

MCV AND SII: IMPLICATIONS - SPEAKER NOTES

Kamran Foroughi, 16 September 2010

Slide 0 – Title slide

Thank you Peter.

This presentation summarises the key observations and recommendations of the paper. The financial crisis puts market-consistent valuation in the spotlight. We will look at some of the commercial issues that arose, and propose that certain technical aspects of market-consistent valuations be revisited.

But first, let's not forget that both accounting standards and solvency regulations are moving to a market-consistent approach. So, where are we going with Solvency II and how does market-consistent valuation fit in?

Slide 1 – Solvency II FD

The Framework Directive was finalised late last year. The Directive states that one of the key drivers for changing the solvency regime is to use an “economic risk-based approach ... so companies properly measure and manage risks”.

This is achieved by requiring companies to calculate a balance sheet to work out “own funds”, the difference between assets and liabilities. The assets and liabilities are calculated as amounts to be exchanged or transferred between knowledgeable willing parties. This balance sheet is then stressed to work out the Solvency Capital Requirement.

In other words, in principle companies should be using a realistic market-consistent best estimate approach to calculate the Solvency II balance sheet. All the allowance for prudence should lie in the capital

requirements. I think most of us would be happy if Solvency II ended up following this principle.

However, Level 2 implementing measures appear to be heading in a prescriptive and somewhat different direction. My fear is that certain elements of Level 2 may be introducing prudence into the basic balance sheet through the back door. Some of it is present now and some will become obvious during the next financial crisis. I identify a few specific areas of concern later, based in part on the QIS 5 specification.

And to state the obvious: if we do not get the calculation of the basic balance sheet right, we will not be getting the Solvency Capital Requirement right either. The objectives behind the whole framework may start to break down.

Moving to IFRS, we can see the foundations of the market-consistent approach underpinning latest IASB Phase II developments covering the measurement of insurance contracts.

Slide 2 – IASB Phase II

The exposure draft states that one of the key aims is to provide relevant information to users for economic decision making.

How does the exposure draft achieve this aim? By proposing a building block approach where the best estimate liability, i.e. the discounted value of future cash flows, has to be calculated using methods and assumptions consistent with current and observable market prices. In other words, it is suggesting a market-consistent approach.

Other building blocks include a risk adjustment - which I will come back to later - and a residual margin which is a plug to ensure that no profit is shown on day 1. Certain acquisition costs fall outside this calculation, guaranteeing a new business loss on day 1.

This whole structure is designed on the one hand to ensure that the insurance liabilities are calculated using a market-consistent approach; and on the other to ensure that the overall framework fits in with other IFRS accounting developments, which tend to restrict or prohibit a day 1 profit.

So, overall the calculations underlying future accounting and solvency will both be based on a market-consistent approach. This follows a trend we have already seen in embedded values and individual countries' regulations.

Why this trend? The paper reminds us why we made the move to market-consistency in the first place and why it is preferred to non-market-consistent measures.

Slide 3 – Advantages of MCV

First, the market-consistent framework allows decision makers to assess better the relative merits of different courses of action and make better decisions.

It is more objective. The calibration of the allowance for market and credit risk, where reliable, is taken out of the hands of actuaries and management, restricting their ability to smooth results - holding back hidden margins in the good years, and releasing them in poor years.

It is easier to achieve consistency. Consistency can mean different things. By calibrating the valuation to market prices where reliable, we should achieve better consistency of the asset and liability valuation on today's balance sheet, better consistency over time, and better consistency in the comparison of valuations between different blocks of business or companies.

There is a clear link to ALM strategies. By benchmarking the calibration with a low risk calibration asset, the MCV tells you the estimated cost of

choosing that low risk strategy. If you choose to mismatch, as most companies do, it helps you assess the risk distribution around your expected return.

These advantages are as relevant today as they have always been.

But the financial crisis has highlighted some important commercial challenges.

Slide 4 – The commercial challenges

Some companies using market-consistent techniques have exhibited far more volatility in their results than those who used smoother traditional techniques. To what extent does this represent weaknesses with the valuation method, or the impact of real asset-liability mismatches?

There is a macroeconomic risk that a market-consistent solvency framework can lead to procyclicality. Market values fall at times of financial crisis, and this can threaten insurers' solvency. In order to protect solvency, insurers may sell higher risk assets to fund the purchases of lower risk assets, leading to further market value falls, again further threatening solvency. Other macroeconomic effects also exist:

For example, what happens if you apply market-consistent techniques in pricing, but operate in a market where other participants do not apply them? For investment related products, the market-consistent measure will tell you to harden prices as the market price of risk goes up. Other traditional measures tend to be smoother, and encourage you to hold prices steady for longer. Those applying the market-consistent measure seem to only have two options: to sell business at a loss, or to lose market share. Neither option seems appealing.

And finally, any value-based measure does not tell you what you need to know about the capital. What is the capital generated by the in force, the

capital strain of new business? Will you be able to maintain dividends? These are all critical questions in the current world.

So what to do? I believe that these issues can be addressed in part by designing a wider reporting pack.

Slide 5 – A wider reporting pack

Here are some of the metrics that the paper describes. **TOUCH ON**

But with all these metrics come new responsibilities.

The need to understand how to use the information to make decisions. The need to avoid snap decisions based on volatile numbers. To balance both short term and long term considerations.

These responsibilities lie with internal users: actuaries, accountants, Directors and senior managers. They also lie with external users: the capital providers, the analysts and the regulators.

PAUSE

So let's revisit the technical issues, and take some lessons from the financial crisis. In the last two years, where has the market-consistent model worked well, and where has been found wanting?

Slide 6 – Revisiting the technical issues

The paper covers these topics. **PAUSE**

And in the rest of this presentation, I will cover some key points on each.

Slide 7 – The overall allowance for risk

There are conceptual questions around what exactly we mean by market-consistent valuation. What are we trying to achieve? How are we calibrating the allowance for risk?

Do we really think that assets and liabilities should be valued completely separately?

Do we use what I call the “transfer value” or “current exit value” approach to valuation? In other words: How much would I get if I sold these assets in the open market? How much would I have to pay to get a third party to take on these liabilities?

This is the Solvency II basis of valuation. It is set out in the Framework Directive and there are important implications for the detailed calibration.

This was also the model put forward by the IASB in 2007 – but interestingly not in the insurance contracts exposure draft. The IASB listened to industry feedback and has instead put forward a “fulfilment” or “going concern” basis.

In calculating the transfer value, straight away you hit on a calibration issue. How on earth do you calibrate the transfer value of the liabilities?

Perhaps you should use the mergers and acquisitions market as a guide. But M&A deals aren’t about selling liabilities to other companies, but selling whole blocks of business in a commercial world where all manner of different considerations apply.

So what does this “transfer value of liabilities” concept mean? It seems a pretty theoretical and nebulous concept to me.

Instead - I propose something more simple and useful.

Remember that at its most basic the nature of an insurance business model is to get premiums from policyholders, invest the premiums in assets, and hold those assets to back the liabilities to meet claims as they arise.

So let's use a philosophy that's concerned with blocks of business, not assets and liabilities separately; that's concerned with going concern value, not transfer value.

I believe this is a more meaningful model. It's also easier to achieve consistency in the valuation between assets and liabilities.

Moving to the asset valuation developments. Simple right? Just use market value? But this is not so easy in a financial crisis!

Slide 8 – Asset valuation developments

One development that should be of enormous interest to insurers is the fair value measurement project developed by both the IASB and FASB. The IASB published a Fair Value Exposure Draft in May 2009, similar in many areas to amendments to the FASB fair value standard.

The FV exposure draft defines the core principle of fair value to be “the price received to sell an asset or transfer a liability in an orderly transaction between market participants at the measurement date”...

How do you determine whether a transaction is orderly? There are nine criteria set out in the FV Exposure Draft to help answer this question.

Several of these relate to the depth and liquidity question insurers have faced when selecting the calibration asset used in the market-consistent valuation of liabilities. So, perhaps the insurance industry can learn from the guidance in the FV exposure draft.

But what do we do if a transaction is deemed to be disorderly?

This question is simple if you can't observe any prices. The draft directs you to use a mark-to-model approach, where you should be taking into account the orderly prices that are out there to try to estimate what value your asset would have if its market were orderly.

The question gets more tricky where you can see a market price, but all the signs are there that the specific market is disorderly. Here is where judgement is needed to decide whether the observed market price represents an orderly transaction – again the mark-to-model approach is encouraged in the FV exposure draft to assess how reasonable the observed market value may be.

This is a huge issue for an insurance company in a financial crisis, such as end 2008 where many markets dried up. At that time I don't think the insurance industry was geared up properly to recognise the need to apply such judgement. Let's be honest: we were all in crisis management mode. There was a real reluctance to make any changes to market prices on the asset side of the balance sheet, and instead companies used all the tools on the liability side to make adjustments.

Unless we work hard to develop best practices to solve this problem, we will not be geared up well for the next crisis.

I see little evidence that the Solvency II developments will help. There is virtually no discussion on this in the QIS 5 specification. There are 90 pages discussing how to value the liabilities plus a myriad of accompanying papers and appendices. These include various discussions about how to value liabilities when the calibration asset is no longer deep and liquid, but little or none of the content seems to relate back to how to value assets in illiquid markets. There is a real danger that we will end up with a framework where decisions being made to allow for illiquid markets are not consistent between assets and liabilities.

A final question - do you calibrate to the mid or bid price? At year end 2008 we saw bid-ask spreads for many financial instruments shooting up, from 10-20 bp, to between 50 and 100bp, which has a significant impact.

Currently, IAS 39 allows a mid price to be used where you are applying fair value to both assets and matching liabilities, but not where IFRS 4 *Insurance Contracts* applies.

Where assets are being held to match insurance contract liabilities, I believe insurance companies should be able to use mid prices in valuing financial instruments where the market and credit risks offset between the assets and the insurance contract liabilities. That would be very good news for the industry, removing a procyclical weakness with current IFRS.

Some of the IASB's pronouncements suggest that future fair value may become more flexible in this area, but it is not clear.

So, what do we calibrate the reference rate to? This was never an easy question to answer, but it has got much more difficult since the financial crisis began.

Slide 9 – The reference rate (pre-liquidity premium)

These are graphs from the UK, showing yields on gilts – UK government bonds, swaps and AA corporate bonds, from end 2006 to end 2009. Similar patterns are observable in other currencies.

I won't tell the full story today, but an interesting observation is that government bonds and swaps have recently started to cross over, for a number of reasons.

One is credit risk related. There are rolling credit checks operating in the swaps market, which effectively reduce the level of credit risk, particularly after year 1.

But two are not credit risk associated.

- Funding premium
- Lack of arbitrageurs willing to operate.

This does suggest that a calibration to swaps with no amendment would be too harsh in the latest financial crisis. So, what are the key issues when thinking about the reference rate?

Slide 10 – Reference rate – key issues

The trend within all of MCEV, Solvency II and IASB is to use a risk-free rate plus a liquidity premium for illiquid liabilities.

Solvency II Level 2 Implementing Measure proposals are that the reference rate, otherwise known as the so-called risk-free rate, should be 100% credit risk free.

But a 100% credit risk free rate can only be a theoretical concept - particularly at times of financial crisis where the long term viability of banks and governments is questioned. In practice in QIS 5 we have seen a 10bp deduction to swaps for credit risk – makes you wonder why bother?

I prefer to identify a suitable low risk calibration asset that matches the liabilities well and calibrate to that yield without adjustment. That is, to accept that the small level of credit risk within that calibration asset is being capitalised in the valuation. Remember, insurance company liabilities are also not 100%-credit-risk-free.

Swaps definitely fall into this category due to the collateralisation and rolling credit check arrangements.

Government bonds probably fall into this category where countries control their own money supply, but not in common currency areas such as the Eurozone where there is clear decoupling risk. We have seen the fall out recently in Greece.

But I believe this rules out using a high quality corporate bond yield in the valuation of insurance contracts.

Such a yield is used in pension scheme valuations. But if you are not holding corporate bonds to match your liabilities and you use a corporate bond yield as a discount rate, then you can see strange movements in net equity during a financial crisis. This is why we saw many pension scheme funds move into surplus at year end 2008, subsequently moving into deficit at interim or year end 2009. There was a clear lag effect in recognising the impact of the financial crisis. We did not see that problem with MCEVs.

And what about the fact that corporate bond spreads went through the roof during the financial crisis, whereas actual defaults did not? If some of this increase in spread is attributable to increased corporate bond illiquidity, and insurance companies are not forced sellers, then surely an insurance company can justify the capitalisation of some of this risk premium?

I prefer to look at this in two parts:

First, what level of liquidity premium can we find in the more illiquid markets such as corporate bonds?

And second how much of that liquidity premium is it reasonable to allocate in the valuation?

In terms of the first question - one way of measuring the corporate bond liquidity premium is the excess of an index corporate bond yield over a swap yield over the market price of credit risk as determined by a company index CDS, referred to as a residual spread. This is my preferred approach for Eurozone and US dollar, but it does contain weaknesses – indices are not available in other currencies. Company CDS' do not always exist.

The CFO and CRO Forums have been very busy in the last year looking closely at this and two other approaches, the covered bond market and the output of a Merton style model.

They have concluded that the following proxy formula works well based on evidence of the past few years.

Let's take a look at how the formula compares to the residual spread approach.

Slide 11 – Level of liquidity risk premium in illiquid assets

EXPLAIN CHART

Interestingly this formula compares closely to the residual spread approach pre and post financial crisis, but it does seem to introduce some prudence in a financial crisis calibration. Should both the 40bp and the 50% level in the formula be a little higher to calibrate better to financial crisis conditions?

The formula is simple and it will encourage the industry to be united on this. That is important in discussions with the regulator.

But what about deciding how much liquidity premium to use in the valuation? This is where I believe much work remains to be done.

Slide 12 – Liquidity premium in the valuation: key issues

One approach is to restrict the corporate bond liquidity premium based solely on the features of the liabilities. To what extent are the liabilities made up of stable and predictable cash flows resembling an illiquid fixed interest asset?

This is the trend within Solvency II liquidity premium taskforce report and QIS 5. EXPLAIN. This approach mirrors decisions taken in the IASB Phase II project.

This works fairly well where markets remain open, such as before the recent financial crisis or since May 2009.

But of course, the nature of an insurance business model is to get premiums from policyholders, invest the premiums in assets, and hold those assets to back the liabilities. A liquidity premium can only be earned by an insurer in practice by thinking about the liabilities, the assets and the ALM strategy together.

And I think this is where Solvency II and Phase II are introducing an accounting mismatch, driven perhaps by some who want to make life easy for themselves and not worry about whether the numbers are meaningful, as well as those who have been reading too much financial economics theory which states that market-consistent values of liabilities have to be independent of the assets held. That theory relies on the efficient market hypothesis, which frankly goes out of the window in the midst of a financial crisis.

Don't forget, in a year end 2008 environment if the illiquid markets all dry up and you don't already hold the assets, then you can't capture the liquidity premium in practice. We are back to the pension scheme valuation problem of companies' equity going up at times of crisis because of accounting mismatches.

Critical from a risk management perspective is whether there is a viable investment strategy available to the insurer to enable the liquidity premium to be captured.

This is why on top of liability driven restrictions I think you need to also consider asset and ALM aspects to judge a sensible level to capitalise in a market-consistent valuation. To introduce further restrictions to the liquidity premium in certain circumstances.

Interestingly the Solvency II illiquidity premium task force paper principle 3 says **READ**.

How can principles 2 and 3 both be met in a dried up market such as end 2008 if you do not already own the assets? The paper does not

elaborate. But this principle seems to have been forgotten about in the QIS 5 specification.

Don't forget QIS 5 covers year end 2009, and QIS 4 covered year end 2007. Neither covered year end 2008. For those of you working on Solvency II projects I suggest you try and apply the QIS 5 approach to the year end 2008 valuation as well. You'll realise that certain aspects of the instructions are difficult to interpret in a year end 2008 environment.

So while the formula we saw earlier may be introducing some prudence in a year end 2008 environment, the Solvency II and IASB approach we may see in the future in allocating the liquidity premium in the valuation may well be optimistic. It will be pure chance if the two offset.

So, what about the calibration of stochastic models?

Slide 13 – Valuation of embedded financial options

Just to recap:

Implied volatility is the wrong parameter in the wrong model to get the right price.

What do I mean by that?

EXPLAIN

This is why I thought the various adjustments we saw to implied volatilities at year end 2008 in calculating market-consistent embedded values were based on flawed logic.

EXPLAIN

So how would companies behave now if the financial crisis were to repeat itself?

Nothing in the public domain suggests to me that a credible approach has been developed in anticipation of the next financial crisis, particularly at an industry level.

In terms of the QIS 5 specification, there is a discussion about whether to use implied volatility or historic volatility. This suggests using implied volatilities where the calibration instruments are deep and liquid, otherwise considering historic volatilities in the calibration. There is a separate section on the calibration of the economic scenario generator which states that the ESG should reproduce the market prices of options, again pointing towards using implied volatilities. But QIS 5 does not consider the fair value in illiquid markets developments in this context.

Slide 14 – Adjustments to option market prices

The industry really needs to be thinking about liability option valuations in the context of the fair value measurement developments, using unadjusted market prices where markets remain deep and liquid and considering what an orderly price may be in more extreme markets. In this way, consistency between the asset and liability valuations can be maintained.

There is also a case for allowing for a liquidity premium for a block of business with embedded options and guarantees, but only for the non-option cash flows. The nature of optionality means that we cannot capture liquidity premium in assets backing option cash flows. No such assets exist.

There are other reasons you will hear for moving away from market prices, which I have less sympathy with.

TALK THROUGH

Moving on now to non hedgeable risk.

Slide 15 – Risk adjustment/margin

COMPARE AND CONTRAST SOLVENCY II AND PHASE II

Interestingly the MCEV Principles come from a different perspective in this area, calling this adjustment a Cost of Residual NHR, consisting of both a charge for uncertainty and an allowance for risks not allowed for elsewhere.

There are two things to think about.

One is the proposals under QIS 5. Where has this 6% come from? CEIOPS has never presented a credible story to back this 6%, instead referring to the fact that this is used by the Swiss Solvency Test. Appendix D of the Swiss Solvency Test, drafted about 7 or 8 years ago, talks about it being a Weighted Average Cost of Capital calibration. The regulators do not seem to realise that the WACC is primarily a market risk measure, and we are allowing for all the market risk directly in the calculation. So much of it may be double counting.

The second problem is that there isn't enough guidance to really tell if Solvency II or Phase II adjustments will be comparable. Is this a charge for uncertainty, or an allowance for risks not allowed for elsewhere? The likelihood is a mix of the two, and no one is really sure how the mix splits by company or for the industry as a whole.

What companies should be doing is undergoing a risk management process to identify what risks are being allowed for where in the valuation, then assessing to what extent the Cost of residual NHR in MCEV or the risk margin in Solvency II or the risk adjustment in Phase II allows for these risks, or whether they are allowed for more directly elsewhere.

Slide 16 – Allowance for NHR - recommendations

This is a process we developed for MCEV, and we have already used with some companies for Solvency II.

EXPLAIN

Interestingly, I have seen some unintended consequences of CEIOPS pushing for a large risk margin. EXPLAIN.

Perhaps we will see similar unintended consequences in Phase II.

Slide 17 – Allowance for own credit risk

- Last paragraph capable of multiple interpretations. No adjustment to what?
- IASB published a credit risk in liability valuation discussion paper last year; this year is confirming its stance that own credit risk has a role to play in the measurement of liabilities. FASB has a similar view.
- But the Phase II exposure draft does talk in paragraph 38 that the “present value of the fulfilment cash flows shall not reflect the risk of non-performance by the insurer, either at initial recognition or subsequently”.
- I think there should be limits, but there are consequences of not allowing any own credit risk in a solvency liability valuation. You introduce pro-cyclicality and end up with differences to the accounting! You could instead allow for the risk of asset non-performance in the capital requirements.
- Already talked about not liking the 10bp negative adjustment to swaps; I'd be much happier leaving instruments such as government bonds or swaps unadjusted. Of course if the 10bp remained at the same level during financial crises that would avoid pro-cyclicality

- QIS 5 changes the wording again

Slide 18 – Valuation of other assets and liabilities

Perhaps so it can justify the stance it is taking in the valuation of corporate debt.

- Corporate debt is now typically valued within the IFRS at either amortised cost or fair value.
- Well QIS 5 introduces a new valuation for corporate debt. You use entry value on day 1, then subsequently you allow for new risk-free rates. So you lock in the day 1 credit risk. What about liquidity premium on corporate debt? The QIS 5 specification is not clear.

More generally there are oddities with other aspects of the valuation of other assets and liabilities.

- Moving on to the pension scheme, QIS 5 says use the IAS 19 basis. This forces companies to use a high quality corporate debt yield to discount pension liabilities, in both the main balance sheet and the SCR stress. We discussed already how this leads to odd results in the midst of a financial crisis where significant surpluses arise, and similar effects are found in the credit risk module when calculating the SCR.
- So we have 3 different interpretations of the phrase “no adjustment to take account of own credit standing” all found in QIS 5. One for technical provisions, one for corporate bonds, and one for pension scheme liabilities.
- And finally the valuation of tax assets and liabilities. One of the oldest international accounting standards IAS 12 has rules that bear no resemblance to what we are used to in market-consistent valuations today. It covers both deferred tax assets and liabilities. It talks about not permitting any discounting, because it reasons the future cash

flows themselves are uncertain. It talks about only creating a deferred tax asset or liability if the likelihood of the asset or liability is greater than 50% probable. These features are in no way consistent with discounted cash flow and MCV techniques, and affect different companies in different ways, depending on their tax position. For some reason, QIS 5 directs the user to follow this standard without amendment. This creates an inconsistency with the rest of the valuation.

And that's all on the technical issues. A few thoughts for you to feed back in your QIS 5 submissions.

But before we move on to your comments and questions, I will leave one last question for us all to think about. **What sort of valuation metric do we want?**

Slide 19 – What sort of valuation metric do we want?

Different metrics encourage different behaviours.

Do we want to return to the Twentieth Century, where in a downturn insurance companies were encouraged by the valuation rules to sell their lower risk assets and buy higher risk assets in order to get a higher valuation interest rate and somehow create regulatory value and protect solvency?

Do we want to stick to the market-consistent method developed in the Noughties? What happens when asset markets dry up and bid-ask spreads explode? When swap yields become lower than government bonds? Does the financial crisis lead to some accidental prudence? Does this trigger procyclicality? Has Solvency II failed so far to address these issues?

Or do we want to recognise where market efficiencies break down at times of financial crisis, and insert some limited and defensible mitigating

features? Encourage insurance companies to exercise judgement in the asset valuation when markets dry up. Allow insurance companies to take advantage of market inefficiencies in the valuation, where given their business model they can take advantage in practice. I believe this maintains the link with ALM, the improved objectivity and the improved consistency, while introducing more financial stability.

What do you think? Thank you very much.

DRAFT