Project	**Financial Instruments (Replacement of IAS 39) – Hedge Accounting**
Topic	**Effectiveness testing – Use of the hypothetical derivative**

Introduction

Background

1. This paper is one in a series of papers that address hedge effectiveness. In other papers we have been careful to talk only about hedge effectiveness assessment or hedge effectiveness measurement. The issue discussed in this paper is relevant for both assessment and effectiveness.

Purpose of the paper

2. This paper discusses whether the hypothetical derivative should be used as a *method* for hedge effectiveness assessment or measurement of hedge ineffectiveness. To achieve this, the paper:

    (a) covers the definitions associated with the 'hypothetical derivative' method, and the issues being faced by preparers when applying this method:

    (b) sets out one example illustrating the application of the 'hypothetical derivative' method;

    (c) provides an overview of the use of a practical expedient approach (similar to a hypothetical derivative) to measure effectiveness within the model proposed by the recently issued FASB's Accounting Standards Update (ASU): and

(d)   provides the staff analysis on the issues arising from the application of the practical expedients allowed by the proposed ASU.

3.   Before starting, it may be worthwhile reminding you what the 'hypothetical derivative' approach is, and how it is used for cash flow hedges in IFRS today.

4.   In summary, the 'hypothetical derivative' approach is not an effectiveness testing method *per se.* Instead, a hypothetical derivative is used as an *input* to an effectiveness testing method (such as dollar offset, regression analysis etc).

5.   A hypothetical derivative is one that would have terms that match the critical terms of the hedged item, including being at on-market rates. That is, it replicates the hedged item.

6.   The change in fair value of the hypothetical derivative is regarded as a proxy for the change in the present value of the expected future cash flows on the hedged transaction. It is this that is then used as an input to an effectiveness *method.* It is important to note that under IFRS using a hypothetical derivative would result in the same answer as measuring the hedged item itself. This is illustrated in the example set out in this paper.

7.   The 'hypothetical derivative' approach is used for both assessment and measurement of effectiveness.

Summary of the outreach activities performed by the staff

8.   During the outreach activities performed by the staff, an issue that has been commonly raised is that the requirement for resetting the hypothetical derivative creates ineffectiveness that is difficult to explain. Some of the scenarios where ineffectiveness often occurs in practice include the following:

(a)   Dedesignation and redesignation of a hedge following a failed effectiveness test;

(b)   Late hedges, or where an additional layer is added to the current hedging relationship; and

(c)   Partial dedesignation of a hedge.

Overview of the FASB's proposed ASU

9. The FASB ASU proposes a *method* similar to, but not exactly the same as, a 'hypothetical derivative' approach to measure ineffectiveness of a hedging derivative instrument that is hedging the variability in a group of forecasted hedged transactions that are expected to occur on potentially different dates within a specific time period. Paragraph 126 [1] of the proposed ASU suggests identifying a "proxy" derivative to be used to measure ineffectiveness of the actual hedging instrument. It is important to note that this proposed proxy, and indeed a 'hypothetical derivative' method is seen a *method* on its own for assessing effectiveness and measuring ineffectiveness for cash flow hedges (rather than, under IFRS, as an *input* to an effectiveness method). The proposed 'proxy' approach that is that, as practical expedients, an entity could consider:

   (a)   the credit risk of the 'proxy' derivative that will be compared to the actual hedging derivative to be the same as the credit risk of the hedging derivative. [The IASB staff believe that this could allow entities to ignore ineffectiveness caused by the changes in the credit quality of the hedging instrument (eg creditworthiness of the counterparty of an uncollateralised derivative) and the credit quality of the hedged item attributable to the hedged risk, where applicable].

   (b)   A *method* both for effectiveness assessment and measurement of ineffectiveness. This may include a derivative that settles within a reasonable period of time of the cash flows related to the hedged transactions. The proposed *A*SU states that, the time period is reasonable if the difference between the forward rate on the derivative used as a '*proxy*' to the hypothetical derivative and the hypothetical derivative (defined as the derivative or derivatives that would exactly offset the changes in the cash flows of the forecasted transactions) is minimal.

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[1] Refer to paragraphs 118 and 126 of the FASB's proposed ASU

The issues

10. **Issue 1 -** Should the hypothetical derivative be a *method* (in its own right) used for assessing and measuring effectiveness in the new hedge accounting model?

11. **Issue 2 -** Should the practical expedients in the 'proxy' method proposed by the FASB ASU be included within the new hedge accounting model?

Staff analysis and alternatives

12. Use of the 'hypothetical derivative' method is widespread and is the preferred method used to calculate the change in fair value of the cash flows of the hedged item when performing the measurement of ineffectiveness. Also, a hypothetical derivative is sometimes used as an *input* for the effectiveness assessment eg when using ratio analysis to perform the effectiveness assessment or when creating data points for regression analysis. Note that using a hypothetical derivative under IAS 39 does *not* constitute a 'method' of assessing effectiveness or measuring ineffectiveness in its own right but is only one possible way to determine the change in the value of the hedged item attributable to the hedged risk. That change in value can then be used as an *input* for effectiveness testing or measuring the ineffectiveness.

13. Entities can use the fair value of a hypothetical derivative as a *proxy* for the changes in fair value of the hedged cash flows, against which the changes in the fair value of the hedging instrument are compared to assess hedge effectiveness and measure ineffectiveness

14. The hypothetical derivative is established as a notional derivative that represents the ideal hedging instrument for the hedged risk. This will typically be a forward contract or interest rate swap, with terms that perfectly match that of the

hedged transaction (not the hedging instrument), has no unusual terms and that has theoretically a zero fair value at the inception of the hedging relationship[2].

15. If an option contract is used as a hedging instrument, the hypothetical derivative under the current IFRS model only reflects the intrinsic value as the time value of the option is excluded from the hedging relationship because it is not a feature of the hedged transaction. This is a difference to US GAAP because under this guidance, the time value of money can be included in the hedging relationship and therefore be considered when assessing effectiveness and measuring ineffectiveness[3]

16. To achieve this result, preparers applying US GAAP are allowed to establish a hypothetical option derivative whose terms exactly match the terms of the hedged transaction and compare full change in fair value of this derivative with the change in fair value of the hedging option. If the critical terms match, then no ineffectiveness will be recognised. This is not allowed under IFRS.

17. The example below illustrates the application of the 'hypothetical derivative' method.

Example – Identification of the 'hypothetical derivative'

18. Entity A acquired at the origination date a GBP100,000 debt instrument that pays 6-month 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 cash flows by entering into an interest rate swap whereby it pays the Libor cash flow that it receives on the bond and receives a fixed rate. For simplification, the effect of credit risk is being ignored in this example. The

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[4] Forward rates obtained based on the spot rates. The calculations have been performed using exponential compounding.

term structure of interest rates at inception and relevant data on the hedged item are as follows[4]:

		t0		t1	
	Days	**Spot rates**	**Fwd Rates**	**Spot rates**	**Fwd Rates**
0					
6m	180	5.25%		5.80%	
1Y	360	5.50%	5.75%	6.00%	6.20%
18m	540	5.75%	6.25%	6.25%	6.75%
2Y	720	5.90%	6.35%	6.40%	6.85%

Periods	0	1	2	3	4
Cash flows	**100,000**	2,591	2,835	3,079	3,127
Discount factor (df)		0.975	0.948	0.920	0.892
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**				

19.   The hypothetical derivative is an interest rate swap where the fair value of the fixed-rate payments equals the fair value of the floating rate payments, resulting in the swap having a fair value of zero. This scenario 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				

20.   Assuming Entity A uses an existing derivative with a similar coupon profile and maturity to hedge the variability of the cash flows, the impact on the hypothetical derivative and hedging derivative will be as follows:

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Hedging Derivative	0	1	2	3	4
Notional	**100,000**				
Fixed rate	**6.02%**				
PV Floating rate (Libor)	**10,832**	2,526	2,687	2,831	2,788
PV Fixed	**11,082**	2,893	2,813	2,729	2,647
FV of Swap	250				

For period 1:

Bond t1	0	1	2	3	4
Cash flows	100,000		2,859	3,054	3,321
Discount factor (df)			0.972	0.943	0.913
PV of Interest	**8,692**		2,780	2,881	3,032
PV of principal	**91,308**				100,000
FV at t1	**100,000**				

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		2	3	4
Notional	**100,000**				
Fixed rate	**6.02%**				
PV Floating rate (Libor)	**8,692**		2,780	2,881	3,032
PV Fixed	**8,396**		2,886	2,800	2,710
FV of Swap	-297				

Effectiveness ratio	
Change in FV of Hypothetical Derivative	-486
Change in FV of the hedging derivative	-547
Effectiveness Ratio	**112%**

21. Based on the changes in the fair value of the cash flows calculated above, the effectiveness ratio will be 112%, which means that ineffectiveness will be recognised.

22. Note however that Entity A could use an alternative approach to measure the fair value change of the hedged item under IFRS as an input to an effectiveness method. This can be achieved by *directly* calibrating a fixed rate bond to a FV of 100,000 at inception. This is illustrated below:

Nominal	**100,000**				
Fixed rate	**5.89%**				
PV of Interest	**10,832**	2,828	2,750	2,668	2,587
PV of principal	**89.168**				
FV of the calibrated Bond at T0	**100.000**				

23. At T1 the effectiveness ratio will be illustrated as follows:

Periods	**0**	**1**	**2**	**3**	**4**
Cash flows	**100,000**		2,901	2,901	2,901
Coupon rate	**5.89%**		0.972	0.9434	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	-547				
Effectiveness	**112%**				

Conclusion

24. The example above demonstrates that the hypothetical derivative is not in itself a method, and using a hypothetical derivative should therefore not be prescribed as mandatory in the context of the hedge accounting model.

25. The hypothetical derivative is solely a mathematical expedient to calculate the change in fair value of the cash flows of the hedged item attributable to the hedged risk, and should not preclude the use of other methods both for

effectiveness assessment and measurement of ineffectiveness (in this latter case a direct method similar to the one outlined in the example above would also be appropriate). If the hypothetical derivative is considered a mathematical expedient then its use will not change any outcomes of the effectiveness assessment of measurement of ineffectiveness but it will have the same mathematical outcome as other computations that are available (but potentially more difficult).

26. The staff believe that the majority of the issues raised during the outreach activities stem from the fact that the current hedge accounting model contains rigid bright lines, and therefore the hedging relationship will fail the effectiveness test, forcing entities to dedesignate and therefore 'reset' the hypothetical derivative (ie designate a new hedge and measure changes in the value of the hedged item from that starting point).

27. The staff also believe that the issue of resetting the hypothetical derivative has a close relationship with the eligibility criteria, and with the dedesignation and discontinuation of hedge accounting. Specific papers will be produced to deal with these issues.

Other Issues

Credit Risk of the hypothetical derivative and of the hedging derivative

28. The FASB's proposed ASU would allow, as a practical expedient, the credit risk for the 'proxy' derivative to be assumed to be *the same* as the actual derivative designated as the hedging instrument (despite the fact that this may not be the case) when measuring ineffectiveness in a cash flow hedge[5].

29. The IASB staff believes that this practical expedient is inconsistent with the objective of the hypothetical derivative which is to establish a notional derivative that will be used to indirectly to calculate the changes in fair value of the hedged item attributable to the hedged risk. To calculate such changes the

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[5] Refer to paragraph 124 of the FASB's proposed ASU

hypothetical derivative should reflect the credit risk of the *hedged item* and not the *hedging instrument*.

30.   In addition, by presuming the same credit risk both for the 'proxy' derivative and hedging derivative, ineffectiveness due to changes in the credit quality of the hedging instrument (eg changes in the creditworthiness of the counterparty to the hedging derivative) as well as the hedged item will not be recognised in profit or loss. This would represent an exception to the principle that all ineffectiveness should be recognised (if the Board wishes to consider such an exception, it should be considered in the context of all measurements of ineffectiveness)

31.   As a result, the IASB staff believe that presuming the same credit risk both for the 'proxy' derivative and hedging derivative is inappropriate and should not be permitted.

Foreign Exchange rate (FX) - the forward element of a 'proxy derivative'

32.   The FASB's proposed ASU states that entities, when measuring ineffectiveness in a cash flow hedge, are allowed to compare the change in fair value of the actual derivative[6] designated as a hedging instrument with the change in fair value of a derivative that would settle within a reasonable time period (this is in substance a 'proxy' derivative). The proposed ASU states that the time period is reasonable if the difference between the forward rate of the 'proxy' derivative and the forward rate of the derivative (s) that would exactly offset the changes in cash flows of the forecasted transactions (ie the hypothetical derivative) is minimal.

33.   This practical expedient aims to help entities identify the derivative that best represents the hedged forecast transaction by referencing it to a derivative that is available in the market.

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[6] Refer to paragraph 126 of the FASB's ASU

34. While allowing a practical expedient is not in itself an issue, provided that the critical terms of the 'proxy derivative' match the terms of the hedged forecast transaction(s), linking the appropriateness of the 'proxy derivative' to the difference in the forward rates might raise some issues. For example, in an environment where interest rates are very low (such as in the current environment) and the term structure is flat or almost flat there will be little impact on the forward rate attributable to the forward points. This means that contracts with substantially different maturities to the hedged exposure could be used as a proxy. (In general, as the interest rates in the two currency environments approach each other the maturity difference (between the cash flows of the hedging instrument and the cash flows that are hedged) that is allowed to be ignored approaches infinity.

35. The IASB staff believes that any measurement (whether direct or indirect) of the hedged item should always replicate the critical terms of the hedged item. This will avoid non-recognition of actual ineffectiveness and will better align the objective of this practical expedient (namely to calculate the changes in the fair value of the hedged item attributable to the hedged risk) with the measurement of ineffectiveness.

Staff recommendations and questions to the Board

36. The staff recommend that the hypothetical derivative should *not* be adopted as a method in its own right for assessing and measuring effectiveness. The Board may wish to clarify that a hypothetical derivative can be used as one way of determining the change in the value of the hedged item attributable to the hedged risk that may then be used as an input for other methods (for example statistical methods or dollar-offset).

37. Regarding the practical expedients allowed by FASB's model the IASB staff recommends that they shall not be permitted as we believe that they are inconsistent with the principal of measuring and recognizing all ineffectiveness

and also with the objective of the hypothetical derivative outlined in paragraphs 3 to 7 above

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Question – Application of the 'hypothetical derivative' approach
Does the Board agree with the staff recommendation as outlined in paragraphs 36 and 37 above?
If the Board disagrees with the staff recommendation, what would the Board propose and why?