



BANK OF ENGLAND

# Speech

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## **Solvency II one year in**

Speech given by

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We are approaching the first round of annual results and disclosures under Solvency II. Today, I want to recap how Solvency II was designed to work for the UK insurance industry; to look back on our approach to implementation and experience of operating the Solvency II framework in the first year of its life; and to pick out a few areas where we now know that Solvency II needs improvement, in particular the impact the current design of the risk margin is having on UK annuity writers' Solvency Capital Requirements (SCRs) and associated use of so-called Transitional Measures on Technical Provisions, which firms will be disclosing over the next few months. My focus will be life insurance, although I will touch on general insurance too along the way.

First, some history. Prior to Solvency II, the UK regulatory regime for insurance had been designed by the Financial Services Authority in the early 2000s. One of its primary aims was to address the lessons from the near failure of Equitable Life in 2000. That company's problems crystallised when it emerged it had insufficient funds to meet guaranteed rates on annuities. It lost a House of Lords court case brought by policyholders with these guarantees, leaving it with a liability of £1.5 billion and forcing its closure to new business. In his Report to Parliament in 2004<sup>1</sup>, Lord Penrose described how Equitable had increased the share of returns to 'with profit' policyholders paid as discretionary terminal bonuses. This had "the intended effect" of reducing future benefits required to be reserved for and recognised as liabilities in the statutory accounts and regulatory returns, which only captured contractual liabilities. In this way, Equitable over-allocated to policyholders from the late 1980s onwards, weakening its underlying - although not its reported - solvency position. The regulatory solvency position was also bolstered by consistent adoption of the weakest valuation basis for reserves and by use of valuation practices "of dubious actuarial merit".

Following Equitable, the FSA supplemented the existing regulatory reporting with 'realistic' reporting, defined as the present value of expected contractual and 'fair' discretionary bonus payments plus a realistic capital margin. That realistic capital margin was based on stress testing, taking account of all key risks – for example, in the case of life insurers, market, credit, longevity and lapse risks.

The Equitable case, along with several failures in the London Market in the preceding 20 years, showed why robust prudential regulation is necessary. Firm failure or even near-failure can bring significant costs for policyholders, particularly when it disrupts the provision of core insurance services. It also showed the importance of effective, forward-looking supervision. Although the board and managers bear first responsibility for the safety and soundness of their firms, we cannot rely entirely on firms' own judgements about risk, reserves and capital adequacy. As Lord Penrose concluded, "the practices of the Society's management could not have been sustained over a material part of the 1990s had there been in place an appropriate regulatory structure adapted to the requirements of a changing industry that happened to manifest themselves in an extreme form in the case of Equitable Life".

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<sup>1</sup> Report of the Equitable Life Enquiry, March 2004.

Solvency II has many key elements in common with the ICAS regime that followed Equitable Life and was subsequently developed by the FSA and PRA. This was no coincidence of course: the UK government, UK regulators and UK firms were heavily involved in the negotiation of Solvency II. Both regimes require firms to value assets at market prices; both require valuation of liabilities on a 'realistic' basis; both include the possibility for firms to determine capital requirements using their own group-wide stochastic modelling and scenario testing; and both set the same '1 in 200 years' target calibration for the level of capital an insurer should hold.

As an aside, this is very different to banking regulation, which is largely based on the accounting balance sheet, allows a more limited scope for internal modelling of capital requirements<sup>2</sup>, includes a much greater scope for supervisory capital add-ons under Pillar 2, does not allow for diversification between risk types, includes leverage and liquidity requirements and has seen a very significant increase in capital requirements and buffers since the financial crisis.

Allowing firms to use internal models to calculate their solvency requirements is an example of how Solvency II meets the needs of the UK insurance sector. UK insurers are many and varied – from Lloyd's and the wholesale London market, to motor and household insurers, to large life companies with significant annuity books, to specialist providers and mutuals. The Solvency II standard formula works well for many of these firms. But no standard formula – however well designed – can work for all of them. That is why the PRA has now approved 22 partial or full internal models and several more are in the pipeline.

The UK is unusual within the EU in having insurance companies with large annuity books – and insurers are increasingly purchasing the legacy annuity obligations of defined benefit pension schemes that corporate sponsors have closed to new members.

Solvency II seeks to balance the need for companies and regulators to take account of all the underlying economic risks of annuity obligations – for example, changes in market prices of assets and long-term interest rates used to discount liabilities – with the need to avoid excessive volatility in capital positions, which would create the potential for procyclical investment behaviour by firms as market prices move. Where insurers have long-term, 'buy and hold' investments backing long-term, sticky annuity liabilities, the so-called Matching Adjustment allows them to filter out movements in the market price of risk. Although application of the Matching Adjustment is subject to a number of asset and liability eligibility criteria, it has much in common with a similar feature of the previous UK ICAS framework – the 'liquidity premium'. Within the EU, the main users are UK life companies. Indeed the only countries with firms currently using the Matching Adjustment are Spain (15 companies) and the UK (23 from the UK).<sup>3</sup>

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<sup>2</sup> Under Solvency II, the scope of internal models is comprehensive and firm-wide. A typical insurance group internal model might take 1 day to run 500,000 scenarios with key processes requiring multiple model runs. A diversified insurance group internal model may use around 150 risk drivers, separated into over 10 different risk categories (e.g. credit, market, mortality, lapse, operational). By contrast, under Basel standards and the EU Capital Requirements Regulation, bank internal models are separate and limited to particular risks eg credit and market, with capital requirements from them added up at the firm level.

<sup>3</sup> *Long Term Guarantee Report*, EIOPA, December 2016.

In its *Financial Stability Report* in November 2016, the Financial Policy Committee concluded that the matching adjustment “is beneficial from a macroprudential perspective by reducing potential instability across the financial system”.<sup>4</sup>

This combination of internal models and the matching adjustment has created strong incentives for UK life firms to invest in long-term illiquid assets, such as commercial property, equity release mortgages and infrastructure financing. Based on supervisory information from firms, currently around 25% of annuities are backed by such illiquid assets but firms have plans for that proportion to increase to 40% by 2020. This trend is welcome and may have wider economic benefits. As supervisors, we will be checking that firms have the risk management capabilities to hold and monitor such assets, and value them properly. Especially where firms are using internal ratings for these illiquid assets, we are also currently consulting on a supervisory approach intended to ensure that any Matching Adjustment benefit being taken is appropriate.<sup>5</sup>

I now want to make a few points on the PRA’s implementation of Solvency II, which I believe has been robust but proportionate, in line with our statutory objectives. The first thing to say is that Solvency II is largely a so-called ‘maximum harmonising’ EU regulation. The PRA cannot set capital requirements that exceed the requirements of Solvency II. Unlike banking regulation, Solvency II does not allow supervisors routinely to set additional capital requirements or buffers akin to those applied under Pillar 2 for banks to reflect our judgement about risks specific to a firm – for example, based on stress testing.<sup>6</sup>

Partly because we cannot simply require firms to top up capital if we think a model is too aggressive, we take an intrusive approach to model approval. We have to be sure that the models are up to scratch before we can allow firms to use them to determine their capital requirements. And Solvency II sets tests and standards that we must enforce. As models can be highly complex, this is necessarily an intensive process. As you would expect, we are reviewing our approach in the light of experience, including seeing if we can streamline in some areas without compromising standards. We do already seek to focus on the most important risk drivers, including assumptions made about diversification across risks. This includes assessing the expert judgements firms have applied against our own estimates in key areas such as (in the case of life insurers) credit, longevity and interest rate risk. But these are not rigid standards. If firms can provide credible evidence that a different number is appropriate for them, we will accept it. And our estimates are usually in the pack of firms’ estimates. We are not enforcing a higher standard of prudence than required by Solvency II.

For the same reasons, we take a robust approach to approving major changes to firms’ internal models. We have now completed the first round of such modifications and my observation is that firms proposed

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<sup>4</sup> *Financial Stability Report*, Bank of England, December 2016, chapter on ‘Risks to financial stability from insurers’ investment behaviour’.

<sup>5</sup> *Solvency II: Matching adjustment – illiquid unrated assets and equity release mortgages – CP48/16*, Prudential Regulation Authority, December 2016.

<sup>6</sup> Solvency II does include provision for supervisors to set temporary capital add-ons reflecting management and governance failings.

considerably more changes that reduced rather than increased capital requirements. We do put a lot of weight on accountability of senior executives (re-enforced through our new Senior Insurance Managers Regime), risk and actuarial functions and good governance within firms. But without strong supervisory oversight of models, firms might relax assumptions, follow their competitors in adopting more aggressive approaches and interpret new data in a favourable light. Model complexity gives ample opportunities to do this. The reality is that firms have strong incentives to reduce capital requirements in order to report higher coverage ratios, increase return on regulatory capital and ultimately pay higher dividends. That is why we have put in place a framework to monitor the possibility that firms' model estimates of capital will drift lower over time.

I am aware that our model change process can sometimes leave a firm in the anomalous position of needing to change a model – for example, following a sudden change in circumstances such as a loss event or acquisition – but without having approval for the change. Firms can help in this by giving us timely and well presented information. Where we can change things in the PRA to speed the process, then we will do so. For example, our recent consultation on market turning events highlighted the importance of timely decision making in those types of circumstances.<sup>7</sup>

Capital requirements are only one side of the equation. Even more important is how firms determine their capital resources. Reviewing the adequacy of reserving is a core element of our supervisory approach, particularly for general insurers. In the case of life insurers with significant annuity books, a key determinant of reserves is their use of the Matching Adjustment. Solvency II sets clear criteria for assets that can qualify for the Matching Adjustment. They must match the maturity of the underlying liabilities – so, for example, long-dated annuity liabilities require similarly long maturity assets – and they must have fixed cashflows.<sup>8</sup> These requirements are set by the Directive; they are not a feature of the PRA's implementation. Indeed we have sought to interpret them in a purposive and proportionate way so that firms can back annuities with a wide range of assets, including illiquid assets, and still benefit from the Matching Adjustment. For example, we have allowed firms to restructure portfolios of illiquid assets, such as commercial real estate mortgages, infrastructure finance or equity release mortgages, using internal securitisations in order to create senior tranches that meet the Solvency II requirements. We have also allowed pairing and grouping of assets to meet the eligibility criteria - for example, combining a floating rate note with an interest swap, or a foreign currency-denominated bond with a cross currency swap. Restructuring of this kind has added complexity, operational risk and some costs for firms. But we think it is leading to a better market outcome than if we had interpreted Solvency II very narrowly and limited the Matching Adjustment to, for example, long-dated, fixed rate sterling bonds, such as gilts. That could have led to higher annuity rates for UK policyholders whereas, in fact, there is no clear evidence that the introduction of Solvency II has affected UK annuity rates

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<sup>7</sup> *'Dealing with a market turning event in the general insurance sector'* - CP32/16, Prudential Regulation Authority.

<sup>8</sup> DIRECTIVE 2009/138/EC (Solvency II), Article 77b (1): Insurance and reinsurance undertakings may apply a matching adjustment [...] where the following conditions are met: (a) the insurance or reinsurance undertaking has assigned a portfolio of assets, consisting of bonds and other assets with similar cash-flow characteristics, to cover the best estimate of the portfolio of insurance or reinsurance obligations [...] (h) the cash flows of the assigned portfolio of assets are fixed [...]

(see the Appendix). The overwhelming driver of sterling annuity rates over recent years has been the level of risk-free interest rates.

I am well aware that some still see the Matching Adjustment as complex and too restrictive. As I have said earlier, we have sought to interpret the requirements as flexibly as we are able within the current legal requirements. We remain open to suggestions that fit within the current legal structure.

Indeed, it would be surprising if a new regulatory framework as complex as Solvency II had no shortcomings. In our experience there have been fewer challenges for general insurers in implementing Solvency II, largely because the net impact of the changes in the balance sheet and capital has been smaller. However, for life insurers with long-dated liabilities such as annuities – and especially in the current low interest rate environment – a significant limitation is the design of the risk margin, which is currently too sensitive to the level of risk-free rates. As the Financial Policy Committee stated in its December 2016 *Financial Stability Report*, addressing this excess sensitivity would have macroprudential benefits. The European Commission has committed to review the design of the risk margin in its forthcoming review of Solvency II and we regard it as a key priority. The PRA has looked at whether it would be possible to fix the problems locally through our own supervisory implementation but concluded that changes to the existing legislation would be more effective and desirable.

The risk margin is calculated by multiplying a fixed cost of capital (6%) by the net present value of future capital requirements. It is intended to provide the financial resources necessary to cover the return on the capital a hypothetical acquirer would need to run off the insurance liabilities. In estimating future capital requirements for the purpose of calculating the risk margin, Solvency II requires insurers to assume that an acquirer would be able to hedge the market risks but not the insurance risks – such as longevity – on the book. The interest rate sensitivity arises because lower interest rates both reduce the discount rate applied to the future capital requirements and lead to higher future capital requirements. UK life firms with long-dated annuity liabilities are more affected than most other EU insurers. This is primarily a UK issue.

With the fall in sterling interest rates between January and September 2016, the overall risk margin of major UK life firms rose from around £30bn to nearly £44bn.<sup>9</sup> We estimate that a 100 basis point reduction in interest rates increases the aggregate risk margin for these firms by around 27% and a 100 basis points increase in rates lowers it by around 20%. Bank analysis has found that that margin at which insurance liabilities have transferred between firms in the past is not nearly so strongly correlated with interest rates.

As the December 2016 *Financial Stability Report* describes, one consequence of this interest rate sensitivity is to introduce potential procyclicality into Solvency II – to some extent counteracting the effectiveness of the Matching Adjustment in removing procyclicality. It could incentivise insurers to de-risk as interest rates fall

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<sup>9</sup> Across the whole UK insurance sector, the aggregate risk margin was around £51bn at end-September 2016.

(and re-risk as rates rise) in order to maintain a stable SCR. We saw some evidence of this behaviour in 2016, primarily through a sharp increase in reinsurance of longevity risk on new annuity business.

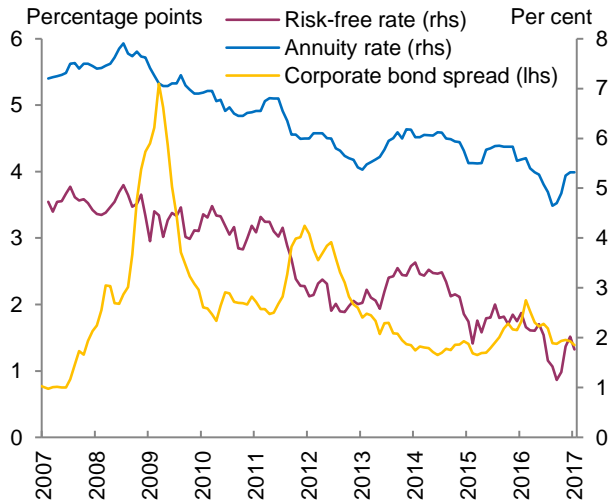
For business written before the introduction of Solvency II, insurers' capital positions have been shielded from this volatility in the risk margin by Transitional Measures on Technical Provisions (TMTPs). The effect of these transitionals is to cushion the immediate impact of new requirements for technical provisions introduced by Solvency II – notably the risk margin. Following the large fall in sterling market interest rates in the first half of 2016, the PRA allowed many life firms to recalculate TMTPs upwards as at June 2016, to some degree offsetting the increase in the risk margin.

Given its flawed design, we believe that the risk margin is too high for UK annuity writers at current low levels of interest rates. As a consequence, TMTPs are higher than they would need to be to serve their purpose with a better designed, more stable risk margin. Analysts and investors should take this into account when considering the scale of use of TMTPs by UK life firms at end-2016. As a broad guide to the scale of this inflation of the risk margin and of TMTPs, the current aggregate level of risk margin for UK life firms of around 50% of SCR (with firms in a range around this average) can be compared to the size of the risk margin at the time of the EIOPA impact study used to calibrate its design (when market interest rates were higher) of around 35% of SCR. The purpose of Solvency II was not to raise capital levels on the stock of existing business across the industry. Therefore, the PRA has complete confidence in TMTPs as a legitimate means of achieving a glide path to the new Solvency II requirements and we give firms the full benefit of TMTPs when considering their capital positions. We encourage firms to provide full disclosure of the risk margin and drivers of TMTPs in their first Solvency and Financial Condition Reports in May.

To conclude, Solvency II was too long in the making and expensive to implement for both regulators and industry. But that is the past. Broadly, it is now working well, with only a few notable exceptions such as the excessive sensitivity of the risk margin to interest rates. Some of the most important parts of Solvency II were drawn from the UK ICAS regime that was born out of UK experience, including the near collapse of Equitable Life. As a result, key elements of it, such as the Matching Adjustment, were designed with the needs of the UK industry in mind. The PRA's implementation of Solvency II has been robust but proportionate, consistent with our statutory objectives.

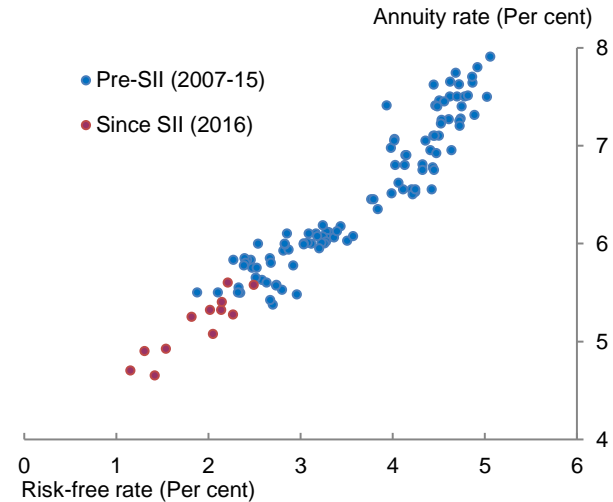
## Appendix: Drivers of changes in UK annuity rates<sup>10</sup>

**Chart 1: Annuity rates, risk-free rates and corporate bond spreads since 2007**



Sources: Bank of America Merrill Lynch, Bloomberg, sharingpensions.co.uk and Bank calculations.

**Chart 2: Relationship between annuity rates and risk-free rates**



Sources: Bloomberg, sharingpensions.co.uk and Bank calculations.

**Table 1: Estimated relationship between annuity rates, risk-free rates and corporate bond spreads<sup>(a)</sup>**

$$\text{AnnuityRate} = \alpha \cdot \text{RiskFree} + \beta \cdot \text{Spread} + \gamma$$

	Coefficients			p values <sup>(b)</sup>			R <sup>2</sup>
	$\alpha$	$\beta$	$\gamma$	$\alpha$	$\beta$	$\gamma$	
<b>Pre-SII: 2007-15</b>	0.753217	0.069835	0.035934	3.51E-50	0.007549	3.74E-58	0.890489
<b>SII: 2016</b>	0.630423	0.080868	0.03866	0.001673	0.785268	5.98E-07	0.786387
<b>All: 2007-16</b>	0.740991	0.068925	0.036442	9.18E-63	0.006131	5.02E-75	0.917595

Sources: Bank of America Merrill Lynch, Bloomberg, sharingpensions.co.uk and Bank calculations.

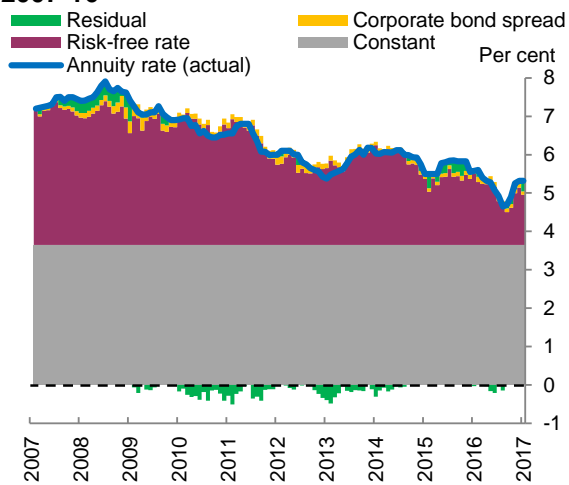
(a) Estimated using ordinary least-squares.

(b) p values below 0.05 are generally interpreted as being statistically significant – meaning all estimated coefficients in this table apart from the  $\beta$  of 0.785268 obtained using just 2016 data.

<sup>10</sup> Using standard annuity rates for a 65 year old on average across males and females (sharingpensions.co.uk); 20-year sterling risk-free market interest rates (Bloomberg), to roughly match conditional life expectancy at age 65; and sterling-denominated option-adjusted corporate bond spreads (BoA-ML).

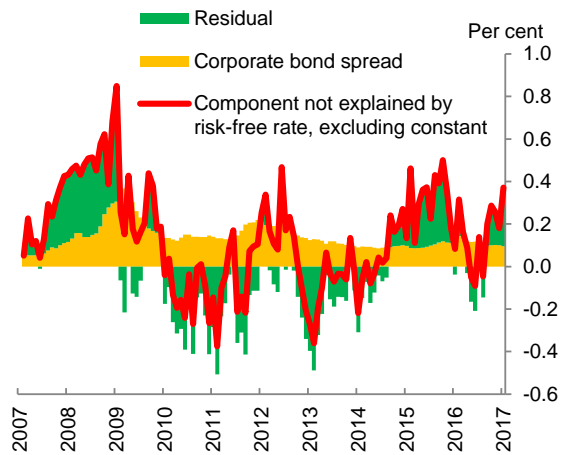


**Chart 3: Estimated contributions to annuity rates, using the relationship in Table 1 over 2007-16**



Sources: Bank of America Merrill Lynch, Bloomberg, sharingpensions.co.uk and Bank calculations.

**Chart 4: Component of annuity rates not explained by risk-free rates using the relationship in Table 1 over 2007-16**



Sources: Bank of America Merrill Lynch, Bloomberg, sharingpensions.co.uk and Bank calculations.