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A review of Solvency II: has it met its objectives?

Abstract of the Edinburgh Discussion

[The Retrospective on Solvency II Working Party, Institute and Faculty of Actuaries, Sessional Research Event, 8 May 2017]

This abstract relates to the following paper: Rae R.A., Barrett A., Brooks D., Chotai M.A., Pelkiewicz A.J. and Wang C. A review of Solvency II: has it met its objectives? *British Actuarial Journal*. doi: 10.1017/S1357321717000241

The Chairman (Mr G. C. Wood, F.F.A.): A warm welcome to all of you. Tonight's event is "A review of Solvency II – Has it met its objectives?" by the Retrospective on Solvency II Working Party.

In May 2001, the European Commission first started considering Solvency II. Fifteen years later we finally got there. I still personally think that it is unfinished business. This is a timely paper from the working party.

Craig Turnbull, who is now with Standard Life Investments after a 15-year career at Barrie & Hibbert, is going to open the discussion. At Barrie & Hibbert, Craig was Head of Research and Advisory, overseeing industry-leading work in insurance: asset-liability modelling; economic capital; Solvency II; and the hedging of insurance liabilities. At Standard Life Investments, Craig leads the Insurance Solutions team, which works closely with Standard Life Investments' global insurance client group to support their insurance asset management requirements.

Craig qualified as a Fellow of the Institute and Faculty of Actuaries in 2003.

We look forward to his opening remarks.

Mr C. J. Turnbull, F.I.A. (opening the discussion): The Working Party's conclusion that Solvency II represents a significant improvement over Solvency I without fully achieving all its goals is, I expect, one with which most of us would feel comfortable. I will attempt to briefly talk about some of the main topics covered by the paper that reflect this caveated conclusion. I will highlight what I think are some of the paper's most important and interesting points for actuaries, and also where, in my view, there are areas where further actuarial research may be useful.

Sections 2 and 3 of the paper provide a comprehensive survey of all the aspects of the design and implementation of Solvency II's Pillar 1 that should be important to life actuaries. This alone makes the paper a valuable reference for practising actuaries. And even those immersed in Solvency II are likely to have found some new and useful facts amongst the commentary. I, for one, was surprised when reminded that European Insurance and Occupational Pensions Authority (EIOPA) estimated that the removal of the Volatility Adjustment (VA) would reduce solvency coverage ratios by some 85%–90% in northern Continental European nations such as Germany and Denmark.

The Working Party's discussion of the implementation of Pillar 1 also highlighted areas where the outcomes do not appear actuarially intuitive, or where they could give UK actuaries reason to pause for thought. For example, are actuaries entirely comfortable that, under the Matching Adjustment (MA) rules, the total asset requirement of an MA book (i.e. the sum of the liability valuation and capital requirement) can be virtually unchanged when its bond portfolio is switched from gilts to BBB-rated corporate bonds?

Another example of a potentially counter-intuitive outcome could be the requirement for non-MA business such as with-profit funds to hold gilt-swap spread capital to support their gilt holdings (which seems especially unreasonable if and when swap spreads over gilts are negative at the valuation date).

The Working Party highlighted the UK life industry's long-standing concerns with the required levels of complexity in Solvency II internal models, and with the burdensome nature of its documentation and governance requirements. The Working Party did not, however, speculate on how this state of affairs might be improved upon. This is, perhaps, an interesting area of future actuarial research: what does a good principles-based capital assessment system look like? Is a more efficient and effective system possible? This might be a timely discussion to have. Since the global financial crisis, many influential thought-leaders have expressed scepticism about giving financial institutions latitude to assess their own capital requirements. Principles-based capital assessment does not have the same in-vogue status it had at the time of Solvency II's initial conception at the start of the century, and Solvency II's current flavour of principles-based capital assessment is arguably not helping to garner further support for it.

Section 4's discussion of the impact of the MA rules on annuity business highlighted some of the currently significant asset-liability management topics for those businesses and their actuaries. The Working Party noted the significant shift in MA asset portfolios from corporate bonds into less liquid assets, and the industry's intention to continue to increase these allocations. Other working parties are currently specifically focussed on the MA and on illiquid asset investing. I would agree these are certainly areas worthy of further actuarial research, and that it raises interesting new actuarial questions. For example, in the context of illiquid liabilities such as annuities, is there an actuarially desirable limit on the proportion of assets held in illiquid assets? What are the long-term potential sources of demand for asset liquidity for such business and how might they behave? The paper noted in section 5 that liquidity management and stress testing are part of Solvency II's Pillar 2. It is arguably also an interesting area of broader actuarial asset-liability management research, and one that may be increasingly relevant for other actuarial fields such as defined benefit pensions as they become increasingly net cash flow negative.

I felt the discussion of pro-cyclicality in section 4.2 was one of the jewels in the paper's crown. This issue requires difficult judgements to be made on the trade-offs that may arise between the objectives of policyholder protection and the supporting of broader financial stability. A general point I would like to make on this topic is that any form of risk-sensitive capital measure (and not only market-consistent ones) has a basic tendency to be pro-cyclical (as, indeed, does financial risk management more generally). If the quality of assets relative to liabilities deteriorates for any given reason, as a consequence there will be less capital available to support risk and there will also, usually, be more risk. If the capital assessment is risk-sensitive, either risk must then be reduced or more capital must be found if a given level of capital coverage is to be maintained.

When market values are used in one way or another in risk-sensitive capital assessment (as they have been by actuaries since the Maturity Guarantee Working Party of 1980), then some pro-cyclicality is inevitable,

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and its degree is governed by the extent to which it is felt reasonable to assume that market price changes are driven by risk premium changes, as opposed to changes in expected cash flows from the asset (and this logic applies similarly whether the asset is a corporate bond, an equity holding or anything else). The empirical evidence to support the hypothesis that variations over time in market risk premiums are a significant driver of financial market value behaviour has been increasingly well-documented by economists over the last 40 years. It was a fundamental feature of the Wilkie Model approach used in Maturity Guarantee reserving and elsewhere by British actuaries over a similar time period.

In the context of a 1-year market value value-at-risk approach, such a view can be captured by "dampening" the asset value stresses following asset value falls. The Working Party suggests that such a dampener approach could be applied to all forms of financial market risks in the Solvency II value-at-risk calculation. This is consistent with the above, but it does, of course, raise the important question of how to calibrate the dampening mechanisms, and whether such calibrations can be delivered in an objective and reliable way in the context of the tail probability estimates that drive Solvency II capital.

Finally, in the paper's tabulation of the historical use of regulatory flexibility for insurers in various European countries since the start of the 21st century, I was somewhat surprised to see that the Working Party did not suggest that Solvency II's current parameterisations of the Last Liquid Point and Ultimate Forward Rate (UFR) for the Eurozone should be included. The current assumed values for these parameters seem to me to be straightforward departures from objective assumptions that have been made in order to support the regulatory solvency levels of life firms in northern European countries such as Germany, and thus avoid prompting significant management actions such as de-risking or capital-raising. As such, I was also somewhat surprised with the Working Party's award of four out of five on the question of whether effective risk management across Europe has been achieved.

My comments are intended to stoke discussion and highlight further avenues of potential research for the profession. I would like to now open the discussion to the audience.

The Chairman: I should now like to introduce the working party's chairman and two members of the working party.

Dick Rae is the Working Party Chair. He currently heads BMO Global Asset Management's UK Insurance Solutions business. Prior to that he spent over 14 years in investment banking where he focussed on asset-liability management and strategic asset allocation management. He was, for a short period, CEO for Abbey Life.

He is joined by Andy Pelkiewicz, who, prior to 2007, was with Sun Life Assurance Society or AXA Sun Life. In that year, he moved to HBOS (later Lloyds Banking Group) as Head of Capital Management in its European Financial Services business. He later moved to Germany and became Head of Actuarial and Investment in this business, and subsequently held the same role following the transfer of most of the business to Heidelberger Leben Group. In these roles he was deeply involved in the implementation of Solvency II for insurers in Germany, Luxembourg and the United Kingdom.

Meshali Chotai is Principal Advisor at KPMG's life actuarial team, having joined the firm from Prudential UK. She was involved in the development of the Solvency II internal models, particularly for the with-profits business, including calibration of the proxy models. Since joining KPMG, she has

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worked on a large variety of engagements including financial reporting, finance transformation and large-scale projects involving both International Financial Reporting Standards and Solvency II.

Mr R. A. Rae, F.I.A.: For the past 18 months our working party has been conducting a review of Solvency II by asking the question "Has it met its objectives"?

I'm joined here by two of our working party, Meshali Chotai and Andy Pelkiewicz, who will present the paper and its findings. There are in fact six members within the working party. Chris Barnard also participated as our Life Research Committee Member Shadow.

Our working party has been able to draw from a broad range of experience from consultancy, asset management, investment banking and life insurance; and from a German, Irish and UK perspective.

Our first action, back in January 2016, was to hold two meetings to determine what our retrospective on Solvency II should look like. Following these we decided that the working party would take a broad look across Solvency II – a generalist approach.

We decided that we would assess Solvency II against its original objectives which include improved consumer protection, effective risk management, harmonisation and financial stability.

Back in October 2016 we were able to seek the views of actuaries that attended a workshop at the Life Conference. Their feedback helped inform the paper.

We chose not to take selective deep dives as there are other working parties that are doing just that. There are working parties looking at the transitional measures on technical provisions and the MA, as Craig (Turnbull) mentioned.

I'm conscious that there will be specialists among you who, within this area, will certainly know more than we do on particular subjects. If it does interest you to form a working party, and you find like-minded professionals within the profession to join you, certainly a range of topics have been highlighted in the paper; namely, issues around discounting; the various approaches that there are to the risk margin; and the design and application of a counter-cyclical buffer risk – not just equity risk but broad market risks.

When we started, we had not bargained for Brexit nor the resultant Treasury Select Committee enquiry into the EU regulation of insurance companies. For our working party, we were fortunate enough to be sufficiently advanced to provide an input into the Institute and Faculty of Actuaries response. With the onset of the election, this enquiry has been disbanded, presumably to resume again with the formation of a new government albeit without its chairman, Andrew Tyrie, who will not be standing for re-election.

There are huge concerns over the impact that Brexit will have on the United Kingdom's ability to compete within Europe in the insurance sector. Post-Brexit we will lose all influence over future changes. Given the importance of the insurance industry to the United Kingdom, and given the need that the EU has had in the past to exert its influence, the working party does not think it makes sense to adopt Solvency II post-Brexit if we do not have that influence. Rather, we think that it makes sense to adopt a parallel set of regulations along the same lines. This gives the United Kingdom the opportunity, a better opportunity in fact than the rest of Europe, to fashion Solvency II and address its issues. However, in respect of any changes, major concerns are passporting and equivalence.

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These are the big issues that are resolved at a political level, which is true of other aspects of Solvency II such as Omnibus II or the equivalence of other regulatory regimes.

With Solvency II we have an impressive regulatory regime that provides a standardised framework that is more extensive than we have seen before. However, despite all its achievements, our findings are that when you look at the outcomes in detail against the goals set, Solvency II falls far short of what it sought to achieve. You could argue that this is harsh given how far it has brought the industry within Europe. But it is only right, given the huge sums of money that companies have invested in it, that a critical appraisal takes place. Some issues are teething problems whilst others are more fundamental. Our paper serves to set these out whilst putting them in perspective of Solvency II's other achievements.

Mr A. J. Pelkiewicz, F.I.A.: I am going to describe sections two and three of the paper.

Solvency II started with the intention of being market-consistent. It was later recognised that, particularly for long-term guarantees, changes were needed to make Solvency II acceptable to member states, and these changes have departed from market consistency.

The question has been raised as to whether market consistency is a desirable end in itself, or merely a useful tool to ensure a consistent approach to valuation, with little need for judgement. It is fair to say that the working party is not fully in agreement on this question.

Section 2.1 is mainly about departures from market consistency. The examples covered are the UFR, the MA and the VA.

The risk-free yield curve used in Solvency II is based on interest rate swap yields. However, for long terms, swap markets are not deep and liquid, and the curve is extrapolated to the UFR. For the euro, the extrapolation starts at year 20 (which seems to have been a political compromise). The curve converges to the UFR of 4.2% over a period of 40 years. The UFR is less of an issue in the United Kingdom, as sterling swap markets are deep and liquid for much longer. In the current low interest environment, EIOPA has already suggested a lower UFR than 4.2%, even though that rate was determined not very long ago on the basis of stable long-term assumptions.

The MA is an addition to the risk-free yield curve, and can be applied to portfolios of liabilities and matching assets, subject to stringent conditions. As at the start of 2016, the MA was being used in two countries, by 15 insurers in Spain and 23 in the United Kingdom, where it is applied to portfolios of annuities.

The VA is an addition to the liquid part of the risk-free yield curve. It aims to protect insurers from market volatility. At the start of 2016, it was being used by 852 insurers in 23 countries. EIOPA has made the point correctly that this is significant in certain countries, particularly Denmark and Germany.

These three adjustments also raise the question of whether the risk-free discount rate is too conservative for the insurance industry. There is a case for using a discount rate that reflects a good investment grade, e.g. AA or A rated.

Most participants in our survey at the Life Conference were in favour of the departures from market consistency, but within the working party we have a difference of opinion.

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Section 2.2 is about the topical issue of the risk margin, which is part of the technical provisions. It is a cost of capital, and is defined as the amount another notional insurer would require to cover the full cost of capital for non-hedgeable risks, following a transfer of liabilities.

This has recently been criticised on the grounds that it is too sensitive to interest rate movements and that it is too large. It is also not stressed in the calculation of Solvency Capital Requirement (SCR), which means that if you hedge the interest rate risk it increases the capital required. This seems perverse. Furthermore, it is complicated to calculate, usually requiring approximations.

A long time ago, when Solvency II was being developed, two different approaches were considered for the risk margin. One was the cost of capital (as in Switzerland), and the other was the difference between best estimate and 75th percentile liabilities (as in Australia). It seems from this that a key driver was the wish to retain a prudent margin above the best estimate, rather than a conviction that the cost of capital must be valued.

It has been questioned whether the cost-of-capital approach, enabling recapitalisation, is over-prudent. The starting point for the review of the risk margin to be carried out by EIOPA should be a re-assessment of its purpose.

Our paper presents a number of our and other commentators' ideas for changes to the risk margin, ranging from changing parameters (e.g. reducing the cost of capital rate from 6%, which many feel is too high) to replacing it with something completely different or doing away with it altogether. These ideas could be of relevance to either a review within Solvency II or a post-Brexit UK review.

Section 2.3 relates to transitional measures. These were packaged and negotiated as a political response to issues that were in the way of a final agreement to Solvency II. They are presented as providing an orderly transition. There are several of these. The most significant is the transitional measure on technical provisions. At the start of 2016, 154 insurers in 12 countries were using this measure, with 28 in the United Kingdom.

It runs off the difference between the Solvency I and Solvency II technical provisions at the end of 2015, linearly over 16 years.

The Solvency II technical provisions include the risk margin, so this measure effectively smooths in the introduction of the risk margin.

In the United Kingdom, the base position is normally the Individual Capital Assessment (ICA), so the initial adjustment is likely to comprise mainly the risk margin and the restrictions to contract boundaries, which were brought in with Solvency II.

In countries that used a passive Solvency I valuation method, it also allows for differences in the discount rate and other valuation assumptions.

The regulator may require (or an insurer may ask for) a recalculation of the measure where the risk profile has materially changed, or after 24 months. The Prudential Regulation Authority (PRA) expects a recalculation every 24 months, and has set out what it considers to be material changes. These include changes to interest rates. The PRA review process for this appears complicated,

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time-consuming and slow to respond. A simpler and more responsive process for recalculation would be welcome.

Our paper also covers the other transitional measures, which I will not go through.

Section 3 of the paper is about capital requirements. Section 3.1 is about the standard formula. This is used to determine the SCR for insurers that do not have an internal model. It is particularly suitable for small and medium insurers and those which are not subject to specific or unusual risks. About 92% of life insurers in the European Economic Area use the standard formula.

Life insurers must value up to 17 separate risks, each of which has its own rules expressed in different forms, ranging from very simple to unnecessarily over-complicated.

The paper gives an overview of how the standard formula is calculated, and describes some of its many peculiarities, including suggestions for improvements. It also gives examples of risks that are not included.

Standard formula companies must assess annually within the Own Risk and Solvency Assessment (ORSA) whether the standard formula assumptions are appropriate, allowing for their specific risk profile. This assessment is a significant burden on small insurers. Insurers must consider how to address significant deviations. The Guidance suggests as solutions to develop a partial or full internal model or to de-risk or align the risk profile with the standard formula, which feels to me like the tail wagging the dog. However, these solutions may be impractical. Furthermore, the regulator may impose a temporary capital add-on following this assessment.

Section 3.2 is about internal models. Insurers may use full or partial internal models for the calculation of the SCR rather than the standard formula, subject to regulatory approval.

I said earlier that 92% of life insurers use the standard formula, so only 8% are using internal models. The PRA had approved internal models for 19 groups by the end of 2015, and a few more since. This is a significant proportion of the European total.

The PRA was an enthusiastic supporter of internal models. It had a pre-application process, which allowed both the regulator and insurers to prepare for the formal process.

We see the use of internal models as positive. It enables insurers to model their risk profiles more accurately than with the standard formula. This encourages insurers to take more responsibility for managing their risks.

However, as indicated by Craig (Turnbull), there are some criticisms such as burdensome governance and documentation, a non-level playing field against the standard formula, supervisory influence on and the benchmarking of calibrations, arguably contrary to the logic of an internal model, and the encouragement of herding and over-complexity.

Our working party believes internal models are too complex. However, there was a broader range of views in the survey at the life conference. I was interested in Craig's comments on internal models – the idea that allowing an internal model is not as fashionable as it was, and maybe there will be a trend in the other direction.

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Finally, section 3.3 is about other economic capital models. An insurer with an existing economic capital model or with a different internal view from the prescribed Solvency II methodology, could use another model alongside its Solvency II model, for purposes other than regulatory solvency. However, this may bring added complexity and even confusion, and, although some insurers may wish to use an alternative model in managing the business, others may conclude that an alternative model is of little practical value. We have already seen that some insurers have ceased reporting embedded value.

Meshali Chotai will describe the rest of the paper including, as Craig described it, the jewel in the crown.

Mrs M. A. Chotai, F.I.A.: I'll be describing sections 4–6 of our paper. To start with I should like to explore our coverage of the impact on behaviour detailed in section 4. Here we cover three key areas, starting with section 4.1 on asset-liability matching (ALM).

So what impact has Solvency II had on ALM practice for insurers? On the positive side, we have a regime that generally rewards the matching of assets and liabilities through a reduction in the SCR, although there are exceptions, the most notable being the risk margin.

In the United Kingdom such a practice has been prevalent within with-profits funds since the realistic balance sheet was introduced in 2003. The main ALM change as a result of Solvency II has been a move to a swaps-based discount rate which has triggered a review of ALM practice for those running their funds assuming a rate based on gilts.

For German insurers, there is a trend to extend the duration of their assets so as to reduce the exposure to interest rate risk. In practice, the trend in Germany has been gradual because of the transitional arrangements, the UFR to some extent and the fact that the downwards interest rate shock in determining the SCR is small when rates are low.

For annuity business, the introduction of the MA has had a huge impact on ALM behaviour. Eligibility rules have introduced a shift away from traditional asset allocations such as corporate and government bonds to high-quality illiquid assets. Some previously favoured illiquid assets, such as equity release mortgages, have had to be securitised internally to meet the rules, bringing with it high costs and resource requirements.

According to the statistics, 25% of annuities are currently backed by illiquid assets with indications that this could increase to as much as 40%. In part, this is also driven by the search for yield in the current low interest rate and falling credit spreads environment. No doubt, this also brings with it positive economic outcomes with greater investment from insurers in areas such as infrastructure assets.

Finally, even for unit-linked business, an ALM practice of moving away from matching the face value of units to one that is closer to the Best Estimate Liabilities reduces capital requirements.

Solvency II has certainly changed the dynamic of ALM practice, in some shape or form, in all corners of Europe.

Also covered in section 4.2 is pro-cyclicality. One of the impacts of Solvency II that raises concerns is the pro-cyclical nature of market-consistent approaches. Questions are being asked about the going concern approach of Solvency II compared to the run-off approach under Solvency I.

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Market consistency will tend to be pro-cyclical. If markets fall, it makes sense to hold capital against further falls.

So, as markets fall or become more volatile, under the 1-year value-at-risk approach of Solvency II, insurers either have to find more capital or sell. This essentially requires them to de-risk in the same timeframe as other institutions.

Underlying all of this, we know that markets can over-react, many markets are not deep and liquid and insurers writing long-tailed business do not have immediate cash flow outgo to pay in respect of claims.

To evaluate the potential solutions, we explore various methods to achieve a more desirable capital regime touching on, for example, the symmetric adjustment for equities in the Standard Formula with potential extensions to other market risk and dealing with short-term volatility through counter-cyclical buffers.

In conclusion, our concerns around pro-cyclicality were echoed by our Life Conference audience last year. A capital regime that provides time for insurers to formulate a measured response would be desirable and bring Solvency II closer to meeting its objective of achieving financial stability.

Our final area in section 4.3 is product design and consumer protection.

Solvency II has increased focus on risk capital, the use of capital and capital steering via the use test. To evaluate the full costs of holding risk capital, we have to consider the capital intensity for each product over its full term.

In this section, we explore how insurers can improve profitability over capital intensity. We look at the impacts of various options ranging from re-designing products to accelerate profit emergence to promoting protection business to bring diversification benefits.

There are clearly pros and cons of each of the approaches, but there is certainly more activity across various insurers evaluating their products and asking questions of new ones. It should be noted that transitional measures do not apply to new business and capital requirements are higher than under Solvency I for long-term guaranteed business. This is an area of potential concern given that competition is not a primary focus of the PRA.

To conclude, we recognise that there is increasing pressure on companies to take a more customer focused view, and ideally one would hope for material positive impacts on conduct risk from Solvency II. The desire is to help reduce reputational risk and future mis-selling.

Time will certainly tell on how insurance companies will factor all this into the Solvency II calculation of risk capital.

In section 5, we move away from Pillar 1 and assess the remaining two pillars of the regime.

Section 5.1 sets out agreement between our working party and votes cast at the Life Conference that Pillar 2 has been a major success of Solvency II.

Section 5.2 explores the requirements and reviews both the ORSA and publicly disclosed Solvency and Financial Condition Report (SFCR).

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The ORSA certainly has the UK's DNA running through it as it is similar to the ICA regime we knew before Solvency II. However, Pillar 2 has raised the bar considerably compared to the Solvency I regime.

In general, the ORSA, although an onerous process, is seen as a useful risk management tool and a best practice approach to embedding a strong risk culture.

The SFCR is being disclosed publicly over the current quarter for the year-end 2016 results. This includes further detailed information about the Solvency II position and may cause companies to rethink their disclosure for the half-year and year-end of 2017.

Section 5.3 covers liquidity. Since the financial crisis, the risk of liquidity has assumed a much greater concern for regulators and recognition of liquidity risk has been another positive feature of Solvency II.

A feature of the UK life insurance market is that most with-profit funds are in run-off and many of them are at the point where they will pay out more in claims than they will receive in the form of investment income or premiums. Liquidity planning is clearly important.

For UK annuity portfolios, cash flow modelling and matching has been a long-standing practice.

Liquidity and the posting of cash collateral makes liquidity a bigger issue for insurers using derivatives, especially long-dated ones.

Overall, there is greater emphasis on liquidity risk in Solvency II, but we do know that it does not include any of the quantitative measures or prescriptive liquidity ratios that you see in the banking regulations.

Our view is that this principles-based approach is appropriate in the context of long-term insurers, given that liabilities are illiquid and long in duration. However, we note that this could give risk to variations in rigour and practice across Europe.

Finally, section 5.4 explores the last pillar of the regime, which has introduced greater transparency across Europe in terms of reporting and public disclosure.

From a UK perspective, though, Pillar 3 disclosures have meant a loss of some of the granularity of detail that we were used to seeing in the PRA returns. In that respect, one would argue that there is less transparency.

Just to put this all into context, for a solo undertaking with no ring-fenced funds, there are potentially 68 quantitative reporting templates (QRTs) of which 13 are required quarterly and with some being publicly available. Naturally, this volume of disclosure brings some common issues like the granularity of reporting, volumes of data, and the speed and frequency of reporting, to name a few.

Interestingly, an increased number of QRTs that are publically disclosed does not automatically mean that the disclosures go far enough. As we have seen, there is no formal requirement to disclose the impact of the UFR on technical provisions. Analysts are aware of this and the capital markets are certainly looking for voluntary disclosures from insurers in this area.

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In conclusion, the working party's opinion is that certain parts of the detailed reporting do not appear to justify the costs (and efforts by all parties). Parts of the supervisory disclosure are too detailed and onerous, and we question their value to the regulators. A post-Brexit world provides an opportunity to evaluate the relative merits of the current disclosures for the purpose of the UK insurance industry.

The final area of the paper is section 6, which is about harmonisation.

On the face of it, the detail of the regulation and the introduction of a common European regulator have resulted in a high degree of harmonisation, but taking a deeper look has revealed important areas in which harmonisation has not been achieved. These can be summarised into three groups: discretion; gold-plating; and interpretations.

Solvency II allows supervisors to exercise discretion in some areas and we have seen examples of this through reporting exemptions, approval processes for the VA and capital add-ons between member states.

The general view of the working party and the members of the Life Conference workshop was that Solvency II has been gold-plated in the United Kingdom but it is difficult to find concrete evidence to support this. It could be justified as a difference in interpretation between our industry and the regulator.

Overall, the working party also struggled to find conclusive data on whether the internal model approval process in the United Kingdom was more difficult to pass than in other EU countries – but we note that this question is highly subjective in nature and difficult to assess given the private discussions between insurers and regulators in this area.

In conclusion, Solvency II has imposed a sophisticated, detailed and revolutionary set of rules across 28 member states, which should be commended as a major accomplishment.

Despite this, our view, and that of our voting audience at the Life Conference was that Solvency II had failed to achieve harmonisation.

We hope our "whistle-stop tour" of the paper gives you a good overview of our work to date and we look forward to an interesting discussion today.

The Chairman: Who would like to open the discussion?

Dr D. J. P. Hare, F.I.A.: I must confess that I have not read every word of the paper. I have looked through it, though, and found it interesting. What I have not been able to find is any reference to the Sharma report. Maybe that is because I have missed it.

I think Solvency II has to be read through the eyes of the Sharma report. There was a paper by Mueller about solvency before the paper by Sharma, which was to be the toolkit that regulators would need in the new Solvency II environment. They looked at many case studies across Europe of failures and near-failures in life insurance companies.

Gabriel Bernardino was a member of that working party, chaired by Paul Sharma (of the Financial Services Authority (FSA) in those days), and they came up with the startling conclusion that life

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companies get into trouble not because of capital but because of what management does; hence all the strong Pillar 2 insights.

I agree with you that it does bear the marks of the FSA in the United Kingdom but I think that is probably mainly because the United Kingdom were in the middle of bringing in their The Institute of Chartered Accountants of Scotland regime anyway, and they were able to do that.

Part of the problem is that, when we talk about Pillar 2, we talk about different capital requirements, whereas what Solvency II means by Pillar 2, colloquially, is a regulatory supervisory framework that requires the company to understand its risks, and then gives the regulator certain powers of intervention.

I chair the working party of the Actuarial Association of Europe that is developing the standard for the actuarial input into the ORSA, and one of the issues we have come up with is whether we should discourage people from using a different capital requirement in the ORSA, because the ORSA is all about the ability of the firm to meet its technical provisions and capital requirements in the future. What is the point of being able to meet another measure? What does that tell you?

The ISAP 3 has been out for consultation several times. Those of you who have looked at it will see that we imply that you need a good reason for not using the Solvency II balance sheet for ORSA projections, given the purpose of the ORSA.

I know of some companies that would much rather look at a different balance sheet. What that tells them about their resilience to regulatory requirements, I am not quite sure. Some people are still wedded to the old ICA approach.

Where I am going with all of this is one of the key points of Solvency II was to encourage people across Europe to understand their risks. That provides the best security for policyholders. In fact, capital is not the best security. Capital is what you have when everything else has gone wrong. I think that that may be a way of looking at the risk margin.

I remember being one of the Treasury negotiating team. The negotiators in the United Kingdom had a support team drawn from a number of different actuaries.

One of the things that was being tried with the risk margin was, essentially, to find how much more you need. It had been deemed inappropriate to have only the best estimate left when everything else goes wrong. You want to have more than that in technical provisions.

But, how do you work that out? You either do it as a probabilistic thing, as Andy (Pelkiewicz) was explaining, or you have this other method, which the industry proposed. I find it quite amusing, with the benefit of hindsight, that the industry was upset about the risk margin, given that it was an industry idea. As far as I can tell it came from an industry group. It got squeezed into either Quantitative Investment Strategies (QIS) 2 or QIS 3. Much of the industry, which had been pushing the method, did not put results in using the method because they were not able to do it. Yet it was still pushed.

So, to some extent, we have what we as an industry pushed for here. But I do not think that anybody realised what would happen to the risk margin when discount rates became as low as they are.

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The key question for the risk margin to me is, if you are going to try to have more than best estimate, how much more do you need?

The Fair Value Working Party based how much more you need on how much you need over the remaining term of the contract. When we presented our results to a Faculty sessional meeting, we were asked, "How much do you need now? Do you not need a current hurdle?" We had not developed a current hurdle.

It is a bit like a pension scheme. What is the current hurdle? Is it the funding basis? Is it the buy-out basis? It probably does not matter quite so much to customer security if there is a protection scheme in place, provided that it is an adequate one. Interestingly, we have a policyholder protection scheme in place in the United Kingdom. I am not sure where we are at with the European one. I personally feel that there has been too much attention paid to Pillar 1. That is not the industry's fault. We seem to have forgotten the importance of Pillar 2, which is how we have arrived at this position in the discussion.

Another question I have is about Pillar 1. Why do the internal models today need to be so much stronger than the ICA models that we had for the last 10 years? Has our understanding of risk been so lacking in the past that we need to hold more capital against those same risks now?

One of my favourite quotes is: "All models are wrong but some models are useful". I think chasing after a perfect capital model is a fruitless task. What we want is an adequate capital model combined with the other features of Solvency II. After all, we are trying to give policyholders the best outcome that we can give them. We are trying to give them security over receiving their benefits; for some types of contracts we are trying to add value.

If the capital requirements stop us adding value or stop innovation, then we have to ask whether that is a helpful consequence or if we have gone too far?

Let us make the ORSA work, and work as a long-term projection. Do not think of it as being a replacement for the ICA, because it is not. It is something much more holistic and it gives actuaries a wonderful opportunity to show that we can explain complex risks to boards in a way that they can take action. That is no mean challenge, no mean feat to achieve it, but if actuaries across Europe can do that, then we have positioned the profession well for the future and served the public interest admirably.

The Chairman: Thank you. Any reaction to that, or any other contributions from the floor, please?

Mr A. J. Clarkson, F.F.A.: Is Solvency II a more effective regime than Solvency I? The answer to that is clearly yes. Does it more effectively reflect and reward good risk management? Yes. Has it been worth the £3 billion quoted in the paper for its implementation in the United Kingdom? Certainly not, in my opinion.

David (Hare) touched on aspects relating to risk culture. If you ask senior people in Life companies or General Insurance companies at the moment what they think of Solvency II, they will say: a lot of money, a lot of time, a lot of resource and lots of detailed technical discussions that you have to pretend to understand. I think we have spent an inordinate amount of time discussing how we should technically measure risk as opposed understanding it and managing it.

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One aspect worth touching on is the level of documentation required. In my view, some documentation is necessary. However, the amount that we have at the moment, I think, is well beyond the value added. Maintaining it on an ongoing basis is not going to be cheap and is a significant challenge. I do wonder whether it provides a false security about the level of understanding of the risk. This reduces the ability of people to identify and be aware of the key underlying assumptions. Maybe someone can pick up that documentation and reconstruct a model. Whether they can pick up that documentation and understand and explain the model in simple terms is a different question.

This was all going to be positive. The concept of an internal model makes sense in theory. If a company is willing to use a model to make business decisions, then why should it not be able to use a model to calculate its capital requirements?

The reality we have found is different. I have some sympathy with the regulators here with the extent of the apparent discomfort that they have when discussing the internal model approvals. We can imagine the scenario. A company runs out of capital. Who decided how much capital to hold? The regulator decided it could use its own model to calculate its capital. So effectively the regulator decided. The company itself could decide how much capital it wanted to hold. I am paraphrasing slightly.

You can also envisage how you might end up going down that route. How much time and money has been spent across the industry in internal model companies working out models to come up with a stress of 39%, of whatever it is, of longevity improvements, say. It has become a game of guess the quantitative indicator. How high does the bar have to be raised?

It is not surprising that, as the paper notes, a poll among actuaries suggests that there is no common view on the issues of preferred solutions. Basically, that just confirms that there is not a single right answer.

Effort, for me, would be better focussed on more effectively managing the risks and capital requirements, given the regulatory regime that we have.

At the end of the day, regulators want to ensure that companies hold sufficient capital to meet the liabilities given a degree of certainty. They want to be able to identify emerging problems and to have time to be able to address them with minimal disruption. Within that context, the specific regulation to drive the level of capital and security will always ultimately be a political and regulatory compromise. The balance needs to be struck between theoretical accuracy, practicality of application, and overall level of capital. I am not convinced that Solvency II has always got that balance right.

Having said all that, we now have Solvency II. It is an improvement on where we were. We should make the most of it and manage our business effectively in that context. We should make its ongoing implementation as efficient as possible. In particular, the process of managing changes to internal models should be made as efficient as possible. Care should be taken that we do not spend an inordinate amount of time refining details of the technical model which will make no difference to the actual capital held.

The Chairman: I have one or two observations.

Picking up Mr Clarkson's points, there are three layers of Solvency II. There are the basic rules and the regulations. The second you could think of as the interpretation of those rules and regulations.

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The third layer, and one which seems to cause angst among actuaries, is the governance around it, and not just the internal governance with governors' committees and boards.

Most actuaries I know want to spend much more time using Solvency II: product strategy, pricing strategy, optimising hedging, reinsurance strategies and so on. But instead they are deep into snagging lists for internal models, transitional measure re-approvals and MA re-approvals. It is not a well-honed process.

Internally within companies, but also specifically within the regulator, there needs to be a lot of work to make these processes far slicker so that actuaries can get on and use the models.

I have one more point on models. It is quite interesting that, as an insurance industry, we are developing more and more complex models due to the regulation. Just as we are pushing ahead with internal models, we see the banking industry, for example, stepping away from using them for operational risk and moving back to a much simpler series of factors. This is at the same time as the regulator is pushing for increased complexity and increased documentation and governance of internal models.

Mr Rae: Perhaps I can respond to some of the things that Alastair (Clarkson) and David (Hare) have said. I was interested by what you said, David, about Pillar 2 and that maybe it should be orientated towards being able to meet future solvency requirements, if I have understood correctly.

One of my concerns about a regulatory regime is that the more you make it granular and prescribe capital requirements, the more those capital requirements increasingly drive investment behaviour. For example, we have reduced the capital requirements for infrastructure debt by 30%.

The PRA is almost acknowledging the fact that its regulation is driving behaviour. I do not know whether that is necessarily a good thing. It does not feel like a good thing to me. I do not know how you can avoid it. Ideally, I should like to see insurers be more grown-up, have less precision and more common sense in trying to do the right thing from an investment point of view, for example, using ALM rather being driven by the capital rules. Alastair, you were talking about the fact that we make things more and more precise throughout the process.

I think you touched on the risk margin, David. The initial rationale is that you have enough risk margin. The liabilities are what it would cost for someone else to take on your balance sheet if you fell into trouble. Certainly, in my days in Mergers & Acquisitions you looked at the risk margin and came up with a value for the cost of carrying capital. That was always an adjustment to the price.

We certainly did not discount it at a risk-free rate, and Foroughi has done some papers in the past about what could be the correct approach to risk margin.

The risk margin is just extra capital that you should hold because it makes sense.

When you look at the MA, if you invest and match the liabilities, all the liquidity premium that you are receiving from your assets are re-invested in order to pay claims, which suggests that somewhere you need to know that you have a little room. I know it is a best estimate liability, but somehow it does not quite feel right. I wonder whether a risk margin based on a 75th percentile, or similar, does, in fact, make sense.

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The Chairman: There is probably time for another contribution.

Comment from a member of the audience: One of the potential outcomes from Solvency II is that insurance companies seem to be so focussed on capital, and making their products as capital-efficient as possible, that effectively the insurance industry seems to be turning into a massive management industry. It seems to have lost sight of the word "insurance" in its title.

From my perspective, I think that is unfortunate for the sector.

Mr A. M. Eastwood, F.F.A.: From the standpoint of management of closed with-profits funds, the risk margin seems to cause particular difficulty. It is not just the risk margin and the capital requirement to be covered, but the way things are managed; companies want to make sure that they have plenty of coverage for the capital requirement on top of the risk margin.

When you add all these up, there might be only a one-in-5,000 chance of not having enough in the kitty at the end of the day, which seems to have gone too far. I think you have to think about whether the risk margin is right in the context of the way in which companies manage these things in practice, which is to hold a buffer over and above the capital requirements.

When you apply all that to closed with-profits funds risks that are difficult to hedge or lay-off, then you end up potentially significantly compromising the pace at which you can share the estate out.

That is not necessarily the wrong outcome if the risks are genuinely still there, but it does rather concentrate the mind that a company has to find imaginative ways of eliminating those risks. Maybe when actuaries emerge from the process of refining internal models that they are focussing on at the moment, we might see more of an appetite for taking on these difficult risks from those who have access to the right capital, and taking them out from closed with-profits funds, which are not really the right funds for those thorny risks.

The Chairman: We have time for one final conclusion.

Comment from a member of the audience: It is not surprising from this audience that most of the discussion has focussed on life assurance. I would support Adrian (Eastwood's) comments about difficulties for with-profits funds in operating within this difficult balance between distributing and governing the pace of distribution as opposed to holding additional capital.

There are also general insurance businesses that are much affected by Solvency II. That is a more difficult area altogether. There is not the same publicly available data to make comparisons. General insurance companies hold their own data very jealously. They may specialise in a variety of different areas making comparisons even more difficult between companies.

Indeed, as well as the regulator in this area, the auditors play an important part in trying to maintain some levels of consistency in reporting. The regulator and the auditors will sometimes get together, or appear to get together, to try to see what the consistent picture is.

It is suspected that the main tool that regulators use is to try to compare different practices by looking at the outcomes companies are reporting for different lines of general business.

This does have some benefits, which are worth mentioning in passing. At board level we will have a variety of people, few of whom will be familiar with how to calculate the details that they see going into their Solvency II reporting. But the outcomes are quite important because they allow boards to make comparisons between different strategic options.

To some extent this was always possible but it is more mechanical now within each company to make these comparisons. I think that does help a better standard of reporting and therefore a better standard of decision-making at board level.

Because of the greater levels of discretion within the general insurance business, regulators will try to make comparisons themselves and push companies into different reporting practices from those of which they will have thought for themselves.

Within a member state of the European Union, that may not be such a bad thing. But we have 28 states at the moment coming down to 27 and there is no sign to the observer that there is any harmonisation between the regulators, particularly in the general insurance field. I think that it is politically difficult to organise and will not happen for a long time. I think it is a weakness in the system.

The Chairman: I will now introduce our closer, Jonathan Pears. Jonathan has spent his career with Standard Life. He is currently their chief actuary.

Mr J. R. Pears, F.F.A.: I should like to start by congratulating the working party on its comprehensive, clear and engaging paper. The subject is wide-ranging and the authors have succeeded in both the breadth of the work and the quality of the comments and suggestions they have made. That has been reflected in the wide range of comments that people have had on the paper this evening.

I will briefly draw together a few themes. There appears to be fairly strong agreement with the authors that the risk margin, particularly the volatility of the risk margin, is a source of concern and that a review of the design is needed.

I was interested in David (Hare's) comment that the industry asked for this form of risk margin. As the authors note, Solvency II permits a number of simplifications in calculating the risk margin. It is interesting that it is the more complex and, in some senses, accurate of these calculations that suffers from the problems of extreme sensitivity to interest rates.

That does suggest that a focus on the purpose of the risk margin and how big it should be, and on its simplification is, perhaps, the right way forward.

In addition to the points noted today, I am aware of a further issue with the risk margin for unit-linked contracts for Standard Formula firms. The strong mass lapse stress together with discounting at a very low rate can result in a risk margin that usually exceeds the SCR and indeed the value of profits on the contract. You then end up with non-intuitive behaviour where, if persistency assumptions or your view of future persistency improves, you end up with a deteriorating solvency position. This I would add to the issues highlighted.

The second theme I should like to focus on is market consistency and risk management. I agree with the authors that Solvency II is a significant improvement over Solvency I. There were direct conflicts

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under Solvency I between short-term solvency considerations and sensible risk management actions, for example, the hedging of guarantees.

The authors expressed the view that it is through market consistency that effective risk management is rewarded, and imply that a number of features of Solvency II detract from this aim.

It is certainly the case that the example that they give of the fast extrapolation to 4.2% UFR in euro, if literally taken to drive risk management, would result in a disincentive to manage those risks.

I was particularly interested in Craig (Turnbull's) comments that he saw this as a temporary political intervention in line with removing the resilience test, and so on.

My view is that, whatever the regulatory regime, there is a need for actuaries to consider their view of the actual risks and make this the primary driver of risk management. David (Hare's) comments on the ORSA aligned to this. This then needs to be balanced against the need for an acceptable position from a regulatory position.

The balance, from my perspective, is much easier to achieve under Solvency II than it was under the previous regime.

Perhaps the most important area of the report is the impact of Solvency II on pro-cyclical behaviour. The vote of the Life Conference was striking: it was that, pretty overwhelmingly, Solvency II has not aided financial stability.

A number of pro-cyclical features of Solvency II are highlighted in the report, including the risk that, in distressed markets, as well as the impact of market fall, you are hit with trying to calibrate your liabilities and your one-in-200 stress in illiquid and volatile conditions. That could itself drive further significant constraints.

In addition to the points listed, I will also highlight the risk of over-reliance on target solvency ranges or probabilities of breaching the SCR. Too rigid use of such targets could amplify the inherently pro-cyclical features of the regulatory position. The pro-cyclical nature of risk-based capital would result in apparently very high solvency ratios or very low probabilities of default and therefore encourage de-risking, return of capital and so on. If conditions then deteriorate, the increasing risk in these conditions will quickly contribute to even more pro-cyclical behaviour.

I feel that the management of this volatility is an area where actuaries have much to add and does illustrate the importance of not being over-reliant on models or the regulatory position in managing risk.

In conclusion, the report provides an excellent point of reference and a starting point for a number of further areas of work.

The Chairman: All that remains is for me to express thanks to the authors of the working party, the closer and all those who participated.

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