

ISSUES IN BRIEF

UK LIFE INSURANCE

**FIXED-TERM ANNUITIES AS
A RETIREMENT SOLUTION**

**CASE STUDY: RELIANCE
MUTUAL RESTRUCTURING**

**HOW WILL EMIR AFFECT
LONG-TERM GUARANTEES?**

**RETIREMENT PUSHES EQUITY
RELEASE TO TIPPING POINT**

**THE DETAILS ABOUT FUTURE
MANAGEMENT ACTIONS PLANS**

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AS WE ISSUE OUR LAST UPDATE OF 2012,

THE UNCERTAINTY FACED BY THE INSURANCE INDUSTRY ABOUT SOLVENCY II IMPLEMENTATION IS PERHAPS AS GREAT AS IT HAS EVER BEEN. DIFFICULTIES CREATED BY THE HIGH COST OF LONG-TERM GUARANTEES IN CURRENT CONDITIONS NOW SEEM CERTAIN TO DELAY IMPLEMENTATION TO AT LEAST 2016, AND A LARGE PROPORTION OF THE ATTENDEES AT THE ACTUARIAL PROFESSION'S LIFE CONVENTION IN BRUSSELS IN NOVEMBER WHO COMPLETED OUR SURVEY THOUGHT IT MIGHT BE EVEN LATER. MANY ASPECTS OF THE NEW REGULATIONS STILL PRESENT CHALLENGES FOR INSURERS, SO THE ADDITIONAL TIME WILL BE WELCOMED BY SOME. WE HAVE INCLUDED AN ARTICLE DISCUSSING THE CONSIDERATIONS ASSOCIATED WITH THE PRODUCTION, IMPLEMENTATION AND MAINTENANCE OF THE FUTURE MANAGEMENT ACTIONS PLAN FOR THOSE WHO ARE ATTEMPTING TO PREPARE THIS ASPECT OF THE SOLVENCY II REQUIREMENTS.

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PRINCIPAL AND
CONSULTING
ACTUARY



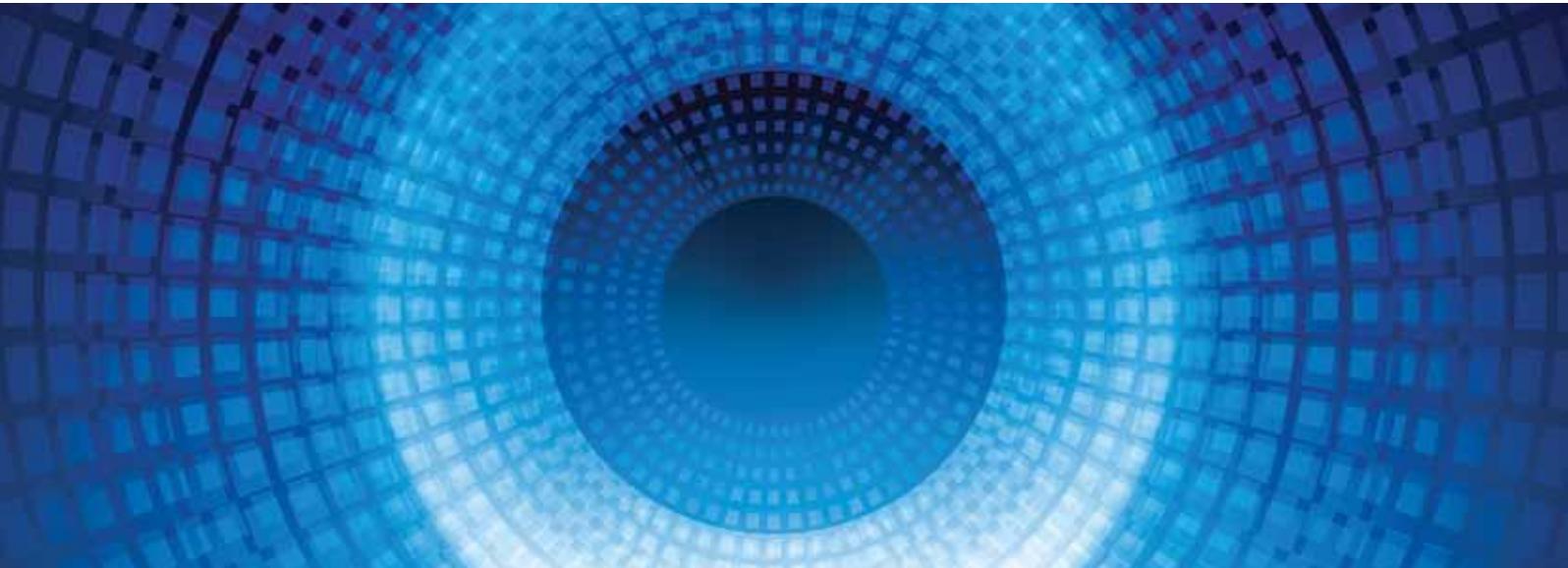
With the new regulations being delayed, attention is returning to more pressing strategic issues such as the growing retirement income challenge. In this issue we discuss the potential flexibility that fixed term annuities can provide for some retirees and how the industry is increasingly looking to equity release as a way to support income needs.

We finally take a look at the complications which arise when a mutual restructures to reflect the declined in with-profits business. Satisfying all stakeholders requires careful planning and a well-structured process.

As the year closes there are still many threats to the prospect of economic recovery. However, there have at least been some encouraging signs recently, so we wish you a happy festive period and look forward to seeing you at one of our events in the New Year.

Nick Dumbreck

RETIREMENT SOLUTIONS: THE ROLE OF FIXED-TERM ANNUITIES



According to the UK's Office for National Statistics (ONS), the number of people aged over 100 in the UK is expected to increase seven-fold by the year 2035, and around one third of all babies born in 2012 are expected to survive to age 100. This dramatic increase in life expectancies is unlikely to be matched year for year by an increase in the average retirement age, and therefore retirement periods are likely to continue to increase.

In addition, times are particularly difficult for those reaching retirement in the current economic climate in the UK, with record low interest rates, increased longevity and a potentially penal regulatory environment for annuity writers causing annuity rates to plumb new depths. Given this, it is unsurprising that many retirees are looking for ways to avoid 'locking in' to annuity rates at their current level.

This presents an opportunity for life insurers to innovate when it comes to product design for retirees, as purchasing one pensions product (e.g., a lifetime annuity) at the start of retirement and holding onto it until death (which could occur several decades later) may no longer be the most appropriate strategy.

Much innovation has already taken place, with buoyant markets developing in respect

of products such as equity release (of which more elsewhere in this edition of *Issues in Brief*) and income drawdown. Much has been written about the pros and cons of income drawdown, but another retirement product to which pensioners may wish to turn is the fixed-term annuity (FTA).

The design of these products varies, but a common structure involves the payment of a single premium at the contract outset, and in return the retiree receives a fixed income for the term of the contract (usually five to 15 years), plus a guaranteed lump-sum payment at the end of the term which can be used to invest in another retirement product at that time at prevailing market prices.

There are a number of providers of FTAs in the UK market, such as LV=, Aviva and Primetime Retirement, although MetLife exited the market in 2012.

An FTA could result in a better financial outcome in the event that the retiree's health deteriorated during the fixed term in such a way that they would be eligible for enhanced lifetime annuity rates by the end of the term as a result of their worsened health.

One of the other main selling points of FTAs is that they do not force the retiree to permanently lock in to a low annuity rate at retirement. This means that if the retiree believes that market interest rates are likely

to increase during the fixed term by an amount which will result in substantially improved annuity rates by the end of that term, then an FTA may be an appropriate alternative product choice, especially if the retiree is not keen to take on investment risk in the meantime (as they would have to if they purchased a drawdown contract).

Many FTAs also come with the option of life cover, in the form of a 'return of capital' style of death benefit. Of course, there is nothing to stop the holder of a lifetime annuity taking out life cover independently of their annuity, but it is our observation that the implicit charge for the death cover available under FTAs is often somewhat cheaper than life cover which could be bought separately.

Another selling point of an FTA relative to a lifetime annuity is the degree of flexibility. Holders of FTAs are able to decide at the end of the fixed term whether they wish to lock in to a lifetime annuity or whether to reinvest the proceeds into another FTA or into an income-drawdown-style product. This flexibility is of value in itself, and therefore can come at a cost.

FTA policyholders also have a degree of flexibility over the level of income they receive during the fixed term. This means that the FTA could be used, for example, as a bridging income while the policyholder

is still working part-time, or while they are waiting to reach the state pension age. The income level receivable under an FTA is, however, subject to annual limits set by the Government Actuary's Department (GAD) and therefore it is unlikely that the annual FTA income during the fixed term would be materially higher than would be available from a lifetime annuity.

However, based on current market prices of FTAs that we have observed in the event that market interest rates remained roughly as they currently are and the annuitant's health did not deteriorate, it seems likely that the FTA would result in a worse financial outcome for the retiree than a lifetime annuity purchased at retirement.

Indeed, it is by no means guaranteed that the FTA will produce a better outcome for the retiree even if interest rates were to increase or if the annuitant were to suffer a deterioration in health during the fixed term. Our analysis suggests that relatively modest increases in interest rates or the development of a medical condition which does not offer a large uplift to annuity rates may not be enough to outperform a lifetime annuity.

All of the above also assumes that life expectancies do not increase more than expected by insurers in the assumptions they use for pricing annuities. In the event that expectations around future longevity increase dramatically during the fixed term, annuity rates may fall even further than anticipated in the future.

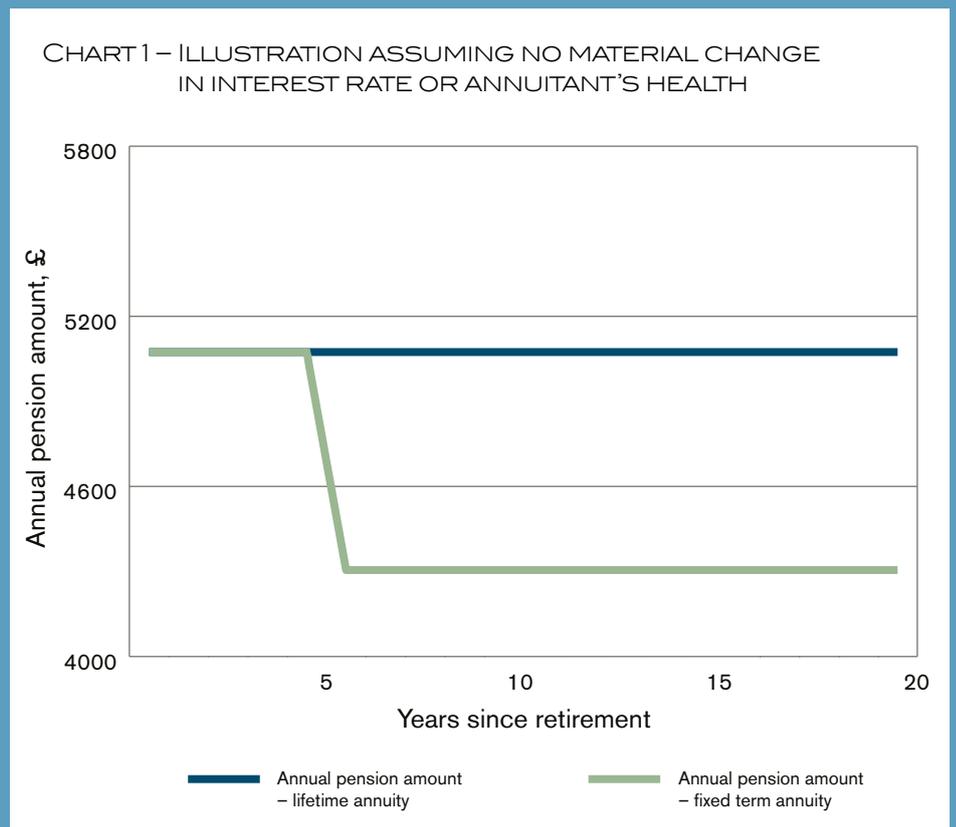
In addition, the policyholder is likely to incur further sets of commission or adviser costs at the end of the fixed term when they take out another retirement product.

Chart 1 compares the income that a 60-year-old healthy male might expect to receive under two options:

1. The retiree purchases a lifetime annuity at retirement
2. The retiree purchases a five-year FTA, followed by a lifetime annuity at the end of the five-year term

The illustration assumes that interest rates and the health of the annuitant remain broadly unchanged at the end of the fixed term. It is assumed that the annual income received under the FTA during the five-year term is the same as that available under the lifetime annuity in order to facilitate a ready comparison. In practice, this may not be possible due to the GAD limits mentioned earlier.

Chart 1 clearly shows that under this illustration, the guaranteed lump sum available to the annuitant at the end of the fixed term would not be sufficient to buy an annual annuity equal to the one available at retirement.



Compare this to Chart 2, which shows how the FTA might compare to a lifetime annuity for a 60-year-old who is healthy in retirement but who suffers a heart attack during the five-year fixed term and is therefore able to obtain an enhanced annuity rate at the end of the term. Assume further that market interest rates used for annuity pricing have increased by 0.5% by the end of the five-year term.

In this illustration, the lifetime annuity rate available at the end of the term is sufficient to provide an income which is greater than that which was available to the retiree via a lifetime annuity at retirement.

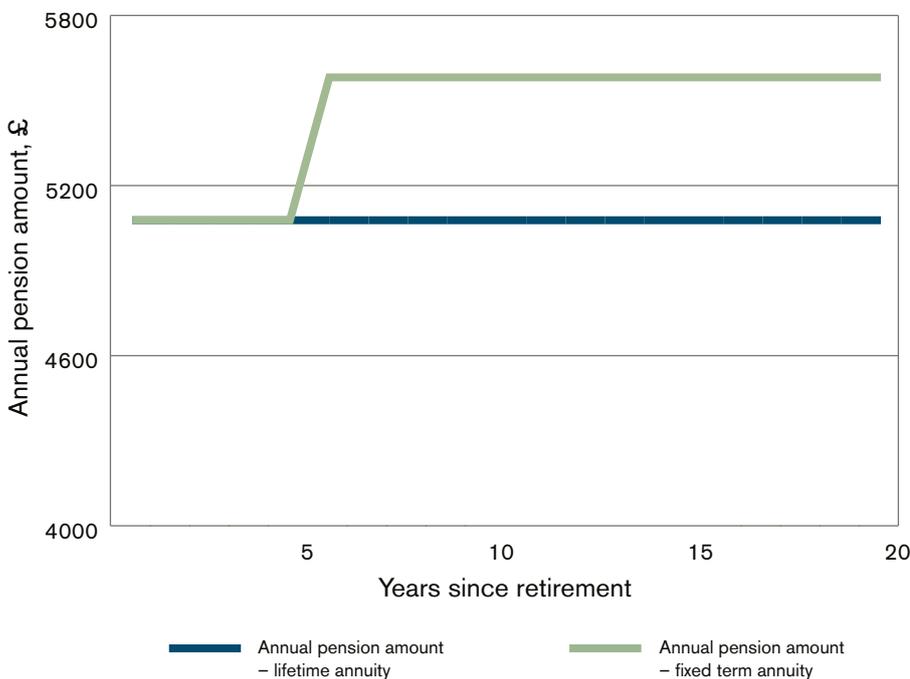
However, our analysis shows that other medical conditions or deteriorations in health which may develop during the fixed term and which offer a more modest enhancement to annuity rates than a heart attack might achieve (such as hypertension and high cholesterol) may not result in a better financial outcome for the annuitant. The same outcome may result in the event that interest rates do not increase.

Of course, even without a deterioration in the annuitant's health, an increase in interest rates by the end of the fixed term could result in a better financial outcome for a FTA relative to a lifetime annuity.

Our initial analysis also indicates that, for those wishing to purchase a joint life retirement product, a joint life FTA is more likely to result in a better financial outcome than a joint life lifetime annuity if the spouse **is significantly younger** than the main policyholder, or if the spouse's pension as a percentage of the main pension is particularly high.

In conclusion, the availability of FTAs in the retirement market is welcome, as it offers consumers more choice and flexibility over how they fund their retirements. However, advisers need to take care to explain the risks of FTAs to their clients and to make it clear that, notwithstanding their flexibility, they are by no means guaranteed to result in a better financial outcome overall for the retiree.

CHART 2 – ILLUSTRATION ASSUMING 0.5% INCREASE IN INTEREST RATES USED FOR ANNUITY PRICING AND ANNUITANT SUFFERS HEART ATTACK DURING FIXED TERM



John Perks, managing director, retirement solutions at LV= says that ‘...there is a role for fixed-term annuities in planning for retirement in the right circumstances. However, as in many things in life, there are no cast-iron guarantees that these products will deliver a better outcome and the opportunity to make financial decisions during retirement as circumstances change should not be underestimated as an end in itself.’

If you would like to discuss any points raised in this article, please contact Chris Lewis at christopher.lewis@milliman.com, Robert Bugg at robert.bugg@milliman.com or contact your usual Milliman consultant.

PROS AND CONS OF FTAS WHEN COMPARED TO LIFETIME ANNUITIES

ADVANTAGES OF FTAS	DISADVANTAGES OF FTAS
<ul style="list-style-type: none"> • Upside potential if interest rates increase during fixed term • Potential access to enhanced annuity rates if health deteriorates • Flexibility over income level to meet needs of the individual • More flexible death benefit options often available • Flexibility over income product chosen at end of fixed term • Potential access to higher annuity rates if personal circumstances (e.g., marital status) changes 	<ul style="list-style-type: none"> • Income level subject to GAD limits during fixed term • Lifetime annuity available at end of fixed term is unknown and may be less than that available at retirement, depending on the policyholder's health, changes in interest rates and views around life expectancies • Likely to incur additional commission/advice costs at the end of the fixed term • If the enhanced annuity market grows significantly by the end of the fixed term, the cost of a lifetime annuity on a standard basis may increase as a result of this

IN CONCLUSION, THE AVAILABILITY OF FTAS IN THE RETIREMENT MARKET IS WELCOME, AS IT OFFERS CONSUMERS MORE CHOICE AND FLEXIBILITY OVER HOW THEY FUND THEIR RETIREMENTS. HOWEVER, ADVISERS NEED TO TAKE CARE TO EXPLAIN THE RISKS OF FTAS TO THEIR CLIENTS AND TO MAKE IT CLEAR THAT, NOTWITHSTANDING THEIR FLEXIBILITY, THEY ARE BY NO MEANS GUARANTEED TO RESULT IN A BETTER FINANCIAL OUTCOME OVERALL FOR THE RETIREE.

RELIANCE MUTUAL CASE STUDY



On 31 May 2012, the members of the mutual insurer Reliance Mutual Insurance Society Limited voted overwhelmingly in favour of its Board's proposals with respect to the future strategy of the Society as set out in the Scheme of Arrangement. This vote, the first of its kind by a UK mutual, was the culmination of a long process during which the Board of the Society carried out a detailed review of its options with regards to the future running of the Society and the possible ways in which the significant value built up from past acquisitions and strategic initiatives could be distributed to its members.

As the actuarial advisers to Reliance Mutual throughout this process, Milliman worked alongside the Board and senior staff of Reliance Mutual and gained insight into the demands and challenges presented at each stage. This article sets out a case study of the process undertaken including the reasons behind the restructuring and the key elements of process itself.

WHY HAVE A VOTE AND A SCHEME OF ARRANGEMENT?

Reliance Mutual closed to new with-profits business in 1999 and opted to pursue a strategy of continuing to write non-with-profits and unit-linked business, as well as starting a programme of acquiring blocks of business from other insurers. The aim was to spread operating costs, increase policyholder security and ultimately improve payouts for the existing with-profits policyholders.

As a result of this strategy, and the surplus built up over the years, the Society was in a position of being able to make substantial enhancements to final with-profit payouts to reward the with-profits policyholders for providing the capital necessary to write and acquire new business. Though successfully providing higher payouts to policyholders than would otherwise have been the case, as the with-profits business matured the Board continued to examine and review its long-term strategy to ensure the equitable return of the value built up to its members.

Around 2008, the FSA began a review into the operation, management and governance of UK mutual insurers in the form of Project Chrysalis. The review concentrated on, amongst other things, the ability of mutual insurers to write new business without

materially adversely affecting existing policyholders, and firms were required to justify their strategies to the FSA.

In order to satisfy the desire to return value equitably to their members and to reassure the regulator, the Society decided to put the results of its strategic review and strategic proposition into a Scheme of Arrangement and invite its members to vote on the proposals.

THE SCHEME OF ARRANGEMENT

Under the Scheme of Arrangement, the main Reliance Mutual with-profits sub-fund (WPSF) has been divided into two newly-created sub-funds. The existing with-profits business has been allocated to With-Profits Sub-Fund 1 (WPSF1) and the remaining business has been allocated to the Ordinary Sub-Fund (OSF). WPSF1 has remained closed to new business and new non-profit business will continue (and has continued) to be written into OSF.

The division of capital between the WPSF1 and the OSF was determined to ensure that the WPSF1 policyholders could expect total payouts to be at least as high as they would be if the Scheme was not approved and the business run off instead. A key part of the decisions around the division

of capital is the make-up of that capital and in particular the allocation of the future profits from the non-profit and unit-linked business.

Also key to the future security and benefit expectations of the Reliance Mutual members are the details of how expenses should be split between the Society's sub-funds and the capital support mechanisms in place between the sub-funds.

THE COURT APPROVAL PROCESS

Although not required by the Companies Act, Reliance Mutual appointed an Independent Actuary to provide a report to the Court and to its members on the consequences of the Scheme.

This report, along with a report by the FSA, was presented to the High Court at a Directions hearing on 30 March 2012. At this hearing, the judge approved the Society's general approach to the member vote on the Scheme including the communications with members and the structure of the vote itself.

On 27 April 2012, the Society sent out mailing packs to its members containing an explanatory letter from the chairman of the board and a members' guide. The latter provided an explanation of the voting process, a summary of the Scheme, and an explanation of the motivations behind the Scheme.

THE MEMBER VOTE

The member vote took place on 31 May 2012. For the purposes of the vote, members were divided into three classes: members holding with-profits policies in the main Reliance Mutual WPSF, members holding non-profit policies in the main Reliance Mutual WPSF and all other members. The division was such that the impact of the Scheme on all members within each class would be broadly similar.

For the Scheme to be approved, each class of member was required to vote in its favour. This required 50% of members within each class to vote for the Scheme and 75% of members in each class to vote for the Scheme by policy value.

The result of the member vote was one of overwhelming support for the Scheme across all three classes with over 96% of members by number and value voting in favour of the proposals. The Society's chief executive commented that: "The Board always maintained that adoption of the Scheme was in all our policyholders' best interests and the result of the vote from all three classes of policyholders was a tremendous endorsement for us going forward."

High Court approval was granted at the Final Hearing on 28 June 2012. The Scheme went live on 1 August 2012.

SUMMARY

The Reliance Mutual Scheme of Arrangement aimed to clarify the operation of the Society and to formalise the strategic direction of the Society. Because it changed the entitlements of some groups of members, the Scheme required member approval and sanction by the High Court. These were granted in May and June of this year and the Scheme has now been implemented within the Society.

Restructuring a mutual insurer is a technical and complex process and one that requires a great deal of planning and preparation.

Milliman has worked alongside Reliance Mutual throughout this process and we have gained insight into the demands and challenges presented at each key stage of the process. These stages include:

- The initial analysis of the high-level strategic options available
- The modelling of the post-Scheme position of the Society in a range of possible structures
- The scenario and stress testing required to satisfy the Board, the FSA and the Independent Actuary
- The revision of the principles and practices of financial management to reflect the post-Scheme management of the Society

Now that the Scheme has been implemented, Milliman continues to work with the Society to assist with the practicalities of its implementation.

If you have any questions about the topics covered in this case study or any other aspects of restructuring, please contact Oliver Gillespie at oliver.gillespie@milliman.com, Gregory Campbell at gregory.campbell@milliman.com or your usual Milliman consultant.

RESTRUCTURING A MUTUAL INSURER IS A TECHNICAL AND COMPLEX PROCESS AND ONE THAT REQUIRES A GREAT DEAL OF PLANNING AND PREPARATION.

EMIR IS FAST APPROACHING: WHAT DOES THIS MEAN FOR LONG-TERM FINANCIAL GUARANTEES?



As we approach the end of 2012, the ongoing implementation of the European Market Infrastructure Regulation (EMIR) is coming ever closer. September 30 marked the original deadline, by which the European Securities and Markets Authority (ESMA) was due to submit technical standards on centrally cleared derivatives to the European Commission. However, at the time of writing, the European Commission and ESMA look set to postpone this deadline now that it has expired, citing that *‘the present deadline is inconsistent with the achievement of a global approach.’*¹

Nonetheless, given that the primary legislation is in force, there is no escaping the onset of the forthcoming central clearing for eligible over-the-counter² (OTC) derivatives and significant risk mitigation

requirements for all other OTC derivatives. OTC derivatives are standard risk management tools used by the insurance industry with, for example, interest rate swaps and swaptions being used by many companies to manage interest rate risk exposures. In particular, the more liquid tenors are frequently utilised as part of the dynamic hedging programmes of variable annuity and long-term guarantee providers. In this article, we think through some of the implications of moving to a centrally cleared basis, in particular from a technical valuation perspective, and what this could mean for the risk management of long-term guarantees in a Solvency II context.

WHAT IS EMIR?

EMIR is the regulatory vehicle through which the European Union delivers on its

G20 commitments of September 2009.³ This is a commitment to ensure that all standardised OTC derivative contracts are traded on exchanges, or electronic trading platforms where appropriate, and cleared through central counterparties. Implementation was originally intended by end-2012 at the latest; although, as illustrated by the timeline below, practically this is expected to be some time beyond this. Other commitments made were that OTC derivative contracts be reported to trade repositories, and that non-centrally cleared contracts should be subject to higher capital requirements. The intention of these global efforts is to reduce risk and increase transparency, with the opaqueness and unregulated nature of the OTC derivatives markets being cited as a key factor contributing to the perilous events of the Global Financial Crisis.



The primary legislation of EMIR is already in force,⁴ as of 16 August 2012.⁵ However, the first central clearing obligations are not expected to take effect until summer 2013. The technical standards which the EU Commission has to formally adopt cover, amongst other areas:

- The detailed technical requirements for central counterparties (CCPs)
- The framework for the determination of which derivatives are subject to the central clearing obligation
- The thresholds for non-financial institutions (see box below)

Once the technical standards are adopted, central counterparties⁶ must apply for recognition within six months of the adoption date, and only then can the first central clearing obligations be imposed.

WHAT ARE SOME OF THE IMPLICATIONS OF EMIR?

Typically, counterparty risk for OTC interest rate derivatives is already mitigated by means of some form of collateral arrangement in the governing ISDA swap agreement, with this mechanism also helping to keep pricing competitive.⁷ However, these arrangements may involve only periodic transfers of collateral, due to wide minimum transfer thresholds. In addition, a range of 'high-quality' collateral (with appropriate haircuts) can be posted.

In comparison, central clearing moves derivative users to cash-only⁸ collateral

requirements for the full mark-to-market margin on such positions on a daily basis (without being subject to minimum transfer thresholds), in a similar manner to futures and as currently required by current cleared swap markets. This cash margin held at the exchange typically also earns the overnight rate of interest.

We expect that the move to cash-based variation margin on interest-rate derivative positions will rejuvenate the debate around the most appropriate risk-free discount rates for insurance company liabilities. For a while it has been a standard in the banking industry to price interest rate derivatives on the overnight index-swap curve (OIS), which gives an actual reflection of the funding cost for these instruments (e.g., the earning of the overnight interest rate on collateral). This now becomes particularly apparent

in a centrally cleared world, with the main clearing houses such as LCH.Clearnet calculating mark-to-market positions on this discount curve basis.⁹

However, insurance companies, whilst recognising this issue, have to satisfy regulatory requirements. Earlier in the Solvency II process, industry debate cited the liquidity of the OIS curve as much lower than for the LIBOR curve at the longer end, and hence many argued for LIBOR as a more reliable and objective measure. In setting the Solvency II risk-free curve the European Commission adopted this stance, and despite improvements in OIS liquidity since then, is unlikely to change this view in the near future given more pressing challenges, such as gaining consensus on the treatment of long-term guarantees.

ADDITIONAL DETAIL

The scope of EMIR covers all financial institutions established within the EU, as well as non-financial institutions exceeding defined thresholds, excluding pension schemes that have a temporary three-year exemption (the need to potentially hold large amounts of cash, to manage variation margin collateral, is one of the key reasons for pension schemes, which strategically hold low cash allocations, to lobby for their exemption).

In addition, any transaction with an obligated EU entity, or any transaction where the contract has a "direct, substantial and foreseeable effect" within the EU, will fall within scope. The clearing obligation will apply to contracts entered into on or after the date of the regulation's entry into force, but only once the clearing obligation takes effect sometime next year.

EMIR also includes reporting obligations for all derivatives, risk management standards for non-cleared OTC derivatives and requirements for central counterparties.

**OIS-LIBOR
SPREAD BASIS**

The difference between OIS and LIBOR makes marginal difference for new at-the-money positions. However, it is of more relevance for in-force legacy hedge asset positions which, given the significant fall in interest rates in recent times, are now significantly in-the-money for hedge portfolios of guarantee providers that are typically net fixed receivers. We illustrate a recent market snapshot of these curves for both the EUR and GBP markets in the Figures 1-2. These graphs also illustrate the Solvency-II-defined risk-free curve, which accounts for a 10-basis-point deduction from the market LIBOR curve, and extrapolates to an ultimate forward rate beyond the regulator-defined last liquid point (which is currently 4.2%, 20 years in the case of EUR, and 50 years in the case of GBP).

FIGURE 1: EUR INTEREST RATE CURVES¹⁰ (28 SEPTEMBER 2012)

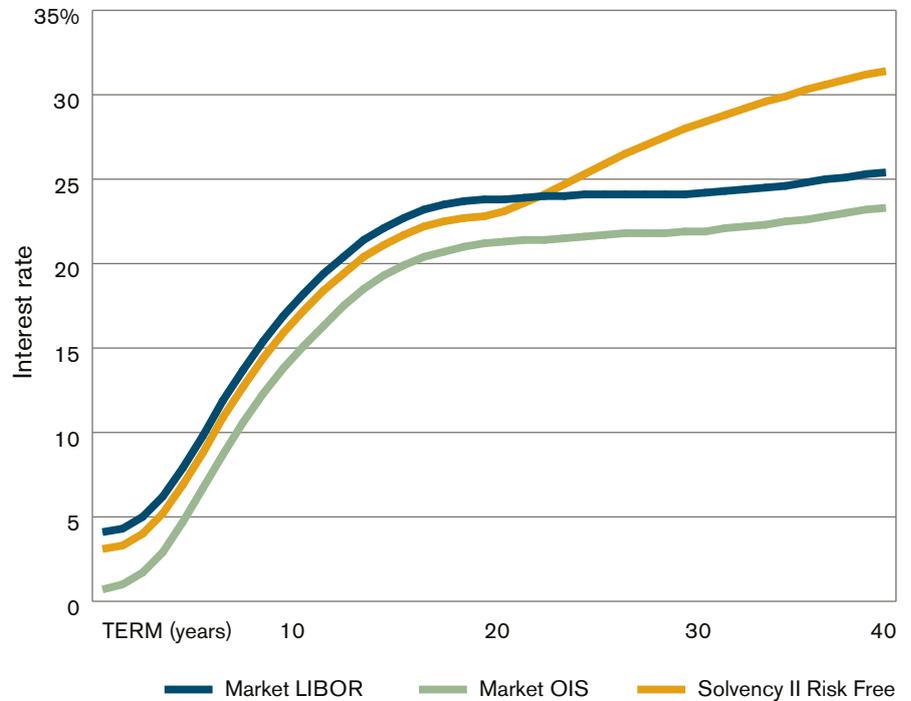
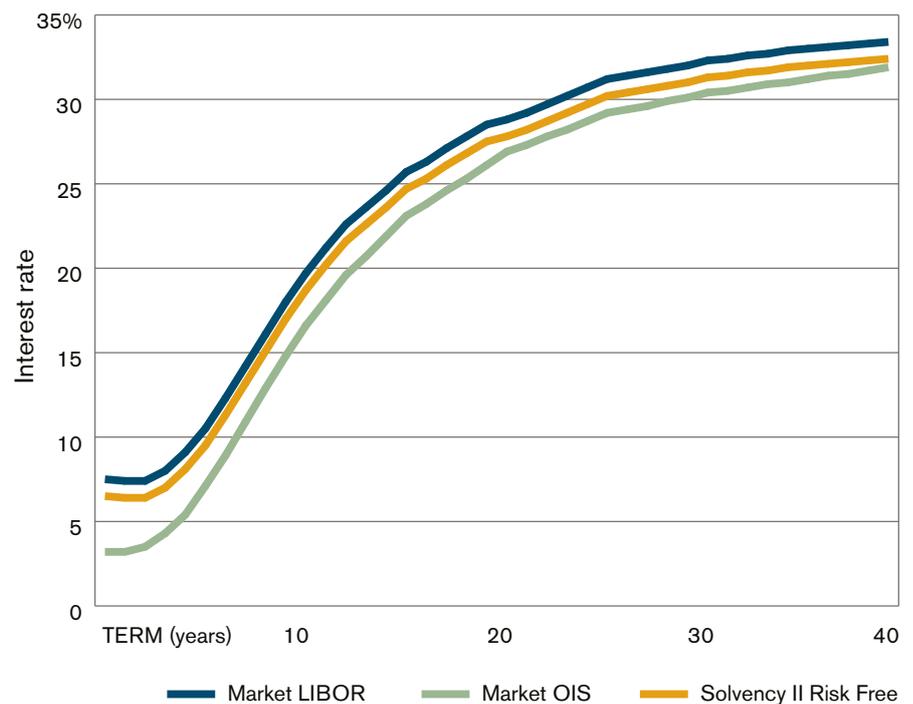


FIGURE 2: GBP INTEREST RATE CURVES¹¹ (28 SEPTEMBER 2012)



Some of the key thoughts to draw from a comparison of these curves:

- Many insurers continue to risk manage on a LIBOR-only basis. Whilst Solvency II continues to reference the LIBOR-curve, their liability valuations are likely to remain referenced to this curve. However, with OTC markets already quoting on an OIS-curve and future CCP clearing houses marking variation margin to an OIS-curve, insurers could certainly justify updating their asset valuations to reflect this basis. Given that OIS sits below the LIBOR curve, this would result in an immediate Solvency II balance-sheet gain for an insurer in the typical position of being a net fixed receiver. However, this gain in asset values should be considered in the context of the existing guarantee premium pricing basis, which is still likely to be determined on a LIBOR basis.
- A key component of the pricing of long-term guarantees is the economic cost of hedging. If hedge assets are expected only to earn the overnight interest rate at a clearing house (as opposed to the higher six-month LIBOR rate), then to not use the OIS-curve for determining this cost component would potentially leave a funding risk for managing a dynamic hedge strategy. This could lead to a one-off increase in guarantee premiums due to the use of a lower discount rate.
- If assets and premiums are determined based on the OIS-curve, and the liability valuation basis remains LIBOR-based, then given the variability in difference between these curves, this will expose any hedging P&L to an additional basis risk factor—LIBOR-vs-OIS spread basis—making interest rate risk management more complex going forward.
- In the case of the EUR market, the spread is further amplified by the construction of the Solvency II risk-free curve, which extrapolates to an ultimate forward rate level currently far in excess of the market's view of risk-free for the long term. This level of spread will depend on fluctuations in the market, and in particular the OIS curve, relative to the fixed long-term ultimate forward rate. In a potential extreme upside scenario, the market long-term rate could potentially rise above the ultimate forward rate (at least before the point at which a regulator could react), leading to a reversal of the surplus into a Solvency II balance-sheet loss. Hence there is also potential capital at risk to account for, for which an additional SCR charge component would logically be required.
- Finally, we note that there is a distinct difference between the GBP and EUR markets, with the Solvency II distortion to the risk-free curve being much less significant for GBP, due to a longer last liquid point of 50 years. The last liquid point is a regulatory parameter, and in practice the markets are much closer in terms of actual market liquidity. The impact of this regulatory parameter could have potential ramifications for the attractiveness and feasibility of offering long-term guarantees in each respective market.

THE SPREAD BETWEEN OIS AND LIBOR ADDS A NEW MARKET RISK FACTOR TO THE HEDGING OF A EUR- OR GBP-BASED P&L.

OIS-SOLVENCY II SPREAD VOLATILITY

To give an indication of the significance of this variability and what a distribution could look like, Figures 3-4 plot percentile points on daily snapshots of the spread between the OIS curve and the Solvency II risk-free curve over 2012 to end September, for both the GBP and EUR markets.

The volatility of this spread is fairly wide for short terms, reflective of the market's perception of short-term counterparty risk in the current environment, but as it is, approaches the 20-year point of both the median level and variation around that median narrow with the increase in term. Once the 20-year point is reached, the two markets behave very differently. In the case of GBP, this trend of narrowing variability and falling spread continues on to longer terms. However, in the case of EUR, both the median level and variation around the median increase rapidly again. This reflects the volatility in the market OIS swap risk-free curve, relative to a (near) fixed Solvency II curve. At the 40-year point, the variability in this spread approaches similar levels to that of the one-year point. However, at such a long duration the present value of this variability is going to be significantly amplified.

FIGURE 3: EUR OIS-SPREAD DISTRIBUTION (DAILY DATA OVER 2012)

Term	1-year	20-year	30-year
0.5% percentile	23 bps	13 bps	53 bps
Median	55 bps	21 bps	70 bps
99.5% percentile	95 bps	29 bps	93 bps

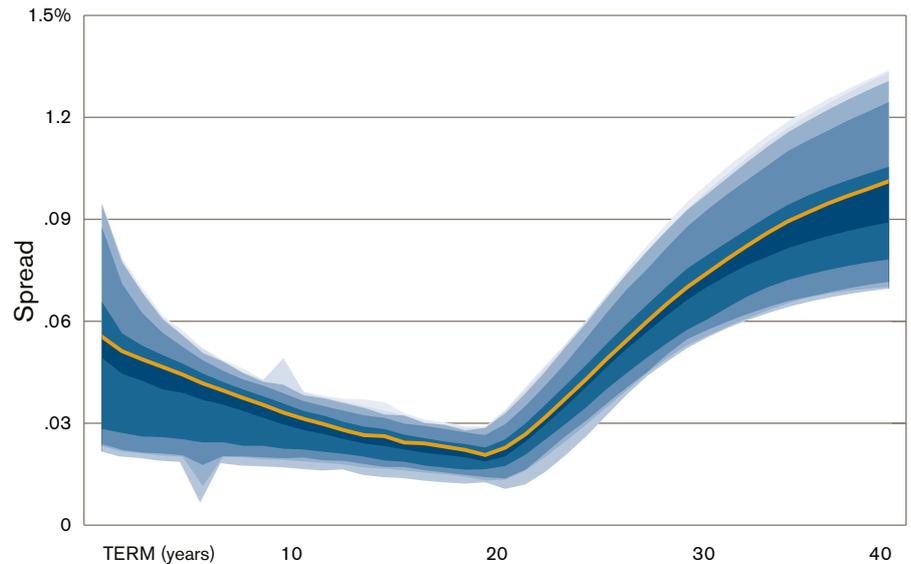
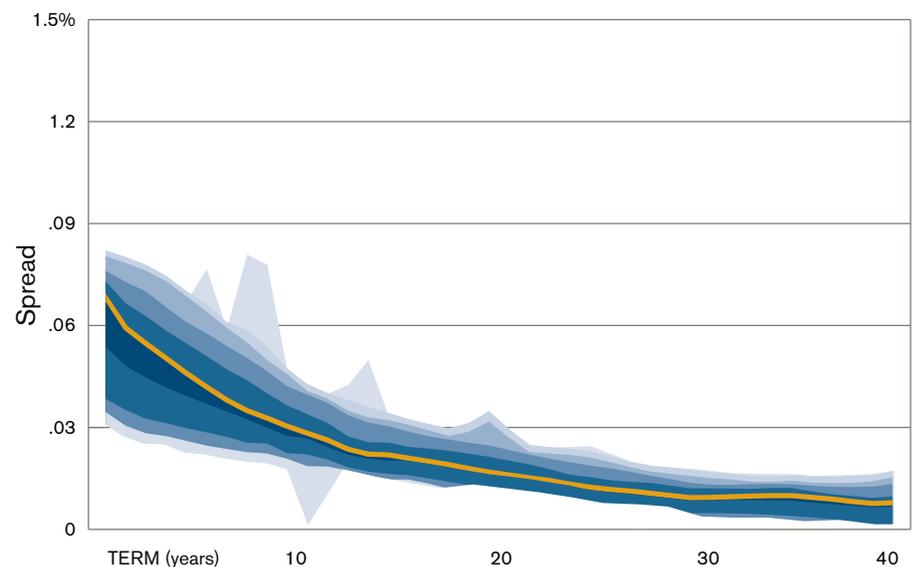


FIGURE 4: GBP OIS-SPREAD DISTRIBUTION (DAILY DATA OVER 2012)

Term	1-year	20-year	30-year
0.5% percentile	34 bps	9 bps	3 bps
Median	68 bps	17 bps	9 bps
99.5% percentile	82 bps	35 bps	17 bps



RISK MANAGEMENT IMPLICATIONS

What does this all mean for risk management, before 20-years in EUR and 50-years in GBP? The spread between OIS and LIBOR adds a new market risk factor to the hedging of a EUR- or GBP-based P&L (assuming LIBOR-discounted liabilities). However, there is an active and increasingly liquid market in OIS-LIBOR swaps for both EUR and GBP, to utilise as a hedge instrument to mitigate this balance-sheet risk. This may create some additional cost and complexity for existing interest rate risk hedging strategies, but at a level that is likely to be feasible. Alternatively, given that the OIS curve is below the LIBOR curve and results in a surplus, some insurers may choose to bear this risk.

What does this all mean for risk management, after 20 years in EUR? Typically, dynamic hedging of interest rate risk is still done with reference to a market-based liability measure. Continuing on this basis means that the economic liability used for risk management purposes diverges significantly from the liability provision under Solvency II. If internal model¹² use-test requirements permit continued risk management on an economic or market-defined measure, then this approach will mean potential balance-sheet surpluses/deficits between regulatory and hedging P&L, for which an appropriate SCR capital charge would need to be applied. This may lead to an additional cost of capital component to guarantee pricing to consider.

If internal model use-test requirements go as far as to necessitate the hedged-liability exposures to be measured consistently with the Solvency II risk-free curve for provisioning, at first glance, this could incorporate the stability that the ultimate forward rate is designed to achieve into the hedging P&L. However, this method may ultimately leave insurers exposed to real significant economic risk.

Furthermore, this assumes that the ultimate forward rate remains fixed. Whilst market volatility driven by European political decision making is something that can be successfully hedged, the direct balance-sheet impact of step changes in EIOPA parameters is something that would be very challenging to hedge.

SUMMARY

As the procession towards central clearing in the derivatives world continues, the new market risk factor of LIBOR-OIS spread basis is going to become ever more apparent, as asset valuations start to use the OIS discounting curve. When remaining in a market-dictated market-consistent framework, understanding this risk is relatively straightforward, and increasingly there are instruments available for managing this risk. There will likely be an increase in the cost of guarantees due to the recognition of the lower OIS-discount rate in the calculating the economic cost of hedging. For existing business, there could be an immediate balance-sheet impact from changing asset valuations to use an OIS discount curve. However, this

gain should be considered relative to the cost of potential future funding strain from guarantee charges that have already been determined on a LIBOR basis.

Assuming that hedging on an economic or market-derived basis is permissible under a Solvency II internal model framework, then this could result in the economic liability that drives the cost of hedging, being greater than the regulatory liability that is required to be held on the balance sheet, therefore making capital management more complex. However, to hedge on a regulatory basis is not necessarily the easy way out, as it leaves insurers exposed to significant real economic risk. This dilemma of the divergence between the Solvency II risk-free curve and the market's view of risk-free in the EUR market beyond 20 years ultimately has the potential to drive significant changes in product design to mitigate this issue.

If you have any questions about the topics covered in this article or any other aspects of your risk management, please contact Neil Dissanayake at neil.dissanayake@milliman.com, Elliot Varnell at elliott.varnell@milliman.com or your usual Milliman consultant.

1 <http://www.esma.europa.eu/news/EMIR-Information-deadline-joint-draft-regulatory-technical-standards-risk-mitigation-techniques>

2 These are derivative instruments that are traded (and privately negotiated) directly between two parties, without going through an exchange or other intermediary.

3 <http://www.g20.org/images/stories/docs/eng/pittsburgh.pdf>

4 The legislation introduces a reporting obligation for OTC derivatives, a clearing obligation for OTC derivatives, measures to reduce counterparty risk and operational risk for bilaterally cleared OTC derivatives, common rules for central counterparties and for trade repositories, and rules on the establishment of interoperability between CCPs. However, many of the regulatory technical standards and details to these obligations are still to be finalised.

5 <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:201:0001:0059:EN:PDF>

6 A CCP is required to be authorised in the member state where it is established, or where it is established in a third country may provide clearing services to clearing members or trading venues established in the EU only where that CCP is recognised by ESMA.

7 Such CSA collateral arrangements may still operate within the bounds of minimum transfer thresholds, and a range of eligible collateral, including 'high-quality' government bonds (at an appropriate haircut), can also be posted.

8 E.g. http://www.lchclearnet.com/risk_management/ltd/acceptable_collateral.asp, and

9 http://www.lchclearnet.com/member_notices/circulars/2010-06-15.asp

10 All interest rate curves are on a spot and annual basis.

11 All interest rate curves are on a spot and annual basis.

12 Referring to EIOPA CP83 that recommends the use of internal models for variable annuity style guarantees, we make assumption that an internal models approach is required for long-term guarantee provision.

REACHING THE TIPPING POINT FOR EQUITY RELEASE



People are coming to retirement without much of a pension, and if they need the money, it isn't going to fall off a magic tree. The home is where the money is.' So said Ros Altman, director-general of Saga, in an article about equity release in the *Daily Mail* in July.

The majority of senior industry figures attending Milliman's recent forum agreed that equity release will experience the largest growth of all products in the at- and in-retirement markets over the next three years.

Equity release, in its modern form, has been around for years and there has been an expectation that at some point the market will grow to its potential. These expectations have recently grown apace and it is worth looking at this market again and to ask: Why now? What has changed?

Let's first step back and look at the drivers on the market. The numbers approaching retirement are increasing as the Baby Boomer generation ages. Individuals reaching retirement are doing so with smaller pension pots due to a number of factors, including the shift from defined benefit to defined contribution with its associated drop in average contributions to workplace pensions, alternative drains on disposable income, and the disinclination

of many individuals to save for the long term. The pension pots most people have at the point of retirement are small and can only buy low levels of income via annuities. This is compounded by yields which are at an all-time low and increased longevity. The income (annuity) that can be bought often fails to match expectations of the amount of income individuals would like to have in retirement. The state pension will not help make up this shortfall, as the UK has one of the lowest replacement ratios in Europe. One more factor is that, with increased longevity, inflation will have a longer time to affect the real value of income in retirement (particularly with non-inflation-linked annuities).

The current drivers on the market, as outlined above, are not showing signs of going away. Indeed, many will be getting stronger (for example, longevity). And they are all pushing in favour of equity release growing as a market.

Why hasn't the market reached its potential yet? What have been the blockers?

One of the main blockers on market growth is the reputation of equity release amongst consumers, intermediaries, government and regulators and the media. This has a knock-on effect in terms of the number of intermediaries willing to

sell equity release (and thus the cost of distribution) and the length of the sales process (and thus the cost of production). There is some evidence that the reputation of equity release is on the rise. For example, more measured articles are appearing in the press, and a pilot scheme was run from January 2010 to June 2011 by several equity release providers in collaboration with three local authorities to offer solutions to low-income homeowners.

With the drivers on the equity release market pushing in favour of market growth and the main blockers appearing to be diminishing, equity release sales may be expected to increase. But what is going to push the market over the tipping point and into significant growth? What has changed?

Two significant factors have changed: the 'ration book generation' is dying out and there are significant—and increasing—numbers arriving at retirement with debt.

Market research has shown that there are very different views held by anyone who can remember a ration book, and those who can't. In brief, the 'ration book generation' (those born before about 1950) have been brought up with notions of self-sacrifice and have strong views on their duty to leave an inheritance to their children and grandchildren. The largest part of this inheritance is often

their property. These views mean that they are less likely to use an equity release product. It may also be the source of feelings of shame associated with 'having' to rely on equity release. With time passing, the 'ration book generation' is naturally dying out. The next generation tends to feel less obligated to leave an inheritance per se, is less likely to go short themselves in order to bequeath their property and is more likely to want to invest in enjoying their retirement.

The other big change that may push the market over the tipping point is the growing number of people arriving at retirement with debt. The most worrying type of debt is mortgage debt, as it is likely to be a significant amount. According to the Council of Mortgage Lenders (CML), 'There are around 3.9 million outstanding mortgages. Of these, two-thirds are set to mature after 2020. In the meantime, the number of interest-only mortgages set to mature each year is between 131,000 and

158,000.' According to the FSA, over the next eight years, around 150,000 interest-only mortgages a year are set to mature, of which 60,000 are likely to be in shortfall. Many of these are going to be owned by people approaching retirement. For those who cannot downsize or otherwise pay off these mortgages, new-style equity release products could provide a solution.

We spend years paying into a pension and then draw on those savings, via an annuity, to support ourselves in retirement. Perhaps it is time to view our properties in the same way: We spend years paying into a property, via a mortgage, and then draw down on those savings, via equity release, to see us through retirement.

If you have any questions about risk appetite or any other aspects of your risk management, please contact Colette Dunn at colette.dunn@milliman.com, Philip Simpson at philip.simpson@milliman.com or your usual Milliman consultant.

TWO SIGNIFICANT FACTORS HAVE CHANGED: THE 'RATION BOOK GENERATION' IS DYING OUT AND THERE ARE SIGNIFICANT—AND INCREASING—NUMBERS ARRIVING AT RETIREMENT WITH DEBT.

WHAT IS A FUTURE MANAGEMENT ACTIONS PLAN?



The current Solvency II rules state that in order to make allowance for future management actions in the calculation of the best estimate liability, a future management actions plan (FMAP) must be in place. The FMAP must detail items including:

- Future actions that are relevant to the calculation of the technical provisions
- Specific circumstances when they will and will not be executed
- The order in which they will be executed
- The amount of time needed to implement the actions and any costs involved

The FMAP must demonstrate that the actions are realistic and consistent with current business practices and strategy. It must also show that the actions are capable of being implemented in the circumstances envisaged.

In this article we provide our views on how to construct the FMAP to remove the most doubt around how realistic it is. This article contains our interpretation of the requirements and firms should seek advice relating to their specific circumstances.

HOW TO DEVELOP THE PLAN

In order to demonstrate that the FMAP is realistic, all key stakeholders need to be involved in its design. The key parties include the board, with-profits committee, investment committee, risk committee and model developers. However, the interests of the parties involved will not always be aligned; therefore, early engagement is recommended. It is important to gain sign-off from all key stakeholders.

Whilst the main application for this article is geared towards with-profits, the actions identified should not be restricted to just this line of business.

When identifying the actions to model, consideration needs to be given to any relevant constraints. Constraints may come from numerous areas, including:

- PPFM
- COBS20
- Existing company policies
- Planned changes to any of these
- The capabilities of the model

The next step is to define the triggers. It is sensible to first consider management information that is already available and the appropriateness of that information.

There is a trade-off to consider when setting the level of detail of the FMAP. The more detailed the FMAP is, the greater in principle the allowance that can be made in the valuation of the technical provisions. Additionally, regulators will need to be convinced that the FMAP is realistic and verifiable; this is doubtful if the FMAP does not link well to business policies or if it is scant on detail. However, with a higher level of hard-wiring into the business processes comes a greater constraint on management's ability to deviate from the plan. Conversely, the more granular the FMAP, the more frequently it will need to be reviewed, making maintenance more onerous.

Establishing how long certain actions will take to implement and at what cost may prove challenging. It may be sensible to seek specialist advice in these cases.

HOW TO MAINTAIN AND IMPLEMENT THE PLAN

Once an FMAP is in place, it needs to be embedded into business-as-usual practices. Regulators will want to see evidence that the FMAP is part of the business processes—for example, that the scope of the FMAP is communicated to the board at least annually, as it has been reflected in setting technical provisions and in other aspects of business planning.

The first step is to ensure that all of the material identified actions are being modelled and that the relevant triggers are set. The FMAP also requires assessment of the quantitative impact of management actions.

Any changes to the business practices and strategy will need to be reflected within the FMAP. An effective way of achieving this would be to link the plan to related processes and policy documents in the business's governance, risk and compliance software.

In order to verify that the FMAP is realistic, it should be back-tested against previous actions taken. Also, the current FMAP should be compared to actions previously used in the best estimate calculations. Any deviations will need to be justified and documented.

The final step of implementation is for the elected parties to monitor the triggers at the defined intervals, as set out in the FMAP. When a trigger is hit, this information should be cascaded to all relevant stakeholders. These include those responsible for executing the actions and all sponsors of the FMAP.

WITHOUT AN FMAP, NO ALLOWANCE CAN BE MADE FOR MANAGEMENT ACTIONS IN THE CALCULATION OF THE TECHNICAL PROVISIONS.

WHAT ARE THE BENEFITS?

Without an FMAP, no allowance can be made for management actions in the calculation of the technical provisions.

There are other advantages to having an FMAP in place. Documenting the planned actions ensures that there is a consistency of approach during times of management change. Furthermore, rather than being reactive, potential decisions are considered in advance of the event, and constraints have been thought through. This ensures that sufficient time is available to choose the actions that best fit the business needs.

WHAT ARE THE DRAWBACKS?

Management may feel constrained by the FMAP, as it stipulates specific actions upon certain triggers. However, if the FMAP itself indicates that some actions may be better applied in combination and the FMAP is well devised, this should pose less of an issue. The firm should be allowed to apply the FMAP in a proportionate manner, provided the reasons for doing so are justified and documented. If such a deviation is required, it should prompt a review of the FMAP.

CONCLUSIONS

We expect a burden of proof in the FMAP, and we have considered ways in which insurers can demonstrate that the actions in the model have some grounding in the business. The most convincing way to do this is to be able to link the FMAP to the other business processes and policy documents.

If you have any questions about the topics covered in this article or any other aspects of Solvency II, please contact Russell Osman at russell.osman@milliman.com, Jillian Wood at jillian.wood@milliman.com or your usual Milliman consultant.

WINTER 2012

EVENTS TO COME

MILLIMAN CONSULTANTS ARE SPEAKING AT A NUMBER OF FORTHCOMING EVENTS. IF YOU HAVE NOT SIGNED UP ALREADY, IT MAY BE POSSIBLE TO GET A DISCOUNT BY MENTIONING THAT YOU ARE A MILLIMAN CLIENT.

DATE	ORGANISER	EVENT
17 December 2012	Institute of Actuary	Joining Networking Evening: Trading Longevity Risk
24 January 2013	Institute of Actuary	Open Forum: Distributional Effect on Asset Purchases
29 January 2013	Infoline	Asset Reporting Under Solvency II Pillar III
30-31 January 2013	Infoline	New Data Requirement and Investment Strategies
28-29 March 2013	Westminster and City Programmes	Pension Buyouts and Longevity Swaps
April 2013	Milliman	Milliman Forum (exact dates to be confirmed later)

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