STAFF PAPER

25-26 September 2013

Accounting Standards Advisory Forum

Project	Accounting for Macro Hedging		
Paper topic	Background papers – background and objective of project		
CONTACT(S)	Jane Hurworth	jhurworth@ifrs.org	0207 246 6457
	Yuji Yamashita	yyamashita@ifrs.org	020 7246 6470

Contents

Accounting for macro hedging

Background and objective of the project

1. What are macro hedging activities?

For the purposes of this project 'macro' hedging activities mean those that relate to portfolios made up of many individual items. Macro hedging activity is commonly applied to open portfolios, for which the risk management is usually dynamic. This occurs because the items included continuously change requiring frequent reassessments of the resultant risk position. This type of risk management can occur in entities from many industries, such as financial institutions, mining or utility groups or manufacturers. The type of risk which is dynamically managed in this way may include interest rate risk, commodity price risk and foreign exchange (FX) risk.

One well known example where there is a need for a revised accounting model for macro hedging is for interest rate risk management in the banking sector. Most banks manage interest rate risk in a dynamic way based on open portfolios. For instance, the loan portfolio is not static as new loans are added and existing loans are prepaid or mature, so the portfolio is continuously changing over time. Consistent with this, risk management is dynamic, with continuous (eg daily) monitoring of the net or residual risk within the portfolio and corresponding reassessment of required hedging activities.

There are a variety of risk management techniques that can be used to quantify the residual risk under management, however there are some common themes for all dynamic risk management techniques. For example, in the context of interest rate risk management for banks under a dynamic risk management framework, risk managers do not look at the risk from any *single* financial instrument in isolation. Rather, the risk under management is calculated with respect to a bank's *entire* risk exposure from the portfolio with respect to changes in the specific managed risk. The calculated risk under management incorporates any offsetting risk positions and existing risk management derivatives within the portfolio to determine the overall (residual) exposure. Risk managers then use additional derivative instruments (eg interest rate swaps), to mitigate the residual risk exposure so that it is within acceptable limits.

A typical risk management technique is **sensitivity analysis** which is commonly used by banks. Sensitivity analysis simulates the valuation change to a bank's *entire* risk exposure from the portfolios caused by changes in the specific managed risk. Sensitivity analysis is very compatible with the risk management requirements of the banking sector. The fundamental business model for banks is to raise funds through financial liabilities (eg deposits) and invest them in financial assets (eg loans), with a view to earning an interest margin between those financial assets and liabilities. Accordingly, the aim of risk management is to protect the net interest margin from the bank's interest rate risk exposures, ie to reduce the impact of changes in market interest rates on the net interest margin. A bank's net interest margin is at risk where there are differences in repricing dates or reference rates for interest payments on its financial assets and financial liabilities.

For example, suppose a bank makes loans with a 10 year fixed interest rate and the loans are funded through deposits with a three-month variable interest rate. If market interest rates increase in the future, the bank will suffer a reduction in net interest margin because the bank will be required to pay more on the funding, but the interest receivable on the loans are fixed for 10 years. This could even result in a negative interest margin ie a loss, if the interest payable on the funding was higher than the interest receivable on the loans. In order to mitigate that risk, the bank enters into interest rate swaps (or other interest rate derivatives), which exchange fixed and variable interest rate payments reducing interest rate mismatches from the loans and deposits. The risk management purpose here is to *stabilise* a net interest margin in the current and future periods.

The advantage of sensitivity analysis is that it enables the bank to quantify and measure the risk with respect to *future* interest margin as (re)valuations of interest rate risk positions. In the above example, the risk of a reduced margin which materialises when interest rates increase in future periods is reflected in a negative valuation change in the fixed interest loans as interest rates increase, with no (or only a small) valuation change in variable rate deposits.

As the sensitivity analysis is applied to interest rate risk identified within *all* financial assets and liabilities[1] under risk management, including risk management derivatives, this enables banks to measure the impact that possible changes in the benchmark interest rates could have on their net interest margin in future periods. This information allows the banks to make decisions on macro hedging activities. Under this risk management framework, one-to-one relationships between any single non-derivative financial instrument and single derivative transaction do not exist. Below is an example of a table a bank might use to report its sensitivity analysis. Using the table, all interest rate risk exposures are managed in an integrated manner. For instance, risk managers measure the value changes in assets (eg loans and securities), liabilities (eg deposits) and derivatives that would materialise if the benchmark interest yield curve shifts by 10 basis points[2]. In addition, interest rate risks are managed by maturity[3]. This is because the effect of changes in interest rates can differ by maturity because of the impact of the changes in the level and the shape of the yield curve[4]. Based on this technique, risk managers can measure the amount of residual (open) risk they have and make decisions on macro hedging using derivative transactions.

1 Note there are cases where banks include unrecognised items (eg loan commitments, 'pipeline transactions') in their sensitivity analysis. In that case, sensitivity analysis also covers exposures that are not recognised assets or liabilities.

2 100 basis points = 1 percentage point.

3 Strictly speaking, interest rate risks are managed according to the timing of the next interest rate changes. In case of fixed rate products, maturity and the timing of the next interest rate changes coincide. In case of variable rate products, they do not coincide (the next reset date for the variable rate is relevant).

4 The diagram assumes the sensitivity analysis is implemented based on the parallel shift scenario of the yield curve. However, the sensitivity analysis is flexible in that it allows risk managers to use various scenarios such as yield curve steepening and flattening.

	Interest rate sensitivity (changes in fair value attributable to interest rate risk per 10bps changes in benchmark rates)							
	O/N	3M	6M	1Y	···	10Y	20Y	Total
Deposits								
Demand Deposits								
Core Deposits								
Non Core Deposits								
Term Deposits								
Risk Limits								
Loans								
Corporates								
Mortgages								
Consumers								
Risk Limits								
Securities								
Corporates								
Governments								
Risk Limits								
Derivatives (interest rate swaps)								
Risk Limits								
Total								
Risk Limits								

2. Risk management activities versus accounting

The main aim of this project is to develop an accounting model for macro hedging that conveys transparent information about macro hedging activities, while reducing the operational complexities that are typical of the existing accounting for open portfolios (for example with respect to tracking and amortisation requirements).

Accounting requirements often result in different measurement or recognition of items that create the same or similar risk exposures. For example, interest rate risk exposure arises from loans and deposits and from interest rate derivatives, however amortised cost is the measurement for many loans and deposits whereas interest rate derivatives are measured at fair value through profit or loss. Similarly, commodity inventory is often measured at the lower of cost and net realisable value, whereas commodity derivative contracts are measured at fair value through profit or loss. Consequently, risk management activities using derivatives where the aim is to **reduce** risk arising from items that are not measured at fair value through profit or loss often results in volatility in profit or loss.

Profit or loss volatility may also arise where differences in accounting recognition exist between the original exposures and risk management derivatives. For example, loan commitments (at a fixed rate) or firm commitments to buy or sell commodities (at a fixed price) are not usually recognised for accounting purposes at the time of entering into the contract. However, from that time onwards, those contracts expose an entity to changes in value from variations in interest rates or commodity prices, respectively. Hence these fixed price exposures would typically be included by risk managers in the calculation of the dynamic risk position when they become contractual but not be recognised for accounting purposes. In contrast, derivatives must be recognised for accounting purposes when an entity becomes a party to the contract. Hence derivatives transacted for risk management purposes may be recognised before the exposures that created the initial risk position. This results in volatility in profit or loss even though the objective of entering into the derivatives is to reduce risk.

The existing hedge accounting requirements allow entities to address such measurement and recognition mismatches by either changing the measurement or recognition for the items that give rise to the risk exposure (a fair value hedge) or deferring gains and losses on the instrument used for risk management to a different period (a cash flow hedge). For example, the application of fair value hedge accounting better reflects static risk management activities for interest rate risk of fixed rate items by remeasuring those items for changes in interest rates. However, in order to apply hedge accounting, it is necessary to identify specific hedged item(s) and hedging instrument(s) and to link them via designation in individual hedge accounting relationships. This is not feasible for dynamic risk management.

3. Limitations of hedge accounting in a dynamic risk management situation

For many entities, hedge accounting is applied to some static hedging relationships for identified risk exposures that represent only a discrete part of their overall business activities. An example is a manufacturing entity hedging the interest rate risk of a particular loan obtained as financing or the foreign currency risk from the purchase of a particular item of equipment in a foreign currency.

In contrast, for some entities, such as banks that perform macro hedging for a substantial part of their interest rate risk exposures, hedge accounting would require a widespread change to normal measurement and recognition requirements because of the pervasive effect of risk management on the entity's transactions. This is pervasive because risk management does not occur at an item by item level, but at an aggregated level for the net risk position that results from many different items that continuously change. In such situations hedge accounting is operationally onerous, as an entity needs to frequently adjust its hedging relationships to match the dynamic nature of risk management.

This problem is explained in the following sections in more detail. In addition, hedge accounting requires selecting either fair value hedge or cash flow hedge accounting, but neither of them in isolation directly portrays actual risk management.

3.1. Problems with the existing accounting solution for macro hedging activity

IFRS contains special requirements for those entities that manage interest rate risk from assets and liabilities on a portfolio basis. Specifically, the existing IAS 39 requirements for 'fair value hedge accounting for a portfolio hedge of interest rate risk' aim to facilitate hedge accounting at a portfolio level. While this particular type of fair value hedge partly accepts the measurement of hedged assets or liabilities on an expected behavioural basis for some financial instruments (eg fixed rate mortgages) it still involves significant shortcomings. Notably, it is limited to interest rate risk and tailored to a situation that in effect means it has only been used by banks. Other shortcomings are discussed below, but in summary we understand that many banks have found this particular type of fair value hedge accounting operationally difficult to apply and do not believe it allows them to present useful information on their macro hedging activities in the financial statements.

3.1.1. Open portfolios

The portfolio hedge accounting for interest rate risk within IAS 39 fails to capture the *dynamic* nature of risk management as it implicitly assumes hedging relationships will be identified on a *static* basis. This assumption is relevant when portfolios are closed, meaning in instances where new items cannot be added, and items included in hedged portfolios cannot be removed or replaced without ending the existing hedging relationship and starting a new one.

In reality, as noted above, macro hedging activities are usually performed *dynamically*, with continuous changes occurring based on open portfolios. As time passes new exposures are continuously added, (such as on the origination of new loans to hedged portfolios), and other exposures are removed from them (such as as the result of maturing or prepaying loans). Risk managers then consider the current net risk position, including all new/revised exposures and determine the appropriate action required to reduce the resultant net risk position to within their risk limits.

The dynamic nature of the risk management of open portfolios is fundamentally difficult to cope with in the traditional hedge accounting framework, as there is an assumption that hedge accounting relationships are identified by linking specific hedging instruments with specific hedged items, which means the model is in substance 'static'. The static hedge accounting model could be applied by treating each designation as a series of closed portfolios with a short life (ie by periodic discontinuation of the hedging relationship for the previous closed portfolio of items and designation of a new hedging relationship for the revised closed portfolio of items). However, this gives rise to operational complexities regarding tracking of hedge accounting relationships and amortisation of hedge adjustments. In addition, it is often impractical to apply such an accounting treatment given the frequency with which hedge portfolios are updated (for example, daily). Furthermore, a static hedge accounting approach is not consistent with the risk management view that considers old and new items together, with a focus on the prevailing risk position (ie a distinction is not made between 'old' and 'new' exposures). As a result, the accounting results that are based on a static hedge accounting model do not provide users with information that is consistent with risk management approaches, thereby limiting the usefulness of the information.

Other features of hedge accounting that lead to operational difficulties and prevent the presentation of useful information on actual risk management in the financial statements include the issues set out below.

3.1.2. Designation on a gross basis

It is not uncommon for exposures to particular types of risk to be managed on a net basis. For instance, banks usually make macro hedging decisions based on the net interest rate

risk arising from a combination of financial assets and liabilities and derivatives, normally using a sensitivity analysis with a maturity (duration) bucket approach[5]. However, although the 'fair value hedge accounting for a portfolio hedge of interest rate risk' model in IAS 39 recognises that interest rate risk is managed on a **net** basis, it requires that portfolio hedges are designated on a **gross** basis for hedge accounting purposes. Consequently, banks often have to identify particular eligible assets **or** liabilities, and designate them as hedged items on a gross basis in order to obtain hedge accounting. This can result in actual risk management being represented only rather **indirectly** as entities may also select those hedged items that will achieve specific accounting results. In that case, the resulting volatility in profit or loss (ie hedge ineffectiveness) is accounting driven rather than necessarily representative of the economic situation, which reduces the usefulness of the information provided.

3.1.3. Inability to include all relevant exposures on an expected behaviour basis (eg core demand deposits)

IFRS 13 *Fair Value Measurement* deems that the fair value of a liability with a demand feature must not be less than the callable amount discounted from the earliest date the counterparty can require repayment. Therefore, for accounting purposes, customer deposits which are callable on demand are measured at the deposit amount and are assumed to have zero fair value risk with respect to interest rate changes, as they can be withdrawn immediately. Nevertheless, it is common for customers to maintain demand deposit accounts with banks for significant periods of time.

Cognisant of this customer behaviour, risk managers usually identify a part of the demand deposit portfolio, that is considered to have features similar to fixed rate liabilities (reflecting their 'sticky' economic nature) and treat them as term liabilities. These are known as **core** demand deposits. Risk managers manage (hedge) the risk of valuation changes with respect to such factors as interest rate risk, based on the expected behaviour of depositors. However, in order for exposures to be eligible hedged items in a fair value hedge for accounting purposes, the fair value of the hedged items must vary

5 A sensitivity analysis with a maturity (duration) bucket approach is usually called a 'Grid Point Sensitivity' analysis and is one way in which a bank might manage interest risk, although a number of other valid techniques exist. For example, some banks may use a simpler but less sophisticated technique referred to as gap analysis. With this technique, entities distribute interest-sensitive assets, liabilities and derivative transactions into 'time buckets' according to maturity (if fixed-rate) or time remaining to next repricing (if floating-rate). These schedules can be used to generate simple indicators of the interest rate risk.

with respect to the hedged risk. As the fair value of demand deposits is deemed to be constant for accounting purposes, fair value hedge accounting is precluded. Consequently, hedge accounting does not permit an accounting treatment for demand deposits that is consistent with risk management activities.

Without the ability to achieve hedge accounting for risk management of demand deposits, the fair value effect of derivatives used to hedge demand deposits may not be offset in profit or loss. This is likely to result in volatility in profit or loss such that a bank that *hedges* the perceived interest rate risk in demand deposits shows *more* volatility than a bank that does not.

In order for the bank to avoid this volatility in profit or loss (which is inconsistent with the risk management perspective), it is common to identify alternative items which can be designated as hedged items (a form of surrogate relationship) – so for example, suitable floating rate assets (for which cash flow hedge accounting can be applied) or alternative liabilities with a similar maturity to the behaviourised core demand deposits may be identified. So hedges are designated for alternative items despite the fact that risk management focused on the interest rate risk perceived in demand deposits. This means the prohibition on including demand deposits on a behaviourised basis reduces the alignment between accounting and risk management reducing the usefulness of hedge accounting information in the financial statements.

3.1.4. Inability to include all deemed risk exposures

In order for entities (eg banks) to have *an holistic* view of their exposure to a specific risk (eg interest rate risk), they usually include in their risk management framework all exposures that they deem to bear that specific risk *irrespective of* the accounting measurement and recognition. This means that exposures may be included in risk management that do not satisfy the accounting definitions of assets or liabilities.

An example is the concept of an equity model book in the banking industry. This idea reflects that some banks disaggregate their target return on their 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[6]. Where return on equity is

6 The origin of the equity model book concept is that many banks used funds raised through capital transactions or retained earnings to invest in fixed rate bonds with different maturities to generate a fixed basic

managed in this way, the entity may deem that its own equity creates an interest rate exposure and include that interest rate profile within its interest rate risk management.

Another example is pipeline transactions. Some banks consider that they are exposed to interest rate risk on forecast transactions and thus consider the deemed interest rate risk in their risk management (eg the interest rate risk arising from the forecast issue of products at advertised rates—colloquially referred to as 'pipeline transactions'). The deemed interest rate risk would be included in the risk exposure in the same way as the risk on existing items (eg loans and deposits or loan commitments). However, until a transaction is contractual, it is difficult to argue that the fair value of those pipeline transactions would actually change with respect to interest rate risk. So similarly to demand deposits discussed previously, it is not possible to include pipeline transactions within hedge accounting relationships.

3.2. Resulting consequences

Without a proper accounting model for macro hedging, many entities, especially banks, have found it difficult to faithfully present their macro hedging activities in the financial statements. As a result, some of them have given up trying to apply accounting solutions that reflect their actual macro hedging activities, and instead use hedge accounting surrogate relationships as the next best alternative, but with a focus on reducing volatility in profit or loss rather than truly reflecting risk management activity.

As noted above, entities may use hedge accounting relationships as surrogates, such as cash flow hedge accounting. However, the risk management focus in conducting macro hedging activities is usually on the overall valuation change of all exposures compared to that of hedging instruments (derivatives). This is closer to a fair value hedge type accounting approach. The solution using cash flow hedge accounting as a surrogate is possible because the designation is done on a gross basis, enabling an entity to pick some items that provide offsetting changes in the variability of cash flows. In that sense, cash flow hedge accounting as a surrogate is an *indirect* way of representing macro hedging activities.

---

return. Other banks use (some of) these funds as part of the *overall* funding for their business activities in general rather than investing them separately. To achieve a similar result to investing in a separate bond portfolio, the funds raised through equity can be internally distributed, like other funds raised through debt, based on transfer pricing transactions that have maturity and interest structures like a separate bond portfolio.

One problem with cash flow hedge accounting is that it does not reduce equity volatility, as the valuation changes in derivatives are just *deferred* to Accumulated Other Comprehensive Income (AOCI). One of the purposes of macro hedging activities is usually to reduce the impact on equity of possible market fluctuations with respect to the particular hedged risk (eg interest rate risk). Cash flow hedge accounting does not represent this risk management purpose well, as it does not reflect the impact on equity that would result from revaluing the interest rate exposures to those market risk fluctuations.

A number of entities use a combination of accounting alternatives (eg cash flow hedge, fair value hedge and the fair value option), where the aim tends to be to minimise profit or loss volatility from the risk management derivatives. So despite the fact that actual macro hedging activities are usually implemented in a comprehensive manner for the portfolios as a whole, accounting solutions result in a 'patchwork presentation' that does not portray the effect of risk management directly and holistically.

In summary, the lack of an accounting model that is tailored to macro hedging activities has resulted in opaque information on those activities in the financial statements. Derivatives used as hedging instruments might be designated as part of *surrogate* hedging relationships dependent on the balance sheet structure of a bank. Hedge accounting may be applied, but in a way that involves a significant operational effort, focuses on stabilising accounting profit or loss, and do not portray the effect of risk management directly and holistically.

Given that most users of financial statements have significant interest in how successful an entity is at achieving its risk management objectives, some pay more attention to non-GAAP information to gain an understanding of these activities.