

ISSUES IN BRIEF

UK LIFE INSURANCE

DYNAMIC REPORTING: MI THAT KEEPS UP WITH THE BUSINESS	2
VALUING LIFETIME MORTGAGES	6
ORSA IN 2016 - PART 1: FIRST STEPS IN THE PROCESS	10
HOW EMBEDDED IS EMBEDDED VALUE?	14
THOUGHT LEADERSHIP	16

HOW ARE WE DOING? WHERE ARE WE HEADING? THESE ARE CHALLENGING QUESTIONS THAT ALL GOOD MANAGEMENT INFORMATION SHOULD ANSWER. IN REALITY, FIRMS ARE OFTEN CONSTRAINED BY THE IDEA THAT MI IS A STATIC, INDICATOR-DRIVEN, COMPLIANCE EXERCISE. MODIFYING MI INTO A DYNAMIC EXPLANATORY EXERCISE, AS DESCRIBED IN OUR FIRST ARTICLE, ENABLES BETTER PREDICTIONS ABOUT EMERGING TRENDS BY FOCUSING THE EXERCISE INTO EXPLAINING HOW OUTPUTS ARE CHANGING.

INCREASING INTEREST IS CURRENTLY BEING EXPRESSED BY THE INSURANCE INDUSTRY IN LIFETIME MORTGAGE PRODUCTS, WHICH PROVIDE ONE WAY OF ADDRESSING MOUNTING CONCERN OVER INSUFFICIENT RETIREMENT PROVISION FOR ASSET-RICH, CASH-POOR PENSIONERS. OUR SECOND ARTICLE LOOKS AT WHAT THESE MORTGAGES ARE, HOW THEY CAN BENEFIT LIFE INSURERS AND, PERHAPS MORE IMPORTANTLY, THE REGULATORY CHALLENGES THESE PRODUCTS CAN POSE.



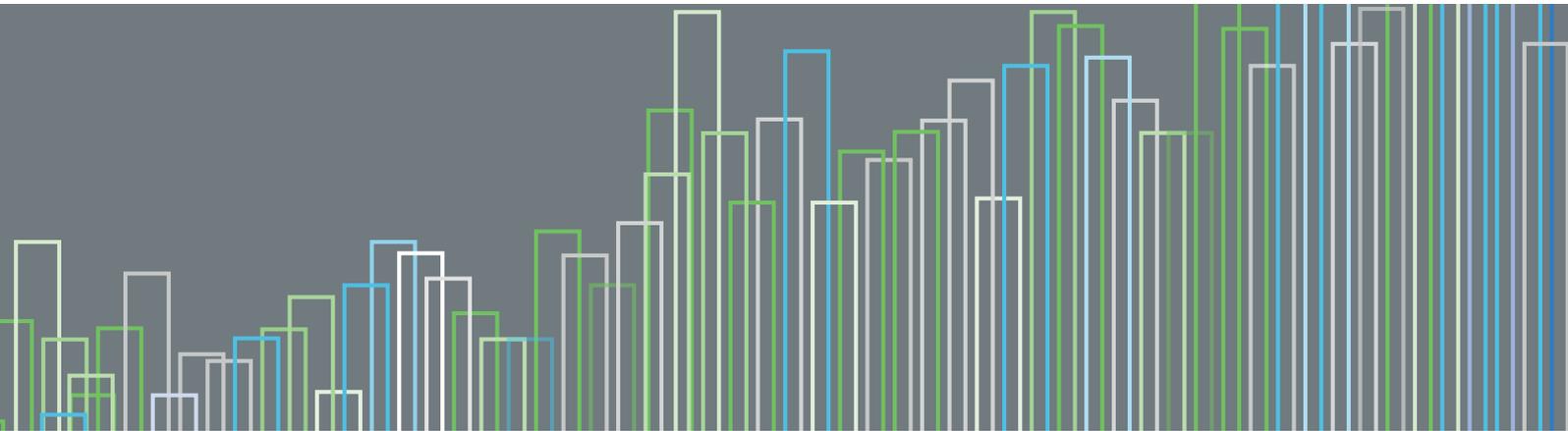
As we enter the Solvency II era, discussion has been transitioning from preparation to implementation and improvement. In the first of a series of articles looking at the ORSA production cycle, we review the vital steps to be taken to ensure that the 2016 ORSA provides meaningful insight and becomes embedded into your business.

Continuing with the theme of developments in a Solvency II world, our final article looks at the history of embedded values and reviews their future prospects as a means of measuring profit and value. Embedded value methodologies have continually evolved over the past 30 years, and it will be interesting to see whether embedded value reporting survives beyond the current year and, if not, how the insights it brings will be provided in the future.

I hope you will find something of interest to you in our Spring 2016 *Issues in Brief*.

NICK DUMBRECK
PRINCIPAL AND
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DYNAMIC REPORTING: MI THAT KEEPS UP WITH THE BUSINESS



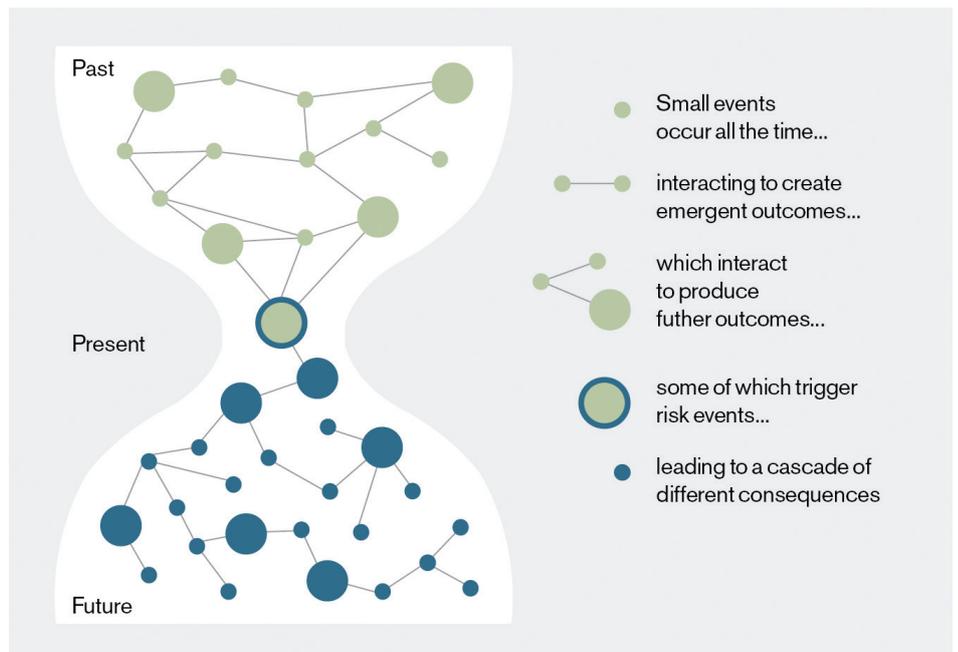
Where am I? How did I get here?
Where am I going? These are three basic questions that all good management information (MI) should answer.

The first question is often challenging to answer, simply because it can take time to collect the information and because the information collected is often subject to bias or inaccuracy. A lot of firms therefore know reasonably well where they were, say, a month or so ago, but not necessarily where they are right now.

The second question is actually harder to answer than it might seem. Surely we can simply look at the position last month and compare it to this month? Well, that simply tells you the degree to which the output status has changed; it does not tell you **how** you got here. Firms are beginning to grapple with this during analysis such as profit and loss attribution: obtaining useful insights about the reasons for change is much harder than describing the change itself!

The main reason for this difficulty in knowing 'how we got here' also underpins the considerably greater difficulty in answering the third question, 'Where am I going?' Essentially, the present is built a step at a time from the past, with vast numbers of factors interacting to move things forward. So it is simply impossible to really know, at a detailed level, how the present has been arrived at, making it equally challenging to produce a decent forecast. The more practical question, therefore, is whether we can find a level of detail where we **can**

FIGURE 1: PATH TO THE FUTURE



usefully describe how the past evolved into the present, and whether, based upon that, we have sufficient information to make an intelligent prediction about the possible futures we face.

Historically this has been tackled by creating a dashboard of variables which are felt to be the most significant indicators of the outputs we are tracking. This is then monitored over time so that we can try to explain which indicator movements appear consistent with variation in the outputs. Forecasts usually involve 'projecting' the indicators forward in some way and inferring what

the corresponding output might be. This approach has some inherent features which lead to undesirable consequences:

- Thoughts about the outputs are **derived** from the status of the indicators rather than **explained** by them. This means that the indicator information is really only suggesting to us that the outputs might have changed rather than why.
- Most indicators are proxies for the actual 'thing' which influences the outputs, so the relationship between indicators and outputs can be more like correlation than cause. In other words, the fact that

an indicator changes might lead us to suspect that the output will also change, but in fact it is not a causal relationship. The temptation is to accept these observed features, but we have to look elsewhere for the underlying explanation.

- The effects of indicators are usually judged in isolation, with the interactions between them being largely ignored to keep the analysis simple. This means that MI can be skewed towards revealing large single stresses rather than finding the, potentially more dangerous, build-up of multiple moderate factors until quite late in the process. The opportunity for proactive action has then largely passed and management is forced into taking reactive, damage-limitation actions.

A lot of management theory came from viewing organisations as being like a 'machine' that you had to control, and so it made sense to monitor it in the way that you would assess the performance of say, an engine. Making observations about performance in each part of the 'machine' should, in aggregate, let you know whether all is well. Of course engineers know that modern machines are not often that simple (feedback and other non-linear effects come into play) and, interestingly, while management thinking has only just started to move on, engineers have made considerable progress in how they study performance – more of that later.

Having identified what we should measure, we then go about collating data relating to the value/status of these drivers and storing it electronically in some form of database. In this form we can report on it and analyse it in a variety of ways. When the MI is first proposed, historical data is often analysed to determine the extent to which these indicators show useful correlation to the output variable. Analysts study the information gathered and develop narratives about how the various indicators inform an understanding of performance.

The 'MI pack' therefore represents a point-in-time hypothesis about how the outputs can be deduced by considering the trends of the indicators identified and

reported in the MI. However, these initial efforts often become the ongoing reports which communicate the MI to management and other stakeholders. The more people look at the pack and can rationalise that its predictions match their expectations, the less likely it is to change; people get 'comfortable' with seeing the same measures each month.

From time to time, small changes (usually additions) are made to explore new features of performance, but nearly always at the expense of overall clarity: The MI tends to grow and, as the proverbial trees proliferate, sight of the wood is lost. As the real story gets harder to discern, you also tend to find that the MI pack becomes more of a compliance check rather than a useful tool for active management. This is particularly the case where the packs have reached a size which is hard to produce in a timely fashion and so the content is more 'lag' than 'lead'.

The underlying business dynamics being monitored are not actually static, so the information we need to consider in order to explain performance is bound to change over time. Such 'change' has historically been problematic with respect to monitoring because the structures needed to measure and store MI were not particularly amenable to change. Relationships between data items had to be defined in order to store and report on them, and the effort required to change them was often non-trivial.

So there are some quite serious practical problems which frequently prevent firms from obtaining real value from their MI reporting:

- The sheer volume of MI means that it becomes harder to see what the MI is telling you, and this is compounded by forming a narrative based on what the indicators say rather than using them to support a narrative about what the outputs are doing.
- Looking first at indicators to decide what is going on means that the MI only reflects what you **are** looking at. It can therefore be hard to spot new trends coming from things you are **not** looking at.

MOVING TO A DYNAMIC APPROACH

Management thinking has finally moved on. It is now largely accepted that companies are not actually very machine-like at all and that their outputs derive from a complex process of interactions which is dynamic and evolving. This means that your MI needs to be dynamic and evolving too, otherwise you will quite often be looking in the wrong place to explain or predict outputs. It also recognises that it is not just the standalone value of a driver that matters; it is also important to know how that driver is interacting with others and to assess their combined impact.

The main change in moving to reporting dynamically is one of perspective, and this might require a cultural shift away from performance compliance towards prediction and learning. Rather than looking at the same set of drivers in each period and asking, 'What do these tell me about the outputs?' we need to ask, 'Which data items are currently contributing to the output behaviour and how?' The first question lends itself to the types of bias highlighted by Sherlock Holmes, where people tend to shape the story about the output to be consistent with how the indicators look, rather than asking if the theory they represent still makes sense. The second enquiry will naturally result in a more dynamic answer which is less prone to pre-judgement

I never guess. It is a capital mistake to theorize before one has data. Insensibly one begins to twist facts to suit theories, instead of theories to suit facts.

– Sir Arthur Conan Doyle's
Sherlock Holmes

The implementation of a dynamic reporting approach begins in a similar manner to the traditional static approach; a theory is formed about how inputs interact to produce outputs. The main differences come in terms of the analysis you carry out and the style of reporting (see performance dashboard example on the following page), although these often influence the types of information you include as well.

The performance of most organisations is not entirely internally generated—the impacts of customer behaviours, competition, regulation, macroeconomic factors, etc. all have a role to play—and including information about these external factors can bring a step-change in insights about how the company is performing. In particular, such broader factors provide ‘context’ to internal factors, thus making it easier to spot emerging trends of threats or opportunities much earlier.

DATA

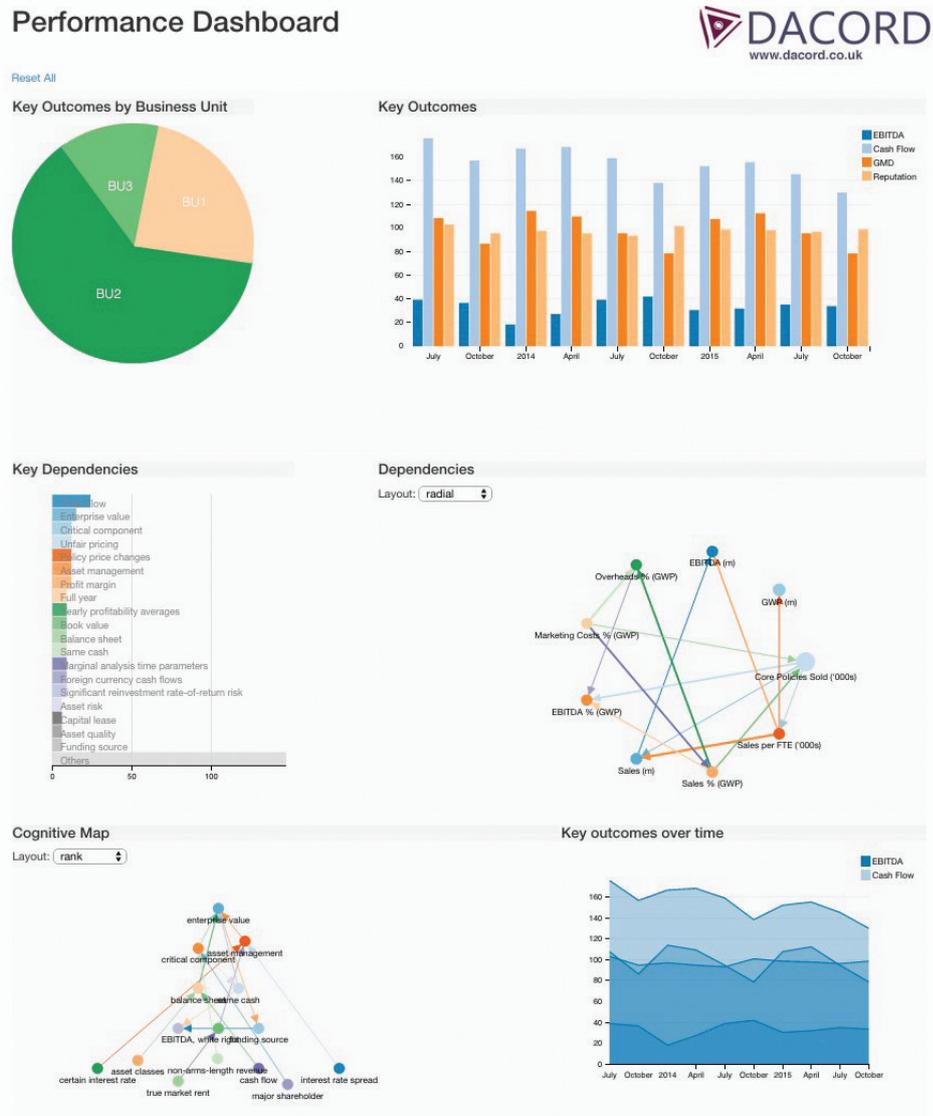
Thanks to rapid developments in data handling, large-scale low-cost storage, cloud-based computing and faster internet access, it is possible to access and process substantial amounts of data at the instant you want it, without necessarily having to locate the data within your organisation. There has also been an evolution of which types of data can be analysed. The old MI databases required advance organisation and setup, but the use of unstructured data is now very common, meaning that we don’t need to decide so far in advance that something might be relevant. It also means that we can more directly assess the factors influencing outcomes rather than having to settle for distant, imperfect proxies.

ANALYSIS

Armed with access to a diverse, rich dataset we can now ask our new enquiry, ‘Which data items are currently contributing to the output behaviour and how?’ Where the old approach implicitly assumes that historical data represents observations of a single mechanism, the dynamic approach wants to know what is going on ‘now’ and contrast that with what has happened ‘before’. In other words, we explicitly assume that things are changing and try to understand ‘how’ and ‘why’. The first important difference is that we do not pre-judge which indicators are relevant to explaining current outputs—we find out in an unbiased and objective manner.

Another important feature of the analysis is that it is multi-variate. Traditional MI tends to encourage the study of each indicator separately and then ‘add up’ to form an

FIGURE 2: EXAMPLE PERFORMANCE DASHBOARD



opinion about the overall state of the output. However, the interactions between the factors is an important determinant of the final outcome, so looking at the factors together yields more authentic insights and is particularly more adept at revealing the early onset of new trends.

The main purpose of the analysis is to determine, without preconceptions, what information the data is giving us about which things are influencing the outcome, and whether this confirms or challenges what we would have expected. The use of data visualisation techniques and non-linear dependency calculations can reveal deep structures that are otherwise

hard to spot. Measures of complexity and connectivity can also be used to determine the manner in which elements are interacting and how that might be expected to evolve. For example, is the mechanism producing the output looking particularly stressed and/or complex and has this changed unexpectedly since the previous period? Such analysis can reveal that even if the output has not materially changed in terms of observed quantum, the way in which it is being produced may have changed significantly, potentially providing early warning of imminent trouble (or opportunity!).

USING DYNAMIC

REPORTING

Whilst the use of business forecasting is not new, it has typically assumed that past MI remains relevant going forwards, and therefore extrapolates trends in the key drivers in order to determine predictions for the outputs. By adopting the dynamic reporting approach described here, it is possible to create a virtuous learning cycle which permits the assumptions about which drivers are key, to be challenged. Forecasts can therefore be made upon a more robust set of assumptions about how future outputs are likely to be created. Using knowledge about the momentum of the mechanism up to this point can permit sudden dislocations or paradigm shifts to be factored in quite naturally, limiting the scope for nasty surprises.

A typical approach (see below) is to consider outputs in the current period, contrast those to outputs in the previous period, determine whether the current position is in line with previous predictions and then make a new prediction for outputs in a future period. The analysis of the current period is contrasted with that of prior periods to help revise theories about the development in performance dynamics: The better you understand how things are unfolding, the better your next prediction will be. Theories formed from studying the data can be integrated with subject matter expert opinions about what might happen next. This permits a reasoned and factually supported claim to be made about the dynamics you expect to see over the coming period even when behaviours are expected to be novel and potentially not previously seen. When you reach the next period, this prediction can be compared with reality and lessons can be learned which should help to improve the next prediction.

CONCLUSIONS

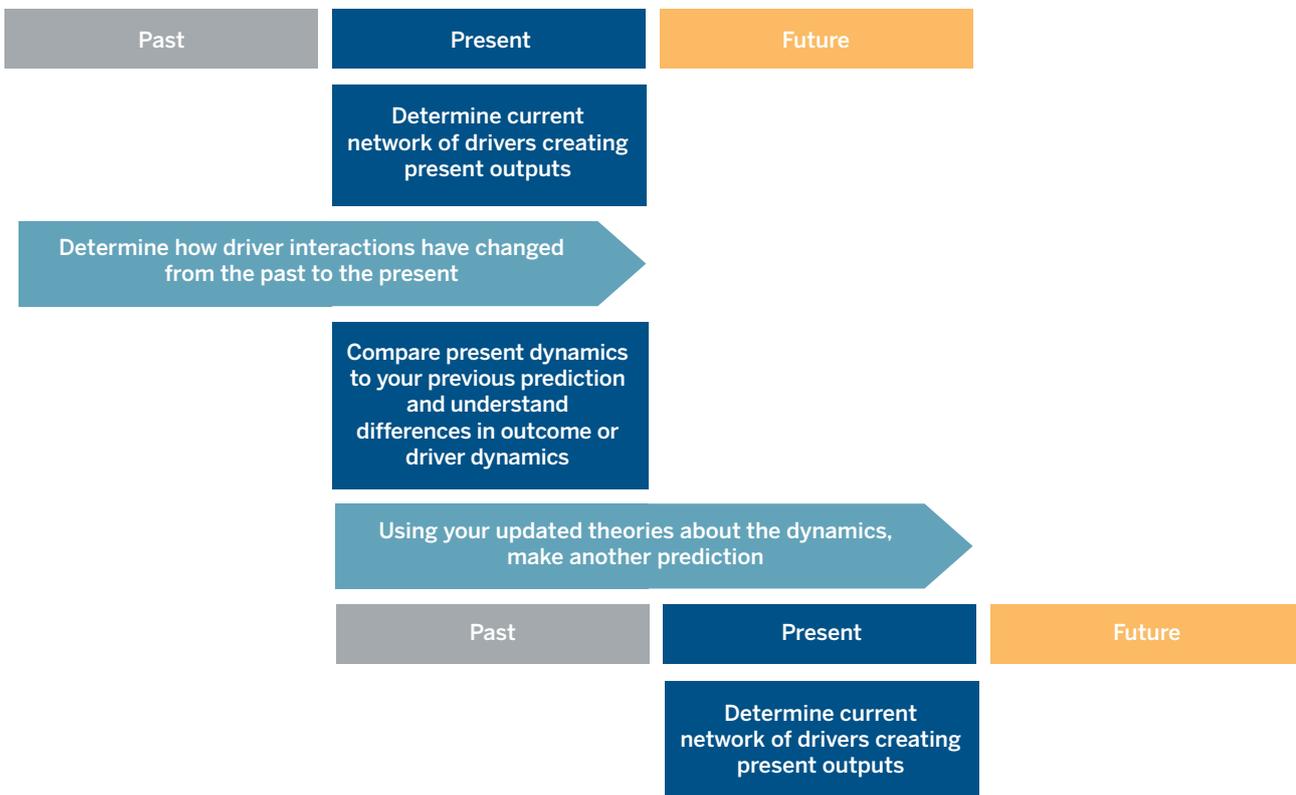
It is now possible, and appropriate, to move MI reporting from being a slow-changing indicator-driven compliance exercise to being a dynamic explanatory exercise. Focussing the MI to tell a clear and compelling story that explains how the outputs are changing moves it back into being a useful business tool to help you make better predictions about future performance and emerging trends.

If you have any questions or require any further information, please contact:

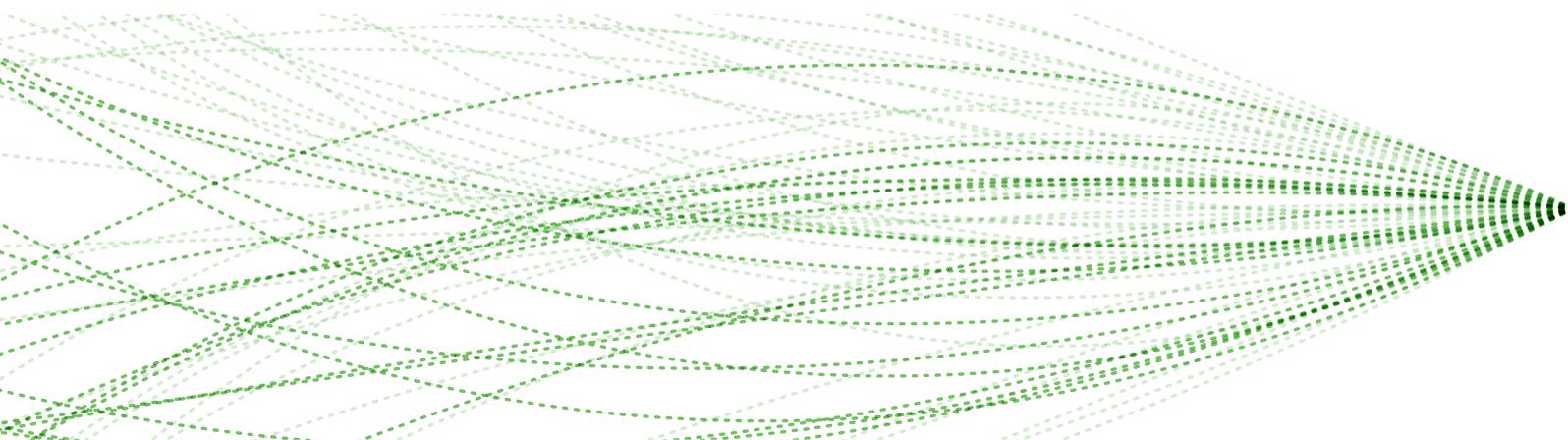
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FIGURE 3: TYPICAL APPROACH



VALUING LIFETIME MORTGAGES



Lifetime mortgages (LMs) are being touted as part of the solution to the mounting concern over insufficient retirement provision for asset-rich, cash-poor pensioners.

These products are also becoming a key part of investment strategies for many life insurers on the lookout for alternatives to traditional assets in an attempt to find a suitable match to their annuity liabilities.

For these reasons, there is currently significant interest in the lifetime mortgage market being expressed by the insurance industry. This has been brought into focus by the release of a discussion paper by the UK's Prudential Regulation Authority (PRA) on 31 March 2016 asking stakeholders for views on LM valuation, capital treatment, risk management and associated matters. There are many aspects of LMs we could cover but given the recent PRA discussion paper, we have chosen to focus on a single critical area and explain some of the key issues around the economic valuation of lifetime mortgage assets.

KEY FEATURES OF THE PRODUCT

Lifetime mortgages are loans made to individual homeowners, with repayment triggered by death or entry into long-term care. Interest on the loan can be paid on a regular basis, but is more frequently left to roll up with the loan at a fixed rate. Early redemption is also typically permitted, though this may be subject to penalties.

LMs are typically issued to individuals in retirement, but given that most LMs are not interest-paying, and given the significant life expectancies of many individuals to whom LMs are sold, the duration of LM assets is typically significant.

The fixed interest rate and long duration of LM assets mean they can be a good match to long-duration fixed-annuity liabilities.

Because LMs are agreed with individual borrowers with relatively small loan sizes, and because there is no ready market in which LM assets can and do change hands, LMs are generally considered highly illiquid.

Some LM products include additional features, including the facility to draw down more funds or to partially repay the loan.

A key feature of LM products is the no negative equity guarantee (NNEG). The NNEG guarantees that the borrower's estate will never owe more than the property's eventual sale price. All members of the Equity Release Council are required to include a NNEG as a feature of their lifetime mortgage products. The NNEG was introduced following adverse media coverage of early mortgage products that did not offer this protection to customers.

Therefore, when valuing lifetime mortgages, the calculation can be considered in two parts:

- The value of the interest and loan repayment
- The cost of providing the NNEG

The economic value of the mortgage would then be determined as the difference between these amounts.

VALUATION

LOAN REPAYMENT

Often these mortgages are sold with a fixed interest rate, and therefore the loan amount at any given point in time is known. The cash-flow uncertainty therefore arises from uncertainty regarding the date of repayment. The loan is repaid on the sale of the property, which can be either due to death, entry into long-term care or early repayment. The expected present value can therefore be calculated given the appropriate decrement assumptions and a suitable choice of discount rate.

Decrement assumptions may be challenging to determine, as there is likely to be limited data available for the LM population, particularly in relation to entry rates into long-term care. The mortality assumptions are likely to differ from insurers' annuity experience given the different customer profiles. For example, the demographic profile of individuals purchasing annuities is likely to differ from those taking out a mortgage. In addition, annuity mortality data is based on annuitants who only exit the population by death. This will include the heavier mortality of those who have moved into long-term care, whereas these individuals would not be included in a study of the mortality rates of mortgage holders. Given this, insurers who do not have access to demographic data from LM assets will find it challenging to set suitable mortality and

early redemption assumptions, particularly as the expertise of reinsurers is not as readily available for LMs as it would be for new entrants into the annuity market, for example.

Insurers must also determine an appropriate choice of discount rate. Lifetime mortgages are not liquid assets, and therefore the discount rate should include an illiquidity premium to reflect the fact that the fair value of an LM will be lower than, for example, a government bond or other liquid security yielding the same expected cash flows. However, the choice of an appropriate illiquidity premium is not always straightforward; there are several methods that could be used, and there is no 'correct' method of determining an appropriate illiquidity premium.

For example, the illiquidity premium used could be benchmarked using an estimate of the illiquidity of a basket of properly rated corporate debt, or even the corporate debt of a suitably chosen entity (e.g., a company whose creditworthiness is linked to property prices). However, there is no obvious method to determine the mix of ratings and duration in the basket.

Alternatively, companies may choose to derive the illiquidity premium as the addition to the discount rate required to value the LM at the initial loan amount at inception. This has the advantage of being an objective measure, as the loan amount is the only directly observable market 'transaction' available for the asset. However, insurers may feel that this leads to the assets being undervalued, as it is common for insurers to assume a Day 1 gain in their economic valuation of LMs, i.e., the fair value of the LM is regarded as being higher than the initial loan amount, even at inception.

Most insurers would also subtract from the mortgage value the present value of the expenses they expect to incur in servicing and facilitating the redemption of the mortgage.

NO NEGATIVE EQUITY GUARANTEE (NNEG)

The NNEG can be thought of as providing a constraint on the repayment amount

received by the insurer. In particular, the insurer will receive the lesser of:

- The loan balance plus accrued interest
- The price for which the property may be sold

The cost of providing this guarantee can be quantified in a number of ways, including using a stochastic projection of property prices.

However, given that the NNEG can be thought of as a payment from the lender to the borrower equal to the maximum of zero and the difference between the loan amount plus accrued interest and the property price, a common approach is to consider the NNEG as a series of put options written by the insurer. The strike price is the rolled up mortgage value at each future time point at which the mortgage may be redeemed.

The cost of the NNEG option will therefore be the sum of the values of the option at each possible maturity date multiplied by the relevant probability of exercise. These probabilities are determined using the chosen demographic assumptions for the mortgage in question, but typically early redemptions do not benefit from the NNEG so that potential anti-selection is avoided.

However, the most appropriate method for pricing these put options is not necessarily straightforward to determine, given that there is no market in options on residential property. The most common pricing approaches use variants of the Black-Scholes option pricing methodology, in particular:

- **Black Scholes with dividends** - The total return from a property can be considered as capital growth and a 'dividend', i.e., its rental income (even if this is notional).
- **Black 76** - A variant on the Black-Scholes model where the spot price of the underlying asset is replaced by a discounted forward price.

However, key assumptions must be made in order to use the Black-Scholes formula, including assumptions for future property

price growth and property price volatility. This is an area where care must be taken in interpreting the available data, such as national house price indices. In particular, any expected differences in price behaviour between the insurer's own property portfolio and properties represented by national house price indices should be considered and, where appropriate, allowed for.

Ideally, property price volatility assumptions would be derived from corresponding market option prices (market-implied volatility), but no suitable traded options exist in relation to UK residential property. A common alternative approach would be to consider the historical volatility in UK house prices, perhaps using a published house price index, together with a potential loading to allow for the increased volatility in individual properties compared with average house prices.

The choice of assumption around property price growth is also subject to significant judgement. For example, an insurer might choose to use historical property price data to set this assumption. Alternatively, an assumption that is linked to expected future earnings inflation might be chosen, under the assumption that property prices are likely to be linked to earnings. Another approach might be to assume property price growth equal to the risk-free rate, or to base the assumption on the views of market commentators around the prospects for property prices.

OTHER ADJUSTMENTS

It is arguable that the economic value of an LM might need to be adjusted downwards to reflect the uncertainty of the timing of cash flows. For example, even if there were no NNEG, the fact that the timing of redemption cash flows is uncertain might mean that an investor would, all else equal, pay less for the LM than for an asset yielding the same expected cash flows without any uncertainty of timing.

Market practice varies in whether explicit adjustments are made in relation to this in mortgage valuation.

ACCOUNTING APPROACH

As well as considering the economic value of mortgages, insurers must necessarily consider LMs from an accounting perspective, particularly given that, under Article 9 of the Delegated Acts, Solvency II generally requires assets to be valued under relevant IFRS rules.

There is a particular issue over the extent to which insurers are permitted under IFRS to recognise 'Day 1 gains', i.e., to assign a higher value to the mortgage at inception than the loan amount advanced.

International Accounting Standard (IAS) 39 is relevant to the valuation of loans and mortgages. This standard permits Day 1 gains in the valuation of assets subject to various conditions, including the requirement in paragraph AG76 (a) that the valuation model use only data from observable markets. Given that LMs' values are dependent on demographic factors such as mortality rates, which cannot be readily derived from market prices, the interpretation of IAS39 is generally that LMs must be valued as the transaction value, i.e., the mortgage amount, at inception.

Two approaches that may be used by insurers to restrict Day 1 gains are:

- The discount rate used in the mortgage valuation can be increased such that the economic value is equal to the mortgage amount at inception. This additional 'spread' is then fixed for the life of the mortgage, resulting in an emergence over time of the gain that would otherwise have been recognised at Day 1.
- The mortgage might be valued at the insurer's view of its economic value, with an offsetting deferred income reserve (DIR) held such that the asset value less the DIR is, at inception, equal to the mortgage amount. This reserve can then be run off over a suitable period, resulting in the gradual emergence of any gain.

IAS39 will be replaced by IFRS 9 as of 1 January 2018, but it appears that the methodology for valuing assets in this context will remain the same.

SOLVENCY II AND RELATED REGULATORY ISSUES

MATCHING ADJUSTMENT

LMs are not considered to be admissible assets for the purposes of the matching adjustment (MA) under Solvency II. This is due to the uncertainty surrounding the cash-flow timing which means that insurers are unlikely to be able to prove that the resulting mismatch risk is immaterial. However, in a letter dated 20 February 2015, the UK's PRA indicated that firms can restructure their LM portfolios through a subsidiary company set up for this purpose, in order for them to be eligible, and many firms have carried out such a restructuring.

The most common approach seems to be internal restructuring using a special purpose vehicle (SPV) that is wholly owned by the insurance entity. The SPV pools and transforms cash flows from the LM portfolio into notes of varying security, which are sold back to the insurance entity. These notes are distinguished by an increasing scale of risk passed on to the investor. The senior note will pay a series of fixed cash flows to the annuity portfolio, and is held by the MA fund. The other notes are held outside the MA fund, and yield the residual cash flows from the underlying LM portfolio, which are subject to the risks in the underlying mortgages,

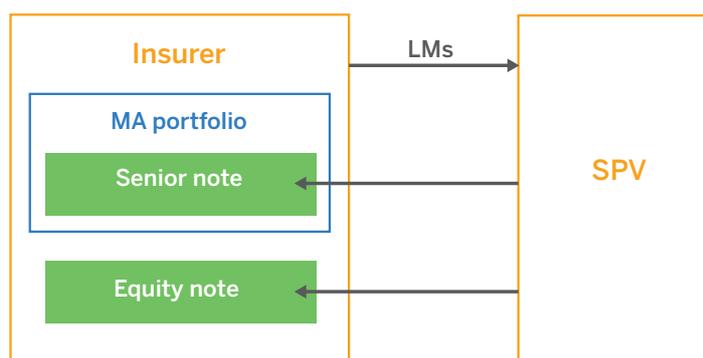
including demographic risks and the risk of losses due to the NNEG. The cash flows paid by the senior note are generally guaranteed and are typically supplemented by a liquidity facility within the SPV.

Firms can calibrate the payments made by the notes to deliver the required levels of risk and return, e.g., the senior note can be fixed to deliver cash flows with a sufficiently high probability over a defined time horizon such that it becomes eligible for MA.

In order to be eligible for MA, the PRA stated in a directors' letter dated 13 June 2014 that assets must have fixed cash flows rather than 'simply "very predictable" cash flows'. However, no quantitative limits have been set for firms to demonstrate that their cash flows are fixed, and therefore asset eligibility is determined on a case-by-case basis.

Article 335(3) of the Delegated Acts requires that in the calculation of consolidated group own funds, intra-group transactions be netted out, which, in the case of LM restructuring, would eliminate the effect of the 'tranche-ing' of risk. However, the PRA stated in its letter from 20 February 2015 that it would consider a structure where all the notes are held by the same entity which contains the matching adjustment portfolio (albeit with any junior/equity notes held outside the MA portfolio), as an 'intra-entity' transaction rather than 'intra-group'. This would ensure that the matching adjustment benefit would be retained on consolidation.

FIGURE 1: INTRA-ENTITY LM RESTRUCTURE



CAPITAL REQUIREMENTS

The PRA expressed a view in its 20 February 2015 letter that transformations involving 'tranche-ing' LM cash flows should be considered as securitisations, and that spread risk capital requirements under the Standard Formula should therefore be determined in accordance with the rules surrounding securitisations. Notes issued by special purpose entities are expected to be considered as Type 2 securitisations under the Standard Formula as they are unlikely to meet certain Type 1 criteria. Type 2 securitisations are subject to significantly higher capital charges than Type 1 structures.

The PRA also indicated in its 20 February 2015 letter that the Standard Formula calculations are unlikely to be appropriate for LMs due to their bespoke nature, and so partial internal models may be required.

Given that the credit rating of the notes are likely to be determined internally, i.e., by the insurer, the PRA also highlighted the need to ensure that stresses are set at the right level. In particular, only considering 1-in-200, one-year, value-at-risk stresses for longevity, property value and early repayment is unlikely to be sufficient to support a rating assessment over the duration of the notes, given their long-term nature.

CONCLUSION

The use of LMs to back annuity liabilities can be a good way for insurers to achieve a higher yield and economic diversification from the corporate bond market, and life insurers are structurally well placed to meet a growing consumer demand to monetise the equity in their property in this way.

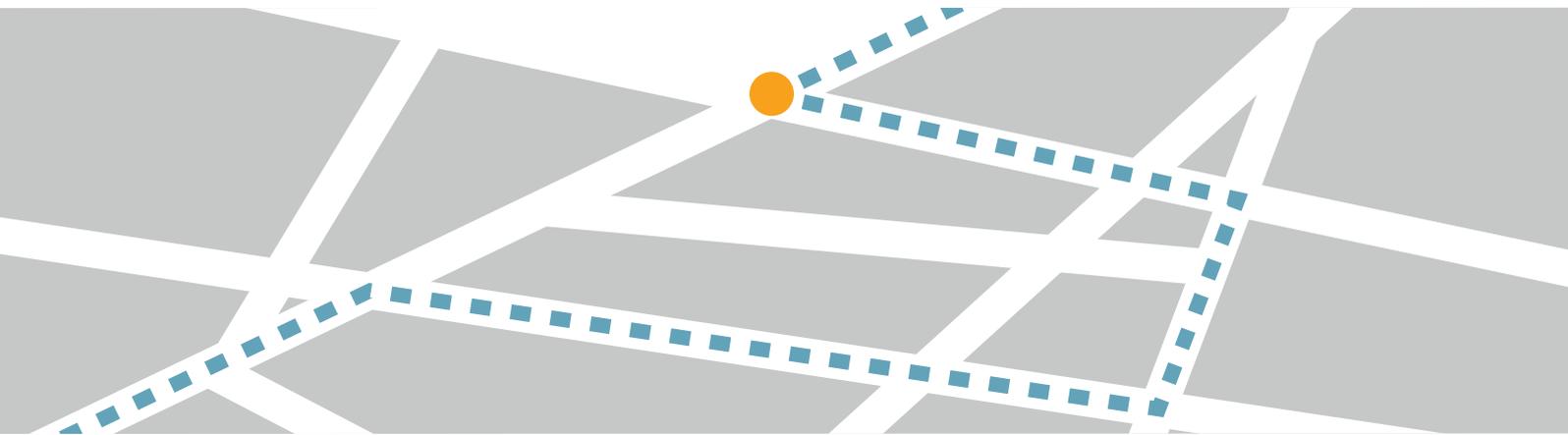
Nevertheless, there are some significant challenges for insurers including the difficulties associated with placing a reasonable value on LM assets, as well as the regulatory and accounting restrictions to which insurers holding LMs are subject. Ultimately, such hurdles will be a bridge too far for some insurers.

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ORSA IN 2016 - PART 1: FIRST STEPS IN THE PROCESS



In the first of a planned series of articles, each of which will look at different stages of the ORSA production cycle, we start by reviewing the important first steps towards ensuring that the 2016 ORSA provides meaningful insight and becomes further embedded within your business.

THE ORSA AGAIN - ALREADY?!

This early into 2016 and the Solvency II world in which we find ourselves, it's probably a little premature to be pausing to look back when the industry is busy grappling with the reality of a new regulatory regime. But from an ORSA perspective, reviewing the development path that firms took to build their process provides valuable insight into what the key objectives should be for 2016.

By the end of 2014, given a helpful nudge by the Prudential Regulation Authority's (PRA's) adoption of the preparatory guidelines a year earlier and the growing acceptance that there really was no escaping the new regime, all firms had (if nothing else) at least produced their first, full ORSA report. But whilst many of the underlying analytical tools and management processes were present and correct, it wasn't until 2015 that firms began to draw these together consistently into a single, holistic framework for assessing risk and capital.

2015 saw firms take positive, significant steps towards meeting the ORSA requirements: more frequent ORSA

FIGURE 1: TARGET ORSA PROCESS



reporting, wider involvement from departments outside of risk and actuarial, the appraisal of all significant business decisions through a forward looking lens, and broader, deeper stress and scenario testing. Nevertheless, it was a year characterised by development and

implementation rather than embedding, with some components necessarily being delivered and used for the first time.

With all that in mind, for many firms, 2016 will be the first year of properly running the ORSA as a joined up, ongoing process—

something that is not only a regulatory expectation but an essential next phase if your business is going to derive real value from all that initial development work. So where to start?

The most successful ORSA processes will be those that have been designed (and implemented) as a virtuous cycle of monitoring, forecasting, testing, challenge and decision making, all driven by the board but with engagement from right across the business (see Figure 1).

What needs doing now should clearly be governed by the length and timing of your own ORSA production cycle, and where in that cycle your business currently is. But for the purposes of this article, we will assume that your business completed its full annual ORSA report in the latter half of last year.

START WITH THE CONCLUSIONS

Over the course of an annual production cycle, culminating typically with the full annual ORSA report, the board will be presented with a wide variety of analysis. This is likely to include short-medium-term forecasts of solvency, a forward-looking assessment of the firm's risk profile, the results from stress and scenario testing, or the output from qualitative tools like horizon scanning or scenario discussion.

Yet the ORSA should exist not only as an analytical framework for assessing or investigating the firm's capital needs and risk profile but also as a decision-making tool central to the management of the business. No business strategy is self-fulfilling and if the ORSA process is to work properly, it is the actions and decisions emerging from the ORSA that will, in the board's view, increase the chances of successfully delivering on that strategy.

In response to the ORSA analysis, the board should therefore ultimately arrive at a series of conclusions in relation to the future strategic direction, operating model or risk management of the business. For many firms, these conclusions may set out areas requiring increased monitoring or

further investigation, or extend to providing the 'go ahead' for important business decisions and management actions.

Returning to the beginning of the ORSA cycle, the top priority should be to ensure that meaningful progress is being made to move these activities forward against the target timescales set by the board.

So we should be starting 2016 by asking: 'Have the new monitoring arrangements been put in place?' 'Has the investigation work been started?' 'Are there any preliminary results or findings?' 'What progress has been made implementing the agreed management actions?' 'How has our organisation or the external environment responded to the decisions we made?' and 'Does the rationale for those decisions remain valid?'

The answers to each of these questions should be discussed with the board, senior management and any affected departments so that the business can respond to any indicative results or outcomes in a timely manner, refining or updating the original conclusions and changing the desired course of action if necessary. As an example of the continuity and consistency that should always exist between connecting parts of the ORSA process, the output from these discussions should also inform the direction and scope of the next round of ORSA analysis and reporting.

REFRESH AND REVISE THE ORSA POLICY

Perhaps this article should have started by referring you straight to your ORSA policy, since a good policy document should already set out what the business should be doing at each stage of the intended ORSA process. But there is another reason for mentioning the ORSA policy here.

It is well-established practice to review and update all policy documents so that they remain aligned with and reflective of the business. However, with the first full run-through of the ORSA process still in the rearview mirror and with firms understandably focusing their resources on Day 1 reporting, a useful window has

opened to allow those responsible for the delivery of the ORSA to stand back and take a critical look at the ORSA policy.

Putting the first iterations of the ORSA policy together back in 2014 or early 2015 was a tricky exercise. The EIOPA guidelines were available to give firms a steer towards what the ORSA needed to cover, and the better firms consulted extensively with their boards as to what they wanted to see and how the ORSA should operate. Nevertheless, the ORSA was (and still is) a new concept to everyone—practitioners, regulators and board members alike—and large questions remained regarding exactly how to implement an effective, value-adding ORSA framework.

Having followed the process mapped out by their current ORSA policy, firms can now examine what did or did not work and identify the gaps in the process or where the ORSA may have sought to deliver too much. Armed with this insight, a revised policy can be put in place that provides for a flexible, comprehensive and informative ORSA that doesn't put undue strain on the board or the business in shaping and delivering that ORSA.

Where changes have been made to key components of the business model, e.g., strategy, risk appetite, governance or organisational structure, etc.—perhaps initiated by the ORSA itself—then the ORSA policy will also need to be updated to accommodate these changes. This will ensure that the procedures and methods used to produce the ORSA, as well as its overall focus and direction, remain relevant and appropriate to the decision making of the firm.

In thinking about how to improve or refine the target ORSA process and update it in line with changes in the business, all areas of the ORSA policy should be carefully reviewed. This should include the purpose and scope of the ORSA, the triggers for ad-hoc analysis, roles and responsibilities, the production cycle and forecast methodology. Updating the ORSA policy now, at the beginning of a new ORSA cycle and before the next pieces of analysis or reporting are carried out, maintains the document as one which articulates what

should happen, rather than something that is retrospectively amended to be consistent with what did happen.

In addition to the 'must haves' dictated by the guidelines, in our view, a good ORSA policy will answer the following questions.

WHY DO IT?

A clearly articulated ORSA philosophy sets out the principles underlying the overall framework, the objectives of the process and the factors upon which the success of the ORSA depends. This is about explaining to anyone and everyone in the business why they should care about and contribute to the ORSA.

WHAT IS IT?

A sufficiently detailed explanation of what the ORSA actually is, in terms of:

- The types of analysis that are carried out
- The key inputs and assumptions to the analysis
- How the results of the analysis are reported and to whom
- Who is involved in and responsible for each part of the ORSA
- How the ORSA is used

The aim should be to translate the higher-level ORSA philosophy in to a much more tangible but accessible description of the process that will be followed, as well as the outputs and outcomes expected from that process.

WHEN SHOULD WE DO IT?

A description of when and where the ORSA will be used, which should cover both:

- The types and materiality of the decisions and management actions which will be assessed through the ORSA
- The types of changes to the business or its external environment that would trigger a refresh of some or all of the ORSA analysis

When defining the situations which will instigate ORSA analysis, a balance needs to be sought such that the ORSA is sufficiently responsive to potential threats and opportunities to the business whilst limiting the practical demands and information overload associated with attempting to investigate absolutely every proposed decision or area of uncertainty.

WHY SHOULD I TRUST IT?

A description of the validation and control, review, challenge and sign-off processes associated with the ORSA framework, designed not only to deliver a robust set of outputs but to also ensure that the ORSA itself is subject to continual refinement and improvement.

WHAT CAN'T IT TELL ME?

A description of any known weakness or limitations in the ORSA framework together with an explanation of how these are allowed for when presenting the results of ORSA analysis: It is important that users of the ORSA have a clear understanding of the limits of the analysis, particularly in relation to how much reliance can be placed on any forecasts of future performance.

GET AHEAD ON SCENARIO DEVELOPMENT

Few would dispute that the ORSA is one of the more valuable features of the Solvency II regime, nor that to a large extent the ORSA is (ideally) just a consolidation of good risk and capital management practices that were or should have been already in place within a business. However, if it is being done properly, then there is also no denying that the ORSA is a time- and resource-intensive exercise, where timely delivery is everything if the outputs from the process are going to inform and influence the direction of the business.

Businesses need to look for any parts of the process that can be progressed earlier on in the cycle to speed things up later on and reduce the burden on key resources at critical points of delivery. Where spare capacity exists within the risk function or a rare gap appears in the schedule of the

next board meeting, kicking off the thought process into what alternative scenarios to consider within the ORSA is one such area where progress can be made.

Preliminary discussions could start with the existing set of stress, scenario and sensitivity tests and explore whether these remain relevant and whether the previous results offered genuine insight into the resilience of the business. Horizon scanning or more informal workshop sessions could also be held to identify any new or increasing threats to the business. Of course, stress and scenarios shouldn't exclusively focus on downside risk, and so the review of the scenario list should also cover any new or planned business development activity intended to be implemented over the forecast period.

At this stage it may be too early to think in detail about how these scenarios should be parameterised, modelled or assessed. However, beginning to qualitatively flesh out the high-level features of a scenario such as the drivers, any anticipated non-financial outcomes, and the timing, severity and duration will ultimately contribute to a richer, more meaningful set of scenarios.

Although regulatory feedback has highlighted the need for a much broader range of testing, there is little value in including scenarios just to bulk out the list if they offer little new information or do not correspond to material areas of uncertainty. Proactively refreshing a more measured set of scenarios, where certain tests are regularly added or removed as appropriate, instead of repeatedly running a larger set of 'standard' scenarios will allow board and management time to be focused on the results that really matter.

CHECK THE TRIGGERS

Unless a business is capable of producing substantive updates to its forward-looking assessment on a very regular basis, ORSA reporting is realistically going to comprise a single, comprehensive report produced annually together with more condensed or targeted analysis delivered, for example, every quarter.

Unfortunately, it is not always possible to run a business, much less control the external environment, according to a fixed calendar schedule. Limits or benchmarks therefore need to be in place that if materially breached, trigger the production of ad-hoc ORSA analysis outside of standard reporting timelines. Ad-hoc reporting also promotes and embeds the ORSA as a tool that is responsive to the needs of the organisation and not just a risk management or regulatory exercise. And, crucially, these limits exist so that the board can be provided with forward-looking insight into potential threats as early as possible.

The beginning of the year is always a busy period for insurers, but that doesn't mean that these limits can be ignored. As with so much of the ORSA, if they are to mean anything to the business, the metrics associated with the limits should be regularly monitored, and if breaches are identified then updated forecasts or scenario analysis should be carried out unless a robust reason for not doing so can be put forward.

So two to three months (or potentially longer) after your last ORSA analysis was completed, it is important to look carefully at any signals, trends or spikes in your management information and if necessary update at least the central forecast of solvency and risk

profile. This exercise doesn't always mean a full model re-run—considerable insight can be gained from a qualitative assessment of how the position of the business may have changed if the right people from across the business are involved.

NO PAUSE BUTTON

The ORSA is a continuous process, not a single report. If that statement is to be more than just noble-sounding rhetoric designed to placate the regulator, then even with everything else going on we can't down tools—the process won't run by itself. Nor can we consider the job of developing the ORSA a done deal: if the ORSA is to continue adding value it needs to be tweaked, refined or upgraded to keep pace with the dangers and opportunities facing the business. There is work that can be done now, that any business can do no matter the resource constraints or competing priorities, which will further embed the ORSA as a key decision-making tool and save time further along in the process. So for Q1, think about:

- Checking progress on decisions and management actions arising from the previous ORSA
- Taking practical experience from delivering the ORSA and feeding this into a revised ORSA policy

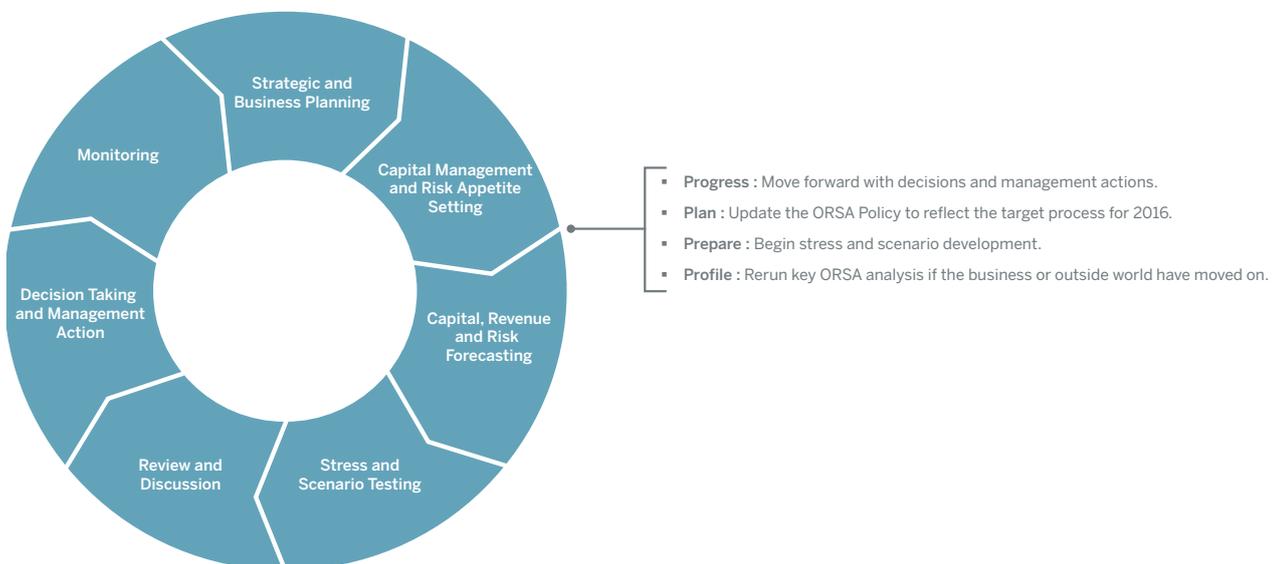
- Actively discussing the alternative conditions, stressed circumstances and business plan activities that should inform the next round of scenario testing
- Reviewing the internal benchmarks or external triggers that might suggest updated ORSA analysis is required outside of the normal reporting schedule

In the next article in the series, we will continue our examination of the ORSA process by looking at a further stage in the cycle: producing the balance sheet and risk profile forecasts that lie at the heart of the ORSA.

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FIGURE 2: Q1 ORSA ACTIVITY



HOW EMBEDDED IS EMBEDDED VALUE?



Embedded value (EV) has been widely and successfully used as a measure of life insurance companies' value, profitability and efficiency of management for the past 30 years. Embedded value techniques arose from the dissatisfaction with accounting measures of profit (when fast-growing companies writing a significant amount of new business would show an accounting loss regardless of the underlying profitability of the business) and the need for more realistic information by the market. There was an increasing demand for a reporting measure which would allow the market to understand and estimate the value of a company from the shareholders' perspective.

Embedded value reporting and methodologies have not remained static and have continually evolved, with each iteration attempting to improve the, often competing, desires for more consistency, a truer representation of company value and more transparency in disclosures. The most recent significant development in embedded value reporting was the issuance of the Market Consistent Embedded Value Principles[®] (MCEV Principles) in 2008 by the CFO Forum. Since then, we have seen a rare period of relative stability in embedded value reporting with only minor updates to guidance and methodologies. The industry generally seems to have settled on MCEV Principles, though a number of companies, including some large players, report under European Embedded Value Principles (EEV Principles).

However, with Solvency II emerging from its chrysalis and beating its wings for the first time at the start of the year, are we about to see a metaphorical tornado hit the embedded value reporting landscape? This is a question that has been asked by many in the industry in the lead-up to the Solvency II implementation date and one for which there still appears to be no clear answer. Towards the end of last year we asked the attendees of our Milliman Forum whether they thought that embedded value would continue to be used for shareholder reporting, and the responses were varied.

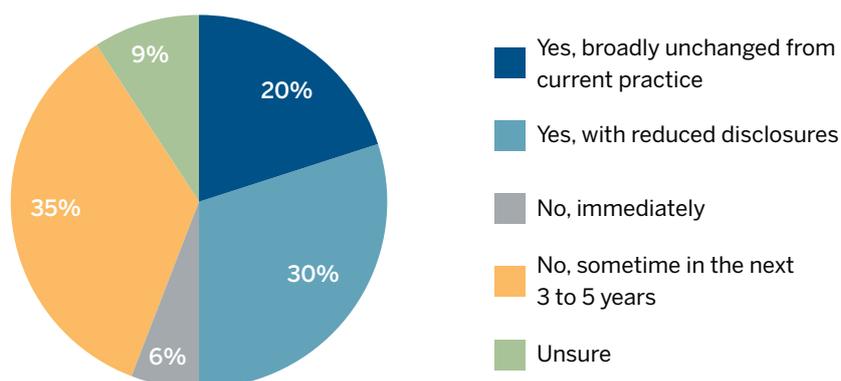
The responses show that many believe that the arrival of Solvency II may spell the end of embedded value reporting in its current form, with the level of Solvency II Own Funds providing a measure of the market-consistent value of a firm. Indeed, many

firms have already begun to align some of the methods and assumptions used for their embedded value disclosures to those used for Solvency II.

Despite potential equivalency it is widely acknowledged that there are a number of fundamental differences between the assumptions and methodologies that underlie the two approaches, not least the fact that Solvency II is a regulatory regime and therefore may contain some elements of prudence (for example, in the application of contract boundaries, and the limited scope for illiquidity premia for business not covered by the matching adjustment).

Furthermore, the belief that Solvency II metrics will replace embedded value reporting disclosures is predicated on the assumption that a market-consistent

FIGURE 1: WILL EMBEDDED VALUE CONTINUE TO BE USED FOR SHAREHOLDER REPORTING?



view of value has been accepted by all firms, but as we noted above there is no consensus on this in the industry with a number of firms still reporting under EEV. Outside of the UK, and in particular in Asia, there has been an increasing interest in embedded value reporting and, with the exception of Japan, market-consistent approaches have yet to be widely accepted. The fact that Solvency II will also not directly apply to firms operating in this region adds further uncertainty to the future of embedded value reporting on a global scale.

Guidance from the CFO Forum on the topic to help ensure some convergence in market practice would be welcomed by many, particularly now that Solvency II is in force. Towards the end of 2015, the CFO Forum published additional guidance which stated that Solvency II was not required to be reflected in MCEV/EEV calculations for reporting periods ending before 30 June 2016, and that the CFO Forum would revisit the MCEV and EEV Principles for reporting periods ending in 2016 and subsequently.

Taking all of the above into consideration, the future of embedded value reporting is unclear. Given this lack of clarity, it may be best to revisit the original drivers for the development of embedded value: to determine a fair and consistent, risk-adjusted value for an insurance company and to provide a realistic measure of profit. Moreover, we must also consider the viewpoint from which we are considering the value, as there are many key stakeholders for embedded value reporting. These include:

- Internal company management
- Shareholders
- Investment analysts
- Potential acquirers
- Credit rating agencies

Just as each of these stakeholders has driven past developments (for example, the recent inclusion of VIF emergence within embedded value used by investment analysts), they will continue to do so in the future.

Along with our regular report which provides an update on the results and trends from year-end 2015 embedded value disclosures, we will be conducting further research into how the key stakeholders of embedded value reports use the available information and how this may shape any future changes.

At the time of writing a few embedded value reports have been published which give us a glimpse into the potential future of embedded value reporting – some companies did not change their methodologies (in line with the CFO FORUM update from October 2015), some companies further aligned their embedded value and Solvency II reporting (with regard to reference rates, for example) and some companies announced that they are going to stop publishing embedded value reports.

If the latter becomes a prevalent practice in the industry, alternative information will be needed on a Solvency II basis to mitigate the loss of EV information. So, companies may start adding supplementary information to their disclosures – volumes and profitability of new business, sensitivities (similar to ones required under MCEV), profit drivers, potentially adjustments to Own Funds to compensate for non-market consistent features of Solvency II, and other information usually required by investors, analysts and key stakeholders.

Nonetheless, it remains to be seen whether the arrival of Solvency II will lead to the development of a “new norm” in embedded value reporting or whether there will only be a temporary disruption with a return to the status quo.

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**CYBER RISK REGULATION:
FIRST LINE OF DEFENCE**
Stuart Collins
April 2016

Regulators and ratings agencies are beginning to take a much closer look at cyber risk, with a particular interest in data security and exposure management.

Read the full article: tinyurl.com/zrqdlum



**WHAT IF...ECONOMIC
VOLATILITY OVERWHELMS
INSURERS**
David Worsfold
January 2016

Insurers know all about risk. Insurers know all about regulation. But do insurance company boardrooms spend enough time looking at political issues and their economic impact?

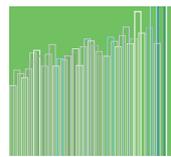
See the video at: tinyurl.com/gsa7u6s



TIME TO MOVE FORWARD
Neil Cattle
18 January 2016

This month, insurers in Europe will begin to operate under the Solvency II regime. Harmonising the 28 European Union states' insurance regulations won't be easy. The journey so far has been challenging. But benefits have already started to emerge.

Read the full article: tinyurl.com/guaz964

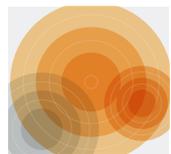


**SECOND-HAND, THIRD
RATE? VIABILITY IN THE
SECOND-HAND ANNUITIES
MARKET**
Christopher Lewis, Colette Dunn
22 March 2016

There has been widespread speculation about the viability of what has become known as the "second-hand annuity market." This article covers market viability, including pros and cons for key market participants. For the second-hand annuity market to be viable, a number of participants are essential.

This article was published in Financial Adviser.

Read the full article: tinyurl.com/z4t7y2x



**EXTRACTING VALUE
FROM SALES PROCESS
MANAGEMENT**
Ashleigh Hickey, Fred Vosvenieks
05 February 2015

Adopting a structural (or causal) approach to operational risk assessment carries a wide range of benefits, not only in terms of determining a more meaningful capital number but also by allowing for more effective risk management. In this research report, we demonstrate the application of causal techniques on operational risk with reference to a case study firm in the Asian insurance market. To test the potential for implementing Milliman's approach based on complexity science in markets with less developed risk frameworks (such as some Asian countries), we partnered with a major Taiwanese life insurance company to carry out a case study covering one particular area of operational risk.

Read the full article: tinyurl.com/hayss45

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13 September 2016	Milliman	Milliman Forum/Milliman Technical Forum
2-4 November 2016	Institute and Faculty of Actuaries	Life Conference and Exhibition 2016

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