

Policy Statement | PS31/18

Solvency II: Equity release mortgages

December 2018



BANK OF ENGLAND
PRUDENTIAL REGULATION
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1 Overview

1.1 This Prudential Regulation Authority (PRA) Policy Statement (PS) provides feedback to responses to Consultation Paper (CP) 13/18 ‘Solvency II: Equity release mortgages’.¹ It also contains the PRA’s final Supervisory Statement (SS) 3/17 ‘Solvency II: Matching adjustment – illiquid unrated assets and equity release mortgages’ (see Appendix).

1.2 This PS is relevant to insurance and reinsurance companies holding equity release mortgages (ERMs).

Background

1.3 CP13/18 contained the following proposals:

- (i) firms using the approach and minimum calibration proposed would meet the PRA’s expectations for assessing the allowance for no negative equity guarantee (NNEG) risk for the purposes of the Effective Value Test (EVT);
- (ii) firms holding ERMs should include an explicit allowance for ‘other risks’ within the EVT;
- (iii) where firms holding restructured ERMs in their matching adjustment (MA) portfolio cannot meet the EVT then this suggests that they may be taking an inappropriately large MA benefit. Accordingly, they will need to review their current approach and consider making changes to the structure, valuation or rating of restructured ERMs to ensure that they are able to calculate their MA benefit consistently with Solvency II requirements;
- (iv) firms holding ERMs that benefit from the transitional measure on technical provisions (TMTP) should adopt the same approach to an assessment of NNEG and other risks for their individual capital adequacy standards (ICAS) technical provisions (TPs) calculations as they do for Solvency II TPs calculations for the purposes of calculating TMTP to ensure consistency between the calculation bases; and
- (v) firms should consider whether they need to revise their internal models in response to any changes as above.

Summary of responses

1.4 The PRA received 27 responses to the CP. The comments received fall under seven broad categories:

- (i) The approach for assessing NNEG risk for the purposes of the EVT.
- (ii) Calibration of the NNEG assessment.
- (iii) Allowance for other risks within the EVT.
- (iv) Implications if the EVT is not met.
- (v) Proposals in respect of TMTP.

¹ July 2018: <https://www.bankofengland.co.uk/prudential-regulation/publication/2018/solvency-ii-equity-release-mortgages>.

- (vi) Solvency Capital Requirement (SCR) calculations.
- (vii) PRA objectives and other areas where clarification is sought.

1.5 The details of the responses and the PRA's feedback and final decisions are set out in Chapter 2, grouped under the seven categories above.

Changes to draft policy

1.6 The PRA has made changes to the draft SS after considering responses to the consultation and further analysis. The changes are as follows:

- (i) Removal of the proposals relating to the TMTP (paragraphs 3.9A, 3.24 and 3.25).
- (ii) Changing the effective date for the policy from 31 December 2018 to 31 December 2019.²
- (iii) Clarification that the phasing-in period referred to in paragraph 3.21 of the SS is available without supervisory approval to all firms and that the phasing-in period will end on 31 December 2021, being in essence three years from finalisation of the policy as set out in this PS, rather than three years from the new effective date of 31 December 2019.
- (iv) Removal of the best view of the deferment rate parameter, as this is not required for the intended purpose of the EVT as a diagnostic test.
- (v) Further minor changes to wording to improve clarity.

1.7 Details of the changes are included in Chapter 2. The PRA considers that changes to the SS outlined in this PS make the final policy clearer and do not result in any additional burden on firms compared to the original proposals. As a result the PRA has not updated the cost benefit analysis or assessment of the impact on mutuals from the CP.

Implementation and next steps

1.8 The expectations set out in the updated SS3/17 will come into effect on 31 December 2019.

1.9 The PRA also intends to consult early in 2019 on additional proposals:

- (i) When and how the PRA will periodically review and publish updated values for the property volatility and deferment rate parameters to be used in the EVT (see paragraphs 2.47 and 2.68). In particular, the PRA will consult on proposals to adjust the deferment rate following a material change in real interest rates, in part with the aim of reducing the sensitivity of the EVT to changes in nominal risk-free rates.
- (ii) Where firms include assets other than ERMs in the special purpose vehicle (SPV) used to restructure ERM loans, how those other assets should be allowed for in the EVT (see paragraph 2.43).

² As announced on 25 October 2018: <https://www.bankofengland.co.uk/prudential-regulation/publication/2018/solvency-ii-equity-release-mortgages>.

- (iii) The frequency with which the PRA would expect firms to assess the EVT (see paragraph 2.68).
- (iv) Principles for how the PRA would assess the approaches firms could use to model the risks associated with ERMs in their internal models against the Solvency II tests and standards (see paragraph 2.110), including whether and how the PRA would expect firms to apply the EVT in stress, taking account of the PRA's proposals for how it would vary the deferment rate.

1.10 The policy contained in this PS has been designed in the context of the current UK and EU regulatory framework. The PRA will keep the policy under review to assess whether any changes would be required due to changes in the UK regulatory framework, including changes arising once any new arrangements with the European Union take effect.

2 Feedback to responses

2.1 The PRA must consider representations that are made to it in accordance with its duty to consult on its general policies and practice and must publish, in such manner as it thinks fit, responses to the representations.³

2.2 The sections below have been structured broadly along the same lines as the proposals in Chapter 2 of the CP:

- A. The approach to assessing NNEG risk for the purposes of the EVT
- B. The calibration for assessing NNEG risk
- C. The allowance for 'other risks'
- D. The implications should firms be unable to meet the EVT
- E. ICAS TPs and TMTP
- F. Solvency II SCR calculated using internal models

2.3 One additional section covers:

- G. Responses which refer or allude to the PRA's objectives and other duties, and other areas of clarifications sought by the respondents.

A The approach to assessing NNEG risk for the purposes of the EVT

2.4 The PRA proposed an option valuation approach to assess NNEG risk for the purposes of the EVT in CP13/18, which it considers to be consistent with principles (II) to (IV) of SS3/17.

2.5 Respondents' comments were under the following themes:

- (i) consistency of the EVT with Solvency II rules;
- (ii) approach to NNEG valuation in the EVT;
- (iii) consistency of the treatment with that of corporate bonds;
- (iv) appropriateness of Black-Scholes and underlying assumptions;
- (v) nature of the NNEG as a put option;
- (vi) rules-based rather than principles-based approach;
- (vii) other arguments challenging the appropriateness of the EVT; and
- (viii) treatment of assets other than ERMs in a securitisation.

³ Sections 2L and 2N of the Financial Services and Markets Act 2000 (FSMA).

A.1 Consistency of the EVT with Solvency II rules

2.6 Some respondents stated that the EVT is not consistent with Solvency II rules based on how the MA is defined and how the fundamental spread (FS) is calibrated in practice. One respondent said that the MA is prescribed to be the amount of spread remaining after the deduction of the FS and that no additional risk allowance should be required based on any other view. Another respondent said that the EVT requires a market consistent approach to calculating the NNEG but expected losses included within the FS are not market consistent and so the EVT is in conflict with the FS calibration. One respondent specifically disagreed with the removal of the reference to the appropriateness or adequacy of the FS from the proposed revised SS3/17 (in paragraphs 3.1 and 3.4), because the level of MA depends on the FS.

2.7 One respondent disagreed with the PRA's view that the FS should reflect all risks retained by the firm and took issue with an EVT that depends on this view: that respondent considered that Solvency II does not intend the FS to reflect any allowance for risk beyond the level of the calibrated FS and that the definition of the FS in the PRA Rulebook would need to be changed for the policy to have any binding legal effect. The same respondent also recognised that firms can accommodate both the definition of FS and the EVT by increasing the value attributed to their MA eligible asset, but considered it unlikely that Solvency II intended firms to increase asset values in order to satisfy the definition of the FS.

2.8 The PRA considers that there is no incompatibility between the EVT and Solvency II and that a change to its rules is therefore not necessary in order to require firms to apply the EVT. The EVT is not an addition or overlay to Solvency II requirements but a diagnostic test to ensure compliance with Solvency II requirements relating to the calculation of the FS and thus the MA in the case where MA liabilities are matched with restructured ERMs.

2.9 Solvency II requires firms to use a risk-free rate for the purposes of discounting their best estimate of insurance liabilities. Unless an adjustment is allowed, firms must apply the basic risk-free rate that is published by EIOPA and adopted by the Commission in accordance with Article 77e of the Solvency II Directive. In exceptional circumstances (where the strict MA eligibility criteria are satisfied), Solvency II allows firms to increase that basic risk-free rate through the application of the MA. The underlying rationale for this is that the MA itself represents an element of the spread on an asset that may be earned risk free by the insurer. In determining the MA, firms must subtract the FS from an asset's spread. Solvency II seeks to harmonise the FS by requiring firms to apply the FS that is published by EIOPA and adopted by the Commission in implementing technical standards (ITS) in accordance with Article 77e of the Directive. But a key principle for the determination of the FS is contained in Article 77c(1)(b) of the Directive – the MA must not include the FS **reflecting the risks retained by the firm** (emphasis added).

2.10 The FS ITS requires certain data 'inputs' in order to determine the FS for a particular class of assets. These are:

- the type of exposure (to Central Governments/Banks, Financial Institutions and Other Exposures);
- the duration of the investment; and
- the 'Credit Quality Step' (CQS) that has been assigned to that investment.

2.11 For externally rated assets, Article 77c(1)(d) of the Directive specifically requires the allocation to the investment of a CQS, using the same scale of CQS as is applied to External

Credit Assessment Institutions (ECAI) rated assets in the context of the Standard Formula SCR pursuant to Article 109a(1). So the CQS for such assets can be determined mechanically by taking the identity of the ECAI, the rating assigned to the asset and looking up the applicable CQS (from 0 to 6) in the Commission ITStandard published under Article 109a of the Directive. But for non-rated assets, there is no similar requirement.

2.12 Although Solvency II requires firms to apply the FS that is published and adopted in the relevant FS ITS, it does not explicitly prescribe how the relevant FS is to be identified where one of the inputs required to look up the relevant FS (an external rating) is missing.

2.13 One possible interpretation of this is that the Directive did not intend MA benefit to be claimed at all on such unrated assets. But the PRA considers this to be: (i) contrary to the intention expressed in other parts of the Directive (which discourage reliance on external ratings); and (ii) a disproportionate approach.

2.14 Therefore, the PRA considers that firms should be allowed to derive an FS for unrated assets by a process that is as consistent as possible with the process that applies for rated assets and will generally involve attributing a rating to them to enable an FS to be determined. In doing this, firms must produce an outcome that plausibly satisfies the overarching high level requirements in Article 77c of the Directive and particularly (given the imperfect alignment of restructured ERMs with the Solvency II FS requirements) the general principle in Article 77c(1)(b) which indicates that the MA must not include the risk retained by the firm. That plausibility will be assessed by a number of factors, for example whether the process adopted and outcome produced are consistent with the results expected from an ECAI rating.

2.15 In order to determine the MA, an asset spread is also needed. Internally restructured ERM notes have no observable market prices or asset spreads. Solvency II requires that assets that are not traded in active markets should be valued based on the maximum use of relevant market inputs, including where necessary inputs from a market for similar instruments with appropriate adjustments (Delegated Regulations, Article 10). In determining these asset spreads, the PRA considers that the total allowance for risk within the restructured senior note (via the FS part of its spread) and the junior note (via its full spread) must be no less than the inherent risk of the underlying un-restructured ERMs and that the allowance for NNEG risk for the purpose of Article 10 is based, so far as possible, on relevant market inputs.

2.16 The EVT constitutes a test of plausibility – it is a diagnostic tool designed to highlight circumstances in which the Directive requirements in relation to the FS, and the Delegated Regulations in relation to determining spreads for untraded assets may not be satisfied and warrant further investigation. It is also a means of enabling the PRA to make efficient use of its resources by directing its supervisory focus to the areas that are of most relevance to its objectives.

2.17 The PRA considers that the adequacy of the FS deducted from MA-eligible note(s) cannot be assessed in isolation: the FS only represents the risk deduction in respect of the restructured senior note because this is the asset that is intended to be eligible for the MA. The changes proposed in CP13/18 to paragraphs 3.1 and 3.4 of the SS, so they referred to MA rather than FS, were to clarify this point. A large portion of the un-restructured ERM risks is actually borne in the first instance by the MA-ineligible junior note and reflected in its spread. Consequently, the PRA does not consider that the allowance for the risks borne by the junior note via its asset spread should be informed, or indeed be restricted, by what the FS represents or the basis on which the FS has been calculated. The EVT implements this holistic

approach because it requires all of the risks presented by ERMs to be attributed to one or other element of the restructure.

2.18 Finally, one respondent suggested that fair values of the NNEG would no longer be required if the junior note was sold to a third party. The PRA disagrees. The overall risk underlying the un-restructured ERMs has not reduced, and the risk of each restructured note remains the same, regardless of the party that owns each note. Another respondent argued that since an NNEG cannot be bifurcated from the rest of the contract, the NNEG should not be required to be valued on a market consistent basis, which it considered to be appropriate for a break-up only. The PRA also disagrees with this point. Assets that are not traded in active markets are required to be valued based on the maximum use of the relevant market inputs (Delegated Regulations, Article 10).

A.2 Approach to NNEG valuation in the EVT

2.19 Some respondents argued that the Solvency II MA framework is designed to allow insurers to take credit for future expected returns above risk-free rates where they are not exposed to the relevant risks, including property risk premiums that would be effectively disallowed by the proposal to apply a market consistent or risk neutral framework to calculate the NNEG. Some of these respondents also argued that using a market consistent approach of the kind proposed by CP13/18 to valuing the credit risk of corporate bonds equates to basing the FS on credit default swap (CDS) spreads representing the market price for credit risk, which they state would leave zero residual MA in an efficient market.

2.20 This argument is flawed because it is based on the premise that an expectation of future house price growth reflected in the property risk premium may be earned risk free by an insurer. That is not the case. An insurer is just as exposed as any other investor to the risk that such expected growth will not materialise. Property risks associated with the NNEG are therefore retained in full by the insurer and Solvency II requires retained risks to be excluded when calculating the MA. For restructured ERMs, the allowance for property (and other) risks retained by the firm may be achieved through a combination of: (i) the securitisation structure providing adequate protection to the MA-eligible senior note(s) (thereby resulting in a reduced value for the loss-absorbing junior note); and (ii) by being appropriately reflected in the FS applied to the senior note(s). Both mechanisms must be considered to ensure that the MA only captures the part of the spread that is in excess of the compensation for the NNEG and other risks retained by the insurer.

2.21 In relation to comments on the market consistency of the proposed approach, the calibration of the EVT specified in CP13/18 is based on a view of the minimum appropriate deferment rate rather than a best view, and the proposed calibration of the volatility parameter does not contain any loading for uncertainty or profit often found in implied volatilities in traded option markets. This is not intended to give an estimate of the market cost of hedging the NNEG. It is aligned with the intention of the EVT as a diagnostic test. Therefore, the PRA does not agree that the proposed approach is analogous to basing the FS on CDS spreads.

A.3 Consistency of the treatment with that of corporate bonds

2.22 Many respondents said that the proposals will result in a penal treatment of ERM loans compared to other MA-eligible assets such as corporate bonds. They argued that the FS for corporate bonds is calibrated on the basis of long-term default statistics and is an expected cost approach based on the risks retained by the insurer as a buy-and-hold investor. They argued that the FS calibration results in some of the excess return above risk-free rates that is part of the credit risk premium being claimed as MA for corporate bonds. In their view, this is

inconsistent with the proposal that disallows any excess property return above risk-free rates to be claimed as MA for ERMs.

2.23 The PRA does not consider it meaningful to make a direct comparison between the treatment of ERMs and corporate bonds in this context. Corporate bonds do not typically require restructuring in order to satisfy the Solvency II MA eligibility criteria. ERMs are typically not MA-eligible assets unless restructured in such a way as to satisfy the MA eligibility criteria. Senior notes from restructured ERMs are designed to have fixed cash flows and therefore be eligible for the MA. The default and downgrade risk of senior notes must be captured by an appropriate FS, just as it is for corporate bonds. However, in contrast to corporate bonds, the fixity and credit quality of cash flows of the senior note(s) are dependent on the loss-absorbing capacity of the junior note and on the specific structural features of the restructuring. The senior note cannot, therefore, be considered in isolation when determining its FS, as the inherent risks in the underlying assets will also be reflected in the asset spread and the value of the loss-absorbing junior note. The necessity for a holistic approach to determining the FS is in marked contrast to the approach adopted for corporate bonds.

2.24 In addition, the credit risk profile of un-restructured ERMs is significantly different to that of corporate bonds. ERMs are a form of specialised lending in which there is dual reliance on the underlying property asset, to fund: (i) the accrued interest; and (ii) the repayment of principal, in each case at maturity. Corporate bonds benefit from the 'pull-to-par' effect, in which the cash flow that will be delivered by the corporate bond at maturity is known with certainty provided there is no prior default. However, this does not apply in respect of ERMs, as there is no 'pull-to-par' effect that will ensure that the property price reverts to any pre-known value at the point of sale, regardless of when that sale occurs. In contrast to corporate bonds, firms with re-structured ERMs are therefore fully exposed to the uncertainty of the value of the property at maturity and thus to the risk that it will be insufficient to cover both the accrued interest and the principal.

A.4 Appropriateness of Black-Scholes and underlying assumptions

2.25 Many respondents raised concerns over the appropriateness of the Black-Scholes model and argued that the assumptions underlying its derivation do not hold in practice for the UK residential property market. Some responses simply stated the Black-Scholes approach was inappropriate without further explanation, while others explained their reasoning.

2.26 The most common argument was that the Black-Scholes formula rests on conceptual assumptions such as availability of liquid hedging instruments. Another limitation noted was that property price returns do not exhibit geometric Brownian motion, under which asset prices can get arbitrarily close to zero, which in the respondent's view is unrealistic for residential UK properties. Instead, respondents noted that property markets tend to be backward-looking, subject to inertia and also some level of Government intervention, all of which lead to auto-regressive property returns. One respondent further commented that a closed formula approach fails to capture potential complexities such as the conditional behaviour of early repayment rates on property returns. In these respondents' views, the use of the Black-Scholes framework leads to an overstatement of the value of the NNEG.

2.27 In CP13/18, the PRA made clear that it was not suggesting that the use of a Black-Scholes option pricing framework was the only means by which firms could demonstrate that they had assessed NNEG risk in a way that met the four principles set out in SS3/17. However, only two respondents suggested alternative approaches to the Black-Scholes formula proposed. These were Monte Carlo simulations or using a 'time-trended mean reverting process'.

2.28 The PRA agrees with the respondents that the attributes of the residential property market do not permit the derivation of the Black-Scholes formula via dynamic replication arguments, and that a closed form solution cannot directly capture conditional early repayment rates. However, while the conceptual assumptions mentioned by respondents are sufficient to allow derivation of the Black-Scholes formula, they are not necessary, and there are several other derivations of the Black-Scholes formula. Furthermore, CP13/18 noted other potential methodologies, such as real-world price deflator techniques which could be implemented in a way that overcomes the challenges to the use of the Black-Scholes formula identified by respondents, albeit at potentially much greater computational cost and opacity of parameterisation. It is open to firms to make use of these alternative approaches, if they so choose.

2.29 CP13/18 also noted academic research⁴ that shows that, if calibrated appropriately, the Black-Scholes formula gives reasonable answers regardless of whether the underlying process does in fact exhibit geometric Brownian motion. Furthermore, individual properties have sometimes traded for very small amounts, which is consistent with the behaviour of geometric Brownian motion. And there are significant benefits from obtaining a consistent set of information, using a methodology that is computationally straightforward, from all affected firms. The PRA notes that the Black-Scholes formula is already used by many market participants in the context of ERMs, albeit often with a different parameterisation from that proposed in CP13/18. The PRA considers that the Black-Scholes formula, with the proposed parameterisation, is consistent with the principles set out in the SS: using the proposed formula and parameterisation therefore makes meeting the expectations set out in the SS readily ascertainable by firms.

A.5 Nature of the NNEG as a put option

2.30 Some respondents said that the NNEG was not a put option as it could only be exercised on death without requiring a decision by the borrower and that there was no benefit to the borrower from exercising the NNEG. Another respondent argued that the NNEG was not a conventional option as the customer does not have to make a decision to exercise the NNEG and there was no deep and liquid market for the underlying asset of deferred possession of properties.

2.31 The PRA notes that both insurers and borrowers recognise the NNEG as a valuable benefit that provides protection to the borrower (if they go into long-term care) or to the borrower's estate (on the death of the borrower). The NNEG acts to limit the amount that can be recovered by the lender from the borrower to the value of the property. As the NNEG effectively allows the borrower to sell the property to the lender for full settlement of the debt regardless of the market price of their property, it has the economic substance of a put option in the hands of the borrower. While exercise of the NNEG may be driven, under the contract, by the occurrence of an extraneous event rather than through a decision on the part of the borrower, the PRA does not consider this materially to affect the economic substance of the NNEG. An analogy may be drawn between this and with-profit guarantees where 'exercise' from the policyholder is not necessarily required, but standard industry practice is nevertheless to value the guarantee as an option. The PRA also notes that it is also widespread practice within the UK life insurance industry to treat the NNEG as having the economic substance of an option.

⁴ For example, see the following papers relating to different specifications of drift and volatility terms: 'Robustness of the Black and Scholes formula', El Karoui, Jeanblanc-Picque, Shreve, *Mathematical Finance*, April 1998; and 'Implementing option pricing models when asset returns are predictable', Lo, Wang, *The Journal of finance*, March 1995.

2.32 The PRA recognises that the lack of a deep and liquid market in deferred property possession makes it difficult to value the NNEG, but that does not change the economic characteristics of the NNEG. The PRA therefore considers that the NNEG is economically sufficiently similar to a put option for the purpose of the EVT and this is consistent with previous consultations on this issue – see, for example paragraph 2.35 of PS14/17.⁵

A.6 Rules-based rather than principles-based approach

2.33 Several respondents commented that the PRA was moving towards a more ‘rules-based’ prescriptive approach regarding the treatment of ERMs. Some of these respondents further noted that this was not consistent with the approach taken for other assets and liabilities and expressed a preference for the PRA to set out only principles and standards.

2.34 However, one of the respondents welcomed the move towards a more specific approach as providing a clearer understanding of the PRA’s expectations but suggested that rather than be prescriptive, the PRA should position its views on the NNEG calibrations as a default and allow firms to implement alternative calibrations where they can demonstrate their suitability to the PRA’s satisfaction.

2.35 The PRA notes that SS3/17 originally set out four principles in connection with the EVT and left it to firms to determine for themselves their own preferred approaches to meet those principles. In its interactions with firms, the PRA found that some firms were reluctant to propose methods and approaches that were consistent with the four principles of SS3/17, with several firms arguing that expectations were insufficiently clear. The PRA therefore decided to make the proposals in CP13/18, with a view to providing greater clarity. It remains open to firms to propose other approaches to NNEG valuation that satisfy these four principles.

2.36 Firms are also reminded that the EVT is a diagnostic test they are expected to carry out to highlight potential inconsistency with the requirements of Solvency II. Solvency II requirements dictate the consequences of any failure by a firm to meet the EVT. The PRA recognises that its proposed expectations in respect of the approach to evaluation of NNEG risks will mean that some firms need to make a more detailed and specific assessment than they have done in the past. But the PRA considers this to be a proportionate way of addressing the risk that Solvency II requirements for the MA are not being complied with. It also has the benefit of ensuring that firms with restructured ERMs adopt a consistent, as well as a compliant, approach in an area where the Solvency II framework lacks explicit provision for FS determination.

A.7 Other arguments challenging the appropriateness of the EVT

2.37 Some respondents stated that the PRA has engineered a process with a pre-determined aim of reducing the attractiveness of ERMs as an asset to insurers. One of these respondents stated that ERM spreads are high due to strong demand and limited supply, not necessarily NNEG risk. Another respondent considered that restructured ERM notes have high spreads not only due to the higher inherent liquidity costs in the original ERMs, but also due to the illiquidity of the notes themselves, and compliance with the principles in SS3/17 eliminates this additional benefit which in the respondent’s view would otherwise be legitimate for MA.

2.38 The PRA does not have a pre-determined view of how much MA should be generated by ERMs and agrees that higher spreads than seen for other asset classes could exist. The PRA is predominantly concerned about whether NNEG risk is assessed properly rather than the

⁵ ‘Solvency II: matching adjustment - illiquid unrated assets and equity release mortgages’, July 2017: <https://www.bankofengland.co.uk/prudential-regulation/publication/2016/equity-release-mortgages>.

absolute amount of residual spread that remains available for MA after a proper assessment of the NNEG has been taken into account. Nevertheless, ERM holdings amongst life insurers have grown rapidly, the PRA's analysis has shown that ERM securitisations appear to give rise to levels of MA benefit that are higher than for other assets found in MA portfolios, and therefore it is reasonable for the PRA to subject the treatment of these assets to particular scrutiny following its risk-based approach to supervision.

2.39 One of the respondents suggested that principles (II) and (III) can be met separately from principle (I), ie outside of the EVT itself. The PRA expects all principles to be met simultaneously, and in CP13/18 proposed an amendment to paragraph 3.13 of the SS accordingly. This is because the remaining principles relate to the economic value of the ERM, which is defined in principle (I) as the value of the ERM as a risk-free loan, less deductions to reflect the value lost due to different sources of risk (eg the NNEG).

2.40 Some respondents considered that the EVT inappropriately compares two different methodologies, saying that the effective value side of the EVT uses the International Financial Reporting Standards (IFRS) fair value of restructured ERM notes whereas the economic value was to be calculated as specified in the CP13/18 proposals. The PRA does not consider this objection to have merit, because by design the EVT does not make the comparison referred to by respondents. The effective value side of the EVT is not the fair value of restructured ERM notes in isolation, but also includes the MA benefit arising from the notes. This is illustrated in the EVT diagram in SS3/17. Other things being equal, the higher the IFRS fair value placed on the notes, the lower the senior note spread, and so the lower the MA benefit arising. And therefore the PRA considers that it is appropriate to compare the combined value of restructured ERM notes and MA benefit arising from the MA-eligible notes, ie the effective value, with the economic value of the ERM loans.

A.8 Treatment of assets other than ERMs in a securitisation

2.41 One respondent commented that the EVT made no reference to assets other than ERMs that could be included within an ERM restructuring vehicle and sought clarification over the treatment of these assets.

2.42 The PRA has designed the EVT to highlight circumstances in which the amount of MA benefit arising from restructured ERM notes may be inconsistent with Solvency II. For ease of understanding, the EVT has been specified in the simplest case where the only asset available to the securitisation vehicle is the un-restructured ERMs.

2.43 The PRA considers that other assets within the SPV could influence the amount of MA both through the rating of the senior note and the allocation of the value of the other assets to each of the notes. The PRA intends to consult on a clarification to the SS on the extent to which the value of other assets within the SPV should be included in the EVT.

B The calibration for assessing NNEG risk

2.44 The PRA proposed specific minimum calibration parameters under the approach to assess NNEG risk for the purposes of the EVT in CP13/18, namely 1% deferment rate and 13% property volatility.

2.45 Respondents' comments have been broadly divided into the following key themes:

- (i) interest rate sensitivity of the EVT;
- (ii) stability of the NNEG assessment;

- (iii) comparison to a certainty-equivalent scenario or stress testing perspective;
- (iv) whether the forward interest rate should reflect the cost of funding above the risk-free rate;
- (v) other arguments for or against the deferment rate analysis;
- (vi) requests for publication of the PRA analysis used in deriving the calibrated parameters;
- (vii) frequency of assessing the EVT and of updating the EVT parameters;
- (viii) link to the Institute and Faculty of Actuaries' research; and
- (ix) other calibration issues.

B.1 Interest rate sensitivity of the EVT

2.46 Many respondents noted that if the EVT were applied at regular intervals based on the proposed method and parameters, it would increase balance sheet interest rate sensitivity and so result in greater balance sheet volatility. Some respondents drew a comparison between this increased interest rate sensitivity and the PRA's own views that the risk margin is currently too interest rate sensitive, for example noting Sam Woods' letter to the Chair of the Treasury Committee of 4 June 2018.⁶ Several respondents suggested that the interest rate sensitivity of the proposals would introduce an unwanted element of pro-cyclicality and a number of respondents further opined that the cost of hedging any increased rate sensitivity would be material. Some respondents suggested that the deferment rate should be linked to market variables such as the real (as opposed to nominal) risk-free rate, which would alleviate some of the increased exposure to interest rates. One respondent disagreed, saying that incorporating interest rate dependence into the deferment rate would add more uncertainty and volatility to Solvency II balance sheets.

2.47 The PRA considers the deferment rate of 1% proposed in CP13/18 to be appropriate at the time of writing, and this has therefore been included in the updated version of SS3/17 that is being issued along with this PS. The PRA agrees with firms that, if applied over the longer term, the CP13/18 calibrations may make insurance balance sheets more sensitive to changes in nominal risk-free rates. In the PRA's view, some of the interest rate sensitivity arising from the calibration proposals is economically realistic and therefore justified. However, the PRA recognises that changing market variables, in particular in real interest rates, may have an impact on the appropriateness of these calibrations. The PRA intends to consult on how and when it would update the deferment rate in response to movements in real interest rates. The PRA does not plan to revise Principle III of SS3/17, ie the deferment rate would not become negative.

B.2 Stability of the NNEG assessment

2.48 A number of respondents noted the point-in-time nature of the interest rate parameter, which contrasts with the fixed through-the-cycle values for the deferment rate and property volatility used in the proposed NNEG valuation. Some of these respondents suggested that a long-term estimate of the interest rate could be used instead. One respondent provided a further justification for this type of calibration with reference to the Sportelli formula, and suggested that a through-the-cycle assessment should be required in respect of the NNEG

⁶ 'Solvency II Risk Margin', published on 6 June 2018: <https://www.bankofengland.co.uk/prudential-regulation/letter/2018/solvency-2-risk-margin>.

allowance, similar to the credit risk allowance for corporate bonds under the MA framework in Solvency II.

2.49 The PRA does not consider a through-the-cycle assessment of the NNEG to be appropriate because only the senior note is eligible for MA, while the junior note is ineligible for MA and expected to absorb first losses from any market movements. The PRA notes that the NNEG is already sensitive to the property price which is a point-in-time estimate. In addition, the PRA considers that fixing both interest rates and the deferment rate at a long-term level to be inappropriate, because this would not be appropriately risk-sensitive.

B.3 Comparison to a certainty-equivalent scenario or stress testing perspective

2.50 Some respondents challenged the proposals on the basis that they had tried to back-solve deterministic property scenarios that would result in the level of NNEG computed on the proposed basis, and concluded that these scenarios were both unprecedented based on historical evidence and highly unrealistic as future forecasts.

2.51 Deterministic scenarios may have their place as part of a firm's stress and scenario testing, for example in the Own Risk and Solvency Assessment (ORSA). But they are not relevant to the calculation of the Solvency II MA and FS. They are also not appropriate for assessing the cost of financial options. Prices for options traded in deep and liquid markets are based on valuation methods (such as Black-Scholes) that properly take into account the features of these options. Using a single deterministic approach, as suggested by firms, to estimate the value of an out-of-the-money contract with an asymmetric payoff necessarily places a value on the contract that is very low (often zero) compared to standard option pricing techniques, which are able to take account of the pay-off asymmetry and the time value of out-of-the-money options properly. In order to recover an appropriate value, it is therefore necessary to plug an apparently very extreme single scenario into the deterministic approach. But this single (apparently) extreme scenario should not be regarded as a forecast for the future evolution of the asset. Rather it is the necessary input into an inappropriate valuation model that does not capture the pay-off asymmetry and time value, in order to recover the value obtained from appropriate standard methods that are able to accommodate these features properly.

B.4 Whether the forward interest rate should reflect the cost of funding above the risk-free rate

2.52 Several respondents commented that the forward rate should be derived using the rate at which money could be borrowed to finance property investments, which is typically materially higher than the Solvency II basic risk-free rate. One respondent compared this with the repo rate being the equivalent cost factored into equity option prices. Some other respondents noted that where they have been traded, property forward contracts have transacted at a level materially higher than the Solvency II basic risk-free rate. These respondents commented that their argument is based on costs and not any expected return premium, so to disregard this effect would be irrational and inconsistent with the risk-neutral approach that is being followed. They concluded that an allowance for the cost of borrowing should be made when determining the forward price of property, either through the deferment rate definition or through an adjustment in the Black-Scholes equation, which could justify using a forward rate in excess of risk-free.

2.53 The PRA considers it inappropriate to use a higher value for the forward rate compared to the discount rate for the NNEG or indeed compared to the discount rate for a notional ERM loan free of NNEG risk, for the following reasons:

- The funding rates mentioned by respondents reflect the credit risk of property investors (eg buy-to-let landlords) rather than the rate at which insurers are able to borrow. However, even where insurers borrow at rates that are above risk-free, Valuation 2.2 of the PRA Rulebook provides that when valuing liabilities, no adjustment to take account of the own credit standing of the insurer shall be made. Hence any compensation for credit risk in the forward rate used in the NNEG calculation should not give rise to MA benefit.
- The appropriate discount rate for deriving the bounding value in present value terms under SS3/17 Principle (II)(i) is the Solvency II basic risk-free rate. This is because retained risk is necessarily measured in relation to the Solvency II basic risk-free rate: it is only once retained risk has been allowed for that the MA be can derived and added to the basic risk-free rate (ie the derivation of the MA must not include the risks retained by the firm). The Black-Scholes formula in CP13/18 is therefore parameterised with the Solvency II basic risk-free rate so it respects the Principle (II)(i) boundary.
- It is a well-established principle that the underlying asset total return (part of which is the forward rate) must be consistent with the discount rate when assessing guarantees. This is the rationale for martingale tests applied to with-profits guarantee valuation, for example. Consistency is achieved straightforwardly in CP13/18 by equating total returns to the basic risk-free rate, consistent with discounting at the basic risk-free rate. Other methods implementing the SS3/17 principles, for example real-world deflator based approaches, are equivalent to using higher rates for both total returns and discounting. The PRA considers that it is inappropriate to use total returns based on higher than the risk-free rate while discounting at risk-free, as such approaches are not internally consistent and would correspond to failing a martingale test in the with-profits context.

2.54 The PRA considers property forward contracts on indices are not relevant for assessing NNEG risk on individual properties without appropriate adjustments.

2.55 The PRA also reminds firms that the EVT is not a valuation methodology and considers that several responses in this area are potentially more relevant to valuation of ERMs than they are to the MA issues that CP13/18 was intended to address.

B.5 Other arguments for or against deferment rate analysis

2.56 One respondent was supportive of the use of the deferment rate, as it is considered to be a natural consequence of modern derivative pricing theory. However, a significant number of respondents either disagreed with the use of a deferment rate in the NNEG valuation, or argued that the deferment rate should be lower, including arguing that it should be negative. The PRA has set out in the following paragraphs how and why it considers the positive deferment rate proposal in CP13/18 to be consistent with Solvency II provisions relating to the MA.

2.57 One respondent argued that rental income is irrelevant because no purchase of the property has occurred at the start of the contract and the risk of shortfall only occurs at the point of mortgage redemption. Another respondent said that neither the insurer nor its annuitants are dependent on the rental income: presumably, this is based on the same view - that only the value of the property at the mortgage redemption is relevant. One respondent asked the more general question of why a positive deferment rate is required to meet Solvency II rules or reflect the risk underlying ERM assets.

2.58 The PRA considers that these comments fail to recognise the importance of principles (II) and (III) of the SS, namely that the value of the ERM is, logically, bounded above by the present

value of deferred property possession, which itself is lower than the value of immediate possession. These principles together with their rationale were discussed at length in CP48/16 and PS14/17⁷ (to which the attention of these respondents is directed) and are not repeated here.

2.59 One respondent stated that the evidence for a positive deferment rate was selective. Other respondents said that there is no liquid market for deferment prices to derive a deferment rate. The PRA notes that CP13/18 provided a range of methods that have been considered in the proposal of its deferment rate, including net rental yield and leasehold relativity analysis as well as the Sportelli formula. The PRA considers that the use of these methods is consistent with the maximum use of inputs from a related market when no active market for the NNEG exists, as per Article 10 of the Delegated Regulations.

2.60 Another respondent noted that because very few mortgage-financed purchasers are in the market for extending leases, this market is not relevant as a yardstick for the ordinary property market, unless suitably corrected. The PRA considers that its analysis of deferment rates is not materially affected by the proportion of lease extensions on properties financed by mortgages. This is because the deferment rate measures the reduction in value from deferred possession relative to the opening value of the property. While it is possible that the method of financing affects the purchase price of the property, the relative cost of deferred possession would be unaffected.

2.61 Some respondents said that forgone rent does not imply any diminution of current or future value of the property and hence forgoing rent in the interim does not compel a positive deferment rate. The PRA considers that a similar argument as above applies: that the deferment rate measures the relationship between the value of deferred possession and current possession (both of which will benefit from the future value), and is not in any way related to either the actual current or future values in isolation.

2.62 One respondent stated that the interest accrued on the ERM effectively represents the rent paid during the deferment period. The PRA interprets this to mean that the respondent considers the rental income has not been forgone as it will be paid in the form of interest when the loan is repaid, and therefore should not influence the deferment rate. The PRA notes that interest represents compensation to the lender for tying up its principal, including compensation for the risks borne in doing so, whereas rent is compensation to the property owner paid by occupiers for the benefit of occupation. As such the interest rate and rental yield have a weak relationship to each other. Moreover, the amount of rent is derived by applying the rental yield to the value of the property, whereas the amount of interest is derived by applying the interest rate to the value of the loan. The property and loan values are in general materially different to each other (initial lending is at loans-to-value (LTV) very materially lower than 100%) and so the amounts of rent and interest are also materially different. The PRA is not, therefore, persuaded by these comments.

2.63 One respondent looked at the relationship between nominal interest rates and deferment rates as implied by leasehold relativities and concluded that a deferment rate of 1% in the current interest rate environment is not supportable by this data. The same respondent also made a case for deferment rates to be linked to real interest rates and specifically referred to the Sportelli formula, concluding that updating the result by taking into account

⁷ In CP48/16, see Q6 in Appendix 2 in the feedback statement on Discussion Paper 1/16 'Equity release mortgages', March 2016; and paragraphs 2.46 and 2.47 in PS14/17 'Solvency II: matching adjustment - illiquid unrated assets and equity release mortgages', December 2016 and July 2017: <https://www.bankofengland.co.uk/prudential-regulation/publication/2016/equity-release-mortgages>.

the change in real interest rate and removing the liquidity premium component from the risk premium would result in a deferment rate of -0.2%. Another respondent argued that the cost could exceed the benefit of property ownership during the deferment period which would lead to a negative deferment rate, particularly in relation to taxes which could be incurred.

2.64 The PRA has set the EVT deferment rate calibration at 1%, as proposed in CP13/18, using its judgement as informed by a range of analysis. The PRA has considered the points raised by respondents carefully, but does not consider that they have made convincing arguments as to why the PRA should revise that judgement: it is highly unlikely that the deferment rate for the residential properties used as collateral for ERM loans would be below 1% under current conditions. A negative deferment rate would breach the principle that investors prefer more to less, on which Principle (III) of SS3/17 is based. The PRA does not consider breaching this principle to be plausible.

B.6 Requests for publication of the PRA analysis used in deriving the calibrated parameters

2.65 A number of respondents requested that the PRA publish the analysis used in deriving the calibrated parameters, and details about any adjustments made to data. One respondent also questioned the appropriateness of adjustments made to allow for changes in the operation of the leasehold market.⁸

2.66 The PRA sees little practical merit in publishing more detailed analysis on these issues. Both CP13/18 and this PS already provide firms with information and explanation as to the rationale for the proposed deferment and volatility calibrations and the basis on which the PRA judges them to be appropriate: additional technical analysis will provide no additional transparency for firms on these points, since the calibrations proposed in CP13/18 are ultimately the product of supervisory judgement based on data and on the requirements of Solvency II. It will be evident from this PS that the PRA has considered all the comments made in response to the consultation very carefully and has set out its views on these comments at some length. The PRA has made some changes to its calibration proposals in the light of consultation feedback, for example, by dropping a 'best view' of deferment – the PRA considers that including a best view is not necessary or proportionate in terms of the regulatory outcome the PRA is seeking to achieve, since the best view is one which firms may reasonably be expected to reach using their own judgement. The PRA also proposes to consult on some further refinements to the EVT to address points made in some of the consultation responses.

B.7 Frequency of assessing the EVT and of updating the EVT parameters

2.67 Some respondents requested clarification as to whether the assumptions used in the EVT will be updated, with one respondent asking for confirmation that regular updates would not take place. Some respondents suggested that the minimum deferment rate should be recalculated at regular intervals. The PRA was asked to provide a methodology for firms to use to derive the deferment rate and volatility parameters. Respondents also asked for clarification on how frequently they should assess the EVT.

2.68 As noted above, the PRA intends to consult on proposals to publish periodically updates to the minimum parameters to be used in the EVT. The PRA will also consult on proposals for the frequency of assessing the EVT.

⁸ See paragraph 2.13 of CP13/18, and the references given in the footnotes on page 9 of CP13/18 available on page 2 of 2 at <https://www.bankofengland.co.uk/prudential-regulation/publication/2018/solvency-ii-equity-release-mortgages>.

B.8 Link to the Institute and Faculty of Actuaries' research

2.69 Some respondents noted that the Institute and Faculty of Actuaries (IFoA) is undertaking research, which has been co-sponsored by the Association of British Insurers (ABI), into the valuation of ERM's and the NNEG, and suggested that the PRA should defer finalising its policy until such time as the results of that research are available.

2.70 The PRA will consider the results of the IFoA research when they are available, which the PRA understands to be in 2019, along with any other future research and developments in this area. But it does not consider that further delay in finalising its proposals is desirable. The PRA has already consulted extensively on this subject, including a discussion paper and two consultations on supervisory statements.

B.9 Other calibration issues

2.71 A number of respondents made comments in relation to dilapidation, noting that adjustments for dilapidation should not be included in the Black-Scholes framework; that dilapidation could be recovered from the relevant estate under certain circumstances; and that Land Registry data implies that retirement property has worse depreciation than ordinary properties.

2.72 The PRA recognises that current property prices should already reflect a market view of future price movements, potentially including any expected future dilapidation. However, insurers' estimates of the current market values of ERM properties are typically uncertain, as they are derived from automated valuation approaches that are unlikely to capture dilapidation that may have taken place since the previous full property inspection. The PRA has not incorporated any allowance for dilapidation into the EVT because the test is intended to be diagnostic. The PRA also notes that even where clauses exist to allow recovery of dilapidation costs, the estate from which these costs could be recovered may not be sufficiently large.

2.73 Some respondents commented that observed volatility of the Halifax/Nationwide data (without adjustment) would suggest a volatility assumption of 8-9%. One respondent suggested that the PRA estimate of house price volatility was skewed by the use of data from periods of high inflation, and that volatility had been lower since the Bank of England introduced its inflation target, also arguing for a figure of 8-9%. One respondent said that the additional idiosyncratic risk allowance is inconsistent with the framework of the EVT, which implies that properties are all homogenous and not subject to idiosyncratic risks.

2.74 The PRA analysed similar data to the respondents. The PRA found that the observed volatility of the Nationwide data (without adjustment) was between 8% and 9% as suggested by respondents. However, this is the volatility of an index, and is not appropriate for use in the assessment of NNEG risk without making several adjustments (as was explained in paragraph 2.16 of CP13/18), in particular for autocorrelation and for the additional volatility expected to be experienced by individual properties. The PRA considers that some allowance for idiosyncratic risks within the EVT parameters is required as these are genuine retained risks affecting the NNEG, regardless of the framework used to measure the risk.

2.75 The PRA is aware that a calibration based on recent data only would be likely to produce a lower estimate than 13%; however it would still be much larger than the respondent's suggested calibration, which in the PRA's view does not reflect the various adjustments required. Furthermore, the long-term nature of equity release products warrants a long-term view of the available data, and the PRA does not consider there to be evidence of a sufficiently clear regime change in property volatility post-1997 to outweigh the shortcomings of using a reduced data set. There are also other statistical aspects including volatility clustering and

effects of de-smoothing which could have the potential to increase further the 13% estimate. As such, the PRA considers that the 13% calibration remains appropriate for the purposes of the diagnostic test.

2.76 One respondent made the comment that the Solvency II framework ignores autocorrelation risk, which could lead to a long period of decline, providing little opportunity for firms to re-capitalise. As noted in paragraph 2.16 of CP13/18, the PRA has allowed for autocorrelation in the base property volatility assumption.

C The allowance for 'other risks'

2.77 The PRA proposed that firms should include an appropriate allowance for risks arising from the early repayment of ERMs within 'other risks' and be able to justify why it is appropriate.

2.78 Several respondents opposed making an explicit allowance for other risks within the economic value of the EVT, and instead considered that the allowance is more appropriately considered in firms' internal rating processes or internal models. Some respondents said that the direction of the stress to apply for demographic risks is unclear and could change over time. One of these respondents argued that demographic risks such as longevity and prepayment risks should be treated as diversifiable in a large enough portfolio, and also considered that these other non-NNEG risks more directly inform the timing of cash flows rather than spread. Another of these respondents appreciated that early repayment risk could potentially be quantified by considering the value of interest rate options or cost of capital calculations, but thought these were inappropriate as they do not capture the impact of early repayments on an insurer's ability to meet its annuity liabilities.

2.79 The PRA agrees that 'other risks' affecting the timing of the ERM cash flows should indeed have been taken into account in firms' internal rating processes (and also internal models), but considers that for consistency it is necessary to include an allowance for other risks in the economic value side of the EVT. The PRA did not propose a pre-defined calibration for this risk in CP13/18, and considers that firms may want to take into consideration a range of factors, including those mentioned by respondents described above. While some aspects of other risk may diversify away in large portfolios, other aspects will remain, for example the risk of mis-estimating assumptions, or for material fluctuations in early payment experience. The PRA considers that any impact on the timing of the cash flows will have a consequential impact on the spread on the ERM loan and the restructured notes. The PRA also notes that other risks and the assessment of NNEG risk in the calculation of economic value may interact, for example the interrelationship between early repayment rates and property returns noted in paragraph 2.26 above. Firms may wish to include a proportionate assessment of such interactions when making allowance for other risks in the EVT.

D The implications should firms be unable to meet the EVT

2.80 The PRA proposed that, where firms holding restructured ERMs in their matching adjustment (MA) portfolio cannot meet the EVT then this suggests that they may be taking an inappropriately large MA benefit, and will need to review their current approach and consider making changes to the structure, valuation or rating of restructured ERMs.

2.81 Respondents' comments have been broadly divided into the following key themes:

- (i) relationship between EVT and rating processes, ECAI rating opinions, and fair value methodology;

- (ii) impact of rating changes;
- (iii) alternative solutions to EVT shortfall;
- (iv) clarification sought on whether the EVT is a diagnostic or compulsory test, and the regulatory consequences for failures;
- (v) implementation date; and
- (vi) phase-in period.

D.1 Relationship between EVT and rating processes, ECAI rating opinions, and fair value methodology

2.82 Some respondents argued that the EVT was potentially inconsistent with the use of ECAI-consistent ratings. Respondents considered that the EVT effectively meant that firms had to back-solve the rating resulting in a conflict with the expectations set out in SS3/17 regarding firms' internal ratings and also questioned whether the EVT undermined firms' fair valuation methodologies that have been audited.

2.83 The respondents also questioned the PRA's statement that there is a lack of observable ECAI ratings and market prices that can be relied upon. They pointed to the existence of some ERM securitisations with ECAI ratings and asked whether they would be subject to the EVT when held by insurers who are not the sponsors of these securitisations.

2.84 The PRA does not intend the EVT to be determinative of a particular outcome. It has been designed as a diagnostic tool for identifying where the combination of the senior and junior notes in an internal restructuring may result in an amount of MA benefit that is not consistent with Solvency II. Where firms have ensured that the rating of the senior notes is ECAI consistent, they should consider whether the failure of the structure to meet the EVT may be due to inappropriate valuation and spreads on the junior note.

2.85 The EVT has been designed to interrogate the allocation of value between notes in an internal restructuring, rather than the valuation of the underlying ERM assets. As the valuations of the notes from internally restructured ERMs are not audited and there is a lack of relevant market information, particularly for the junior notes, the PRA considers the EVT to be an important tool in ensuring that allocation of the value of the underlying ERMs between senior and junior notes is appropriate.

2.86 The EVT has been designed for the circumstances where firms are internally restructuring ERMs and there is a lack of relevant rating and market valuation information. Where firms invest in senior notes from third party securitisations that have ECAI ratings and observable prices, there is likely to be more market information available, and there would be a reduced need for the PRA to make use of the EVT in such circumstances.

D.2 Impact of rating changes

2.87 Some respondents commented on the potential for small shortfalls in the EVT to require frequent restructurings which may have to be reversed as circumstances change. Respondents also questioned whether the approaches available to address failure of the EVT such as changing the terms, valuation approach or credit rating would be sufficiently sensitive to address the shortfall in the EVT without the need for further changes being required as circumstances change.

2.88 The PRA has designed the EVT to reflect the maximum economic value to an insurer that is likely to arise from ERM loans, when restructured and held within an MA portfolio. The PRA does not expect firms to design their ERM restructuring to meet the EVT precisely. This approach would, in any event, mean that even small changes in market conditions and other relevant inputs would likely result in the test not being met. The PRA notes that credit rating changes are inherently discrete and nonlinear. If ERM notes were designed so they barely met the criteria for a particular rating, then a very small adverse movement in conditions could give rise to a downgrade, and hence a large step change in the amount of MA arising as a result of that downgrade.

D.3 Alternative solutions to EVT shortfall

2.89 Some respondents suggested that EVT shortfalls could be addressed by holding additional reserves, a notional restructuring of the ERM loans, or other out-of-model adjustments. Some respondents suggested that because the EVT is designed to be a regulatory diagnostic test, firms should not be required to take any particular actions to eliminate any shortfalls, but rather a regulatory capital add-on should be applied. One respondent suggested a proportionate approach could be taken to remediate any EVT shortfall, based on the materiality of the shortfall itself.

2.90 The failure to meet the EVT does not give rise to automatic regulatory consequences. Firms must, however, ensure their MA is calculated in accordance with Solvency II requirements. The PRA considers that an EVT shortfall is a strong indication that one or more of the ERM note structure, valuation or rating does not reflect the underlying risk profile of the un-restructured assets, and that the MA derived from the senior note does not comply with the Directive requirements. Capital add-ons to the SCR may be appropriate as a temporary measure while a firm undertakes the necessary remediation action to address any underlying issues evidenced by the EVT shortfall but are not intended as a permanent alternative to compliance with the Directive requirements for the MA. The PRA considers that other temporary additional provisions or out-of-model adjustments are also inappropriate to address an underlying failure to meet Solvency II requirements for the valuation of liabilities. An injection of assets into the SPV may be an appropriate way of remedying the issues highlighted by an EVT shortfall, provided the value of these assets is allocated appropriately between the notes issued by the SPV. The PRA considers that any notional restructuring is also an inappropriate means of addressing non-compliance with the Directive requirements for calculation of the FS and the MA, as it would undermine the MA eligibility requirement regarding the fixity of senior note cash-flows.

D.4 Clarify whether the EVT is a diagnostic or compulsory test, including the regulatory consequences for failures

2.91 One respondent suggested that if the EVT is intended to be compulsory rather than a diagnostic test, then the regulatory consequences for any failures should be stated explicitly.

2.92 The EVT is a diagnostic tool to enable both the PRA and firms to assess whether firms have made adequate allowance for the risks inherent in assets which generate a reduction in the value of matched insurance liabilities within the regulatory balance sheet. Firms that use the approach set out in SS3/17 in respect of restructured ERM cash flows will meet the PRA's expectations for this assessment: see paragraph 3.3B of the updated SS3/17. The PRA does not consider that the proposed approach is the only possible method for assessing whether NNEG risk has been properly taken into account for the purposes of the MA benefit, as stated in paragraph 2.6 of CP13/18.

D.5 Implementation date

2.93 Many respondents said that implementation the CP13/18 principles by 31 December 2018 would not be possible, citing a range of reasons.

2.94 Having reviewed the responses to CP13/18, the PRA agrees that a 31 December 2018 implementation date could be unfeasible for a number of firms. Therefore the implementation date from which firms are expected to comply with the proposals has been revised to 31 December 2019.⁹

D.6 Phase-in period

2.95 Many respondents commented on the length and structure of the phase-in period of the CP13/18 proposals. Several respondents suggested that the scope of the phase-in period be extended to include the full impact on Solvency II TPs, and not simply limited to the move from the 0% to 1% deferment rate. Many respondents suggested to phase in the proposals alongside the remainder of the period for the Solvency II TMTP, ie 13 years from 31 December 2018. Another respondent noted that stakeholders, including the investment community, would look through to the final balance sheet position and so the phase-in period would not provide a material benefit. One respondent requested that the phase-in period not be at the supervisor's discretion but should apply to all insurers that hold ERMs.

2.96 The PRA expects firms to assess the EVT based on a deferment rate of 0% from the implementation date of 31 December 2019. The subsequent phasing-in period of 2 years has been chosen to strike an appropriate balance between achieving the PRA's objectives and giving firms a reasonable period in which to adjust. The PRA agrees that the phase-in period should be available to all insurers that hold ERMs and has updated paragraph 3.21 of the SS accordingly.

E ICAS TPs and TMTP

2.97 The PRA proposed that firms with approval to apply TMTP would make an allowance for NNEG and other risks in their ICAS illiquidity premium calculations that takes account of the principles and approach in SS3/17, including the calibrations set out in the proposed updated text of SS3/17, for the purposes of the illiquidity premium that they factor into their ICAS TP calculations used in calculating the amount of TMTP.

2.98 Many respondents challenged these proposals, arguing that the proposals were inconsistent with Article 308d of the Solvency II Directive, Regulation 54, and INSPRU 7, and that it was unreasonable for the PRA to make retrospective changes to firms' ICAS methodologies. Some respondents argued that the proposals would defeat the purpose of the TMTP and undermine it as a valid source of capital, and that the proposals were contrary to the PRA's attempts to simplify the TMTP calculations.

2.99 The PRA has considered the responses received and has decided not to proceed with proposal in CP13/18 that firms should apply the same single set of principles (EVT and calibrations set out in SS3/17) within the computation of INSPRU 7 TPs.

2.100 The starting point for the valuation of insurance liabilities under both the ICAS regime and Solvency II is the discounting of cash flows by a rate that is genuinely risk-free. Firms were expected for the purposes of determining a discount rate for valuing their insurance liabilities under ICAS, to make allowance for both expected and unexpected loss and to keep this under

⁹ As announced on 25 October 2018: <https://www.bankofengland.co.uk/prudential-regulation/publication/2018/solvency-ii-equity-release-mortgages>.

review as market conditions changed.¹⁰ But the PRA acknowledges that it did not set out specific guidance at the time INSPRU 7 was in force as to how firms should identify the credit and liquidity elements of the spread on ERMs, and that principles for measuring the extent of expected and unexpected risks arising on ERMs were not consistently applied and understood. Firms are reminded that they should ensure they allow appropriately for the recognition of the risk of expected and unexpected loss from ERM risks including NNEGs, consistent with the application of INSPRU 7 prior to 2016, when determining the liability valuation discount rate for pre-Solvency II TPs for the purposes of calculating TMTP.

2.101 The PRA has previously given guidance¹¹ that firms should analyse the material components and drivers of their TMTP benefit in order to facilitate better risk management, and that firms should make this analysis available to the PRA. The PRA has also given guidance that this analysis should also be included in a firm's ORSA.

2.102 Firms are also reminded of the need to ensure that the assets they hold to cover their TPs, including ERMs, satisfy the Solvency II prudent person investment requirements. Where this is not the case, for example, where a firm's investment in ERMs exposes it to excessive risk concentration or exceeds prudent levels, the PRA may consider exercising its powers to require the firm to comply with these requirements in accordance with the Investments rules of the PRA Rulebook.

2.103 The PRA has also previously drawn the attention of firms to the need to ensure that they have sufficient assets under stressed conditions to continue to ensure that liability cash flows in MA portfolios can continue to be matched.¹²

2.104 Where firms are dependent on TMTP to cover their SCR they will need to set out a phasing-in plan to demonstrate that they will be able to meet their solvency requirements at the end of the transitional period. Where this dependency is material, the PRA will closely monitor the robustness of the phasing-in plan including its sustainability under a range of operating conditions and may require firms to make adjustments to the plan to ensure that it is realistic. Firms are reminded that, where this is not the case, approval to apply TMTP may be revoked.

F Solvency II SCR calculated using internal models

2.105 The PRA noted in CP13/18 that firms with approval to calculate their SCR using an internal model may consider making changes to their internal model in order to ensure that the internal model continues to reflect their risk profile, as measured using the approach to assessing the NNEG risks for the purposes of the EVT.

2.106 Respondents' comments have been broadly divided into two key themes:

- (i) the extent of any prudence arising from the EVT; and
- (ii) how to adapt existing internal models to a CP13/18 basis.

¹⁰ See paragraph 6.5 of 'Insurance Sector Briefing: Risk and capital management update, Financial Services Authority, September 2008: http://www.fsa.gov.uk/pubs/other/isb_risk_update.pdf.

¹¹ See paragraph 2A.1 of SS6/16 'Maintenance of the 'transitional measure on technical provisions' under Solvency II', April 2017: <https://www.bankofengland.co.uk/prudential-regulation/publication/2016/maintenance-of-the-transitional-measure-on-technical-provisions-under-solvency2-ss>.

¹² SS8/18 'Solvency II: Internal models - modelling of the matching adjustment', July 2018: <https://www.bankofengland.co.uk/prudential-regulation/publication/2018/solvency-2-internal-models-modelling-of-the-matching-adjustment-ss>.

F.1 The extent of any prudence arising from the EVT

2.107 A number of respondents commented that meeting the EVT would result in prudence being included in the TPs and that this would be better placed in the SCR.

2.108 As noted in paragraph 2.21 above, the proposed calibration set out in paragraph 3.20 of CP13/18 was intended as a minimum calibration and is therefore expressly designed not to act as a source of prudence in TPs. As a result, the question as to whether any prudence in TPs ought to be placed in the SCR does not arise.

F.2 How to adapt existing internal models to a CP13/18 basis

2.109 A number of respondents said that the impact of the proposals on the SCR calculation and internal models had not been fully considered. Some respondents requested further clarity on the treatment of capital and internal models from the PRA. One respondent queried whether the specified calibrations of the EVT parameters would be a good starting place to calibrate the EVT in stress. Some respondents commented that the EVT should be excluded from the stressed balance sheet as its inclusion could lead to a stress-on-stress situation and excessive prudence.

2.110 The PRA is not setting any expectations at this stage regarding internal models, but intends to consult on the frequency of the EVT assessment and the role of the EVT in internal models in early 2019. One respondent to CP13/18 asked for clarification as to whether and how an 'EVT in stress' might be applied by firms that use an internal model to calculate their SCR. The PRA also intends to consult in early 2019 on a number of principles that would inform this process. These principles will take into account the PRA's views on how it might update the deferment rate in response to movements in real interest rates, since firms would need to factor this into their modelling. The consultation will therefore address issues such as the extent to which firms would consider stressing other inputs to the EVT, such as risk-free rates, current house prices and house price volatility, as well as consulting on validation techniques that firms may wish to consider.

2.111 The PRA notes the requirement in Solvency Capital Requirement – Internal Models 11.2(3) of the PRA Rulebook that the methods used to calculate the probability distribution forecast must be consistent with the methods used to calculate TPs. That being the case, the PRA considers it necessary for firms to focus initially on ensuring that the base balance sheet is properly compiled before turning to the SCR. While the PRA recognises the SCR as being an important determinant in firms' overall financial position, it does not consider that the SS3/17 expectations concerning a diagnostic check on the MA within the base balance sheet is dependent on the outcome of the treatment of ERMs in stress.

G PRA objectives and other duties; other areas of clarification sought

2.112 Respondents' comments have been broadly divided into the following key themes:

- (i) the impact on annuity and ERM markets: consumers and competition;
- (ii) the risk of unfair competition from non-UK providers;
- (iii) the risk of unfair competition between banks and insurers;
- (iv) the PRA's duty to protect policyholders;
- (v) industry stability: the risk that policy has created uncertainty in insurance company valuations and affected investor confidence;

- (vi) fair value and potential inconsistency with IFRS 17;
- (vii) the potential read-across to leasehold reform;
- (viii) cost benefit analysis; and
- (ix) the potential for further reviews in other areas.

G.1 The impact on annuity and ERM markets: consumers and competition

2.113 A number of respondents commented on the adverse impact of the proposals on the ERM market, including the increased costs and reduced supply of ERMs. These respondents noted that ERMs are considered to be socially and economically important in an aging society where retirees are able to use their main asset to improve their income and help fund increased healthcare and living costs.

2.114 Many respondents also expressed general concerns over the impact of the proposals on the returns on insurers' capital, and the detrimental effect where the higher costs of capital are passed on to annuitants. One respondent went as far as saying that returns for insurers would be uneconomic, another stated that annuity rates have fallen by 5% since the publication of CP13/18. Some respondents mentioned the impact on bulk purchase annuities and pension de-risking.

2.115 Several respondents commented on the impact on competition on both the ERM and the annuity markets: some of these respondents referred to the adverse impact on smaller incumbents with focussed business models and that it would not be in consumers' interest if they are squeezed out of the market with less choice being available. One respondent specifically stated that niche expertise in medically underwritten annuities could be lost. Another respondent thought that the proposals undermine the industry's ability to operate in a competitive or economically rational way where players have both entered and exited the market already at their own will, while regulatory prudence would act to restrain the level of competition.

2.116 Some respondents drew the link or interdependency between the ERM and the annuity markets, the good duration match between the borrowers and the lenders, and stated that ERMs therefore play an important role in the broader UK pensions industry. One respondent made the comment that the proposals effectively result in retirees facing the 'twin challenge' of reduced LTVs and worsening annuity rates.

2.117 The PRA agrees that ERMs are a valuable product and are likely to become more important with an ageing population. It considers that the SS will help ensure that this growth takes place on stable foundations, in line with the PRA's objectives.

2.118 A common approach to measuring the level of NNEG risk across firms means that a more level playing field is achieved consistent with the PRA's secondary competition objective. The PRA's approach should align reserving more closely to risk and encourage risk-based pricing. The actual impact will depend on the action of a large number of players that already operate in different segments of the market. Some insurers may switch to targeting lower initial LTV ratios, or increase the focus on draw-down products or interest-paying products, but firms with a greater risk appetite may still want to operate at the riskier segments of the market.

2.119 The PRA considers that a reduction in the supply of ERMs is not the most likely outcome from the proposals. The inherent profitability of ERMs is not affected by the proposal and

ERMs may remain intrinsically attractive because they are long-dated, can be a good match for annuity liabilities, and have relatively high spreads (regardless of the extent to which part of these spreads can be capitalised through an immediate MA benefit on the regulatory balance sheet).

2.120 In terms of cost to ERM borrowers, the PRA considers that competition should limit the extent to which insurers can increase ERM loan interest rates. Higher loan interest rates also lead to faster accrual of interest, raising NNEG risk. The PRA's proposals could lead to greater differentiation in pricing by risk.

2.121 The proposals do not affect the annuity market directly. Any indirect effect would only arise if the SS leads to a material change in MA benefit or regulatory capital and insurers seek to recover the costs through higher annuity prices. But for a typical firm restructured ERMs are a relatively small proportion of the assets backing annuity liabilities. The PRA has seen no clear evidence that the publication of the CP had any material effect on annuity pricing.

2.122 Overall, the PRA considers that the policy is not intended, and is unlikely in practice, to limit growth of the ERM or the annuity market including any niche areas such as medically underwritten annuities. But it is important to ensure that such growth and pricing strategies are sustainable, with firms properly reflecting the risks that they have retained in their reserving.

G.2 The risk of unfair competition from non-UK providers

2.123 Several respondents said that the proposals create an unfair competitive advantage for non-UK insurers or reinsurers in the individual and bulk annuity market, where they are able to apply a more favourable MA or liquidity premium treatment to ERMs due to regulatory arbitrage. Some of these respondents said that this would reduce the ability to control consumers' risks and adversely impact the security of annuitants' benefits. One respondent cited specific examples of insurers who have already left the UK market and considered that regulation was a significant contributor to their decisions.

2.124 The PRA considers that its policy is an appropriate implementation of Solvency II so that the risks associated with ERMs are properly reflected in insurers' balance sheets. Any transfer of risk to non-UK providers would not therefore reflect excessive UK regulatory requirements. To the extent that ERM risks are transferred overseas, the PRA will discuss the risks with the relevant regulators. The PRA supports common international standards for internationally-active insurers and reinsurers.

G.3 The risk of unfair competition between banks and insurers

2.125 Some respondents drew comparisons between the regulatory treatment of ERMs for banks and insurers. They argued that the proposals in CP13/18 were significantly more penal than the assumptions used for banking stress tests, which was felt to be an unjustified regulatory difference. Moreover, it was suggested that the proposals could put insurers at a competitive disadvantage, and could lead to the possibility of regulatory arbitrage if mortgages were securitised through a bank.

2.126 The PRA notes that bank stress tests are used to size appropriate capital buffers in excess of minimum capital requirements, and not for the balance sheet valuation of assets and liabilities. By contrast, the SS addresses compliance with the Solvency II MA requirements and determination of own funds, or available capital. The MA is a regulatory measure that is specific to insurance.

2.127 Comparisons between the EU bank and insurance capital frameworks are difficult for a number of reasons, including different approaches to the valuation of assets and liabilities, the possibility for insurers using internal models to take account of risk diversification and the Pillar 2 capital requirements and buffers for banks. But the PRA has seen no evidence that the bank regulatory framework is significantly less onerous than that for insurers. Indeed almost all new ERMs are currently being originated by insurers with approval to use the MA.

G.4 The PRA's duty to protect policyholders

2.128 One respondent expressed concern that the consultation process had taken a long time given that it is a simple problem of valuing a put option, noting that in this time the ERM market has grown significantly.

2.129 The PRA considers that the assessment of NNEG risk for the purposes of the MA is more complex than valuing a put option. The PRA also considers that it was appropriate to consult widely on the approach to follow for this assessment, given the importance of the policy to the market: this is amply evidenced by the number of responses, the breadth of issues raised by the respondents and the diversity of views expressed.

G.5 Industry stability: the risk that policy has created uncertainty in insurance company valuations and affected investor confidence

2.130 A number of respondents commented on the impact of the proposals on investor confidence in the insurance industry. One respondent said that retroactive treatment would cause a shock change in capital positions for some insurers which would be disruptive to the industry. Another respondent said that the proposal would set a precedent that the historical reported financial position of life insurers could not be relied upon. Another respondent said that back books of business cannot be repriced, and that they were priced and written in compliance with regulations at that time. Another said that predictability and visibility of UK regulations and broader legal system are vital to investor confidence, and that a long enough transition period is required to manage change without undue disruption. Another respondent referred to the proposal being contrary to the content of the Chancellor's letter on recommendations for the Prudential Regulation Committee¹³ that encouraged trade and investment.

2.131 These comments relate principally to the proposals in CP13/18 in relation to the ICAS illiquidity premium and TMTP. As explained above, the PRA has withdrawn these proposals in the final policy. Nonetheless, the PRA does not agree with the principle underlying these comments that the regulatory treatment of insurance assets and liabilities should not change over their lifetime. If necessary in pursuit of its statutory objectives and consistent with applicable laws, the PRA will change the regulatory treatment of both new and existing business. Any changes will be subject to consultation, as in this case.

G.6 Fair value and potentially inconsistency with IFRS 17

2.132 Some respondents questioned whether the PRA expects firms to align their own NNEG valuation assumptions used in the fair value of the ERMs for reporting purposes to those that are specified in CP13/18. Another respondent commented to the effect that allowing ERMs to be restructured to bring them into the MA regime takes the regulatory balance sheet further away from current accounting standards. The same respondent also noted the developments in IFRS 17, which in their view are also not consistent with the regulatory treatment of ERMs,

¹³ 'Recommendations for the Prudential Regulation Committee – 2017', March 2017: <https://www.bankofengland.co.uk/letter/2017/remit-for-the-prc-2017>.

and commented that the PRA should be working on achieving consistency between IFRS and Solvency II.

2.133 The PRA notes that the proposals set out a means of assessing whether firms are complying with Solvency II requirements for the MA. The PRA has not set any expectations for how firms value ERMs in their financial reporting under IFRS.

G.7 The potential read-across to leasehold reform

2.134 Some respondents drew attention to a risk that the proposals on deferment rates in CP13/18 could have unintended consequences for the market for leasehold extension and enfranchisement. These respondents sought greater clarity from the PRA on how it has arrived at its views of deferment rates, and one of the respondents asked that the best view of the deferment rate be removed from the proposals to avoid the risk of unintended application to the leasehold market.

2.135 The PRA issued CP13/18 for the purposes of explaining its proposed approach to the exercise of its functions, in support of the PRA's statutory objectives. The scope of the PRA's policy proposals related to ERMs held by insurance and reinsurance companies within the scope of PRA regulation. The PRA has set out a minimum deferment rate solely as an input to the EVT used as a diagnostic test to check that insurers are properly recognising risks associated with the NNEG on ERMs and therefore not overstating the MA in their technical provisions. It has not considered use of this deferment rate in any other context and does not intend for it to be used for any other purpose.

2.136 As noted above, the PRA has decided to remove its best view of the deferment rate, because a view of the minimum deferment rate is sufficient and appropriate for the EVT as a diagnostic tool. The PRA understands the respondent's position that removal of the PRA's best view might have the further effect of reducing the risk of unintended application to the leasehold market, but wishes to emphasise that the best view has been removed for supervisory reasons.

G.8 Cost benefit analysis

2.137 Some respondents asked whether a more proportionate approach to the insurance regulations could be taken in light of the impact of the high cost and low marginal benefit to policyholder security and given the risk margin contribution to TPs in the current low interest rate environment. Several other respondents said that a detailed cost benefit analysis should have been performed taking the impact on firms' balance sheets, capital requirement, new business pricing, and insurance business moving overseas into account, before the consultation was published. Some respondents requested that such analysis be published to aid transparency.

2.138 The PRA considers that the proposals are in line with the requirements of the Solvency II Directive and its MA framework with which firms are bound to comply, and with which the PRA is required to ensure compliance. As the proposals are being introduced to support existing Solvency II requirements, any perceived costs arising from the impact of adopting the approach set out in the revised version of SS3/17 would arise through the need to comply with Solvency II. Therefore, any cost benefit analysis when measured against a position of non-compliance would not be meaningful.

G.9 The potential for further reviews in other areas

2.139 One respondent asked whether the PRA had any intention of applying an EVT style approach when evaluating MA benefit for any other asset classes.

2.140 At the present time the PRA has no plans to introduce the equivalent of an EVT for other asset classes.

2.141 The PRA has an interest in ensuring that the MA benefit being claimed on all asset classes is appropriate. But ERMs have a number of specific characteristics, including the need for restructuring in order to be made MA-eligible and the NNEG.

Appendix

Supervisory Statement SS3/17 'Solvency II: Matching adjustment – illiquid unrated assets and equity release mortgages' available at: <https://www.bankofengland.co.uk/prudential-regulation/publication/2017/solvency-2-matching-adjustment-illiquid-unrated-assets-and-equity-release-mortgages-ss>