

GN45: Determining the *With-Profits Insurance Capital Component*

Classification

Practice Standard

Purpose

The FSA Handbook of Rules and Guidance requires insurance companies and friendly societies with with-profits insurance liabilities unless below a threshold, to determine a *with-profits insurance capital component* in respect of these liabilities. It also sets out detailed *rules and guidance* to follow in calculating this amount, including in particular to use methodology/methods and assumptions which have regard to/are in accordance with generally accepted actuarial practice. The FSA Handbook states that guidance notes such as this are important sources of evidence as to generally accepted actuarial practice. This note therefore provides additional guidance to insurers and Directive friendly societies on how to meet these requirements.

Definitions Terms defined by the FSA Handbook appear in italics when used in this document and have the same meaning.

Legislation or Authority

The Financial Services and Markets Act 2000

The FSA Handbook of Rules and Guidance:

Application

Life insurance *firms* required to determine a *with-profits insurance capital component*

Status

Approved under Due Process	Version Effective from
1.0	31.12.04
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1 General

- 1.1 Where a *firm* requires an actuary to produce work conflicting with the FSA Handbook and/or with this Guidance Note, the actuary may do so provided that the work clearly and unambiguously states that the actuary has done so under instructions and that the work does not conform to this Guidance Note. The adoption of the output of such work will create a situation where the actuary producing the work, the *with profits actuary* and/or the *actuarial function holder* will be required to report the matter to the FSA
- 1.2 This GN is supplementary to;
- 1.2.1 the requirements of the FSA Handbook, including but not restricted to INSPRU and GENPRU;
 - 1.2.2 any individual guidance given by FSA;

- 1.2.3 requirements contained in other Guidance Notes whether adopted by the Board for Actuarial Standards or retained by the Profession; and should not be used as a substitute for reference to such documents or guidance.
- 1.3 The information kept must be sufficient to enable a third party to assess independently the material factors involved in the calculation of the *with-profits insurance capital component* and in particular items used in deriving the *with-profits benefit reserve*.
- 1.4, All reasonable steps must be taken to ensure that the data used to calculate all elements of the *with-profits insurance capital component* are accurate. If the effect of inaccurate data on the liabilities is uncertain, then an addition to the *risk capital margin* must be made for the risk that the actual value of the liabilities will be greater, or the value of assets less, than that derived from the available data. However, if the impact of the data inaccuracy is likely to increase liabilities, then an addition to the realistic liabilities must be made. If any potential data inaccuracy is material, the directors' certificate required or any statement must make reference to this.
- 1.5 Any attribution which is required to be made between sub-funds or between with-profits and non-profit policies in the same fund must be made using a method which is consistent with the *firm's PPFM*. Notwithstanding this, the *resilience capital requirement* if applicable should be allocated and the *long-term insurance capital requirement* should reflect the results of a free-standing calculation.
- 1.6 The calculation of several of the factors required to determine the *with-profits insurance capital component* may include some allowance for management actions. Any allowance for management actions in the calculation factors required to determine the *with-profits insurance capital component* must be consistent with the *firm's PPFM*. Any changes assumed to be made in the *firm's* practices, including reductions in surrender values, reductions in percentages of asset share targeted and increases in policy charges, must be consistent with the principles set out in the *firm's PPFM*. It must not be assumed that it will be possible to make changes to those principles. The time that it is assumed it will take to implement any changes in practices must allow for the *firm's* with-profits governance process to take place, including consultation with the *with-profits actuary*, and also for any changes to systems or other administration procedures that would be needed. Allowance must be made for the cost of any such changes.

2 Realistic value of assets

2.1 PVFPNP from non-profit policies written in a *with-profits fund*

2.1.1 Method

- 2.1.1.1 To ensure consistency with the *realistic value of liabilities*, account must be taken of the approach to allocating future non-profit surpluses in the *firm's PPFM*. This may, for example, state that there is some form of augmentation to asset share from non-profit surplus. Any effect on the value of *future policy-related liabilities* and the cost of guarantees must be allowed for. Where a *firm* is unable to model dynamically the *non-profit insurance business* alongside the *with-profits insurance business*, a suitable adjustment must be taken. The combined treatment

- of the *with-profits insurance business* and *non-profit insurance business* must ensure that the *realistic excess capital* is consistent with the *firm's PPFM*.
- 2.1.1.2 The Present Value of Future Profits for Non-Profits insurance business ('PVFPNP') may make allowance for the release of the *long-term insurance capital requirement* and any *resilience capital requirement* attributable to *non-profit insurance business* in the *with-profits fund* and to the extent that these are covered by admissible assets of the *with-profits fund*. However, if capital held outside the *with-profits fund* is deemed to cover some or all of any *resilience capital requirement* or *long-term insurance capital requirement* attributable to the *non-profit insurance business* in the *with-profits fund*, then no value must be placed on the release of this part of that capital requirement.

2.1.2 Assumptions

- 2.1.2.1 Assumptions used to determine PVFPNP are required to be based on current estimates of future experience that contain reasonable allowance for risk and uncertainty. The FSA Handbook does not require an explicit margin for prudence for each individual assumption provided that the margins in the basis overall are adequate. Hence aggregate adjustments, such as an adjustment to the discount rate, are permissible.
- 2.1.2.2 Where such aggregate approaches are used the *firm* should normally estimate the impact of using explicit margins for each material class of business to satisfy itself that adopting the aggregate approach does not lead to a material overstatement or understatement of the PVFPNP. For this purpose explicit margins for risk and uncertainty must be made for both policy-related items (such as mortality, morbidity, persistency and expense levels) and to asset-related items (such as defaults by corporate bond issuers, property tenants and *reinsurers*).

2.1.3 Liquidity Premiums

- 2.1.3.1 Care must be taken in taking credit for any liquidity premium within an asset yield in any situation where normal random fluctuations in *claims* payments could require the assets to be sold unexpectedly. Where credit is taken for a liquidity premium, the size of that premium must not exceed that which is justifiable based on the actual assets held.
- 2.1.3.2 The *firm* should normally test how this analysis would be affected by changes in the assumptions on credit default rates, mortality assumptions, and mortality rate trends.
- 2.1.3.3 The methodology and assumptions must be based on best estimates of future experience and derived from current market yields. Therefore:
- the period over which the liquidity premium is capitalised must take account of the outstanding duration of the bond portfolio to which it relates, and must be reduced to take account of any expected future bond disposals required to meet annuity payments, and
 - the liquidity premium must be based on current market bond spreads and best estimates of future default rates.
- 2.1.3.4 Appropriate allowance may be made for liquidity premiums on reinvestment if the intention is to maintain the same asset mix in the future.

2.1.3.5 The methodology and assumptions must involve reasonable (but not excessively prudent) adjustments to reflect risk and uncertainty. Therefore where a *firm* includes the value of the liquidity premium in the PVFPNP it must be able to demonstrate that:

- a liquidity premium has historically existed for the type and credit quality of the bonds held, taking account of historic rates of default, and
- the method for selecting the liquidity premium rate is prudent and leaves a prudent margin for those credit and liquidity risks that the *firm* is still exposed to, particularly expected default costs (including the possibility that the bond might be downgraded to a credit rating that will require it to be sold – see 2.1.3.6 below) and the uncertainty or potential volatility in default costs.

2.1.3.6 For the avoidance of doubt, the rationale for including the value of a liquidity premium in the PVFPNP relies on the illiquid nature of the liability and does not require the *firm* to hold all corporate bonds to maturity. It is likely that the credit rating of some holdings will over time deteriorate below normal guidelines or limits, and will be sold. In this circumstance, credit can be taken for a liquidity premium adjusted as in 2.1.3.5 above. This type of event relates to default risk, and the *firm* receives compensation for this in that part of the spread which is excluded from the determination of the liquidity premium.

2.2 Stress testing the PVFPNP for calculating the *risk capital margin*

2.2.1 The *mathematical reserves* used in the calculation of the PVFPNP must be recalculated to reflect the scenario being considered. In addition any excess or deficiency of the value of the assets over the value of the *mathematical reserves* must be included in the calculation of the revised PVFPNP.

2.2.2 If an allowance was made in the PVFPNP for the release of the *long-term insurance capital requirement* and any *resilience capital requirement* then a variety of methods are acceptable when calculating the revised PVFPNP. However, the incidence of these releases must not be faster than the release allowed for in paragraph 2.1.1.2 above.

2.3 Value of *derivatives* or *quasi-derivatives* in the *with-profits fund*

2.3.1 The market value, if positive, for a *derivative* or *quasi-derivative* in a *with-profits fund* may be included in the *realistic value of assets* whether the asset is admissible or not. Admissible *derivatives* will be given a value within the *regulatory value of assets*; an adjustment will be required if but only if that value has been restricted on account of the size of the holding within the calculation of the *excess admissible assets*. Inadmissible *derivatives* should be given full market value, if positive. Wherever possible mark to market (valuation at readily available close out prices, using the more prudent of bid/offer price) must be used. Where marking to market is not possible marking to model must be used. If the market value of a *derivative* is negative it should be valued within realistic liabilities as an element of *realistic current liabilities*.

3 Realistic value of liabilities

3.1 General

- 3.1.1 A firm's PPFM may make reference to asset shares being determined based on certain example or benchmark policies for determining scales of final bonus. In such cases, the with-profits benefit reserve should normally be calculated in a manner consistent with how benefit payments are determined in practice. If for practical reasons it is not possible to calculate the with-profits benefit reserve in this way, a suitable adjustment must be made elsewhere so that the *realistic value of liabilities* overall is consistent with that practice.
- 3.1.2 Where all or part of a policy is reinsured, it is generally accepted actuarial practice to calculate the various components of liability after adjustment for amounts payable to and receivable from *reinsurers*. A credit test on *reinsurance* contracts is required, and this must be applied directly to any credit taken in the calculation of liabilities as well as to any asset item.

3.2 With-profits benefits reserve

3.2.1 Retrospective method

- 3.2.1.1 The retrospective method will often be used for policy classes where an asset share method is used as a guide when determining bonuses.
- 3.2.1.2 It is necessary to document why if an aggregate approach is adopted in calculating the *with-profits benefits reserve*, it is reasonably expected to lead to the same or a higher asset share than that which would have been calculated on an individual contract basis. However it is not actually necessary to carry out calculations to demonstrate this in practice.
- 3.2.1.3 If the asset shares that are used in the *with-profits benefits reserve* and as a guide in the determination of scales of bonus are calculated for groups different from those used when actually setting rates of bonus (e.g. quinquennial rather than annual groupings) or differ in another way, it is necessary to ensure that there is no material understatement of the *with-profits benefits reserve*. If there is a material likelihood of understatement, an appropriate adjustment must be made, such as increasing some or all of the asset shares used in its calculation.

3.2.2 Prospective method

- 3.2.2.1 The prospective method will often be used for policy classes where bonus rates are not, or not directly, determined by asset share methods (as is often the case with whole life policies, particularly if the bonus rates are those, or derived from those, determined for endowment policies) or where the asset shares are determined for specimen policies only and are not calculated in aggregate.
- 3.2.2.2 The future bonuses valued must be consistent with the future return on investments assumed, which should be consistent with the discount rate. Assumed future expense inflation must also be consistent with the future growth and discount rates. Where guarantees are present, the growth and discount rates used could materially affect the magnitude of a prospectively calculated *with-profits benefits reserve*. If a risk free rate is used then more (though not necessarily all) of

the guarantee cost is likely to be present within the *with-profits benefits reserve* than if best estimate growth and discount rates had been used. The prospective method used to calculate the *with-profits benefits reserve* must be consistent with the approach taken to value guarantees and options (see section 4 below) so that the overall *realistic value of liabilities* is market-consistent.

- 3.2.2.3 Where a *firm* uses specimen policies when it determines bonus rates by applying asset share methods, then the future bonuses valued in the prospective method must be consistent with those that the asset share model would produce if the assumed investment growth and inflation rates in paragraph 3.2.2.2 above were to be realised in future. Similar considerations apply to discretionary surrender and termination values if these are determined using asset share methods applied to specimen policies.
- 3.2.2.4 Where bonus rates for a class of policy are based on bonus rates calculated for another class of policy, and asset share methods are used for that second class, then the future bonus rates assumed must be consistent with those that the asset share model for the second class of policy would produce if the assumed investment growth and inflation rates in accordance with paragraph 3.2.2.2 above were to be realised in future.

3.3 *Future policy-related liabilities*

- 3.3.1 There is generally an interrelationship between the different elements making up these liabilities. For example, a *firm* may intend to pay less than 100% of asset share on maturity (unless a guarantee applies) for policies which carry minimum guaranteed maturity values. In this case it could either calculate the value of the reduction relative to 100% of asset share and the guarantee cost relative to the reduced percentage of asset share, or it could calculate the value of the reduction net of the effect of the guarantee with the guarantee cost calculated relative to 100% of asset share. Discretion exists as to how the total liability is divided but the choice made must be clearly disclosed in any report.

3.3.2 **Past miscellaneous surplus (or deficit) planned to be attributed to the *with-profits benefits reserve***

- 3.3.2.1 Any items included under this heading must be consistent with the *firm's PPFM* and current or intended future practice for determining bonus rates. It should be noted that items included under this heading are such that they could be removed in adverse circumstances. Any past miscellaneous surplus which is intended to be a more permanent addition to policyholder benefits should be included in the with-profits benefit reserve.

3.3.3 **Planned enhancements to the *with-profits benefits reserve***

- 3.3.3.1 For a closed *with-profits fund* it would normally be expected that the whole of any inherited estate would be distributed over time. In such a situation, planned enhancements to the *with-profits benefit reserve* are recognised in respect of the general intention to distribute the estate, and this would result in the Form 19 working capital being by definition zero.

- 3.3.3.2 For an open *with-profits fund*, there is no need to recognise any such inherited estate as a planned enhancement except to the extent that there is a plan to distribute it.
- 3.3.3.3 If any aspect of a *firm's* discretionary practices are expected to lead to overall payments being in excess of the *with-profits benefits reserve* (e.g. if non-contractual aspects of the surrender or transfer bases, or non-contractual application of guaranteed annuity rates, for a particular class of policy) might be expected to result in payments greater than asset share in certain circumstances and the *firm* does not expect to revise the basis as circumstances change) and such excess amounts are not recognised elsewhere within the *realistic value of liabilities* then provision must be made under this heading. The cost of such enhancements must be calculated on a market-consistent basis
- 3.3.3.4 Where there is a PVFPNP included within the realistic assets of the fund, consideration should be given as to whether the same amount needs to be included with the planned enhancements to the *with-profits benefit reserve*. For example, if the *PPFM* states that non-profit surplus emerging will automatically be passed on each year to with-profits policyholders, then inclusion of the additional liability is necessary. In other circumstances, whether an additional liability is required will depend upon whether there is other evidence which suggests that policyholders have an expectation or entitlement that such allocations will be made each year or at some particular point in the future.

3.3.4 Planned deductions for the costs of guarantees, options and smoothing from the *with-profits benefits reserve*

- 3.3.4.1 If the future charges are to be reassessed periodically in the light of the then future cost of guarantees, options or smoothing, possibly net of residual accrued past charges and costs, then the valuation of them must allow for future changes to the charges if appropriate and material.

3.3.5 Future costs of contractual guarantees (other than financial options)

- 3.3.5.1 Simulated investment returns in the multiple scenarios of a market-consistent Monte Carlo model or the use of a judiciously selected range of adverse scenarios are permitted if a deterministic approach is used.

3.3.6 Future cost of smoothing

- 3.3.6.1 The calculation of the cost (or benefit) from smoothing must reflect the practical intentions and capabilities of the *firm* when changing bonus rates, including the minimum interval between changes and any publicly-disclosed or privately intended limits on the difference in payouts on similar policies at each change.
- 3.3.6.2 If Monte Carlo models are used and the model produces investment returns only over intervals as long as or longer than the minimum interval between changes to rates of final bonus, then it must be considered whether materially different smoothing costs might result from modelling investment returns over shorter periods. If this is considered possible then additional investigations must be carried out.

3.3.6.3 When payouts are in excess of unsmoothed asset share, policyholders may exercise encashment options in greater numbers (or deferral options in lesser numbers). In determining whether it is necessary to assume a higher level of encashments (or lower level of deferrals), any actual experience of policyholders' behaviour in differing circumstances and the likely future level of awareness amongst policyholders as to the existence or otherwise of a beneficial smoothing position must be taken into account.

3.3.7 **Financing costs**

3.3.7.1 If a *with-profits fund* has received a loan (or other form of finance) the repayment of which is contingent in some way on the fund's ability to cover its liabilities (however defined for that purpose), then, in each relevant stochastic scenario or deterministic model, only so much of the form of finance as would actually be repayable in those circumstances must be treated as repayable capital.

3.3.7.2 To the extent that interest and fees on loans or other forms of finance are attributable to asset shares, then no liability must be recognised under this heading. However, account must be taken of past such costs in calculating *with-profits benefits reserves* and of future such costs when projecting *with-profits benefits reserves* into the future.

3.3.7.3 To the extent that future management actions include the possible use of loans or other forms of financing or the repayment of existing facilities, the resulting changed costs must be recognised in the relevant stochastic scenarios or deterministic model.

3.3.8 **Other long-term insurance liabilities**

3.3.8.1 When making provision for the costs of compensation to policyholders who have successfully claimed that they have been mis-sold their policies by the *firm* or its agents, it is necessary to take into account the projected amount of the payouts in each future year. The projections must allow where relevant for amounts payable, and successful *claims* that may be made, when the policies themselves become *claims*.

3.3.8.2 When assessing the propensity to *claim* in a future year, past experience of the number of complaints arising after periodic communications to policyholders (e.g. mortgage endowment re-projections) and in the interval between such communications must be allowed for. Allowance must also be made for the expected effect, on both the amount and number of *claims*, of differences in the degree of potential disadvantage which future communications are projected to show.

3.3.8.3 Allowance must be made for the cost of handling complaints, whether valid or not, including the cost of references to the FOS.

3.3.8.4 If the *firm* does not intend to pay compensation in cases where neither the courts nor the FOS would make awards because of time limitation, this may be reflected in the liabilities.

3.3.8.5 It is not necessary, under this heading or elsewhere in the *realistic value of liabilities*, to make provision for future mis-selling compensation or other regulatory costs in respect of classes of business for which no systemic

infringements have yet been identified. However it may be appropriate to include an allowance for some lower level of regular ongoing compensation costs based upon the *firm's* own experience.

4 The value of guarantees, options and smoothing

4.1 General

- 4.1.1 Stochastic methods (which include both Monte Carlo simulation models and closed-form solutions) should normally be used to calculate the market-consistent value of financial options. GN47 describes recommended standards for the use of stochastic models in this context.
- 4.1.2 Where there is uncertainty regarding non-financial factors which affect the value of guarantees and options (e.g. option take up rates, trends in longevity, lapse rates), stochastic variation in these factors may be incorporated into one overall model. Deterministic alternatives may also be used but care should be taken to ensure that an appropriate allowance is made for the possible adverse covariance between the factors.
- 4.1.3 The starting assumption should be that gilts represent the risk-free yield. However, analysis may be made of the recent gaps between swap yields and gilt yields. These may indicate, for example, that liquid gilts typically yield a little less than is accounted for by credit risk (as, for example, implied by the spread between LIBOR and LIBMID and that between LIBMID and repo rates). The 'gaps' may be in recognition of additional returns being earnable by the holders of liquid gilts due to their repo abilities or may be due to other reasons. If this is the case, the risk-free rate may be assumed to be the yield on liquid gilts, increased by the observed 'gap'. It is acceptable, nonetheless, to calibrate to gilt yields in which case, no such analysis is required.
- 4.1.4 If a model is calibrated allowing for the gap, it will project forward the accumulated value of the gilt portfolio at a rate in excess of that capable of being earned from the gilts themselves. This could conceivably lead to an under-valuation of the long-term guarantees under one or more classes of business backed by an asset portfolio invested significantly in gilts, particularly if stock-lending is not practical. If this is the case, consideration should be given to using for such classes of business a model calibrated to the gilt curve.

4.2 Use of a deterministic approach

- 4.2.1 It is usually necessary to use stochastic models to value options. However, it may be appropriate to use an approximate deterministic approach if it can be demonstrated that no practicable alternative exists, or that the value of the option is not material.
- 4.2.2 A deterministic approach may be used to value guarantees if it utilises market pricing information in a way which can be demonstrated in principle to give an equivalent result to a stochastic approach. Such a demonstration should not make any implicit assumptions about the independence of any of the variables used.

4.3 Allowance for taxation in the valuation of guarantees and options

4.3.1 Appropriate allowance must be made for tax when calculating the costs of guarantees and options. The provisions established must be adequate to cover both the cost of providing the guarantee or option and the future tax that would be payable on the assets backing those provisions. Where a stochastic approach is adopted the calculation of the tax must recognise the future tax that would be payable in each scenario.

4.4 Guaranteed Annuity Rates (GARs)

4.4.1 A portfolio of GARs has some similarities in form from an economic perspective with a portfolio of swaptions with a range of exercise dates, tenors and strike rates and with quantum equal to the value of the cash fund of the underlying policy on vesting. In most circumstances, the quantum depends upon persistency, take-up rate of pension at vesting, the then market values of the assets constituting the asset shares of the policies and the expected future progress of mortality rates.

4.4.2 It is therefore appropriate to calibrate stochastic models to interest rate swaptions. Account should be taken of the different profiles of the cash flows from a portfolio of annuities and a portfolio of swaps.

4.4.3 The model used should be calibrated to reproduce swaption prices as closely as possible across as much as possible of the range of swaptions which reflect the liability portfolio. In particular, the greatest accuracy should be achieved at the exercise dates, tenors and strike rates which represent the majority of the liabilities by value, subject to the availability of reliable *derivative* prices. If reliable prices are not available for a material part of the liabilities (e.g. because the strike rates required are significantly different from those currently available), then adequacy of the model should be tested relative to the available prices and theoretical justification documented of the adequacy for the prices actually required.

4.4.4 It is normally necessary to model both the maturity benefit and the GAR simultaneously using appropriate correlations, although it may be possible to model each separately and combine the results using appropriate analytical techniques.

5 Risk capital margin

5.1 General

5.1.1 The sum of the realistic value of the liabilities and the *risk capital margin* is not intended to be a complete test of adequacy of a *firm's* assets in accordance with generally accepted actuarial practice. Rather, the *risk capital margin* is intended to facilitate a broad, public comparison of capital requirements between *firms*..

5.2 The market risk scenario

5.2.1 Assumptions have to be made about future returns from equities or real estate when calculating the changed *realistic value of liabilities*. The requirement must be taken to be that the expected annual percentage return from equities or real estate does not increase as a result of the reduction in value. Where, for tax purposes, it is necessary to divide the return into dividends or rental income and capital growth,

the assumption must be that future dividends or rental income represent the same proportion of the expected return as before the reduction in value.

- 5.2.2 For regular monitoring of solvency, it is acceptable to assume that whichever of a rise or fall in each of fixed-interest yields, equity market values and property market values was the more onerous in the most recent half-yearly return to the FSA continues to be the more onerous, unless it is considered likely that the relationship has changed.

5.3 The credit risk scenario

- 5.3.1 Where *derivatives* are fully collateralised, and the collateralisation arrangements are fully enforceable, then this can be taken into account in determining the default risk of *derivatives*. In some but not all circumstances the impact may be limited to the effect of the *counterparty* being unable to meet the next margin payment call under the collateral arrangements following the credit risk event. It is also appropriate to take account of any initial margining arrangements in assessing this impact. The requirement to consider each factor influencing the change in value must be interpreted as also including the credit risk to the value of the collateral itself.

5.4 The persistency risk scenario

- 5.4.1 In the application of the persistency risk adjustment there is an exclusion for ‘maturities’ and ‘retirements’. These terms are not defined, and the interpretation of this rule is a matter of law. It is generally accepted actuarial practice to treat early maturities and early retirements as equivalent to surrenders. Therefore, the exclusion must not apply to an option to terminate early, however described, that has been treated as a surrender in the calculation of the *realistic value of liabilities* unless it is explicitly excluded.
- 5.4.2 Where voluntary termination generates profits, the reduction in profits arising from lower termination rates will either reduce the future growth of asset shares, possibly increasing the cost of guarantees, or reduce the *realistic excess capital* directly, depending on whether or not the termination profit is allocated to asset shares.

5.5 Allowing for management actions in the calculation of *risk capital margins*

- 5.5.1 A realistic amount of time must be allowed for these actions to take effect. Where the actions relate to the sale or purchase of assets, this time period must be judged in relation to the magnitude of the assumed transaction compared with the capacity of the market to absorb or provide the assets concerned. In making this judgement, a realistic view should normally be taken of the likely reaction of other market participants to the occurrence of the risk scenario. However, a prudent reduction in the value credited to a strategy of selling or purchasing assets should normally be applied where there is significant uncertainty as to how other participants might react.
- 5.5.2 Except where the magnitude is insignificant in relation to the market’s capacity, the price at which the transactions are assumed to take place must be adjusted to allow for the impact of the transaction and of other similar transactions likely to be made by other market participants in the risk scenario.

5.6 Allowing for policyholders' actions in the calculation of *risk capital margins*

- 5.6.1 In assessing the likely change in the exercise rate of policy options in the *market risk* scenarios, any relevant recent experience should be taken into account. However, it must be borne in mind that behaviour when an option is out of or barely in the money is an unreliable indication of likely policyholder behaviour when an option is significantly in the money and judgement will need to be applied in deriving suitable adjustments. As maturity guarantees become more attractive, reductions in early terminations should also be considered. It should not normally be assumed, without appropriate justification, that no change in behaviour would occur if a risk scenario came about.
- 5.6.2 The adjustment to termination rates required in the persistency risk scenario must be applied on top of any changes arising from consideration of policyholder behaviour in *market risk* scenarios.
- 5.6.3 The *realistic value of liabilities* must include an allowance for increasing future awareness of policy options. A realistic allowance must be made for increased awareness where the *firm* has increased or intends to increase disclosure to customers, such as issuing personal notifications shortly prior to the date on which a valuable option may be exercised. The impact of increased awareness must also be borne in mind when assessing likely changes in policyholder behaviour in the *market risk* scenario.
- 5.6.4 Because the *realistic value of liabilities* will allow for increases over time in the take-up rates of guaranteed annuity options as a result of increasing value due to improving longevity, there is no need for a further allowance for this in the calculation of the *risk capital margin*. However, a change in the take-up rates should normally be assumed in response to the fixed interest yield change in the risk scenario: this change in take-up rates would be an increase in take-up if the yield fall is more onerous (as is likely if there are substantial unhedged guaranteed annuity liabilities) or a reduction if the yield rise is the more onerous.
- 5.6.5 If the *realistic value of liabilities* assumes less than 100% take-up of guaranteed annuity options, this must be reconsidered in the risk scenario to allow for the risk that customers may elect not to take up their full tax free cash allowance, especially as they may have other policies with one or more providers from which they may differentially choose their tax free cash. Such considerations should normally include an analysis of the level at which the tax free cash foregone becomes less valuable than the additional guaranteed annuity net of tax, at basic and higher rates of tax.
- 5.6.6 It is possible that in the *market risk* scenario, policyholders might react to the reduced solvency of a *firm* by increasing voluntary terminations. However, this must not be used as an offsetting assumption in the persistency risk scenario.
- 5.6.7 The calculation of the *risk capital margin* should normally include a reassessment of the appropriate level of mis-selling reserves to allow for the risk that the level of complaints or the amount of compensation per complaint may alter in the scenario.

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