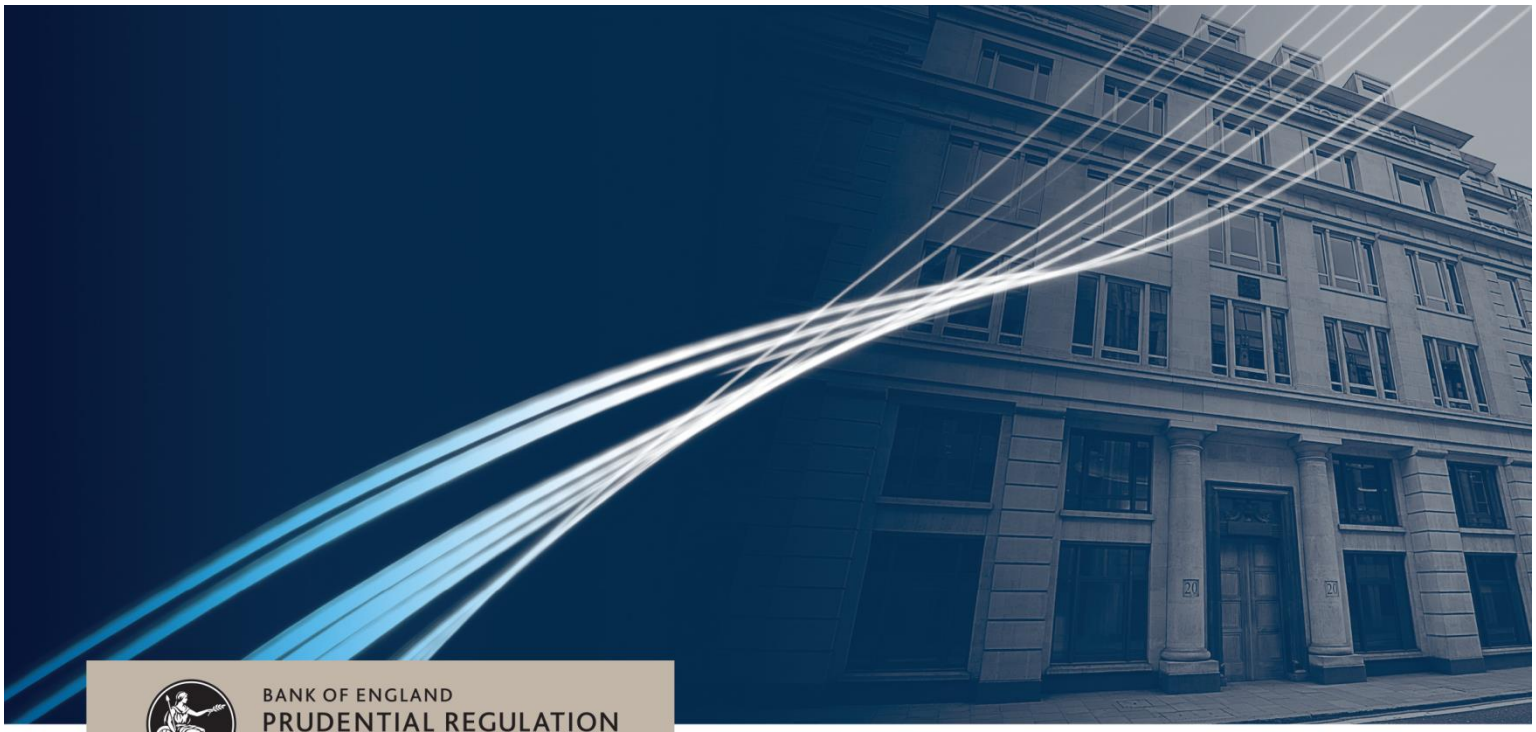

BANK OF ENGLAND
PRUDENTIAL REGULATION AUTHORITY

Consultation Paper | CP48/16

Solvency II: Matching adjustment - illiquid unrated assets and equity release mortgages

December 2016

Prudential Regulation Authority
20 Moorgate
London EC2R 6DA

Prudential Regulation Authority, registered office: 8 Lothbury, London EC2R 7HH.
Registered in England and Wales No: 07854923

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Responses are requested by Tuesday 14 March 2017.

Please address any comments or enquiries to:
CP48/16
Prudential Regulation Authority
20 Moorgate
London
EC2R 6DA

Email: CP48-16@bankofengland.co.uk

Contents

1 Overview

1.1 This consultation paper (CP) sets out the Prudential Regulation Authority's (PRA) proposed expectations in respect of firms investing in illiquid, unrated assets within their Solvency II matching adjustment (MA) portfolios. It also provides feedback to the responses the PRA received to Discussion Paper (DP) 1/16 'Equity release mortgages'.[1]

1.2 This CP is relevant to life insurance and reinsurance companies holding or intending to hold restructured illiquid assets (including equity release mortgages (ERMs)) in an MA portfolio.

1.3 The PRA has observed that insurance firms are increasingly including illiquid, unrated assets (including, restructured ERMs) within their Solvency II MA portfolios. These assets can be a good match for long-term annuity liabilities and increasing investment in real assets may have wider economic benefits. The PRA recognises these can be complex assets that lack observable market prices as well as external credit ratings, making it difficult to assess what an appropriate amount of MA benefit should be. The PRA seeks to support firms wishing to invest in illiquid assets by giving clarity about its expectations of appropriate practice.

1.4 The draft supervisory statement (SS) at Appendix 1 contains proposals relating to internally-rated assets that are included in MA portfolios. It also contains specific proposals relating to the valuation approach and fundamental spread (FS) mapping to be used for restructured ERMs when determining their contribution to a firm's overall MA benefit. This CP seeks views on those proposals.

1.5 This CP follows from DP1/16, which sought views on ERM valuation, capital treatment, risk management and associated matters. In that DP, the PRA sought a range of views on good practice for managing the risks introduced by investing in ERMs. The PRA, having considered the responses, is now consulting on proposals relating to the supervisory approach to ensuring MA benefits are not misstated in illiquid internally rated MA portfolios. Appendix 2 to this CP includes a summary of responses from DP1/16. The finalisation of the industry-wide review of ERMs will build on the proposals in this CP.

1.6 The proposed implementation date for the proposals in this CP is 2017 H2.

1.7 This consultation closes on Tuesday 14 March 2017. The PRA invites feedback on the proposals set out in this consultation. Please address any comments or enquiries to CP48-16@bankofengland.co.uk.

2 Proposals

2.1 Some illiquid assets can be highly complex (for example, restructured loans and assets with embedded options). They can also have wide spreads and give rise to high MA benefits.[2] More complex exposures, or assets where the FS mapping results in a large MA benefit, are likely to present greater risks to firms, including the risk of the MA benefit being overstated. This risk is likely to be increased further where assets are valued using alternative valuation

1 March 2016; www.bankofengland.co.uk/pra/Pages/publications/cp/2016/dp116.aspx.

2 In reality the MA benefit is calculated for the MA portfolio in aggregate, rather than on an asset-by-asset basis. However, throughout this CP, 'the MA benefit on an asset' is used as an abbreviated way of referring to 'the contribution that the asset makes to the overall amount of MA benefit derived from the matching portfolio'.

methods according to Article 10(5) of the Solvency II Delegated Regulation, ie where the spread assumed to be earned is not observable.

2.2 Illiquid assets often lack credit ratings from External Credit Assessment Institutions (ECAIs). In this case, to determine how much MA benefit the asset will attract, a firm must map the asset to a certain level of FS. In order to do so firms generally assign an internal credit rating to the asset and then decide how this internal rating should be mapped onto a Credit Quality Step (CQS). For such assets both the level of total spread and the level of FS are determined based on firms' internal processes.

2.3 The PRA intends to monitor the level of MA benefit claimed by firms investing in illiquid and unrated assets and gain assurance that the firm is not claiming an inappropriate level of MA benefit. For this purpose the PRA's approach will be based on selective in-depth reviews for those assets it judges to be most at risk of MA benefit misstatement.

2.4 The PRA set out its expectations regarding the use of internal credit assessments in the FS mapping process in a letter to firms in June 2015. As noted in the letter, to avoid any undue bias arising from a firm's use of internal credit assessments, the PRA's view remains that for such purposes internal credit assessments should be broadly consistent with the issue ratings that ECAIs would produce, ie they should lie within the plausible range of a rating given by an ECAI, to mitigate the risk of undue bias in the resulting FS.[1]

2.5 In order to implement these in-depth reviews in a proportionate and risk-based way the PRA will establish appropriate thresholds for intervention. These thresholds will be calibrated based on data already available to the PRA or collected from firms on a voluntary basis and will be reviewed from time to time in the light of experience and market developments. Development of these thresholds will enable the efficient allocation of PRA resources.

2.6 Where for certain assets the level of MA benefit exceeds those thresholds, the PRA will seek additional assurance regarding the appropriateness of the benefit being claimed. These reviews will help to verify the adequacy of firms' technical provisions. The draft SS clarifies the PRA's expectations regarding those reviews, both in general and in the case of one specific asset class (ERMs).

2.7 Regarding ERMs, responses to DP1/16 showed a wide variety of views on some aspects of internal credit assessments (eg around governance and validation) and a wide variety of practice regarding valuation of the embedded guarantee, with suggestions that sometimes diverged from conventional approaches to the valuation of guarantees in incomplete markets. The PRA's approach will include verification that the risks arising from guarantees embedded in the asset have not led to an inappropriately high MA. For the purposes of this assessment certain valuation principles are specified to verify that the risks arising from such guarantees are allowed for in the FS and do not result in increased MA.

2.8 Given the complexity of restructured ERM notes, the draft SS contains some provisions specific to that asset class. The PRA will consider the merits of setting out similarly granular expectations for other particular asset classes in future.

1 'Solvency II: matching adjustment', June 2015: www.bankofengland.co.uk/pra/Documents/solvency2/maletter1June2015.pdf.

3 The PRA's statutory obligations

3.1 The proposals set out in the draft SS are compatible with the PRA's statutory objectives under the Financial Services and Markets Act 2000 (FSMA). The PRA's proposals would contribute to the PRA's general objective to promote the safety and soundness of firms and the PRA's specific insurance objective to contribute to the securing of an appropriate degree of protection for those who are or may become insurance policyholders, by helping the PRA ensure firms appropriately value ERM assets and where applicable gain an appropriate level of MA benefit in respect of restructured illiquid asset holdings.

3.2 When determining the general policy and principles by reference to which it performs particular functions, the PRA is legally required, so far as is reasonably possible, to facilitate effective competition in the markets for services provided by PRA-authorised persons in carrying out regulated activities. The PRA does not consider that the proposal will hinder effective competition.

3.3 The PRA has considered matters to which it is required to have regard, and it considers that the draft SS is compatible with the regulatory principles and relevant provisions of the Legislative and Regulatory Reform Act 2006.

3.4 The PRA considers that the regulatory principles of most relevance to the proposals are:

- the need to use resources in the most efficient way - the proposals specify the PRA's expectations and the indicators the PRA will consider when the PRA exercises an enhanced level of scrutiny thereby allowing the PRA to focus its resource in a more efficient manner;

- the responsibilities of senior management to comply with the Senior Insurance Managers Regime – the proposals highlight the areas and the functions most relevant and the requirement that senior managers are responsible for ensuring an appropriate FS is applied; and

- that the PRA exercise its functions as transparently as possible - the proposals clearly set out for firms how the PRA will exercise its supervisory duties for scrutiny by firms in the proposed CP.

3.5 The proposed draft SS clarifies the PRA's expectations of firms and does not impose additional requirements. Where the PRA decides it is appropriate to commission a skilled persons report, that decision will be made on a case by case basis and subject to the existing considerations applying to the use of skilled persons reports as set out in Policy Statement 5/14 'The PRA Rulebook'.[1] The overall economic effects of the proposals in the draft SSs has been considered previously, in the Financial Services Authority's (FSA's) CP11/22 'Transposition of Solvency II – Part 1'[2] and the PRA's CP16/14 'Transposition of Solvency II: Part 3'.[3]

1 June 2014; www.bankofengland.co.uk/pra/Pages/publications/ps/2014/ps514.aspx.
2 November 2011; www.bankofengland.co.uk/publications/Documents/other/pra/policy/2013/transportationofsolvency2-1cp11-22.pdf.
3 August 2014; www.bankofengland.co.uk/pra/Pages/publications/cp/2014/cp1614.aspx.

Impact on mutuals

3.6 When making general policy, the PRA considers whether, in its opinion, the impact of the proposed rules on mutuals will be significantly different from the impact on other firms. It is not expected that the effect on mutuals will be significantly different to that of other firms.

Equality and diversity

3.7 The PRA has performed an assessment of the policy proposals and has not identified any equality or diversity implications.

Appendices

1	**Draft supervisory statement – 'Solvency II: Matching adjustment - illiquid unrated assets and equity release mortgages'**
2	**Feedback statement on DP1/16 'Equity release mortgages'**

Appendix 1 – Draft supervisory statement 'Solvency II: Matching adjustment – illiquid unrated assets and equity release mortgages'

Contents

1 Introduction

1.1 This supervisory statement (SS) sets out the PRA's expectations in respect of firms investing in illiquid, unrated assets within their Solvency II matching adjustment (MA) portfolios. It is addressed to life insurance and reinsurance companies holding or intending to hold restructured illiquid assets (including equity release mortgages (ERMs)) in an MA portfolio.

1.2 This statement should be read in conjunction with PRA Rulebook SII firms Technical Provisions rules 6 and 7.

1.3 As part of firms' MA applications, they are required to explain how they will assign appropriate fundamental spreads (FS) to the assets in the MA portfolio. For assets with credit ratings provided by External Credit Assessment Institutions (ECAIs), the FS assignation process is relatively prescriptive. In contrast, for internally-rated assets there is more judgement involved in determining which FS should apply.

1.4 Firms need to have confidence that the risk management of these more complex credit exposures, in particular the FS mapping process and the size of the MA benefit claimed on them, is fit for purpose. It is therefore expected that firms will be able to provide strong evidence to support the FS mapping for those internally-rated assets that present the greatest complexity and/or risk exposure.

1.5 The PRA reminds firms of the responsibilities resting with Senior Insurance Management Functions under the Senior Insurance Managers Regime (SIMR). Specifically in this case the:

- Chief Actuary function is responsible for advising the board about the reliability and adequacy of the calculation of the technical provisions;

- Chief Risk function is responsible for reporting to the board on the risk management strategies and processes in relation to credit assessments; and

- Head of Internal Audit function is responsible for independent assurance on the adequacy and effectiveness of these processes and the firm's accounting and reporting procedures.

Where material reliance is being placed on the FS mapping for internally-rated assets, each of these senior managers will need to be satisfied that an appropriate FS is being applied.

1.6 Chapter 2 of this SS clarifies the PRA's expectations where internal credit assessments are used as part of determining the FS, including some expectations that are specific to restructured ERMs. Chapter 3 then sets out some principles to be applied when assessing the risks from guarantees embedded within ERMs, for the purposes of determining an appropriate FS for restructured ERM notes.

2 Use of internal credit assessments for assigning fundamental spreads

2.1 Firms are reminded that performing an internal credit assessment and mapping an asset onto an FS are two distinct processes. The PRA expects that a firm's FS mapping process will include an assessment of whether the FS appropriately reflects the risks retained by the firm, as per rule 7.2(2) of the Technical Provisions Part of the PRA Rulebook.

2.2 As part of the initial MA approval process, the PRA requires firms to obtain proportionate independent assurance reviews of the internal credit assessment processes used for assets within the MA portfolio.[1] These reviews generally focus on providing assurance on the processes themselves, as opposed to the internal ratings (or FSs) that firms assign to their assets as a result of those processes.

2.3 Regarding the use of internal credit assessments in the FS mapping process the PRA's view is that for such purposes internal credit assessments should be broadly consistent with the issue ratings that ECAIs would produce, ie they should lie within the plausible range of a rating given by an ECAI, to mitigate the risk of undue bias in the resulting FS.[2]

2.4 The overarching aim of the FS mapping is to determine how much of the spread on an eligible asset should be assumed to reflect the risks retained by the firm on the assumption that the asset is held until maturity. To serve as a useful starting point for an FS mapping, the credit assessment should consider all possible sources of credit risk, both qualitative (eg due to a lack of legal enforceability of a scheduled payment) and quantitative (eg due to economic stresses), and how these may interact. The PRA expects firms to make adjustments to their internal credit assessments (either upward or downward) where this is necessary to take into account all of the features of the asset, or to account for any risks arising from qualitative factors such as lack of data that have not already been allowed for within the internal credit assessment.

2.5 To determine whether these expectations are being met, the PRA will seek assurance on firms' FS mappings in a proportionate way, focusing on the exposures which in its view present the greatest risk and potential for inappropriately large MA benefit. In assessing the risk of an exposure to a particular asset class, the PRA will consider both the proportion and the absolute amount of the spread that is being claimed as MA benefit, as well as the materiality of the exposure. Specifically the PRA will focus on assets which present some or all of the following features:

- they are more complex (eg because they have been restructured); or
- the absolute amount of MA benefit derived from the asset is material to the firm; or
- the MA benefit (expressed as a proportion of the total spread on the asset) is high either in its own right or when compared to the benefit from a comparable reference instrument.

2.6 The PRA will calibrate thresholds around these features using data on firms' asset exposures. For assets that breach these thresholds, the PRA will seek additional assurance that the assigned FSs are appropriate, taking into account the specific risks posed by the assets.

2.7 The detailed scope of the assurance will be set by the PRA in each case but should, without limitation, include:

- a detailed description of all the risks affecting each asset and how the insurer has satisfied itself that it has considered all potential sources of default and loss;

1 As previously communicated to firms in 'Solvency II: matching adjustment', March 2015: www.bankofengland.co.uk/pra/Documents/about/praletter280315.pdf.
2 'Solvency II: matching adjustment', June 2015: www.bankofengland.co.uk/pra/Documents/solvency2/maletter1June2015.pdf.

- the methodology for assessing and quantifying these risks, including the scope of qualitative and quantitative factors considered and the calibration of any stresses;

- the availability, appropriateness, and quality of the data over the credit cycle on which these risk assessments and calibrations are based, including how the firm has allowed for partially available or missing data in the internal credit assessment and the FS mapping;

- justification for any reliance being placed on expert judgement;

- evidence that the credit assessment and FS mapping have been performed by individuals with relevant asset-specific credit risk expertise, who are free of conflicts of interest, be they internal or external to the firm;

- validation of the results of the FS mapping process. For example, how the insurer has satisfied itself that the internal credit assessment used as a starting point will provide an accurate prediction of probability of default and expected loss, and how the overall FS mapping process has allowed for all of the risks retained by the firm;

- the process for ongoing review of the credit assessment and FS mapping, including how the firm has satisfied itself that these will remain appropriate over time and under a range of operating experience. It is expected that the credit assessment and mapping will be reviewed at regular intervals, as well as in response to changes in relevant economic conditions; and

- how any previously identified shortcomings in the firm's internal credit assessment process (including any that were identified as part of the independent reviews mentioned in paragraph 2.2 above) have been addressed.

2.8 If the PRA judges that a firm is unable to provide satisfactory assurance using its own internal resources, it may choose to commission an independent review, which may take the form of a report commissioned from a skilled person under Section 166 of the Financial Services and Markets Act 2000 (FSMA).

Assurance on internal credit assessments for restructured equity release mortgages

2.9 The PRA expects that internal credit assessments for restructured ERM notes will be anchored on a risk analysis of the legal documentation between all parties concerned. This includes, for example, the original loan agreement between the borrower and the lender, the contract between the originator and the insurance firm, and the legal structure of the notes issued by the special purpose vehicle (SPV).

2.10 As mentioned in paragraph 2.4, firms should consider both qualitative and quantitative sources of risk in their credit risk assessments.

2.11 Some of the quantitative features the PRA would expect to be considered explicitly include (but are not limited to):

- underwriting terms of the underlying ERMs (eg prepayment terms, interest rate at which the loan will accrue, conditions attaching to the borrowers, conditions attaching to the property);

- exposures (eg loan to value ratios, ages of borrowers, health of borrowers);

- strength of security (eg location, state and concentration of the properties used as collateral, rights of the SPV to substitute underlying ERMs);
- leverage, including a full analysis of the cash-flow waterfall between the loan receivables and the cash flows paid to the senior noteholder; and
- stress and scenario testing of the amount and timing of receivables, for instance as a result of:
    - changes in the value of the properties that collateralise the ERMs, both in the immediate and longer term, including allowance for additional costs (eg dilapidation costs, transaction costs relating to sales);
    - demographic risks relating to the borrowers under the ERMs (eg longevity trend and volatility, morbidity); and
    - prepayment risk.

2.12 Where a firm has restructured an ERM portfolio into a range of tranches, the spread on a given tranche should be commensurate with the level of risk to which that tranche is exposed. The more junior the tranche, the greater the spread would be expected to be in order to reflect the higher exposure to risk.

2.13 Likewise the PRA would expect to see evidence that the securitisation structure provides loss absorbency to protect the senior note payments, eg a proportion of the cash flows accruing to the junior note in the early years of the transaction being kept in reserve in case of subsequent losses that reach the senior notes.

2.14 Reliance on any credit or liquidity-enhancing features should be carefully justified, taking into account the availability of these facilities over the expected lifetime of the SPV, including under stressed scenarios such as those referred to in paragraph 2.11.

2.15 Qualitative factors that a firm may need to reflect in the internal credit assessment could include:

- uncertainty over the quantitative risk factors above resulting from a lack of data;
- the terms and conditions of the legal agreement(s) between the insurer and the SPV (eg cross-default provisions, covenants);
- uncertainty about the recoverability of the receivables when they become due (eg due to legal rights or practical considerations); and
- quality of loan servicing (eg ability to monitor properties and maintain knowledge of exposure and risk).

3 Assessing the risks from embedded guarantees in equity release mortgages

3.1 This chapter sets out the PRA's approach to assessing the appropriateness of the FS applied to restructured ERM notes. The size of the MA benefit arising from restructured ERM notes depends on the:

- contractually-agreed cash flows of the notes and the value placed on those notes, which will determine their spread; and

- FS assigned to the notes. The FS must reflect the risks that the firm retains in relation to the cash flows of the notes, including default and downgrade risk.

3.2 ERMs are complex assets that often have embedded features such as a 'no negative equity guarantee' (NNEG) and no fixed maturity date. Restructuring them to produce MA-eligible notes with fixed cash flows adds a further layer of complexity.

3.3 As with any securitisation, there is a risk that the valuation and credit assessment of the MA-eligible notes is not aligned with their true risk profile, leading to an FS that does not reflect all of the risks retained by the firm. As noted in paragraph 2.5 the PRA will apply a higher supervisory intensity where it considers that there is a risk that the FS on internally-rated assets may be inappropriate. For restructured ERM notes, this increased oversight will include both an assessment of the quality of the firm's internal credit assessments (see paragraphs 2.9 to 2.15), and a verification that the risks retained by the firm as a result of the embedded NNEGs have been appropriately allowed for, as described below.

3.4 The NNEG guarantees that the amount repayable by the borrower under the ERM can never exceed the market value of the property collateralising the loan at the repayment date. As such it is an important source of risk for an ERM. As part of the review of the adequacy of the FS, the PRA will assess the extent to which it properly reflects the NNEG risks retained by the firm.[1] Compensation for these NNEG risks should not lead to an MA benefit.

3.5 Assets such as ERMs generally do not have directly observable market prices, and so nor do they have directly observable spreads. Instead a spread must be derived, having first determined both a fair value for the ERM using alternative valuation methods as well as assumptions about cash flows.

3.6 The presence of an NNEG will increase the derived spread on an ERM versus an equivalent loan without such a guarantee. It will also increase the amount of spread that should properly be attributed to risks retained by the firm.

3.7 When determining the fair value of an asset for the purposes of deriving its spread, it is important that any embedded guarantees are valued consistently with the rest of the asset (ie on fair value principles).[2] Otherwise, the component of the asset's spread that is assumed to represent compensation for the risks arising from the guarantee may be underestimated. Further, it is not sufficient simply to ensure that the value placed on the asset as a whole represents a fair value, since there could still be an incorrect attribution of value between the NNEG and the other components driving the valuation.

3.8 The PRA will assess the allowance made for the NNEG risk against its view of the underlying risks retained by the firm. This assessment will include the following four principles, which are explained in more detail below:

(I) securitisations where firms hold all tranches do not result in a reduction of risk to the firm;

1 The focus on the NNEG should not be taken to imply that other risks (eg prepayment risk) are not considered material by the PRA; and indeed Chapter 2 is clear that these other risks should all be considered in the internal credit assessment and FS mapping.

2 The PRA's rules on valuation are set out in Valuation 2.1 of the PRA Rulebook.

(II) the economic value of ERM cash flows cannot be greater than either the value of an equivalent loan without an NNEG or the value of future possession of the property providing collateral;

(III) the value of future possession of property should be less than the value of immediate possession; and

(IV) the compensation for the risks retained by a firm as a result of the NNEG must comprise more than the best estimate cost of the NNEG.

3.9 The best estimate cost of the NNEG mentioned in the last paragraph does not refer to the present value of the cost of the guarantee if the future were to develop as per the firm's central expectation. Instead it refers to the mean of a stochastic distribution of possible future guarantee costs, where the random variables used in the stochastic projection have been calibrated based on a best estimate of their true distributions.

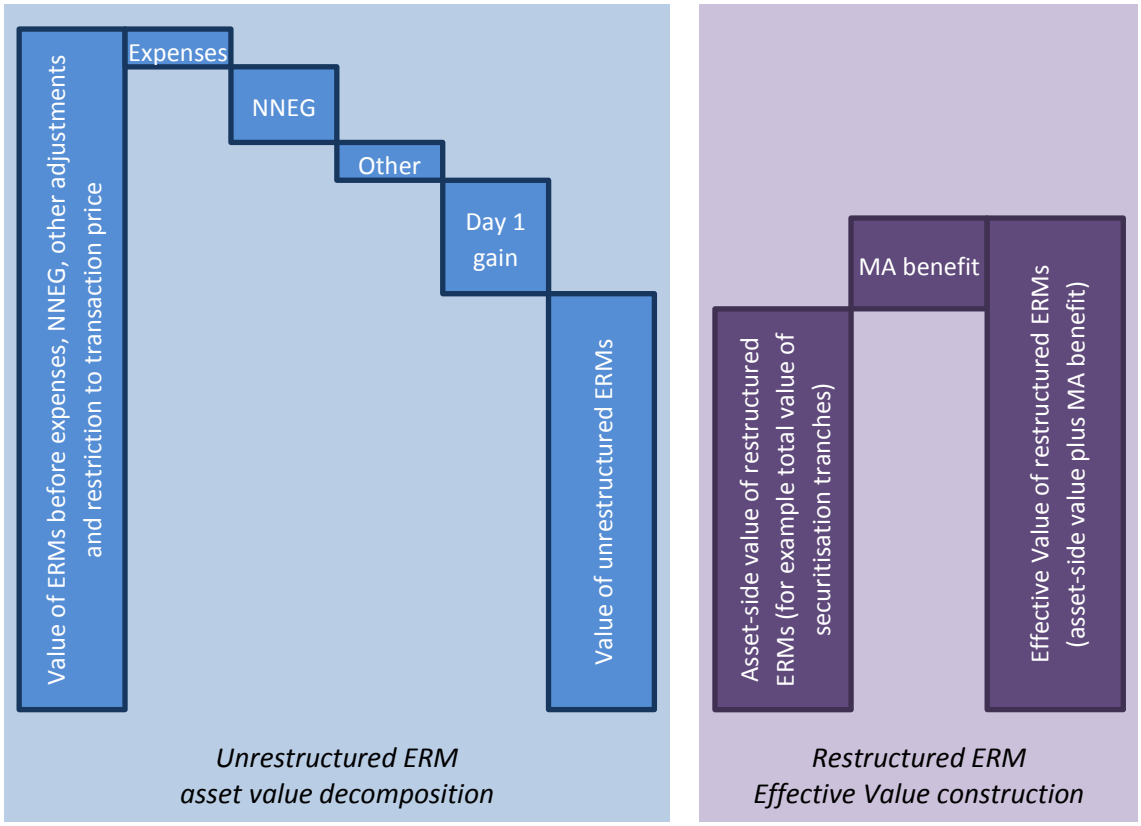
(I) Securitisations where firms hold all tranches do not result in a reduction of risk to the firm

3.10 Where firms hold all of the tranches of a securitisation (as is generally the case for correctly restructured ERM portfolios), the economic substance of their aggregate exposure remains the same regardless of the form of the securitisation. Understanding the risks posed to a firm by the NNEG, and how these risks have been distributed between the various tranches of restructured notes, is an important part of ensuring that the FS appropriately reflects all of the NNEG risks that are retained by the firm in relation to the cash flows on the MA-eligible notes.

3.11 Some of the exposure to the risks posed by the NNEG will remain in the junior tranches outside of the MA portfolio. Nevertheless it is important to verify that the combination of the junior tranche values and the FS mapping of the MA-eligible tranche(s) have appropriately covered all of the risks retained by a firm that holds the ERMS until maturity, including those that arise from the NNEG. For this reason the PRA will assess the overall 'Effective Value' of the ERM against the components of the value of the unrestructured ERM (the 'economic value decomposition'), as described in paragraphs 7.8 and 7.9 of DP1/16 and illustrated in Figure 1 below.

3.12 This assessment will be carried out on a firm-by-firm basis to provide assurance that all of the risks that the firm is exposed to as a result of the NNEG have been appropriately reflected, either in the value of the securitised assets or in the FS assigned to those assets in the MA portfolio.

Figure 1: Illustration of the construction of Effective Value



(II) The economic value of ERM cash flows cannot be greater than either the value of an equivalent loan without an NNEG or the value of future possession of the property providing collateral

3.13 This concept was introduced as the first proposition of paragraph 4.9 of DP1/16. It is derived from the following considerations:

(i) Given the choice between an ERM and an equivalent loan without an NNEG, a market participant would choose the latter, since either the guarantee is not exercised, in which case the ERM and the loan have the same payoff, or it is, in which case the ERM pays less.

(ii) Similarly, a market participant would prefer future possession of the property on exit to an ERM, given that the property will be of greater value than the ERM if the guarantee is not exercised, or the same value if it is.

(III) The value of future possession of a property should be less than the value of immediate possession

3.14 This statement is equivalent to the assertion that the deferment rate[1] for a property is positive. The rationale can be seen by comparing the value of two contracts, one giving immediate possession of the property, the other giving possession ('deferred possession') whenever the exit occurs. The only difference between these contracts is the value of foregone rights (eg to income or use of the property) during the deferment period. This value should be positive for the residential properties used as collateral for ERMs.

1 By deferment rate the PRA means a discount rate that applies to the spot price of an asset resulting in the deferment price. The deferment price is the price that would be agreed and settled today to take ownership of the asset at some point in the future; it differs from the forward price of an asset in that the forward price is also agreed today, but is settled in the future.

3.15 It is important to note that views on future property growth play no role in preferring one contract over the other. Investors in both contracts will receive the benefit of future property growth (or suffer any property depreciation) because they will own the property at the end of the deferment period. Hence expectations of future property growth are irrelevant for this statement.

(IV) The compensation for the risks retained by a firm as a result of the NNEG must comprise more than the best estimate cost of the NNEG

3.16 As noted in paragraphs 3.10 and 3.11, the purpose of the assessment of effective value is to verify that all risks that have been retained by the firm on the assumption that it holds the ERMs until maturity have been appropriately reflected in the value assigned to the different tranches and the FS derived for those tranches in the MA portfolio. The NNEG component of the economic value decomposition should capture all of the risks that the firm remains exposed to as a result of giving this guarantee. Noting that the FS captures more than the expected cost of defaults, but also includes additional components for the cost of downgrades (eg calibrated as the cost of rebalancing the portfolio to maintain a certain probability of default), as well as a floor to allow for other sources of uncertainty in the cash flows, the PRA's view is that the compensation for the risks that have been retained by the firm as a result of giving the NNEG will comprise more than the best estimate cost of the guarantee.

3.17 The PRA is not at this stage expressing a view on the specific calibration of adjustments that should be made to the best estimate cost of the NNEG to ensure that it would be appropriate in the economic value decomposition. Nevertheless the PRA's view is that an unadjusted best estimate cost cannot be sufficient for this assessment. As part of its reviews of restructured ERM notes, the PRA will ask firms how they have ensured that all of the risks they have retained as a result of giving the NNEG have been allowed for in the valuation of the notes and the selection of the FS for those notes in the MA portfolio.

Appendix 2 - Feedback statement on DP1/16 'Equity release mortgages'

Introduction

On 31 March 2016 the PRA published Discussion Paper (DP)1/16 Equity release mortgages. In response to the DP the PRA has met industry stakeholders and received fifteen responses mainly from the insurance industry and their representatives.

This appendix is intended to summarise the responses received and in certain cases provides a PRA comment. The PRA is grateful to all who responded to the DP.

Question 1:

(i) Which of the challenges in paragraphs 3.12 and 3.13 do you consider to be the most and least significant?

'3.12 The challenges of valuing ERMs include estimating exit probabilities, estimating drawdown rates (for products permitting future drawdowns) and setting property-related assumptions. In addition, appropriate discount rates need to be set for the cashflows being valued. Some of these challenges are explored in the chapters that follow.

3.13 The former Individual Capital Adequacy Standards (ICAS) regime permitted insurers to derive a liquidity premium directly from ERMs. Where appropriate, this led to a reduction in the value of liabilities backed by ERMs. The current Solvency II regime has a similar concept in the form of the matching adjustment, but with more prescriptive rules than ICAS. In particular, ERMs do not have fixed cashflows and so do not meet the Solvency II eligibility criteria for inclusion in an MA portfolio. This has led some firms to restructure their ERM portfolios to meet these eligibility criteria, as discussed further in Chapter 7. To assist with the transition from ICAS to Solvency II, the PRA published guidance to firms on ERM restructuring, for example in the Insurance Supervision Executive Director's letter of 20 February 2015.'

(ii) What additional challenges should be considered?

(iii) Where you have identified significant challenges in parts (i) and (ii) above, what solutions would you recommend?

Summary of responses

There was consensus that property assumptions (growth and volatility) were most significant. Respondents noted the heterogeneous nature of portfolios and the challenge of valuing a 'no negative equity guarantee' (NNEG) driven by individual properties rather than House Price Index (HPI) performance.

A number of respondents cited as a major challenge the need for securitisation to allow Equity Release Mortgages (ERMs) to become part of a matching adjustment application.

Some respondents suggested it would be helpful for the PRA to publish indications of base and stress parameters deemed desirable for ERMs.

Question 2:

(i) Which ERM valuation inputs do you think should be classified as Level 1, 2 and 3?

(ii) Which of these are, in your view, most significant to the valuation?

(iii) What other considerations and controls do you believe should be in place when classifying the valuation of inputs and the ERMs as Level 1, 2 or 3 (as defined in IFRS 13)?

Summary of responses

(i) There was consensus that the inputs were mostly Level 3, although one respondent thought they were mostly Level 2, including the 'ERM liquidity premium'. Market data such as risk free rates, and market historical data (not future expected data) were agreed to be Level 2. Inputs assumed to be Level 3 included decrement rates, mortality, delay in settlement, spreads over risk free etc.

(ii) and (iii) The majority of respondents considered the most significant input to be the ERM discount rate, ie the rate required to equate the model value to the loan value. However, there were other views expressed, including the price that someone is willing to pay in an open market, or the HPI and prepayment rates. One respondent highlighted that the prepayment rate assumption is a 'key area of uncertainty', also noting that '...given the relatively small percentage of the overall ERM value that the NNEG represents, we consider the HPI assumption to be less significant than the yield curve.'

Question 3:

To what extent could a small portfolio lead to a material concern about the experienced exit rates? Do you think a small portfolio size should be considered a source of valuation uncertainty? Please outline any quantitative analysis or research that would justify your views.

Summary of responses

A few respondents suggested that if the overall exposure to ERMs was small within the overall asset portfolio, then this error did not really matter. Four respondents suggested that 1,000 loans was the minimum exposure required at which uncertainty became immaterial. All agreed that in a small portfolio there will be greater uncertainty about the timing and the magnitude of future ERM cash flows, and so there will be greater uncertainty in the valuation of the ERM portfolio. However, a number of respondents felt that few, if any, firms in the ERM market had small portfolios that might lead to greater uncertainty.

Question 4:

Please rank the three types of exit (mortality, long-term care and early repayments) by (1) financial impact and (2) degree of uncertainty, and provide commentary for the rankings. The PRA invites submission of examples of what you consider to be good practice in respect of setting assumptions for long-term care rates, as there is generally less data available to forecast long-term care rates than rates for the other exit types.

Summary of responses

Respondents indicated that either mortality or prepayment represented the largest financial impact, but respondents were almost evenly split on which this was. All were agreed that movement into long-term care was the lowest impact.

Regarding uncertainty, there was almost complete agreement that mortality was least uncertain. There was a majority view that prepayment was the most uncertain, but some felt that it was movement into long-term care. It was also noted that 'the empirical observation is that there are several times as many redemptions recorded as being due to death than for transfers to long-term care'.

Question 5:
How should fair values of ERMs reflect compensation for the uncertainty in exit rates? Please share evidence from actual transactions, if possible.

Summary of responses

A number of respondents thought that this should be reflected in the discount rate. Some felt it should reflect secondary market transactions or newly originated ERMs. One respondent suggested 'projecting best-estimate loan proceeds and capturing the risk and illiquidity premium via the discount rate used, or by applying a risk-adjustment to the cashflows and discounting using risk-free'.

Question 6:
(i) How should ERM valuation reflect the relationships in paragraph 4.9?

> 4.9 The following two relationships hold regardless of whether or not the NNEG is construed as a series of put options, or whether it is valued any other way. First, the present value of an ERM payoff at an assumed exit date cannot exceed the present value of receiving the property at that date where a NNEG applies (because the NNEG restricts the loan repayment to the value of the property, as discussed in paragraphs 3.9 and 3.10). Second, the value of having immediate possession of the property is higher than the present value of receiving the property at some point in the future (put differently, deferral of possession leads to a reduction in current value, arising from foregone income or inability to use an asset).

(ii) Other than cases where the loan advance is used to improve the property, are there any circumstances in which you believe these relationships would not hold?

Summary of responses

Most respondents agreed with the first relationship. Some respondents agreed with both. Those who did not agree with the second relationship broadly took the following lines of argument:

- The assumption that the present value of deferred possession must be a decreasing function of time to deferment is equivalent to the assumption that property has zero growth, or that a property asset will earn only the risk free rate. This assumption only applies in a deep and liquid market.

- Academic/financial market theory does not apply to ERMs. One respondent posited that 'an academic might argue that, in looking at the NNEG, one should assume that the asset earns the risk free rate, which would then be reduced by either a rental yield or a 'holding cost', as implied by this relationship statement. In practice, a buy-to-let investor is unlikely to buy if he genuinely believes that the rental income plus price increase will equal the risk free rate, given that he has to borrow at the mortgage rate'.

PRA Comment

Regarding the second statement, it is important to clarify that it makes no assumptions regarding the future rate of house price growth. The statement refers only to values at the valuation date (eg time 0) and in particular compares the value of having ownership of a property asset today against the present value of having ownership of that asset only at some point in the future (say time T), that is the value today of possession deferred until time T. In both cases an investor would benefit or suffer from whatever house price growth or decline were to take place between time 0 and time T. Therefore house price growth is not a relevant consideration in this comparison, and neither is the depth or liquidity of the market. The difference in value will be driven instead by the benefit that a knowledgeable, willing investor would be expected to attach to owning the asset between time 0 and time T. Where such an investor attaches a positive benefit to property ownership between time 0 and time T it will be the case that immediate possession of the asset is worth more than deferred possession. Nor is any specific financial market theory necessary to support this statement beyond the principle of non-satiation which should apply to knowledgeable willing parties operating in an arm's length transaction.

This assertion is consistent with observable facts in the housing market where, for example, a 99-year leasehold trades for similar value to a freehold with vacant possession. The former reflects the right of ownership from time 0 to T=99 years, the latter is the value of immediate ownership. In this case almost all of the value of the property is reflected in the ownership over the first 99 years. There is no implication that participants in the freehold and leasehold market have any particular views on future house price growth.

Question 7:

(i) If alternative valuation methods are used (ie where quoted market prices in active markets are not available), how should the parameters of valuation models be calibrated in a way that demonstrates consistency with the requirement of Solvency II Delegated Regulation ((EU) 2015/35) Article 10(6) to 'make maximum use of relevant market inputs?'

(ii) Please include a discussion of what you consider is good practice in relation to deriving appropriate inputs for current and future property prices (including how the assumed total return is shown to be appropriate, having regard to assumptions around rental yields, reduced to allow for expected associated management costs and void periods), property volatility, dilapidation adjustments, sales costs, timing of sales and the discount rate.

(iii) The list of parameters in (ii) is based on valuation methodologies the PRA has seen used by the life insurance industry and in academic papers. Please include any other parameters that you consider may be relevant to the valuation of the NNEG.

Summary of responses

There was no consensus on the first part of the question, although most respondents either explicitly or implicitly followed the line that there is no active liquid market in residential property derivatives (or ERMs more generally) so it is a given that there are no or limited observable financial market inputs. No respondents mentioned the availability of data on freehold and leasehold values at different maturities. One respondent noted the unusual nature of the market in domestic houses and supply and demand issues. In line with responses to Question 6, many considered that long-term future house price growth assumptions were relevant to the NNEG valuation in addition to property volatility.

There was a range of views expressed in response to the second part of the question. A few respondents commented that rental yields might be relevant to the valuation of ERMs, although one respondent challenged whether rental yields and property management costs are relevant at all, given that they are only concerns for directly held investment property.

One respondent noted that a number of participants in the ERM space have historically sought property option prices from banks in order to gauge the NNEG hedge cost. They noted that 'these prices implied higher option prices and volatilities than ERM funders were using'. They also noted that this reflects the fact that 'banks already have a large exposure to property and cannot themselves hedge the risk, there is no residential property option market, and the level of resulting risk aversion/profit margin included in the pricing'.

Question 8:

(i) What types of property derivatives are you aware of currently, either in the UK or in other territories?

(ii) Are these index derivatives or derivatives on individual properties?

(iii) Are you aware of over-the-counter providers who could fully or partially hedge the risk drivers of the NNEG?

(iv) What factors do you think participants in such a market should consider when pricing options similar to the NNEG?

(v) To what extent should unobservable inputs such as hedging costs be reflected in the valuation of the NNEG, having regard to the requirements of IFRS 13 and Solvency II Delegated Regulation Article 10(6), and how, in your view, should this be done in practice?

Summary of responses

(i) and (ii) Most respondents agreed either that there were no residential property derivatives, or that there were but they were too limited or illiquid to be any use. All agreed that there were no derivatives on individual properties, and that any derivatives would have to reference an index, such as the Halifax House Price Index Investment Property Databank (IPD) futures, or the NCREIF Property Index (NPI) in the US (largely commercial properties).

(iii) and (iv) Most were aware of over-the-counter providers (banks). One respondent thought there were no current providers, but in answer to part (v) stated that while banks were initially interested in these solutions, experience was that 'after protracted negotiations' they generally backed away at the point they understood how long they would be exposed to this risk on their own balance sheet, and how little understanding of the risk there was (from their perspective). They also noted 'historic examples of companies providing NNEG hedges, such as bespoke house price derivatives on reversion mortgage portfolios'. Suggested factors broadly replicated answers to Question 2 above.

(v) There was little consensus on this part of the question. Some respondents stated that traditional option and guarantee pricing techniques considered appropriate for the wider investment market (eg equity market) to valuing the NNEG might not be appropriate on the basis of the differences between the residential property market and the wider investment market, because residential property is not purely an investment asset.

Respondents put forward three options:

(a) value the NNEG as the cost of transferring the NNEG risk from an insurer to a third party; or

(b) make an implicit allowance for hedging costs by assuming future house price growth is risk free; or

(c) assume that the hedging cost is reflected by the origination costs and within secondary market transaction prices and the assumptions underlying these transactions (eg valuing the NNEG using Monte Carlo simulations or the Black-Scholes framework; with a HPI assumption of Retail Price Index (RPI) plus a spread).

Responses favoured option (c), though some with a use of discount rates that brought them near to option (b).

Others were of the view that a real-world model should make an allowance for the additional capital charge that investors would make for taking on risks associated with equity release business.

Question 9:

(i) To what extent do you consider the Black-Scholes model assumptions to be reasonable for the case of ERM valuation? For example, to what extent are the put options hedgeable if the underlying mortgaged property is not traded?

(ii) To what extent does the unknown term (or exit date) of individual loans matter?

(iii) For products that permit future drawdowns, the strike price of the put options is also indeterminate – what impact do you believe this has on the applicability of the Black-Scholes framework?

Summary of responses

(i) Many respondents felt that Black-Scholes was suitable, so long as its use was appropriately qualified or managed. Many mentioned the textbook conditions that they considered must apply if Black-Scholes were to be valid. Some of the conditions that respondents listed as necessary for the applicability of the Black-Scholes framework were: no autocorrelation, no stochastic volatility, normality with no jumps, absence of market psychology, herding behaviours, and other general irrationalities leading to non-random price patterns, deep and liquid markets, continuous rebalancing etc.

Other approaches were also proposed including using Monte-Carlo simulation, citing such things as policyholder behaviours that vary depending on the actual performance of the property market or of the wider economy.

(ii) Most felt that the exit rate uncertainty could be addressed by appropriate decrement assumptions.

(iii) A variety of opinions were put forward including: the uncertainty introduced by future drawdowns is not dissimilar to that of uncertain exit rate; future drawdowns complicated the use of the Black-Scholes model; the impact could be addressed by making an adjustment to the property price (ie the strike price of the option) to reflect the undrawn portion of the loan; and if drawdowns were allowed, the NNEG could be valued assuming they have been fully drawn down.

PRA comment

Many respondents mentioned a version of the Black-Scholes formula known as 'Black 76', where the underlying price is the 'forward price' of the property. This version uses the current price of a forward contract. Some respondents appeared to conflate this with the forecast future price of the property, but provided no justification for why house price inflation was relevant to the current price of a forward contract.

Question 10:
One of the assumptions of the Black-Scholes framework is that the underlying asset follows a geometric Brownian motion. How appropriate do you consider this assumption is to residential property, given there is evidence that residential property prices display time series effects such as mean-reversion and volatility clustering?

Summary of responses

Most respondents felt that Black-Scholes framework with suitably conservative assumptions, such as upwardly adjusted volatility assumption, would be appropriate. Some referred to their answer to Question 9.

Question 11:

(i) In light of these observations, do you believe is it reasonable to use the Black-Scholes framework?

(ii) If so, what adjustments should be made, either to the framework itself, or to its calibration?

(iii) If not, what do you consider are the alternative frameworks or models that could be used, for example other option-pricing frameworks, valuation frameworks designed for incomplete markets, or frameworks which aim to establish reasonable ranges of prices having regard to investor risk preferences?

Summary of responses

Nearly all expressed caution or some qualification about the use of Black-Scholes, but most thought it was nonetheless reasonable. A minority drew a distinction between the Black-Scholes closed-form solution and Monte Carlo simulations and preferred the latter; a few others rejected Black-Scholes entirely.

(i), (ii) and (iii) Consistent with answers to the previous two questions, the general view was that Black-Scholes was reasonable, adjustments could include a volatility adjustment, a suitable property growth rate and appropriate calibration of property-related inputs; in particular in the use of a conservative volatility assumption. Alternative suggestions were Ornstein-Uhlenbeck or ARMA GARCH time series models.

Question 12:
How do you consider the idiosyncratic nature of risks associated with the valuation of the NNEG, including (but not limited to) the dilapidation risk, should be taken into account in the valuation?

Summary of responses

Opinion on the appropriate adjustment was divided, suggestions included adjustments to property value, property volatility, HPI, and a margin for dilapidation. Some felt that

systematic underperformance risk due to adverse selection should be allowed for in the valuation.

> Question 13:
> Do you think the assumption of statistical independence is appropriate, and if not, what adjustments should be made?

Summary of responses

One respondent considered that this is a capital requirement question. Otherwise, most agreed that there was a scarcity of data, and therefore any dependence was difficult to quantify. Most thought there was a (weak) positive correlation between prepayment and property growth. Some respondents claimed the evidence supports no direct link between mortality/morbidity and house prices.

> Question 14:
> How do you consider the assumed level of any future advances on existing loans (such as drawdowns, where permitted) should be calibrated? To what extent do you believe future drawdown rates depend economically or statistically on the performance of the underlying property?

Summary of responses

It was noted, as in answers to the previous question, that further borrowing is more likely where there has been an increase in house prices, and less likely following a decrease. Most observed that it depends on the nature of the contract. Many stated that further advances, as opposed to drawdown from an existing facility, can be treated as new loans, so do not need to be modelled. Where a drawdown facility is contractual, providers maintained they could limit future drawdowns so as not to increase the loan-to-value (LTV) above a threshold level.

Some respondents did not hold any loans with a drawdown facility. Others said that mortgages with a contractual option to take further advances against the property are an important part of the equity release market.

One suggestion was to assume loans are fully drawn down when valuing NNEG, so that no other allowance is needed, but that in general the drawdowns are not contractually guaranteed.

> Question 15:
> How do you consider 'porting' an ERM from one property to another should be taken into account in the valuation of ERMs?

Summary of responses

Almost all respondents felt that porting was not a material issue. The reasons cited included there are generally contractual mechanisms in place to minimise the risk of losses.

Question 16:
How often do you consider the properties underlying ERMs should be revalued? What do you believe the mix of on-site and desk-based revaluation should be, balancing accuracy, timeliness and proportionality to the risk?

Summary of responses

Some respondents noted that full inspection would not only be costly, but would involve 'undue stress and worry to older customers and reflect poorly on the lenders reputation and that of the industry in general'. Nearly all listed the possibilities as full inspection, drive by/walk by, desktop, index based revaluations or automated valuation models (AVMs). Most considered the frequency and depth of revaluation depended on the likelihood of the NNEG biting in the future, so that monitoring LTV thresholds would be appropriate.

Question 17:
How do you consider valuation uncertainty should be assessed and what considerations should inform the size of the risk adjustment required under IFRS 13?

Summary of responses

There were no uniform replies. Answers included a combination of allowing prudent margins, consideration of the level of uncertainty with focus on key areas of uncertainty, and use of risk adjusted discount rate.

Question 18:
(i) Where you are aware of secondary market transactions, to what extent do these prices form inputs into the ongoing development of valuation models?

(ii) How do you think price transparency could be improved (perhaps by market data providers aggregating hypothetical quotations for portfolios, industry surveys or some other means)?

Summary of responses

(i) and (ii) Some respondents were not aware of such transactions. Most others thought the secondary market is currently not transparent or public, and hence there is insufficient valuation data. Respondents commented along the lines that 'the secondary market is small with infrequent transactions and prices varying significantly from one deal to another.' It was generally considered that improving transparency would be very difficult.

Question 19:
What do you consider are the approaches and techniques that should be used to identify and monitor emerging risks to ERMs, such as changes in flood risk and other environmental issues, legal changes, changes to the taxation of residential property or associated mortgages, changes to political or social attitudes to long-term care, or changes in the market for ordinary mortgages?

Summary of responses

There were a range of responses from just initial and regular monitoring of risks to the specifics of how this would work. Respondents were clear that the underwriting process is a useful tool for risk identification and highlighted the importance of governance around valuations and criteria. Respondents identified that the key things that should be monitored

were legal, regulatory and political changes as well as broader market and social developments.

Attendance of seminars, conferences, forums and working groups was seen as a useful mechanism to discuss emerging risks.

Question 20:
Where capital calculations are carried out by performing stress or scenario tests, which parameters, in order of materiality, do you consider should be stressed? The PRA invites responses in respect of all relevant capital regimes. Relevant regimes would include, without limitation:

(i) the standard formula, internal model and own risk and solvency assessment (ORSA), for Solvency II firms;

(ii) the Capital Requirements Regulation, for firms subject to it; and

(iii) for all firms, any other forms of capital calculation, whether for internal purposes, to comply with other regulatory regimes, for rating agency purposes, or any other relevant reason.

Summary of responses

Some respondents listed more than ten parameters to be stressed in capital model calculations. Discount rates and property value and volatility stresses were generally the most highly ranked.

Respondents noted that the standard formula may require different parameters to be stressed to those where there is an approved internal capital model, perhaps because the ERMs have been restructured.

Many respondents felt that an internal model or partial internal model was the best way to capture the specific idiosyncratic risks relating to ERMs.

Question 21:
What do you believe are the most relevant considerations and techniques for calibrating the parameters of ERM capital models?

Summary of responses

Key aspects for consideration when calibrating parameters of ERM models were statistical analysis of historical data including firms' own experience supplemented by expert judgement, taking into account industry benchmarks and statistical analysis of key parameters.

Question 22:
What tools and metrics do you consider should be used to validate ERM capital models?

Summary of responses

Respondents gave a variety of suggestions. Many expected validation to take into account each components materiality relating to the underlying data inputs and assumptions. Benchmarking could be done against previous calibrations or industry peers subject to allowing for different characteristics of portfolios. Back-testing was also seen as a useful validation tool.

Question 23:
Beyond capital requirements, what metrics and indicators do you consider can be used to measure ERM risks?

Summary of responses

Most respondents recommended a range of items to monitor such as liquidity levels, distributions of LTVs, historical experience (NNEG, prepayments, redemptions) and property market changes along with the outputs of stress and sensitivity testing.

Another common suggestion was monitoring of historical and ongoing complaints, both internal and with the Financial Ombudsman Service, with the intention to highlight issues in terms and conditions or selling practices.

Question 24:
(i) What techniques do you consider should be used to determine whether the level and type of exposure to ERMs is prudent?

(ii) What techniques do you believe should be used to determine whether the level and type of exposure to restructured ERMs is prudent, given the considerations in paragraph 6.8?

6.8 Restructuring a portfolio of ERMs is likely to transform exposure to a large number of individual loan assets into an exposure to the entity which issues the restructured assets. The requirements to diversify properly and avoid excessive risk concentration may therefore be particularly relevant to firms that hold restructured ERMs.

Summary of responses

(i) Respondents generally considered that the underlying ERMs in a portfolio should be well diversified (eg distribution of lives, geography and property types) while matching the relevant liabilities. Techniques suggested to support this were liquidity, cashflow and Asset Liability Management (ALM) analysis as well as monitoring of metrics such as LTV against appetite. A number of respondents also suggested stress and scenario testing.

(ii) Specifically in relation to restructured ERMs, retaining full control of the vehicle and underlying assets was seen as important. Respondents were not concerned about intragroup risk here, arguing the exposure was to the underlying property. Respondents agreed that appropriate due diligence and consideration as to the operational structure of restructuring vehicle and the events under which the vehicle should take account of the risk of crystallisation of credit downgrade/default risk.

Question 25:
How do you think the risk in paragraph 6.11 should be managed?

6.11 There is a risk that the illiquidity, long duration and any future advances (for example drawdown facilities) of ERMs may lead to mixed asset portfolios becoming increasingly concentrated in ERMs or restructured ERMs over time (and as a result becoming increasingly illiquid), particularly if volumes of new business on the liability side are low or zero.

Summary of responses

Respondents said risk management approaches generally included monitoring of ERMs against the risk appetite and making forward-looking projections and stress/scenario testing of the

balance sheet, liquidity and cashflows. There were various opinions on whether this should be on a new business or closed basis.

ERM portfolio allocations were considered against targets and distributions monitored. Long term management of the asset portfolio was considered part of strategic asset allocation.

Question 26:
How do you consider the risks of residential property as an asset class should be monitored and managed? Please include a discussion of changes in demand and supply for residential property, changes to the taxation of property, and macroeconomic features such as interest rates and inflation.

Summary of responses

Respondents considered management of property risk first in the initial underwriting phase through robust and dynamic underwriting process and standards and acceptability criteria. They also suggested diversification and regular review and monitoring of exposures against maximum LTV limits and other factors such as internal thresholds.

An internal model was mentioned as an insightful way of taking account of house price risks in a firm's risk management system (see responses to Question 20 above).

Question 27:
How do you think the risk of individual property underperformance should be monitored and managed? Please include a discussion of regional performance variations, variations related to specific types of property, and dilapidation risk.

Summary of responses

In terms of monitoring and managing individual property underperformance there were a number of suggestions. These included: initial analysis, identification and categorisation of high-risk loans against risk appetite statements covering property types, regions, values and LTVs. For existing loans, monitoring ranged from detailed regular revaluation inside and out to drive-by valuations, desk-based evaluation tools or indices. Cost and level of perceived risk affected the approach that firms took.

Question 28:
(i) Where risk controls are in place, how do you believe secondary risks should be monitored and managed? For example, the PRA understands that many providers impose a requirement on the borrowers to maintain buildings insurance and keep the property in good repair. How practicable do you think it is to enforce such requirements in practice?

(ii) What controls and mitigation measures do you believe could be applied in cases where these requirements cannot practicably be enforced, or are breached?

Summary of responses

Respondents suggested that while some risks should be covered by buildings insurance, and borrowers were contractually obliged to maintain the property in good repair, contingency insurance should be in place to cover the risk that buildings insurance has not been maintained or there is inadequate coverage. Respondents suggested several ways of monitoring, to ensure coverage and that repairs took place.

Question 29:

(i) In light of the significant judgment required to derive an appropriate MA benefit for ERM securitisations and the potential for inconsistency in approach between firms, how do you consider those assessments (made by firms, their advisors and auditors) could make use of quantitative comparators, such as the Effective Value concept introduced above?

(ii) If you consider the Effective Value concept is not helpful, do you have any alternative suggestions?

(iii) Do you believe indicative theoretical boundaries on MA benefit or Effective Value could be expressed in relation to components of the valuation of unrestructured or restructured ERMs, in relation to other boundaries such as those discussed in paragraph 4.9 and Question 6, in relation to the size of MA benefit available on other asset classes, or in other ways?

(iv) How should such boundaries be determined?

Summary of responses

Effective Value is the total value of all tranches of the restructured ERMs on the asset side of the balance sheet, plus the MA benefit arising from the restructured ERMs on the liability side of the balance sheet. Some respondents were not clear on its purpose and many considered that it was unlikely to be a fair comparison given the number of firm specific methods and assumptions which go into it. Responses detailed extensively the ways ERM portfolio risk profiles can differ and so a common theme is that there is 'no one size fits all' benchmarking statistic. Some responses highlighted sensitivities of the metric and how it could be manipulated perversely.

It was suggested that 'Effective Value' could however be used for validation purposes to consider the economic value of (restructured) ERMs.

Due to this perceived lack of consistency, in particular with differences in the profile and quality of ERMs, most responses indicated they considered that it is not appropriate to set boundaries based on this metric. An alternative suggestion was to set clear principles rather than hard boundaries.

PRA comment

The purpose of Effective Value is to provide a reference point of the total balance sheet benefit arising from the asset. This benefit can then be compared on a firm-by-firm basis (rather than across firms) against the economic decomposition of each firm's ERM asset value to ascertain the extent to which the cost of the NNEG may not have been included in the fundamental spread (FS).

The PRA notes that some firms have suggested that starting from a best-estimate cost approach provides side benefits that are useful for risk management purposes; these firms typically make additional allowance for the cost of holding capital against the risks arising from the guarantee. Other firms have proposed using a modification of the classical risk neutral assumptions used for option valuation to reflect the idiosyncrasies of valuing a guarantee on a specific residential property. It is the PRA's view that an unadjusted best estimate cost cannot be sufficient for the purposes of assessing the Effective Value.

Question 30:
Are there any forms of boundary that you consider to be inappropriate or which, in your view, would have a disproportionate impact in relation to the risk profile of the restructured ERMs? Please include impact assessments in your response where relevant.

Summary of responses

Most responses considered such boundaries were not appropriate or recommended the PRA should be cautious in the potential use of boundaries due to the complex differences in how the products are written across the industry, eg different LTVs and ages and that value measures would vary with market conditions.

Question 31:
What do you consider would constitute good practice in respect of assigning credit ratings at the time of restructuring ERMs, and other illiquid assets? Respondents may wish to draw on the experience of internally rating or restructuring other types of assets, or of rating agencies. Comments on mapping ratings to CQSs are also invited.

Summary of responses

Most respondents highlighted the importance of having a clear internal ratings methodology. They considered components of a robust methodology to include analysis of both quantitative and qualitative factors with the former based on scenario and sensitivity testing and the latter relying on expert judgement. One respondent cited exposure monitoring, collateral analysis, legal enforceability and originator insolvency of the claim as being something that should be considered in the rating process. There was some support for the inclusion of qualitative factors in rating, but little detail on how this should be achieved.

Where applicable, firms agreed that ratings model calibration should be in line with any approved internal capital model risk distributions, and validated with similar methodology and assumptions as used for the validation of the internal capital model.

Several different approaches to reaching Probability of Default, Expected Loss and Loss Given Default were set out. For example it was noted by some respondents that Expected Loss was more directly determined, through stochastic or deterministic methods, rather than going through Probability of Default and Expected Loss as the method the European Insurance and Occupational Pensions Authority (EIOPA) uses for FS. Some firms highlighted that the resultant Loss Given Default assumed was usually far lower than the 70% assumed in the EIOPA methodology.

There was a wide offering of proposals for examples of wider good practice including: having appropriate governance, independent validation, ongoing review of assumptions and back-testing. Three respondents suggested an independent review with two of these suggesting inclusion in the audit scope (though this was in some cases caveated with a caution regarding the additional expense). One respondent suggested that the second line should undertake a validation.

There were mixed views as to whether a standard mapping of ratings to CQS should apply.

In terms of quantitative stresses there was a roughly equal split between firms' preference for deterministic and stochastic stresses but there was, however, little detail of what risk factors the stresses should reflect, nor how they should be calibrated. For example;

(i) Around half the respondents noted they would take a comparatively low Loss Given Default assumption into consideration when determining the rating of an ERM securitisation. However, little comment was made on the justification of this assumption.

(ii) A liquidity facility is common in ERM securitisations (to help meet the cash flow schedule) but little mention was made by respondents of what extra retained risks such a facility brought to the assessment.

Question 32:
Do you consider that an 'equation of value' between unrestructured and restructured ERMs should hold?

Summary of responses

Responses were almost unanimous that the equation of value should hold in most cases where the firm retains ownership of the restructuring entity and where certain assumptions are made about frictional costs.

Question 33:
Where an 'equation of value' holds, one of the tranches can be considered to be a 'residual' and valued by subtracting the value of the other tranches from the total value of unrestructured ERMs less frictional costs. In which circumstances do you think is it more appropriate to consider the senior or junior tranche as the residual?

Summary of responses

There were conflicting views on how the 'residual' tranche should be determined and detailed justifications as to why a particular method/ or order was preferred or not.

Question 34:
(i) What do you consider the relationship between the values of senior and junior tranches in the restructured ERMs should be?

(ii) How, in your view, should the values (or, equivalently, spreads) of these tranches be derived, and how should values or spreads be validated in relation to each other, and in relation to the ratings discussed in Question 31?

Summary of responses

In line with the responses to Question 33, there were mixed views on the relationship between the values of the junior and senior tranches and how their values or spreads should be derived.

Question 35:
For securitised ERM cashflows, how do you believe changes in the value of ERMs, and in the amount and timing of ERM cashflows under the stresses that apply to the capital calculations (as considered in Question 20), should impact the ratings and values of the various securitisation tranches, and how should changes affect the resulting MA benefit?

Summary of responses

There was a wide range of responses which usually highlighted the need for consistency with the internal or partial internal model parameters. Additionally, one respondent noted that 'EIOPA publish details as to how they calculate the FS but there is no guidance as to whether

and how this mechanical approach might change in stress conditions. Furthermore PRA has cautioned against a mechanical recalculation of the FS algorithms under stress conditions'.

PRA comment

This is an area which the PRA intends to return to in 2017 after the further work indicated in the main body of this consultation paper.

Question 36:

(i) What management actions do you believe are available to firms that are exposed to restructured ERMs whose value or credit rating has deteriorated under stress?

(ii) Under what circumstances do you consider these actions to be viable? Please include a discussion of how you consider such actions might affect eligibility for the MA and how eligibility could be maintained.

Summary of responses

There were a number of management actions suggested. The most common were: injecting additional capital (where there is a value strain), adding new ERMs to the structure (to support the rating), and increasing the size of the liquidity facility (where there are liquidity strains). Responses also included accepting the downgrade or cancelling and reissuing the notes (depending on legal structure).

Respondents generally asserted that the viability of the above should be considered with respect to the specifics of the firm and note issuing entity. In general, respondents did not believe that relying on such actions would affect MA eligibility.

Question 37:

(i) What do you believe are the additional risk management issues that arise from the process of restructuring ERMs? (See Chapter 6 for a discussion of issues for unrestructured ERMs).

(ii) In particular, how do you consider the liquidity risks of restructured ERMs should be identified, measured, monitored, managed, controlled and reported, including without limitation any liquidity risks arising from future advances on existing loans (for example drawdowns)?

Summary of responses

(i) Common themes were: liquidity risk (particularly relating to the liquidity facility), regulatory risk (including risk of losing matching adjustment eligibility) as well as operational and legal risks relating to administration of the restructured ERMs.

(ii) Suggestions included monitoring and stressing both short and long term liquidity requirements and interplay with the liquidity facility.