EIOPA technical specifications for Long-Term Guarantee Assessment

January 2013

The Long-Term Guarantee Assessment requires participating firms to test the application of the proposed package of measures designed to address issues affecting products with long-term guarantees under a variety of scenarios.

INTRODUCTION

On 28 January 2013 EIOPA launched the Long-Term Guarantee Assessment ("LTGA"). This assessment requires selected firms to calculate and report Solvency II balance sheet items under a number of different scenarios in order to test the application of the proposed long-term guarantee measures.

Participating firms have been selected by national supervisors to ensure the assessment covers at least 50% of non-unit-linked life technical provisions and at least 20% of relevant non-life gross written premium as at 31 December 2011 ("YE11").

The LTGA package has been published on EIOPA's website and includes:

- Launch Presentation;
- Technical specifications (parts I and II);
- Appendices to the technical specifications containing related data (including details of the discount curves and fundamental spreads);
- Spreadsheets setting out example calculations of the matching adjustment;
- Reporting templates and associated user guide;
- A series of helper tabs covering cashflow discounting, calculation of the risk margin and the calculation of capital changes under several of the SCR sub-modules;
- Two qualitative questionnaires - one for internal model users (asking for further information on if and/or how an internal model was used for the assessment), and a second for all participants (covering items such as implementation costs, and implications for product design, risk management and investment activities);
- Description of simplifications that may be used for the calculation of the SCR and historical balance sheets (including details of which assets should be revalued and how this should be performed); and
- A Q&A section that will be updated throughout the assessment.

Part I of the Technical Specifications has been updated since their first publication by EIOPA on 18 October 2012. The original document was the subject of a separate Milliman summary document while further documents included on the EIOPA website sets out a log of changes since this original version.

The Launch Presentation sets out the expected timetable for the LTGA. This requires firms to submit results to their national supervisors by 31 March 2013 – a 9 week period. EIOPA will produce its report to the trilogue parties by 14 June 2013, allowing the European Commission to provide its report to its co-legislators by 12 July 2013.

EIOPA stresses repeatedly throughout the Technical Specifications that the measures being tested are for the purpose of the LTGA only and specific measures being tested may not be in the form of Solvency II finally adopted (if at all).

Milliman has prepared this summary paper of Part II of the LTGA technical specifications, to set out what the requirements may mean for firms participating in the assessment.

GENERAL OVERVIEW OF THE LTGA

The purpose of the LTGA is to assess the impact of the proposed package of long-term guarantee measures (the "LTG package") that have been proposed to deal with the issue of artificial volatility on long-term products. The aims of the assessment are set out in the technical specifications as being to assess how the LTG package:

- impacts policyholder protection;
- can be used by supervisory authorities to supervise solo and group firms efficiently and effectively;
- can be implemented efficiently and effectively by all firms (and the cost of its implementation);
- provides the right incentives for good risk management and wide risk diversification and contributes to the correct risk reflection of the undertakings;
- may impact on financial stability (and, in cooperation with ESRB, to assess if it has the potential to create systemic risks);
- impacts upon the single market, including on cross-border business;
- impacts on firms' solvency position and also possible competition distortions in national markets; and
- influences long-term investment by firms.

Elements of the LTGA

Under the LTGA, firms are asked to test combinations of the following measures under 13 different scenarios (see the side panel for details):

- Extrapolation of the risk-free rate;
- Adapted relevant risk-free interest rate term structure (including the Counter-cyclical Premium or "CCP");
- Two transitional measures;
- Matching adjustment ("MA") for certain life insurance obligations ("classic matching adjustment"), of which there are 2 variations; and
- Matching adjustment for certain insurance obligations not covered by Article Classic ("extended matching adjustment"), of which there are 3 variations.

The LTG Package – Some Definitions

The LTG package tested under the LTGA consists of:

1. Extrapolation of the risk-free rate

Determination of the approach to extend the interest rate curve beyond the point where markets are not sufficiently deep, liquid and transparent to its ultimate forward, or equilibrium, rate.

2. Counter-cyclical premium

An adjustment to the interest rates used to discount liability cashflows aimed at preventing pro-cyclicality during times of market stress by reflecting depressed market values of assets (such as bonds) in the value of liabilities.

3. Transitional measures

Two transitional measures intended to smooth the introduction of the full impact of Solvency II over a "sufficiently long time period". Proposals will test a 7 year glide path between the Solvency I and Solvency II discount rate curves, and an adjustment to the SCR equity sub-module.

4. Classic matching adjustment

The matching adjustment is a measure that prevents changes in the value of assets with fixed maturity dates, caused by spread movements, from flowing through to firms' balance sheets for portfolios where companies have fully or partially mitigated the impact of these movements.

The classic matching adjustment can only be applied to liabilities with no policyholder options (except a surrender option where the surrender value cannot exceed the value of the assets), with no future premiums and only exposed to longevity risk (e.g., annuities).

5. Extended matching adjustment

A version of the matching adjustment applicable to all life insurance liabilities and non-life annuities, including those with policyholder options, as well as health insurance liabilities where the underlying business is conducted on a similar technical basis to that of life insurance.

Test Scenarios

Under scenario 0, firms are required to calculate and report the complete Solvency I and Solvency II balance sheets as at a reference date of YE11 without any of the LTG package being applied. This includes the following Solvency II (and equivalent Solvency I) items:

- Assets;
- Technical provisions;
- Own funds (by Tiers and including Ancillary Own Funds where applicable);
- Solvency Capital Requirement ("SCR") based on standard formula calculations (accompanied by internal model results where appropriate);
- SCR capital surplus;
- SCR ratio;
- Minimum Capital Requirement ("MCR");
- MCR Capital surplus; and
- MCR ratio.

This provides a reference scenario for the other 12 scenarios under which the Solvency II balance sheet and solvency position (or, where specified, just affected Solvency II items) should be recalculated assuming the combination of measures set out in Table 1 of the technical specifications, and included in Appendix A to this summary.

The final 3 scenarios (scenarios 10 to 12) test the application of the LTG package as at different reference dates. Under these, scenario 10 requires firms to complete Solvency II items using a reference date of 31 December 2009 ("YE09") while scenarios 11 and 12 should be based on a reference date of 31 December 2004 ("YE04") (representing relatively "normal" market conditions). For the purpose of these scenarios, firms should use the data used for assets and liabilities in the YE11 assessments, adjusting these only for the yield curve and market prices provided by EIOPA as part of their simplifications. The actual Solvency I position as at YE04 should also be provided by firms as part of scenarios 11 and 12.

For all scenarios, firms must apply the LTG package in the following order (and where liabilities meet the criteria of certain of the measures, there is no choice of what measure to apply):

1. Identify the liabilities that meet the criteria to apply the classic matching adjustment and apply the discount curve including the classic matching adjustment to these liabilities;
2. Of the remaining liabilities, identify those which meet the criteria for the extended matching adjustment and those which are applicable for the transitional measure and apply the relevant discount curve; and
3. Discount the remaining liabilities using the unadapted, or relevant adapted, discount curve (including the CCP) where applicable for the respective scenario.

We note that the volume of work required for the LTGA in order to produce results for all 13 scenarios (involving 3 different reference dates) as well as providing estimates of a number of sensitivities is likely to be considerable. It may prove onerous for many firms to complete it within a 9 week time horizon, particularly when many are already busy with year-end requirements.

Although EIOPA asks participating firms to complete the assessment on a best efforts basis, using specified approximations and simplifications where required to complete the assessment, firms will also have to provide considerable qualitative information which may prove challenging. This includes details of the effort and costs involved in completing the assessment and estimates of how onerous the implementation and on-going calculation of the package would be.

DETERMINATION OF THE RISK-FREE INTEREST RATE

The Technical Specifications set out the basic and adjusted (i.e., including the CCP) risk-free discount curves to be used for all major currencies and for the different reference dates and scenarios.

Consistent with the EIOPA consultation paper of 13 March 2012, the risk-free rates used for the LTGA are based on 3 month LIBOR swap rates, unchanged from those used under QIS5. While the reference instrument is unchanged, a number of changes have been made to the parameters used to extrapolate the risk-free rate beyond the point where reference markets are considered deep, liquid and transparent.

For the purposes of the LTGA, the last liquid point ("LLP") for Sterling curves is fixed at 50 years for all scenarios, while the Euro LLP is adjusted from 30 years under scenario 0 to 20 years for the other scenarios.

The convergence speed for extrapolation to the ultimate forward rate (UFR) is set at 10 years for all currencies and under all scenarios, apart from scenarios 0 and 4 where convergence over 40 years is applied.

The adjustment for credit risk used in the determination of the risk-free rate has been updated from the 10 basis points (bps) used under QIS5. The adjustment is based on current analysis of the overnight market relative to the swap market and now stands at 35 bps as at YE11, 20 bps as at YE09 while the adjustment as at YE04 remains unchanged at 10 bps. The technical specifications note that where risk-free rates are based on government bonds, the same credit risk adjustment as used for swaps should be applied for the purposes of the LTGA.

The credit risk adjustment is calibrated from the difference between swap rates based on 3-month Libor, which are currently used as a reference instrument for the Solvency II discount rate, and overnight swaps rates, which are assumed to be virtually credit risk-free. The change in the credit risk adjustment as at YE11 reflects an increased divergence between these rates over recent years, partly driven by a lack of confidence between banks when lending to each other over longer periods of time.

We note that the increase in the credit risk adjustment to 35 bps represents a significant increase from the 10bps used previously and appears to incorporate unnecessary levels of prudence in its derivation. Furthermore, given that the calibration of the credit risk adjustment is supposedly unchanged from that used under the QIS5 exercise, it is unclear why the adjustment as at YE09 has been increased to 20bps (relative to the 10bps used under QIS5 for the same reference date).

There has been an increased call for Solvency II discount rates to be derived directly from overnight rates, particularly following the decision for central clearing houses to base their calculations on the overnight rate. These concerns highlight issues of discrepancies arising where collateral calculations are based on overnight rates while the valuations on the Solvency II balance sheet are performed using adjusted 3 month Libor rates.

Extrapolation of the risk-free interest rate curve

For the LTGA, the risk-free interest rate curve, as derived from liquid market data points, is extended to the ultimate forward rate ("UFR") by means of extrapolation using the Smith-Wilson method as proposed in a pre-consultation paper issued on 13 March 2012. The UFR is set at 4.2% for all currencies.

Two different assumptions for the convergence of the risk-free interest rate curve to the UFR are tested under the LTGA. The default assumption of convergence within 10 years from the LLP will be tested in all scenarios apart from scenario 5, where an alternative assumption testing convergence within 40 years from the LLP will be used.

COUNTER-CYCLICAL PREMIUM

The CCP is an adjustment to the interest rates used to discount liability cashflows aimed at preventing pro-cyclicality during times of market stress by reflecting depressed market values of assets (such as bonds) in the value of liabilities. This is intended to prevent firms needing to realise assets during times of market stress, actions which may drive the markets further into crisis.

While previous versions of the CCP, detailed during the Omnibus II process, have been based on spreads over risk free for assets held by a typical (representative) insurer, under the LTGA, three default levels of the CCP are tested:

- A default assumption of 100 bps (tested under scenarios 1 and 4-10);
- 50 bps (tested under scenario 2); and
- 250 bps (tested under scenario 3).

The CCP is assumed not to apply as at YE04.

Adjusted risk-free interest rate curves, incorporating the three default levels of the CCP to be tested, are provided by EIOPA for major currencies.

The decision to test three default levels of the CCP, rather than using "real" yield curve adjustments, is stated to be due to a lack of sufficient data. The results of the assessment will be used to assess the impact of actual CCP levels for each reference date, currency or country through an "add-on analysis" (details of which are not specified).

If the CCP has been applied, firms must also calculate an additional component of the SCR corresponding to the loss in basic own funds resulting from an instantaneous decrease of 100% of the CCP.

The CCP is a measure intended to enable the insurance industry to cope during periods of distressed market conditions. However, there are concerns that an additional SCR component based on the capital charge that would result from an instantaneous 100% decrease in the CCP is being tested, thus diluting the potential relief available. We note this component must be included for both standard formula and internal model firms and, if adopted, would appear to remove around 50% of the benefit of including the CCP.

TRANSITIONAL MEASURES

The LTGA tests the application of two transitional measures. In both cases, the measures should be applied as if at the start of the transition period.

The first of these is applied on the discount rate curve, intended to smooth the introduction of the full impact of Solvency II over a "sufficiently long time period". This is tested under scenarios 8 and 11 (applied to all existing business), and scenario 9 which tests the application to paid in premiums only.

Under this measure, for life contracts (excluding renewals) where the maximum Solvency I discount rate was based on the yield on the corresponding assets currently held, minus a prudential margin, the risk-free interest rate to be used in the calculation of best estimate liabilities will be calculated as a weighted average of the Solvency II rate including any CCP (as provided by EIOPA) and the Solvency I rate. The weights to be applied to the Solvency I and Solvency II rates over the 7 year period should be determined according to the following table:

Years into the process	Weight of SII rate	Weight of SI rate
0	0%	100%
1	14%	86%
2	29%	71%
3	43%	57%
4	57%	43%
5	71%	29%
6	86%	14%
7	100%	0%

Where the transitional measure is applied, EIOPA specifies this must:

- be applied to obligations resulting from activities within the firm's member state;
- be applied only to existing contracts as at the date of application; and
- apply to all eligible insurance obligations of the firm, i.e. there is no free choice to apply the measure only to a subset of those obligations.

Significantly, the MA cannot be applied to any of the obligations to which the transitional measure is applied while the CCP applies only to the Solvency II component of the curve.

Where different Solvency I rates apply to different liabilities, these should be assigned to buckets and the rate under the transitional measure should be determined separately for each bucket of liabilities.

A second transitional measure applies to the calculation of the SCR equity sub-module. Under this, the equity stress to be applied is 22% for each type of equities and no equity dampener is to be applied.

The introduction of these transitional measures is intended to reduce the impact of the introduction of Solvency II for firms and markets.

We note that, while this proposal does not appear to be in line with the principle of market consistency, a weighted allowance will reduce the impact over time. However, it is unclear how firms should manage the Solvency I rate going forward or whether this will allow them to effectively lock into the yield on assets held on the implementation date. The detailed transitional rules will need to incorporate a holistic approach if they are to encourage sound risk management and minimise arbitrage opportunities.

Furthermore, this may result in difficulties in managing portfolios going forward, particularly where new business and existing business are valued at different rates or where firms have branches.

EIOPA has commented that, for the purposes of determining the SCR, where the transition measure is applied, the interest rate stresses should be applied to the whole risk-free interest rate term structure, including the Solvency I rates.

MATCHING ADJUSTMENT

The MA is intended to be a mechanism that prevents changes in the value of assets with fixed maturity dates, caused by spread movements, from flowing through to firms' balance sheets for portfolios where companies have fully or partially mitigated the impact of these movements.

For the purposes of the LTGA, the MA is calculated as the "spread over the risk-free rate on admissible backing assets, less an estimate of the costs of default and downgrade". Where liabilities and matching assets meet the criteria set out in section 4 of the technical specification, this adjustment may be applied to the basic risk-free spot rates used to discount eligible liability cashflows. Where the MA is applied, no other adjustment to the risk-free rate can be included for the same liabilities (although other adjustments may be used for liabilities not eligible for the MA). For the purposes of the LTGA, the Risk Margin is assumed to remain unchanged when applying a MA.

The MA may not be applied to any liabilities where market risk is borne by policyholders (e.g., unit linked policies).

For the purposes of the LTGA, companies are able to apply two different MA options, depending on the type of insurance obligation, with a number of versions of each option tested under the various scenarios. These are listed as:

- The classic MA (Classic Standard) – restricted to liabilities with no policyholder options, no future premiums and only exposed to longevity risk (e.g., annuities). Limits apply to both the proportion of BBB-rated assets held and the level of MA that is applied for these assets
  - An alternative version (Classic Alternative) tests the application without any limits on holdings of BBB-rated assets or the MA applied in respect of these.

- The extended MA (Extended Standard I) – applicable to all life insurance liabilities and non-life annuities, including those with policyholder options. An application ratio is used to scale the maximum MA to reflect the "level of matching implicit between the eligible liabilities and the cash-flows of the assigned assets", calibrated at a 99.5% confidence level, Two alternative versions are tested:
  - Extended Standard II where the application ratio is calculated at a 99.9% confidence level; and
  - Extended Alternative which does not require cashflow matching and for which assets do not need to provide fixed cashflows or meet credit quality limits.

The technical specifications break down the calculation of the MA into a number of steps:

- Step 1 – identification of the eligible liabilities;
- Step 2 – identification of the admissible assets;
- Step 3 – consideration of the impact of cashflow matching requirements; and
- Step 4 – calculation of the MA, including the calculation of the application ratio in step 4a.

We have set out below details of how these steps should be performed for the standard application of the MA under Classic and Extended (Standard I) options and highlighted how the alternative applications differ from these standard approaches.

The decision to test multiple versions of the MA under the LTGA reflects the level of debate and controversy surrounding this measure, which has become increasingly politicised during the Omnibus II period (and the cause of many of the delays in the Solvency II process). We understand that the split of the MA into two main options (the classic and the extended) was introduced in part response to this debate, potentially extending the MA to a wider range of products and territories.

Under the draft Omnibus II texts, the choice of which option to apply rested with the Member State, creating concerns that different decisions by countries would result in an un-level playing field for insurance products across Europe. We note that, while such an option is not directly tested under the LTGA, the results from scenarios 8, 9 and 11 would be expected to provide supervisors with an indication of the impact of restricting the MA in their markets by testing the application of the measures without the extended MA.

Firms should also provide qualitative information on the expected impact of the LTG measures (and eligibility criteria) on their investment decisions and whether they would foresee any major implications on financial markets resulting from changes in their investment choices. Where firms intend to restructure their asset portfolios in order to apply the MA (or improve its impact), details of this should also be provided.

Classic MA (Classic Standard)

Eligible liabilities

The Classic MA, as set out under Classic Standard, can only be applied to liabilities with no policyholder options (except a surrender option where the value cannot exceed the value of the assets), with no future premiums and only exposed to longevity risk (e.g., annuities). The technical specifications note that liabilities from a single contract may not be split to meet these requirements.

Admissible assets

For all versions of the MA tested in the LTGA, the assigned portfolio of matching assets must consist of bonds and assets with "similar cash-flow characteristics". Furthermore, the cashflows must be fixed and have a pre-defined maturity and the issuers of the assets or any third parties should not be able to change the cashflows of the assets (unless such changes allow the cashflows to be restored at an equivalent or better level of credit risk, e.g., through "make-whole" clauses).

The technical specifications include a table setting out a number of bond-like asset classes and EIOPA's view of whether these meet the above criteria. Under this, the following asset classes would be eligible to be included in the assigned portfolio under Classic Standard:

- Standard or inflation-linked corporate bonds;
- Standard or inflation-linked sovereign bonds;
- Swaps, where the combination with other assets leads to fixed cashflows;
- Commercial mortgages with make-whole clauses; and
- Asset-backed securities with fixed cashflows.

Significantly, the matching portfolio can also contain overnight assets, such as cash. These assets would only be eligible to cover cashflow matching requirements in the first year and should be considered as being risk-free and assumed to have a MA of zero.

The following asset classes are specifically identified as being ineligible for inclusion in the matching portfolio, as the cashflows can be altered by a third party:

- Callable bonds;
- Equity release mortgages;
- Subordinated debt;
- Preference shares;
- Bank hybrid debt;
- Other derivatives; and
- Property (long lease).

Where companies include any assets in their matching portfolios that EIOPA has identified as generally inadmissible, they are required to demonstrate how the requirements have been met, and hence why they consider these assets as admissible.

The matching portfolio should not contain assets with credit quality less than BBB and the proportion of the matching portfolio held in BBB-rated assets must be no more than 33.33%. In both cases, the limits exclude "exposures to Member States' governments and central banks denominated and funded in the domestic currency of that central government and central bank".

Cashflow matching requirements

The technical specifications require firms to perform a number of steps in assessing the governance requirements surrounding their cashflow matching for the eligible liabilities and assigned assets in the matching portfolio. Under this, firms must demonstrate that the assigned portfolio of assets is sufficient to cover the relevant best estimate liabilities (in the same currency), and that this asset assignment can be maintained for the lifetime of the liabilities (except for asset management purposes such as replacing assets that have defaulted). Firms must also demonstrate that the liabilities and corresponding assets are ring-fenced or are identified, managed and organised separately from the rest of the business, with no possibility of transfer.

In order to assess the adequacy of the cashflow matching, firms are required to group the asset and liability cashflows into yearly intervals and compare to ensure that the expected liability cashflows do not materially differ from the admissible asset cashflows. This materiality should be assessed by considering any shortfalls that occur between the cashflows on an annual basis (including liquid overnight assets for the first year only), and calculating the degree of mismatch as the discounted sum of the cashflow shortfalls as a percentage of the best estimate value of the liabilities in the portfolio. For the purposes of the assessment, the degree of mismatch should not be greater than 15% and should be reported to EIOPA as part of the assessment.

We note that requiring the discounted value of the cashflow shortfalls to be no greater than 15% of the best estimate liability value permits a large level of cashflow mismatches for the purposes of the assessment. EIOPA notes that this simplified method of determining the degree of mismatch and high materiality limit have been chosen as "firms have not had the opportunity to structure their portfolios optimally". As such, the permitted level of mismatch may be significantly lower should this requirement be taken forward through the Omnibus II process.

For the purposes of the LTGA, it is sufficient for firms to have the ability to ring-fence (or identify, manage and organise separately without any possibility of transfer) portfolios of liabilities and matching assets, rather than for the ring-fencing to be currently in place. Where this is not possible, the MA cannot be applied to these portfolios. Firms should provide details (and expected costs) of any restructuring they would perform under Solvency II in order to guarantee a ring-fenced and/or separately managed and organised portfolio as part of their qualitative response.

Calculation of the MA

The maximum MA is calculated for all versions as the difference between the spread on the investment return over the basic risk free rate of the assets in the matching portfolio ("the spread") and the Fundamental Spread.

In turn, the spread of the assets is calculated as the difference between the annual effective rates, calculated as the single discount rate, that where applied to the liability cashflows:

1. results in a value equal to the market value of assigned matching assets; and
2. results in a value equal to the best estimate value of the liabilities in the portfolio.

The fundamental spread represents the portion of the spread that is attributable to the probability of default and the cost of downgrades. These are provided by EIOPA and are broken down by asset class, duration and rating for each reference date. EIOPA notes in the technical specifications that, for the purpose of the assessment only, "should it be necessary to aggregate the fundamental spread across categories (asset classes, durations and ratings)…the market value of assets and the average duration, within the category, should be used as weights".

For the purpose of the classic MA the fundamental spread is capped at 75% of the long-term average spread ("LTA spread"), values of which are also provided by EIOPA. Where no long-term default assumptions are available for the assets, the fundamental spread should be set at 100% of the LTA spread.

Where liabilities and assets meet the requirements for the application of the Classic Standard, the maximum MA can be applied.

We note that the restriction set out in 4.7(5) of the Technical Specifications requires the fundamental spread used for the Classic Standard approach to be capped at a level such that the MA for BBB-rated assets does not exceed the higher of that for AA and A-rated assets.

These requirements look likely to require firms to calculate the MA on an asset-by-asset basis (rather than at a portfolio level), a task that may prove onerous to many firms. Furthermore, while most firms may be expected to hold a diversified range of assets, it is unclear how this cap should be calculated should the portfolio hold no AA or A-rated assets on which to base the calculation and whether the cap could be based on average spreads for these situations.

Classic Alternative

An alternative approach to the Classic Standard is applied for scenario 4.

This tests the impact of removing the restriction on the maximum proportion of BBB-rated assets that can be held in the matching portfolio (although all assets must still be rated BBB or higher). Consistent with this, the MA in respect of BBB-rated assets does not need to be capped at the matching adjustment for AA or A rated assets.

The extended MA (Extended Standard I)

In contrast to the classic MA, the extended MA is applicable to all life insurance liabilities and non-life annuities, including those with policyholder options, as well as SLT health insurance liabilities. The technical specifications note that liabilities from a single contract can be split into individual benefits or guaranteed obligations to meet these requirements (although, where this is done, the MA would only apply to the eligible parts of the contract).

Under this option, the assets assigned to the matching portfolio must still consist of bonds or similar assets with fixed cashflows rated BBB or higher (excluding "exposures to Member States' governments and central banks denominated and funded in the domestic currency of that central government and central bank") but do not need to have pre-defined maturity dates as cashflow matching is not required. As for the standard application of the Classic Standard, the proportion of the matching portfolio held in BBB-rated assets must be no more than 33.33%.

The maximum MA is calculated in the same way as under the classic MA (although the fundamental spread is subject to a floor of 80%, and not 75%, of the LTA spread). However, in order to take account of possible mismatches between asset and liability cashflows resulting from the additional underwriting risks (such as lapses or earlier expected liability payments), an application ratio is used to scale the maximum MA to reflect the "level of matching implicit between the eligible liabilities and the cash-flows of the assigned assets."

Application ratio

The application ratio is determined to ensure that firms incur "no losses through forced sale of assets with a probability of 99.5% over the period till run-off of the obligations". In order to achieve this, the following formula should be used in respect of a portfolio of liabilities:

$$Application\ ratio = \max\left(0{,}1 - \frac{discounted - cashflow - shortfall}{best\ estimate\ liability}\right)$$

where the discounted-cashflow-shortfall reflects the losses through forced sales resulting from the underwriting risks that the liabilities are exposed to.

The technical specifications detail that, for both standard formula and internal model firms, this should be calculated as being equal to annual net cashflows (calculated as the difference between the assigned asset cashflows and stressed liability cashflows over each year) that occur as a result of applying the following prescribed stresses (combined using the correlation parameters set out in the technical specifications):

- **Lapse** - the more severe of an instantaneous lapse of 40% of policies in the portfolio or a permanent increase of 50% of the on-going lapse rate assumption;
- **Mortality** – an instantaneous permanent increase of 15% in the mortality rates;
- **Disability** – an instantaneous permanent increase of 35% in the disability rates in the following 12 months, and 25% for subsequent months, combined with an instantaneous permanent decrease of 20% in the disability and morbidity recover rates; and
- **Life catastrophe** – an instantaneous increase of 0.15 percentage points to the mortality rates in the following 12 months.

Any net annual surpluses (described as negative net annual discounted cash out-flows) should be set to zero, and no application ratio should be applied where the matching adjustment is negative.

EIOPA notes that the implied assumption in the calculation of the net cashflows, that firms will be able to make benefit payments up to one year after those payment fall due, is a simplification made purely for the purpose of the assessment. As such, more realistic calculations may be required in any final version of this calculation.

The application ratio recognises that where cashflow mismatches occur due to underwriting risks, such as lapses, some assets may need to be sold early to cover these cashflows while the remaining assets in the portfolio can still be held to maturity (and hence still be eligible for the MA calculation). EIOPA specifies that internal models are not to be used in the calculation of the application ratio, and rather, firms are required to assess this level of mismatch at a 99.5% confidence level, by considering the asset cashflows that would be required to cover the "worst case" liability cashflows as determined for the SCR under the standard formula. These stresses should only be applied to liabilities for which the stresses would lead to an increase in liability cashflows.

EIOPA has stressed that the methodology for calculating the application ratio is purely for the purposes of the LTGA and does not pre-empt any future developments.

Given the application ratio is intended to assess the losses of forced sales by considering the proportion of assets that need to be sold early, it is unclear why the formula compares the discounted-cashflow-shortfall to the best-estimate liability value, and not the value of the assets in the assigned portfolio. Furthermore, we note that a number of insurance products include features, such as market value adjustments ("MVAs") which reduce the losses on forced sales of assets. It is unclear whether these should be included in the calculation of the application ratio.

It appears that the condition that no application ratio is applied where the MA is negative recognises that, where asset valuations are artificially high, the firm should not be exposed to losses on forced sales. By ensuring the liability values are increased by the same level, this criteria appears to incentivise firms from realising these asset gains, e.g., through dividend payments.

Extended Standard II

A second variation of the Extended Standard MA is tested under scenario 7. This version, labelled Extended Standard II, differs from Extended Standard I only in the calculation of the application ratio. For the purposes of Extended Standard II this is calibrated to a 99.9% confidence level (rather than the 99.5% level of the stresses of the standard formula used under Extended Standard I) and the following stresses should be applied:

- **Lapse** - the more severe of an instantaneous lapse of 56% of policies in the portfolio or a permanent increase of 70% of the on-going lapse rate assumption;
- **Mortality** – an instantaneous permanent increase of 21% in the mortality rates;
- **Disability** – an instantaneous permanent increase of 49% in the disability rates in the following 12 months, and 35% for subsequent months, combined with an instantaneous permanent decrease of 28% in the disability and morbidity recover rates; and
- **Life catastrophe** – an instantaneous increase of 0.21 percentage points to the mortality rates in the following 12 months.

Extended Alternative

A further version of the Extended Standard MA (the Extended Alternative) is tested under scenario 6. This tests the removal of a number of the asset admissibility requirements. Significantly:

- there are no cashflow matching requirements;
- asset cashflows do not need to be fixed; and
- there are no credit quality limits applied to the assets in the matching portfolio.

Under this version, the technical specifications note that floating rate notes and convertible bonds could also be included in the matching portfolio (as cashflows are not required to be fixed).

While the application of Extended Alternative does not require firms to hold sufficient admissible assets to cover the best estimate of liabilities, firms should be able to identify a sub-portfolio of liabilities that can be covered by the admissible assets (i.e., where the present values of the liability and asset cashflows are equal when discounted at the basic risk-free rate). This should be done by scaling the whole liability portfolio by the ratio of the present value of asset cashflows over the present value of liability cashflows for the whole portfolio, in both cases using the basic risk-free rate.

The maximum MA is calculated in the same way as under the Classic approach. However, as there are no restrictions on the credit quality of the matching assets, the fundamental spread should only reflect the probability of default.

Where there are insufficient assets in the matching portfolio firms should make several adjustments to the calculation and application of the extended MA:

- Where the calculation of the effective annual rate that where applied to the liability cashflows gives a value equal to the market value of the assigned assets is not "*sound and reliable*", it may be replaced by direct reference to the yields on the admissible asset over the basic risk-free rate (to prevent negative rates);
- The maximum MA should be reduced by the application ratio (calculated in the same way as under Extended Standard I); and
- A cap should be applied to the applied MA to ensure that the impact of the MA on the full liability portfolio does not exceed the difference between the discounted value of the assigned asset cashflows discounted with the risk-free interest rate curve with and without the MA included.

For the purposes of Extended Alternative, firms are required to identify a sub-portfolio of liabilities that can be covered by the assigned assets. However, the purpose of this sub-portfolio is not immediately clear and where such a sub-portfolio is identified, firms may apply a matching Adjustment to the whole portfolio (scaling the MA by an application ratio to reflect the level of matching).

Despite this, the scaling factor used to identify the sub-portfolio may be used by firms in the simplification set out in paragraph 4.7(7) of the technical specifications (which incorrectly references paragraph 4.6(3)(b)). This allows firms to use this factor to reduce the MA under Extended Alternative to ensure the impact of the MA on the full liability portfolio does not exceed the difference between the discounted value of the assigned asset cashflows discounted with the risk-free interest rate curve with and without the MA included.

We note that many firms will welcome EIOPA's decision to test versions of the matching adjustment with relaxed asset eligibility restrictions. However, the specific exclusion of a number of asset classes, including equity release mortgages and long-lease property, may come as a blow to firms who have been lobbying hard for such assets to be considered eligible.

However, as the fundamental spreads provided by EIOPA cover only assets rated BBB or higher, where firms hold lower rated assets they are required to calculate the corresponding fundamental spreads themselves for the purposes of Extended Alternative. EIOPA notes that this fundamental spread should be equal to probability of default and does not include a component for the risk of downgrades. These should be based on long-term views derived from the most recent publications and data and should incorporate a 30% recovery ratio.

CONSIDERATIONS FOR THE CALCULATION OF THE SCR

For scenarios where any MA applies (Classic or Extended), the spread risk change for the SCR should be calculated as follows:

- The regular spread risk stress should be applied to assets; and
- For liabilities, a revised MA should be included which makes partial allowance for the spread stress.

The revised MA should be calculated as:

$$MA' = (spread + Sup) - (Fundamental\ Spread + Sup * red\_factor)$$

Where:

- Sup = 1-year spread stress at the appropriate credit quality step; and
- Red_factor is the relevant reduction factor set out in the following table:

Credit quality step	0	1	2	3	4	5	6
Red_factor	0.45	0.50	0.60	0.75	1	1	1

For the interest rate sub-risk module, the shocks should be applied without taking into account the MA.

As noted in the earlier section on transitional measures, for the purposes of the LTGA, EIOPA has stated that the equity transitional measure to determine the SCR should be applied assuming as if at the start of the transition. At this point, the equity change equals 22% and no equity dampener is applied.

SENSITIVITIES

In addition to the main requirements, section 5 of the technical specifications includes a request for the results of a number of sensitivities to be reported as part of scenarios 1 and 6 (i.e., the base scenario and the scenario testing the Extended Alternative MA). Firms may use simple approximations to determine the outputs for these scenarios which include:

- Assuming the CCP is not triggered;
- Restricting the CCP application to liabilities with duration > 7 years;

- Changing the conditions on the classic MA to restrict its application to life insurance undertakings (including composites with a predominate portion of life business), strictly ring-fencing the assets and liabilities, permitting obligations to be split within a single contract, and limiting the BBB-rated assets to only 10% of the assigned portfolio;
- Basing the extended MA on a hypothetical asset portfolio;
- Removing the requirement to set surpluses to zero in the calculation of the application ratio;
- Applying strict cashflow matching for the Extended Alternative MA;
- Applying the fixed cashflow requirement to the Extended Alternative MA;
- Applying the 33.33% limit on BBB-rated assets (and corresponding cap on the MA in respect of BBB-rated assets) to the Extended Alternative MA; and
- Basing the fundamental spread to be used under the Extended Alternative MA on that used for the Standard application.

We note that the sensitivity removing the requirement to set surpluses to zero in the calculation of the application ratio tests a design of the application ratio which we understand is broadly consistent with the approach put forward by industry groups. Under this, surpluses arising from asset cashflows could be held as risk-free assets to offset shortfalls, reducing losses from forced sales and resulting in a higher application of the matching adjustment.

SUMMARY

The LTGA launched by EIOPA requires selected firms to test a range of different approaches under different economic conditions in order to understand the effects on consumers, insurance companies, supervisors and the financial system as a whole.

Under the assessment, firms are asked to test combinations of the following measures under 13 different scenarios (involving 3 different reference dates):

- Extrapolation of the risk-free rate;
- Adapted relevant risk-free interest rate term structure (including the Counter-cyclical Premium or “CCP”);
- Two transitional measures;
- The classic matching adjustment, of which there are 2 variations; and
- The extended matching adjustment, of which there are 3 variations.

Participating firms are also requested to provide considerable qualitative information (including details of the effort and costs involved in completing the assessment and estimates of how onerous the implementation and on-going calculation of the package would be going forward) as well as the results of a number of sensitivities in relation to scenarios 1 and 6.

As such, the volume of work required for the LTGA is likely to be considerable and it may prove onerous for many firms to complete this within a 9 week time horizon, particularly when many are already busy with year-end requirements.

Although EIOPA only asks participating firms to complete the assessment on a best efforts basis, using specified approximations and simplifications where required, it appears likely that many firms will struggle to provide complete quantitative results for the assessment within this timescale. As such, this may have a knock-on effect on the completeness of the final report that EIOPA is charged with producing, potentially placing greater emphasis on the qualitative responses provided by firms.

Despite the significant amount of work which the LTGA will require, we welcome the fact that EIOPA is seeking to test a wide range of options to find a solution to these difficult issues. Hopefully, the assessment will produce sufficient results which, when reviewed objectively, will lead to a set of rules which will produce an overall satisfactory outcome in line with aims set out by EIOPA (see page 2).

Appendix A – Summary table of scenarios

			Scenarios at the reference date YE11									Scenarios at historic reference dates		
		0	1 BASE	2	3	4	5	6	7	8	9	10	11	12
I	**Adapted relevant risk-free interest rate term structure (CCP)**													
A	*No CCP*	x											x	x
B	*CCP of 100bps*		x			x	x	x	x	x	x	x		
C	*CCP of 50bps*			x										
D	*CCP of 250 bps*				x									
II	**Extrapolation**													
A	*In line with QIS5*	x												
B	*LLP 20yrs for EUR, 40 yr convergence*						x							
C	*LLP 20yrs for EUR, 10 yr convergence*		x	x	x	x		x	x	x	x	x	x	x
III	**Classical Matching adjustment (77c)**													
A	*No Matching Adjustment*	x												
B	*77c Standard version*		x	x	x		x	x	x	x	x	x	x	x
C	*77c Alternative version*					x								
IV	**Extended Matching adjustment (77e)**													
A	*No Matching Adjustment*	x								x	x		x	
B	*77e Standard I version*		x	x	x	x	x					x		x
C	*77e Standard II version*								x					
D	*77e Alternative version*							x						
V	**Transitional Measures**													
A	*No transitional measure*	x	x	x	x	x	x	x	x			x		x
B	*Transitional measure applied to all existing business*									x			x	
C	*Transitional measure applied to paid in premiums only*										x			
VI	**Reference date**													
A	*31 December 2011 (YE11)*	x	x	x	x	x	x	x	x	x	x			
B	*31 December 2009 (YE09)*											x		
C	*31 December 2004 (YE04)*												x	x

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