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|---------|---------------------------------------------------|--|--|
| Project | Macro Hedge Accounting | | |
| Topic | Alternatives for a business oriented model | | |

Introduction

1. This paper is about a macro hedge accounting concept derived from business and risk management considerations and activities. The paper is based on the agenda papers 9 to 9C which were discussed in the September 2011 meeting. Therefore this paper should be read in conjunction with those.
2. At the IASB meeting in September the staff was asked to prepare an analysis of alternatives for a macro hedge accounting model which is derived from actual business and risk management activities and considerations. Those are the conceptual alternatives 1 and 2 as described in agenda paper 9C of the series mentioned above.
3. The deliberations are still focussed on interest risk management of financial institutions which does not mark a limitation to the macro hedging project. It is rather used as an example which will be carried over to other situations later in the project. It is assumed that decisions on key features in the context of interest rate risk management can provide a basis for other risks and similar risk management approaches as well.
4. There are no questions to the Board in this paper.

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

The views expressed in this paper are those of the staff preparing the paper. They do not purport to represent the views of any individual members of the IASB.

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Pre-Considerations

5. The following are considered to assist in the development of a macro hedge accounting model:
 - (a) Which areas of the financial statements are primarily affected by interest rate risk management and what kind of information should these areas provide?
 - (b) What is or what should be the effect of risk management activities on those areas?

Areas of the financial statements primarily affected by interest rate risk management

6. When analysing the effect of interest rate risk management on the financial statements the following areas are mainly to be considered:
 - (a) net interest income.
 - (b) profit or loss.
 - (c) equity.
7. *Net interest income* follows an effective yield concept, which means a cost based measurement has to be determined for interest-bearing instruments even in situations where those instruments are accounted for at fair value. As this is also the target of the risk management activities the net interest margin in the financial statements should reflect the managed interest margin.
8. *Profit or loss* represents the performance of the entity for the given period and should be representative of the business activities. As a consequence gains or losses resulting from the valuation of a hedging instrument that offset the profit or loss effect of an identified risk position in another period are not an indicator for performance in the period of those valuation gains or losses. They rather represent a part of net income that will be compensated in future periods when the hedged risk affects the financial statements in the opposite way. This is also the basic idea of hedge accounting—to balance accounting mismatches of the hedged risk and hedging instruments.

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9. *Equity* includes the accumulation of profit or loss and other comprehensive income (OCI). Although there is no equity definition in IFRSs nor do IFRSs follow any particular capital maintenance concept, equity is often seen as being representative of the substance (net assets) of an entity. As OCI represents a component of income similar conceptual considerations as for profit or loss could be applied. Therefore the questions whether an amount to be accounted for in OCI is representative for the performance of the respective period could be seen as applicable as well.
10. In other words, a gain and the consequential increase in equity that can result from the valuation of hedging instruments in isolation indicates a positive performance for the period and an increase in net assets. However, when there is an offsetting risk position not yet recognised or measured this alleged improvement is just temporary as there will be a counter-effect once the risk materialises.
11. Conversely, one can argue that the current fair value measurement for a derivative entered into for a speculative purpose only is truly representative of the performance for the period and changes the net asset position of the entity.
12. This means that to properly represent an entity's performance and financial standing a proper reflection of risk management is needed. This is also in line with the basic idea behind the accounting treatment of derivatives as outlined in IFRS 9 *Financial Instruments*.¹

Effect of risk management activities on the financial statements

13. In general, interest income should be recognised using an effective yield concept. Applying this principle consistently to all interest-bearing financial instruments of the non-trading units leads to the recognition of the managed net interest income. This covers also hedging instruments like interest rate swaps commonly used for interest rate risk management.² As a consequence if the derivatives that relate to managing interest rate risk can be properly reflected net interest income represents

¹ See also IFRS 9 B4.1.9 and BA.7(a).

² With those the entire fair value (dirty) is split into an interest accrual accounted for as interest income and the remaining fair value (clean) accounted for as fair value change. The same principle can be applied to instruments accounted for at fair value through profit or loss.

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the net interest margin earned with financial instruments recognised through the relevant accounting period.

14. This net interest margin is not affected by changes in market interest rates to the extent it is protected through risk management activities. The effect of risk management activities on the margin becomes visible with the interest accrual of the hedging instruments.³ Therefore it represents the stabilised net interest income as targeted with risk management activities.
15. From there one can draw the conclusion that a macro hedging model that functions properly should allow the locked-in net interest margin to be reflected as net interest income on the basis of an effective yield concept for all existing non-trading instruments including hedging instruments. Artificial amortisation effects resulting from a rather static understanding of risk management on a gross basis as well as one-off valuation effects (whether realised or unrealised) does not allow net interest income to be properly reflected.
16. The additional requirement to account for some instruments at fair value (ie derivative hedging instruments) creates further effects on profit or loss resulting from changes in the clean fair value. The clean fair value represents the present value of future interest income and expenses⁴ on hedging instruments that will offset the corresponding interest income and expenses that are subject to risk management. Following this risk management logic these fair value changes are not representative of the performance of the entity in the current period but rather indicate the future hedging effect on interest income.
17. This leaves two possibilities for the accounting for hedging instruments in a macro hedging model:
 - (a) either account for the hedging instruments on an accrual basis consistent with the hedged items (accrual accounting concept) or
 - (b) establish a value for the hedged risk position that offsets the measurement of the hedging instruments (valuation concept).

³ An exception to that might result from the elimination of internal hedging instruments when the net interest income as presented on a consolidated basis does not include interest from external trading instruments. This bias in comparison to risk management considerations is dependent on the approach taken regarding the substitution of internal derivatives for hedge accounting purposes.

⁴ In the meaning of future cash flows less accruals (not a presentation as profit or loss items under IFRSs).

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18. The **accrual accounting concept** could be achieved either through ‘amortised cost’⁵ accounting or the *complete* deferral of all fair value changes on the hedging instruments. This would ensure profit or loss and equity effects from valuation elements are reflected in the periods when the relevant risks will be offset in future.
19. With the **valuation concept** the risk position as defined by risk management would become subject to valuation to create the respective offset.
20. Both alternatives require an understanding of the risk position and hedged risk that qualifies for accounting purposes. In both cases this would determine which instruments and/or risk would be subject to the modified accounting. This would be decisive for the distinction of hedging from non-hedging instruments as only hedging instruments would qualify for accrual accounting. Following the alternative valuation concept the definition and measurement of the risk position would determine the level of offset.
21. The considerations up to this point lead to the question whether a macro hedge accounting model should rather follow an accrual accounting concept or a valuation concept as lead idea.

Accrual accounting versus valuation concept*Assuming ‘perfect’ risk management*

22. The comparison of both concepts leads to the same result in respect of their effect on the financial statements discussed earlier in this document. However, this is only true under the assumption of a ‘perfect’ risk management approach. Conceptual strengths and weaknesses become obvious when the notion of a ‘perfect’ risk management is dismissed.
23. The accrual accounting concept has the characteristic of an all-or-nothing decision. A financial instrument either qualifies as a hedging instrument (with the consequence that it does not create any volatility) due to changes in its fair value or it does not.

⁵ In this paper references to ‘amortised cost’ are not used in the technical sense as defined in IFRSs (where it does not apply to derivatives) but in a wider notion of a form of accrual accounting.

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24. Hence, in situations where a hedging instrument addresses the hedged risk without creating a perfect offset the resulting mismatches would not be visible. Depending on the hedging relationship this can lead to difficult distinction decisions. As a consequence significant fair value changes of the hedging instruments could become subject to accrual accounting without addressing a risk position or vice versa.
25. In contrast, the valuation concept enables hedging relationships that are not perfect to be reflected as valuation elements, which automatically leads to volatility. As such the quality of risk management activities in comparison to the defined risk positions can be shown in a more detailed way. This provides a transparent accounting solution.
26. Theoretically it would be possible to achieve a similar outcome with the accrual accounting concept. However, this would require a separate balance sheet item that carries the volatility identified off-balance into the financial statements.⁶ This would lead to a rather artificial solution creating higher operational burden without providing more transparency in comparison to the valuation concept. Given that, the accrual accounting concept is closer to a categorisation decision for hedging instruments rather than a hedge accounting model. This also ties back to the analysis in agenda paper 9C of the September IASB meeting.⁷

One-off effects

27. Furthermore the considerations to this point assumed that all financial instruments stay on the balance sheet until their maturity. This assumption is too simplistic in practice as loans might be prepaid with customers having to pay a prepayment penalty or financial instruments including derivatives might be sold or cancelled at current fair values. This creates another layer of complexity.
28. In a cost accounting regime the described events qualify as realised one-off gains or losses and should be reflected in profit or loss. However, economically prepayment penalties, for example, represent compensation for lower interest

⁶ With an off-balance concept all instruments are accounted for at amortised cost. In addition, the hedged items and hedging instruments are subject measurement outside the financial statements. Any mismatch resulting from that measurement that should be accounted for in the financial statements in profit or loss (eg ineffectiveness) is reflected in a separate balance sheet item to achieve that result.

⁷ Refer to agenda paper 9C of the September IASB meeting, par. 12 and 13.

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income earned with the loan replacing the prepaid one. Therefore the treatment as a one-off gain does not seem to be appropriate unless an offsetting hedging instrument is terminated at the same time to generate the counter-expense. This offsetting termination usually does not occur when the net risk position of an open portfolio is managed on a dynamic basis.

29. This again could be addressed by treating all realised gains and losses as deferred income with an amortisation to the original maturity of the derecognised instrument. This treatment however would only be appropriate when the one-off gain or loss is linked to a replacement transaction. Otherwise the realisation as a gain or loss would rather be an appropriate indicator for the performance of the current period and should be considered in profit or loss immediately. In other words the sale of a financial asset *without* any replacement is a gain of the period the sales transaction occurs rather than deferred income. This shows that such an approach would introduce a new level of complexity as it involves a lot of judgemental decisions.
30. As an alternative the measurement of the hedging instrument could in those situations be switched from amortised cost to fair value through profit or loss. This would create an offsetting impact to the realised prepayment penalty. The hedging instrument qualifies again for amortised cost measurement when it continues to be used as hedging instrument (re-designation). The one-off valuation at fair value is then treated as an upfront payment subject to amortisation. This approach however creates similar problems as the amortisation of prepayment penalties. The derivative that becomes subject to the measurement switch has to be selected, which is almost impossible with an a risk management approach on the basis of an open portfolio. Furthermore, the switch between amortised cost and fair value measurement creates significant operational effort. Therefore this approach also does not lead to a viable alternative. The easier solution is to establish a valuation principle for the risk position hedged that offsets the fair value measurement of the hedging instruments. For that a distinction between realised and unrealised gains or losses becomes unnecessary. Also, it would be unnecessary to decide whether a one-off gain or amortisation as deferred income is appropriate. It would be replaced by the fact that there is either

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an offsetting valuation or not. With an offsetting valuation the result would be similar to an amortisation otherwise it would lead to one-off income.

31. The following example for a pre-payable loan hedged with an interest rate swap illustrates the considerations above. It is based on the following assumptions:

- (a) The starting point is a loan with a term of 6 years and a fixed interest rate of 5% representing the market rate when granted. The loan is pre-payable whereby the prepayment triggers a penalty payment representing the present value of the difference between the loan's interest rate and the relevant market interest rate at the date of prepayment. In this example the prepayment occurs at the end of period 3 leading to a penalty payment of 4.2. At the same time a new loan is granted with a term of 3 years and the then current market rate of 3.5%.
- (b) The original loan is hedged with an interest rate swap for the entire contractual term of 6 years. This swap is also used to hedge the replacement loan.
- (c) As a simplification the fair value calculations below are based on the contractual cash flows discounted with the current market rate. The swap valuation assumes a constant value of 100 for the floating leg. The numbers in the example are rounded.

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| Period-end | 1 | 2 | 3 | 4 | 5 | 6 |
|-----------------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Market Interest Rate | 4.5% | 4.0% | 3.5% | 3.0% | 2.5% | 2.0% |
| Loan 1 | | | | | | |
| Amortised Cost | 100.0 | 100.0 | 100.0 | | | |
| Fair Value | 102.2 | 103.6 | 104.2 | | | |
| Interest Income | 5.0 | 5.0 | 5.0 | | | |
| Fair Value Change | 2.2 | 1.4 | 0.6 | | | |
| Prepayment Penalty | | | 4.2 | | | |
| Loan 2 | | | | | | |
| Amortised Cost | | | | 100.0 | 100.0 | 100.0 |
| Fair Value | | | | 100.9 | 100.9 | 100.0 |
| Interest Income | | | | 3.5 | 3.5 | 3.5 |
| Fair Value Change | | | | 0.9 | 0.0 | (0.9) |
| Swap (pay fixed / receive floating) | | | | | | |
| Amortised Cost | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Fair Value | (2.2) | (3.6) | (4.2) | (3.8) | (2.4) | 0.0 |
| 'Interest Income' (fix leg only) ⁸ | (5.0) | (5.0) | (5.0) | (5.0) | (5.0) | (5.0) |
| Fair Value Change | (2.2) | (1.4) | (0.6) | 0.4 | 1.4 | 2.4 |
| Accounting | | | | | | |
| Accrual concept | 0.0 | 0.0 | 4.2 | (1.5) | (1.5) | (1.5) |
| <i>Net Interest Income</i> | <i>0.0</i> | <i>0.0</i> | <i>0.0</i> | <i>(1.5)</i> | <i>(1.5)</i> | <i>(1.5)</i> |
| <i>Prepayment Penalty</i> | | | 4.2 | | | |
| Valuation concept | 0.0 | 0.0 | 0.0 | (0.2) | (0.1) | 0.0 |
| <i>Net Interest Income</i> | <i>0.0</i> | <i>0.0</i> | <i>0.0</i> | <i>(1.5)</i> | <i>(1.5)</i> | <i>(1.5)</i> |
| <i>Fair Value Change Loans</i> | <i>2.2</i> | <i>1.4</i> | <i>0.6</i> | <i>0.9</i> | <i>0.0</i> | <i>(0.9)</i> |
| <i>Fair Value Change Swap</i> | <i>(2.2)</i> | <i>(1.4)</i> | <i>(0.6)</i> | <i>0.4</i> | <i>1.4</i> | <i>2.4</i> |

⁸ In this paper references to interest income are not all in a strict sense of interest revenue as defined in IFRSs but in a wider sense (for illustration purposes). For example, the payments received on one leg of an interest rate swap as such are not interest revenue as defined in IFRSs. However, hedge accounting can result in a hedge adjustment to interest revenue if the latter is a hedged item. Also for illustration purposes the example assumes that the floating leg of the swap is offset by a funding transaction with matching terms. As such the interest cash flows and valuation are not addressed in this example. However, the impact of the valuation of the floating leg of interest rate swaps is discussed separately later in this paper.

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32. This simple example shows that both alternatives lead to the same net interest income based on the recognised financial instruments. Furthermore the negative effect on the margin resulting from the prepayment as the loan substitution bears lower interest rates becomes obvious as well. The accrual accounting concept leads to a one-off gain resulting from the prepayment penalty as the amortised cost of the loans always stays at 100. It leads to profit in period 3 which is actually a compensation for the negative margin in the following periods (excluding discounting and unwinding effects).⁹ An amortisation of the penalty would require the tracking of the loan replacement as this treatment could only be justified as long as a substitute exists. On an open portfolio basis this is nearly impossible and would lead to the application of 'practical approaches' based on assumptions. The valuation concept however shows a balanced net income (excluding discounting and unwinding effects). Therefore the fact that a valid risk management strategy is applied is adequately reflected. If there was no replacement for the prepaid loan the valuation of the then non-hedging swap would automatically create volatility which is in line with the considerations earlier in this document.

Conclusion on pre-considerations

33. The analysis above highlights the advantages of a valuation concept in comparison to an accrual accounting concept.
34. Further aspects that support a valuation concept for the development of a macro hedging model are:
- (a) The interest rate risk management of financial institutions commonly identifies interest rate risk on the basis of fixed rate financial instruments using present value based methods for the related quantification.

⁹ In the example above the prepayment penalty of 4.2 corresponds with the negative effect on net interest income of 1.5 per period. The difference of the accumulated amount of that negative effect (4.5) and the prepayment penalty results from the discounting effect using the current market rate of 3.5%.

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- (b) This valuation concept is in line with the long standing treatment under IFRSs that derivative instruments are to be accounted for at fair value through profit or loss.¹⁰

35. As a consequence the following considerations are based on the valuation concept as described above. It assumes that hedging instruments (commonly derivative instruments) are accounted for at fair through profit or loss. It is then necessary to determine the items that should become subject to an offsetting valuation as well as the measurement basis used for that valuation (full fair value versus a valuation attributable to the hedged risk).

Alternatives under a valuation concept

36. Following a valuation concept to address macro hedging relationships two different underlying ideas for the valuation could be used:
- (a) Separate valuation and presentation of the valuation of the risk position ('separate valuation concept').
 - (b) Valuation of the risk position to determine the level of coverage for the fair value changes of the hedging instruments ('coverage concept').

Separate valuation concept

37. This approach changes the measurement for elements of the risk position. This allows accounting mismatches to be overcome that otherwise arise due to the fair value measurement of the hedging instruments. For example, for financial instruments otherwise accounted for at amortised cost it represents a (selective) exception from the general measurement principles. The basic idea is the introduction of a concept similar to a fair value option for particular situations rather than a hedge accounting type concept.

¹⁰ Both aspects are discussed in more detail in agenda paper 9C of the September IASB meeting.

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Coverage concept

38. With this approach the risk position is valued to determine the portion of the fair value change of the hedging instruments that are covered by an offsetting effect. As a consequence, this portion would not be accounted for through profit or loss. The accounting therefore only focuses on accounting for changes in the fair value of the hedging instruments and determines the appropriate accounting treatment for those fair value changes. As a consequence volatility would primarily result from uncovered hedging instrument positions rather than the valuation of the risk position itself. This leads to the distinction between ‘over- and under-hedges’ whereby only over-hedges result in volatility. This concept reflects the mixed measurement model idea in IFRS 9 as instruments otherwise accounted for at amortised cost cannot increase volatility in profit or loss when un-hedged. However, although changes in the fair value of the hedged item are not recognised, this concept requires a valuation of the risk position that is close to the one used for the decision to enter into derivatives. Otherwise no reasonable statement regarding the coverage can be made, ie it is hard to distinguish between open positions and mismatches.
39. Furthermore this concept is consistent with the idea of a hedge accounting relationship, as the starting point is a hedging instrument for which offset needs to be demonstrated. In line with general principles this would also imply an ongoing effectiveness test and the determination of the ineffective amount.
40. Both concepts require further analysis of the appropriate valuation of the risk position which is addressed in the next section.

Full Fair Value Assumption

41. On the basis of the insights above the easiest and most intuitive solution for a valuation approach would be to recognise the full fair value measurement of all financial instruments through profit or loss. This alternative is already available today through the fair value option.¹¹ Although this would take away the majority of operational difficulties associated with today’s hedge accounting requirements

¹¹ See IFRS 9 paragraphs 4.1.5 and 4.2.2 (assuming the qualifying criteria are met).

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it is used in rare circumstances only.¹² The reason is that applying full fair value accounting to all non-trading financial instruments creates significant volatility resulting from various sources. Those can be distinguished as follows:

- (a) Volatility resulting from fair value elements that are not or separately risk managed:
 - (i) Credit spreads and other non-interest¹³ elements (liquidity spread, margin).
 - (ii) Optionality risk (prepayment risk, etc.) when managed separately.
 - (iii) Other sub-elements of interest rate risk resulting from different interest indices, yield curves etc.
- (b) Volatility resulting from elements of the managed risk position that do not currently qualify for fair value measurement (ie accounting takes away the compensating volatility of the net position resulting in accounting mismatches):
 - (i) Core demand deposits.
 - (ii) Pipeline trades¹⁴.
 - (iii) Equity model book (net free funds)¹⁵.
- (c) Layer approaches that represent only a portion of the underlying transactions (bottom layer) or take into account further transactions like replacements of removed items¹⁶:

¹² For a detailed discussion of the operational burden and bias resulting from today's accounting approach in comparison to risk management see agenda paper 9B of the September IASB meeting.

¹³ In this paper references to 'non-interest' are used to describe elements of yield other than *benchmark* interest. This is only for ease of reference (economically and for accounting purposes spreads on the benchmark interest are also interest).

¹⁴ For a more detailed explanation of these transactions refer to agenda paper 9A of the September IASB meeting.

¹⁵ For a more detailed description of the basic idea refer to the Education Session in June 2011, presentation of the European Banking Federation, section 'Models'.

¹⁶ The full fair value measurement covers all existing (recognised) financial instruments in their entirety. In contrast, layers represent only a portion of that (bottom layer) or even a wider population when future replacements or new transactions are already considered.

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- (i) Layer approach on the basis of a homogeneous portfolio (typically core demand deposits).
 - (ii) Layer approach on the basis of a non-homogeneous¹⁷ portfolio (typically pre-payable loans).
- (d) Effect of risk limits (ie some fair value movements will not be offset because of risk management choices):
- (i) Mismatches.
 - (ii) Open positions.
- (e) Volatility resulting from the fair value measurement of derivatives not covered by the managed risk positions:
- (i) Fair value measurement of the floating leg of interest rate swaps.
 - (ii) Effect of counterparty credit risk on fair value measurement.
 - (iii) Replacement of internal hedging instruments with external ones.

42. The topics listed above are essentially the result of differences between full fair value measurement and the elements of risk considered from a risk management perspective, ie only a portion of factors relevant to fair value measurement are subject to risk management (and vice versa). This volatility could be addressed if the remeasurement of the hedged items more closely reflected the risks being managed.

43. The differences between a full fair value measurement and the actual risk management as listed above have to be further analysed. As keeping the conceptual differences results in volatility in profit or loss and equity the question is whether this is considered representative for the performance of the entity and therefore provides useful information.

¹⁷ 'Non-homogeneous' in this instance relates to differences regarding the timing of interest and principal cash flows (repricing risk). It does not involve other risk categories.

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44. The conceptual differences can be addressed by adopting risk management approaches for accounting purposes, ie the definition and measurement of the risk position follows risk management considerations.

Alternatives for the valuation of the risk position

45. Given that the sources of volatility listed in the section above are the result of conceptual differences between the risk management view and the full fair value accounting concept one might question whether reflecting this ‘conceptual’ volatility in profit or loss could serve as an adequate indicator for performance.
46. In other words: Should volatility resulting from un-hedged risk that would otherwise not be accounted for at fair value through profit or loss effect the financial statements?
47. By adopting risk management elements for the valuation of the risk position (the hedged risk) the remeasurement would move more closely to a risk management perspective. With full fair value measurement as a starting point the following steps would lead from a full fair value measurement to an approach that is closer to the risk management definition.

Step 1: Full fair value measurement

48. Under this concept the entire fair value is used for the valuation of the risk position. This leads to the recognition of fair value changes in profit or loss as described above that is neither representative of the business model nor the risk management approach. Non-interest elements that are not subject to interest rate risk management and for which related fair value changes would not otherwise be recognised in the financial statements for amortised cost items are included in the measurement. Furthermore the full fair value indicates the potential sales price for an instrument. This is arguably only representative for the performance when a business model is not to hold to collect contractual cash flows. This is the basis for the measurement at amortised cost for financial instruments in IFRS 9. Arguably, simply because risk management activities are undertaken, it is not appropriate to therefore cause all fair value changes (even on risks that are not managed within that risk management approach) to be reflected in profit or loss.

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Step 2: Fair value attributable to interest rate risk

49. This approach limits the fair value measurement to changes triggered by interest rate fluctuations only assuming that is the risk being managed within the risk management approach. Therefore changes resulting from non-interest elements are excluded from the remeasurement. For this approach a benchmark interest rate has to be determined to measure interest rate driven fair value changes. In addition, any optionality risk that is related to interest rates (ie prepayment risk) is valued on the basis of an option pricing model. Where applicable the option pricing model might consider the irrational behaviour of counterparts. The concept of using a benchmark interest rate to determine changes in fair value attributable to interest rate risk is already available today, eg for fair value hedges of interest rate risk under IAS 39 *Financial Instruments: Recognition and Measurement*.

Step 3: Net interest margin as risk management objective

50. This approach allows the risk management approach of hedging the net interest margin rather than fair value changes to be reflected. As a consequence this approach changes the selection criterion for the benchmark interest rate to the index used for the calculation of the margin for the particular instrument. For example, the benchmark interest rate used for the fair value measurement of a loan would be the one used by a potential investor as a basis for calculating a purchase price. In contrast a benchmark interest rate representative of the margin risk is derived from the funding (assumption) for that loan. This is influenced by the funding strategy of the entity. Both benchmark rates might be identical but could also differ. Often the index addressed by hedging instruments as well as the discount rate used for pricing purposes is also derived from the common funding rate.
51. In essence, this concept accepts that the hedged interest rate risk is reflected in the discount rate (benchmark rate) used for the calculation of the present value for risk management purposes. This is different to an approach that derives the benchmark rate from the contractual cash flows of the hedged instruments (as a portion of those).

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52. This understanding of the risk management objective would also address the sub-Libor issue. The hedged risk would be calculated as the present value of the managed cash flows discounted with the benchmark interest rate.¹⁸

Step 4: Portfolio as unit of account

53. Accepting valuations that are based on a portfolio as unit of account permits approaches that address optionality risk through the modelling of expected cash flows. Therefore the hedged risk can be limited to the repricing risk determined on the basis of expected cash flows at portfolio level.

54. This opens the valuation for approaches where existing transactions or transactions that are highly likely to occur are considered on the basis of their expected cash flows at portfolio level. These could be pre-payable loans, core demand deposits or pipeline trades. However in this step the approach is restricted to closed portfolios.

Step 5: Open portfolios to be included

55. Widening the approach to open portfolios has the consequence that replacements can be considered for valuation purposes. As this considers future transactions it is similar to including highly probable forecast transactions. It also means that replacements automatically become subject to measurement as soon as considered part of the risk position.

56. This approach allows the designation of (bottom) layers for portfolios under the assumptions that removals will be replaced by new instruments sharing identical terms (homogeneous portfolio). This concept would open the measurement of core demand deposits on the basis of the 'stickiness' assumption. Following the argument in the basis for conclusions of IAS 39.BC187 (a) the stickiness is mainly the result of withdrawals being offset by new deposits which keeps the total balance stable.¹⁹ This could be addressed by opening the accounting for layer approaches that consider future replacements.

¹⁸ For further explanations on the conceptual background of the sub-Libor issue refer to agenda paper 9B of the September 2011 IASB meeting.

¹⁹ The view taken in IAS 39 implies a 'first in first out'-assumption for the development of demand deposits. The risk management view however is focused only on the expected existence of the balance

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Step 6: Applying repricing risk for periods rather than days

57. The approach so far assumed that repricing risk is defined as any deviation in cash flow structures between fixed rate financial assets and liabilities. Therefore cash flows would be compared on a daily basis to identify those deviations. This risk results from the fact that the timing difference has to be bridged by funding or investment transactions at future (floating) interest rates.
58. Alternatively, repricing risk can be defined on the basis of periods or blocks of time ignoring timing differences within that period. As an example, offsetting cash flows that occur within the same month would not be hedged for repricing risk even when they occur on different days. This can be seen as splitting repricing risk into further elements not addressing risk from short-term timing differences.
59. Following this concept also opens the accounting for risk management approaches where repricing risk is managed on the basis of time buckets rather than addressing each timing difference in cash flows. With a time bucket concept all cash flows that occur within a period of time are not managed for the interest rate risk that results from those timing differences. The risk excluded that way is the interest rate risk on the investment and funding transactions required to bridge those timing differences within a given time bucket.
60. This concept becomes relevant when (bottom) layers are defined for a portfolio with deviating cash flow structures, for example loans with a common maturity in a particular future period. As such it is ignored that the loans might have different timings and amounts of cash flows although sharing maturities within the same period.
61. The described situation is typical for setting bottom layers on pre-payable loan portfolios. The approach to exclude elements of repricing risk would allow basing the measurement of the risk position on the defined layer as the deviation between the terms of the layer and the actual instruments (ie the layer's constituent items) would be excluded as non-hedged repricing risks.

because the question whether that balance consists of original transactions or replacements does not change the risk position given the homogeneity of the deposit position.

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62. Similar considerations also apply to risk limits when the risk are identified and managed on the basis of time buckets accepting (un-hedged) timing differences in cash flows.

Step 7: Multi-dimensional risk objectives

63. This addresses situations where the risk management strategy follows various objectives with one comprehensive strategy. For example, this could be a short-term fixed return and a long-term floating return.
64. Allowing this approach would open accounting for techniques like the use of equity model books that in essence represent the target return for the net portfolio. The equity model book represents the investment of funds raised as equity in transactions with owners in their capacity as owners (which is then for example passed on as internal funding to the asset-liability management function rather than being invested in a particular separate bond portfolio, which would be an alternative strategy). As it would be the case with a bond investment the institution has targets regarding return and maturity which are reflected in the parameters of the equity model book used for its measurement. The equity model book is then treated like an interest-rate position that reflects the target return on equity. In a perfect risk management strategy the effect is that the net portfolio (without the equity model book) should exactly achieve the target return and the valuation of the net portfolio mirrors the one of the equity model book.
65. Beside the equity model book, other portfolio strategies can also be found that comprise various risk management objectives for the portfolio in one comprehensive strategy, eg short-term fixed return and long-term floating return.
66. Following the steps up to this point would allow the hedged item to be measured in a manner consistent with that performed by risk management for the fixed rate positions. It would also allow models and transfer price transactions to be used as a basis of measuring the hedged item (to reflect the risk management perspective) and because of that perspective potential mismatches due to external transactions would be excluded.

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Step 8: Valuation of floating rate instruments

67. In a next step the measurement of the risk position (through valuation of the hedged item) could consider floating rate instruments as well. This results from the fact that interest rate swaps addressing repricing risk of an interest rate margin in essence link a fixed rate position to a floating rate position. A valuation that is only based on the fixed rate risk would not address the fair value change of the floating leg of the interest rate swaps.
68. However, the floating rate position is usually not identified. There is an assumption that each maturity gap is closed by a market transaction which creates the floating rate position.
69. This leaves as potential alternatives:
- (a) Identification and valuation of the actual floating rate instruments (existing ones and forecast transactions) as part of the risk position. This approach is already covered by existing guidance for IAS 39.²⁰
 - (b) The valuation of the floating leg of the interest rate swap is ignored. If applied, this approach could only be justified for the coverage concept as described earlier in this paper. It would be justified with the general set up of the risk management approach given that the benchmark interest rate used for funding and investment transactions and the index of the floating leg correspond.

Step 9: Counterparty risk of hedging instruments

70. Often the counterparty credit risk of the hedging instruments is managed on a comprehensive basis. For example the counterparty risk of the entire derivatives position (including trading derivatives) is managed centrally taking into account mitigating factors like master netting agreements.
71. As a consequence risk management approaches addressing interest rate risk do not expressly consider counterparty risk of the hedging instruments. This is consistent with the approach taken for the hedged items.

²⁰ IAS 39 IG F.1.13.

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72. As a key assumption the macro hedging model does not change the general fair value measurement criteria for hedging instruments.

Step 10: Internal Derivatives

73. A further topic to be addressed is the fact that hedging instruments might be entered into with other departments (like the entity's own trading desk) rather than with an external counterparty. However, with risk management strategies that are based on internal derivatives that pass the risk from the non-trading to the trading area this creates mismatches when the internal derivatives are not accepted for valuation purposes and the external and internal derivatives are not identical. There are four alternatives to deal with this topic:

- (a) Denial—This follows the elimination principle for internal transactions under IFRSs in the consolidated financial statements. As a consequence the separate valuation concept would lead to a valuation of the risk position only without directly offsetting hedging instruments. To the extent that the trading unit externalised the risk, the valuation of the risk position would be offset by respective trading gains or losses. However, both the valuation of the risk position as well as the trading result would ignore the effect of the internal derivatives and therefore would not be representative for the actual activities of both areas. With the coverage concept however, macro hedge accounting would not be applicable because there would be no relevant risk coverage. The consolidated financial statements would present the same trading result as with the valuation concept while the non-trading area would neither include the hedge effect on net interest income nor the valuation of the risk management.
- (b) Replacement—The internal derivatives are eliminated but external (trading) derivatives can be designated to the non-trading area to achieve the offsetting result. Therefore to the extent that the replaced external derivative position matches the internal one the risk management perspective can be reflected. However, this concept creates operational burden by requiring an artificial exercise.

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- (c) Externalisation—The valuation of the hedged item is based on the internal derivatives when there is an offsetting external derivative position. This could be applied on an instrument by instrument basis (today's accounting) or on a net portfolio level considering risk limits (reflecting the risk management approach). For the balance sheet the internal derivatives would still be eliminated on consolidation.
- (d) Presentation—This concept is based on the valuation concept assuming an elimination of the internal derivatives. However, it overcomes the fact that the resulting consolidated financial statements that include the valuation of the risk position and the trading result without considering internal derivatives is not representative for the activities of both areas. This is achieved through a reclassification of the effect on profit or loss resulting from the internal derivatives from trading to non-trading. This concept does not work with the coverage concept as this is based on accounting for (external) derivatives and therefore requires an external link.

74. Following the separate valuation concept where the existence of hedging instruments is not a pre-condition for accounting, the internal derivative question could become a pure income statement presentation topic. It might still be linked to pre-conditions regarding pricing, externalisation and alignment with the underlying risk management strategy. When ignoring internal derivatives for presentation purposes the key question is whether consolidated financial statements that present in profit or loss trading and non-trading results would be representative of the respective activities of both areas and would provide any additional value to users in comparison to a bank using external derivatives.

Step 11: Risk limits

75. The risk limit concept as applied by financial institutions aims to ensure that the future interest rate volatility will stay within pre-defined boundaries. The approach taken can vary based on the reference used for determining the risk (notional amounts, cash flows, present value sensitivities), the level of

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aggregation (time bucket concept), the definition of scenarios for sensitivity analysis and the actual limits set.

76. From an accounting perspective, the risk limit system ensures that the potential valuation bias between the risk position and hedging instruments stays within the pre-defined limits. This could be seen as accepted risk exposure and in turn economic volatility that should be recognised in profit or loss. As an alternative, this could also be considered as an intentional un-hedged position. This applies when following the concept of repricing risk by period as explained with step 6. Taking the suggested steps leaving an open (un-hedged) position would not result in volatility when it does not result from hedging instruments (because it would not be reflected in the valuation of the hedged item).
77. To ensure that 'stand-alone' derivatives are always accounted for at fair value through profit or loss risk limits could be accepted to the extent that they are not breached and the risk position exceeds the hedging instruments. This is commonly referred to as 'no over-hedge'. As long as these requirements are met no volatility would be presented in profit or loss, ie any volatility identified so far would not be reflected in profit or loss as it is within the risk limits.
78. The resulting question however is how to deal with breaches of risk limit or over-hedge situations. The staff have identified four alternatives:
- (a) Discontinuation and re-designation—This concept follows the hedge accounting principles that as soon as the requirements for hedge accounting are no longer met the hedging relationship is discontinued (ie no further valuation of the risk position would occur). Consequently the accumulated valuation adjustment becomes subject to amortisation. This should be based on the term of the underlying risk position, which creates practical problems (as described for a potential accrual accounting earlier in this paper). Also, future financial statements would be affected by amortisation effects. When the hedging relationship is re-designated immediately this effect would be more or less neutralised. As such the breach of the limit would have no consequences on the financial statements.

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- (b) Reversal of the offsetting valuation—This is the opposite scenario. In case of a breach of the limit the entire offsetting valuation of the risk position is reversed. This avoids the amortisation issue but creates a major one-off effect.²¹
- (c) Reversal of the risk limit effect—with this concept only the volatility previously not recognised in profit or loss because it was within the risk limits (see paragraph 77) would be reversed (ie recognised in profit or loss). As such the offsetting valuation of the risk position would still apply. However, to the extent that the valuation of the risk position does not offset the fair value measurement of the hedging instruments the mismatch is accounted for through profit or loss. This is because the argument that the mismatch is within the pre-defined risk limits is not valid any more. A breach of the risk limit resets the accumulated volatility that was not recognised in profit or loss because it was within the risk limit to zero.
- (d) Limit the consequences to the instrument causing the breach—this creates a selection problem when trying to identify the instrument that actually caused the breach given that a portfolio approach is applied.

Dealing with assumptions

79. All of the steps described above are based on assumptions. The measurement of the risk position in almost all circumstances is based on *expected* cash flows. The discount rate (benchmark rate) used, defining layers, assumptions on replacements and future transactions, assumptions that affect the target return for the portfolio (eg a three-year fixed rate return), internal derivatives, setting time buckets and risk limits all represent judgemental areas. If this approach were taken those should become subject to explanatory disclosures to explain the factors affecting the measurement of the hedged item.

²¹ This would be the logical approach for an exceptional accrual accounting for macro hedging that is based on the existing risk limit concept.

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80. In addition, it raises the question of the appropriate accounting treatment for changes in assumptions that consequently effect the valuation of the risk position (one-off effect).
81. As a starting point the general principles used for financial instruments accounted for at fair value through profit or loss could apply. Consequently, any change in the valuation is accounted for through profit or loss regardless whether they represent ongoing fluctuations or arise due to adjusted assumptions. In addition, changes should trigger explanatory disclosures explaining the rationale and effect of the change.²²
82. The only exception to this principle today in accounting for financial instruments at fair value through profit or loss results from day-1 gains or losses for instruments where the fair value is not determined solely on the basis of observable inputs. The corresponding situation could occur with this valuation model, when the actual contractual cash flows of the hedged items are used for measurement purposes rather than the modelled cash flows. For example a zero-interest bearing core demand deposit position would be treated like a zero coupon bond (leading to a day-1 discount) while the internal transfer pricing transaction might be interest-bearing. The amortisation of that day-1 discount would however ensure a similar result (excluding discounting and unwinding effects).
83. As an alternative to reflecting each change in the measurement of the risk position in profit or loss it could be considered to amortise those effects under some circumstances. This applies to situations where changes in parameters used for the measurement represent adjustments to the risk management objective rather than reflecting changes of the risk position itself.
84. A typical example would be the decision to change the parameters of the equity model book. Those represent an adjustment of the risk management objective rather than a change in the risk position. The risk position without the equity model book might be unchanged but risk management's objective for the target return might have changed.

²² Such disclosures could for example include some broadly similar to some required for changes to how fair values are measured.

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85. The described example is different to an adjustment of expected cash flows for a pre-payable loan portfolio that is triggered by observed changes in prepayment behaviour.
86. Following the principles of the general hedge accounting model a change in risk management objectives should not affect profit or loss. To avoid this, changes in the valuation of the risk position that reflect an adjusted risk management objective could be amortised. This is a similar concept as the treatment of forecast transactions that are not hedged anymore while the hedged transactions are still highly probable to occur.
87. This concept requires the distinction between changes of parameters that reflect a different development of the risk position and those that are the result of different risk management objectives. Beside the equity model book mentioned above other areas could be the setting of (bottom) layers for homogeneous and non-homogeneous portfolios or of risk limits. Changes in these areas often represent changes in the risk management objective rather than being triggered by a different behaviour of the risk position.
88. Changes in assumptions should be subject to disclosures explaining the reason for the change and the effect on financial statements.

Presentation of the valuation effect

89. The analysis so far focussed on the measurement of the risk position to be reflected in profit or loss. It is also necessary to determine where in the statement of financial position the counter-item, ie essentially the amount being attributed to the hedged item or risk position should be presented. The staff have identified three alternatives:
- (a) Adjustment of the carrying value of the risk position, if applicable.
 - (b) OCI.
 - (c) Deferred income.
90. Furthermore one can distinguish between:

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- (a) Uniform presentation. Only one balance sheet position is used for the entire valuation of the risk position. This approach corresponds with the concept of accounting for the coverage of hedging instruments.
- (b) Presentation by source. For this the valuation effect of each element of the risk position is presented together with the related balance sheet item. This approach corresponds with the separate valuation concept.

91. The uniform presentation puts emphasis on the fact that one comprehensive risk management approach is applied. As the risk position might involve elements without corresponding balance sheet positions (pipeline trades, equity model book) the only two alternatives available are OCI or deferred income.
92. The presentation by source allows the distinction between elements of the risk position, which seems to be the more transparent approach. In addition, it is possible to introduce different presentations for different items dependent on their characteristics. This is especially important as the presentation in OCI leads to equity volatility.
93. Adjustments of carrying values are applicable for all elements that represent financial instruments subject to recognition in the balance sheet, including prepayable loans, demand deposits, loan commitments (contractual). This approach would not be available for future transactions like pipeline trades, replacements or the equity model book. Also, a comprehensive approach like the effect of keeping volatility out of profit or loss because an exposure remains within risk limits would not qualify as it cannot be allocated.
94. For the items not qualifying for the adjustment, ie risk positions that do not relate to financial instruments that qualify for balance sheet recognition, the first alternative would be presentation in OCI. This approach leads to volatility in equity, ie transfers volatility from profit or loss to equity without neutralising it completely. Therefore it has to be analysed whether this presentation is considered to appropriately reflect the entity's performance or financial position (ie a change in net assets). Furthermore one could consider whether valuation elements that are primarily based on risk management objectives rather than expected behaviour (eg equity model book) are more adequately reflected in OCI given their characteristic.

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95. To the extent that a presentation in OCI were considered appropriate but a balance sheet item is missing, the recognition of a separate item outside equity would be the remaining option. This could be deferred income to reflect the risk management focus on net interest income (margin), an income statement position.

96. For example, for core demand deposits accepted as a risk position under this concept the following journal entries would be available:

(a) Adjustment of the carrying value of the risk position

| | | | |
|-------------------|----|--------------------|----|
| (i) Dr Derivative | 15 | Cr. Profit or loss | 15 |
|-------------------|----|--------------------|----|

| | | | |
|------------------------|----|--------------|----|
| (ii) Dr Profit or loss | 17 | Cr. Deposits | 17 |
|------------------------|----|--------------|----|

(b) OCI

| | | | |
|-------------------|----|--------------------|----|
| (i) Dr Derivative | 15 | Cr. Profit or loss | 15 |
|-------------------|----|--------------------|----|

| | | | |
|------------------------|----|---------|----|
| (ii) Dr Profit or loss | 17 | Cr. OCI | 17 |
|------------------------|----|---------|----|

(c) Deferred Income

| | | | |
|-------------------|----|--------------------|----|
| (i) Dr Derivative | 15 | Cr. Profit or loss | 15 |
|-------------------|----|--------------------|----|

| | | | |
|------------------------|----|---------------------|----|
| (ii) Dr Profit or loss | 17 | Cr. Deferred Income | 17 |
|------------------------|----|---------------------|----|

97. Under a uniform presentation approach that is based on the accounting for hedging instruments only, the offsetting journal entries for OCI and deferred income could be capped to the fair value change of the hedging instruments. The resulting journal entries would be:

(a) OCI

| | | | |
|-------------------|----|---------|----|
| (i) Dr Derivative | 15 | Cr. OCI | 15 |
|-------------------|----|---------|----|

(b) Deferred Income

| | | | |
|-------------------|----|---------------------|----|
| (i) Dr Derivative | 15 | Cr. Deferred Income | 15 |
|-------------------|----|---------------------|----|

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Potential objective of developing a macro hedge accounting model

98. Based on the analysis above the potential objective is to develop a model that results in interest income resulting from financial instruments²³ reflecting the risk management strategy. This means that to the extent the margin is locked in, providing transparency about the net interest income would involve screening out accounting volatility that results from the mixed measurement model, which would otherwise spill over into an accounting mismatch in the margin. To achieve this, the valuation result of the hedged risk positions should be defined in a way that it provides useful and transparent information about the entity's activities including risk management.
99. This could be achieved by introducing a remeasurement approach that mitigates the accounting mismatches that otherwise would result from interest rate risk management. Such a remeasurement would provide useful and transparent information.
100. Key features for such a macro hedge accounting approach could be:
- (a) Derivatives and other financial instruments not qualifying for amortised cost accounting in accordance with IFRS 9 are accounted for at fair value through profit or loss, even when used as hedging instruments—no accrual accounting concept.
 - (b) Determination and measurement of the risk position that is offset by the fair value measurement of the hedging instruments. This follows a fair value measurement concept as the lead idea but adjusted by elements of the risk management approaches. This is to address valuation mismatches of a nature that only reflects conceptual differences between the risk management view and the full fair value accounting concept and therefore would not be representative of the entity's performance and therefore contradict the transparency and useful information objectives.

²³ This is a first step of developing a solution for interest rate risk. However, the scope of the macro hedge accounting project is *not* limited to this risk and other risks will be addressed later on in this project.

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- (c) Regarding the introduction of risk management aspects for accounting purposes one of the key areas is the treatment of measuring risk positions based on models. This involves questions on:
- (i) The link between the model and the actual external transactions.
 - (ii) Appropriate treatment of changes in valuation parameters dependent on their cause.
 - (iii) Accepting the risk definition underlying the model concepts.
- (d) For the definition and measurement of the risk position for accounting purposes the balance sheet presentation of the measured risk position has to be determined. For that a hedge adjustment of the carrying amount of the respective risk position or a presentation in OCI or a separate balance sheet item like deferred income are available, whereby the two latter alternatives allow to cap the effect of the risk position to the valuation of the hedging instruments. For the presentation in OCI similar considerations as with profit or loss apply, ie whether the resulting volatility in OCI and therefore equity appropriately represents the entity's performance and financial position and therefore provides useful and transparent information.
- (e) Finally, the resulting accounting concept has to be accompanied by adequate disclosures explaining the risk management approach taken and the resulting risk position including its measurement. This includes a description of changes to the valuation, the rationale for those and an analysis of their effects.