spot exchange rate	EUR/CHF Spot exchange rate

Conclusion: the hedge is expected to be highly effective.

9) Retrospective effectiveness test on 30 September 20x6

IAS 39 requires the effectiveness of a hedging relationship to be assessed retrospectively as a minimum at each reporting date. Based on Company W's risk management policies, the effectiveness of the hedge is assessed using the dollar offset method, on a cumulative basis.

Hedged firm commitment			**Hedging instrument** Spot component		
Firm commitment in EUR	50,000,000	EUR	(50,000,000)	EUR	Notional amount
Spot rate at test date	1.6500		1.6500		Spot rate at test date
Firm commitment in CHF	82,500,000	CHF	(82,500,000)	CHF	EUR leg translated into CHF
			1.0000		Discount factor (CHF)
			(82,500,000)	CHF	FV of the EUR leg (spot)
FV of cars to be delivered	(75,000,000)	CHF			
Difference	7,500,000	CHF	75,000,000	CHF	Spot comp of notional at inception
			1.0000		Discount factor (CHF)
Discount factor (CHF)	1.0000		75,000,000	CHF	FV of CHF leg (spot)
FV of the hedged item (spot)	**7,500,000**	**CHF**	**(7,500,000)**	**CHF**	**FV of the derivative (spot component)**
	-100%				

Conclusion: the hedge has been highly effective for the period ended 30 September 20x6.

10) Accounting entries on 30 September 20x6

Recognition of the change in the fair value of the derivative

All the criteria for hedge accounting are met in the period to 30 September 20x6. Fair value hedge accounting can therefore be applied.

The fair value of the derivative can be calculated as follows:

Hedging instrument		
Notional amount	(50,000,000)	EUR
Forward rate at test date	1.6500	
EUR leg translated into CHF	(82,500,000)	CHF
Discount factor (CHF)	1.0000	
FV of the EUR leg (spot)	(82,500,000)	CHF
Notional amount	76,568,622	CHF
Discount factor (CHF)	1.0000	
FV of CHF leg (spot)	76,568,622	CHF
FV of the derivative	**(5,931,378)**	**CHF**

	CHF
Fair value at 30 June 20x6	(3,850,955)
Fair value of the derivative on 30 September 20x6	(5,931,378)
Change in fair value to be recognised on 30 September 20x6	**(2,080,423)**

The change in the fair value of the hedged firm commitment attributable to the hedged risk is calculated as follows:

	CHF
Fair value of the hedged firm commitment at 30 June 20x6	4,954,401
Fair value of the hedged firm commitment at 30 September 20x6	7,500,000
Change in fair value of the hedged item attributable to the hedged risk	**2,545,599**

The accounting entries are as follows:

(In CHF)	DR	CR
Other operating income and expenses	2,080,423	
Derivative (financial liability)		2,080,423
Fair value hedge – change in fair value of the forward contract		

(In CHF)	DR	CR
Firm commitment (other assets)	2,545,599	
Other operating income and expenses		2,545,599
Fair value hedge – change in fair value of the hedged firm commitment attributable to the hedged risk		

Recognition of the sale on 30 September 20x6

(In CHF)	DR	CR
Receivable	82,500,000	
Revenue		82,500,000
Sale of EUR 50m at spot rate of 1.6500		

As the receivable is short-term and euro interest rates are low, management of Company W determines that the effect of discounting is not material and therefore, as permitted by IAS 39, the receivable is recognised at face value.

(In CHF)	DR	CR
Cost of goods	65,000,000	
Inventory		65,000,000
Sale of inventory whose cost is CHF 65m		

Reclassification of amount recognised as firm commitment

The firm commitment is no longer recognised in the balance sheet, having been met by the delivery of cars and the recognition of a receivable. The balance sheet amount relating to the firm commitment is therefore derecognised. As the expiry of the firm commitment forms part of the consideration received on the sale, the corresponding entry is to revenue.

(In CHF)	DR	CR
Revenue	7,500,000	
Firm commitment		7,500,000
Derecognition of the firm commitment		

Helpful hint

The total effect on revenue is:

Sale recognised at spot rate	82,500,000
Adjustment from previously recognised firm commitment	(7,500,000)
Revenue recognised	75,000,000

The revenue is thus recognised at the hedged rate (ie, the spot rate at the inception of the hedge).

Cash settlement of the derivative

The derivative matures and is settled in cash.

(In CHF)	DR	CR
Derivative (financial liability)	5,931,378	
Cash		5,931,378
Cash settlement of the derivative		

As Company W is exposed to foreign currency risk on the receivable, it may choose to enter into a new derivative to hedge the foreign currency risk of the receivable. As the retranslation of the receivable under IAS 21 will affect the income statement, hedge accounting is not necessary.

Helpful hint

If Company W had chosen to hedge the foreign currency risk of the firm commitment with a forward maturing on 30 November (ie, the date of the expected cash flow), there would have been some ineffectiveness. This is due to the fact that the firm commitment matures at an earlier date (30 September); changes in its fair value are therefore calculated by discounting from that day. Changes in the spot component of the forward contract are calculated by discounting from its maturity date (30 November). If the forward matures on the date of the cash flow from the firm commitment, it would be better to designate the forward as a cash flow hedge, as the effectiveness test can then reflect the date of the expected cash payment (30 November) rather than the maturity of the firm commitment (30 September).

Summary of accounting entries

	Balance sheet								Income statement			
	Derivative		Cash		Receivable		Firm commitment		Revenue		Other operating income & expense	
31 December 20x5												
FV change to firm commitment							3,893,576					3,893,576
FV change to derivative		3,669,291									3,669,291	
30 June 20x6												
FV change to firm commitment							1,060,825					1,060,825
FV change to derivative		181,664									181,664	
30 September 20x6												
FV change to firm commitment							2,545,599					2,545,599
FV change to derivative		2,080,423									2,080,423	
Recognition of sale					82,500,000					82,500,000		
Reclassification of firm commitment								7,500,000	7,500,000			
Derivative settlement	5,931,378			5,931,378								

Illustration 5: Locking in the interest rate for a forecast floating rate borrowing with a forward starting interest rate swap – cash flow hedge

Background and assumptions

Company L is a Dutch company with a EUR functional currency. Company L's reporting dates are 30 June and 31 December.

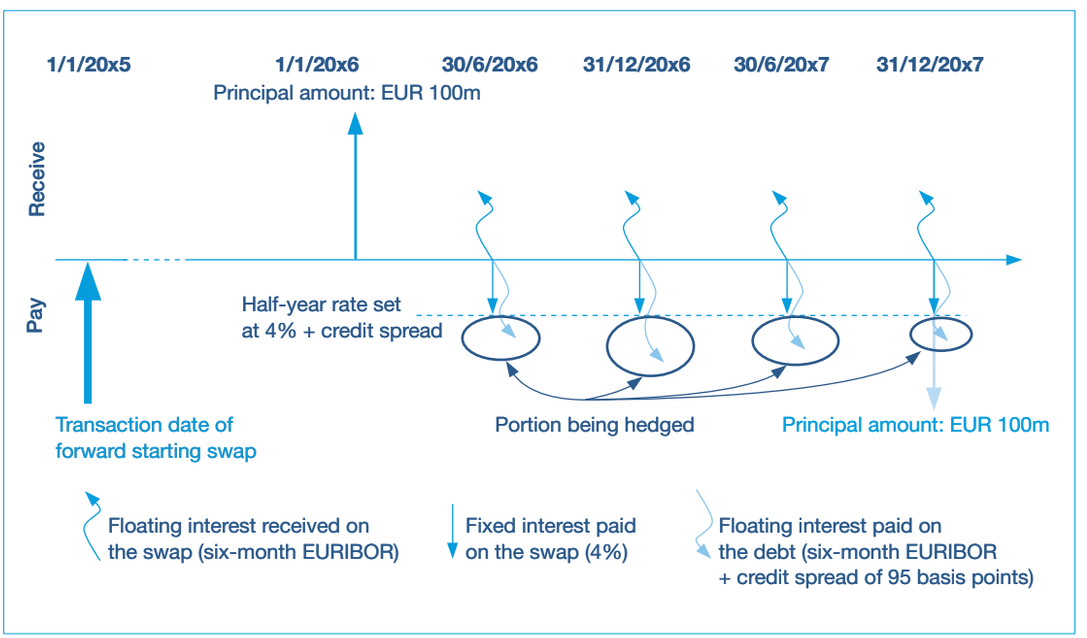
On 1 January 20x5, Company L has a commitment from Bank B to borrow up to EUR 120m at EURIBOR + 95 basis points in the next 18 months. Company L's management expects that, on 1 January 2006, it will draw down a EUR 100m two-year borrowing to finance phase 2 of a major investment project. Interest will be paid semi-annually on 30 June and 31 December. No transaction costs will be incurred on issuing the debt.

L's management expects the six-month EURIBOR rate to increase in the next 12 months and wishes to 'lock in' the present interest rate for its future floating rate borrowing. On 1 January 20x5, Company L enters into a EUR 100m two-year forward starting swap to receive six-month EURIBOR and pay 4% fixed interest.

Interest will begin to accrue on the forward starting swap on 1 January 20x6, which is the expected date of issuance of the debt. The variable leg of the swap is pre-fixed/post-paid (ie, payments are set at the beginning of each six-month period and paid in arrears) on 30 June and 31 December each year. The fair value of the swap is nil at the inception of the hedge.

Helpful hint
A forward starting swap is a 'plain vanilla' interest rate swap on which interest accrues from a specified start date in the future. No interest accrues before the start date.

The cash flows on the debt and the swap can be represented as follows:



Six-month EURIBOR rate at various dates when the loan or swap is reset is as follows.

15/12/20x5	4.350%
31/12/20x5	4.437%
15/6/20x6	4.730%
30/6/20x6	4.743%

The forward rates derived from the swap yield curve and the implied zero-coupon rates at the dates of testing hedge effectiveness are as follows:

	Forward rates for testing dates				Zero-coupon rates for testing dates			
	1/1/20x5 (YC1)	30/6/20x5 (YC2)	31/12/20x5 (YC3)	30/6/20x6 (YC4)	1/1/20x5 (ZC1)	30/6/20x5 (ZC2)	31/12/20x5 (ZC3)	30/6/20x6 (ZC4)
15/6/20x6			4.430%				4.547%	
30/6/20x6	3.944%	4.119%	4.437%		4.000%	4.200%	4.550%	
15/12/20x6			4.475%	4.722%			4.567%	4.850%
31/12/20x6	3.982%	4.157%	4.476%	4.743%	4.020%	4.220%	4.570%	4.867%
15/6/20x7			4.508%	4.763%			4.586%	4.870%
30/6/20x7	4.020%	4.194%	4.513%	4.780%	4.039%	4.239%	4.589%	4.886%
15/12/20x7			4.545%	4.800%			4.606%	4.889%
31/12/20x7	4.058%	4.233%	4.551%	4.819%	4.059%	4.259%	4.609%	4.906%

Extracts of risk management policies for interest rate risk

Company L is exposed to interest rate risk on interest bearing debt and investments.

Company L manages its exposure to interest rate risk through the proportion of fixed and variable rate net debt in its total net debt portfolio. Such a proportion is determined twice per year by Company L's board of directors on the recommendation of its financial risk committee.

To manage this proportion of fixed and variable rate net debt, Company L may enter into any of the following derivative financial instruments: interest rate swaps; forward starting interest rate swaps; and purchased interest rate caps.

Extracts of hedge effectiveness testing policies

Strategy 1C: Cash flow hedges of interest rate risk for future issuance of debt

Prospective effectiveness testing for cash flow hedge relationships

Prospective effectiveness testing must be performed at the inception of the hedge and at each reporting date. The hedge relationship is highly effective if the changes in the cash flows of the hedged item that are attributable to the hedged risk are expected to be offset by the changes in the cash flows of the hedging instrument.

Prospective effectiveness testing must be performed by comparing the numerical effects of a shift in the hedged interest rate on both the present value of the cash flows being hedged and the fair value of the hedging instrument. This test must be performed using at least three interest rate scenarios. However, for hedges where the critical terms (including the variable leg reset date) of the hedging instrument perfectly match the critical terms of the hedged item, one scenario may be used (a shift of 100 basis points of the zero coupon curve up or down).

Change in fair value of the swap is the difference between the fair value of the cash flows of the swap using the zero-coupon curve derived from the swap yield curve at the date of testing and fair value of the projected shifted cash flows discounted using the shifted zero-coupon rates.

Change in present value of the coupons expected to be paid on debt is the difference between the present value of the projected coupons paid on debt (excluding the credit spread) at the date of testing, and the present value of the coupons expected to be paid according to the shifted zero-coupon rates. The coupons are calculated using current forward rates and are compared to the benchmark rate, defined as the market rate for an equivalent fixed rate loan at inception. The net result is discounted using the zero-coupon curve derived from the swap yield curve.

Retrospective effectiveness testing for cash flow hedge relationships

Retrospective effectiveness testing must be performed at each reporting date using the dollar offset method on a cumulative basis. The hedge is tested for effectiveness under this method by comparing the cumulative change in the dirty present value of the hedged item with the cumulative change in the dirty fair value of the hedging instrument. This means that accrued interest on both the hedging instrument and the hedged item is taken into account when assessing retrospectively the effectiveness of the hedge.

The hedge is effective if this amount falls within a range of 80%-125%.

$$\text{Effectiveness} = \frac{\text{Cumulative change in dirty fair value of hedging instrument}}{\text{Cumulative change in dirty present value of hedged cash flows}}$$

Change in fair value of the swap is the difference between the fair value of the swap at the beginning of the hedge relationship and the testing date. The swap's cash flows are calculated using the forward rates and discounted using the zero-coupon rates curve derived from the EURIBOR swap yield curve.

Change in the present value of the coupons expected to be paid on debt is the difference between the present value of the coupons expected to be paid on the debt (excluding the credit spread) at the beginning of the hedge relationship and the testing date (ie, cumulative basis). The coupons are calculated using the forward rates and compared to the benchmark rate, defined as the market rate for an equivalent fixed rate loan at inception. The net result is discounted using the zero-coupon rates curve derived from the EURIBOR swap yield curve.

Helpful hint
Retrospective effectiveness tests are performed by comparing the dirty fair value of the hedging instruments and the dirty present value of the hedged cash flows, rather than comparing the clean fair value/clean present value. This means that accrued interest on both the debt and the swap are taken into account when testing effectiveness. This method for assessing retrospectively the effectiveness of a cash flow hedge relationship usually results in more ineffectiveness than the 'clean versus clean' method.

Helpful hint
The method used for assessing retrospectively the effectiveness of the hedge relationship is the dollar offset method using the benchmark rate approach (see FAQ 3.8).

Hedge designation

Company L's hedge documentation is as follows:

1) Risk management objective and strategy

For 20x6 and 20x7, Company L's board of directors, on the recommendation of the financial risk committee, has decided to maintain a ratio of fixed:floating rate net debt of between 70:30 and 60:40. In order to meet this ratio, management has decided to 'fix' the interest rate of the debt expected to be issued on 1 January 20x6.

2) Type of hedging relationship

Cash flow hedge: forward starting receive variable rate and pay fixed interest rate swap.

3) Nature of risk being hedged

Interest rate risk: variability in coupons paid on the debt to be issued on 1 January 20x6 (draw down on loan commitment of up to EUR 120m from Bank B) attributable to movements in six-month EURIBOR.

Credit risk on the debt is not designated as part of the hedge relationship.

4) Identification of hedged item

Transaction number: B0609R forecasted transaction – debt not yet issued

The hedged item is the interest cash flows on a forecast future two-year, EUR 100m debt with a coupon of six-month EURIBOR + credit spread, paid semi-annually on 30 June and 31 December.

Type	Private borrowing
Notional amount	EUR 100m
Issue date (expected)	1 January 20x6
Maturity date (expected)	31 December 20x7
Interest rate	Six-month EURIBOR + credit spread
Settlement dates	30 June 20x6, 31 December 20x6, 30 June 20x7, 31 December 20x7

5) Forecast transaction

The issuance of the debt is considered as highly probable for the following reasons:

1) The debt is required to finance phase 2 of investment project X. Phase 2 is needed to finish project X. Phase 1 is progressing as budgeted and scheduled to be completed in December 20x5. Phase 2 is planned to commence immediately Phase 1 is finished; and
2) The financing is secured through loan commitment of up to EUR 120m for two years at six-month EURIBOR to be drawn within 18 months from Bank B.

6) Identification of hedging instrument

Transaction number: reference number D1905K in the treasury management system.

The hedging instrument is a two-year forward starting interest rate swap with the following characteristics:

Type	Forward starting swap
Notional amount	EUR 100m
Transaction date	1 January 20x5
Start date	1 January 20x6
Maturity date	31 December 20x7
Underlying	Receive six-month EURIBOR, pay 4.00%
Settlement dates	30 June and 31 December

Hedge designation: the fair value movement of swap D1905K is designated as a hedge of the change in the present value of the coupons on forecast debt B0609R attributable to movements in six-month EURIBOR.

7) Effectiveness testing

Strategy 1C of the effectiveness testing policy is applied for this hedge designation.

Description of prospective test

Dollar offset method, being the ratio of the change in the fair value of the swap D1905K, divided by the change in the present value of the coupons expected to be paid on forecast debt B0609R attributable to changes in six-month EURIBOR interest rate (ie, excluding the credit spread on the debt) compared to the benchmark rate of 4%.

The critical terms (including the reset dates) of the swap perfectly match the critical terms of the portion of the debt designated as hedged. As permitted in the risk management policy, the prospective tests will therefore be performed using only one scenario (a 100 basis points shift of six-month EURIBOR).

Frequency of testing: at inception of the hedge and then at each reporting date (30 June and 31 December).

Description of retrospective test

Dollar offset method, being the ratio of the change in the fair value of the swap D1905K, divided by the change in the present value of the coupons expected to be paid on forecast debt B0609R attributable to changes in six-month EURIBOR interest rate (excluding the credit spread) compared to the benchmark rate of 4%.

Frequency of testing: at every reporting date (30 June and 31 December) after inception of the hedge.

Effectiveness tests and accounting entries

1) Prospective effectiveness test on 1 January 20x5

Company L's management assesses the effectiveness of the hedge prospectively, as required by IAS 39.

Based on the hedge documentation, the prospective effectiveness test consists of comparing the effects of a 100 basis points shift in the zero-coupon rates derived from the swap yield curve on the fair value of the swap and the present value of the hedged cash flows (the hedged cash flows being the difference between the forecast cash flows and the benchmark rate).

A coupon of six-month EURIBOR plus a credit spread will be paid on the debt. For effectiveness testing purposes, only the cash flows related to six-month EURIBOR are taken into account. The credit risk associated with the debt is not part of the hedge relationship; therefore, it is excluded from the tests.

Prospective effectiveness test on 1 January 20x5							
	30/6/20x5	**31/12/20x5**	**30/6/20x6**	**31/12/20x6**	**30/6/20x7**	**31/12/20x7**	**TOTAL**
Cash flows on the swap							
Fixed leg			(2,000,000)	(2,000,000)	(2,000,000)	(2,000,000)	
Variable leg at YC1			1,971,959	1,991,190	2,009,764	2,029,004	
Net cash flows			(28,041)	(8,810)	9,764	29,004	
Discounted CF at ZC1			(26,446)	(8,143)	8,846	25,743	**0**
Fixed leg			(2,000,000)	(2,000,000)	(2,000,000)	(2,000,000)	
Variable leg at YC1+1%			2,454,198	2,473,516	2,491,821	2,511,150	
Net cash flows			454,198	473,516	491,821	511,150	
Discounted CF at ZC+1%			422,286	429,389	435,087	440,870	**1,727,631**
							1,727,631
Cash flows on the debt							
Expected cash flows at YC1			(1,971,959)	(1,991,190)	(2,009,764)	(2,029,004)	
Benchmark rate			2,000,000	2,000,000	2,000,000	2,000,000	
Portion being hedged			28,041	8,810	(9,764)	(29,004)	
Discounted CF at ZC1			26,446	8,143	(8,846)	(25,743)	**0**
Expected cash flows at YC1+1%			(2,454,198)	(2,473,516)	(2,491,821)	(2,511,150)	
Benchmark rate			2,000,000	2,000,000	2,000,000	2,000,000	
Portion being hedged			(454,198)	(473,516)	(491,821)	(511,150)	
Discounted CF at ZC1+1%			(422,286)	(429,389)	(435,087)	(440,870)	**(1,727,631)**
							(1,727,631)
						Effectiveness	**-100%**

Conclusion: the hedge is expected to be highly effective.

Helpful hint

As the critical terms of the swap perfectly match the critical terms of the debt, a quantitative test is not required. A qualitative test consisting of comparing the critical terms of the hedging instrument and the hedged item could have been used as long as it was consistent with Company L's risk management policies. Frequently the reset dates of the variable leg are not the same as those of the debt and a quantitative test is required.

2) Accounting entries on 1 January 20x5

No entry, as: (1) the debt is not yet issued, and (2) the fair value of the forward starting swap is nil at inception.

3) Retrospective effectiveness test on 30 June 20x5

IAS 39 requires the effectiveness of a hedging relationship to be assessed retrospectively as a minimum at each reporting date. Based on Company L's risk management policies, the effectiveness of the hedge is assessed using the dollar offset method. As presented below, the dollar offset method consists of comparing the effects of the change in EURIBOR swap yield curve on the fair value of the hedging instrument and the present value of the hedged cash flows.

Retrospective effectiveness test on 30 June 20x5

	30/6/20x5	31/12/20x5	30/6/20x6	31/12/20x6	30/6/20x7	31/12/20x7	TOTAL
Cash flows on the swap							
Fixed leg			(2,000,000)	(2,000,000)	(2,000,000)	(2,000,000)	
Variable leg at YC1			1,971,959	1,991,190	2,009,764	2,029,004	
Net cash flows			(28,041)	(8,810)	9,764	29,004	
Discounted CF at ZC1			(26,446)	(8,143)	8,846	25,743	**0**
Fixed leg			(2,000,000)	(2,000,000)	(2,000,000)	(2,000,000)	
Variable leg at YC2			2,059,578	2,078,520	2,097,046	2,116,298	
Net cash flows			59,578	78,520	97,046	116,298	
Discounted CF at ZC2			57,177	73,787	89,313	104,765	**325,042**
							325,042
Cash flows on the debt							
Expected cash flows at YC1			(1,971,959)	(1,991,190)	(2,009,764)	(2,029,004)	
Benchmark rate			2,000,000	2,000,000	2,000,000	2,000,000	
Portion being hedged			28,041	8,810	(9,764)	(29,004)	
Discounted CF at ZC1			26,446	8,143	(8,846)	(25,743)	**0**
Expected cash flows at YC2			(2,059,578)	(2,078,520)	(2,097,046)	(2,116,298)	
Benchmark rate			2,000,000	2,000,000	2,000,000	2,000,000	
Portion being hedged			(59,578)	(78,520)	(97,046)	(116,298)	
Discounted CF at ZC2			(57,177)	(73,787)	(89,313)	(104,765)	**(325,042)**
							(325,042)
						Effectiveness	**-100%**

Conclusion: the hedge has been highly effective for the period ended 30 June 20x5

Helpful hint

The hedge was 100% effective, as the critical terms of the swap match those of the debt. Ineffectiveness could arise from a number of causes, including a change in the expected issuance date or terms of the forecast debt (illustrated below), or in the liquidity or credit risk of the swap.

4) Accounting entries on 30 June 20x5

Cash flow hedge accounting

The change in the fair value of the swap amounts to EUR 325,042 for the period ended 30 June 20x5, as presented in the table above. Based on the retrospective effectiveness test performed on 30 June 20x5, the hedge is 100% effective. The entire change in the fair value of the swap is therefore recognised in equity.

The entry is as follows:

(In EUR)	DR	CR
Derivative instrument – swap	325,042	
Cash flow hedge reserve (equity)		325,042
Cash flow hedge – change in fair value of the forward starting swap		

5) Prospective effectiveness test on 30 June 20x5

The same method is used as at the inception of the hedge.

Prospective effectiveness test on 30 June 20x5

	30/6/20x5	31/12/20x5	30/6/20x6	31/12/20x6	30/6/20x7	31/12/20x7	TOTAL
Cash flows on the swap							
Fixed leg			(2,000,000)	(2,000,000)	(2,000,000)	(2,000,000)	
Variable leg at YC2			2,059,578	2,078,520	2,097,046	2,116,298	
Net cash flows			59,578	78,520	97,046	116,298	
Discounted CF at ZC2			57,177	73,787	89,313	104,765	**325,042**
Fixed leg			(2,000,000)	(2,000,000)	(2,000,000)	(2,000,000)	
Variable leg at YC2+1%			2,559,578	2,578,520	2,597,046	2,616,298	
Net cash flows			559,578	578,520	597,046	616,298	
Discounted CF at ZC2+1%			519,382	523,241	526,235	528,933	**2,097,790**
							1,772,748
Cash flows on the debt							
Expected cash flows at YC2			(2,059,578)	(2,078,520)	(2,097,046)	(2,116,298)	
Benchmark rate			2,000,000	2,000,000	2,000,000	2,000,000	
Portion being hedged			(59,578)	(78,520)	(97,046)	(116,298)	
Discounted CF at ZC2			(57,177)	(73,787)	(89,313)	(104,765)	**(325,042)**
Expected cash flows at YC2+1%			(2,559,578)	(2,578,520)	(2,597,046)	(2,616,298)	
Benchmark rate			2,000,000	2,000,000	2,000,000	2,000,000	
Portion being hedged			(559,578)	(578,520)	(597,046)	(616,298)	
Discounted CF at ZC2+1%			(519,382)	(523,241)	(526,235)	(528,933)	**(2,097,790)**
							(1,772,748)
						Effectiveness	**-100%**

Conclusion: the hedge is expected to be highly effective.

6) Entries on 15 December 20x5

In October, it becomes apparent that investment project X is ahead of schedule and phase 2 will commence in December. Company L's management now expects to draw down the new debt of EUR 100m on 15 December. As Company L's management does not believe the change in timing will give rise to significant ineffectiveness in the hedge relationships, it decides not to cancel or adjust the forward starting swap entered into a year ago.

On 15 December, the debt is recognised at the proceeds received by Company L, which represents its fair value on the issuance date. The debt is classified as other financial liabilities and will subsequently be measured at amortised cost. The coupon of the debt for the first period is set at the current EURIBOR rate of 4.35% plus 95 basis points.

(In EUR)	DR	CR
Cash	100,000,000	
Other financial liabilities – debt		100,000,000
Issuance at par of a EUR 100m two-year variable debt		

7) Retrospective effectiveness test on 31 December 20x5

As the debt has been issued on 15 December with interest reset dates on 15 June and 15 December, the retrospective effectiveness test performed at 31 December 20x5 is based on the actual issuance date.

The same method as described on 30 June 20x5 is used. As Company L's risk management policies require, the effectiveness test is performed on a cumulative basis.

Retrospective effectiveness test on 31 December 20x5

						TOTAL
Cash flows on the swap	**31/12/20x5**	**30/6/20x6**	**31/12/20x6**	**30/6/20x7**	**31/12/20x7**	
Fixed leg		(2,000,000)	(2,000,000)	(2,000,000)	(2,000,000)	
Variable leg at YC1		1,971,959	1,991,190	2,009,764	2,029,004	
Net cash flows		(28,041)	(8,810)	9,764	29,004	
Discounted CF at ZC1		(26,446)	(8,143)	8,846	25,743	**0**
Fixed leg		(2,000,000)	(2,000,000)	(2,000,000)	(2,000,000)	
Variable leg at YC3		2,218,673	2,237,940	2,256,377	2,275,655	
Net cash flows		218,673	237,940	256,377	275,655	
Discounted CF at ZC3		213,901	227,542	239,734	251,901	**933,078**
Cash flows on the debt						
Expected cash flows at YC1		(1,971,959)	(1,991,190)	(2,009,764)	(2,029,004)	
Benchmark rate		2,000,000	2,000,000	2,000,000	2,000,000	
Portion being hedged		28,041	8,810	(9,764)	(29,004)	
Discounted CF at ZC1		26,446	8,143	(8,846)	(25,743)	**0**
		15/6/20x6	**15/12/20x6**	**15/6/20x7**	**15/12/20x7**	
Expected cash flows at YC3		(2,175,000)	(2,235,627)	(2,254,146)	(2,273,441)	
Benchmark rate		2,000,000	2,000,000	2,000,000	2,000,000	
Portion being hedged		(175,000)	(235,627)	(254,146)	(273,441)	
Discounted CF at ZC3		(171,496)	(225,778)	(238,096)	(250,386)	**(885,757)**
						(885,757)
					Effectiveness	**-105.3%**

Conclusion: the hedge has been highly effective for the period ended 31 December 20x5, although some ineffectiveness has occurred.

Helpful hint
The change in timing of issuing the debt is short in this illustration and the interest rate changes are small enough that the hedge remains highly effective and qualifies for hedge accounting. Even with small timing differences, there is always a risk that the change in the interest rate in the intervening period might be significant and that the hedge may cease to be highly effective. In that case, hedge accounting is discontinued from the last date when the hedge was demonstrated to be highly effective.

8) Accounting entries on 31 December 20x5

Accrued interest on the debt

(In EUR)	DR	CR
Finance costs – interest expense	220,833	
Accrued interest		220,833
Interest paid on the debt (5.30%*100.000.000*15/360)		

Accrued interest for the period from 15 to 31 December is recorded.

Cash flow hedge accounting

On 31 December the first period of the variable interest leg of the swap is set at 4.437%, the current six-month EURIBOR rate.

The cumulative change in the fair value of the swap amounts to EUR 933,078 for the period ended 31 December 20x5; the cumulative change in the present value of the hedged cash flows amounts to EUR 885,757. As the cumulative change in the present value of the hedged cash flows is less than the cumulative change in the fair value of the swap (ie, there is an 'overhedge'), the difference (EUR 47,321) must be recognised as ineffectiveness in profit or loss in 'other operating income and expense'.

The effective and ineffective portions of the change in the fair value of the derivative are shown below.

Fair value (in EUR)	Hedged item	Swap	Effective portion (recognised in equity)	Ineffective portion (recognised in profit and loss)
At 31 December 20x5	885,757	933,078	885,757	47,321
At 30 June 20x5	325,042	325,042	325,042	–
Change	560,715	608,036	560,715	47,321

Helpful hint
If the change in the fair value of the hedging instrument had been lower than the change in the present value of the hedged cash flows (an 'underhedge'), no ineffectiveness would have been recognised in profit or loss.

(In EUR)	DR	CR
Derivative instrument – swap	608,036	
Cash flow hedge reserve (equity)		560,715
Other operating income and expense – ineffectiveness		47,321
Cash flow hedge – change in fair value of the forward starting swap		

Recycling of amount recognised in equity

As the recognition of interest expense means that the forecast transaction is beginning to affect profit and loss, the associated gains or losses recognised in equity are reclassified into profit and loss. The first coupon of the debt, excluding the credit spread, is set at 4.35%, 35 basis points above the benchmark rate. On 30 June the first settlement of the swap related to the effective portion of the hedge will be EUR 175,000; 15 days of interest from this coupon have been recognised in profit and loss in the current period. EUR 14,583 (ie, 15/180*175,000) should therefore be recycled to profit and loss at 31 December 20x5, as this represents the corresponding portion of the amount previously recognised in equity.

(In EUR)	DR	CR
Cash flow hedge reserve (equity)	14,583	
Finance cost – interest expense		14,583
Cash flow hedge – change in fair value of the forward starting swap		

The total effect on profit and loss is therefore EUR 206,250 (EUR 220,833 - EUR 14,583), which is equivalent to 4.95% (the hedged benchmark rate of 4% + the 95 basis points of credit spread) interest for 15 days.

9) Prospective effectiveness test on 31 December 20x5

The same method is used as at inception of the hedge.

Prospective effectiveness test on 31 December 20x5

						TOTAL
Cash flows on the swap	**31/12/20x5**	**30/6/20x6**	**31/12/20x6**	**30/6/20x7**	**31/12/20x7**	
Fixed leg		(2,000,000)	(2,000,000)	(2,000,000)	(2,000,000)	
Variable leg at YC3		2,218,673	2,237,940	2,256,377	2,275,655	
Net cash flows		218,673	237,940	256,377	275,655	
Discounted CF at ZC3		213,901	227,542	239,734	251,901	**933,078**
Fixed leg		(2,000,000)	(2,000,000)	(2,000,000)	(2,000,000)	
Variable leg at YC3+1%		2,218,673	2,719,102	2,737,252	2,756,639	
Net cash flows		218,673	719,102	737,252	756,639	
Discounted CF at ZC3+1%		212,894	681,163	679,649	678,404	**2,252,109**
						1,319,031
Cash flows on the debt						
Expected cash flows at YC3		(2,175,000)	(2,235,627)	(2,254,146)	(2,273,441)	
Benchmark rate		2,000,000	2,000,000	2,000,000	2,000,000	
Portion being hedged		(175,000)	(235,627)	(254,146)	(273,441)	
Discounted CF at ZC3		(171,496)	(225,778)	(238,096)	(250,386)	**(885,757)**
		15/6/20x6	**15/12/20x6**	**15/6/20x7**	**15/12/20x7**	
Expected cash flows at YC3+1%		(2,175,000)	(2,716,733)	(2,735,098)	(2,754,368)	
Benchmark rate		2,000,000	2,000,000	2,000,000	2,000,000	
Portion being hedged		(175,000)	(716,733)	(735,098)	(754,368)	
Discounted CF at ZC3+1%		(170,756)	(680,553)	(679,207)	(678,026)	**(2,208,541)**
						(1,322,785)
					Effectiveness	**-99.7%**

Conclusion: the hedge is expected to be highly effective, although some ineffectiveness is expected.

10) Accounting entries on 15 June 20x6

The first coupon of the debt is paid.

The coupon for the second period is set at 4.73% + 95 basis points of credit spread, 4.73% being the current six-month EURIBOR rate.

(In EUR)	DR	CR
Finance cost – interest expense	2,650,000	
Cash		2,650,000
Interest paid for the first six months (5.30%*100,000,000/2)		

11) Retrospective effectiveness test on 30 June 20x6

The same method is used as at 31 December 20x5. As required in Company L's risk management policies, the effectiveness test is performed on a cumulative basis.

Retrospective effectiveness test on 30 June 20x6

					TOTAL
Cash flows on the swap	**30/6/20x6**	**31/12/20x6**	**30/6/20x7**	**31/12/20x7**	
Fixed leg	(2,000,000)	(2,000,000)	(2,000,000)	(2,000,000)	
Variable leg at YC1	1,971,959	1,991,190	2,009,764	2,029,004	
Net cash flows	(28,041)	(8,810)	9,764	29,004	
Discounted CF at ZC1	(26,446)	(8,143)	8,846	25,743	**0**
Fixed leg	(2,000,000)	(2,000,000)	(2,000,000)	(2,000,000)	
Variable leg at YC4	2,218,673	2,371,743	2,390,102	2,409,404	
Net cash flows	218,673	371,743	390,102	409,404	
Discounted CF at ZC4	218,673	362,943	371,929	380,950	**1,334,495**
					1,334,495
Cash flows on the debt					
Expected cash flows at YC1	(1,971,959)	(1,991,190)	(2,009,764)	(2,029,004)	
Benchmark rate	2,000,000	2,000,000	2,000,000	2,000,000	
Portion being hedged	28,041	8,810	(9,764)	(29,004)	
Discounted CF at ZC1	26,446	8,143	(8,846)	(25,743)	**0**
	15/6/20x6	**15/12/20x6**	**15/6/20x7**	**15/12/20x7**	
Expected cash flows at YC4	(2,175,000)	(2,375,000)	(2,381,639)	(2,400,229)	
Benchmark rate	2,000,000	2,000,000	2,000,000	2,000,000	
Portion being hedged	(175,000)	(375,000)	(381,639)	(400,229)	
Discounted CF at ZC4	(175,000)	(366,914)	(364,629)	(373,281)	**(1,279,824)**
					(1,279,824)
				Effectiveness	**-104.3%**

Conclusion: the hedge has been highly effective for the period ended 30 June 20x6, although some ineffectiveness has occurred.

12) Entries on 30 June 20x6

Accrued interest on the debt

Accrued interest for the period from 15 to 30 June is recorded.

(In EUR)	DR	CR
Finance costs – interest expense	236,667	
Accrued interest		236,667
Interest paid on the debt (5.68%*100.000.000*15/360)		

Cash flow hedge accounting

The cumulative change in the fair value of the swap amounts to EUR 1,334,495 for the period ended 30 June 20x6, while the cumulative change in the present value of the hedged cash flows amounts to EUR 1,279,824, as shown in the table below. As the cumulative change in the fair value of the swap is more than the cumulative change in the present value of the hedged cash flows, the difference less any ineffectiveness already recognised in prior periods (EUR 47,321) is recognised as ineffectiveness in the profit and loss account in 'other operating income and expense'.

The effective and ineffective portions of the change in the fair value of the derivative are shown below:

	A Fair value of Hedged item	B Fair value of Swap	C Effective portion (lower of A and B)	Ineffective portion (B-C)
At 30 June 20x6 (Cumulative change)	1,279,824	1,334,495	1,279,824	54,671
At 31 December 20x5	885,757	933,078	885,757	47,321
Change	394,067	401,417	394,067	7,350

The change in the fair value of the swap is recognised as follows:

(In EUR)	DR	CR
Derivative instrument – swap	401,417	
Cash flow hedge reserve (equity)		394,067
Other income and expense – ineffectiveness		7,350
Cash flow hedge – change in fair value of the forward starting swap		

Cash settlement of swap

	EUR
Interest paid on the fixed leg of the swap EUR 100m x 4.000%/2	(2,000,000)
Interest received on the variable leg of the swap EUR 100m x 4.437%/2	2,218,673
Net received	**218,673**

(In EUR)	DR	CR
Cash	218,673	
Derivative instrument – swap		218,673
Cash settlement of the swap		

Recycling of amount recognised in equity

During the period, the hedged transaction has affected profit and loss through the recognition of interest expense. The associated gains or losses recognised in equity are reclassified into profit and loss. At 30 June the first settlement related to the effective portion of the swap is EUR 175,000, of which EUR 14,583 was recycled in the period ending 31 December 20x5. The remaining EUR 160,417 is recycled at 30 June 20x6.

The second coupon of the debt is set at 4.73%, excluding the credit spread, 73 basis points above the benchmark rate. On 31 December 20x6 the second settlement of the swap related to the effective portion of the hedge will be EUR 365,000; 15 days of interest from this coupon have been recognised in profit and loss in the current period. EUR 30,416 (ie, 15/180*365,000) should therefore be recycled to profit and loss at June 30 20x6, as this represents the corresponding portion of the amount previously recognised in equity.

(In EUR)	DR	CR
Cash flow hedge reserve (equity)	190,834	
Finance cost – interest expense		190,834
Cash flow hedge – change in fair value of the forward starting swap		

The total effect on finance cost for the period is therefore EUR 2,475,000 (EUR 2,650,000 – EUR 220,833 + EUR 236,667 – EUR 190,834), which is equivalent to 4.95% (the hedged benchmark rate of 4% + 95 basis points of credit spread) interest for 180 days. In addition, ineffectiveness of EUR 7,350 is recognised in profit or loss.

Summary of accounting entries

	Balance sheet								Income statement			
	Derivative instrument – swap		Other financial liabilities – debt		Cash		Equity		Other operating income & expense		Interest income & expenses	
30 June 20x5												
Cash flow hedge accounting	325,042							325,042				
15 December 20x5												
Debt issuance				100,000,000	100,000,000							
31 December 20x5												
Accrued interest on debt				220,833							220,833	
Cash flow hedge accounting	608,036							560,715		47,321		
Recycling							14,583					14,583
1 January 20x6												
Reversing of accrued interest			220,833									220,833
15 June 20x6												
Payment of interest						2,650,000					2,650,000	
30 June 20x6												
Accrued interest on the debt				236,667							236,667	
Cash flow hedge accounting	401,417							394,067		7,350		
Cash settlement of derivative		218,673			218,673							
Recycling							190,834					190,834

Illustration 6: foreign currency hedge of a net investment in a foreign operation – net investment hedge

Background and assumptions

Company K, a Swiss company with a CHF functional currency, has an Italian subsidiary, Company D, whose functional currency is EUR. Company K's reporting dates for its consolidated financial statements are 30 June and 31 December. The group's presentation currency is CHF.

On 1 January 20x5, Company K issues a two-year floating rate debt with the following characteristics:

Type	Issued debt
Principal amount	EUR 100m
Start date	1 January 20x5
Maturity date	31 December 20x6
Interest rate	Six-month EURIBOR
Settlement dates	30 June 20x5, 31 December 20x5, 30 June 20x6, 31 December 20x6

No transaction costs are incurred relating to the debt issuance. K's management has chosen to issue euro-denominated debt to hedge K's net investment in Company D. It wishes to reduce the consolidated balance sheet volatility arising from EUR/CHF fluctuations by designating the debt as a hedge of the net investment. On 1 January 20x5, the net investment in Company D is EUR 100m. It is not expected to fall below EUR 100m, as Company D has been a profitable company for many years and its forecasts for the next two years, as approved by Company K's board of directors, show it continuing to make material profits.

Exchange rates on various dates during the hedge relationship are as follows:

Helpful hint

A net investment in a foreign operation is the amount of the reporting entity's interest in the net assets of the operation, including goodwill. If the entity is financed through an inter-company loan that will not be repaid in the foreseeable future (quasi-equity), this loan is included in the net investment.

A hedge of a net investment is a hedge of an accounting exposure (ie, the variability in equity arising from translating the net investment at different exchange rates).

Average exchange rates for the six-month periods during the hedge are as follows:

	1/1/20x5	30/6/20x5	31/12/20x5	30/6/20x6	31/12/20x6
EUR/CHF spot rate	1.5000	1.5800	1.6000	1.6200	1.6500
EUR/CHF forward rate	1.5667	1.6343	1.6364	1.6383	1.6500
Forward points	**0.0667**	**0.0543**	**0.0364**	**0.0183**	**0.0000**

	30/6/20x5	31/12/20x5	30/6/20x6	31/12/20x6
EUR/CHF average rate	1.5400	1.5900	1.6100	1.6400

Annual interest rates on various dates during the hedge are as follows:

	1/01/20x5	30/6/20x5	31/12/20x5	30/6/20x6	31/12/20x6
CHF interest rate	3.5500%	3.6200%	3.6500%	3.5750%	3.6450%
EUR interest rate	1.3505%	1.3500%	1.3750%	1.3250%	1.3550%

For the purpose of this illustration, the yield curve (ie, interest rate) at each reporting period end is assumed to remain the same through the term of the hedge designation (ie, the yield curve is flat at all times). This simplification does not have any impact on the effectiveness test in this example, as the reset dates of the loan coincide with the effectiveness testing date. With a non-flat yield curve, the calculation of the fair value of the variable rate debt will still give a fair value equal to the face value, as the variable coupons will be at market rate.

Extracts of the risk management policies for foreign currency risk

Background to the group

The group is an international retailer operating around the world, particularly in Western Europe (Switzerland, Italy and the UK) and the US. The biggest subsidiary is based in Italy.

Foreign currency risk

The group's presentation currency is CHF. Foreign currency risk arises from transactions denominated in foreign currencies and net investments in foreign operations.

Investments in foreign operations (translation foreign currency risk)

A foreign currency exposure arises from net investments in group entities whose functional currency differs from the group's presentation currency (CHF). The risk is defined as the risk of fluctuation in spot exchange rates between the functional currency of the net investments and the group's presentation currency. This will cause the amount of the net investment to vary. Such a risk may have a significant impact on the group's financial statements.

This translation risk does not give rise to a cash flow exposure. Its impact arises only from the translation of the net investment into the group's presentation currency. This procedure is required in preparing the group's consolidated financial statements.

Hedging instruments

The group uses derivatives (such as forward contracts and purchased options) and cash instruments (non-derivatives such as foreign currency borrowings) to hedge foreign currency risk. All derivatives must be entered into with counterparties with a credit rating of AA or higher.

Extracts of hedge effectiveness testing policies

Strategy 2C: Hedge of a net investment for foreign currency risk with a debt instrument.

Prospective effectiveness testing for net investment hedges

Prospective effectiveness testing should be performed at the inception of the hedge and at each reporting date. For hedges where the hedging instrument is a cash instrument, the hedge relationship is highly effective if the foreign currency gains and losses on the hedged item (net investment) that are attributable to the hedged risk (changes in spot exchange rates) are expected to be offset by the foreign currency gains and losses on the hedging instrument (cash instrument).

Prospective effectiveness testing must be performed by comparing the numerical effects of an upward shift in the benchmark exchange rate (EUR/CHF spot exchange rate) on both the value of the hedging instrument and the value of the hedged item.

- **The value of the hedging instrument:** when the hedging instrument is a cash instrument (for example, a debt instrument), this value is determined by discounting the future cash flows, including interest payments, on the debt and translating the result at the spot exchange rate. Accrued interest (if any) is excluded from the calculation.
- **The value of the net investment being hedged:** this is determined by translating the amount of the net investment into the group's presentation currency using the spot exchange rate.

This test should normally be performed using at least three currency scenarios. However, for hedges where the critical terms of the hedging instrument perfectly match the critical terms of the hedged item, one scenario is sufficient.

Retrospective effectiveness testing for net investment hedges

Retrospective effectiveness testing should be performed at each reporting date using the dollar offset method on a cumulative basis. The hedge is demonstrated to be effective under this method by comparing the cumulative foreign currency gains and losses on the hedging instrument with the cumulative foreign currency gains and losses on the net investment being hedged, and showing that it falls within the required range of 80%-125%.

- **Foreign currency gains and losses on the hedging instrument:** when the hedging instrument is a cash instrument (for example, a debt instrument), such foreign currency gains and losses are determined by discounting the future cash flows (using the current euro interest rate) on the debt and translating the result at the spot exchange rate. Accrued interest (if any) is excluded from the calculation.
- **Foreign currency gains and losses on the net investment being hedged:** such gains and losses are determined by translating the amount of the net investment into the group's presentation currency using the spot exchange rate.

Company K's hedge documentation is as follows:

Hedge designation

1) Risk management objective and strategy

In order to comply with Company K's foreign currency risk management strategy, the foreign currency translation risk arising on the net investment in Company D is hedged.

2) Type of hedging relationship

Net investment hedge.

3) Nature of risk being hedged

In accordance with the group's risk management policies, the hedged risk is the risk of changes in the EUR/CHF spot exchange rate that will result in changes in the value of the group's net investment in Company D when translated into CHF. The risk is hedged from 1 January 20x5 to 31 December 20x7.

4) Identification of hedged item

The group's net investment in EUR in Company D on 1 January 20x5 is EUR 100m. EUR 100m of the net investment is designated as the hedged item.

5) Identification of hedging instrument

Transaction number: reference number G0901Z in the treasury management system.

The hedging instrument is a two-year floating rate debt with the following characteristics:

Type	Issued debt
Principal amount	EUR 100m
Start date	1 January 20x5
Maturity date	31 December 20x6
Interest rate	Six-month EURIBOR
Settlement dates	30 June 20x5, 31 December 20x5, 30 June 20x6, 31 December 20x6

Hedge designation: the foreign currency exposure of debt G0901Z is designated as a hedge of the change in the value of the net investment identified in (4) above that is attributable to movements in the CHF/EUR spot rate.

6) Effectiveness testing

Effectiveness testing strategy 2C will be applied.

Description of prospective effectiveness testing

Dollar offset method, being the comparison of the numerical effects of a shift in the benchmark exchange rate (EUR/CHF spot exchange rate) on both the value of the hedging instrument and the value of the hedged item.

As permitted in the risk management policies, one scenario is used for assessing prospectively the effectiveness of the hedge relationship (a 10% upward shift of the EUR/CHF spot exchange rate), as the critical terms of the hedging instrument perfectly match the critical terms of the hedged item.

Frequency of testing: at inception of the hedge and then at each reporting date (30 June and 31 December).

Description of retrospective effectiveness testing

Dollar offset method, being the ratio of the cumulative foreign currency gains and losses on the debt (G0901Z), divided by the foreign currency gains and losses on the net investment being hedged.

Foreign currency gains and losses on the debt is the change in the present value of cash flows of the debt (interest and principal repayment) attributable to change in the EUR/CHF spot exchange rate.

Foreign currency gains and losses on the net investment being hedged is the change in the value of the net investment being hedged using the EUR/CHF spot exchange rate.

Frequency of testing: at every reporting date (30 June and 31 December) after inception of the hedge.

Effectiveness tests and accounting entries

1) Prospective effectiveness test on 1 January 20x5

At inception of the hedge, the forward EUR/CHF exchange rate is 1.5667 and the six-month EURIBOR is at 1.3505%. On that date, the spot EUR/CHF exchange rate is 1.5000.

Company K's management assesses the effectiveness of the hedge prospectively, as required by IAS 39. Based on the hedge documentation, the prospective effectiveness test consists of comparing the effects of a 10% shift of the EUR/CHF spot exchange rate on the net investment and the debt instrument.

Prospective effectiveness test on 1 January 20x5

	30/6/20x5	31/12/20x5	30/6/20x6	31/12/20x6	TOTAL
Cash flows on the debt					
Expected cash flows at 1.3505% (EUR)	(675,250)	(675,250)	(675,250)	(100,675,250)	
Discount factor	0.99332	0.98653	0.97990	0.97344	
Discounted cash flows (EUR)	(670,736)	(666,153)	(661,675)	(98,001,436)	
EUR/CHF spot exchange rate	1.5000	1.5000	1.5000	1.5000	
Discounted cash flows (CHF)	**(1,006,104)**	**(999,229)**	**(992,513)**	**(147,002,154)**	**(150,000,000)**
Expected cash flows at 1.3505% (EUR)	(675,250)	(675,250)	(675,250)	(100,675,250)	
Discount factor	0.99332	0.98653	0.97990	0.97344	
Discounted cash flows (EUR)	(670,736)	(666,153)	(661,675)	(98,001,436)	
10% shift in EUR/CHF spot exchange rate	1.6500	1.6500	1.6500	1.6500	
Discounted cash flows (CHF)	**(1,106,714)**	**(1,099,152)**	**(1,091,764)**	**(161,702,370)**	**(165,000,000)**
				Change	**(15,000,000)**
Net investment					
Net investment in EUR				100,000,000	
EUR/CHF spot exchange rate				1.5000	
Net investment in CHF				150,000,000	**150,000,000**
Net investment in EUR				100,000,000	
10% shift in EUR/CHF spot exchange rate				1.6500	
Net investment in CHF				165,000,000	**165,000,000**
				Change	**15,000,000**
				Effectiveness	**100%**

Conclusion: the hedge is expected to be highly effective.

2) Entries on 1 January 20x5

The debt is recognised at the proceeds received by Company K, which represents its fair value on the issuance date. The debt is classified as other financial liabilities and will subsequently be measured at amortised cost.

(In CHF)	DR	CR
Cash	100,000,000	
Other financial liabilities – debt		100,000,000
Issuance at par of a EUR 100m two-year debt		

3) Retrospective effectiveness test on 30 June 20x5

IAS 39 requires the effectiveness of a hedging relationship to be assessed retrospectively as a minimum at each reporting date. Based on Company K's risk management policies, the effectiveness of the hedge is assessed using the dollar offset method. The dollar offset method consists of comparing the effects of the change in EUR/CHF spot exchange rate on the hedged item (net investment) and the hedging instrument (cash instrument).

Retrospective effectiveness test on 30 June 20x5					
	30/6/20x5	**31/12/20x5**	**30/6/20x6**	**31/12/20x6**	**TOTAL**
Cash flows on the debt					
Expected cash flows at 1.3505% (EUR)	(675,250)	(675,250)	(675,250)	(100,675,250)	
Discount factor	0.99332	0.98653	0.97990	0.97344	
Discounted cash flows (EUR)	(670,736)	(666,153)	(661,675)	(98,001,436)	
EUR/CHF spot exchange rate at inception	1.5000	1.5000	1.5000	1.5000	
Discounted cash flows (CHF)	(1,006,104)	(999,229)	(992,513)	(147,002,154)	**(150,000,000)**
Expected cash flows at 1.3500% (EUR)		(675,000)	(675,000)	(100,675,000)	
Discount factor		0.99317	0.98650	0.98002	
Discounted cash flows (EUR)		(670,389)	(665,885)	(98,663,726)	
EUR/CHF spot exchange rate at testing date		1.5800	1.5800	1.5800	
Discounted cash flows (CHF)		(1,059,215)	(1,052,098)	(155,888,687)	**(158,000,000)**
				Change	**(8,000,000)**
Net investment					
Net investment in EUR				100,000,000	
EUR/CHF spot exchange rate at inception				1.5000	
Net investment in CHF at inception				150,000,000	**150,000,000**
Net investment in EUR				100,000,000	
EUR/CHF spot exchange rate at testing date				1.5800	
Net investment in CHF at testing date				158,000,000	**158,000,000**
				Change	**8,000,000**
				Effectiveness	**100%**

Conclusion: the hedge has been highly effective for the period ended 30 June 20x5.

Helpful hint

In practice, both the prospective and retrospective effectiveness tests may be performed by:

1) translating the principal amount of the debt into CHF using the relevant EUR/CHF spot exchange rates (for the retrospective test, the rates at the beginning and end of the period); and
2) comparing the difference with the foreign currency gains and losses on the net investment. This 'short cut' gives the same results, as shown below.

Principal amount of the debt (in EUR)	EUR 100,000,000
EUR/CHF spot exchange rate at inception	1.5000
	CHF 150,000,000
Principal amount of the debt (in EUR)	EUR 100,000,000
EUR/CHF spot exchange rate at testing date	1.5800
	CHF 158,000,000
Difference (+gain/-loss):	**CHF (8,000,000)**
Foreign currency gain on the net investment (see table above)	**CHF 8,000,000**
Effectiveness	**100%**

3) Accounting entries on 30 June 20x5

Recognition of interest on the debt

Interest for the first six months (EUR 675,000) is paid on 30 June. The payment is translated using the spot rate on 30 June. The interest expense is translated at the average rate for the six month period as interest accrues over time. The difference in translation rates gives rise to a loss that is recorded as 'other operating income and expense'.

(In CHF)	DR	CR
Finance costs – interest expense	1,039,500	
Other operating income and expense	27,000	
Cash		1,066,500
Payment of interest on the debt at 1.35% for six months		

Net investment hedge accounting

As the hedge has been fully effective for the period, the entire foreign currency loss on the debt is recognised in equity, and there is no ineffectiveness to recognise in profit or loss.

(In CHF)	DR	CR
Translation reserve (equity)	8,000,000	
Debt instrument		8,000,000
Net investment hedge		

Helpful hint
A gain of CHF 8 million will also be recognised in the translation reserve from the translation of the hedged net investment in the Italian subsidiary. As a result, the net change in the translation reserve for the six months ended 30 June 20x5 is nil.

4) Prospective effectiveness test on 30 June 20x5

The same method is used as at the inception of the hedge.

Prospective effectiveness test on 30 June 20x5

	30/6/20x5	31/12/20x5	30/6/20x6	31/12/20x6	TOTAL
Cash flows on the debt					
Expected cash flows at 1.3505% (EUR)	(675,250)	(675,250)	(675,250)	(100,675,250)	
Discount factor	0.99332	0.98653	0.97990	0.97344	
Discounted cash flows (EUR)	(670,736)	(666,153)	(661,675)	(98,001,436)	
EUR/CHF spot exchange rate	1.5800	1.5800	1.5800	1.5800	
Discounted cash flows (CHF)	(1,059,763)	(1,052,522)	(1,045,447)	(154,842,269)	**(158,000,000)**
Expected cash flows at 1.3500% (EUR)		(675,000)	(675,000)	(100,675,000)	
Discount factor		0.99317	0.98650	0.98002	
Discounted cash flows (EUR)		(670,389)	(665,885)	(98,663,726)	
10% shift in EUR/CHF spot exchange rate		1.7380	1.7380	1.7380	
Discounted cash flows (CHF)		(1,165,137)	(1,157,308)	(171,477,556)	**(173,800,000)**
				Change	**(15,800,000)**
Net investment					
Net investment in EUR				100,000,000	
EUR/CHF spot exchange rate				1.5800	
Net investment in CHF				158,000,000	**158,000,000**
Net investment in EUR				100,000,000	
10% shift in EUR/CHF spot exchange rate				1.7380	
Net investment in CHF				173,800,000	**173,800,000**
				Change	**15,800,000**
				Effectiveness	**100%**

Conclusion: the hedge is expected to be highly effective.

5) Retrospective effectiveness test on 31 December 20x5

The forward EUR/CHF exchange rate is 1.6364 and the six-month EURIBOR is at 1.3750%. On that date, the spot EUR/CHF exchange rate is 1.6000. The method used is the same as at 1 January 20x5.

Retrospective effectiveness test on 31 December 20x5

	30/6/20x5	31/12/20x5	30/6/20x6	31/12/20x6	TOTAL
Cash flows on the debt					
Expected cash flows at 1.3505% (EUR)	(675,250)	(675,250)	(675,250)	(100,675,250)	
Discount factor	0.99332	0.98653	0.97990	0.97344	
Discounted cash flows (EUR)	(670,736)	(666,153)	(661,675)	(98,001,436)	
EUR/CHF spot exchange rate at inception	1.5000	1.5000	1.5000	1.5000	
Discounted cash flows clean (CHF)	(1,006,104)	(999,229)	(992,513)	(147,002,154)	**(150,000,000)**
Expected cash flows at 1.3750%			(687,500)	(100,687,500)	
Discount factor			0.99316	0.98639	
Discounted cash flows (EUR)			(682,796)	(99,317,205)	
EUR/CHF spot exchange rate at testing date			1.6000	1.6000	
Discounted cash flows clean (CHF)			(1,092,473)	(158,907,527)	**(160,000,000)**
				Change	**(10,000,000)**
Net investment					
Net investment in EUR				100,000,000	
EUR/CHF spot exchange rate at inception				1.5000	
Net investment in CHF at inception				150,000,000	**150,000,000**
Net investment in EUR				100,000,000	
EUR/CHF spot exchange rate at testing date				1.6000	
Net investment in CHF at testing date				160,000,000	**160,000,000**
				Change	**10,000,000**
				Effectiveness	**100%**

Conclusion: the hedge has been highly effective for the period ended 31 December 20x5.

6) Accounting entries on 31 December 20x5

Recognition of interest on the debt

Interest for six months (EUR 687,500) is paid on 31 December. The payment is translated using the spot rate on 31 December. The interest expense is translated at the average rate for the six-month period as interest accrues over time. The difference in translation rates gives rise to a loss that is recorded as 'other operating income and expense'.

(In CHF)	DR	CR
Finance costs – interest expense	1,093,125	
Other operating income and expense	6,875	
Cash		1,100,000
Payment of interest on the debt at 1.375% for six months		

Net investment hedge accounting

As the hedge has been fully effective for the period, the entire foreign exchange loss on the debt is recognised in equity and there is no ineffectiveness to recognise in profit or loss.

(In CHF)	DR	CR
Translation reserve (equity)	2,000,000	
Debt instrument		2,000,000
Net investment hedge		

	CHF
Cumulative foreign exchange loss on the debt on 31 December 20x5	(10,000,000)
Cumulative foreign exchange loss on the debt on 30 June 20x5	(8,000,000)
Foreign exchange loss to be recognised in translation reserve	**(2,000,000)**

7) Prospective effectiveness test on 31 December 20x5

The same method is used as at the inception of the hedge.

Prospective effectiveness test on 31 December 20x5

	30/6/20x5	31/12/20x5	30/6/20x6	31/12/20x6	TOTAL
Cash flows on the debt					
Expected cash flows at 1.3505% (EUR)	(675,250)	(675,250)	(675,250)	(100,675,250)	
Discount factor	0.99332	0.98653	0.97990	0.97344	
Discounted cash flows (EUR)	(670,736)	(666,153)	(661,675)	(98,001,436)	
EUR/CHF spot exchange rate	1.6000	1.6000	1.6000	1.6000	
Discounted cash flows (CHF)	(1,073,178)	(1,065,845)	(1,058,680)	(156,802,298)	**(160,000,000)**
Expected cash flows at 1.3750% (EUR)			(687,500)	(100,687,500)	
Discount factor			0.99316	0.98639	
Discounted cash flows (EUR)			(682,796)	(99,317,205)	
10% shift in EUR/CHF spot exchange rate			1.7600	1.7600	
Discounted cash flows (CHF)			(1,201,720)	(174,798,280)	**(176,000,000)**
				Change	**(16,000,000)**
Net investment					
Net investment in EUR				100,000,000	
EUR/CHF spot exchange rate				1.6000	
Net investment in CHF				160,000,000	**160,000,000**
Net investment in EUR				100,000,000	
10% shift in EUR/CHF spot exchange rate				1.7600	
Net investment in CHF				176,000,000	**176,000,000**
				Change	**16,000,000**
				Effectiveness	**100%**

Conclusion: the hedge is expected to be highly effective.

8) Retrospective effectiveness test on 30 June 20x6

On 30 June 20x6, Company K's net investment has decreased to EUR 98.5m because Company D made unexpected losses. The spot EUR/CHF exchange rate on 30 June 20x6 is 1.6200 and the six-month EURIBOR is 1.3250%. Effectiveness is tested using the same method as is described on 31 December 20x5.

Retrospective effectiveness test on 30 June 20x6

	30/6/20x5	31/12/20x5	30/6/20x6	31/12/20x6	TOTAL
Cash flows on the debt					
Expected cash flows at 1.3505% (EUR)	(675,250)	(675,250)	(675,250)	(100,675,250)	
Discount factor	0.99332	0.98653	0.97990	0.97344	
Discounted cash flows (EUR)	(670,736)	(666,153)	(661,675)	(98,001,436)	
EUR/CHF spot exchange rate at inception	1.5000	1.5000	1.5000	1.5000	
Discounted cash flows clean (CHF)	(1,006,104)	(999,229)	(992,513)	(147,002,154)	**(150,000,000)**
Expected cash flows at 1.3250%				(100,662,500)	
Discount factor				0.99342	
Discounted cash flows (EUR)				(100,000,000)	
EUR/CHF spot exchange rate at testing date				1.6200	
Discounted cash flows clean (CHF)				(162,000,000)	**(162,000,000)**
				Change	**(12,000,000)**
Net investment					
Net investment in EUR				98,500,000	
EUR/CHF spot exchange rate at inception				1.5000	
Net investment in CHF at inception				147,750,000	**147,750,000**
Net investment in EUR				98,500,000	
EUR/CHF spot exchange rate at testing date				1.6200	
Net investment in CHF				159,570,000	**159,570,000**
				Change	**11,820,000**
				Effectiveness	**101.5%**

As illustrated above, the hedge is no longer fully effective because the carrying value of the hedged net investment is lower than the principal amount of the hedging debt instrument. However, the hedge remains highly effective.

Conclusion: the hedge has been highly effective for the period ended 30 June 20x6.

9) Accounting entries on 30 June 20x6

Recognition of interest on the debt

Interest for six months (EUR 662,500) is paid on 30 June. The payment is translated using the spot rate on 30 June. The interest expense is translated at the average rate for the six month period as interest accrues over time. The difference in translation rates gives rise to a loss that is recorded as 'other operating income and expense'.

(In CHF)	DR	CR
Finance costs – interest expense	1,066,625	
Other operating income and expense	6,625	
Cash		1,073,250
Payment of interest on the debt at 1.325% for six months		

Net investment hedge accounting

As the hedge has not been fully effective for the period, ineffectiveness must be recognised in profit or loss.

Cumulative foreign exchange loss on the debt on 30 June 20x6	(12,000,000)
Cumulative foreign exchange loss on the debt on 31 December 20x5	(10,000,000)
Foreign exchange loss on the debt for the period (A)	**(2,000,000)**
Translation reserve balance on 30 June 20x6	11,820,000
Translation reserve balance on 31 December 20x5	10,000,000
Difference (B)	**1,820,000**

As the change in the hedging instrument (the debt) is greater than the change in the hedged item (the net investment), it is not fully absorbed by the hedged item. The difference must therefore be recognised in the income statement as ineffectiveness.

Amount to be recognised in profit or loss (A+B) **(180,000)**

(In CHF)	DR	CR
Other operating income and expense	180,000	
Translation reserve (equity)	1,820,000	
Debt instrument		2,000,000
Net investment hedge		

10) Prospective effectiveness test on 30 June 20x6

The same method is used as at the inception of the hedge. In addition, Company K's management does not expect its Italian subsidiary to make further losses for the remaining life of the hedge (until 31 December 20x6).

Prospective effectiveness test on 30 June 20x6

	30/6/20x5	31/12/20x5	30/6/20x6	31/12/20x6	TOTAL
Cash flows on the debt					
Expected cash flows at 1.3505% (EUR)	(675,250)	(675,250)	(675,250)	(100,675,250)	
Discount factor	0.99332	0.98653	0.97990	0.97344	
Discounted cash flows (EUR)	(670,736)	(666,153)	(661,675)	(98,001,436)	
EUR/CHF spot exchange rate	1.6200	1.6200	1.6200	1.6200	
Discounted cash flows (CHF)	(1,086,592)	(1,079,168)	(1,071,914)	(158,762,326)	**(162,000,000)**
Expected cash flows at 1.3250% (EUR)				(100,662,500)	
Discount factor				0.99342	
Discounted cash flows (EUR)				(100,000,000)	
10% shift in EUR/CHF spot exchange rate				1.7820	
Discounted cash flows (CHF)				(178,200,000)	**(178,200,000)**
				Change	**(16,200,000)**
Net investment					
Net investment in EUR				98,500,000	
EUR/CHF spot exchange rate				1.6200	
Net investment in CHF				159,570,000	**159,570,000**
Net investment in EUR				98,500,000	
10% shift in EUR/CHF spot exchange rate				1.7820	
Net investment in CHF				175,527,000	**175,527,000**
				Change	**15,957,000**
				Effectiveness	**101.5%**

Conclusion: the hedge is expected to be highly effective, although some ineffectiveness is expected because the carrying value of the hedged net investment is smaller than the principal amount of the hedging debt instrument.

Helpful hint

This ineffectiveness could be avoided by re-designating the hedge, so that the hedging instrument is designated as 98.5% of the debt instrument (ie, an amount that matches the reduced net investment). In this example, in which the losses are relatively small, such re-designation would make no difference to the accounting entries, as the hedge remains highly effective. However, had the losses been so big as to cause the hedge to fail the effectiveness test, re-designating the hedge in this way may allow the company to apply hedge accounting for future periods.

Helpful hint

What will happen if the hedged net investment is sold? If Company D is sold or otherwise disposed of, the hedging gains or losses on the debt previously accumulated in the translation reserve (equity) will be transferred to profit or loss as part of the gain or loss on disposal.

Summary of accounting entries

	Balance sheet						Income statement			
	Debt instrument		Cash		Translation reserve (equity)		Other operating income & expense		Finance cost	
01/01/20x5 Recognition of the debt		100,000,000	100,000,000							
30/6/20x5 Interest on the debt Debt re-translation		8,000,000		1,066,500	8,000,000		27,000		1,039,500	
31/12/20x5 Interest on the debt Debt re-translation		2,000,000		1,100,000	2,000,000		6,875		1,093,125	
30/6/20x6 Interest on the debt Debt re-translation		2,000,000		1,073,250	1,820,000		6,625 180,000		1,066,625	

Glossary

Amortised cost of a financial asset or financial liability

The amount at which the financial asset or financial liability is measured at initial recognition minus principal repayments, plus or minus the cumulative amortisation using the effective interest method of any difference between that initial amount and the maturity amount, and minus any reduction (directly or through the use of an allowance account) for impairment or uncollectibility.

Available-for-sale financial assets

Non-derivative financial assets that are designated as available for sale or are not classified as (a) loans and receivables, (b) held-to-maturity investments, or (c) financial assets at fair value through profit or loss.

Cash flow hedge

A hedge of the exposure to variability in cash flows that (a) is attributable to a particular risk associated with a recognised asset or liability (such as all or some future interest payments on variable rate debt) or a highly probable forecast transaction, and (b) could affect profit or loss.

Derivative

A financial instrument or other contract within the scope of IAS 39 with all three of the following characteristics:

(a) its value changes in response to the change in a specified interest rate, financial instrument price, commodity price, foreign exchange rate, index of prices or rates, credit rating or credit index, or other variable, provided in the case of a non-financial variable that the variable is not specific to a party to the contract (sometimes called the 'underlying');

(b) it requires no initial net investment, or an initial net investment that is smaller than would be required for other types of contracts that would be expected to have a similar response to changes in market factors; and

(c) it is settled at a future date.

Effective interest method

Method of calculating the amortised cost of a financial asset or a financial liability (or group of financial assets or financial liabilities) and of allocating the interest income or interest expense over the relevant period.

The effective interest rate is the rate that exactly discounts estimated future cash payments or receipts through the expected life of the financial instrument or, when appropriate, a shorter period to the net carrying amount of the financial asset or financial liability. When calculating the effective interest rate, an entity should estimate cash flows considering all contractual terms of the financial instrument (for example, prepayment, call and similar options) but should not consider future credit losses. The calculation includes all fees and points paid or received between parties to the contract that are an integral part of the effective interest rate (see IAS 18), transaction costs and all other premiums or discounts.

There is a presumption that the cash flows and the expected life of a group of similar financial instruments can be estimated reliably. However, in those rare cases where it is not possible to estimate reliably the cash flows or the expected life of a financial instrument (or group of financial instruments), the entity should use the contractual cash flows over the full contractual term of the financial instrument (or group of financial instruments).

Embedded derivative

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

An embedded derivative causes some or all of the cash flows that otherwise would be required by the contract to be modified according to a specified interest rate, financial instrument price, commodity price, foreign exchange rate, index of prices or rates, credit rating or credit index, or other variable, provided in the case of a non-financial variable that the variable is not specific to a party to the contract.

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

An embedded derivative should be separated from the host contract and accounted for as a derivative if, and only if:

(a) the economic characteristics and risks of the embedded derivative are not closely related to the economic characteristics and risks of the host contract (see IAS 39, Appendix A paragraphs AG30 and AG33);

(b) a separate instrument with the same terms as the embedded derivative would meet the definition of a derivative; and

(c) the hybrid (combined) instrument is not measured at fair value with changes in fair value recognised in profit or loss (ie, a derivative that is embedded in a financial asset or financial liability at fair value through profit or loss is not separated).

Equity

Any contract that evidences a residual interest in the assets an entity after deducting all of its liabilities.

Fair value

The amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's length transaction.

Fair value hedge

A hedge of the exposure to changes in fair value of a recognised asset or liability or an 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 profit or loss.

Financial instrument

Any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity.

Financial asset

Any asset that is:

(a) cash;

(b) an equity instrument of another entity;

(c) a contractual right:
  (i) to receive cash or another financial asset from another entity; or
  (ii) to exchange financial assets or financial liabilities with another entity under conditions that are potentially favourable to the entity; or

(d) a contract that will or may be settled in the entity's own equity instruments and is:
  (i) a non-derivative for which the entity is or may be obliged to receive a variable number of the entity's own equity instruments; or
  (ii) a derivative that will or may be settled other than by the exchange of a fixed amount of cash or another financial asset for a fixed number of the entity's own equity instruments. For this purpose, the entity's own equity instruments do not include instruments that are themselves contracts for the future receipt or delivery of the entity's own equity instruments.

Financial asset or financial liability at fair value through profit or loss

A financial asset or financial liability that meets either of the following conditions:

(a) It is classified as held for trading. A financial asset or financial liability is classified as held for trading if it is:
  (i) acquired or incurred principally for the purpose of selling or repurchasing it in the near term;
  (ii) 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 (except for a derivative that is a designated and effective hedging instrument); or

(b) Upon initial recognition it is designated by the entity as at fair value through profit or loss. An entity may use this designation only:
  (i) for a hybrid (combined) contract that contains one or embedded derivatives, unless:
    – the embedded derivative does not significantly modify the cash flows that would otherwise be required by the contract; or
    – when it is clear, with little or no analysis when a similar hybrid (combined) instrument is first considered, that separation of the embedded derivative is prohibited, such as a prepayment option embedded in a loan that permits the holder to prepay the loan for approximately its amortised cost;
  (ii) when doing so eliminates or significantly reduces a measurement or recognition inconsistency (sometimes referred to as 'an accounting mismatch') that would otherwise arise from measuring assets or liabilities or recognising the gains and losses on them on different bases; or
  (iii) for a group of financial assets, financial liabilities or both if it is managed and its performance is evaluated on a fair value basis, in accordance with a documented risk management or investment strategy, and information about the group is provided internally on that basis to the entity's key management personnel – for example, the entity's board of directors and chief executive officer.

Investments in equity instruments that do not have a quoted market price in an active market, and whose fair value cannot be reliably measured, shall not be designated as at fair value through profit or loss.

Financial liability

Any liability that is:

(a) a contractual obligation:
  (i) to deliver cash or another financial asset to another entity; or
  (ii) to exchange financial assets or financial liabilities with another entity under conditions that are potentially unfavourable to the entity; or

(b) a contract that will or may be settled in the entity's own equity instruments and is:
  (i) a non-derivative for which the entity is or may be obliged to deliver a variable number of the entity's own equity instruments; or
  (ii) a derivative that will or may be settled other than by the exchange of a fixed amount of cash or another financial asset for a fixed number of the entity's own equity instruments. For this purpose, the entity's own equity instruments do not include instruments that are themselves contracts for the future receipt or delivery of the entity's own equity instruments.

Firm commitment

A binding agreement for the exchange of a specified quantity of resources at a specified price on a specified future date or date.

Forecast transaction

An uncommitted but anticipated future transaction.

Hedge effectiveness

The degree to which offsetting 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.

Hedged item

An asset, liability, firm commitment, highly probable forecast transaction or net investment in a foreign operation that:

(a) exposes the entity to risk of changes in fair value or future cash flows; and

(b) is designated as being hedged.

Hedging instrument

A designated derivative or (for a hedge of the risk of changes in foreign currency exchange rates only) a designated non-derivative financial asset or non-derivative financial liability whose fair value or cash flows are expected to offset changes in the fair value or cash flows of a designated hedged item.

Held-to-maturity investments

Non-derivative financial assets with fixed or determinable payments and fixed maturity that an entity has the positive intention and ability to hold to maturity other than:

(a) those that the entity upon initial recognition designates as at fair value through profit or loss;

(b) those that the entity designates as available for sale; and

(c) those that meet the definition of loans and receivables.

An entity should not classify any financial assets as held to maturity if the entity has, during the current financial year or during the two preceding financial years, sold or reclassified more than an insignificant amount of held-to-maturity investments before maturity (more than insignificant in relation to the total amount of held-to-maturity investments) other than sales or reclassifications that:

(a) are so close to maturity or the financial asset's call date (for example, less than three months before maturity) that changes in the market rate of interest would not have a significant effect on the financial asset's fair value;

(b) occur after the entity has collected substantially all of the financial asset's original principal through scheduled payments or prepayments; or

(c) are attributable to an isolated event that is beyond the entity's control, is non-recurring and could not have been reasonably anticipated by the entity.

Loans and receivables

Non-derivative financial assets with fixed or determinable payments that are not quoted in an active market, other than:

(a) those that the entity intends to sell immediately or in the near term, which should be classified as held for trading, and those that the entity upon initial recognition designates as at fair value through profit or loss;

(b) those that the entity upon initial recognition designates as available for sale; or

(c) those for which the holder may not recover substantially all of its initial investment, other than because of credit deterioration, which should be classified as available for sale.

An interest acquired in a pool of assets that are not loans or receivables (for example, an interest in a mutual fund or a similar fund) is not a loan or receivable.

Net investment in a foreign operation

The amount of the reporting entity's interest in the net assets of that operation.

Transaction costs

Incremental costs that are directly attributable to the acquisition, issue or disposal of a financial asset or financial liability. An incremental cost is one that would not have been incurred if the entity had not acquired, issued or disposed of the financial instrument.

Transaction costs include fees and commissions paid to agents, advisers, brokers and dealers, levies by regulatory agencies and securities exchanges, and transfer taxes and duties. Transaction costs do not include debt premiums or discounts, financing costs or internal administrative or holding costs.

Appendix

Hedge documentation template

1) Risk management objective and strategy (this section may make reference to central documents).

_____

_____

2) Type of hedging relationship

- ☐ Fair value hedge
- ☐ Cash flow hedge
- ☐ Hedge of net investment

_____

_____

3) Nature of risk being hedged

- ☐ Interest rate risk
- ☐ Foreign currency risk
- ☐ Credit risk
- ☐ Other risk (for example, equity risk, commodity risk - please specify)

_____

_____

4) Identification of hedged item

Transaction number: _____

Is the hedged item a forecasted transaction?

- ☐ Yes, please complete section 5 below.
- ☐ No, please continue to section 6

5) Forecast transactions

(Only required to be completed if the hedged item is a forecast transaction.)

Expected hedged amount

Nature of forecast transaction

Expected timing of forecast transaction

Expected price for forecast transaction (both at inception and subsequently)

Rationale for forecast transaction being highly probable to occur

Method of reclassifying into profit and loss amounts deferred through equity

6) Identification of hedging instrument

Transaction number:

Hedge designation

7) Prospective effectiveness testing

Description of testing

Frequency of testing

8) Retrospective effectiveness testing

Description of testing

Frequency of testing

Will retrospective effectiveness testing be on a cumulative basis or a period-by-period basis?

☐ Cumulative

☐ Period-by-period

10) Other information

Include any other information that may be used to assist with understanding the hedging relationship – for example, a diagram of the transaction structure.

IFRS products and services

PricewaterhouseCoopers has a range of tools and publications to help companies apply IFRS (see also the inside front cover).

Applying IFRS

Applying IFRS is PwC's authoritative guidance on the interpretation and application of IFRS. The interactive tool includes links to over 1,000 real-life solutions, as well as direct links to applicable text in the IFRS standards and interpretations.

***Applying IFRS* is available on our electronic research tool, *Comperio IFRS*. See below.**

COMPERIO® IFRS

Comperio IFRS is a one-stop instant access point to a comprehensive collection of technical financial reporting and assurance literature. It provides a fast and effective way of finding the answers to your IFRS questions.

To order *Comperio IFRS*, visit our website www.pwc.com/ifrs

P2P IFRS – from principle to practice

P2P IFRS is PwC's interactive electronic learning solution. Users build their knowledge easily and conveniently with 19 hours of learning in 32 interactive modules.

For further information, network licence prices or demonstrations, send an email to: corporatereporting@uk.pwc.com

IFRS News

IFRS News is a monthly newsletter focusing on the business implications of IASB proposals and new standards. It provides information on and interpretation of IASB activity, highlighting problems encountered and solutions found by PricewaterhouseCoopers IFRS teams.

Copies are available free on the website www.pwc.com/ifrs. For further information, send an email to the editor: joanna.c.malvern@uk.pwc.com

World Watch

Governance and corporate reporting

World Watch contains opinion articles, case studies and worldwide news on the many initiatives to improve corporate reporting.

Copies are available free on the website www.pwc.com/ifrs. For hard copies, send an email to the editor: sarah.grey@uk.pwc.com

www.pwc.com/ifrs