STAFF PAPER

27 February 2012 – 2 March 2012

IASB Meeting

Project	**Macro Hedge Accounting**		
Paper topic	Accounting model for macro hedging: valuation approach		
CONTACT(S)	Christian Garz	cgarz@ifrs.org	+44 (0)20 7246 6410
	Martin Friedhoff	mfriedhoff@ifrs.org	+44 (0)20 7246 6410

This paper has been prepared by the staff of the IFRS Foundation for discussion at a public meeting of the IASB and does not represent the views of the IASB or any individual member of the IASB. Comments on the application of IFRSs do not purport to set out acceptable or unacceptable application of IFRSs. Technical decisions are made in public and reported in IASB *Update*.

Introduction

1.   The purpose of this paper is to outline a potential accounting model for macro hedging using a valuation approach. It reflects the Board's discussions of valuation alternatives at the December 2011 IASB meeting as well as accounting alternatives at the January 2012 IASB meeting.

2.   This is to support the continued discussion of further aspects following the 11 steps introduced with agenda paper 7A of the November 2011 IASB meeting. Those further aspects primarily relate to the scope of financial instruments and transactions to be considered for the hedged risk position, qualifying risk management objectives and issues related to hedging instruments. The focus is on interest rate risk management of financial institutions. Specific aspects of other risks or industries will be covered later in the project.

3.   The focus is on a *revaluation model* that covers the entire risk position used by risk management ("net designation" approach) on a portfolio level. For comparison the accounting alternatives of fair value hedge accounting for a portfolio hedge of interest rate risk (IAS 39) and the non-application of hedge accounting are illustrated in the appendix at the end of this paper.

Terminology—Product margin versus net interest income

4. The descriptions in this paper distinguish between the *product margin* and the *net interest income (also net interest margin)*. The *product margin* refers to the pricing of the financial instruments, ie the calculation of the contractual interest rate of both assets and liabilities. It is the spread between the contractual interest rate and the relevant benchmark interest rate. This is charged by business units to cover their expenses and to generate a profit. For each individual financial instrument the product margin represents a _fixed_ percentage. It is independent of changes in benchmark interest rates.

5. In contrast, *net interest income* is a measure of overall profitability of lending and funding activities taken together and is calculated as the difference between interest revenue and interest expense for the entire net portfolio. Therefore, the net interest income includes:

    (a) the product margins of all portfolio items; and

    (b) any mismatches in the benchmark interest rates underlying the pricing of the instruments in the portfolio.

6. Such mismatches may result from different terms regarding the adjustment of interest rates (fixed interest rate versus floating interest rate), different maturities and differences in the benchmark interest rates used (bid-offer spread, different index).[1] Mismatches in the benchmark interest rates can lead to negative net income that threatens the portfolio product margin. Therefore the objective of risk management activities is to address those mismatches, ie interest rate risk on the basis of benchmark interest rates.

7. These activities usually do not lead to a completely fixed net interest income as the risk management activities might not cover these mismatches in their entirety. Also the portfolio product margin changes over time through turn-over within the portfolio. This effect cannot be addressed with hedging instruments.

8. The described interaction can be illustrated as follows:

---

[1] For example, assets and liabilities are usually priced on the basis of bid and offer prices. Furthermore different indices might be used for setting the benchmarks for different types of products. Also the setting of the benchmark usually occurs at the date of origination at then current interest rate levels. Differences in the timing of origination lead to differences in the amount of the benchmark interest elements.

Asset Pricing	
Benchmark Interest Rate	5.0%
+ Product Margin	1.5%
Contractual Interest Rate	6.5%

Liability Pricing	
Benchmark Interest Rate	4.5%
- Product Margin	1.0%
Contractual Interest Rate	3.5%

Combined Portfolio Level		
Net Interest Margin / Net Interest Income	3.0%	(6.5% - 3.5%)
Portfolio Product Margin	2.5%	(1.5% + 1.0%)
Impact of Benchmark Interest Rate Mismatches	0.5%	(5.0% - 4.5%)

Example used for this paper

Initial set-up

9.   The example assumes a portfolio consisting of the following gross positions:

Loan Book
Notional Amount: *100*
Term: *6 Periods*
Interest Rate: *6.0%*
Prepayable

Liabilities
Notional Amount: *40*
Term: *Matching to open position*
Interest Rate: *Floating (benchmark rate) reprices every period-end*

Deposits
Notional Amount: *60*
Term: *6 Periods*
Interest Rate: *4.0%*
Callable

10.   For the loan book the initial estimate is that the initial balance of 100 remains stable. The same initial estimate applies for the deposit balance of 60, which creates a partially offsetting net fixed rate position. For simplification it is assumed in this example that the deposit balance is treated as a core demand deposit. For the remaining loan balance it is assumed that it is funded with a liability at current market terms (ie at a floating rate) with another bank.

11.   The contractual interest rate of the loans comprises three elements: a benchmark interest rate of 5.0%, a credit spread to cover defaults of 0.6% and an additional spread of 0.4%.

12.   The deposits use the same benchmark rate of 5.0% as a starting point and deduct a margin of 1.0%. As the other liabilities are entered into with other financial institutions it is assumed that there is no margin. Therefore the repricing of those is based on the benchmark rate at the end of each period so is 5.0% initially.

13.   For risk management purposes the risk position is determined on the basis of the fixed rate instruments, ie the loans of 100 and the deposits of 60. The net fixed interest rate exposure that remains is then managed with interest rate swaps under which the bank pays away fixed interest on its loans and receives back floating interest. This leads to the following portfolio:

Dynamic development of the portfolio

Loan portfolio

14.   The original loan portfolio becomes subject to prepayments of 10 at the end of each period. At the same time there are new additions to the loan book. The new loans have the same remaining maturity but are non-prepayable (to simplify the example) and are all fixed rate loans priced at current terms at the date of their origination.

15.   For the pricing of the new loans the following assumptions are made:

Pricing Table	0	1	2	3	4	5	6
Benchmark Rate	5.0%	4.0%	5.0%	6.0%	5.0%	4.0%	5.0%
Credit Spread	*0.6%*	*0.8%*	*1.0%*	*1.2%*	*1.4%*	*1.6%*	*1.8%*
Other Spread	*0.4%*	*0.5%*	*0.6%*	*0.7%*	*0.8%*	*0.9%*	*1.0%*
Product Margin	1.0%	1.3%	1.6%	1.9%	2.2%	2.5%	2.8%
Contractual Rate	6.0%	5.3%	6.6%	7.9%	7.2%	6.5%	7.8%

16.   As a consequence of the replacements within the loan book interest revenue changes over time. While the product margin increases with each replacement in this example, the benchmark interest rate fluctuates over time.

Deposits and liabilities

17.   The deposit balance declines by 10 at the end of each period (like for the loans—however, there are no replacements by new deposits). So there is a decline in the core demand deposits in the portfolio for each period. The constant decline of the deposit balance that is treated as a fixed rate liability leads to an increasing floating rate liability position in the portfolio.

18.   There is a constant loss of product margin on the funding side because the liabilities replacing the deposits do not earn any margin. In addition, the increase in floating rate liabilities leads to more volatile interest expense over time.

Interest rate swaps

19.   The interest rate swaps change the bank's exposure arising from some of the loans from fixed rate to floating rate on the basis of the benchmark interest rate. Economically, this is similar to actually originating some of the loans at a floating rate plus a fixed margin. The bank still has all fixed rate loan assets but has a reduced amount of "fixed rate" (deposit) funding—so its net fixed rate asset position is increasing over time. The amount of interest rate swaps is increased over time to reflect this.

20.   The development of the portfolio over time can be illustrated as follows:

Asset Side (Fixed Rate Loans only)								Liability Side (Deposits and Liabilities)						
0	1	2	3	4	5	6		0	1	2	3	4	5	6

■ (dark blue)		Original fixed rate loan portfolio
■ (light blue)		Fixed rate loan replacements

■ (dark blue)		Deposits treated as fixed rate
□ (white)		Floating rate liabilities

Development of net interest income

21. The described scenario leads to the following development of net interest income over time analysed separately by portfolio product margin (which excludes the effect of changing benchmark rates) and the development of benchmark interest rates (benchmark interest rate impact):

Left graph legend:
- Benchmark Interest Element
- Portfolio Product Margin
- Net Interest Margin / Net Interest Income

Callout (left): Meaning of the "triangle": General development of benchmark interest rates destabilises the margin.

Right graph legend:
- Benchmark Interest Element (incl. Swaps)
- Portfolio Product Margin
- Net Interest Margin / Net Interest Income (incl. Swaps)

Callout (right): Interest rate swaps balance the benchmark interest element. As a consequence net interest income (net interest margin) reflects the portfolio product margin.

22. The left graph shows the development of net interest income over time. The benchmark interest element reflects the standalone impact of changes in the benchmark interest rate on net interest income. It is driven by the effect of variable rate interest expense on floating rate liabilities (whereas the assets are fixed rate), which is amplified over time as the amount of floating rate liabilities

increases. In contrast, the loans are fixed rate and hence only reset to current benchmark interest to the extent they are replaced at the end of period.

23. However, the product margin element is relatively stable in this example. The replacements within the loan book in the example lead to *increases* in the portfolio product margin. This impact is largely offset by the decreasing deposit balance. This leads to a loss of product margin on the funding side as the floating rate liabilities are assumed not to contribute any product margin as the funding is interbank.

24. The combination of both elements leads to total net interest income (ie interest revenue less interest expense), which is calculated on the basis of contractual interest rates (ie calculated before considering the effect of the interest rate swaps).

25. The risk management objective is to address the risk to the portfolio resulting from changes in the *benchmark* interest rate. This risk is managed using swaps for the benchmark interest rate. For this example the swaps lead to a balanced *benchmark* interest element (as shown in the right graph). In the example this fully neutralises the effect of the benchmark interest rate movements (because the floating amounts received on the swap match the floating amounts due on the floating rate funding). As a consequence total net interest income and the product margin element correspond.

26. The described effects can be seen in net interest income in the financial statements as well. The following graphs therefore illustrate the development of interest revenue and interest expense on the basis of contractual interest rates (ie before considering the effects of the swaps). The distance between both lines represents the net interest income earned in the respective period.

27. The left graph shows that the net interest income fluctuates mainly owing to the development of interest expense resulting from the increasing floating rate liabilities. As such the lowest net interest income is earned in period 4 owing to increasing interest rates (and interest expense).

28. The graph on the right illustrates the impact of risk management activities. The interest revenue earned with the fixed rate loans is adjusted by the swaps. The combination of the fixed rate loans and the swaps means the bank *receives*

amounts that reflect changes in benchmark interest rates as well. Consequently, after taking into account the swaps (ie the risk management activity) the distance between both lines (and therefore the net interest income) stays relatively stable.
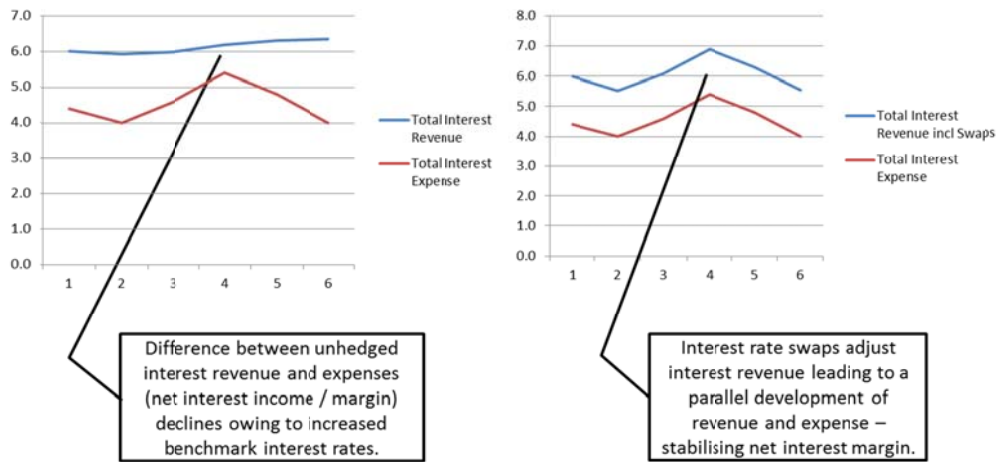
Other expenses

29.   As explained earlier in the paper the *product margin* is calculated to cover other expenses. Therefore those other expenses have to be considered when analysing the development of net interest income to arrive at the overall profitability.

Default risk

30.   The credit spread covers (expected) losses from defaults in the loan book. For this example it is assumed that the actual losses from defaults increase each period. This is considered in pricing of new loans (replacements).

31.   Owing to the increasing defaults, the credit spread calculated for the original loans does not cover the actual losses. For the purpose of this example only actual defaults are considered for the income statement without a separate assessment of impairment.
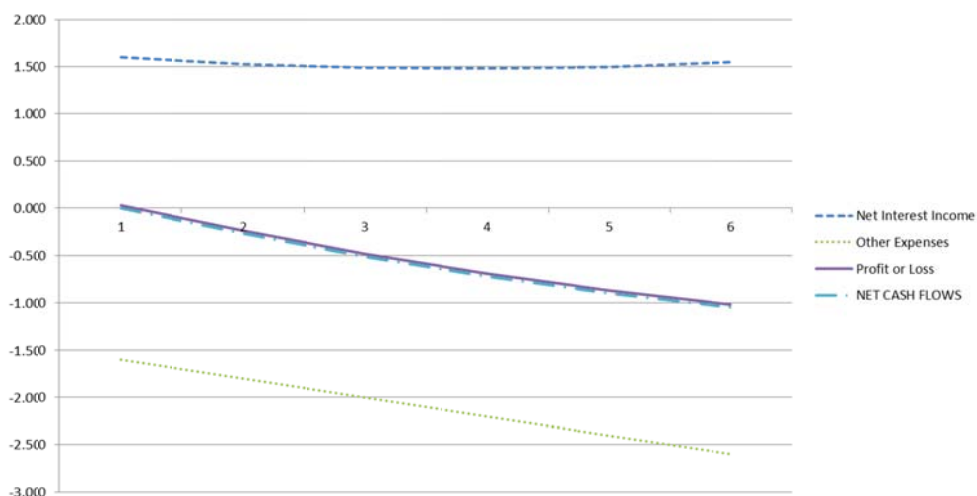
Other expenses

32.   Other expenses relate to ongoing servicing costs (salaries, branches, equipment, etc) and origination costs. For this example the other spread element considered for the pricing of loans and deposits is supposed to cover these.

33. For this example it is assumed that those expenses are also subject to an ongoing increase. These increasing costs are considered in pricing new loans.

Development of profit or loss over time

34. The described effects lead to the following development of the income statement and net cash flows over time (without consideration of any valuation):

	1	2	3	4	5	6
Interest Revenue	6.000	5.930	5.990	6.180	6.300	6.350
Interest Expense	-4.400	-4.000	-4.600	-5.400	-4.800	-4.000
Swap (Net Interest Income)	0.000	-0.400	0.100	0.700	0.000	-0.800
Net Interest Income	1.600	1.530	1.490	1.480	1.500	1.550
Losses from Defaults (Cash Flow)	-0.600	-0.800	-1.000	-1.200	-1.400	-1.600
Admin Expenses	-1.000	-1.000	-1.000	-1.000	-1.000	-1.000
Other Expenses	-1.600	-1.800	-2.000	-2.200	-2.400	-2.600
Profit or Loss	**0.000**	**-0.270**	**-0.510**	**-0.720**	**-0.900**	**-1.050**
NET CASH FLOWS	0.000	-0.270	-0.510	-0.720	-0.900	-1.050

35. The increasing losses resulting from defaults and other expenses are not covered by the net interest income (net interest income) as the pricing of the underlying instruments was based on different expectations. Hence the balanced profit / net cash flows of the first period become increasingly negative over time.

36. Net interest income remains relatively stable as the effects from changes in benchmark interest rates are entirely hedged with interest rate swaps as previously shown. The only volatility of net interest income that remains is the result of the described factors that influence the *product margin*.

37.   The scope of the risk management activities and the relationship between net interest income and the other expense positions can be illustrated best when analysing the first two periods in detail:

Income Statement - Period 1	Total	Loans	Deposits	Liabilities
Interest Revenue	6.000	6.000	-	-
Interest Expenses	-4.400	-	-2.400	-2.000
Net Interest Income	1.600	6.000	-2.400	-2.000
thereof Benchmark Interest Rate	0.000	5.000	-3.000	-2.000
thereof Credit Spread	0.600	0.600	-	-
thereof Other Spread	1.000	0.400	0.600	0.000
Default Losses	-0.600	-0.600	-	-
Other Expenses	-1.000	-0.400	-0.600	0.000
Profit or Loss	0.000	5.000	-3.000	-2.000

Income Statement - Period 2	Total	Loans	Deposits	Liabilities
Interest Revenue	5.930	5.930	-	-
Interest Expenses	-4.000	-	-2.000	-2.000
Net Interest Income	1.930	5.930	-2.000	-2.000
thereof Benchmark Interest Rate	0.400	4.900	-2.500	-2.000
thereof Credit Spread	0.620	0.620	-	-
thereof Other Spread	0.910	0.410	0.500	0.000
Default Losses	-0.800	-0.800	-	-
Other Expenses	-1.000	-0.500	-0.500	0.000
Profit or Loss	0.130	4.630	-2.500	-2.000

38.   When splitting net interest income into its elements it can be seen that the credit spread does not cover the actual defaults in the second period. The same applies for the other spread in relation to other expenses.

39.   Different accounting requirements cover those aspects separately. For example, the default risk is subject to impairment considerations or the accounting requirements that apply to other expenses (eg salaries, rental expense, depreciation) result in accrual accounting for those. Hence, if the product margin is subject to amortised cost accounting this avoids an accounting mismatch with the accounting for the costs that the product margin economically covers.

40.   The actual "pure" interest rate risk relates to the *benchmark* interest rate revenue and expense for the portfolio (risk position). For this example it is mainly influenced by the repricing of the floating rate liabilities.

41. The risk management activities focus on this benchmark interest rate line and seek to achieve a balanced result.[2]

Basic accounting concept—the valuation approach

42. The basic idea of the valuation approach as introduced with the discussion at the November 2011 IASB meeting (agenda paper 7A) is a simple one. To adjust the carrying values of the financial instruments that make up the risk position with a valuation adjustment that quantifies the (hedged) risk. It is assumed the general principle of accounting for derivatives at fair value through profit or loss is not changed.

43. Therefore the impact on the statement of financial position would consist of three elements as illustrated below:
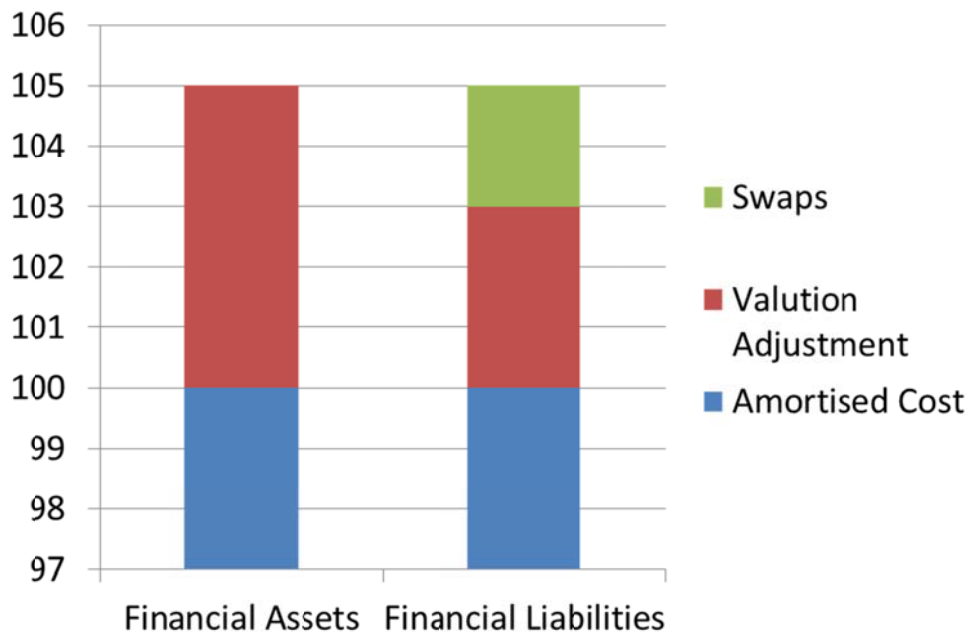
44. As a starting point the hedged financial assets and liabilities are still accounted for following the general principles. For this example it is assumed that the default measurement for both assets and liabilities is amortised cost. The amortised cost

---

[2] For the "perfect" example used in this paper benchmark interest rate income always includes the effect of accruals on the swaps, ie for the second period the swaps lead to a net interest payment of 0.400.

calculation is also required to determine interest revenue and expense on the basis of effective interest rates.

45. The carrying values of the hedged financial assets and liabilities are then adjusted for a valuation that reflects changes in the (hedged) risk. This valuation is affiliated with the fair value measurement of the hedging instruments (swaps). Assuming a perfect alignment, the adjustment to the carrying amount would be equal to the valuation of the hedging instruments. Hence, mismatches between both valuations may (not illustrated here) result from the risk management approach taken (acceptance of open positions or level of accuracy). Further mismatches might result from the definition of or restrictions to the valuation adjustment for accounting purposes. The latter creates potential differences between the risk management approach and the financial statement information. The 11 steps introduced at the November 2011 IASB meeting essentially determine this mismatch for future accounting purposes.

Illustration of the net portfolio valuation approach

Valuation attributable to the hedged benchmark interest rate risk

46. In the example the hedged risk is the benchmark interest rate risk exposure of the portfolio. Therefore for this calculation the entire net portfolio is remeasured for changes in the underlying benchmark interest rate. As an addition to the previous analysis the income statement is now extended by a valuation of the loans and deposits (illustrating the effect of the approach being investigated) and the fair value measurement of the interest rate swaps (which is already required).

47. For the net portfolio valuation attributable to the hedged benchmark interest rate risk this approach results in the following development of the income statement over time.

Income Statement	1	2	3	4	5	6
Interest Revenue	6.000	5.930	5.990	6.180	6.300	6.350
Interest Expense	-4.400	-4.000	-4.600	-5.400	-4.800	-4.000
Swap (Net Interest Income)	0.000	-0.400	0.100	0.700	0.000	-0.800
Net Interest Income	1.600	1.530	1.490	1.480	1.500	1.550
Valuation Adjustment Loans	4.007	-4.361	-2.318	2.673	0.865	-0.865
Valuation Adjustment Deposits	-2.226	2.226	0.802	-0.802	-0.096	0.096
Fair Value clean Swaps	-1.781	2.135	1.517	-1.871	-0.769	0.769
Net Valuation	0.000	0.000	0.000	0.000	0.000	0.000
Losses from Defaults (Cash Flow)	*-0.600*	*-0.800*	*-1.000*	*-1.200*	*-1.400*	*-1.600*
Admin Expenses	*-1.000*	*-1.000*	*-1.000*	*-1.000*	*-1.000*	*-1.000*
Other Expenses	-1.600	-1.800	-2.000	-2.200	-2.400	-2.600
Profit or Loss	**0.000**	**-0.270**	**-0.510**	**-0.720**	**-0.900**	**-1.050**
NET CASH FLOWS	0.000	-0.270	-0.510	-0.720	-0.900	-1.050

48. This approach remeasures fixed rate items (including those treated as fixed rate, eg core demand deposits) in the portfolio for the hedged (benchmark interest rate) risk. The valuation of the loans and deposits is based on their fixed rates ie it reflects the benchmark interest cash flows applicable at their origination. As such for the starting balance of the loan book the benchmark cash flows are 5%. This becomes subject to change with replacements carrying different benchmark rates. The same logic applies to the cash flows for the deposits. Both are then discounted using the current benchmark rate.[3]

49. The described approach was introduced and discussed in more detail in agenda paper 4A of the December 2011 IASB meeting. The underlying assumption regarding the definition of interest rate risk is that the margin earned on top of the benchmark rate is paid on an ongoing basis (alternative 2 in that paper). This is a common approach as the margin is actually calculated to cover other losses and expenses.[4]

50. The valuation in this example shows that the *benchmark interest-related part* of the net interest income is expected to be stable (because mismatches between the benchmark interest rate exposure and the swaps used to hedge it would be anticipated by valuation differences, ie a net valuation other than zero). Therefore

---

[3] Please see paragraphs 9–20 for a detailed description of the assumptions regarding the development of the portfolio.

[4] Other approaches are to assume the accumulation of the margin over the lifetime of the related financial instruments and to include the reinvestment risk into the risk position (alternative 3) or to ignore interest rate risk related to the product margin completely (alternative 4). Please see agenda paper 4B of the December 2011 IASB meeting for a more detailed discussion and calculation of these alternatives.

total net interest income actually represents the portfolio *product margin* calculated for the underlying financial instruments without significant impacts from changes to benchmark interest rates. In contrast, the valuation does not address the risk that the portfolio product margin earned might not be sufficient to cover the costs it was intended to cover. It also does not address future changes in the product margin that would result from future changes in the pricing of products.

51.   For this simple example the net valuation is always zero as all benchmark interest rate related value changes to loans, deposits and hedging instruments offset each other. In a real life example the net valuation impact will include the results of mismatches between the valuation of the risk position and the hedging instruments resulting from the following scenarios (not illustrated in this paper):

(a)   Over- and under-hedge scenarios in respect of the net risk position, ie the hedging instruments do not cover the entire risk position or exceed it. Those include time lags resulting from changes to the portfolio that were not reflected by adjusting the hedging instruments on a timely basis.

(b)   Valuation mismatches between the risk position and the fair value measurement of the derivatives because of differences in the timing of cash flows or differences regarding the input parameters.

52.   When looking at the valuation for each type of instrument individually the valuation represents the present value of the future positive or negative impact on net interest income resulting from changes in benchmark interest rates in comparison to the rate set on the instrument on the date of its origination. For example, the positive valuation of 4.007 for the loan book in the first period represents the positive effect on interest income if the loans were funded at a floating benchmark rate. So it is an indicator of whether the current benchmark interest rate level supports or threatens the product margin for each product if unhedged.

53.   The net valuation of the entire portfolio is an indicator of the effect of changes in the benchmark interest rate on net interest income. After the first period the net portfolio value is 1.781. When unhedged this number represents the present value

of the additional positive impact on net interest income resulting from the decline in benchmark interest rates (from 5.0% to 4.0%).[5]

54. For this example this value is entirely offset by the swaps. Therefore the portfolio is entirely protected against changes of benchmark interest rates as addressed by the hedging instruments.

Conclusion

55. The net portfolio valuation approach as described in this paper corresponds with the risk management definition of the risk position in respect of transactions (net position rather than gross positions) and the valuation reflects the hedged risk (*benchmark* interest rate risk).

56. Other elements of net interest income (the product margin) are not directly addressed by interest rate risk management. The target is rather to insulate net interest income against the effect of changes in benchmark interest rates. The other elements like the credit spread or other spreads have to be seen in combination with the respective expense lines in the income statement. Different accounting requirements separately address those aspects, for example credit risk is covered through impairment considerations. The other spreads correspond with other expenses that are accounted for on an accrual basis. Including them into the valuation of the risk position would not only lead to a disconnect from the actual risk management process—it would also create a new accounting mismatch because the related expense lines are accounted for on an accrual basis.

57. The calculation of the risk position by type of transaction like in this example provides further information about the actual interest rate risk environment and its impact on the instruments in the portfolio or risk position. Therefore it is transparent and reflects risk management activities. At the same time it leads to volatility that reflects risks that have not been addressed by interest rate risk management such as the spread to cover credit and other expenses in the example.

---

[5] It reflects the fact that revenue arises on fixed rate instruments that are now at a higher level than part of the funding cost that is arising on variable rate funding instruments.

58. Finally, referring to risk management data addresses potential practicability concerns. However, increasing the level of alignment with risk management results in the management judgement necessarily applied for risk management purposes being reflected in the valuation that is used for accounting. This could create conflicts with the transparency objective. Ring-fencing or even excluding judgemental areas would however create accounting-only solutions that do not reflect actual business activities. To address this aspect a balanced solution has to be found. This is in part what the 11 steps are designed to consider.

Appendix: Illustration of selected alternative approaches

A1.   The appendix to this paper contrasts the descriptions of the net portfolio valuation approach with portfolio fair value hedge accounting for interest rate risk in accordance with IAS 39 and the non-application of any hedge accounting.

Portfolio fair value hedge accounting for interest rate risk in accordance with IAS 39 (simplified tracking of the hedge adjustment)

A2.   For this example it is assumed that hedge accounting is based on the *portfolio fair value hedge accounting model* for interest rate risk in accordance with IAS 39 *Financial Instruments: Recognition and Measurement*. Therefore the hedging instruments are designated to hedge a *proportion* of the loan book (gross designation). Prepayments lead to a release of the related hedge adjustment.

A3.   It is assumed that the simplifications provided by the standard regarding the tracking of the hedge adjustment are used. Therefore the balance at the end of each period becomes subject to a straight-line based amortisation.
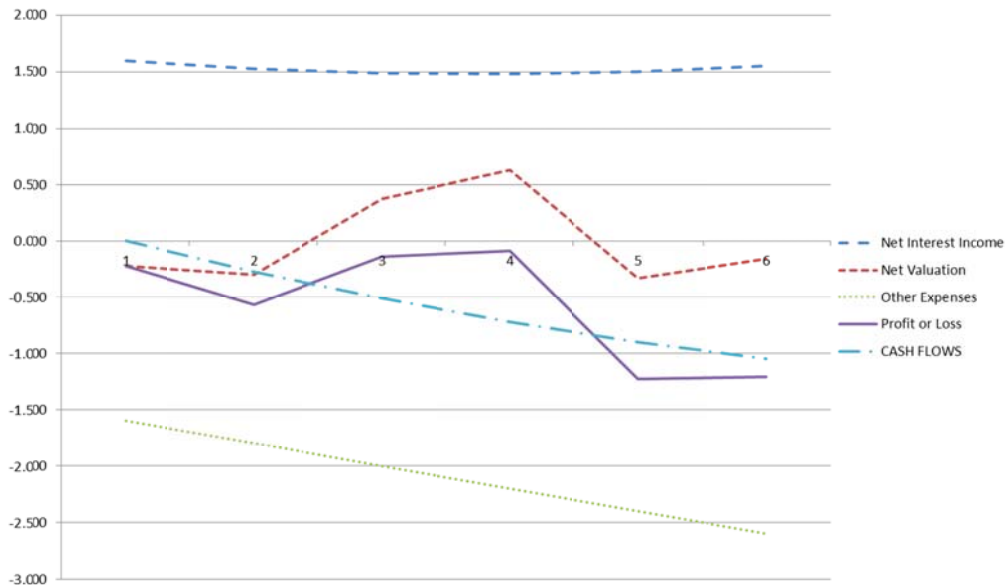

A4.   Owing to the amortisation the valuation correlates neither with the benchmark interest element nor with the development of the cash flows. This is because the amortisation already anticipates the "pull-to-par effect" even though that occurs

later on through the ongoing valuation of the hedged items anyway (double-counting). Hence, the natural development of the valuation is foiled.

No application of hedge accounting

A5.   For this example net interest income is calculated on the basis of amortised cost including the effect of the current period accruals on interest rate swaps. Therefore the valuation is limited to derivatives, ie the change in the "clean" present value of the interest rate swaps[6].
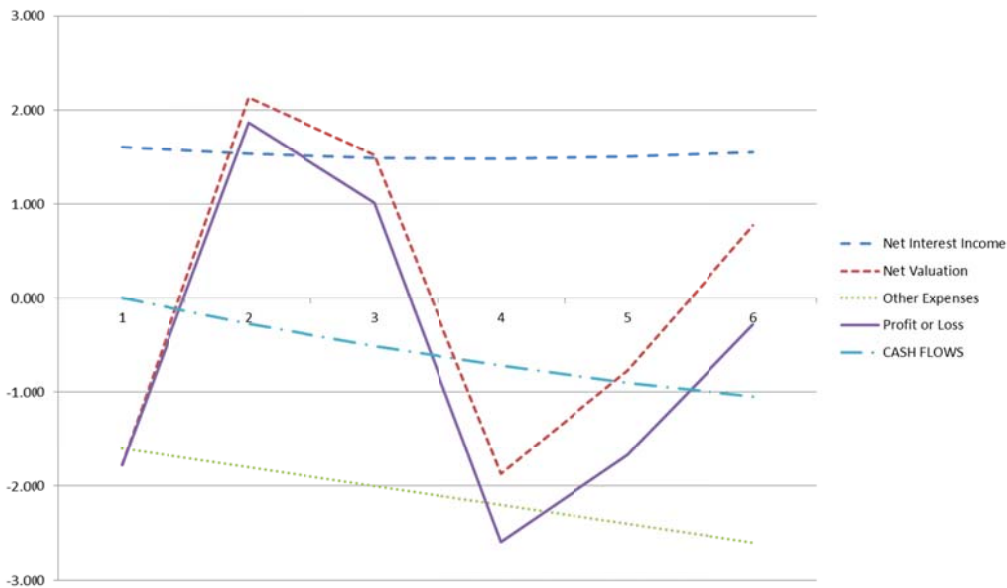
A6.   Therefore, there is no correlation to the accounting for any of the risks that the swap is addressing as hedging instrument. The valuation provides an indication for future positive or negative cash flows resulting from the swaps without any context of the purpose for entering into the derivatives (ie risk management) including offsetting effects that economically exist but are not captured by the accounting.

---

[6] The clean present value of an interest rate swap represents the present value of all future cash flows less the interest accruals from the last payment date up the valuation date.