
Project	Financial Instruments (Replacement of IAS 39) – Hedge Accounting
Topic	Hedge Effectiveness - Principles underlying the assessment of hedge effectiveness

Introduction

Background

1. This paper is one in a series of papers that will address the specific issues regarding the *assessment* of hedge effectiveness (ie the ‘effectiveness test’).
2. This paper does not address the following issues which will be subject to separate papers:
 - (a) Methods for assessing hedge effectiveness.
 - (b) Discontinuation of hedge effectiveness.
 - (c) Measurement of ineffectiveness.

Purpose of the paper

3. The purpose of this paper is to discuss the principles underlying the assessment of effectiveness in the context of the new hedge accounting model. The paper has the following structure:
 - (a) Overview of the issue.
 - (b) Staff analysis (including one example).
 - (c) Staff recommendation and questions to the Board.

This paper has been prepared by the technical staff of the IFRS Foundation for discussion at a public meeting of the IASB.

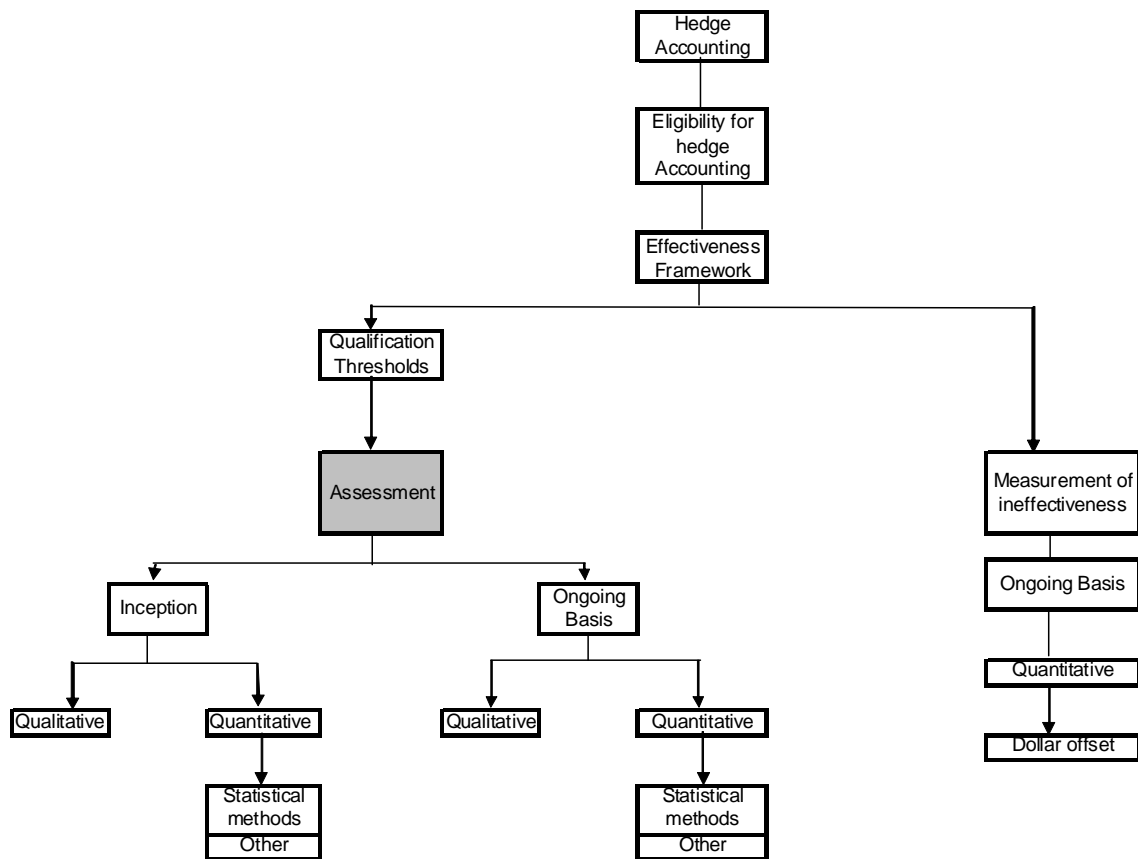
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4. This paper aims to address the principles underlying the *assessment* of hedge effectiveness following the structure in the diagram below:



The issue

5. Which principles should the assessment of hedge effectiveness follow under the new hedge accounting model?

Staff analysis

Objective of effectiveness assessment and background

6. As described in paper 7A, the staff believes that effectiveness assessment has two primary objectives:

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- **Objective A:** setting a minimum level of how effective a hedge must (or be expected to) be during its term in order to be recognised as a hedge for financial reporting purposes (this could be described as a ‘*screen in*’); or
 - **Objective B:** screening out hedge relationships with *accidental* offsetting of changes between the hedged item and the hedging instrument attributable to the hedged risk (this could be described as a ‘*screen out*’).
7. The two objectives when considered in conjunction aim to achieve a balance between the accounting for hedging activities and the role of risk management as a tool to assist preparers in identifying instances where accidental offsetting might be reported as hedging.
8. **Objective A** has aims to set a particular minimum hurdle to qualify for hedge accounting. The *screen-in* is achieved by defining thresholds for example that the hedge needs to be *reasonably* effective to qualify for hedge accounting. This is the route taken in the recently issued FASB proposals.
9. **Objective B** aims to set out a broader scene for hedge accounting by defining what is the main objective for hedge accounting (ie avoid accidental offsetting to be treated within the scope of hedge accounting). All the relationships that do not meet this objective will be excluded from the scope of hedge accounting and hence the *screen-out*.

Outline of the model being proposed by the staff

10. Taking **Objective B** as a starting point, the staff is proposing a model that relies on the following assumptions:
- (a) The main objectives of the effectiveness assessment are:
 - (i) the elimination of accidental offsetting from the scope of hedge accounting (consistent with objective B);
 - (ii) predict the behaviour of the hedging relationship during its term.
 - (b) Effectiveness assessment will not follow any particular threshold such as the *reasonably effective threshold* proposed by the FASB ASU. The

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rationale is that there is the risk of interpreting the *reasonably effective* threshold as a bright-line of eg 50% effectiveness (or developing into such a bright-line over time). This would create the same issues that have arisen with the current model (refer to agenda paper 7 for further details), only at a different place.

- (c) The model will rely on a classification mechanism that will split hedging relationships between non-complex and complex.
 - (d) Information produced internally by risk management for the purpose of decision making (ie when to hedge, what to hedge and how to hedge?) and monitoring of the ongoing effectiveness will be the main source of data for effectiveness assessment.
 - (e) Entities that do not have a structured set of information produced for risk management purposes will not be precluded from applying hedge accounting. They will be allowed to perform effectiveness testing for the purpose of financial reporting (refer to paper 7A for further details).
11. In the context of the model above, risk management will act as a tool to prepare information on the way entities manage their risks, which will be subsequently used for the purpose of financial reporting.
 12. Risk management encompasses definitions set internally for the purpose of decision making (eg accidental offsetting, acceptance criteria, effectiveness criteria etc). These are used to define what management's view of an appropriate hedge is. For accounting purposes relationships regarded by management as 'appropriate hedges' should be assessed in the light of the requirements of the hedge accounting model.
 13. As part of risk management, entities usually consider the following variables when assessing hedging relationships for effectiveness:
 - (a) the exposure to the risks being hedged;
 - (b) the statistical relationship between the hedging instrument and hedged item (or the risk variables they include);
 - (c) expected behaviour over the life of the hedge;

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- (d) the sources of uncertainty of offset within the hedging relationship; and
 - (e) the terms of the hedged item and hedging instrument, whether they will achieve offsetting changes and whether these will be sufficient to meet the hedge accounting qualification criteria.
14. As described above, the staff believes that hedging relationships can be classified into two major categories: non-complex and complex.
 15. Non-complex hedges are hedging relationships where the critical terms of the hedged item and hedging instrument match or are closely aligned. If there are no substantial changes in the terms of the hedge (eg changes in credit risk) the hedge is expected to be highly effective during its term.
 16. Complex hedging relationships are hedging relationships where the critical terms of the hedged item and hedging instrument do not match and are not closely aligned. These involve an increased level of uncertainty regarding the degree of offset and therefore the effectiveness of the hedge during its term is more difficult to predict.

Qualification of hedges

17. In order to qualify for hedge accounting a hedging relationship has to pass the effectiveness test used for the purpose of the hedge accounting model. Risk management is the primary source of data that can help determine whether the effectiveness test used for accounting purposes is met.
18. The predicted behaviour of the hedging relationship might be assessed using a two fold test:
 - (a) **Non-Complex hedging relationships:** A qualitative assessment for non-complex hedging relationships (see further discussion in this paper), or
 - (b) **Complex hedging relationships:** A quantitative analysis, for example, using statistical analysis to predict the relationship between variables affecting the hedging relationship.

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19. In order to be considered effective for accounting purposes, both tests need to be met. In the context of the model being proposed by the staff preparers need to:
- (a) demonstrate that the offsetting created by the hedging relationship is not accidental, and
 - (b) the relationship meets the requirements defined by risk management to be considered an eligible hedging relationship. A discussion on the various types of methods used for assessing hedge effectiveness is provided in paper 7C.
20. As described in paragraph 13 above, the level of uncertainty of offset in a hedging relationship is one of the main aspects considered by risk management to enter into a hedging relationship (or at least to exclude the hedging relationship from the scope of hedge accounting due to accidental offsetting). Uncertainty stems from the complexity of the hedging relationships. Complexity has different sources including:
- (a) different terms between the hedged item and hedging instrument,
 - (b) use of existing derivatives that might be *in* or *out-of-the-money* as hedging instruments (these are commonly termed 'late hedges'),
 - (c) hedging instruments with different underlying risks,
 - (d) correlation between risks etc.
21. Consideration of the impact that these sources of uncertainty may have on the effectiveness should be the main criterion for classifying hedging relationships between complex and non-complex and thereby require a qualitative or quantitative assessment.

Frequency of effectiveness assessment

22. The model being proposed by the staff uses a *forward-looking* approach to hedge effectiveness.
23. As a result the staff proposes that:

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- (a) Non-complex hedging relationships should be qualitatively assessed for effectiveness at the inception of the hedge. Subsequent reassessment shall be performed qualitatively except if there are circumstances suggesting that the hedging relationship is no longer considered within the criteria defined by risk management to consider the hedging relationship as effective. These include changes in the credit risk of the counterparty to the hedged item and hedging instrument, changes in the timing or amount of the cash flows. In such cases the assessment would be quantitative.
 - (b) Complex hedging relationships are quantitatively assessed both at inception and on an ongoing basis.
24. The staff believes that the model above will allow entities to align effectiveness assessment with two main objectives: (i) exclude accidental offsetting from the scope of hedge accounting (performed at inception) and (ii) predict the expected behaviour of the hedging relationship during its term (inception and ongoing basis).
25. At the same time, the type of test and its frequency takes into account the inherent risk of each hedging relationship as it is driven by the category in which the hedging relationship.
26. Complex hedging relationships involve an increased risk of failing the effectiveness assessment due to their sources of uncertainty of offset. These are usually monitored on a quantitative basis for risk management purposes. Therefore, the staff believes that a quantitative test is the appropriate tool to test whether the objectives of the effectiveness assessment outlined in paragraph 10 are still met.
27. The staff also believes that any retrospective test should only be considered for the purpose of determining the point in time where the hedging relationship ceased to be effective. That is a hedge accounting discontinuation issue, which will be addressed in a separate series of papers.

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28. Following the outline of the model, the paper will now address with the issue of assessing effectiveness in non-complex and complex hedging relationships.

Non-Complex hedging relationships

29. Hedging relationships where the critical terms match or are closely aligned are likely to be regarded as non-complex. In this context, ‘critical term’ is typically associated with the contractual terms of the hedged item and hedging instrument. Mismatches generating a negligible impact on the effectiveness of the hedge do not violate the critical terms match assumption. Example 1 below illustrates a scenario where the impact on hedge effectiveness is negligible.

Example 1 – Immaterial difference in the critical terms resulting from a ‘late hedge’

30. Entity A acquired a 100,000 CU units debt instrument that pays 6 months Libor semi-annually. The maturity of the instrument is 2 years. Entity A is exposed to interest rate decreases and would like to eliminate the risk of changes in the variability in the cash flows by entering into an interest rate swap whereby: it pays 6 months Libor semi-annually (aligned with the cash flows received on the bond) and receives a fixed rate. For simplification the effect of credit risk is being ignored in this example. The term structure of interest rates at inception and relevant data on the hedged item are as follows¹.

		t0	
Years	Days	Spot rates	Fwd Rates
0			
0.5Y	180	5.25%	
1Y	360	5.50%	5.75%
1.5Y	540	5.75%	6.25%
2Y	720	5.90%	6.35%

¹ Forward rates obtained based on the spot rates. For the purpose of this example days have been counted using a 30/360 convention and exponential compounding is being used to calculate coupons, discount factors and forward rates.

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Periods	0	1	2	3	4
Cash flows	100,000	2,591	2,835	3,079	3,127
Discount factor (df)		0.97474036	0.9478673	0.919559	0.891678
PV of Interest	10,832	2,526	2,687	2,831	2,788
PV of principal	89,168				100,000
FV at acquisition	100,000				

31. Economically, entity A is performing a cash flow hedge against changes in the variability of the Libor cash flows of the bond.
32. Assume that entity A uses a hypothetical derivative to measure the changes in the interest rate risk of the hedged item. At the inception of the hedge, the hypothetical derivative will be an interest rate swap where the fair value of the fixed rate payments will equal the fair value of the floating rate payments resulting in the swap having a fair value of zero². For this scenario it can be illustrated as follows.

Hypothetical Derivative	0	1	2	3	4
Notional	100,000				
Fixed rate	5.89%				
PV Floating rate (Libor)	10,832	2,526	2,687	2,831	2,788
PV Fixed	10,832	2,828	2,750	2,668	2,587
FV of Swap	0				

33. Entity A wants to hedge the exposure to the variability of the cash flows using an existing interest rate swap with the same remaining maturity and variable payments but a different fixed rate. For the purpose of risk management entity A considered that the non-zero fair value of the (actual)³ swap at

² The assumption of a zero fair value is a simplification. The swap regarded as hypothetical derivative would have had a value other than zero resulting from the upfront fees paid / received at inception or embedded in the terms. These have been disregarded.

³ Ie the hedging instrument.

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inception of the hedge is immaterial in the context of the hedging relationship.

Data on the hedging derivative is presented below:

Hedging Derivative	0	1	2	3	4
Notional	100,000				
Fixed rate	6.16%				
PV Floating rate (Libor)	10,832	2,526	2,687	2,831	2,788
PV Fixed	11,332	2,958	2,877	2,791	2,706
FV of Swap	500				

Questions arising from Example 1

34. Example 1 raises the following questions that will be answered by the staff analysis that follows below:

- (a) **Question 1:** Would the use of a derivative with a fair value that is immaterial in relation to the position being covered still allow the application of a qualitative assessment?
- (b) **Question 2:** Would the use of an assessment based on the comparison of the variable leg of the swap with the variable coupon of the bond as permitted under US GAAP produce a different outcome?

Analysis

35. The fair value of 500 represents the fair value of the differential cash flows resulting from terms that do not match (in this scenario the fixed rate of the swap). If there are no changes in the other critical terms, changes in the effectiveness assessment will only be attributable to the changes in fair value of the differential cash flows resulting from non-matched terms⁴. Therefore,

⁴ Excluding the effect of 'repayments', ie the part of the initial fair value of the swap that is repaid by the fixed leg cash flow differential each period.

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ineffectiveness will be recognised as time lapses. Demonstration for period 1 is presented below:

Term structure of interest rates for period 1

	t1		
	Days	Spot rates	Fwd Rates
0			
0.5Y	180	5.80%	
1Y	360	6.00%	6.20%
1.5Y	540	6.25%	6.75%
2Y	720	6.40%	6.85%

Bond data for period 1

Periods	0	1	2	3	4
Cash flows	100,000		2,859	3,054	3,321
Discount factor (df)			0.97220347	0.943396	0.913075
PV of Interest	8,692		2,780	2,881	3,032
PV of principal	91,308				100,000
FV at t1	100,000				

Hedging relationship data for period 1

Hypothetical Derivative (t1)	0	1	2	3	4
Notional	100,000				
Fixed rate	5.89%				
PV Floating rate (Libor)	8,692		2,780	2,881	3,032
PV Fixed	8,206		2,820	2,737	2,649
Change in the FV of Swap	-486				

Hedging Derivative (t1)	0	1	2	3	4
Notional	100,000				
Fixed rate	6.16%				
PV Floating rate (Libor)	8,692		2,780	2,881	3,032

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PV Fixed	8,585		2,951	2,863	2,771
FV of Swap	-107				

Effectiveness ratio	
Change in FV of Hypothetical Derivative	-486
Change in FV of the hedging derivative	-607
Effectiveness Ratio	125%

36. The effectiveness ratio can also be calculated using the change in fair value of the synthetic instrument created by the hypothetical derivative (in this scenario a fixed rate bond with a coupon rate of 5.89%). The outcome will be as follows:

Periods	0	1	2	3	4
Cash flows	100,000		2,901	2,901	2,901
Coupon rate	5.89%		0.97220347	0.943396	0.913075
PV of Interest	8,206		2,820	2,737	2,649
PV of principal	91,308				100,000
FV at t1	99,514				
FV at the acquisition date	100,000				
Difference in the FV of the hedged item	-486				
Change in FV of the hedging derivative	-607				
Effectiveness	125%				

Reconciliation of the changes in fair value for period 1

Reconciliation of change in FV of actual derivative:					Total
	1	2	3	4	
Fixed leg difference	133.91	133.91	133.91	133.91	
PV [in t0]	130.53	126.93	123.14	119.40	500.00
PV [in t1]		130.19	126.33	122.27	378.79
			Difference		-121.21
Change in FV of hypothetical derivative	-486	-486			
Unwind of discount on fixed leg difference	14.51	14.51			
Repayment [equivalent]	-133.91	Repayment shall not form part of effectiveness calculation			

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Effect of changes in interest rate	-1.81	-1.81			
Change in FV of actual derivative	-607	-474			
Ratio	125%	97.4%			

37. In the scenario illustrated above, the ‘small numbers issue’ arises as a result of the combined effect of the difference in the fixed legs that is compensated by the movements in the term structure of interest rates. If the effect of the repayment of the fixed leg is not excluded the hedging relationship would be on the edge of not passing the effectiveness test under the current hedge accounting model. All the changes verified are immaterial and have no relevance for the risk management of entity A therefore performing a quantitative assessment for this type of hedges under these circumstances is disproportionate and of questionable usefulness.
38. A similar issue would have arisen if the small number change had been driven by small differences in the repricing dates or differences in the day count convention between the hedged item and hedging instrument. The staff believes that in this context, the definition of what constitutes material in the context of the assessment of critical terms is a professional judgement made in the context of risk management and that should be the main criteria to preclude or apply a critical terms match approach. In the scenario above an experienced risk manager would have disregarded all the effects even without performing the detailed assessment.
39. The staff therefore believes that in the scenarios described above, hedging relationships should not be precluded from the qualitative assessment and therefore should be regarded as non-complex.

Staff Answers

Question 1

40. In the scenario illustrated above, the staff believes that qualitative assessment is appropriate because:

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- (a) the difference in the fair value because of the non-matched terms is immaterial at inception and there are no other changes in the other critical terms over the life of the hedge (credit risk is being excluded from the critical terms analysis);
- (b) ineffectiveness is driven by small numbers change (refer to paragraphs 37 to 38). This results in high volatility in the effectiveness *ratio* that has little or no economic meaning;
- (c) the primary objective of the hedge (ie eliminating the volatility associated with the Libor rate cash flows) is fully achieved; and
- (d) ineffectiveness will be fully recognised in the income statement as time lapses.

41. The staff also considers that:

- (a) Using percentage bright-lines for effectiveness assessment does not facilitate application of the general IFRS guidance on materiality so that the test will be based on a rigid threshold which leads to an arbitrary decision.
- (b) A significant mismatch between the fixed leg of the hypothetical derivative (ie regarding the hedged item) and the actual derivative (ie the hedging instrument) might create significant volatility in the fair value resulting from the non-matched terms and therefore lead to more than just negligible ineffectiveness.
- (c) Subsequent changes in the other variables affecting the hedging relationship may require entities to stop the qualitative assessment and perform a quantitative approach.

Question 2

42. The staff believes that applying the comparison of the floating rate legs as allowed under US GAAP would not produce a different solution from the one outlined in question 1. This method is only allowed in limited circumstances particularly when the fair value of the hedging derivative is zero or close to zero.

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This means that this method is based on similar considerations as the ones outlined in the question above and therefore it would lead to a similar conclusion.

Staff conclusion for non-complex hedging relationships

43. For the purpose of hedge accounting, the staff believes that non-complex hedging relationships shall be assessed for effectiveness on a qualitative basis both at inception and on an ongoing basis. This is due to the fact that, if it is determined that the critical terms match or are closely aligned, the hedge is expected to achieve offsetting changes and therefore is expected to be effective during its term. A quantitative reassessment will be required if there are significant changes within the hedging relationship such as:
- (a) a change in the credit risk of the hedging instrument or the hedged item⁵. This change is specific to the instrument rather than to the counterparty (or -parties) due to the fact that hedging instruments sometimes contain forms of collateral or other credit enhancements, or a ranking of claims, that make the assessment of credit risk specific to the instrument or transaction rather than to the entity;
 - (b) changes in the timing, amount or probability of occurrence of the cash flows of the hedged item.

Complex hedging relationships

44. Determining whether a hedging relationship is complex may involve assessing the sources of volatility in the hedging relationship, their impact on the effectiveness of the hedge and defining materiality thresholds for the exposure to those sources of volatility. This will not be possible if rigid bright-lines are set.

⁵ For some hedged items this is less straightforward or applies in a different way, eg in case of a forecast transaction.

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45. Complex hedging relationships contain additional challenges as their terms do not match and are not closely aligned and, therefore, may fail the effectiveness assessment due to the effect of changes in the variables within the hedging relationship not achieving a full offset.
46. Entities use risk management as a tool to determine what they consider complex and therefore, what type of effectiveness assessment is needed for the purpose of decision making, ie for whether to enter into the hedge and also for ongoing monitoring of effectiveness to determine whether to continue with the hedge.
47. Effectiveness assessment for complex hedging relationships is normally performed using statistical tools to predict the relationship between the variables within the hedging relationship because percentage-based assessments are sensible to small number changes and are not a sound basis for economic decisions.
48. Hence, management's information or analysis used for decision-making can be used to demonstrate a valid expectation of other than accidental offset. In the absence of management information, entities will be required to perform a quantitative assessment for the purpose of qualifying for hedge accounting as described in paper 7A.

Staff conclusion for complex hedging relationships

49. Based on the above, the staff believes that upon being classified as complex (refer to paragraphs 44 to 48 above) they shall be assessed for effectiveness on a quantitative basis both at inception and on ongoing basis. This conclusion is based on:
 - (a) Complex hedging relationships involve an increased degree of uncertainty of offset because they have hedging instruments and hedged items with different contractual terms. Therefore, it would be inappropriate to perform a critical terms match analysis. The effectiveness assessment is less straightforward than for a non-complex hedging relationship due to changes in the underlying risks of the hedged item and hedging instrument that do not fully offset.

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- (b) The risk of inappropriate accounting is higher when complex hedging relationships are reported under hedge accounting.

Advantages and disadvantages of the proposed approach

- 50. The proposed approach above requires entities to classify relationships in accordance with their level of complexity. This is determined by reference to the level of uncertainty of the degree of offset contained in each hedging relationship. Risk management should be considered in assessing such uncertainty.
- 51. The requirement of having a full quantitative test for complex hedging relationships both at inception and on an ongoing basis allows entities to:
 - (a) Identify the sources of volatility in the hedging relationship and therefore the point where the hedging relationship is no longer expected to be effective as defined by entities risk management. .
 - (b) Have an understanding of the potential impact of the uncertainties on the financial statements.
- 52. This approach however, will be onerous for preparers who use complex hedging relationships as part of their hedging activities but do not have a risk management to draw on for quantitative effectiveness testing.
- 53. For non-complex hedging relationships, allowing them to be qualitatively assessed both at inception and on an ongoing basis removes the onerous requirement of having a full quantitative test for all hedging relationships. This also makes the application of hedge accounting easier and more consistent with risk management practice.
- 54. A quantitative test will be required once there are significant changes in a non-complex hedging relationship.

Conclusion

- 55. Based on the above the staff believes the Board has following alternatives:

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Effectiveness assessment model

- (a) **Alternative 1** – Hedging relationships shall be qualitatively assessed *except* if there are changes in circumstances indicating that the hedging relationship no longer meets the criteria defined for risk management.
- (b) **Alternative 2** – Distinguish between complex and non-complex hedging relationships. Non-complex hedging relationships will be assessed qualitatively and complex hedging relationships to be assessed quantitatively. Non-complex hedging relationships where immaterial differences between the terms of the hedged item and hedging instrument are verified will be eligible for the qualitative assessment.

Frequency of Effectiveness Assessment

- (c) **Alternative 1** – Require a full prospective and retrospective test.
- (d) **Alternative 2** – Adopt a forward-looking approach using prospective tests both at inception and on an ongoing basis. The type of test will be determined by the classification of the hedging relationship.⁶

Implications for hedge accounting

56. Principles for assessing hedge effectiveness are a fundamental part of the hedge accounting model. They will have an impact on a number of different areas within the model, particularly:

- (a) Discontinuation of hedge accounting (will be addressed at a future meeting).
- (b) Methods for assessing effectiveness (addressed in agenda paper 7C).

⁶ Any retrospective test will be considered as part of the discussions of discontinuation of hedge accounting (see paragraph 27).

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Staff recommendation and question to the board

57. The staff recommends **Alternative 2** for both questions.

Rationale for the staff recommendation

58. The staff believes that by distinguishing complex from non-complex hedging relationships the link between risk management and financial reporting will be improved. Complex hedging relationships have increased levels of uncertainty regarding the degree of offset as the variables generating volatility may not have an offsetting or largely offsetting behaviour within the hedging relationship. Hence, tracking of their behaviour will be an essential component of the effectiveness test and this should primarily be a quantitative assessment.
59. Allowing a forward-looking model for the effectiveness test will be closer to risk management and will allow entities to rely on the information produced internally for the purpose of decision making. This will also provide better information for users who will be able to see how entities do their ongoing monitoring of effectiveness as the main source of data for assessment of hedge effectiveness.

Question 1 – Principles underlying the assessment of hedge effectiveness

Does the Board agree with the staff recommendation as outlined in paragraph 57?

If the board disagrees with the staff recommendation, what would the Board prefer instead, and why?