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Project	Accounting for Macro Hedging		
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1. Assumptions for overview

The overview focuses on describing the accounting model for macro risk management for banks with respect to interest rate risk, and so does not include all the considerations and alternatives discussed by the Board. Addendums to this document will be required to describe the approach for other risks.

Please note that this document is incomplete and is provided simply to give background on the overall approach. In particular, this document does not describe the scope of application of the revaluation approach. A section on the potential scope will be added in due course based on Board discussions. This is also an extract from a larger document some cross referenced items are square bracketed and/or not included.

1.1. What do we mean by managing on a dynamic basis?

- Risk management is undertaken on a dynamic basis for open portfolios, where new exposures are continuously added and existing exposures expire.
- The risk management objective for the open portfolio is to transform the (net) yield from the portfolio such that it has the desired sensitivity to changes in market rates. This is usually achieved by balancing the timing and basis of future market price fixings of exposures within the portfolio, combined with the use of derivatives to mitigate any residual market rate mismatches.
- Management is of risk from external exposures only.
- Open risk positions are dynamically managed.

Another common factor with respect to dynamic risk management of open portfolios is as follows:

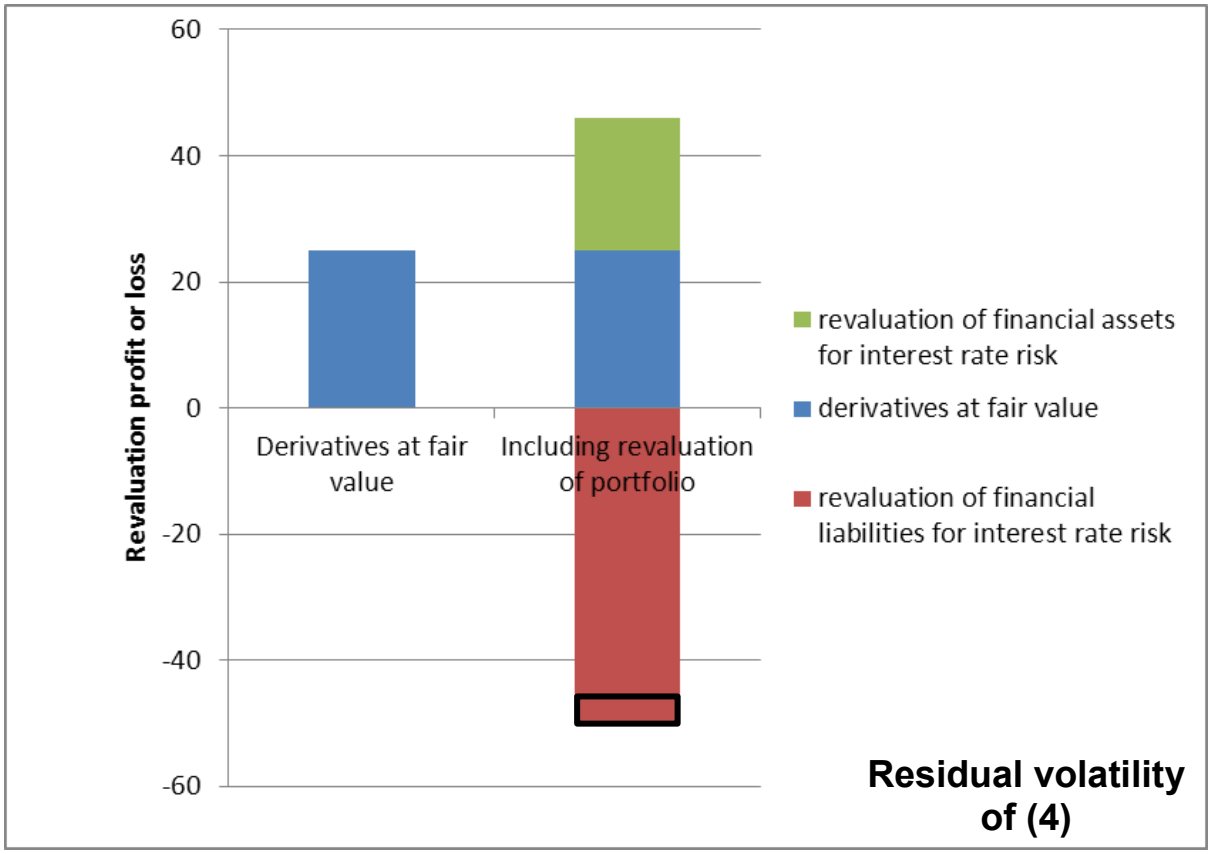
- Calculation of risk managed exposures may include an element of estimation in terms of volume and/or timing.

2. Revaluation approach overview for interest rate risk

In summary: Exposures within open portfolios for which risk management is undertaken will be revalued with respect to the managed risk. No change to accounting for risk management instruments. Offset in profit or loss arises to the extent of offsetting risk positions.[1]

[1] Assumptions about offset in P&L and the accounting for risk management instruments were discussed at the July 2013 IASB. See agenda paper 4A.

The revaluation approach itself is quite simple. There will not be any change to the accounting for the risk management derivatives which will be at fair value through profit or loss. However, application of the revaluation approach requires the revaluation of risk managed portfolios with respect to the managed risk. The resultant revaluation adjustment will then be recognised in the statement of financial position. Offset in profit or loss should be achieved from the revaluation of the exposures within the risk managed portfolio for the managed risk and fair value changes in risk management derivatives to the extent that offset exists. Any remaining open risk positions will have a net impact on profit or loss. For clarity, the portfolio approach is an overlay to IFRS 9: *Financial Instruments*, such that the classification and measurement requirements are applied first. Therefore the cumulative impact is that the business model is still reflected in the financial statements, as is the fact that the interest rate element is being dynamically managed. See below for a simple example:



DR/(CR)				Balance sheet presentation alternatives[2]		
Assets	Amortised cost	Revaluation adjustment	Fair value	Line by line	Gross aggregate	Net adjust
Retail Loans	1,000	11		1,011	1,000	1,000
Commercial Loans	750	30		780	750	750
Debt securities	500	(20)		480	500	500
Macro hedging revaluation					21	
Derivatives			25	25	25	25
Liabilities						
Deposits	(400)	5		(395)	(400)	(400)
Issued debt securities	(1,500)	(40)		(1,540)	(1,500)	(1,500)
Firm commitments		(15)		(15)		
Macro hedging revaluation					(50)	(29)
		(29)	25			
P&L from risk management activities		4				

Such an approach facilitates an accounting result that is consistent with risk management activities in that it does not require a specific linkage between an exposure(s) and a particular derivative(s), as risk managers typically consider the remaining net risk positions without distinguishing between risks from derivatives and 'managed'[3] exposures.

Although offset will result from the revaluation of the portfolio, this is calculated by revaluing the individual exposures within the portfolio, for the managed risk. So the managed exposures making up the revalued portfolio must be discernible.

Taking the above example of retail loans, which for the purposes of this explanation consists of a portfolio of 5 year loans with an annual managed fixed coupon of 4.5%, total amortised cost[4] equal to par of 1,000. If the market rate of the managed interest rate had fallen to

[2] Balance sheet presentation alternatives are discussed in section 5.1.

[3] Managed exposures mean instruments that are included within dynamic risk management undertaken by an entity for the particular risk.

[4] Assuming that no premium, discount or other non coupon related elements of EIM (effective interest method) exist

4.25%[5], then the revaluation adjustment represents the discounted value of the original managed coupons using the prevailing market rate. The revaluation adjustment would be calculated applying the usual discounted cash flows methodology as follows:

$45*(1.0425)^{\wedge-1} + 45*(1.0425)^{\wedge-2} + 45*(1.0425)^{\wedge-3} + 45*(1.0425)^{\wedge-4} + 1{,}045*(1.0425)^{\wedge-5} – 1{,}000 = 11$

This example is highly simplified, but a similar calculation is required for all individual exposures included within the revalued portfolio. The resultant profit or loss volatility will represent any remaining open interest rate risk positions after considering the risk management derivatives. The managed exposures are not measured at fair value. They are revalued only with respect to the managed risk, consistent with risk management.

It is anticipated that for many banks the application of the revaluation approach will facilitate a good representation of the risk management activities in the financial statements, and will be less operationally onerous in terms of tracking. In order for this to be achieved it is necessary that the approach permits the inclusion of particular managed exposures on a behaviourised/modelled basis, for example considering the expected cashflows that will arise on portfolios of prepayable mortgage or core demand deposits rather than only reflecting their strict contractual maturities. This should better reflect the risk management view of interest rate risk within items making up the revalued portfolio.

In addition the approach also permits the inclusion of some managed exposures within the revalued portfolio that would not be eligible as hedged items under hedge accounting in IFRS 9 (see section 4 for more details). This may include equity model book and pipeline transactions. However, there may be some dynamic risk management undertaken for which the resultant accounting cannot fully represent the risk management approach, for example bottom layers (see section 7.2 for more details).

Two income presentation alternatives are included within this Discussion Paper. Both include a proposal that offset from the revaluation of risk positions from managed exposures within the revalued portfolio will be presented in a single net line item in profit or loss, along with fair value changes in risk management derivatives. In addition, a change to net interest income is also required to indicate how the risk management activity has transformed it. These proposals are designed to reflect the net risk management approach, but also avoid the need to artificially allocate fair value movements and net interest from derivatives to

[5] Assumes a flat yield curve

particular gross exposures impacting different profit or loss line items. See section 5.1 for more detailed discussion on the proposed alternatives for income statement presentation.

Conversely, as the revaluation adjustment for the revalued portfolio is the sum of the revaluation of each exposure within the portfolio, it is possible to post the revaluation adjustments to individual managed exposures and hold them in the balance sheet at their revalued amount, however some users of financial statement may conclude that recognising the adjustments in aggregate may provide more useful information on the risk management activity. See section 5.1 for more detailed discussion on the proposed alternatives for presentation in the balance sheet.

3. Scope

The possible scope of the model was discussed by the Board in May 2013 (agenda paper 4B). Please refer to Board paper supplied.

3.1. Optional or Mandatory?

This topic was discussed by the Board in May 2013 (agenda paper 4B). Please refer to Board paper supplied.

3.2. Other eligibility criteria or restrictions

The eligibility criteria for the application of the revaluation approach focuses on the risk management approach. There is no requirement for additional effectiveness tests on initial designation or subsequently, over and above existing risk management processes. Any remaining open risk positions in the portfolio to which the portfolio revaluation approach is applied will be automatically captured in profit or loss.

4. The revalued portfolio

In summary: External recognised assets and liabilities and unrecognised firm commitments that are risk managed as part of an open portfolio would be eligible for inclusion within the revalued portfolio for accounting purposes.

Additionally, in order for the accounting to provide a more holistic representation of risk

management, other exposures deemed to attract interest rate risk for risk management purposes may also be eligible for inclusion. This could include exposures from pipeline transactions and an equity model book.

If portfolios are risk managed using behaviourised expectations where the portfolio is considered the unit of account, the revaluation approach would also be applied considering portfolio behaviourisation.

The revalued portfolio should include all exposures managed together for risk management purposes, including any net positions[6].

The objective of the portfolio revaluation approach is to specifically address open portfolios because of the special circumstances they present, especially operational aspects. The nature of the risk management activities that indicate when the approach could/should be applied is relevant in determining the scope of application. However, whether an item is eligible or not for inclusion within a revalued portfolio also depends on the *type* of exposure. Any exposure managed within an open portfolio that would be eligible for a fair value hedge would also be eligible for inclusion within a revalued portfolio for accounting purposes. Specifically this includes external recognised assets or liabilities and unrecognised firm commitments.

In addition, the following items may also be considered eligible for inclusion in the revalued portfolio for accounting purposes if they are included in the risk management of an open portfolio:

- Equity model book
- Pipeline transactions

Equity model book (EMB)

Some banks disaggregate the return on equity into a **base return** similar to interest (ie compensation to equity holders for providing funding) and a **residual return** for net income over and above the base return. Where return on equity is managed in this way, it is common for interest rate management to facilitate the attainment of the target base return. This is achieved by modelling the target base return as a replication portfolio that attracts the desired interest rate profile for the return on equity. For example the replication portfolio could be

[6] Subsequent discussion on the issue of what the portfolio approach should be applied to occurred at the May 2013 Board, see agenda paper 4B supplied.

represented by a series of three year fixed rate deposits. This replication portfolio representing EMB is included within the risk management portfolio in the same way as external exposures.

If banks include an EMB replication portfolio in their risk management activities, arguably if there is a desire for the accounting to closely follow risk management, it should be included in the revalued portfolio as an interest rate risk exposure. However, this approach assumes that users of financial statements find information on a bank's ability to achieve their targeted base return on equity to be useful. Conversely, some users of financial statements may find it strange that an accounting solution for risk management of open portfolios would include a revaluation of the targeted base return on equity with respect to interest rate risk.

The usefulness of information on EMB is further discussed in section 5.3 on Disclosures.

Pipeline transactions

'Pipeline transactions' are a colloquial expression to describe forecast volumes of draw downs on fixed rate products at advertised rates. Although they do not yet contain contractual commitment by any party, 'economic compulsion exists', such that the bank considers them as if they were binding on the basis of a general public offer to all customers (current and future) via an advertisement (eg 5 year fixed rate mortgage or deposit product at 4.5%). Economically the bank views the interest rate risk profile from pipeline transactions to be the same as writing a short term free put option to all customers. For risk management purposes, banks would estimate the likely volume of customer balances to be drawn down under the free option on a behaviourised basis and manage the resultant fixed rate interest rate risk attached to it.

Although it is relatively common for banks to manage interest rate risk from pipeline transactions as part of their portfolio risk management, there are some conceptual difficulties with permitting the revaluation of pipeline transactions for interest rate risk. It would result in the recognition of an asset or liability in the balance sheet before the entity becomes a party to the transaction, and it would also presume the existence of fair value risk for exposures where no fair value risk exists[7].

[7] It is noted that this is different to a fair value hedge of a firm commitment which is based on contractual rights and it is different to a cash flow hedge of a highly probable future cash flow as in that case it is the exposure to cash flow variability rather than changes in fair value that is hedged.

However, it should be noted that where portfolio risk management includes EMB and/or pipeline transactions, then any attempt to exclude either from the revalued portfolio for accounting purposes, will not provide an accounting result that is largely aligned with risk management.

Portfolio as the unit of account

As well as the eligibility of the *type* of exposure for inclusion in the revalued portfolio, consideration is also required of *how* to revalue exposures within the revalued portfolio.

Financial assets and liabilities at amortised cost are accounted for using the effective interest method (EIM). Application of the EIM requires estimates of expected cash flows to be made considering the contractual terms of the assets or liabilities. Consistent with the EIM requirements, in most circumstances, banks manage interest rate risk from a portfolio of exposures on an expected cash flow or behaviourised basis.

For example, where banks have an expectation as to the profile and volume of prepayment after consideration of interest rates and other economic or environmental factors within a prepayable fixed rate mortgage portfolio, they will often manage the resultant interest rate risk after applying the expected prepayment profile and not based on the maximum (or minimum) contractual lives of the mortgages. This behaviourisation is based on the expectations of the portfolio as a whole, and not each individual exposure. The revaluation approach should allow such a portfolio to be considered on a behaviourised basis, thereby permitting the behaviourised portfolio to be considered the unit of account. (See section 7)

Additionally banks do not usually manage interest rate risk from a portfolio of demand deposits on a contractual basis. Instead, banks often identify a core element of the demand deposit portfolio, and model a longer term interest rate profile, considering behavioural and other factors (see section 7.3) for inclusion within risk management.

The expectation is that where risk management of portfolios is performed after applying portfolio behaviourised assumptions, the accounting would mirror this approach, considering the portfolio as the unit of account, similar to the application of the EIM[8].

[8] It should be noted that whilst there are similarities with the approach to behaviourised exposures within a portfolio under EIM and the revaluation approach, there may be some differences. The revaluation approach could allow behaviourised considerations that exceed contractual terms, for example an assumption of maturities longer than the maximum contractual maturity of deposits or even in the absence of any contract in in the case of the equity model book.

4.1. Net positions and variable rate items

The eligibility of exposures for inclusion within a revalued portfolio should be based on risk management. If exposures are managed together (ie in contemplation of each other) then it makes sense that they should also be revalued together as part of the same portfolio for accounting purposes. Relevant risk management activity would typically be on a net basis but might also be on a gross basis. 'Net basis' means that gross exposures that include offsetting risks between them, eg loans and deposits, are considered for risk management purposes together. In order to present holistic information on the risk management activities, those gross exposures should be included within the same revalued portfolio, to reflect the offsetting risks.

For example, a bank has a portfolio of 5 year fixed rate assets of CU100m, which are funded by CU40m of 5 year fixed rate liabilities and CU60m of 3m LIBOR liabilities. It wishes to reduce the net interest margin variability from the portfolio that results from CU60m of fixed rate assets being funded by CU60m of variable liabilities. On application of the revaluation approach to this portfolio, the bank would include the gross CU100m of assets and CU100m of liabilities in the portfolio, as all these instruments are considered part of the net risk position.

However, where risks are managed on a gross basis, exposures included within the revalued portfolio should reflect that gross position. For example if the interest rate risk from an open portfolio of debt securities was managed without regard to funding instruments, then the funding instruments should **not** be included within the revalued portfolio.

Further consideration of this issue is required following the May 2013 discussion on scope of the portfolio revaluation approach, see agenda paper 4B.

5. Presentation and disclosures

5.1. Presentation

In summary:

The usual recognition of income and expense applies for those elements of the exposures that are not part of the managed risk.

Two alternatives are suggested for the income statement presentation of the portfolio revaluation approach for the managed risk element. The aim of both alternatives is that the

interest lines in the income statement reflect the risk management objective, eg transformation of net interest margin with respect to the managed risk. In addition a single profit or loss line item would present the net changes in the valuation of the revalued portfolio for the managed risk and fair value changes in derivatives used for the purposes of risk management. However differences arise in the two alternatives in the split of income and expense between net interest income and the revaluation effect.

Recognised exposures included within the revalued portfolio will initially be recognised in the balance sheet at the default carrying amount under IFRS 9, consistent with the fact that the accounting for macro hedging solution is an overlay to IFRS 9. Three alternatives are suggested for the recognition of the revaluation adjustments in the balance sheet. The main difference in the proposed alternatives is whether a net or gross presentation of the revaluation adjustments in the balance sheet provides the most useful information about the risk management activities. Risk management instruments will continue to be recognised in the balance sheet at fair value.

Balance sheet treatment

Three alternatives have been proposed for the recognition of revaluation adjustments from exposures included within the revalued portfolio. The alternatives are as follows:

- **Line by line balance sheet gross up** – exposures included within revalued portfolio recognised at default carrying amount *plus* associated revaluation adjustments
- **Separate lines for aggregate adjustments to assets and liabilities** – Single balance sheet line item for revaluation adjustment for revalued assets and similar presentation for revalued liabilities
- **Single net balance sheet line item** – net revaluation adjustments for all revalued exposures recorded in single balance sheet line item

The alternatives are further explained by the below diagram.

DR/(CR)				Balance sheet presentation alternatives		
Assets	Amortised cost	Revaluation adjustment	Fair value	Line by line	Gross aggregate	Net adjust
Retail Loans	1,000	11		1,011	1,000	1,000
Commercial Loans	750	30		780	750	750
Debt securities	500	(20)		480	500	500
Macro hedging revaluation					21	
Derivatives			25	25	25	25
Liabilities						
Deposits	(400)	5		(395)	(400)	(400)
Issued debt securities	(1,500)	(40)		(1,540)	(1,500)	(1,500)
Firm commitments		(15)		(15)		
Macro hedging revaluation					(50)	(29)
		(29)	25			
P&L from risk management activities		(4)				

The question is which presentation provides the most useful information on risk management activity of a net portfolio. For example, a line by line presentation of the revaluation adjustment in the balance sheet reflects this calculation and provides transparent information on the value of exposures that are managed. Conversely, it could be argued that a gross presentation in the balance sheet is not consistent with the risk management focus on the net portfolio. In addition, the volatility in the line by line presentation due to changes in interest rates may not provide transparent information on a bank's ability to generate yield from its underlying assets and liabilities. There are also operational considerations.

The example above assumes that all revalued exposures will be recognised financial assets and liabilities, however, as previously noted in section 4, unrecognised firm commitments are also eligible for inclusion within the revalued portfolio. Furthermore, the balance sheet recognition for revaluation of other exposures such as equity model book and pipeline transactions must also be considered.

Although firm commitments may not yet be recognised, due to their contractual nature they would meet the definition of an asset or liability, and hence there is no conceptual difficulty

recognising the associated revaluation adjustment in the balance sheet. The revaluation of firm commitments will be posted to a new balance sheet line item.

However, it is more difficult to argue that a revaluation adjustment for either pipeline transactions or the equity model book should be an asset or a liability. Careful consideration will be given to the appropriateness of using OCI for this purpose.

The accounting for risk management instruments would be unchanged. They would continue to be held in the balance sheet at fair value.

Income statement treatment for the effect of risks other than the risk considered for revaluation

The usual recognition of income and expense applies for the effect of those risks of the exposures that are not part of the risk for which the exposures are revalued. Income and expense from these risks will continue to be based on the relevant standards, and so will be reflected in the normal income statement line items appropriate for the exposure, without reference to the revalued portfolio. For example, if a loan was risk managed with respect to changes in the benchmark interest rate as part of an open portfolio, any residual components of the loan such as the credit margin will accrue to interest revenue as usual under IFRS 9 and IAS 18: *Revenue*, outside of the revaluation approach accounting for macro hedging activity.

Income statement treatment for risk positions and risk management instruments

The objective of risk managers within a bank is understood to be to transform the interest rate exposure profile to achieve a desired effect on the net interest margin. Within an open portfolio, this risk management objective is usually achieved by focusing on valuation risk from fixed price exposures with respect to benchmark interest rate risk.

Therefore appropriate representation of net interest margin in line with that risk management objective in the income statement is paramount. In addition, information should also be provided on the effect of revaluation by interest rate risk, reflecting the entity's exposure and how the entity managed that exposure. This is also a means to capture the effect of risk management activity on the future net interest margin.

Two income presentation alternatives have been devised in order to reflect that risk management focus, both include presentation of the transformation of net interest income after risk management, and a net revaluation effect from exposures and risk management instruments, reflecting open positions. However differences do exist in the two approaches on

the allocation of income and expense between net interest income and the revaluation effect. The two approaches are:

- **Actual net interest approach** – actual interest income and expense is reported, with an additional interest line to present net interest from risk management instruments. Revaluation P&L from risk management activities provides information on mismatches in anticipated future net interest income
- **Stable net interest income approach** – net interest income is reported on the assumption that a bank's risk management objective is to stabilise net interest. Revaluation P&L from risk management activities provides information on how good a bank was at achieving that objective for both realised and future net interest margin

There are some clear benefits to the actual net interest approach; it provides a before and after risk management view of net interest income, it provides information on the revaluation effect from positions relating to future net interest income. In addition as there is no change to the accounting for interest from exposures it will be easier to implement.

As the stable net interest approach presents an 'aspirational' net interest income profile, that may not meet with the aspirations of the reporting bank, there is some unease as to the usefulness of the information it provides on actual risk management activity. In addition, the stable net interest approach would be a significant change to existing processes with minimal perceived benefit.

See section 1 in the Appendices for a detailed example of both approaches.

5.2. Presentation for internal derivatives

In summary: In order to separately reflect risk management and trading activity in the financial statements, it is necessary to gross up the effect of offsetting internal derivatives in the income statement. Profit or loss from internal derivatives is fully eliminated in profit or loss (ie there is no net effect remaining).[9]

Presentation is further complicated if internal derivatives are identified as the risk management instruments. It is common in banks for ALM (Asset Liability Management ie risk managers) to manage interest rate risk positions from the managed portfolio by transferring risk to the trading desk using internal derivatives. The traders would then treat

[9] This topic was further discussed at the July 2013 IASB, please refer to agenda paper 4A provided.

the resultant risk position from the internal derivatives in the same way as they would risk positions from external exposures. Consequently in many instances the traders would not transact external derivatives to fully eliminate the risk transferred from the managed exposures via internal derivatives.

In order to separately reflect the risk management and trading activity in the financial statements, it will be necessary to gross up the offsetting internal derivatives in the financial statements. The profit or loss from all internal derivatives will still be eliminated so there would be no net impact on profit or loss (ie risk management and trading desk have fully offsetting profit or loss from internal derivatives). However, the impact of internal dervatives will be shown gross in the income statement. See table below for an illustration applying the actual net interest presentation:

	Risk Management Book	Trading Book
Net interest income	Accrual from external customer exposures included in the revalued portfolio (no change to existing treatment) plus Net accrual from risk management instruments, including internal derivatives	Nil
Revaluation P&L from dynamic risk management derivatives	Changes to clean revaluation of external exposures included in the revalued portfolio and clean fair value changes of all risk management instruments[10], may include both internal and external derivatives.	Nil
Trading profit or loss	Nil	Changes in fair value of all trading instruments[11], may include external and internal derivatives.
Net profit or loss	Net profit or loss from risk management and trading activity. All profit or loss from internal derivatives in risk management books will be fully offset by profit or loss from internal derivatives in the trading book. Hence profit or loss from internal derivatives will be zero in the consolidated profit or loss at all times.	

[10] Risk management instruments will ordinarily be identified through the formal book structure of the bank, as described in footnote **Error! Bookmark not defined.**.

[11] Trading instruments will ordinarily be identified through the formal book structure of the bank, as described in footnote **Error! Bookmark not defined.**.

Balance sheet	Only external derivatives will be recognised in the balance sheet.	

Internal derivatives between risk management and trading books represent the transfer of risk from risk management to trading. One of a bank's key controls will be to ensure that all internal derivatives between risk management and trading areas offset as they represent the same transaction from the perspective of both internal parties.

Although the overall profit or loss effect from internal derivatives will be nil in the consolidated financial statements, the existence of internal derivatives for risk management purposes facilitates a change in recognition of profit or loss from exposures included within the revalued portfolio. This is regardless of whether the risk transferred to the trading book via internal derivatives was passed on from the trading book to external counterparties or not. There is no requirement to prove internal derivatives are externalised in order to apply the revaluation approach. Actions undertaken by ALM to mitigate identified risks and transfer them to the trading book via internal derivatives would be sufficient to demonstrate how risk management occurs.

5.3. Disclosures

Disclosures were discussed at the July 2013 meeting agenda paper 4B. Please refer to Board paper supplied.

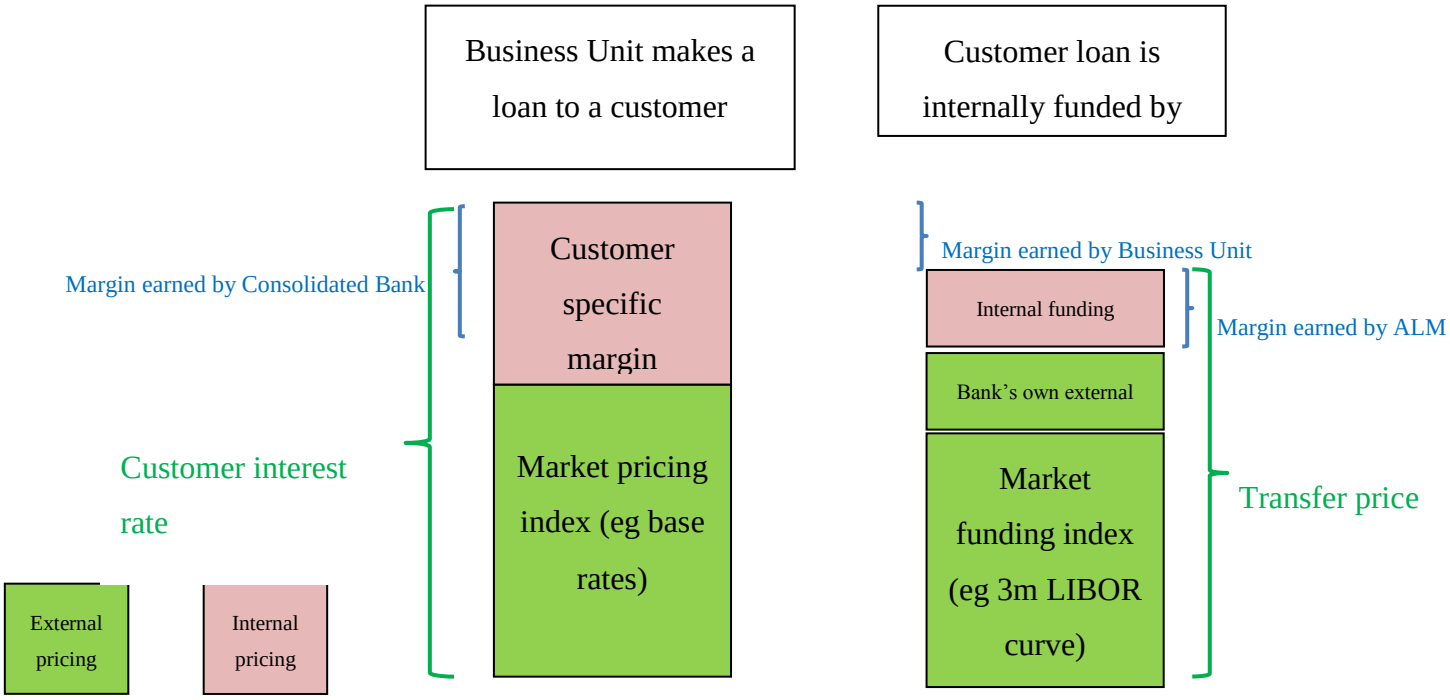
6. The risk position

In summary: As far as possible the revaluation of risk positions should be determined consistently with how risk positions are managed. Where the risk management objective is to transform net interest margin, it is likely that the funding rate is considered to be the managed risk.

Considerable operational relief could be achieved if existing transfer pricing arrangements were considered to adequately represent the actual risk position for the purposes of the calculation of the revaluation adjustment.

The revaluation approach requires revaluing risk positions as discussed in section 2 above. It is not a full fair value measurement. This is consistent with risk management which is typically undertaken on a 'by risk' basis. The identification of the risk position for accounting purposes should be driven by the risk management objective.

The diagram below illustrates the indices a bank typically considers when pricing customer loans and associated funding for the Business Unit, and how and where a bank earns net interest margin:



6.1. Funding rate

Where the risk management objective is to transform the **net** margin[12] earned from the managed portfolio, the risk position should be based on the benchmark[13] or market interest rate used for funding or reinvestment. It is likely that the funding rate will be embedded in the transfer pricing arrangements for the internal funding, facilitating the transfer of interest rate risk from the business unit originating the external customer exposure to the ALM or risk management function.[14]

[12] A risk management objective to transform net interest margin is to protect the net interest margin against changes in market interest rates to the desired extent. This is achieved where possible by balancing interest bearing assets and liabilities such that the timing and basis of future interest rate fixings match, combined with the use of derivatives to mitigate any residual unwanted interest rate mismatches.

[13] Benchmark rate in this context means any appropriate readily available market interest rate.

[14] As can be seen in the above diagram where a key driver of the transfer pricing is the market funding index

For example, as is shown in the above diagram, the pricing of particular fixed rate mortgage products may be constructed from base or prime rates. However the pricing of the transfer of the resultant fixed interest rate position to ALM may be based on LIBOR or other interbank rates, to match the usual pricing mechanism of the bank's funding transactions.

Such a treatment indicates a business model where the risk of changes in the differential between pricing and the cost of funding for future business remains with the business unit, and is not ordinarily included within dynamic risk management. Conversely, any residual exposure to the funding rate from existing lending is managed by ALM. This is consistent with a business model to collect contractual cash flows from the customers, while dynamically the inherent interest rate risk.

For example, a lending unit may price its fixed rate loans using the base rate, but is provided fixed rate funding from ALM based on a 3m LIBOR curve[15]. The lending unit's margin is insensitive to changes in the 3m LIBOR curve for the existing loans, as the risk has been transferred to ALM via the internal funding transaction. Typically ALM will provide fixed price funding (based on 3m LIBOR curve) via internal funding transactions to establish this risk transfer. The lending unit knows that ALM will provide funding based on the prevailing 3m LIBOR curve for future deals. However, if base rates and 3m LIBOR diverged such that base rates fell by 0.2% more than 3m LIBOR, the customer margin retained by the lending unit on future lending would be diminished by the 0.2% LIBOR versus base rate divergence.

The use of the internal funding transactions (also referred to as transfer pricing deals) to represent[16] the interest rate risk within the external exposures would provide considerable operational relief to the application of the revaluation approach[17]. However consideration must be given as to whether the internal funding transaction is a good enough representation of the actual external risk position for accounting purposes.

If the risk position is identified with respect to the appropriate funding rate there is no expectation that the risk position would always meet the requirements for designation as a risk component for hedge accounting purposes. This is because by definition, the funding rate

[15] 3m LIBOR curve in this context means the yield curve constructed from LIBOR and swap market data with 3m LIBOR as a reference rate.

[16] There is no suggestion that the internal transfer deals become the managed exposures, just that they represent the appropriate risk in the external exposures for inclusion within the accounting model

[17] The alternative is that another mechanism is put in place to identify the interest rate risk in the external exposures, so that it can be revalued with respect to interest rate risk. This is likely to require direct access to all Business Unit systems, many of which are unlikely to have revaluation capabilities.

may not have been considered within the particular market structure that dictates the lending rate. However, some criteria are required to ensure that the risk position is sufficiently relevant to the actual external exposure in order for the revaluation adjustment to provide relevant information in the financial statements.

For example, would it be acceptable to identify the risk position for a JPY loan, which happens to be internally funded in EUR, as Euribor? This would result in a revaluation adjustment for the JPY loan being calculated as if it were a EUR denominated loan.

6.2. Pricing rate

There may be instances where the risk management objective is to transform the profile of existing of fixed price exposures which expose the entity to transactions that become 'off market'. In this circumstance, it would be appropriate for the risk position to be the benchmark rate that a potential borrower or investor would consider when assessing pricing of fixed rate positions. (Although prevailing practice for transfer pricing is usually funding side driven as discussed in the previous section, if an entity's transfer pricing was driven by lending or investing prices the approach would also work.)

Where the risk position is based on the pricing rate, the pricing rate selected must be an appropriate one. IFRS 9 requires that any hedged risk component is *separately identifiable and reliably measurable.* Whilst this requirement may not be wholly appropriate for a portfolio revaluation approach for pricing risk, some eligibility requirements for the identification of managed risks will be required.

It should be noted that for some risk management strategies the funding and pricing risk (or their equivalent) will be one and the same, for example some power entities managing the net margin from gas purchases and sales where both are based on the same market pricing or banks' risk management of fixed rate money market transactions.

6.3. How to revalue individual exposures

In summary: The portfolio revaluation adjustment is the sum of the revaluations of each of the exposures within the revalued portfolio. The revaluation with respect to the managed risk of each exposure within the portfolio is calculated using normal present value techniques. Both the cash flows to be discounted and the discount rates are identified with reference to the managed risk.

For each exposure within the portfolio managed for interest rate risk subject to the portfolio revaluation approach, the revaluation shall be calculated as follows:

The present value at a given point in time of those parts of the contractual cash flows that represents the interest rate risk that the entity manages (numerator) discounted at the current rate that corresponds to that risk (denominator)[18].

The numerator is a set of cash flows whose determination depends on whether it relates to fixed rate or variable rate exposures:

- For fixed rate exposures it is based on the interest rate level (that corresponds to the risk that the entity manages) at the time when the financial instrument first gave rise to the interest rate risk exposure. This numerator remains fixed at its initial level.
- For variable exposures it is based on the level of the relevant current interest rate (that corresponds to the risk that the entity manages) at the time of calculating the present value. This numerator is updated by projecting future variable contractual interest cash flows using the forward curve and the rate that has been fixed for the current interest period (if applicable).

The denominator is always updated (ie for both fixed and variable rate exposures), ie it is the current rate at each time of calculating the present value. The numerator is only updated for changes in interest rates for variable exposures.

Changes in the interest rate that do not form part of the risk that the entity manages under the same approach, such as customer counterparty risk, instrument liquidity, pricing versus funding margin[19] will not form part of the revaluation adjustment. Such risks are typically managed separately by the business unit.

For example: A customer loan is priced from one benchmark index (the pricing index) plus a counterparty credit spread. The funding for that type of lending is usually on another benchmark index (the funding index).

[18] Similar to the calculation of a fair value hedge adjustment under IFRS 9.

[19] If using the funding rate as the managed risk.

	Deal date and date included in revalued portfolio	1st revaluation date
Pricing index	4.1%	4.5%
Counterparty credit spread	3%	3.5%
Funding index	4.5%	5%

Managed risk identified as	Funding rate	Pricing rate
Contractual cash flows	7.1%*	7.1%*
Cash flows used for revaluation (numerator)	4.5%	4.1%
Discount rate on 1st revaluation (denominator)	5%	4.5%

*=4.1%+3%

Changes in the counterparty credit risk and the differential between the pricing and funding index will not be reflected in the revaluation adjustment, but will ultimately impact profit or loss through the business unit impairment calculation and the earned margin on reinvestment of funds respectively.

6.4. Sub-benchmark rate managed risk components

In some instances financial instruments can attract an interest rate that is below the benchmark rate. For example if the market considers a bank to be **more** credit worthy than its peers, it may be able to attract funding paying a rate equal to a benchmark rate ***less*** a margin. In a LIBOR environment this is known as ‘sub-LIBOR’. Risk managers will usually manage the interest rate risk from sub-LIBOR instruments in the same way as those paying LIBOR or above.

Where recognised sub-benchmark instruments attract a floating rate, they usually include an embedded floor with a strike rate equal to the level of the margin to be deducted from the

benchmark rate. The reason for the existence of the floor is to avoid the coupon on the sub benchmark instrument being negative (ie issuer will not **charge** interest on sub benchmark deposits). Typically, risk managers do not include the interest rate risk from the embedded floor within their managed risk portfolio, as the embedded floor is not usually replicated in the risk transfer from the business unit issuing the sub-benchmark instrument. However, the embedded floor has a real economic impact on the bank's interest rate risk profile and so arguably when accounting for the recognised floating rate sub-benchmark instruments as part of the revalued portfolio, the value of the embedded floor should be included. An alternative view is that it is not appropriate to include the impact of the embedded floor within the accounting for dynamic risk management, as the risk from the floor remains with the business unit and does not actually form part of the dynamic risk management. This is similar to the management of the spread between the funding and pricing benchmark rate discussed above in section 6.1 and 6.3.

6.5. Risk management of foreign currency instruments

It is not uncommon for banks to have more than one macro portfolio, in particular banks would often dynamically manage the interest rate from a portfolio of non-functional currency exposures separately. For example, a bank with GBP functional currency may also raise funds and lend in other currencies such as USD, EUR or JPY. The bank may manage the interest rate risk from each foreign currency portfolio separately. In addition, the bank would also manage the foreign currency risk from the portfolio, this may be managed in conjunction with the interest rate, or as a distinct process.

Given the linkage between interest rate and foreign currency dynamic risk management, there is a need for the portfolio revaluation approach to act as a solution for both interest and foreign currency risk. This discussion paper so far focuses on the application of the portfolio revaluation approach, but further analysis is required on foreign currency risk.

7. Portfolio as the unit of account

7.1. Prepayment risk

In summary: It is common for risk management to be applied to the resultant interest rate risk from prepayable open portfolios **after** applying portfolio behavioural expectations, and not based solely on the contractual lives of the individual exposures within the portfolio. To reflect risk management, accounting for the risk exposure arising from the open prepayable portfolio would need to be performed based on the expected behaviour of the portfolio, treating the portfolio as the unit of account.

Changes in the economic value of the inherent prepayment option should impact the revaluation adjustment, this could be achieved in more than one way depending on how the prepayment risk is managed, e.g. modifications in behaviourised cash flows from changes in prepayment assumptions if managed based on expected cash flows or revaluation of the inherent prepayment option if managed using options.

Some financial instruments have variable maturities, for example where a prepayment option exists within the instrument. A common example of this is a prepayable fixed rate mortgage.

A prepayable fixed rate mortgage will have a contractual life but could be prepaid at any time by the borrower. If prepaid, it is not uncommon for a penalty to become payable by the borrower, however, the penalty[20] does not usually fully compensate the bank for the lost intrinsic value of the prepayment option. There may be a number of factors driving the decision for a borrower to prepay its mortgage, one of these will be interest rates, but a number of other factors may also influence that decision.

Some banks may choose to manage some of the interest rate risk from prepayable exposures by using interest rate options (eg swaptions), but it would be unusual for a bank to manage a prepayable portfolio exclusively on a contractual basis using options. Specifically, some

[20]Mortgage prepayment penalties are often calculated by applying predetermined percentages to prepaid amounts. Although this is unlikely to equate to the lost intrinsic value of the prepaid loan, the purpose is to compensate the bank to some extent. Although the penalty payable itself is not sensitive to changes in interest rates, the likelihood that borrowers will prepay is. It is relatively common practice for prepayment penalties to remain with the lending business unit (recognised through EIM), and not be included within behaviourised cashflows for risk management purposes. [How prepayments are treated within risk management processes is discussed further in section **Error! Reference source not found.** of the Appendices.]

banks may use a combination of swaptions and swaps when managing prepayable portfolios. Some model the prepayment risk from factors that are not interest rate related and manage the resultant risks using derivatives without optionality, and then use swaptions for the remaining profile. Alternatively, banks may use swaptions to hedge the portion of the prepayable exposures they believe have the highest uncertainty around whether prepayments will occur.

Alternatively, where banks have an expectation as to the profile and volume of prepayment after consideration of interest rates and other economic or environmental factors, they will often manage the resultant interest rate risk after applying the expected prepayment profile and not based on the contractual lives of the individual mortgages.

The prepayment profile applied is based on the expected behaviour of the portfolio as a whole, rather than individual exposures. Therefore in order to include behaviourisation within the accounting for the revalued portfolio, the portfolio must be considered the unit of account.

Taking a simple example: a bank has a CU500m portfolio of 2 year fixed rate mortgage loans, made up of a large number of individual customer loans. Based on current circumstances, the bank might expect that in 12 months' time CU50m of the portfolio will have been prepaid, with no subsequent prepayments until maturity. The bank could not predict which customer loans are prepaid after 1 year, nor does it expect 10% of every customer loan to have been prepaid, but just that an amount of CU50m will have been prepaid from the portfolio.

At that point in time, the interest rate risk for risk management purposes from the above simple fact pattern would be similar[21] to the interest rate risk from CU50m of 1 year and CU450m of 2 year fixed rate lending.

If prepayable portfolios are managed on a behaviourised basis then their cash flows should be included in the revalued portfolio on a behaviourised basis (ie initially as CU50m of 1 year and CU450m of 2 year fixed rate lending in the above example). Consequently, if the risk management focus is on interest rate risk from **expected cash flows**, then consistent with risk management, any change in the **value** of the prepayment option itself will not be included within the revaluation adjustment for accounting purposes. However, as noted below in section 8.3, where prepayment expectations change, this would affect the revaluation adjustment as managed exposures within the revalued portfolio would reflect current

[21] Non-prepayable fixed rate lending does not have the same sensitivity to interest rate risk as prepayable lending. This is further explored in section 7.2.

expectations[22]. Hence modifications in behaviourised cash flows due to in changes in prepayment assumptions will result in profit or loss volatility.

7.2. Bottom layers and proportions of managed exposures

In summary: Revaluation with respect to the managed risk must be of the **whole** portfolio to which the portfolio revaluation approach is applied. It is not possible to exclude layers or proportions of the identified portfolio from the revaluation.

Many banks undertake risk management of prepayable portfolios applying a 'bottom layer' approach. For example, a bank has a CU100m portfolio of prepayable loans with a 5 year contractual maturity. Considering the portfolio as the unit of account, the bank expects loans with a total principal of CU35m to have been prepaid before the end of the contractual term. Therefore CU65m is estimated to be in existence for the full 5 years. The bank may choose to transact a 5 year pay fixed receive variable swap for CU60m, ie the bottom CU60m layer of the expected CU65m, in recognition that there is a margin of error in the behaviourisation and the bank does not wish to inadvertently introduce fixed rate risk into the portfolio. For risk management purposes, as long as the CU60m of loans remain outstanding for the full contractual term, the risk management activity is considered a success by the bank. It has been suggested that any accounting approach for this risk management activity should also reflect this bottom layer approach.

The revaluation approach does not permit the ability to identify a bottom layer of a portfolio in this way for inclusion within the revalued portfolio. One of the key requirements of the revaluation approach is that the revaluation adjustment for the portfolio is the aggregate of the revaluation adjustments for all the exposures making up the portfolio that are managed for the same risk. This requires an ability to calculate the revaluation of each exposure. When considering a bottom layer, a bank cannot easily determine which exposures within the portfolio make up the bottom layer, and which exposures do not[23]. So unless all exposures

[22] The numerator cash flows as discussed in section 6.3 will be amended to reflect up to date prepayment expectations

[23] For non homogenous portfolios it would be possible to specify an 'order' in which exposures should be considered to be within the bottom layer, for example first use tranche A, then if that is insufficient include tranche B, then onto tranche C etc.. However would introduce significant operational complexity and tracking. However, it is likely to result in profit or loss volatility to reflect the occurrence of higher than expected

making up the portfolio are homogenous[24], it is not feasible to calculate the revaluation adjustment for the bottom layer.

Furthermore, the inclusion of a 'bottom layer' within a revaluation approach ignores the prepayment risk within the portfolio, unless the bottom layer was breached. If changes in the value of the prepayment option are not captured by either valuing the option itself or updating and revaluing the behaviourised cash flows, then a main characteristic of the prepayable portfolio with respect to interest rate risk would not be captured (or at least not appropriately).

Some banks may choose to hedge a proportion of the risk position, for example only hedge 80%. The revaluation approach does not permit the inclusion of a proportion of exposures. One of the aims of the project for accounting for macro hedging is to provide transparent information on dynamic risk management activity. If decisions have been made as part of risk management to only hedge 80% of an open position, then arguably the accounting should reflect that risk management decision to leave a position unhedged[25].

Even for homogenous portfolios, if the level of the desired bottom layer changes, ie the bank now wishes to mitigate the risk on the bottom CU64m of the identified behaviourised risk portfolio rather than the CU60m previously managed, this introduces the concept of a 'bottom bottom' layer which further increases operational complexity. Similar issues would occur if a proportion of the exposures were permitted to be included in the portfolio revaluation approach and the hedged proportion increased from 80% to 90%. In this case the additional 10% to be revalued for the first time would require tracking and amortisations and increase.

The simplicity of the revaluation approach is that all items in the portfolio are revalued so there is no need to track the period over which items are revalued and no amortisations are necessary. If a bottom layer or proportions approach were introduced to this approach then it would involve extensive amortisations and tracking requirements when changes to the level of the bottom layer or proportion occur or if the bottom layer were breached.

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prepayment as exposures brought into the 'bottom layer' sometime after they were recognised are unlikely to have a zero NPV, so there is an element of valuation catch up.

[24] Open portfolios are unlikely to be homogeneous as new exposures will be added with terms based on different market conditions.

[25] When hedging only 80% of the risk position, application of the portfolio revaluation approach will result in the revaluation of 100% of the exposures with respect to interest rate risk, to be offset by fair value from derivatives hedging only 80% of the risk. Therefore the 20% unhedged portion will result in revaluation volatility.

7.3. Demand deposit replication portfolios

In summary: Demand deposits determined to be 'core' for interest rate risk purposes are eligible for inclusion in the revalued portfolio in a manner consistent with the risk management treatment. A replication portfolio is often included within risk management to capture the deemed interest rate risk from the demand deposit portfolio, where the portfolio is considered the unit of account.

Another portfolio for which banks often manage interest rate risk on a basis that is different to the contractual interest rate is for current account balances or demand deposits, where a replication portfolio is used. These consist of customer deposits that usually attract a zero or low stable rate of interest, and are therefore largely fungible for interest rate risk purposes. The balances can be withdrawn, and new or increased customer deposits made without any notice or penalty. Interest rates earned on these deposits are generally insensitive to changes in market interest rates.

The total balance from all such customer deposits may vary, but banks determine an amount of core deposits that the bank believes will be maintained for a particular time frame and hence perform like longer term fixed rate exposures for interest rate risk. The bank cannot determine which customer deposits will make up the core deposits, but that is not necessary given the fungible nature of these customer deposits. Deposits are fungible for interest rate purposes as new deposits will usually be on the same terms as any withdrawn deposits they replace. The proportion of the total demand deposits from customers identified as core deposits will vary from bank to bank.

When managing interest rate risk, banks treat the identified level of core deposits differently to the rest of the demand deposit balance. Given the perceived stable nature of the core deposits, banks treat them as fixed rate funding, and impute a fixed market rate and term to the core deposits for risk management purposes. In order for the accounting to reflect risk management, it would need to revalue the longer term fixed rate replication portfolios to capture the interest rate risk from core demand deposits considered for risk management. As the individual customer deposits making up the core deposits are unknown, the inclusion within the revalued portfolio for accounting purposes of 'fixed rate' core deposits identified as part of risk management can only be permitted if the demand deposit portfolio is deemed to be the unit of account.

The length of terms banks impute for the core deposits varies from bank to bank, and is driven by a variety of factors. Factors will include both expected existing and new customer behaviour, but also could include consideration of the naturally occurring interest rate risk in the balance sheet or liquidity/pricing of hedging instruments. If the term of the core deposits were to change with immediate effect (ie existing assumptions used by risk management is amended) this would have an impact on the revaluation adjustment and hence profit or loss. It may be appropriate for restrictions to be considered about when assumptions about existing core deposits can be amended once included within the revalued portfolio. In contrast, new core deposits may have a different term to existing core demand deposits already included within the revaluation portfolio. Over time, considering the factors mentioned earlier, the bank may appropriately consider that the deemed interest rate risk within the demand deposits has changed.

The residual level of demand deposits, that do not form part of the core deposits, are usually included within risk management as overnight deposits, consistent with the contractual demand nature of the customer deposits. The identification of a core deposit layer within the wider demand deposit portfolio could be described as a bottom layer. However, the revaluation of the deposits in the bottom layer does not assume that the top layer has all of the prepayment risk. Any prepaid deposits are replaced with no impact on the valuation as the deposits within the portfolio tend to be homogenous.

Where replication portfolios are used for core demand deposits additional disclosure requirement may be helpful for users of financial statements to understand their relevance in the dynamic risk management. [See section 5.3 for further discussion.]

8. Operational considerations

In summary: Contractually based exposures should be included in the revaluation portfolio when an entity first becomes a party to the contract. Reclassification of exposures out of the revaluation portfolio should only be permitted in very limited circumstances. Revaluation adjustments will naturally be removed as exposures mature or are derecognised.

Changes in expectations for behaviourised portfolios due to changes in **customer** behaviour, will result in profit or loss volatility as the revaluation adjustment should reflect the most up to date behaviour assumptions.

8.1. Date of inclusion in revalued portfolio

If managed exposures are included in the revalued portfolio when the entity becomes a party to the contract, presumably when the value with respect to the risk that the entity manages is zero (ie implied par[26]), no incremental day one revaluation adjustment will be required.

However, if managed exposures are included within the revalued portfolio after the entity has become a party to the contract such there is a delay between inception and inclusion, this could result in a **non-zero valuation** with respect to the risk being managed on initial inclusion in the portfolio. This would be the case if the approach requires that the risk would always have to be valued compared to the risk level at the time the entity became a party to the contract.[27] Either this non-zero valuation could be recognised as a day one impact in profit or loss or it could be amortised to profit or loss over time. Recognition on day one in profit or loss, reflecting historic changes to benchmark rates, will result in profit or loss volatility that does not reflect the prospective risk management activity, if the exposure was not dynamically managed for interest rate risk in the historic period, and may be open to manipulation. Whereas amortisation of day one valuations would significantly increase operational complexity.[28] Therefore managed exposures may only be included within the revalued portfolio when the entity becomes a party to the contract.

8.2. Removal from the revalued portfolio

If revalued exposures are prepaid or sold, they will be derecognised and any valuation adjustments will be automatically removed from the balance sheet and taken to profit or loss as there is nothing remaining within the revalued portfolio to be revalued with respect to the derecognised item. All remaining revaluation adjustments are attributed to individual exposures that still exist within the portfolio. This significantly reduces any tracking requirements.[29]

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[26] [Further details on calculating the revaluation adjustment are included in section XX of the appendices]

[27] This has been a working assumption for the model. Otherwise the same exposure revalued for the same risk by the same entity in the same portfolio could still result in two different valuations, which also would require additional tracking. Consequently, this would reduce comparability even within a risk position and increase operational complexity.

[28] As noted in the detailed discussion on sub benchmark exposures in section **Error! Reference source not found.** of the appendices.

[29] However, where risk management instruments are closed out, if the actual net interest income presentation is applied, then some amortisation may be required in order to represent the impact the risk management derivative has had to date on future net interest income. [See section 1.1 in the appendices for more detail.]

However, if exposures are permitted to be removed from the revalued portfolio prior to their maturity (or earlier derecognition, if applicable), this will either require amortisation of the revaluation adjustment passed so far which would be operationally onerous, or an immediate impact on profit or loss, which could be open to manipulation and will not represent an economic gain or loss.

In addition, the criteria for initial inclusion within the revalued portfolio are driven by risk management. Hence reclassification out of the revalued portfolio for accounting purposes would only ever be permitted as a result of a change in risk management, for example, if the exposure was no longer managed as part of the risk portfolio. Therefore, careful consideration would be required to determine the circumstances under which such a reclassification should be allowed, if at all.

8.3. Amendments to managed exposures due to changes in expected customer behaviour

On application of the revaluation approach to portfolios which are managed on a behaviourised basis, if expectations for that portfolio change due to alterations in customer behaviour, that change should be reflected in the profile of the portfolio being revalued for accounting purposes. The revaluation of this change in profile will result in profit or loss volatility.

For example: an entity initially included a fixed rate exposure in the 4 year bucket, based on its prevailing prepayment assumptions. The entity transacted a 4 year derivative to eliminate the interest rate risk on the 4 year bucket. If after 6 months the exposure was expected to be prepaid in 5 years' time (ie 1.5 years later than originally thought), the revaluation adjustment for the revalued portfolio would reflect the current value with respect to the managed risk, of the exposure with a remaining 5 year term whereas the fair value of the derivative is only based on its remaining life of 3 years and 6 months. The resultant profit or loss volatility reflects the fact that the current expected outcome is different to the bank's original prepayment assumptions, which meant that with hindsight they had a 1.5 year unhedged exposure when the exposure was first transacted.

Similarly if the prepayment expectations changed such that the exposure was subsequently expected to be prepaid after 3 years elapsed, this too would lead to profit or loss volatility as the last year of the 4 year derivative covers a longer period than the remaining exposure (based on the current estimate).

Conversely, as was noted in section 7.3, amendments to the profile of existing behaviourised portfolios for factors that are **not** driven by customer behaviour may **not** be permitted. For example, it may not be appropriate to retrospectively amend the profile of the replication portfolios representing either the existing equity model book or core deposit except where the amount of the deposit exceeds the level of equity or core customer deposits respectively. This is to avoid the recognition of one off revaluation impact in P&L when no external event has occurred.

9. Sources of revaluation profit or loss volatility

In summary: The effect of the revaluation approach is that offset is achieved in profit or loss from the revaluation of the exposures with respect to the managed risk, and the fair value of the risk management derivatives. Offset can only be achieved to the extent that it actually exists. Revaluation profit or loss volatility will occur where there are differences between the valuation of the managed exposures and the fair values of risk management instruments. In particular where open risk positions remain in respect of the items included in the scope, this will result in profit or loss volatility, even where open positions are within risk limits. Resultant open risk positions from changes in behaviourised assumptions will also result in gains or losses.

Some examples of expected sources of revaluation profit or loss volatility are discussed below, although this should not be considered an exhaustive list[30].

9.1. Credit risk and other drivers of fair value for risk management instruments

The fair value of risk management instruments, as required by IFRS 13 *Fair Value Measurement*, must reflect all the assumptions market participants would use when pricing the instrument. A key assumption when pricing interest rate derivatives is of course market interest rates, but it is not the only one. Changes in any other market pricing consideration such as counterparty credit risk will impact the fair value of risk management derivatives. In

[30] Further consideration of the sources of profit or loss volatility on application of the portfolio revaluation approach to interest rate portfolios including foreign exchange risk is required, as noted in section 6.5.

addition, other fair valuation factors such as whether instruments are collateralised or not, will also impact the fair value of risk management instruments. As these additional pricing drivers are not all considered in the revaluation of the exposures (unless they are a part of the risk dynamically managed by the entity and thus included in the revaluation), full offset is unlikely to occur in profit or loss.

9.2. Remaining open positions

Risk managers usually have established tools and methods to identify remaining open risk positions within the portfolios they manage. This is a very dynamic process taking account of all exposures and risk management instruments. Once open risk positions are identified, risk managers will often have a variety of actions available to them in order to mitigate identified open risk positions.

Risk managers have to make a decision as to the most appropriate actions for them to deal with the open risk position. Consideration will be given to pricing of various risk management instruments, instrument liquidity, cash flow profile, risk limits (see section 9.2.1 below), product approval, market capacity, operational considerations, credit risk and others when deciding on the most appropriate actions. In many cases risk managers will not fully eliminate open risk positions (eg manage the duration), but will mitigate them to an acceptable extent using the selected risk management instruments.

Where risk management instruments do not fully eliminate open interest rate risks within the revalued portfolio, profit or loss volatility would occur on application of the portfolio revaluation approach, which reflects the remaining open risk position. It thus reflects an economic mismatch.

9.2.1. Risk limits

As noted above risk managers must decide how to manage identified open risk positions. As well as deciding *how* to mitigate the risk position they can also consider the *extent* of the risk position they wish to mitigate. Banks usually delegate risk limits to set thresholds for risk levels that they are willing to tolerate, ie levels they can accept without risk managers seeking mitigation. As long as risk managers remain within their delegated risk limits at all times, then their activities will be considered a ‘success’ by the bank.

In accounting terms ‘success’ might be seen as no profit or loss volatility from risk management activities. However, applying the revaluation approach to a portfolio which includes risk positions that were intentionally left open **will** result in profit or loss volatility. This is because the revaluation of the full risk position, including a position that intentionally remains open, will be only partially offset in profit or loss by the fair value of the risk management instruments.

The IASB discussed this issue and highlighted the usefulness of the information on a bank’s risk management activities provided by the resultant profit or loss volatility and the operational difficulties of excluding intentionally open risk positions from the revaluation adjustment.

Indeed, during the discussion, the IASB noted that if compliance with risk limits guaranteed zero profit or loss volatility within the revaluation approach this could lead to very counter-intuitive results, as the wider the risk limits are, reflecting greater tolerance of risk, the less volatility profit or loss shows. In fact there was very little support expressed by the IASB for incorporating a risk limits approach into the accounting.

9.3. Changes to behaviourised balances

As discussed in section 8.3, where changes in the expected customer behaviour for portfolios of exposures occur, the revaluation adjustment will include a catch up adjustment reflecting the current valuation of the updated behaviourised exposures. Corrective action is likely to be undertaken to mitigate the new risk profile *once identified*, but the fair value of the risk management instruments will only reflect the corrective action *prospectively*, hence there is likely to be some profit or loss volatility.

It may seem strange that even though risk managers may consider that they have done the best job they could, based on the best information available at the time, some volatility in profit or loss occurs. However this demonstrates one of the key differences between the aim of accounting and risk management. Risk management is very forward looking, with a focus on prevailing risk positions, whereas the aim of accounting is to record the effect of prior actions, including the actual outcome from risk management assumptions. Hence if an open economic position existed then it is appropriate that the profit or loss reflects that.

9.4. Fair value changes in non derivative risk management instruments

Non derivative instruments which are accounted for at fair value through profit or loss (FVTPL) may be included in the dynamic portfolio (either as exposures[31] or risk management instruments). In order to present the revaluation effect from dynamic risk management activities, there is a question as to whether the full fair value change should be included in the revaluation effect from risk management, or just fair value changes due to the managed risk?

For derivatives, it is common place to assume that all fair value changes are relevant for risk management. However, this may not be the case for non derivative instruments where risks that are not dynamically managed, such as credit risk may be the main driver for fair value changes at least in some periods. In that case it is difficult to argue that recognition of **all** fair value changes, (including risks such as credit) should be included within the revaluation effect from risk management, where they do not form part of the dynamic interest rate risk management strategy. In a sense this would risk the revaluation approach overriding the classification model and not only in respect of the managed risk.

If it is not thought appropriate to include fair value changes for risks other than the managed risk for non derivative hedging instruments within the revaluation effect, then there will be a need to isolate the fair value impact due solely to the managed risk. Such an approach would add operational complexity to the process, and the mechanism to isolate the managed risk element would need to be considered.

[31] Classification and measurement guidance in IFRS9 may require FVTPL treatment, possibly due to the characteristics of the instrument, but for risk management purposes the instrument could be considered an exposure to be managed for interest rate risk.

Appendices

1. Presentation — example

Below is a more detailed example demonstrating both income presentations discussed above in section 5.1 of the main report:

A bank has a portfolio of fixed rate loans which are funded by a portfolio of variable rate liabilities. The bank manages the interest rate risk on the net portfolio. As part of its risk management strategy it has chosen to eliminate 80% of the existing interest rate mismatch using an interest rate swap. The bank applies the revaluation approach to this net portfolio.

Instrument	**Notional**	**Interest rate basis**	**Interest rate**	**Interest rate risk included in revaluation approach**
Loan	CU100m	Receive fixed rate annually on 31 December (initial market + product spread)	4% (=3%+1%)	3%
Deposit	CU100m	Pay 6m LIBOR on 31 Dec and 30 June	6m LIBOR	6m LIBOR
Interest rate swap	CU80m	Receive 6m LIBOR on 31 Dec and 30 June Pay fixed rate annually on 31 December	6m LIBOR 3%	6m LIBOR 3%

The bank has stabilised its net interest margin to the desired extent (ie 80%).

Market rates*	31-Dec-12	30-Jun-13	31-Dec-13	30-Jun-14	31-Dec-14
Annualised LIBOR rate	3.0%	2.8%	2.5%	3.3%	4%
LIBOR for 6 month period	1.49%	1.37%	1.24%	1.61%	1.98%

* Assuming a flat yield curve

Stable net interest income approach

		6m to 30-Jun-13	6m to 31-Dec-13	6m to 30-Jun-14	6m to 31-Dec-14
Interest revenue	(a)	1.99[32]	1.87	1.74	2.11
Interest expense	(b)	(1.49)	(1.37)	(1.24)	(1.61)
Net interest income	(c)	0.5	0.5	0.5	0.5
Revaluation profit or loss from dynamic risk management	(d)	0.25	0.24	(0.62)	(0.54)
Total profit or loss for the 6 month period	(e)	0.75	0.74	(0.12)	(0.04)

(a) Accrual interest revenue for the product spread not included within the revalued portfolio (ie 1% annually), plus interest accrual for the exposure at market rates (ie 6m LIBOR) of the risk that is being managed. In this example, the managed interest accrual is exactly the same as the floating leg on the derivative, but that will not always be the case.

(b) Accrual interest expense, as for interest revenue, but in this fact pattern actual coupons are the same as the risk for which the exposure is revalued, (both 6m LIBOR).

(c) Net interest income is consistent with the assumed risk management objective to stabilise net interest income. In this fact pattern NII reflects a locked in net annual margin of 1.0% (0.5% for 6 month reporting period). This presentation is not wholly consistent with the actual risk management objective to eliminate 80% of the interest rate mismatches in the portfolio.

(d) Net impact of fair value changes from derivatives and revaluation changes from exposures, reflecting the valuation of the unhedged position (20% in this fact pattern), less the stabilisation impact reported in NII that was not actually achieved through risk management.

(e) Net profit or loss is the same under both presentations

[32] Interest revenue for 6 month period is calculated as: 1% spread for 6 months (0.5%) plus LIBOR for that 6 month period (1.49%)

Actual net interest income approach

		6m to 30-Jun-13	6m to 31-Dec-13	6m to 30-Jun-14	6m to 31-Dec-14
Interest revenue	(a)	2.0[33]	2.0	2.0	2.0
Interest expense	(b)	(1.49)	(1.37)	(1.24)	(1.61)
Net interest from dynamic risk mgt	(c)	(0.01)	(0.10)	(0.21)	0.09
Net interest income	(d)	0.5	0.53	0.55	0.48
Revaluation profit or loss from dynamic risk management	(e)	0.25	0.21	(0.67)	(0.52)
Total profit or loss for the 6 month period	(f)	0.75	0.74	(0.12)	(0.04)

(a) Actual interest revenue accrued for the loan portfolio (ie 4% annually), no change to existing interest recognition guidance

(b) Actual interest revenue accrued for the deposit portfolio (ie 6m LIBOR), no change to existing interest recognition guidance.

(c) Net interest accrual[34] from risk management instruments (ie receive 6m LIBOR and pay 3% annually on CU80m in this fact pattern)

(d) Reported net interest income is consistent with the actual risk management objective, as a stable margin is achieved for 80% of the portfolio, but net interest income achieved on the unhedged 20% varies as 6m LIBOR varies.

(e) Net of clean[35] fair value changes from derivatives and clean revaluation changes from exposures. In this fact pattern it will represent the valuation of the 20% unhedged portion.

(f) Net profit or loss is the same under both presentations

[33] Interest revenue for 6 month period is calculated as: contractual 4% coupon for 6 months

[34] Accrued interest is an implicit part of the valuation of financial instruments, as the value of all future cash flows is included in the valuation calculation.

[35] Clean fair values and revaluations are the full valuations less the accrued interest.