



BANK OF ENGLAND

Speech

An annuity is a very serious business: Part Two¹

Speech given by

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¹ Chapter 2, *Sense and Sensibility*, Jane Austen, 1811

A year ago, I spoke to this conference about the risks facing insurers active in the bulk purchase annuity market. In particular, I discussed the treatment of unrated, direct investments under the Solvency II Matching Adjustment, with a particular focus on equity release mortgages. A year later and the movement of defined benefit pension liabilities from employers to insurers has continued apace. Around £30 billion of risk was transferred in 2018, if you include buy outs, buy ins and longevity swaps (Chart 1).² Most commentators expect the market to continue to grow. On the demand side, more employers might be in a position to afford a buy out if improvement in life expectancy stalls, interest rates rise and asset values increase (Chart 2). On the supply side, the possible emergence of superfunds could create an alternative to insurers. Meanwhile, the current level of transactions is still dwarfed by the scale of remaining defined benefit (DB) liabilities of some £1.8 trillion, of which nearly £1.1 trillion are closed to new members.³

Today I want to discuss more generally the risks associated with insurers taking on significant annuity obligations. I will then show how, in my view, the PRA's implementation of Solvency II does a good job of addressing these risks. In particular, it gets the balance right between protecting policyholders and allowing insurers to invest for the long-term in ways that support the UK economy. Design flaws in the risk margin, however, remain a problem. Finally, I will raise some particular issues facing insurers active in this market, including 'fallen angels', internal ratings, equity release mortgages and risks from climate change.

Risk and regulation of annuity business

Moving defined benefit pensions from employers to insurers can certainly be a good thing. For pensioners, it safeguards future pension benefits. For companies, it releases them from pension risks allowing them to focus on their core businesses, potentially raising levels of investment and productivity. From my perspective as the prudential regulator of UK insurers, taking on significant promises to pay pensions over several decades does though bring risks that insurers need to manage effectively and against which they need to hold appropriate reserves and capital. Protecting annuities on which pensioners rely for their livelihoods is clearly important.

² In a buy out, the promises to pension fund members are transferred fully from a pension fund and employer to an insurer. In a buy in, an insurer agrees to pay to a pension fund a stream of income matching some or all of its pension liabilities. In a longevity swap, an insurer protects a pension fund against the risk that its longevity experience turns out to be different to expected.

³ Source: *The pensions landscape: Defined benefit pensions 2018*, The Pensions Regulator.

I see four main risks:

1. **longevity risk** - the risk that annuities to pensioners need to be paid for longer and therefore at a higher cost to the insurer because people live longer than expected;
2. **market risk** - the risk that asset returns are insufficient to pay the pensions: for example, because the insurer holds assets of shorter maturity than its liabilities, market interest rates fall and the insurer cannot afford to buy sufficient bonds to produce the income needed to meet its annuity obligations to pensioners;
3. **credit default and downgrade risk** - the insurer suffers losses because the assets in which it has invested default or downgrade; and, perhaps most importantly
4. **management and governance risk** - in the absence of regulation the owners and managers of an insurer may be incentivised to maximise their own short-term returns rather than managing the business in the long-term interest of the annuity holders. The interests of owners and managers are not necessarily aligned with those of the policyholders because owners share the benefits of taking more risk in a good outcome but have limited exposure to losses in a bad outcome because of their limited liability. Policyholders might be unable to monitor how an insurer is run because of the long-term and complex nature of pensions business. Unscrupulous owners and managers might therefore have an opportunity to take excessive risks or misuse policyholder funds: for example, by using them to finance their other business ventures. They might also seek to mask the true financial position of an insurer using opaque models, optimistic assumptions and impenetrable mumbo jumbo. The misalignment of incentives might be particularly extreme when an insurer is close to insolvency, with owners and managers tempted to take more risk in a 'gamble for resurrection'.

In my view, these risks are common to any profit-seeking financial institution in the business of investment in order to pay annuities. That is why, for example, our response to the recent Department of Work and Pensions consultation on superfunds said:

“The risks faced by DB consolidators are similar to those managed by insurance companies providing annuities. And insurance companies may want to enter the defined benefit consolidation market. There may be unintended consequences if the two types of business are regulated differently.”⁴

⁴ <https://www.bankofengland.co.uk/-/media/boe/files/prudential-regulation/publication/pru-response-to-dwp-consultation-paper-defined-benefit-pension-scheme-consolidation>

Overall, I think the PRA's implementation of the Solvency II regime addresses these risks well. I would emphasise in particular the following features of the regime:

1. It strongly encourages UK insurers to invest in assets with fixed cashflows that closely match those of their annuity liabilities. This limits exposure to market risk.
2. Insurers are required to hold a buffer of assets above the value of their policyholder liabilities that can absorb unexpected losses due to credit defaults, longevity shocks or other reasons. Solvency II limits what counts as own funds to instruments that can genuinely absorb losses.
3. The capital calculation in Solvency II captures all the risks to which the insurer is exposed, including those in other parts of the group.
4. The incentives of owners and managers are brought back into alignment with those of policyholders in a number of ways including:
 - a. Requiring owners to put their own money at risk through minimum capital requirements that must be maintained at all times.
 - b. If capital levels fall close to these minimum requirements, a supervisory ladder of intervention shifts control increasingly away from owners and managers at a time when their incentives to act in the interests of policyholders are weakest because of the temptation to gamble for resurrection.
 - c. Capital requirements are risk-based, so that owners must put more of their own money on the line as the insurer takes greater risk.
 - d. Taking more risk should also never lead to an apparent improvement in the capital position of an insurer.
 - e. The UK Senior Managers' Regime puts specific responsibilities for the key aspects of running an insurer on individual managers.
 - f. We expect insurers to have effective risk management and governance, including independent risk and internal audit functions; and boards with a majority of independent non-executive directors, for both insurance groups and significant insurance companies within those groups.
 - g. Insurers must disclose their financial position regularly in some detail, based on market prices for assets and liabilities as far as possible.

Our regime, however, is not seeking to eliminate all risk (or achieve the stability of the graveyard). Provided insurers match their assets and liabilities, the Solvency II Matching Adjustment insulates them from movements in the market price of assets backing annuity liabilities to which they are not

exposed as buy-and-hold investors. They are also able to bring forward into day-one profits any returns on these assets in excess of what is required to compensate for the risk of credit default and downgrade. That adds up to a powerful incentive to invest in long-term assets yielding good risk-adjusted returns.

Since the introduction of Solvency II, UK insurers have responded by diversifying out of government and corporate bonds into direct investments in infrastructure finance, commercial real estate lending and equity release mortgages (Chart 3). The infrastructure investments, for example, include renewable energy, hospitals, student accommodation, social housing and railway rolling stock leasing (Chart 4). The PRA is well aware of the need to have regard to facilitating long-term productive investment in the economy when pursuing its statutory objectives.⁵ Insurers active in the bulk purchase annuity market tell us that they intend to continue this diversification into direct investments, targeting on average a c.40-50% share of total assets backing annuity obligations, significantly higher than before Solvency II.

Overall, I think the PRA's implementation of Solvency II works well for annuity business. That is why we recommended adoption of a similar framework for superfunds.

Solvency II does though have one significant flaw as a regime for annuities business: the design of the risk margin. Particularly in relation to long-dated insurance risks, such as longevity, the risk margin calculation is too sensitive to interest rates. As a result, the risk margin is too high when interest rates are low and too low when they are high. With interest rates currently low, insurers have responded to a too-high risk margin on annuity business by reinsuring longevity risk on new business offshore. Meanwhile Transitional Measures on Technical Provisions (TMTP) offset the risk margin on the pre-Solvency II back book. The irony is that UK insurers do not hold an especially high level of risk margin (net of TMTP) on their annuity books in practice.

This outcome is unwelcome from our perspective because UK insurers are increasingly exposed to offshore reinsurers and TMTP is higher than it otherwise would be, giving the impression that UK insurers are more reliant on transitionals to meet capital requirements. The availability of longevity reinsurance has limited any drag on growth in the bulk purchase annuity market. Although one possible effect has been to make it more expensive for pension schemes with a high

⁵ The Chancellor's letter to the Governor of 8 March 2017 setting out recommendations to the Prudential Regulation Committee (PRC) about aspects of the economic policy of the government to which the PRC should have regard when considering how to advance its statutory objectives includes "The government wishes to ensure financial services markets make a positive contribution to sustainable economic growth in the UK economy in the medium and long term, through the facilitation of finance for productive investment and as a productive sector of the UK economy."

proportion of younger members to achieve an insurer buy out. This is because reinsurers have had a lower appetite for deferred than in-payment annuities. Although I hear that this might have changed recently. As Sam Woods wrote to Nicky Morgan in June of last year⁶, the PRA does not currently see a durable way to implement a change in the risk margin with sufficient certainty for insurers to be able to rely on it for pricing, capital planning and use of reinsurance. We continue to keep this position under review.

Current issues

Despite the diversification into direct investments, corporate bonds are likely to remain the largest category of assets backing U.K. insurers' annuity liabilities. Partly because the Matching Adjustment benefit to holding sub-investment grade bonds is low, the great majority of these bonds are investment grade. The overall credit quality of the investment-grade bond universe has deteriorated significantly over the past decade. The share of BBB-rated bonds in the sterling market, for example, has increased from under 10% to nearly half since 1998 (Chart 5). Within this BBB-rated segment, analysts have drawn attention to potential 'fallen angels' at risk of downgrade to sub-investment grade or even default. These issuers may be at risk because of a combination of excessive debt, structural change in the economy and poor management.

Insurers face a risk of reduced Matching Adjustment benefit if issuers are downgraded and financial loss if they default. They should be reviewing the credit quality of their corporate bond investments and focusing in particular on any lumpy exposures. It is reassuring that the proportion of BBB-rated bonds in UK insurers' aggregate Matching Adjustment portfolios has remained more or less unchanged notwithstanding the increasing share in the wider market. These proportions do vary considerably across individual insurers, however (Chart 6). Firms with higher proportions of BBB assets should be stress testing to make sure that they can comfortably absorb downgrades at a time when markets may be less liquid and they cannot easily rebalance their assets. We will explore this in our upcoming Insurance Stress Test.

Turning to direct investments, let me be clear that the PRA supports sensible diversification of portfolios backing annuities into assets such as infrastructure finance, commercial real estate lending and equity release. However, we expect insurers to do this properly. That includes:

⁶ <https://www.bankofengland.co.uk/prudential-regulation/letter/2018/solvency-2-risk-margin>

1. Having a strategy and risk appetite. Insurers need a disciplined approach. To put it flippantly, they should not be buying whatever is on the market this week or simply because they see their competitors buying those assets. The risks from direct investments are different to bonds. This is especially true if insurers originate their own Matching Adjustment assets: for example, by financing property development. Boards need to set clear risk appetites that capture all material risks at a suitable level of granularity, translating into a set of limits.
2. Building the right capabilities. Some insurers do investment in-house and others outsource. All insurers need people with sufficient market knowledge in all three lines of defence. That includes underwriting, risk management and potentially work out.
3. Developing appropriate management information, including for the board.
4. Appropriate valuations, internal ratings, and Matching Adjustment and Solvency Capital Requirement calculations.

On this final point, we have provided considerable guidance on our expectations in Supervisory Statement 3/17 (SS3/17), particularly in relation to restructured equity release mortgage portfolios. One thing that has become clear to me is the importance of internal ratings. These can drive both asset valuations (if insurers use the approach of mapping to valuations of similarly-rated traded assets) and the Matching Adjustment benefit. We said in SS3/17 that:

“an internal credit assessment should consider all possible sources of credit risk, both qualitative (eg due to strength of the terms and conditions in the loan agreement or a lack of default data) and quantitative (eg due to economic stresses), and how these may interact. An internal credit assessment will then need to be mapped onto a credit quality step (CQS). The PRA’s view is that the CQS to which an internal credit assessment maps should lie within the plausible range of CQSs that could have resulted from an issue rating given by an External Credit Assessment Institution (ECAI). Broad consistency between the CQSs resulting from firms’ internal assessments and ECAI issue ratings will help to mitigate the risk of undue bias in the resulting fundamental spreads.”

This does not mean that we want insurers simply to adopt rating agency models across the board. We want firms to develop their own rating models that take into account all possible sources of credit risk. I am mindful here of the Financial Stability Board standard against mechanical reliance on ratings.⁷ “The goal of the FSB principles is to end mechanistic reliance on ratings provided by

⁷ <http://www.fsb.org/work-of-the-fsb/policy-development/additional-policy-areas/reducing-reliance-on-credit-ratings/>

ECAIs by banks, institutional investors and other market participants by reducing the “hard wiring” of ECAI ratings in standards, laws and regulations and by providing incentives for firms to develop their own capacity for credit risk assessment and due diligence” This standard does also say that supervisors should closely check the adequacy of firms rating processes and guard against upward bias. That is what we seek to do.

Turning to restructured equity release mortgages specifically, we developed our Effective Value Test (the ‘Test’) to help determine whether insurers appear to be taking an inappropriately large Matching Adjustment benefit. This followed very extensive engagement with industry and more widely, including discussion and consultation papers. We recently issued a follow-up consultation paper⁸ to provide greater clarity to insurers on, for example, how often they should calculate the Test and in what circumstances the PRA will update key parameters in the Test, such as the deferment rate. The consultation paper also proposes that firms would be asked to use the Test ‘in stress’ as a validation technique, to help provide assurance that their internal models are assessing appropriate capital requirements against risks from these assets. We expect to finalise these proposals by the end of September so that firms can start applying the Test on their base balance sheets from the end of this year. Firms will need longer to review their internal model methodologies and make any necessary changes. We have proposed that this should take place by the end of 2021 at the latest.

A key point to draw out is that lenders of equity release mortgages are exposed to the risk of *individual* property prices. This is because insurers provide a no-negative-equity guarantee to every borrower. Modelling approaches focused on house price indices do not capture all the risks – a portfolio of options is a very different thing to an option on a diversified index. Indeed UK insurers have experienced a number of these guarantees crystallising in recent years despite the rapid rise in UK house price indices over the past decades. One reason is that different localities of the United Kingdom have seen widely varying house price inflation – a national index masks the range of outcomes (Chart 7). Another is that some properties may become dilapidated if elderly borrowers are unable to maintain the property. Willingness to maintain may be lower where borrowers have limited or no equity remaining in their properties. Equity release contracts generally require properties to be maintained. But, in practice, losses do occur and cannot necessarily be recovered.

⁸ <https://www.bankofengland.co.uk/prudential-regulation/publication/2019/solvency-ii-equity-release-mortgages-part-2>

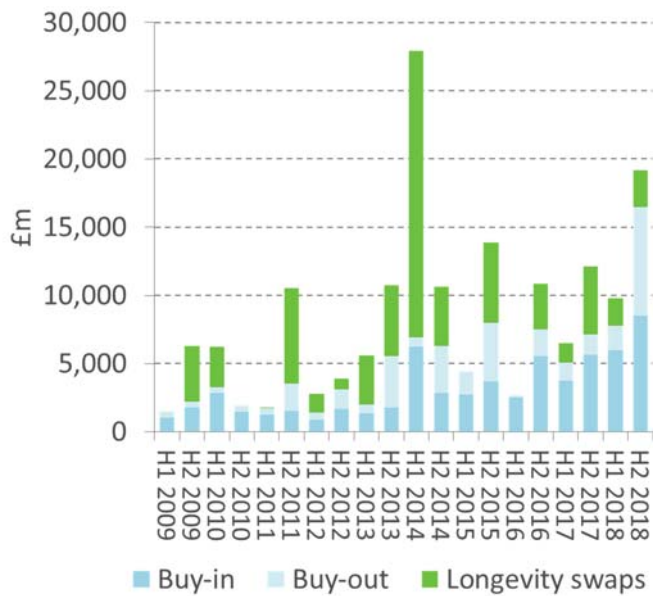
Looking ahead over the next several decades, climate change is a new reason why individual house prices might diverge from the national average. Climate scientists predict a rise in sea levels. Flooding from rivers and surface water run-off is likely to increase. More frequent droughts will bring more widespread subsidence. An important recent paper by Climate Wise – a group comprising representatives from insurers – considered the consequent risks to UK property lenders.⁹ The paper argued that flood insurance is likely to become more expensive and continued availability of cover cannot be assumed. Within insurance, climate change physical risks are often seen as primarily an issue for general insurers. But the life insurers (as well as the banks) have the long-dated property lending exposures.

Using catastrophe models, the paper estimates a 25% increase in the number of UK properties at significant risk of flooding by 2100 if global temperatures warm by 2°C and a 40% increase if they warm by 4°C. The models suggest that this risk is unevenly distributed across the United Kingdom, with coastal regions most affected (Chart 8).

To conclude, the PRA's implementation of Solvency II works well as a prudential regime for UK annuity writers. But we do need to make the risk margin less sensitive to interest rates. Since the introduction of Solvency II, around £60 billion of risk has transferred from defined benefit pension schemes to insurers. Meanwhile insurers have switched around £20 billion of the assets backing these annuities into direct investments, such as infrastructure finance, commercial real estate lending and equity release mortgages. The PRA welcomes both trends. We will continue to supervise insurers closely to ensure that they have the necessary capabilities to take on this business and are calculating appropriate reserves and capital against the associated risks.

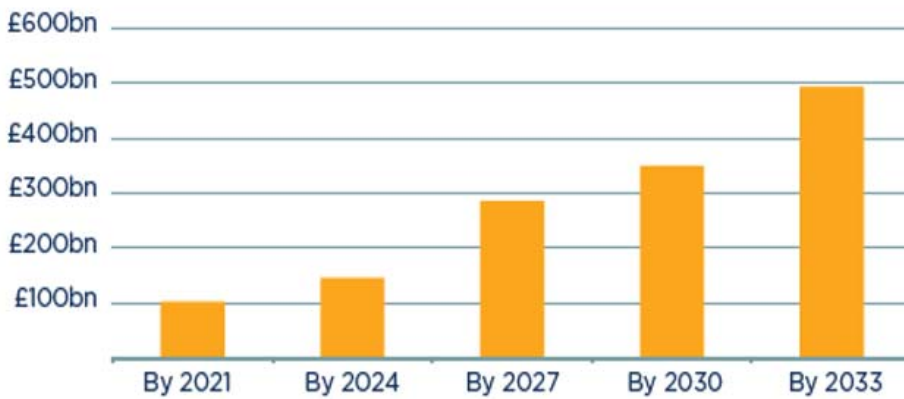
⁹ *Physical risk framework: understanding the impacts of climate change on real estate lending and investment portfolios* Climate Wise 2019

Chart 1: Transfer of pensions risk from UK company defined benefit schemes to UK insurers



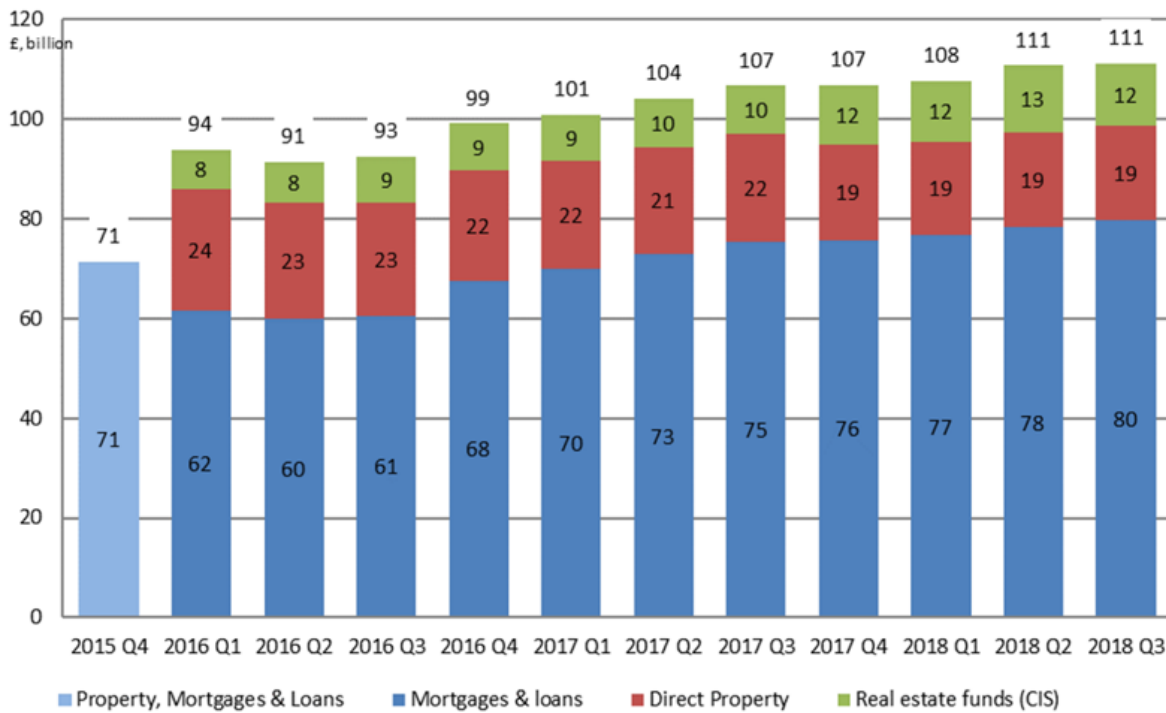
Source: Hymans Robertson Annual Risk Transfer Report (Oct 2018) updated for H2 2018 data

Chart 2: FTSE 100 UK pension plans reaching full funding on buy-out



Source: Lane Clark & Peacock Pensions De-risking 2019 Report

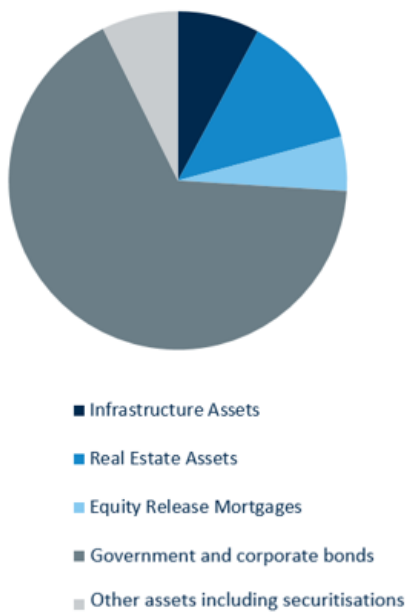
Chart 3: UK insurers' property and direct investment assets backing annuities



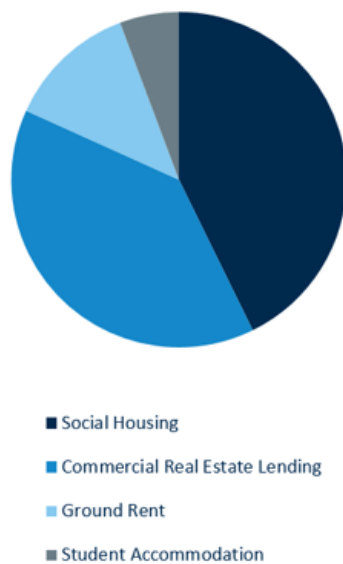
Source: Solvency II asset data, Bank calculations, Financial Stability Report, Bank of England. Chart updated to latest available data.

Chart 4: UK insurers' annuity backing asset breakdown

Annuity-backing assets split (YE17)

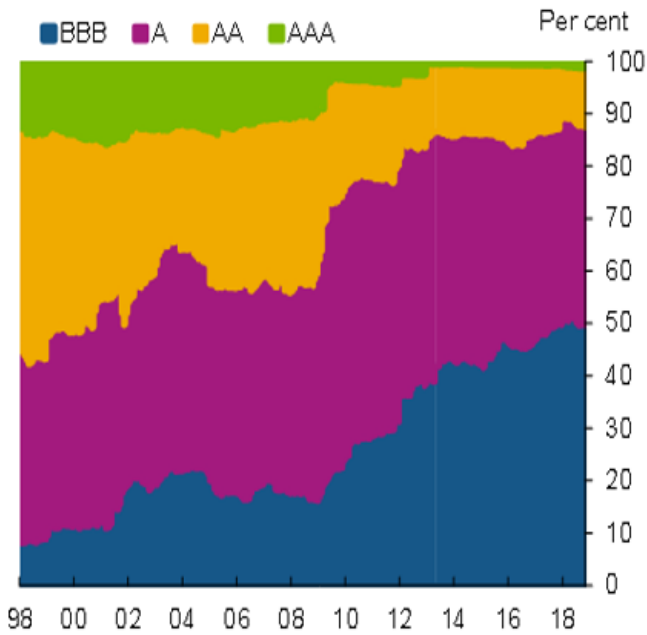


Real estate asset split (YE17)



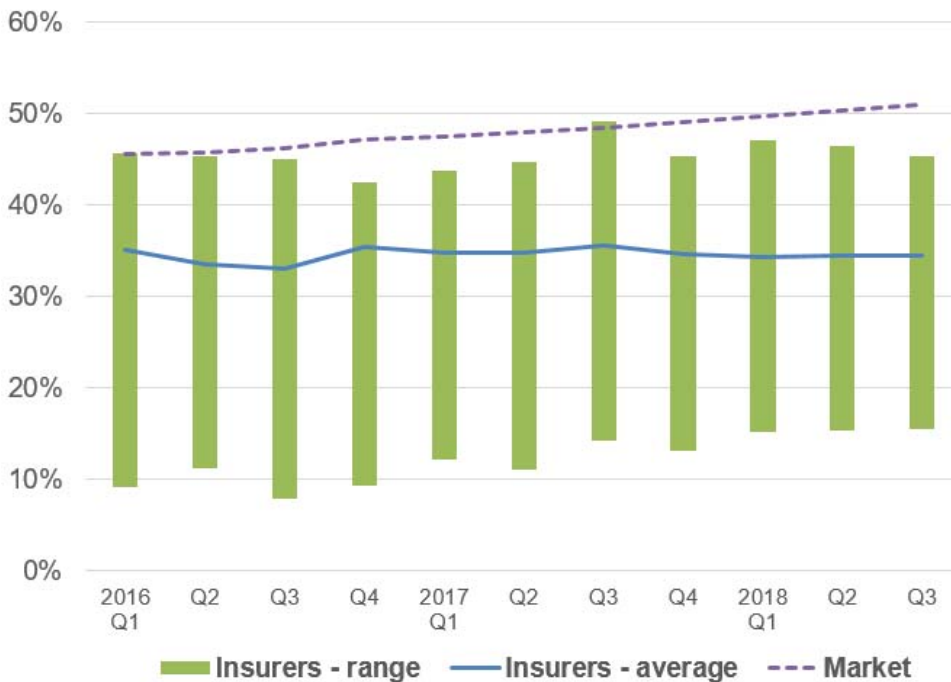
Sources: Firms data submission March 2018, Bank calculations, Bank of England.

Chart 5: Sterling investment-grade corporate bond index by credit rating



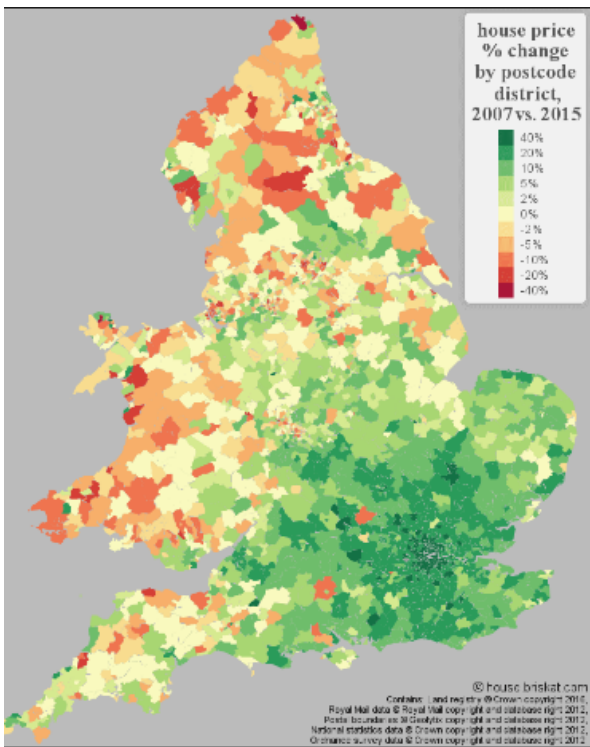
Source: ICE Bank of America Merrill Lynch.

Chart 6: BBB-rated corporate bonds as a proportion of investment-grade corporate bonds in UK insurers' Matching Adjustment portfolios



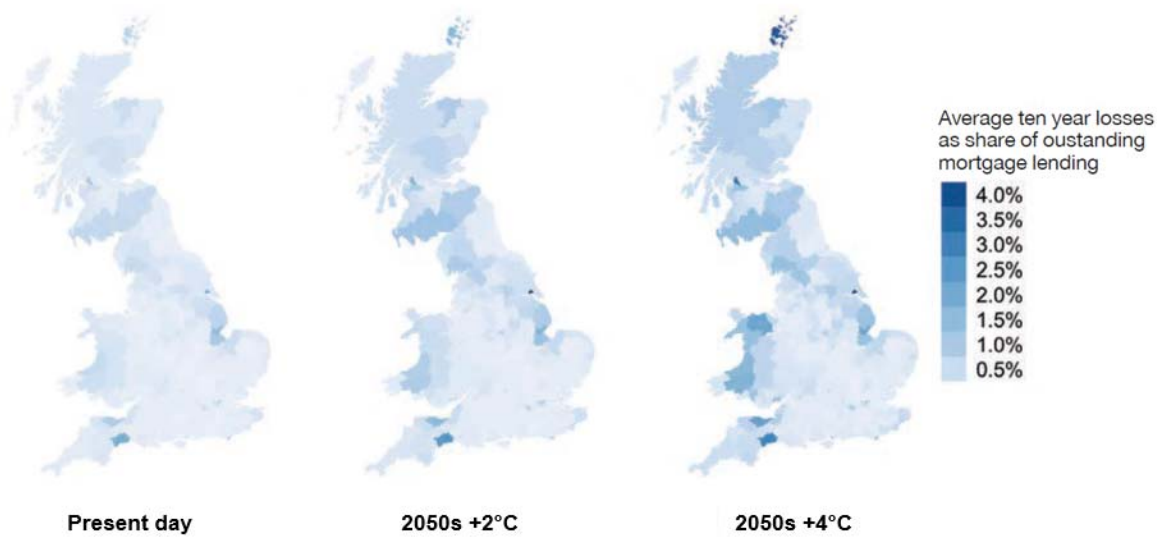
Sources: Solvency II Q3 2018 asset data, Bank calculations, Bank of England.

Chart 7: England and Wales house price changes 2007 vs 2015



Source: house.brisket.com, using Land Registry, Ordnance Survey and Royal Mail data.

Chart 8: England, Scotland and Wales projected flood risk for mortgage lenders



Note: This map shows how ten-year average losses from flood vary across local authority districts in Great Britain. Ten-year average losses are expressed in terms of outstanding mortgage lending.

Source: ClimateWise, Sayers and Partners and Vivid Economics, based on FFE