

**Bundesanstalt für
Finanzdienstleistungsaufsicht**



LTGA Report: Germany

Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin)

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Executive Summary

The long-term guarantees assessment aimed at assessing the efficiency of a set of valuation instruments intended to deal with issues associated with insurance products with long-term guarantees that may be affected by artificial volatility in the Solvency II framework. We believe that this aim has been successfully achieved, and moreover, that most measures, as suggested by the European dialogue parties, are well fit for purpose with only limited need for further modification.

The organisation of the study was conducted by EIOPA, and we would like to thank EIOPA staff for the excellent management of this exercise.

With regards to the German market, we can report that our analysis shows in a very clear and decisive manner that the interest transitional is the instrument best fit for the purpose of adapting the valuation model to the specificities of long-term business with guarantees. On the German market, the introduction of fair value models against the backdrop of the current low interest environment presents significant challenges to undertakings whose liabilities are defined by a lifelong duration of contracts in connection with guaranteed interest rates. Those contracts have been designed under the Solvency I supervisory regime, and an appropriate phase-out of the old regulation is indispensable to ensure that their embedded obligations can be fulfilled. The interest transitional as proposed by the dialogue parties, by addressing the core element of traditional business via the smoothing-out of guaranteed interest rates, is addressing precisely the long-term guarantee issues the current assessment is targeting. It is thus an instrument well designed from a supervisory and risk-management perspective, although it might seem technically challenging at first glance.

Nonetheless, BaFin's analysis of the instrument indicates the need for some minor technical refinement of the interest transitional with respect to the following three aspects. First, to address some practical issues with the implementation that were discovered in the field test, we suggest to apply a parallel shift of the risk free interest rate term structure, rather than averaging between Solvency I and Solvency II rates as in the current proposal. Second, the interest rate stress in the Solvency II standard formula will need to be adapted to the instrument, as the stress' calibration is based on unadjusted market rates, leading to unreasonably high capital requirements when being applied on the transitional rate. Third, and most vitally important, the duration of the transitional must be adapted to appropriately account for the long-term nature of long-term guarantee business, which typically has a run-off horizon of more than 60 years. A design providing for interpolation over a period of only seven years is most certainly much too short to render the instrument fit for purpose. The measure's duration will need to be expanded to a period of at least 20 years.

In addition to the interest transitional as proposed by the trialogue parties and tested in the current assessment, some stakeholders recently suggested including a new transitional option into the LTG package. This option is not directly targeting long-term guarantee valuation, but intended to cover a wider range of transitional requirements linked to a low Solvency I valuation of technical provisions. Whilst we have no objections against this new measure as an additional alternative, we would like to firmly stress that this new option does not mitigate the necessity of the introduction of a measure that allows for an appropriate transition of guarantees for existing long-term business in a prolonged low-interest environment as it is the case in Germany. To target this core issue, we consider it of utmost importance that the interest transitional is implemented into the Solvency II framework.

Having the general aim of the reduction of artificial volatility in view, our results show that an adequate design of the method for the determination of the risk free rate in combination with the adaptation are sensible instruments.

With respect to the determination of the risk free rate, we are pleased that the most important element of the methodology has already been agreed on by the trialogue parties, namely the stipulation that the last liquid point reflects the liquidity in bond markets, thus ensuring stability of the curve. We firmly oppose any initiative to re-open negotiations of this core element of a method designed to reduce volatility of the Solvency II balance. In addition to that, we note that an extrapolation method ensuring fast convergence to the ultimate forward rate is beneficial towards that aim as well.

With respect to the adaptation to the risk-free rate, we support the general motivation behind the instrument's introduction, namely accounting for the fact that asset valuation based on fair value concepts might not always be adequate, notably in times of stressed financial markets. We thus appreciate that the adaptation is specifically designed to prohibit that artificial volatility produced by financial markets distorts the supervisory regime. In our view, it is however difficult to follow the reasoning behind the introduction of a risk charge on the adaptation in the standard formula. Not only is the effect of the instrument distorted by this to the extent that the application of the instrument tends have a negative impact on the solvency position in scenarios with high artificial spreads. It also seems to us that this risk-charge is introducing an element generally foreign to the Solvency II capital requirements, as it can be interpreted as the measurement of mis-valuation risk.

Some stakeholders recently suggested including an alternative to the current design of the adaptation into the LTG package which is basically designed as a permanent mechanism based on currency or national representative portfolios. We are concerned about the adequacy of the approach and are not certain that the tool achieves the desired goal of reducing artificial volatility over time. Designing a supervisory instrument based on few simple principles might do the job as well.

Turning to the last set of measures tested in this exercise, we can clearly conclude that the extended matching adjustment does not live up to its promise. Leaving aside our assessment that the general design of the instrument is prone to introduce a degree of complexity into the Solvency II framework that can hardly be rendered transparent by the supervisory process, our results indicate an effect on undertaking's solvency position that is minor at best. The classical matching adjustment is not applicable to existing German insurance business and was not tested by the German market. We therefore refrain from assessing the measure in the context of the LTGA.

To sum up, our recommendation for a way forward on the route to a Solvency II supervisory regime that adequately accounts for the specific nature of long-term guarantees business, is, first and foremost, to continue developing the interest transitional to an instrument whose design adequately reflects the nature of the business it is targeting, especially with respect to its duration that needs to be expanded up to a minimum of 20 years. Second, to ensure that the method for the determination of the risk-free rate is stable by basing it on liquid bond markets and ensuring fast convergence. Third, to introduce an instrument adequately targeting the interconnect of financial market's artificial volatility in times of crisis and the Solvency II valuation model.

1. Introduction

1.1. Disclaimer

The following is an evaluation of a pre-defined set of instruments aimed at addressing issues associated with insurance products with long-term guarantees. It is based on the analysis of data that was voluntarily provided by the German insurance industry for the purpose of this study. BaFin conducted quality checks on this data, and decided on formats for its presentation that are suitable to convey answers to the core questions of the exercise at hand. We trust in the reliability of the results delivered, but would like to indicate that they had to be derived on the basis of technical specifications that are incomplete to the extent that not all technical requirements of the instruments tested have yet been fully defined and regulated. Thus, a certain degree of interpretation was required from the practitioner's side. Although we are positive that the recommendation we derive from this data are valid, we would like to indicate that the results we report may in part be subject to biases stemming from the fact that some technical details on the LTG instruments are yet to be formulated.

1.2. Background

Please refer to EIOPA report.

1.3. Objectives

Please refer to EIOPA report.

1.4. Analysis Framework

Please refer to EIOPA report.

1.5. Participation/ Coverage

BaFin puts great emphasis on the goal that the German insurance industry has the opportunity to test any measure proposed for implementation into the Solvency II regime on its adequacy and practicability. For this reason, we did not limit the LTGA participation to a set of pre-selected firms, but invited the entire industry to submit data and to join an open dialogue on the efficiency of the instruments proposed. We are very grateful that the German industry took up this invitation, especially in view of the challenging timelines of the exercise, and that the German market thus well overachieved the participation targets set by the dialogue parties (life sector: 90% versus 50% target, non-life sector: 45% versus 25% target). We are especially

proud to report that a significant number of small and medium sized firms participated in the exercise (64 out of 97), presenting us with the opportunity to assess not only the quantitative impact of the measures, but also collecting feedback on the feasibility of implementation in organisations with limited technical resources.

FIGURE 1 DECOMPOSITION OF PARTICIPANTS BY SIZE

Sample mix	#
Large	33
Medium	47
Small	17
N/A	
Total	97

FIGURE 2 MARKET COVERAGE ANALYSIS¹

Coverage	as % of		Participants*
Life	Total Gross TP	90%	57
Life excl. linked business	Total Gross TP excl. linked business	91%	
Health	Total GWP	63%	24
Non-Life	Total GWP	45%	35
* incl. participants just provided qualitative questionnaire			

Coverage	as % of		Participants*
Life	Total Gross TP	78%	46
Life excl. linked business	Total Gross TP excl. linked business	80%	
Health	Total GWP	58%	19
Non-Life	Total GWP	45%	32
* participants provided quantitative data			

Since on the German market, health insurance business by law cannot be conducted together with non-life or life insurance business in the same firm, thus constituting a separate sector, we report results for health insurance business separated from other non-life business. This format is for the German market more appropriate than the EIOPA format of merging health with other non-life business, also in view of the fact that German health insurance business is conducted similar to life business,

¹ In addition to the participants listed in this overview, two German reinsurance undertakings participated in the LTGA. Due to the small sample, and for reasons of confidentiality, reinsurance results are not shown in BaFin's LTGA report. The data was however submitted to EIOPA and included in the analysis conducted for the European report.

exhibiting long-term guarantees. It represents thus the part of the non-life sector most affected by the long-term guarantees package.

In some of the following sections, we concentrate our analysis on the results delivered by one or two sectors. This is due to the circumstance that the sample size delivered by other sectors with respect to certain scenarios may sometimes be too small to justify drawing conclusions from observed trends.

2. Situation without the LTG Package

EIOPA intended this section for the presentation of the effect of the non-application of the LTG-package (scenario 0). BaFin considers that there is no scenario that has been quantitatively assessed in the LTG which would serve the purpose of being a neutral starting point. In particular, BaFin considers scenario 0 as being highly hypothetical and not representing a policy option in the Omnibus II negotiations. Especially the progress already agreed on with respect to the starting point into extrapolation is not allowed for. BaFin notes that in respect of the extrapolation, the LTGA was only considered to test the speed of convergence and not the determination of the last liquid point (LLP). Therefore, referencing to a scenario that specifies a 30 year LLP for the Euro is clearly inappropriate.

3. Adapted relevant risk-free interest rate term structure (adaptation) – Article 77a

3.1. Purpose of the measures and highlights of the tested approach (adaptation)

Please refer to EIOPA report.

3.2. Impact on policy holder protection

Please refer to section 9.2.

3.3. Impact on effective and efficient supervision

Please refer to section 9.3.

3.4. Implementation effort

3.4.1. For industry

Please refer to section 9.4.

3.4.2. For NSAs

Please refer to section 9.4.

3.4.3. For EIOPA

Please refer to EIOPA report.

3.5. Incentives for good risk management

Please refer to section 9.5

3.6. Impact on financial stability and prevention of systemic risks

Please refer to section 9.6

3.7. Impact on insurance and reinsurance undertakings' solvency position²

3.7.1. All undertakings

For a detailed description of the methodology and scenarios referred to in this section, please refer to EIOPA report.

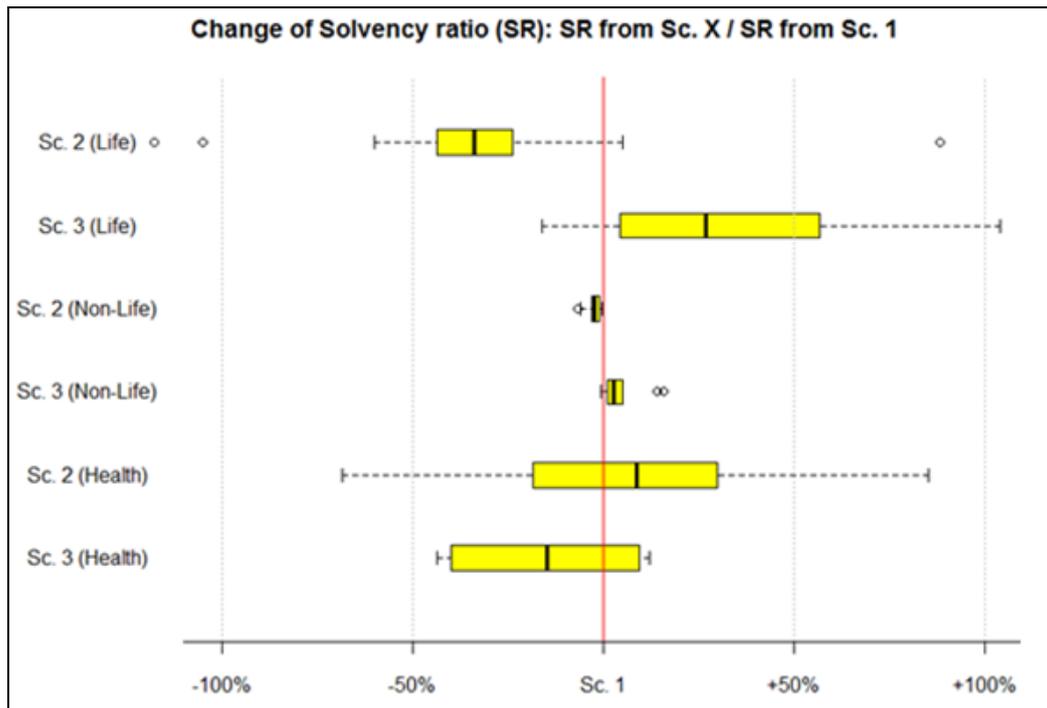
Figure 3 shows how the solvency ratio varies with the level of the interest adaptation, by showing the relative change of the ratio when moving from 100bp to 50bp (Scenario 2) and moving from 100bp to 250bp (Scenario 3) respectively.

Figure 4 conducts the same analysis for technical provisions, showing the relative change of the ratio when moving from 100bp to 50bp (Scenario 2) and moving from 100bp to 250bp (Scenario 3) respectively.

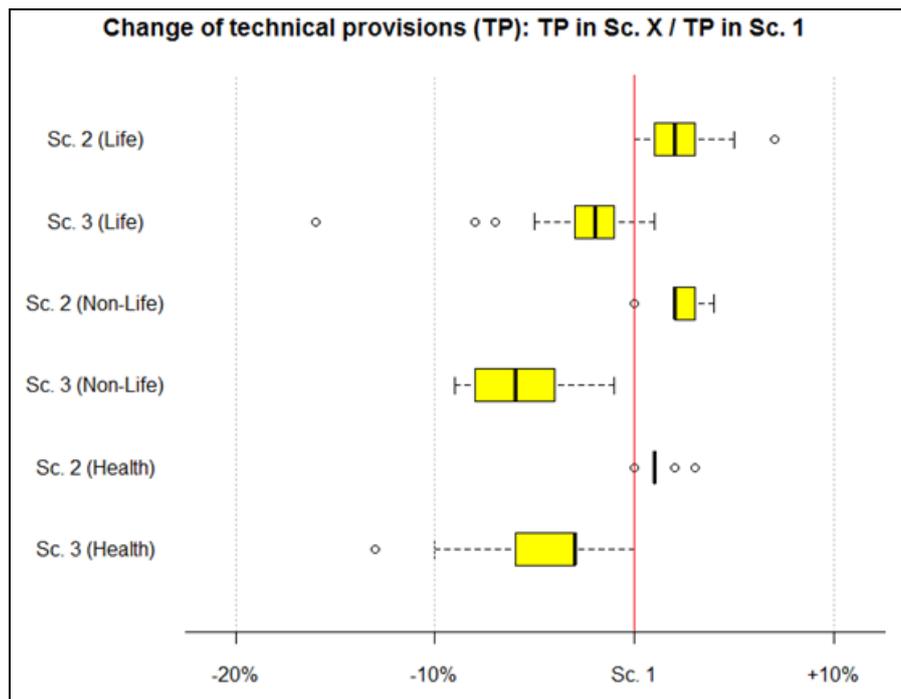
The graphs should be read as follows: dots mark statistical outliers, for the rest of the sample, 50 percent of participants are shown within the yellow box; the black line in the yellow box marks the position of the average participant (median); maximum and minimum are at the ends of the dashed lines.

² It should be noted that all analysis shown in this section is based on the "Base scenarios" of the LTGA, i.e. undertakings have applied the following LTG measures alongside the adaptation: the Classical matching adjustment Standard version, the Extended matching adjustment Standard I version, and a 10 years convergence speed with regards to extrapolation.

**FIGURE 3 DEPENDENCY OF THE SOLVENCY RATIO ON THE LEVEL OF ADAPTATION:
50BP VERSUS 100BP, 250BP VERSUS 100BP**



**FIGURE 4 DEPENDENCY OF TECHNICAL PROVISIONS ON THE LEVEL ADAPTATION:
50BP VERSUS 100BP, 250BP VERSUS 100BP**



Considering the life sector, it can be seen that an increasing adaptation leads to increasing solvency ratio. Although this seems obvious one has to take into account the effect of the adaptation-risk, which can be observed very clearly in the change of the solvency ratio from Scenario 1 to Scenario 3. The increasing solvency ratio does not reflect the increase of adaptation from 100 bp to 250 bp. The level of the adaptation does not influence the level of technical provisions to the extent expected either. The reason is that a higher level of adaptation leads to higher Future Discretionary Benefits which increase the technical provisions and therefore dampen the effect of an increasing adaptation. Also looking at Scenario 2 in comparison to Scenario 1, the level of the adaptation does not influence the level of technical provisions to the extent expected either. Again, the reason is that a lower level of adaptation leads to lower future discretionary benefits which decrease the technical provisions and therefore dampen the effect of a decreasing adaptation.

For the health sector, the impact on the solvency ratios varies around 100% where the lower adaptation (50 bps, scenario 2) nearly meets the original solvency ratios on average. The higher adaptation (250 bps, scenario 3) downgrades the solvency ratio mainly influenced by the adaptation stress. As far as the impact on the technical provisions is concerned the higher adaptation slightly lowers the value of

the technical provisions. As in life insurance business the loss absorbing capacity of the obliged surplus participation combined with a premium adjustment mechanism, which is characteristic for German health insurance business, is the main reason for this result. The impact of the adaptation stress is similar to that of life insurance. This effect is caused by the fact that the main business of health insurance undertakings is based on long term life insurance techniques.

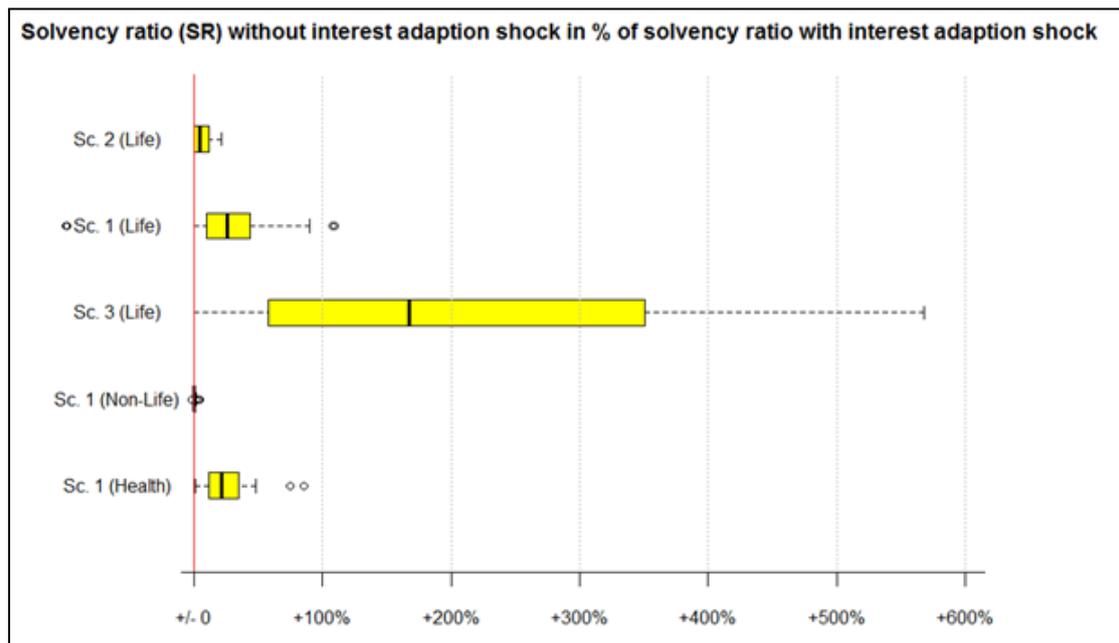
With regard to the non-life sector (excluding health), it can be observed that a higher level of adaptation reduces the technical provisions of all participants. However this effect is not large enough in order to create an impact on the participants' solvency position as large as observed for life or health firms. In general, the respective undertakings are not very sensitive to the changes in the interest rate level. In consequence, the changes for different levels of adaptation are not as scattered as for the other classes of business. Nonetheless, a lot of undertakings remarked in the qualitative questionnaire that the adaptation would help to avoid pro-cyclical behaviour during stressed market conditions.

In Figure 5 we are isolating the effect of the standard formula stress on the interest adaptation, comparing solvency ratios where the adaptation-stress has been removed to solvency ratios including the adaptation-stress. The impact of the adaptation-stress for non-life and health participants was thereby not as big as for life participants. The graphs were therefore plotted for the whole range of scenarios 1 to 3 only for the life insurance sample.

It can be clearly seen that that for the life sector, the adaptation-stress does not only have a great impact across scenarios (as mentioned above) but also within the scenarios. This demonstrates that the adaptation risk module counteracts the intention of the adaptation.

With regards to the non-life sector, it can be observed that since the impact of the adaptation on the solvency position is not very big, the adaptation stress does not have a big impact either. The small adaptation stress usually does not add a lot of capital charge to the market risk module after diversification between the sub-modules.

FIGURE 5 EFFECT OF STRESS ON THE ADAPTATION ON THE SOLVENCY RATIO



3.7.2. Undertakings by size

No varying trends could be observed from the outcomes of small, medium or large participants. We attribute this to the fact that German life and health insurance is generally homogenous with respect to the type of business written, and that the instrument tested is non-complex in its application.

3.7.3. Undertakings by type

Please refer to section 3.7.1.

3.7.4. Group aspects

Please refer to EIOPA report.

3.7.5. National market insights

n/a

3.7.6. Cross-border business

Please refer to EIOPA report.

3.7.7. SII balance sheet volatility

Please refer to section 3.7.7.

3.8. Impact on competition

Please refer to section 9.8.

3.9. Impact on Long Term Investments

Please refer to section 9.9.

3.10. Other considerations

n/a

3.11. Main technical findings on the individual measure (adaptation)

Our analysis shows clearly that the interest adaptation is an effective instrument to account for distorted financial markets at YE 2011. It is effective in adjusting the valuation of liabilities, in order to balance out the effects of excessive and temporary spread movements which are transported into the solvency II balance sheet through the market valuation of assets.

With regard to the complexity of the measure, we assess it not to add material complexity, as only the assumption on the interest rate term structure will need to be replaced in the valuation models of the undertakings. This conclusion is based on the assumption that the adaptation is not being anticipated in the pricing, valuation and risk management which is a requirement in the Omnibus II text being the basis for the LTGA. BaFin considers that this implies that the adaptation is only reflected in the valuation in times of crisis whereas there is no explicit modelling or allowance for future potential adaptations. For the supervisory process this implies that the supervisor will need to verify that the adaptation is not anticipated in the pricing, valuation and risk management, in particular in the scenario calibrations being used in stochastic valuation models.

Nonetheless, we note that the results of the LTGA have shown that the inclusion of a capital charge for the adaptation massively impacts the effectiveness of the adaptation counteracting its effect by reducing it disproportionately. This is particularly obvious when comparing the results for the first three scenarios. Whereas the solvency ratios stay within a range of +/-30% compared to scenario 1 where a 100 bps adaptation is applied, the variance is far higher, when the risk module for the adaptation is not taken into account. We are furthermore wondering how the risk charge it introduces can be justified in the general setup of the LTG framework. In our view, the effect of an instrument well suited for the reduction of volatility is thus distorted by adding an element generally foreign to the Solvency II framework that does not foresee capital requirements for the risk of mis-valuation of balance sheet positions. Thus, we strongly advocate removing the risk charge for the adaptation from the framework.

With regard to the conceptual implementation of the adaptation and in view of its task to act as a counter-cyclical tool in times of crisis situations, it is considered sensible to base the determination of the adaptation on a representative portfolio, which is determined either currency or national specific to ensure that the insurance and reinsurance undertakings can earn the adaptation in practice in a risk-free manner. Although this implies that the adaptation does not perfectly match the effect on the assets which can be observed for each individual insurer, this can be tolerated in view of the temporary application and its aim to reduce pro-cyclical behaviour. In addition, this approach ensures that undertakings are not exposed to the wrong risk management incentives as it is not possible for them to "chase the premium". Furthermore, the determination based on a representative portfolio performed centrally by EIOPA allows for a transparent application not diminishing comparability of technical provisions across undertakings. The adaptation consequently allows accounting for a disrupted market situation in an objective manner.

The qualitative feedback from participants indicated that the industry considers it essential for the adaptation to be predictable and consequently to be based on predictable triggers and formulae. We agree that the adequate use of the adaptation in times of exceptional circumstances depends on the concrete design of this measure. It seems important that the application of the adaptation is designed as a functional tool that minimizes pro-cyclical effects and excessive or artificial volatility that are likely to occur in times of stressed financial markets. We therefore consider it necessary that the methods applied for the purpose of determining a crisis, as well as the quantification of the adaptation are comprehensible and made transparent for both undertakings and supervisors. Thus, we see the need to publish the process to be followed and the methodology to be applied in line with the other components of the term structure. We also acknowledge the industries request for certainty to allow for proper financial planning. For this purpose, it is necessary that a sensible

approach is applied for both, the quantification of the adaptation but also the determination of stressed circumstances. We therefore support to introduce additional criteria in the Level 2 text to further clarify the conditions under which a crisis is present and thus an adaptation is to be applied.

Assessment of alternatives to the adaptation

Some stakeholders recently suggested including an alternative to the current design of the adaptation into the LTG package which is basically intended as a permanent mechanism based on currency or national representative portfolios. We understand that the motivation for proposing this new measure is to reduce volatility in the solvency position. We would like to express our view that further refinement of the instrument will be necessary in order to ensure that it is fit for purpose in this respect. We however appreciate that the design already addresses the predictability issues of the adaptation, although we are of the view that these could have also been tackled by improving the adaptation mechanism with respect to the transparency of the quantification and the determination of stressed circumstances. It should also be noted that other alternatives to the adaptation, e.g. the introduction of a supervisory forbearance instrument based on a few simple principles might do the job as well.

If this new proposal were further advanced, we recommend retaining the adaptation's requirement prohibiting the anticipation of the measure's application in undertakings' risk management, pricing and valuation. We are not convinced that the introduction of transparent disclosure requirements via an alternative own funds adjustment approach will be sufficient to set appropriate risk sensitive incentives in this respect. Furthermore, with the instrument's purpose to serve as a supervisory forbearance tool in times of crisis in view, we prefer an instrument that is applied for a limited, pre-defined time period over a permanent mechanism. In this context, we consider it also of utmost importance that the measure's design features a mechanism that is non-symmetrical with respect to the adaptation mechanism, thus not artificially increasing capital requirements in favourable market circumstances. We appreciate that the instrument's design is appropriate in this respect.

In view of the fact that the alternative adaptation has not been tested in the LTGA, we are of the view that further technical analysis will need to be performed to assess the implications of applying an own funds adjustment instead of an adjustment to technical provisions as this would add a complete new and artificial component in the own funds framework. We also note that under such an approach, without adding a new asset item, own funds would no longer be determined as the surplus of assets over liabilities. This would be inconsistent with the overall system of own funds determination and classification and would constitute a more significant interference with the Solvency II methodologies than only altering interest rates as an input parameter for the valuation of technical provisions. Also, we expect some technical

issues at group level with respect to the transferability and eligibility of group own funds.

4. Extrapolation – Article 77b

4.1. Purpose of the measure and highlights of the tested approach (Extrapolation)

Please refer to EIOPA report.

4.2. Impact on policy holder protection

Please refer to section 9.2

4.3. Impact on effective and efficient supervision

Please refer to section 9.3

4.4. Implementation effort

4.4.1. For industry

Please refer to section 9.4

4.4.2. For NSAs

Please refer to section 9.4

4.4.3. For EIOPA

Please refer to EIOPA report.

4.5. Incentives for good risk management

Please refer to section 9.5

4.6. Impact on financial stability and prevention of systemic risks

Please refer to section 9.6

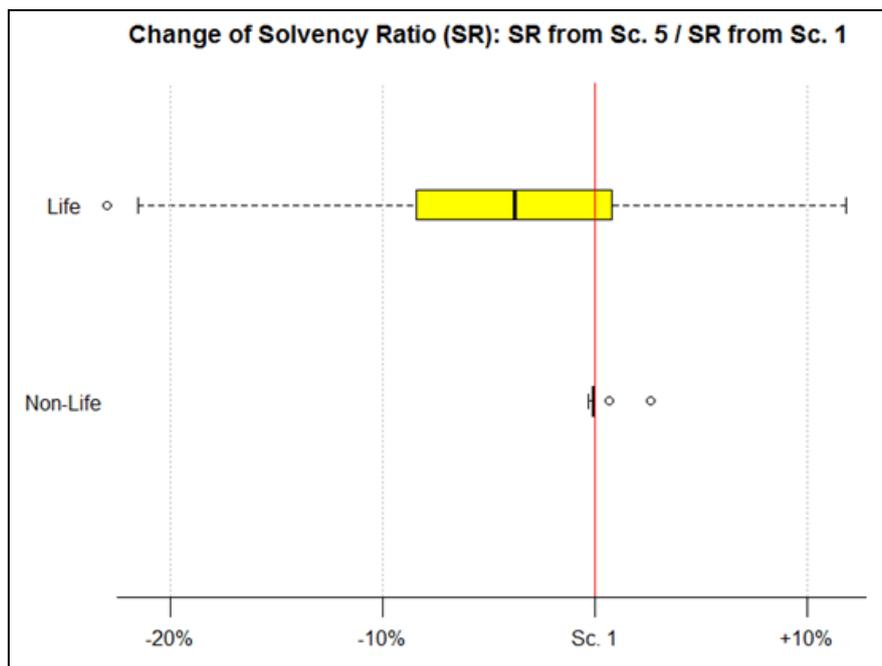
4.7. Impact on insurance and reinsurance undertakings' solvency position³

4.7.1. All undertakings

For a detailed description of the methodology and scenarios referred to in this section, please refer to EIOPA report.

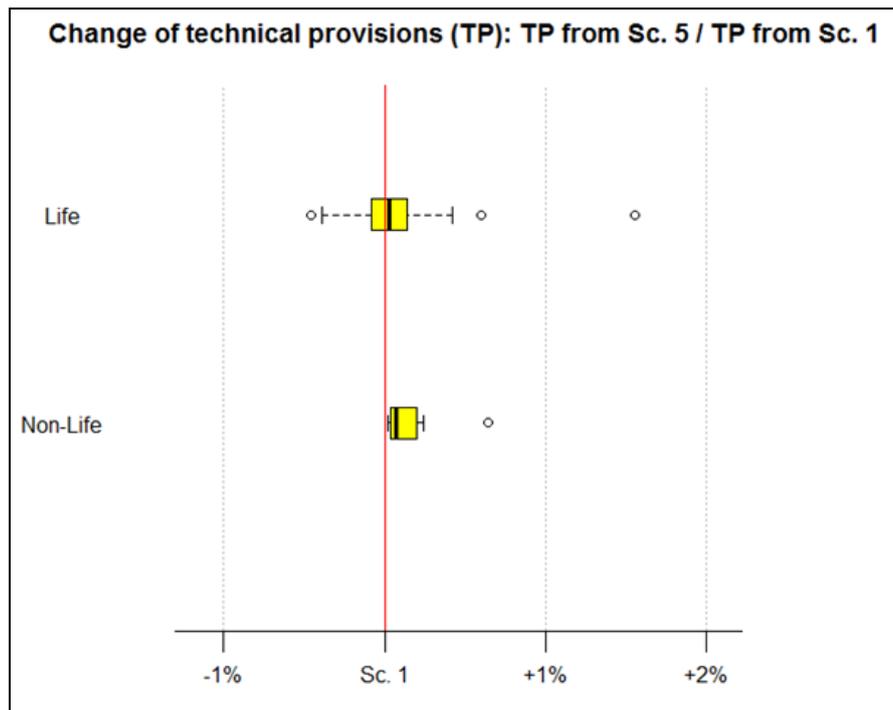
Figure 6 examines the effect of the speed of convergence chosen for the extrapolation methodology on the solvency ratio, whereas Figure 7 conducts the same analysis on the effect on technical provisions. Both graphs show only the life and non-life (excl. health) sectors, as the sample for Health was too small to be included in the graphs.

FIGURE 6 EFFECT OF SPEED OF CONVERGENCE ON SOLVENCY RATIO: 40 VERSUS 10 YEARS



³ It should be noted that all analysis shown in this section is based on the "Base scenarios" of the LTGA, i.e. undertakings have applied the following LTG measures alongside the extrapolation approach: the Classical matching adjustment Standard version, the Extended matching adjustment Standard I version, and a 100 bps adaptation.

FIGURE 7 EFFECT OF SPEED OF CONVERGENCE ON TECHNICAL PROVISIONS: 40 VERSUS 10 YEARS



For the life sector, a comparison between Scenario 1 and Scenario 5 does neither show an essential difference for the solvency ratio nor for the technical provisions. It seems that not the length of the extrapolation plays the decisive role when applying the Smith-Wilson method to calculate the basic risk-free interest rate term structure but the starting point of extrapolation. However, the concrete design of the extrapolation should be such that it avoids artificial volatility in the extrapolated part of the curve. This motivates a fast rate of convergence towards the UFR.

With regards to the non-life (excl. health) sector, it can be observed that as described in the section 3.7.1 that the industry not very sensitive to changes in the level of interest rates. The impact of the convergence speed on their solvency position or the level of technical provisions is therefore rather small. However some participants answered in the qualitative questionnaire that the faster convergence would help to reduce artificial volatility.

For health insurance business, the sample is too small to warrant a quantitative assessment. However, taking into consideration the long term character of business written by the German health sector, we anticipate that both technical provisions and solvency ratios are influenced by the choice of the extrapolation period.

4.7.2. Undertakings by size

No varying trends could be observed from the outcomes of small, medium or large participants. We attribute this to the fact that German life and health insurance is generally homogenous with respect to the type of business written, and that the instrument tested is non-complex in its application.

4.7.3. Undertakings by type

Please refer to section 4.1

4.7.4. Group aspects

Please refer to EIOPA report.

4.7.5. National market insights

n/a

4.7.6. Cross-border business

Please refer to EIOPA report.

4.7.7. SII balance sheet volatility

Please refer to section 9.7

4.8. Impact on competition

Please refer to section 9.8

4.9. Impact on Long Term Investments

Please refer to section 9.9

4.10. Other considerations

n/a

4.11. Main technical findings on the individual measure (Extrapolation)

With respect to the extrapolation of the risk free rate, we support the general approach taken to design it such as to reduce artificial volatility in technical provisions and thus in the full solvency II balance sheet including own funds. We would like to stress that, although an extrapolation method ensuring a fast convergence to the UFR is most beneficial for reducing volatility over time, we welcome the fact that the most important design element working to that effect has already been decided on by the dialogue parties, namely the determination of the last liquid point (LLP).

Where compatible investment products are offered to match liabilities, these can provide information which can be used for a market-consistent valuation of technical provisions. However, due to the lack of market instruments with matching durations for long term liabilities, for longer maturities predictions about future returns based on observable market data have to be made. For the input to the non-extrapolated part of the interest rate curve, it is essential to focus on observable market data that stems from deep, liquid and transparent markets (DLT) to ensure a consistent valuation of technical provisions in the Solvency II Balance Sheet. In addition, it is important that the choice of the interest rate curve to be used for the discounting of liability cash flows ensures that the behaviour of the curve beyond the starting point into extrapolation is credible through time and thus allows a reliable valuation of liabilities.

We therefore consider it important to provide a good fit to market prices on the one hand, whilst not preventing insurers to manage changes between valuation dates in a credible fashion. To ensure a reliable valuation of liabilities through time, the choice of the starting point into extrapolation should consequently have due regard to the volume of the available fixed income markets (corporate and government bonds as well as swaps) with respect to the liabilities to be covered for the respective maturities, thus taking into account the hedging possibilities of the insurer. We therefore consider it of utmost importance that the current OII compromise proposal stipulates a LLP that reflects the liquidity in bond markets, as reflected in the fact that the ToR did not mandate EIOPA to analyse the determination of LLP in the context of the LTGA.

Certainly, the extrapolation methodology itself, where interest rates are assumed to approach to a long-term equilibrium (UFR), does already address the problem of artificial volatility. However, the concrete design should be such that it avoids artificial volatility in the extrapolated part of the curve. It is part of the fundamentals of a macro-economic extrapolation approach that there is a reduction of volatility of the interest rates through time for increasing maturity. This in fact was the

motivation to extrapolate to a fixed UFR. Therefore, this assumption should also be reflected in the choice of the rate of convergence towards the UFR, or more generally for the extrapolation approach as a whole.

The speed of convergence was explicitly tested in the LTGA in scenario 5 where the impact of a 40 years convergence speed was assessed. Comparing the results of this scenario with scenario 1 which was based on the assumption of a 10 years convergence speed, it can be concluded that the choice of the speed of convergence does only have a minor impact on the valuation of technical provisions - and thus the own funds - and the solvency capital requirement. However, it is expected that the volatility of solvency results will be reduced over time in case a quick convergence is chosen, as movements in observable interest rates in deep, liquid and transparent markets will have less impact on the final interest rate term structure used for the valuation of technical provisions.

In addition, we would like to note that, in line with the proposal made for the extrapolation of the interest rate, the determination of the capital requirement for interest rate risk in the standard formula should be developed such that it reflects the reduction in volatility of interest rates for longer maturities. The approach chosen should be consistent to the approach taken for the determination of Technical Provisions. We thus propose to change the current approach to the interest rate stress to an approach which is based on an extrapolation of stressed liquid data points to a UFR. This would adequately reflect the relative invariance of the ultimate long-term forward rate. However, we do not believe that it is reasonable to keep the UFR unchanged in the interest rate stress scenarios prescribed in the standard formula. Taking into account the very long term nature of the UFR, there is a risk that economies undergo changes leading to an UFR that deviates from the one assessed today. However the risk of a sustained change in the inflation environment would also need to be reflected as the expected inflation rate - as a component of the UFR - would be affected. Therefore, we consider it technically sound to allow for a change in the UFR and do not consider that this would add complexity to the calculation itself. However, we agree that the calibration of such a stress is challenging. Assuming that the UFR is assessed as the sum of two components (the real interest rate and expected inflation rate), it seems sensible to anticipate only modest stress that allow for the consequences any fundamental change in the manner financial markets and economic policies work at present could have on the UFR. We consider a 5% stress to the UFR to be a sensible stress level for the UFR.

5. “Classical” Matching adjustment – Article 77c

The classic matching adjustment was not considered to be applicable by most undertakings participating in the LTGA because they are not able to separate the asset portfolio for the purpose of the matching with corresponding liabilities. Only the extended matching adjustment was therefore applied for German insurance business for the purpose of the LTGA. Please refer to section 6.11 for the technical findings on the extended matching adjustment.

6. “Extended” Matching Adjustment – Article 77e

6.1. Purpose of the measures and highlights of the tested approach (“Extended” matching adjustment)

Please refer to EIOPA report.

6.2. Impact on policy holder protection

Please refer to section 9.2.

6.3. Impact on effective and efficient supervision

Please refer to section 9.3.

6.4. Implementation effort

6.4.1. For industry

Please refer to section 9.4.

6.4.2. For NSAs

Please refer to section 9.4.

6.4.3. For EIOPA

Please refer to EIOPA report.

6.5. Incentives for good risk management

Please refer to section 9.5.

6.6. Impact on financial stability and prevention of systemic risks

Please refer to section 9.6.

6.7. Impact on insurance and reinsurance undertakings' solvency position

6.7.1. All undertakings

For a detailed description of the methodology and scenarios referred to in this section, please refer to EIOPA report.

Figure 8 examines the effect of introduction of the extended matching adjustment on the solvency ratio, whereas Figure 9 conducts the same analysis on the effect on technical provisions. Both graphs show only analysis for the life and health sectors, as hardly and non-life (excl. health) participant reported results for the instrument.

FIGURE 8 IMPACT OF THE EXTENDED MATCHING ADJUSTMENT ON THE SOLVENCY POSITION

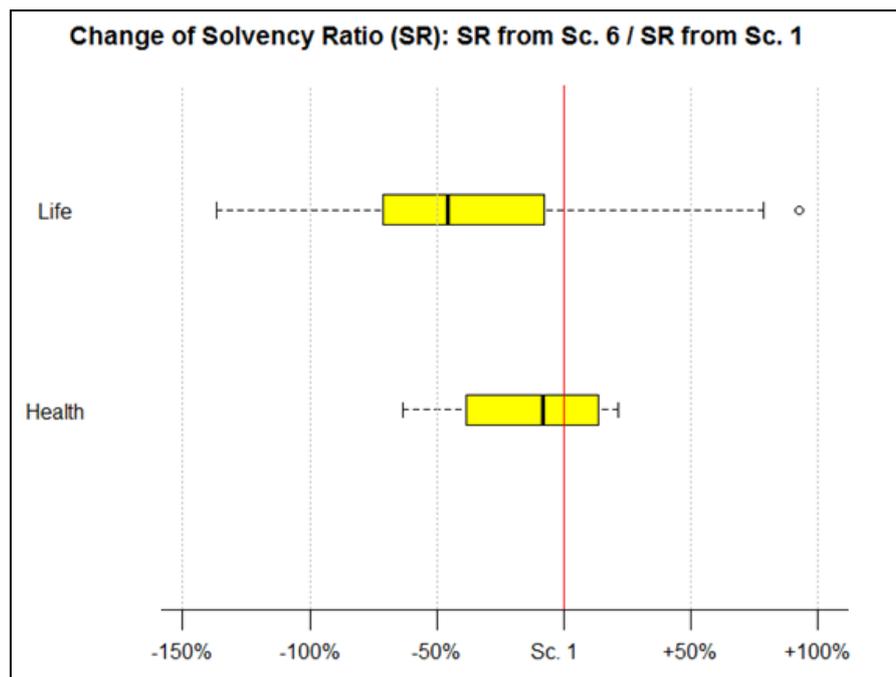
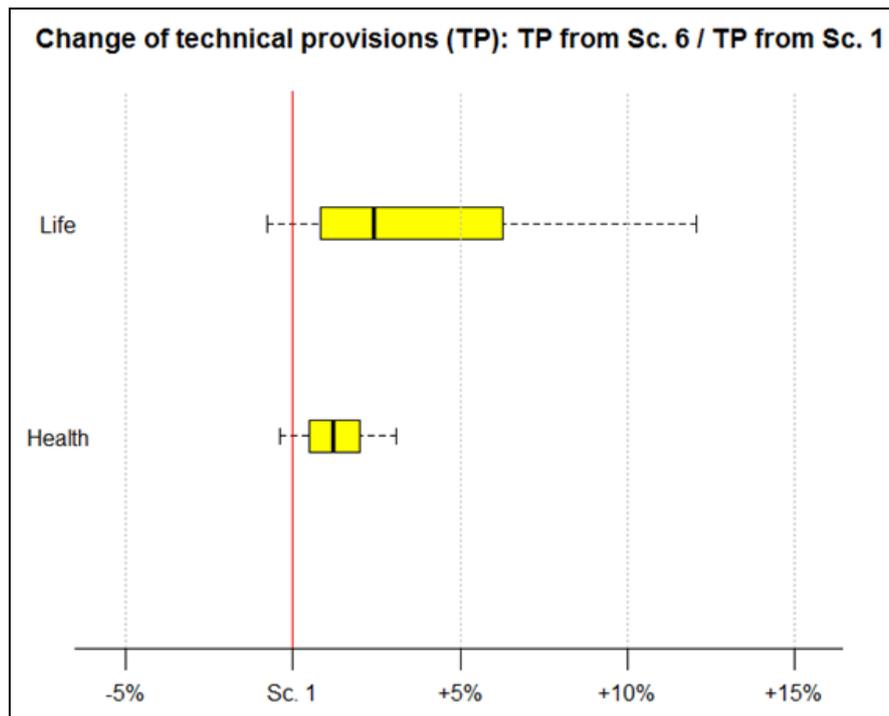


FIGURE 9 IMPACT OF THE EXTENDED MATCHING ADJUSTMENT ON TECHNICAL PROVISIONS



Although the life sector results disperse widely, it can be observed that the extended matching adjustment does neither lead to a higher solvency ratio, nor to lower technical provisions. This is connected to the fact that the application of the matching adjustment and the interest adaptation are mutually exclusive. Thus, whereas in Scenario 1 an interest adaptation of 100bp applies, in Scenario 6 level of adjustment must be earned by the assets.

For the health sector, at the current stage of development, the results do not justify the implementation of a matching adjustment given that technical provisions even slightly grow while the solvency ratios are reduced by some 10 percentage points on average. The changes of solvency ratios vary heavily.

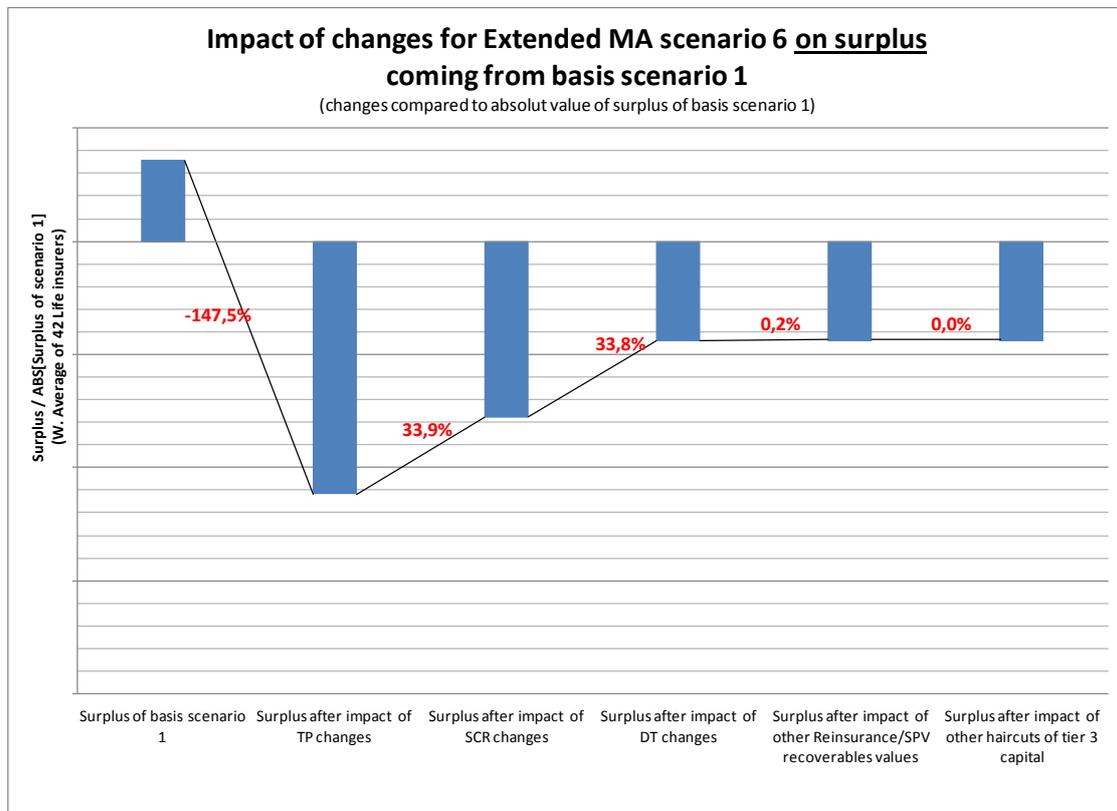
Only one non-life (excl. health) participant delivered quantitative results on the scenario 6. It is therefore not possible at this stage to draw conclusions on the impact of the extended matching adjustment for non-life sector based on the quantitative results. Some non-life participants remarked in their qualitative feedback that the complexity of the extended matching adjustment is too high. In consequence, the benefits from an application of the matching adjustment for the non-life sector would not justify the resources necessary in order to apply it.

Eligibility of Technical provisions for the extended matching adjustment

In the German life insurance market, the extended matching adjustment could only be applied to the whole with-profit life insurance portfolio. This is due to the fact that future discretionary benefits arising from investment income for a German life insurance undertaking are, according to the German insurance supervisory law (Versicherungsaufsichtsgesetz, VAG), to be calculated on the basis of the whole undertaking’s asset portfolio as well as distributed to all profit sharing contracts within the undertaking. There is generally no direct allocation of assets to a sub-portfolio of insurance liabilities.

This fact was also reflected in the results received from undertakings, where the vast majority reported that the extended Matching Adjustment had been applied to all insurance liabilities excluding index- and unit-linked liabilities. Similar results were received from German health insurers.

FIGURE 10 DECOMPOSITION OF SURPLUS FOR THE MATCHING ADJUSTMENT: LIFE SECTOR



Based on a weighted average, life participants reported a reduction in the overall surplus of 38% when applying the extended Matching Adjustment compared to the surplus reported for scenario 1 (assuming an adaptation of 100 bps).

For nearly all life insurers, technical provisions increased, which resulted in a clear negative effect on the surplus compared to scenario 1 of around -150%.

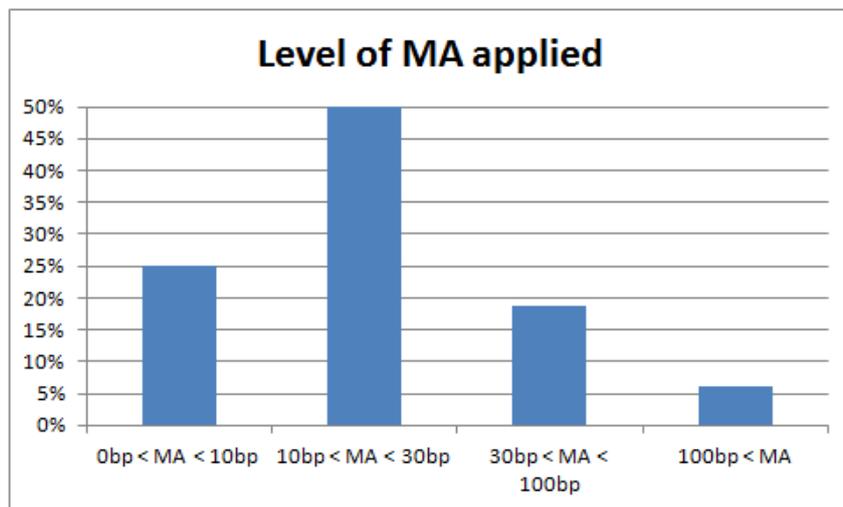
In particular for large insurance undertakings it could be observed that the SCR decreased in scenario 6 compared to scenario 1. This resulted in an increase of the surplus of around 34% (always based on weighted averages).

Similar effects could be observed for the changes in deferred taxes, the changes of which lead to a further increase in the surplus. There is only minor impact observed on the surplus with respect to changes in reinsurance/SPV recoverables.

A. Credit quality of eligible assets

Figure 11 shows that for the vast majority of the life insurers the level of matching adjustment applied in scenario 6 (Extended MA Alternative) is below 30 bps. This is caused by the low level of the application ratio which shall make sure that insurance undertakings incur no losses due to mismatching and forced sales.

FIGURE 11 LEVEL OF MATCHING ADJUSTMENT APPLIED BY PARTICIPANTS

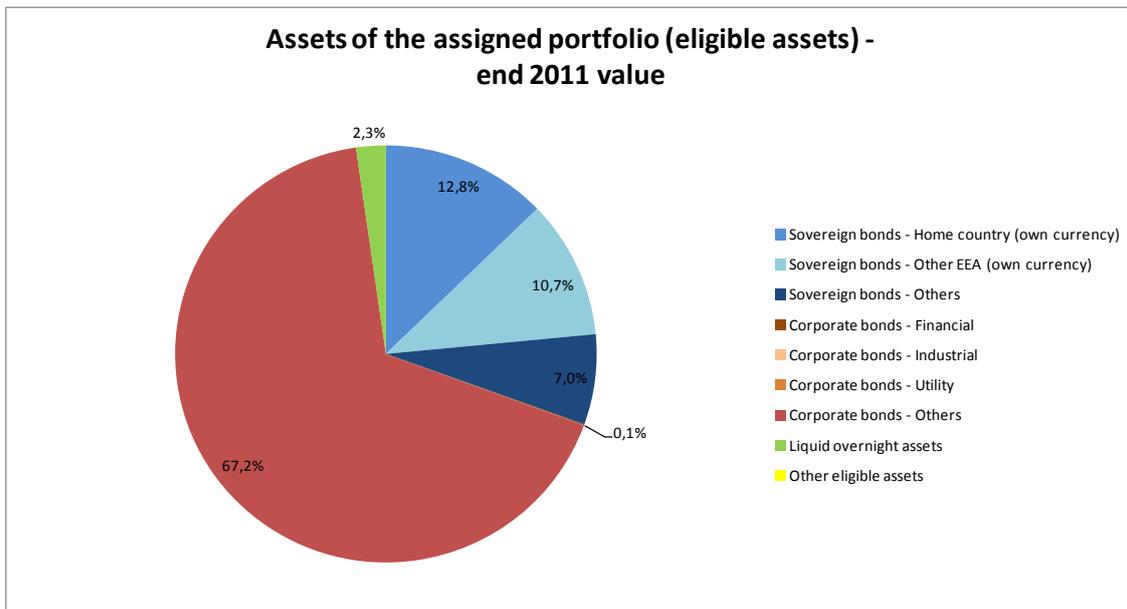


B. Types of assets including fixity of cash flows

German insurers participating in the LTGA did not calculate the sensitivity for the extended matching adjustment based on a hypothetical portfolio. Furthermore, no results were received for the estimation of the impact of applying the fixed asset cash flows requirement to the extended alternative matching adjustment. In addition, there was no information available on the additional sensitivity for netting surpluses and shortfalls in the alternative application ratio. No conclusions on those can therefore be drawn from the quantitative inputs received.

Figure 12 clearly illustrates that nearly all investments of German life insurers (remembering the fact that no sub-portfolio of liabilities and thus of the assets was chosen for the application of the extended Matching Adjustment) are in bonds and thus applicable for the assigned portfolio of assets.

FIGURE 12 ASSETS ASSIGNED TO MATCHED PORTFOLIO: LIFE SECTOR



C. Matching criteria

The framework of 77c was considered to be not applicable to current business by most undertakings in our market. As thus only the extended matching adjustment was applied for which the matching criteria is not applicable, no analysis on this issue is performed for the German market.

D. Application ratio

We note that the current proposal for the determination of the application ratio was developed to enable an implementation of the extended matching adjustment for the purpose of the LTGA. However, we are not convinced that the current modelling of the application ratio ensures that the part of the insurance portfolio which remains matched under stressed situations is reflected adequately, in particular when lapse due to socioeconomic factors is considered.

In view of the technical difficulties to capture this in the technical framework, it is of considerable importance that this framework is implemented appropriately in order not to endanger policyholder protection by mispricing the actual risks. Further analysis will therefore need to be performed to ensure that the proposed calculation methodology including the allowance of spread risk adequately reflects the risk of

losses insurance undertakings could incur through forced sales taking into account the allowed safety level. We thus ask EIOPA to further develop the methodology in the future in its technical standard including background analysis, rationale for the choice of the stress and the determination of the stress levels.

The weighted average of the application ratio reported amounts to 50,2 %. Please note that only 10 life insurance undertakings have delivered information on the application ratio applied, the numbers do thus not necessarily reflect the whole sample received for scenario 6.

E. Determination of fundamental spreads

As regards the share of total market spread explained by the fundamental spread in our sample, they cannot be by asset classes, durations and ratings. They vary from 0.25% to 18.84% where the average is given by 9.61% and the median by 8.82%.

Independent from particular insurance products in our national market, we consider that the matching adjustment concept does not yet properly reflect all risks. In particular, we consider that the volatility of the probability of default (the risk that the expectation with respect to the probability of default is not met) is not adequately reflected. It would be preferable to allow for this risk in reflecting the spread risk associated with the assets in the matching portfolio in the risk margin. This would be based on the assumption that both, liabilities as well as assets in the matching adjustment portfolio, are transferred to the reference undertaking. An alternative would be to consider the volatility of the probability of default in the fundamental spread. It seems however that the current design of the fundamental spread composed of the following two elements

- “(i) the credit spread corresponding to the probability of default of the assets; and
- (ii) the credit spread corresponding to the expected loss resulting from downgrading of the asset. ”

does not yet adequately reflect that.

In this respect we would like to stress that we consider it of utmost importance that the cost of downgrading is included in the fundamental spread. Not allowing for this risk in the fundamental spread would have the consequence that a material risk would not be considered anymore.

6.7.2. Undertakings by size

No varying trends could be observed from the outcomes of small, medium or large insurers. There are thus no differing conclusions on the impact depending on size.

Nevertheless, we would like to note that as the implementation cost for the matching adjustment might be considerable, we consider that larger undertakings might have a comparative advantage over small market participants. In order to benefit from the measure, undertakings must implement new organisational structures fulfilling the legal requirements for ring-fencing, develop the technical infrastructure and expertise to calculate the adjustment.

Furthermore, the considerably broad framework for the matching adjustment leaves some room for undertakings with respect to the design of the portfolio and the technical implementation of the adjustment. Larger undertakings may be better equipped to make best use of the options offered by the current provisions for their advantage. In addition to that, the access to financial markets and a sophisticated Asset-Liability Management may be contributing factors for a comparative advantage.

6.7.3. Undertakings by type (Life, NL, Health, Composites)

Please refer to section 6.7.1.

6.7.4. Group aspects

Please refer to EIOPA report.

6.7.5. National market insights

n/a

6.7.6. Cross-border business

Please refer to EIOPA report.

6.7.7. SII balance sheet volatility

Please refer to section 9.7.7.

6.8. Impact on competition

Please refer to section 9.8.

6.9. Impact on Long Term Investments

Please refer to section 9.9.

6.10. Other considerations

n/a

6.11. Main technical findings on the individual measure ("Extended" matching adjustment)

The extended matching adjustment introduces a new component by adapting the valuation of liabilities when undertakings have a specific asset structure.

If the extended matching adjustment was introduced, we consider it essential

- that there are specific requirements on the assets of the assigned portfolio of assets to ensure a prudent investment behavior preventing undertakings to chase the premium; this covers both, investment rules with regard to minimum requirements on the asset quality as well as assets eligible for the assigned portfolio of assets,
- that there are requirements on the underwriting risks allowed for in the contracts for which the extended matching adjustment is applied which impacts on the concrete design of the application ratio in case of the extended matching adjustment,
- more general, that all risks are reflected adequately.

The instrument leads to a technically complicated adjustment mechanism. In particular, we consider that the concept does not yet properly reflect all risks. In particular, we consider that the volatility of the probability of default (the risk that the expectation with respect to the probability of default is not met) is not adequately reflected as it is neither reflected in the risk margin nor in the fundamental spreads.

In addition, we are concerned that the modifications to the SCR calculations introduced for the purpose of the extended matching adjustment will need to be examined in more detail, in particular the interaction between the SCR calculations and the calculation of the application ratio, implying in addition specific group considerations. For the calculation of technical provisions on group level we expect it challenging for the supervisor to assess the comparability of the valuation (comparable calculation of the matching adjustment) between the different undertakings within the group.

We also see some methodological flaws in respect to the implementation of the application ratio. We are not convinced that the modelling of the application ratio ensures that the part of the insurance portfolio which remains matched under stressed situations is reflected adequately. In view of the technical difficulties to capture this in the technical framework, it is of considerable importance that the framework for the extended matching adjustment is implemented appropriately in order not to endanger policyholder protection by mispricing actual risks. Further analysis will therefore need to be performed to ensure that the proposed calculation methodology including the allowance of spread risk adequately reflects the risk of losses insurance undertakings could incur through forced sales taking into account the allowed safety level.

7. Transitional measure – Article 308b

7.1. Purpose of the measures and highlights of the tested approach (Transitional)

The long term guarantees assessment included a transitional measure on the relevant risk-free interest rate term structure to calculate the best estimate with respect to insurance or reinsurance obligations, for contracts, excluding renewals,

- (a) for which, according to the laws, regulations and administrative provisions adopted pursuant to Directive 2002/83/EC, technical provisions were determined using the interest rate referred to in the laws, regulations and administrative provisions adopted pursuant to Article 20.B.a of that Directive; and,
- (b) where the insurance or reinsurance undertaking complies with the laws, regulations and administrative provisions for the establishment of technical provisions which are adopted pursuant to Article 20 of Directive 2002/83/EC, Article 15 of Directive 73/239/EEC and Article 32 of Directive 2005/68/EC.

In the transitional phase, undertakings are required to value these contracts according to Solvency II principles, however assuming that an average of Solvency II and Solvency I interest rates is used for valuing existing liabilities, where the Solvency I interest rate is fixed at the date of implementation of the LTG package. In effect, the transitional measure applies to recognized insurance obligations at date of application of Solvency II. For new business the full Solvency II valuation applies. Nevertheless, two alternatives of the transitional have been quantitatively assessed in the LTGA by insurance and reinsurance undertakings:

- The application of the transitional interest rate curve for the valuation of recognized insurance obligations (Scenario 8);
- The application of the transitional interest rate curve for the valuation of recognized insurance obligations relating to already paid-in premiums only (Scenario 9).

The purpose of the measure is to introduce the full effect of the Solvency II valuation only gradually over a sufficiently long time-period.

For the LTG, a transitional period of seven years was assessed. The LTG aimed to assess the impact of the transitional measure on European insurance and reinsurance undertakings' solvency position.

7.2. Impact on policy holder protection

Please refer to section 9.2

7.3. Impact on effective and efficient supervision

Please refer to section 9.3.

7.4. Implementation effort

7.4.1. For industry

Please refer to section 9.4

7.4.2. For NSAs

Please refer to section 9.4

7.4.3. For EIOPA

Please refer to EIOPA report.

7.5. Incentives for good risk management

Please refer to section 9.5

7.6. Impact on financial stability and prevention of systemic risks

Please refer to section 9.6

7.7. Impact on insurance and reinsurance undertakings' solvency position

We note that the only alternative calculated by German insurance undertakings is the transitional being applied to the whole existing business. No results were obtained for scenario 9, where the transitional yield curve is to be applied to obligations arising from paid-in premiums only.

The artificial split of obligations for the purpose of the calculation of the transitional can be considered as not feasible and does not fit the intended purpose of the

transitional – the smooth phasing in of the Solvency II valuation for the existing business.

7.7.1. All undertakings

For a detailed description of the methodology and scenarios referred to in this section, please refer to EIOPA report.

Figure 14 examines the effect of introduction of the interest transitional on the solvency ratio, whereas Figure 15 conducts the same analysis on the effect on technical provisions. Both graphs show only analysis for the life and health sectors, as hardly any non-life (excl. health) participant reported results for the instrument.

Only one non-life (excl. health) participant delivered quantitative results on the scenario 8. It is therefore not possible at this stage to draw conclusions on the impact of the interest transitional for the non-life sector based on the quantitative results. However, as laid out in section 3.7.1 the non-life sector is not very sensitive to changes in the level of interest rate. Thus, no large impact is expected from the application of transitional measures on the solvency position of German non-life business.

For life insurance business, the results highlight that the impact of the application of the transitional on technical provisions is comparable to scenario 1 - thus the transitional results in an overall decrease of technical provisions as expected. Also the solvency ratio stays in a comparable range compared to scenario 1. Furthermore, it has to be considered that the additional spread of 100 bps which was granted in Scenario 1 here has to be bridged by the transitional measure.

The intention of the transitional does not consist of having influence on the life insurers' asset allocation and risk management. Instead, this tool is supposed to enable a smooth transition from the Solvency I to the Solvency II regime. The technical provisions are raised step by step to the level required under Solvency II.

In addition to the above, one has to consider that the stress on the interest rate has not yet been adapted to the transitional, thus leading to unreasonably high capital requirements. In our assessment, this will need to be addressed when adjusting the consistency of capital requirements with the LTG-measures at a later stage. The stress' calibration is based on unadjusted market rates, leading to unreasonably high capital requirements when being applied on the transitional rate (which is expected not to be exposed to the same volatility than the "pure" Solvency II curve). Figure 13 outlines the unreasonable increase of the capital charge for interest rate risk compared to the technical provisions comparing scenario 1 to scenario 8.

Considering the weighted average as a good reference to measure the impact on the whole market, the interest rate risk increases in a range of around 50% compared to the size of the technical provisions (4,5% for scenario 1 compared to 6.2% for scenario 8).

FIGURE 13 INTEREST RATE RISK CHARGE COMPARED TO TECHNICAL PROVISIONS

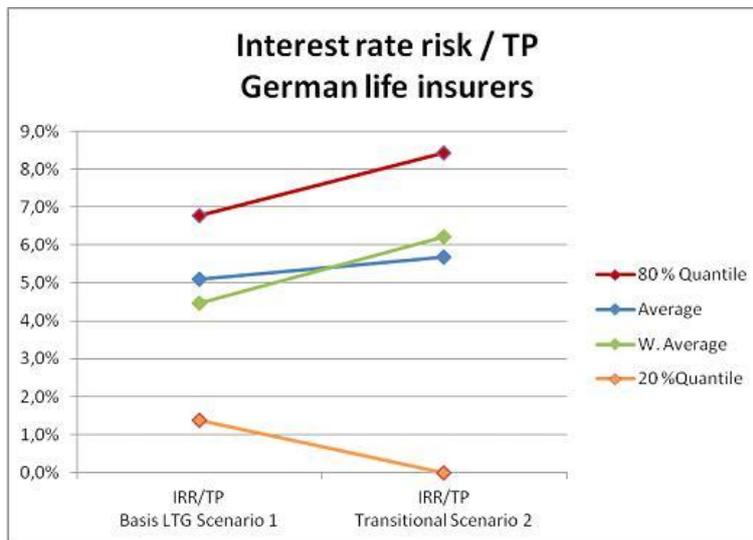


FIGURE 14 IMPACT OF INTEREST TRANSITIONAL ON SOLVENCY RATIO

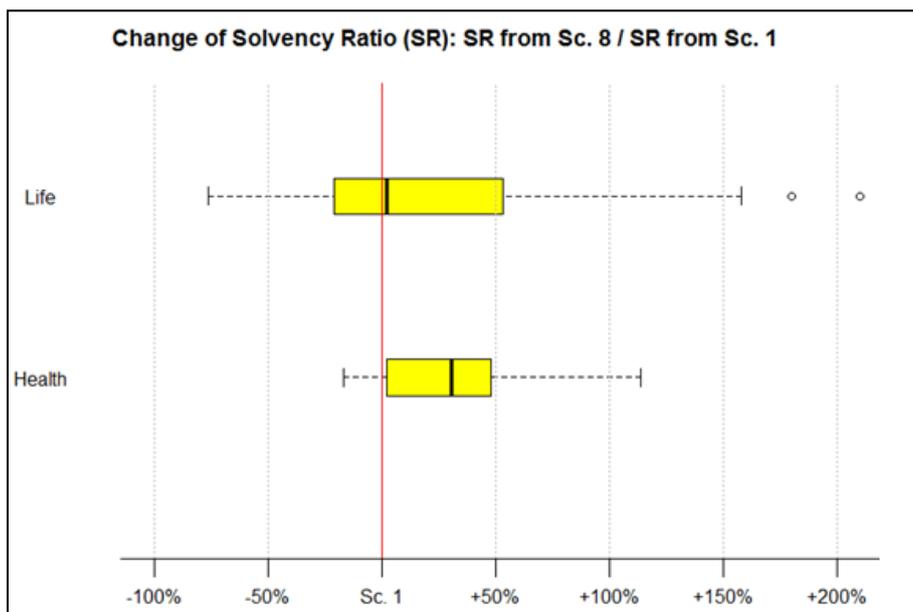
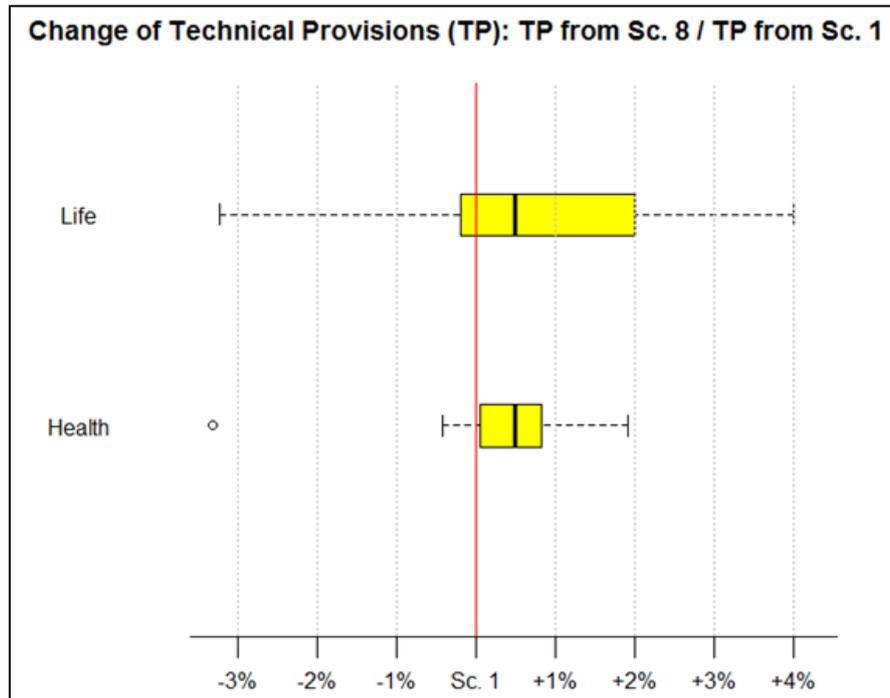


FIGURE 15 IMPACT OF INTEREST TRANSITIONAL ON TECHNICAL PROVISIONS

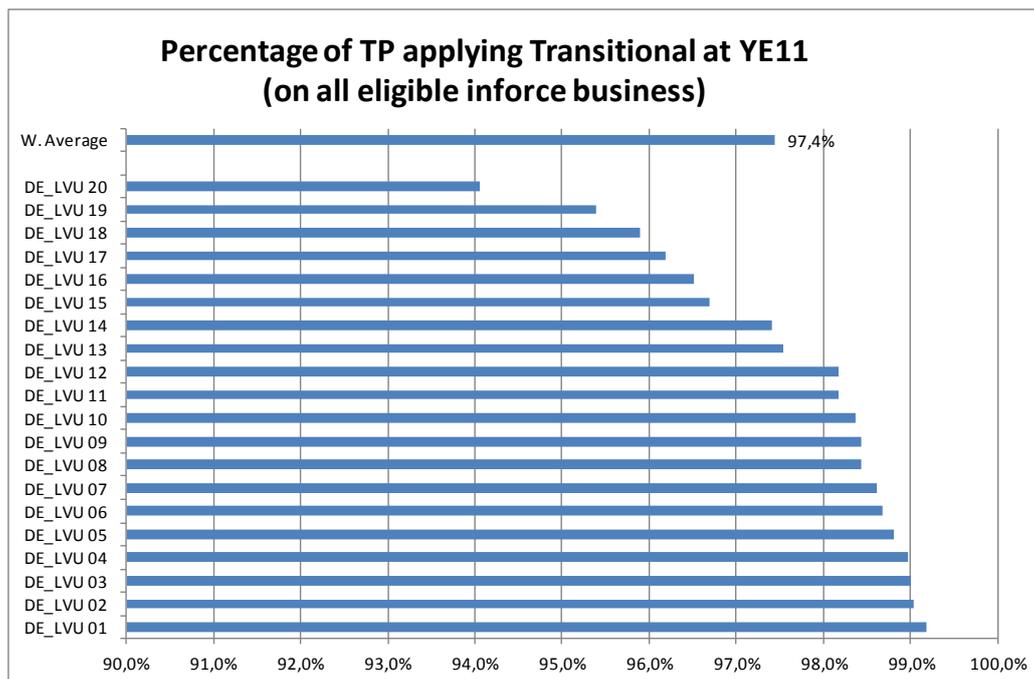


Eligibility of technical provisions for the transitional measure

Figure 16 displays the percentage of technical provisions eligible for the transitional at YE 2011 reported by life participants. Although 43 participants reported results for scenario 8, only 20 of them provided information on the share of technical provisions applying the transitional.

The high applicability rates ranging between 90% and 100% can be explained by the fact that the transitional was applied to the entire business except unit-linked business, the reason being that for German life insurers an assignment of assets to certain liabilities is not possible in general.

**FIGURE 16 ELIGIBILITY OF TECHNICAL PROVISIONS FOR THE INTEREST
TRANSITIONAL: LIFE SECTOR**



7.7.2. Undertakings by size

No varying trends could be observed from the outcomes of small, medium or large participants. We attribute this to the fact that German life and health insurance is generally homogenous with respect to the type of business written, and that the instrument tested is non-complex in its application.

7.7.3. Undertakings by type

Please refer to section 7.7.1.

7.7.4. Group aspects

Please refer to EIOPA report.

7.7.5. National market insights

n/a

7.7.6. Cross-border business

Please refer to EIOPA report.

7.7.7. SII balance sheet volatility

Please refer to section 9.7.

7.8. Impact on competition

Please refer to section 9.8.

7.9. Impact on Long Term Investments

Please refer to section 9.9.

7.10. Other considerations

n/a

7.11. Main technical findings on the individual measure (Transitional)

With regards to the German market, our analysis shows

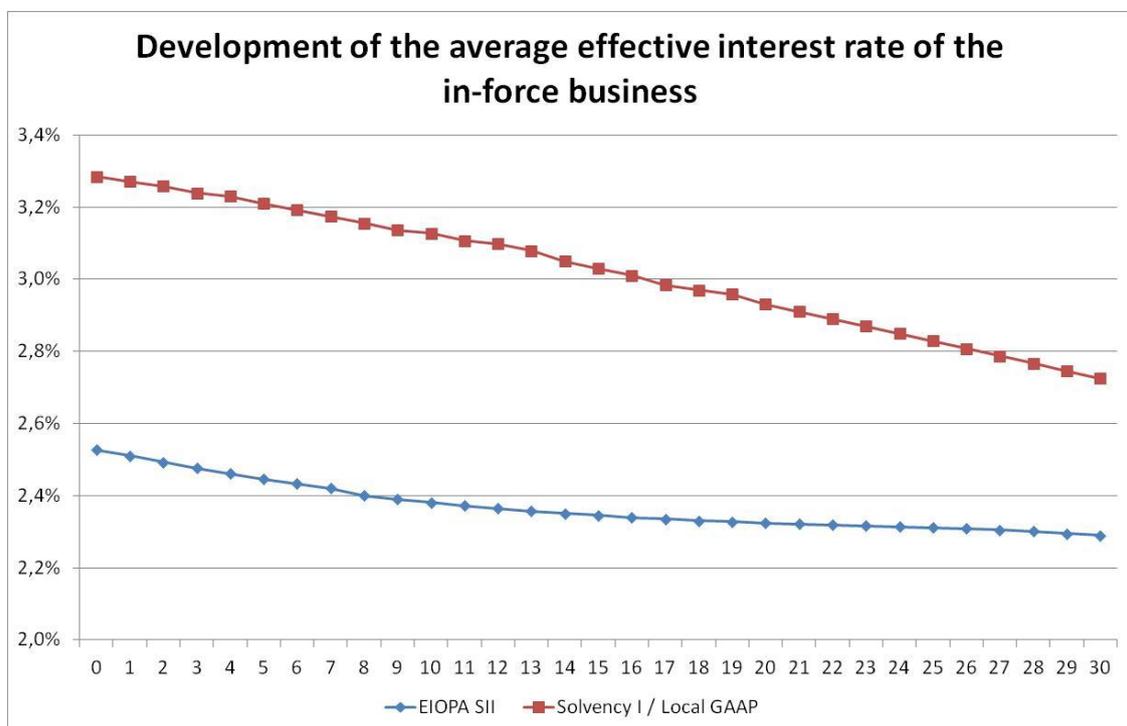
- that due to the long-term nature of the contracts, a gradual implementation of Solvency II for the existing life insurance portfolio will be necessary, and
- that the interest rate transitional is an instrument well suited for the purpose of accounting for the need to adapt the valuation so that a gradual implementation of Solvency II for the existing life insurance portfolio is achieved.

At this point we would like to stress that the German life insurance business underlies certain distinctive features which require a wide transitional solution. In particular, the long-term duration of the contracts in connection with a high average guaranteed interest rate lead to notable challenges for life business in the current low interest environment. The terms of these contracts have been designed under the old supervisory regime, and their guarantees must be fulfilled as well as their inherent promises must be kept.

Figure 17 outlines the development over time of the average effective guaranteed interest rate that is present in the existing business. It can be observed that it has a

tendency to decrease over time – however only slowly - as the structure of the portfolio changes over time (contracts with very high guaranteed rates of 4% run off, at the same time the share of contracts with a lower interest rate of e.g. 1,75% increases).

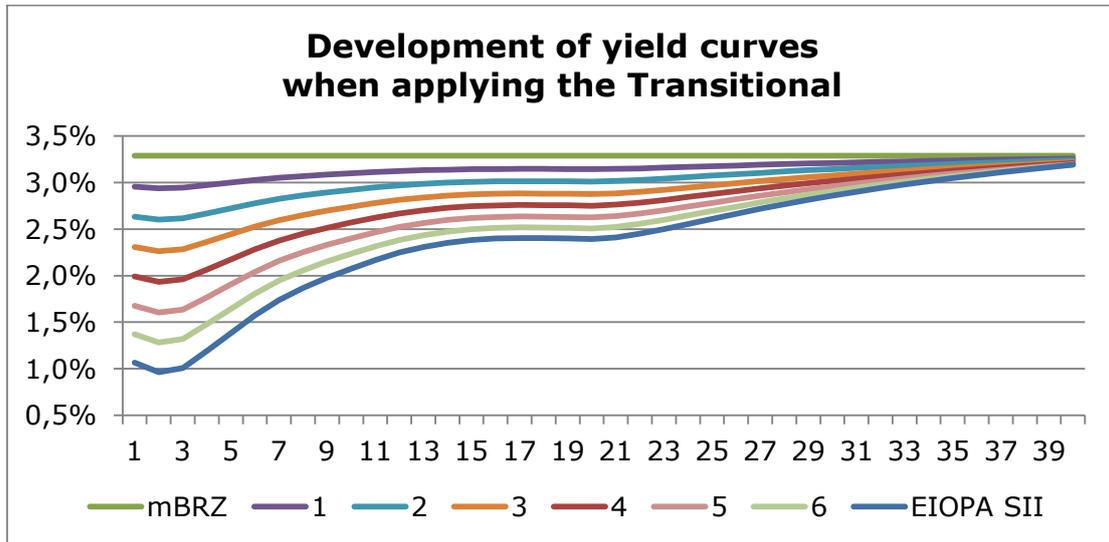
FIGURE 17 DEVELOPMENT OF AVERAGE EFFECTIVE INTEREST RATES FOR IN-FORCE BUSINESS



To allow a comparison with the Solvency II interest rate term structure, we calculated an effective interest rate on this term structure, assuming an average cash flow profile of a German life insurance undertaking as well as – for simplicity reasons - assuming the Solvency II interest rate to be constant over time. The comparison of the two rates outlines the big gap that is currently present, with the Solvency I rates being around 80bps higher than the Solvency II rates. This difference decreases over time as the portfolio structure changes, however only slowly.

An exemplary but representative development of the yield curves applied during the transitional period is outlined in Figure 18 (again assuming the Solvency II interest rates not to vary over time).

FIGURE 18 DEVELOPMENT OF YIELD CURVES WHEN APPLYING THE TRANSITIONAL

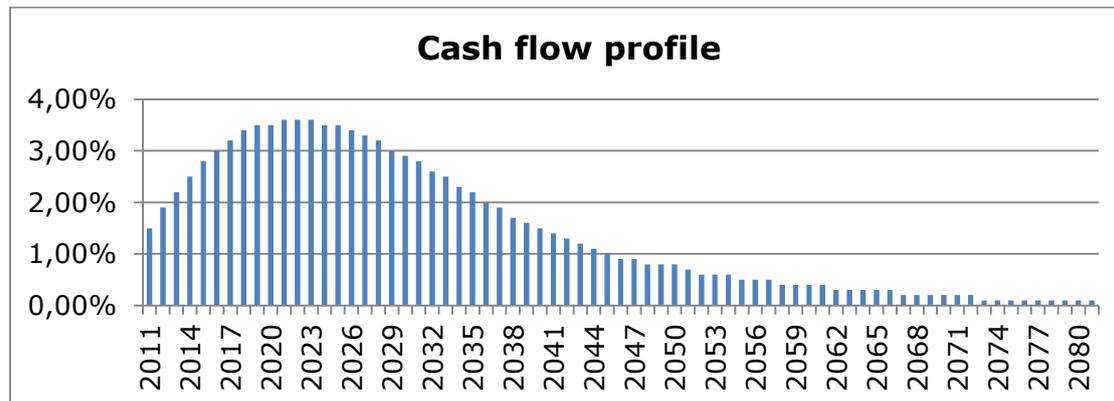


Starting point of the application of the Transitional is the Solvency I rate in year 0 of the transitional period which amounts to around 3.3% (marked as mBRZ) for the German life insurance market on average. The determination of the yield curves that result as a combination from the Solvency II interest rate term structure and the Solvency I interest rates in the following years of the transitional period (marked with 1 to 6 in Figure 19) takes into account that the average interest rate present in the existing business decreases over time (see Figure 18). After 7 years the full Solvency II curve is applied for the valuation.

It is obvious when looking at the graph that the yield curves resulting from the application of the transitional always lie above the “pure” Solvency II interest rate curve (however without application of an adaptation), thus resulting in lower technical provisions. However, the concrete impact on a life insurance undertaking depends on its average guaranteed interest rate that is present in its existing business as well as of the structure of its business with respect to the duration of the liabilities.

Figure 19 shows a typical liability cash flow profile of a German life insurance undertaking – as taken from the results that were reported in the LTGA.

FIGURE 19 TYPICAL LIABILITY CASH FLOW PROFILE OF GERMAN LIFE OBLIGATIONS



It can be observed that the duration of the liabilities is very high as the cash flows of the first 20 years amount to around half of the absolute volume of the total cash flows.

We are therefore concerned that the current design of the transitional does not provide a sufficient tolerance as regards the extension of the transitional period. We thus consider that the duration of the transitional must be adapted to appropriately account for the long-term nature of long-term guarantee business, which typically has a run-off horizon of more than 60 years. This aspect was also raised by many participants commenting that a seven year transitional would be insufficient considering that the duration of average life insurance portfolio exceeds 7 years by far.

We therefore conclude that the current proposal of a period of only seven years is most certainly much too short to render the instrument fit for purpose. The measure's duration will need to be expanded to a period of at least 20 years.

In addition, we would like to highlight that the transitional is still in need of technical refinement, although very well designed in principle by addressing exactly the long-term guarantee issue and is thus avoiding band wagon effects. Many participants reported that they discovered the need for further clarification and guidance. The following aspects were mentioned in this regard:

- The transitional requires that the undertaking introduces a distinction between existing business and new business, considering that different risk-free curves need to be used for the valuation, which is particularly challenging for the calculation of future discretionary benefits,
- The valuation applying the models already developed for Solvency II for business for which the transitional is applied presents problems if the shape of the risk-free rate curve to be used under the transitional is very different from the shape of the Solvency II curve.

In general, future discretionary benefits arising from investment income for a German life insurance undertaking are, according to the German insurance supervisory law (Versicherungsaufsichtsgesetz, VAG), to be calculated on the basis of the whole undertaking's asset portfolio as well as distributed to all profit sharing contracts within the undertaking. There is generally no direct allocation of assets to a sub-portfolio of insurance liabilities. Thus, undertaking's assets cover a range of sub-portfolios of profit sharing contracts with varying Solvency I rates. Where, for the calculation of technical provisions under Solvency II, future discretionary benefits are to be estimated, the assumption on the interest rate term structure directly impacts the estimation of future investment income from the existing assets of the undertaking. As the transitional measure is based on a weighted average of the Solvency II and Solvency I interest rates, with the latter varying for different contracts, technical difficulties in the calculation arising from the fact that no direct allocation of assets and liabilities is present can be expected.

Therefore, implementations of the transitional that are technically feasible and practicable need to be developed to ensure that an adequate valuation of existing and new business is achieved, the challenge being to capture different assumptions on future investment income (implied by varying Solvency I rates in the insurance book) combined with no separate dedication of specific assets. We note that we have provided additional guidance to the undertakings to support them in calculating the transitional and building up on the expertise developed during this process are positive that workable solutions to all issues will be found.

However, we consider it sensible to reduce complexity in the design of the transitional in improving the transition to the Solvency II curve by applying a parallel shift of the risk free interest rate term structure where the shift would be reduced annually.

The suggestion would be as follows:

- For each year of the transitional period, the actual Solvency II interest rate curve is taken as a starting point.
- The difference of the effective Solvency II interest rate and the Solvency I interest rate for each undertakings' portfolio, where positive, multiplied with a factor is added to the Solvency II interest rate term structure (dynamic approach).
- The factor represents the share of the difference to be taken into account in each year of the transitional period, starting with 100% and decreasing linearly over the transitional period to 0%.
- Finally, as in the original transitional proposal, the transitional curve being composed of the Solvency II interest rate curve plus maturity independent add on is used for the valuation of the best estimate.

Allowing for a dynamic reassessment of the difference between Solvency II and Solvency I rates accounts for the fact that the Solvency II curve will change over time and gives undertakings applying the transitional the necessary certainty on the development of the interest rate curve during the transitional period.

This technically refined proposal ensures that the shape of the resulting discount curves is the same as that of the Solvency II curve, which leads to a smoother technical implementation and would facilitate an easier valuation of embedded options and guarantees. Nevertheless, the impact of the refined proposal is expected to be similar to the original transitional, thus not diminishing the conclusions from the LTGA.

Furthermore, we would like to take the chance to stress that we consider that the interest rate stress in the Solvency II standard formula will need to be adapted to the instrument as well to achieve a consistency in the valuation and calculation of the capital requirements. The stress' calibration is based on unadjusted market rates, leading to unreasonably high capital requirements when being applied on the transitional rate (which is expected not to be exposed to the same volatility than the "pure" Solvency II curve). Figure 13 (in chapter 7.7.1) shows this effect.

Assessment of transitional options based on static adjustments of the Solvency II balance sheet

In addition to the interest transitional as proposed by the trialogue parties and tested in the current assessment, some stakeholders recently suggested including a new transitional option into the LTG package. Technically, this option is not implemented in the Solvency II balance sheet via an adjustment to the risk-free rate used for the valuation of technical provisions, but rather introduces an additional own funds element (in the following referred to as **static transitional**) based on the difference between technical provisions valued under Solvency I and Solvency II respectively at the date of implementation. By not directly addressing the gap between guaranteed and risk-free rates, this new option is thus not targeting the long-term guarantee valuation issue, but intended to cover a wider range of transitional problems linked to a low Solvency I valuation. This new option does not serve the purpose of introducing a measure that allows for an appropriate transition of guarantees for existing long-term business in a prolonged low-interest environment, as it is the case in Germany. To target this core issue, we strongly advise that the interest transitional, adjusted in some technical aspects and to an appropriate duration as elaborated above, is implemented into the Solvency II framework.

The two options are hardly interchangeable, as they differ fundamentally on a technical level with respect to their quantification and dynamic behaviour in a volatile interest environment:

- The quantification of the interest transitional is based on the difference between the level of the Solvency I interest rates (that represent the return guaranteed to the policyholder) and the level of the Solvency II risk-free term structure. The measure thus ensures a gradual transition of guaranteed rates to Solvency II valuation and targets directly issues arising from the interconnect of the current low interest rate environment and higher guaranteed rates. In contrast, the focus of the static transitional on the absolute difference between technical provisions valued under Solvency I and Solvency II significantly modifies this picture by allowing for relief in a more general manner. Whereas the interest transitional only adjusts the interest rate, but apart from that requires that technical provisions in general are valued based on Solvency II principles (e.g. with respect to cash-flows, inclusion of a risk margin etc.), the static transitional would implicitly render the Solvency I valuation techniques eligible for transition.
- The static transitional is determined only once at the beginning of the transitional phase. In the following years, the amount quantified in the first year will be decreased linearly without reflecting interest rate movements during this time. In contrast to this static calculation, the interest transitional works on a dynamic basis, taking into account the current differences in the level of interest rates between Solvency I and Solvency II in the transitional period. This dynamically assessed correction is then linearly decreased over the transitional period. Both static and dynamic approach lead to similar impacts in case the Solvency II interest rates remain unchanged in the transitional period. However, differences between these two approaches would arise where the level of Solvency II interest rates varies over time. In the case where Solvency II interest rates would decrease during the transitional period, the interest transitional's dynamic approach would automatically recognise the increasing gap between Solvency I and Solvency II interest rates, and therefore lead to a higher relief than under the static approach. Similarly, in case where the Solvency II interest rates increase during the transitional period, under the dynamic approach the size of the correction is automatically decreased, reflecting the decreasing gap between Solvency I and Solvency II rates. In contrast, the static transitional's correction would not be impacted, possibly introducing counterintuitive risk-management incentives in a high interest environment. Thus, by building up on current market information, only the interest transitional appropriately reflects the extent of a divergence between Solvency I and Solvency II interest rates not only at the start, but also during the transitional period, ensuring that the gap between these rates is continuously diminished to allow for a gradual and smooth transition towards Solvency II rates.

Both options are non-exclusive with respect to their application, as they can be implemented in all member states with the transitional need the respective

measures are intended to address. Whereas the interest transitional is targeted towards long-term business with guarantees in a low-interest environment, the static transitional addresses issues in member states with low valued Solvency I technical provisions and limited own funds. They also exhibit comparable qualities with respect to the following aspects:

- Both options are of a truly transitional nature, as they are limited with respect to the duration of their application. Both are also limited with respect to their applicability to existing business only.
- Both options are simple to allow implementation at proportionate costs. The interest transitional will however need some further technical refinements in order to render its application non-complex in practice. We are confident that our proposal for a parallel shift to the risk-free rate as elaborated above points into the right direction in this respect.
- Both options are supervisable.
- With respect to their transparency, both options require full disclosure of their effect on the solvency coverage. Specifically the interest transitional is furthermore well embedded in the general Solvency II methodology, as it adapts the general principles for the valuation of technical provisions in only one aspect, namely the interest curve, and avoids blending them with Solvency I principles in other aspects.
- Both options will need to be accompanied by an intensified supervisory review process.

Hence, we believe that a dual approach complementing the interest transitional with the static transitional as an alternative measure, can well serve the purpose of transitioning large legacy books of business into Solvency II in a safe and economically responsible way.

8. Extension of Recovery Period – Article 138(4)

8.1. Purpose of the measures and highlights of the tested approach (Extension of recovery period)

Please refer to EIOPA report.

8.2. Impact on policy holder protection

n/a

8.3. Impact on effective and efficient supervision

n/a

8.4. Implementation effort

8.4.1. For industry

n/a

8.4.2. For NSAs

n/a

8.4.3. For EIOPA

n/a

8.5. Incentives for good risk management

n/a

8.6. Impact on financial stability and prevention of systemic risks

n/a

8.7. Impact on insurance and reinsurance undertakings' solvency position

n/a

8.8. Impact on competition

n/a

8.9. Impact on Long Term Investments

n/a

8.10. Other considerations

n/a

8.11. Main technical findings on the individual measure (Extension of recovery period)

This measure is designed to allow the supervisor some flexibility in times of financial crisis, enabling him to take into account potential negative effects of supervisory measures on the financial markets. The measure complements the instruments based on the market condition (e.g. the adaptation to the risk free rate) by an individual element targeted towards the individual undertaking introducing supervisory discretion where this is appropriate in order not to force the supervisor to exacerbate the turmoil in financial markets. However, we believe that the need to take the situation in financial markets into account must be balanced against the general requirement that breaches of the SCR are to be remedied shortly. In our assessment, a maximum extension by 21 months as envisaged in the draft Level 2 Implementing Measures would be appropriate, possibly extended to 36 months under specified circumstances of crisis and dysfunctional financial markets.

9. Long-term guarantee package – overall assessment

9.1. Purpose of the Long-term guarantee package and highlights of the tested approach

Please refer to EIOPA report.

9.2. Impact on policy holder protection

Ensuring insurance undertaking's ability to fulfil their obligations towards policyholders is the core of the supervisory task. Realistic and reliable measurement of the solvency position is an instrument towards that aim. This can be best achieved by a supervisory framework that stabilises the fair value view of market consistent valuation with elements prohibiting artificial volatility, as is the aim of the long term guarantee measures. Hence, stabilising valuation is an instrument for ensuring policyholder protection. However, the introduction of a new valuation methodology for supervisory purposes may bring along new incentives that may affect policyholders as well, e.g. for investment, the assignment of discretionary benefits, or product design. For the German market, the profit participation mechanism in the life sector is of special relevance in this respect, because any change in the undertaking's profit expectations will have direct effects on policyholder participation in these profits. With respect to stabilising this mechanism, the adaptation to the risk-free rate and especially the transitional are instruments enhancing policyholder protection in the Solvency II framework.

By reducing the impact of the exaggerated market spreads in times of stressed financial markets on the solvency position, the interest **adaptation** to the risk free rate ensures that undertakings with long-term life obligations are not forced to implement unwarranted benefit cuts in order to meet supervisory goals. The interest adaptation is thus a stabilising mechanism advancing a smooth and consistent participation of policyholders in the investment profits of the undertaking. Regarding investment effects, we see a certain danger that the application of the instrument over a long period could incentivise a shift towards riskier assets in undertaking's portfolios. Thus, it is important that the triggering and de-triggering mechanism for the instrument is designed in an objective manner and in a way to ensure that the applicability of the adaptation is limited to times of stressed financial markets, and not widened to serve a wider purpose. Thus, the adaptation is an instrument that strengthens policyholder protection in times of stressed financial markets and its implementation will be sufficiently forward looking in order not to limit policyholder protection in normal times.

The **interest transitional** is another measure allowing for a smooth transition between different valuation regimes, because it promotes continuity in the

undertaking's management of its business, and thus prohibits undesired policy changes with regards to the profit participation policy. At the same time it does not mis-incentivise product design by being applicable to existing business only. In contrast to the adaptation, this measure is especially designed to take into account the lock-in effects of long-term business with guarantees. However, to be properly implemented, the duration of the instrument must be aligned with the long-term nature of life business in view.

The **extended matching adjustment** framework's implementation is subject to considerable technical difficulties, and thus could endanger policy holder protection by mispricing risks if not implemented appropriately. A prominent example is the application ratio that is necessary to reflect the risk of forced sales of assets, whose design could not be finalized for the purpose of the LTG assessment.

Regarding the **extrapolation** methodology, we do not expect any impact on policyholder protection by the alternatives tested in the assessment. However, we consider an extrapolation method ensuring fast convergence to the ultimate forward rate and, more important, a starting point reflecting the liquidity of bond markets to be of considerable importance with regards to incentives towards product design. Since the implementation of a market consistent valuation under Solvency II will result in higher volatility of technical provisions, undertakings offering annuity insurance products may be incentivised to counteract the undesired effects of the market consistent valuation by changing their guarantee structures, e.g. by moving towards giving guarantees in sections or alternatively considering variable annuity type of products, or shift from continuous surplus participation to final payments. The LTG measures are targeted towards mitigation of those incentives, in particular the current design of the extrapolation method. If this was not implemented appropriately, in particular with respect to an early starting point, we would anticipate a noticeable impact on the market for future annuity insurance, and possibly also non-life products with long-term guarantees. As these products offer long-term interest rate guarantees, their market consistent valuation is highly dependent on an appropriate design of the interest rate term structure. Thus, if the extrapolation methodology is not implemented adequately ensuring stability of the curve and avoiding artificial volatility, as a consequence, we expect to see considerable volatility in technical provisions. The product design alternatives mentioned above however would mitigate this effect only to a limited extent.

9.3. Impact on effective and efficient supervision

In general, supervision is effective if it ensures the overarching objective of policyholder protection. With regards to the LTGA measures, thus, in principle, any instrument beneficial to policyholder protection will also serve the supervisory task insofar it is suited to provide for a realistic measurement of the undertaking's ability to fulfil its obligations towards policyholders. However, the supervisory process can only achieve its aim if the measure provides for a transparent control of the correct

application of the measure. To be exact, an instrument that is well suited from a theoretical perspective to measure an undertaking's solvency correctly, but whose proper review is very demanding with respect to expertise, frequency and resources, presents a high obstacle to the effectiveness and efficiency of the supervisory process. Thus, the transparency of the implementation of a measure in the undertaking's calculation models is indeed an issue.

With respect to the effectiveness and efficiency of the supervisory process, the method for **extrapolation** of as well as the interest **adaptation** to the risk free cannot be expected to produce major obstacles for the supervisory process, as basically only the assumption on the interest rate term structure will need to be replaced in the valuation models of the undertakings. There is only a limited number of manageable additional supervisory tasks following from the implementation of the adaptation, namely the verification that the adaptation is not anticipated in the pricing, valuation and risk management. An additional area of complexity might however arise in the supervision of insurance groups, as the group valuation could be subject to different levels of the adaptation for different currencies or national markets in times of financial crisis. In this context we would like to stress that, in order to render the supervisory process efficient, information on the solvency situation without application of the adaptation (balance sheet information on technical provisions, own funds and capital requirements) will be necessary for supervisors in order to assess the undertaking's risk situation and its ability to endure the situation of stressed financial markets. Also, we believe this information will be necessary for the firm's risk management.

The **extended matching adjustment** seems to be the most difficult measure to supervise. The overarching idea of the market consistent valuation under Solvency II is to ensure comparability across undertakings, by valuing liabilities in a consistent manner, when those encompass the same risks in terms of nature, scale and complexity. The measure introduces a new component by adapting the valuation of liabilities when undertakings have a specific asset structure. Therefore, the liabilities of an undertaking are not valued independently from the assets. This approach makes it more difficult for the supervisor to get a precise picture on specific balance sheet items (e.g. the value of options and guarantees). We thus fear that the comparability of solvency results between insurance undertakings is reduced, due to the fact that different risk free rates are applied to the liabilities of different undertakings and within undertakings.

In addition to that, the assessment of the compliance with the ring fencing requirement (or the requirement to assign a portfolio that is organised and managed separately without any possibility of transfer) will be a challenging additional task for supervisors. This is in particular to be expected for markets which have a high amount of life insurance contracts with profit participation. In case the capital gains of the assets in the matching portfolio are only allocated to the matching adjustment

liabilities, the supervisor needs to prevent a negative selection of assets for the remaining insurance business in setting up the matching portfolio. Also, the supervision of the extended matching adjustment will be far more difficult to the extent that the complexity of the models required determining the adjustment will present a challenge to the supervisory process. The measure implies a number of assumptions and parameters to be determined which will need to be challenged by supervisors. Furthermore, the comparability of technical provisions is reduced, as those vary by undertakings. Also within one undertaking, the transparency and consistency of the valuation will be endangered as it will be challenging to assess the adequacy of technical provisions where the matching adjustment is only applied to one part of the business. We also expect that the comparability of solvency results between insurance undertakings will be reduced, due to the fact that different risk free rates are applied to the liabilities of different undertakings and within undertakings. The overarching idea of the market consistent valuation under Solvency II is to ensure comparability across undertakings, by valuing liabilities in a consistent manner, when those encompass the same risks in terms of nature, scale and complexity.

Last, the SCR calculations will need to be examined in more detail when the extended matching adjustment is applied, in particular the interaction between the SCR calculations and the calculation of the application ratio, implying in addition specific group considerations. For the calculation of technical provisions for a group we expect it challenging for the supervisor to assess the comparability of the valuation (comparable calculation of the matching adjustment) between the different undertakings within the group.

As the **interest transitional** measure is based on a weighted average of the Solvency II and Solvency I interest rates, with the latter varying for different contracts on the German market, technical difficulties in the calculation arise from the fact that no direct allocation of assets and liabilities exists. Therefore, a technically sound implementation of the transitional is necessary, in order to ensure that an adequate valuation of existing and new business is achieved, the challenge being to capture different assumptions on future investment income (implied by varying Solvency I rates in the insurance book) combined with no separate dedication of specific assets. This certainly impacts the supervisory process, which will need to ensure that adequate implementations have been chosen to capture the specificities of the existing profit sharing regime. During the LTGA, BaFin has provided additional guidance to the undertakings to support them towards that aim. In building up on the expertise developed during this process, we are positive that workable techniques providing for an adequate and transparent implementation of the measure can be implemented, that avoid the introduction of additional complexity in the Solvency II framework by the measure. This would most certainly be ensured, if BaFin's proposal was taken up, to improve the transition to the

Solvency II curve by applying a parallel shift of the risk free interest rate term structure where the shift would be reduced annually (see section 7.11 for details).

9.4. Implementation effort

9.4.1. For industry

We expect neither the choice of the **extrapolation** method nor the introduction of the interest **adaptation** to require major additional effort on top of the general implementation costs of Solvency II, as only the assumption on the interest rate term structure will need to be replaced in undertaking's valuation models. With respect to the adaptation, this assessment is however based on the assumption that the instrument's triggering is not being anticipated in the pricing, valuation and risk management of the undertaking, as stipulated by Omnibus and the LTGA specifications. We consider that this implies that the adaptation is only reflected in the valuation in times of crisis whereas there is no explicit modelling or allowance for anticipation of future triggering.

The implementation costs for the **interest transitional** will depend on its final design. If our proposal to apply a parallel shift of the risk free interest rate term structure were to be taken up (see section 7.11), we expect that its implementation is well feasible.

The implementation cost for the **extended matching adjustment** might however be considerable. In order to benefit from the measure, undertakings must implement new organisational structures fulfilling the legal requirements for ring-fencing, as well as develop the technical infrastructure and expertise to calculate the adjustment. In view of the fact that it is an opt-in measure, we thus expect large undertakings to have a comparative advantage over small market participants.

9.4.2. For NSAs

In view of the fact that the complexity of the supervisory process with regards to valuation methods follows the complexity of their implementation in undertaking's valuation models, we expect that the effort for NSA's with respect to the respective measures will be proportionate to the industry's effort.

In addition to that, we expect that supervisory authorities will be asked to support EIOPA in the calibration of the currency adaptation by delivering the relevant industry data to ensure an harmonized determination of the adaptation. Additional effort might arise with respect to the national adaptation, where the supervisor is in charge of observing the national financial market to detect the emergence of a crisis situation.

9.4.3. For EIOPA

Please refer to EIOPA report.

9.5. Incentives for good risk management

With respect to good risk-management, the **extended matching adjustment** may incentivise undertakings to invest in assets with low credit quality to gain a high matching adjustment. In addition, although we consider minimum asset quality condition to be a necessary requirement to ensure that undertakings can actually hold assets to maturity, the instrument introduces additional investment risks, as undertakings will need to exchange assets in case of downgrade by assets of better credit quality.

With regards to the **adaptation**, we do not expect bad risk management incentives as long as the determination based on a representative rather than an undertaking-specific portfolio ensures that it is not possible for individual firms to “chase the premium”. The interest **transitional** is applicable to existing business only, for this reason incentives for bad risk management are limited.

9.6. Impact on financial stability and prevention of systemic risks

The interest **adjustment** and the **interest transitional** are both instruments well suited for avoiding pro-cyclical effects. Whereas the former reduces the risk that undertakings are forced to sell undervalued assets in order to meet supervisory requirements in times of stressed financial markets, the latter provides for a smooth transition into the requirements of the new regime, taking adequately into account the long-term nature life-insurance business with life-time guarantees, thus prohibiting precipitate restructuring of business models.

The **extended matching adjustment** by reducing the volatility in the solvency balance sheet, is expected to reduce pro-cyclical effects. However, in case the capital gains of the assets in the matching portfolio are only allocated to the liabilities in the matching portfolio, this might imply the risk of a negative selection of assets for the remaining insurance business in setting up the matching portfolio (where originally with profit participation based on the whole insurance portfolio was present).

9.7. Impact on insurance and reinsurance undertakings' solvency position

9.7.1. All undertakings

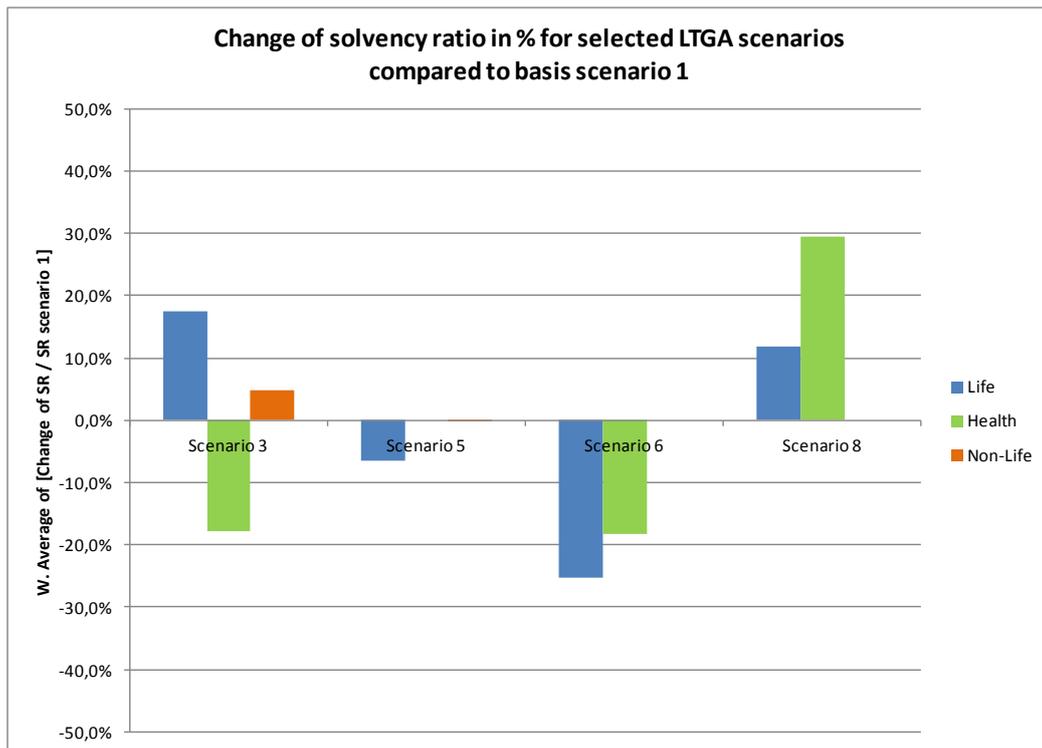
Overall, our conclusion with respect to the life/health sector is that the favourable LTG-measures are the adaptation to the risk free interest rate term structure as well as the transitional measure. Whereas the adaptation is a good crisis instrument the transitional enables a smooth transition from the Solvency I to the Solvency II regime. The MA in its extended alternative version has proved to be too complex and technically difficult. Also its SCR-results are lower than those of Scenario 1 and Scenario 8.

Figure 20, Figure 21 and Figure 22 display the effect of the various LTG instruments on the solvency coverage ratios in the German market. The impact of the measures is scaled towards scenario 1. Please note that, in contrast to most other figures in this report that provide a quantile presentation, results in the current section are derived on weighted averages.

FIGURE 20 CHANGE OF SOLVENCY COVERAGE VERSUS BASE SCENARIO 1

		Change of SR in % compared to scenario 1				
	Scenario 1 Baseline with LTGP	Scenario 3 Higher CCP (250%)	Scenario 5 Longer convergence	Scenario 6 Alternative 1 extended MA	Scenario 8 Transitionals existing	
Life						
SCR						
Solvency ratio compared to basis scenario 1	±0%	+17,5%	-6,5%	-25,3%	+11,8%	
MCR						
Solvency ratio compared to basis scenario 1	±0%	+34,1%	-6,0%	-41,3%	-4,7%	
Health						
SCR						
Solvency ratio compared to basis scenario 1	±0%	-17,7%	-	-18,3%	+29,5%	
MCR						
Solvency ratio compared to basis scenario 1	±0%	+21,1%	-	-26,4%	+18,5%	
Non-Life						
SCR						
Solvency ratio compared to basis scenario 1	±0%	+4,8%	-0,01%	-	-	
MCR						
Solvency ratio compared to basis scenario 1	±0%	+11,9%	-0,3%	-	-	

**FIGURE 21 CHANGE OF SOLVENCY COVERAGE VERSUS BASE SCENARIO 1: SECTOR
BREAKDOWN**



**FIGURE 22 CHANGE OF MINIMUM SOLVENCY COVERAGE VERSUS BASE SCENARIO 1:
SECTOR BREAKDOWN**

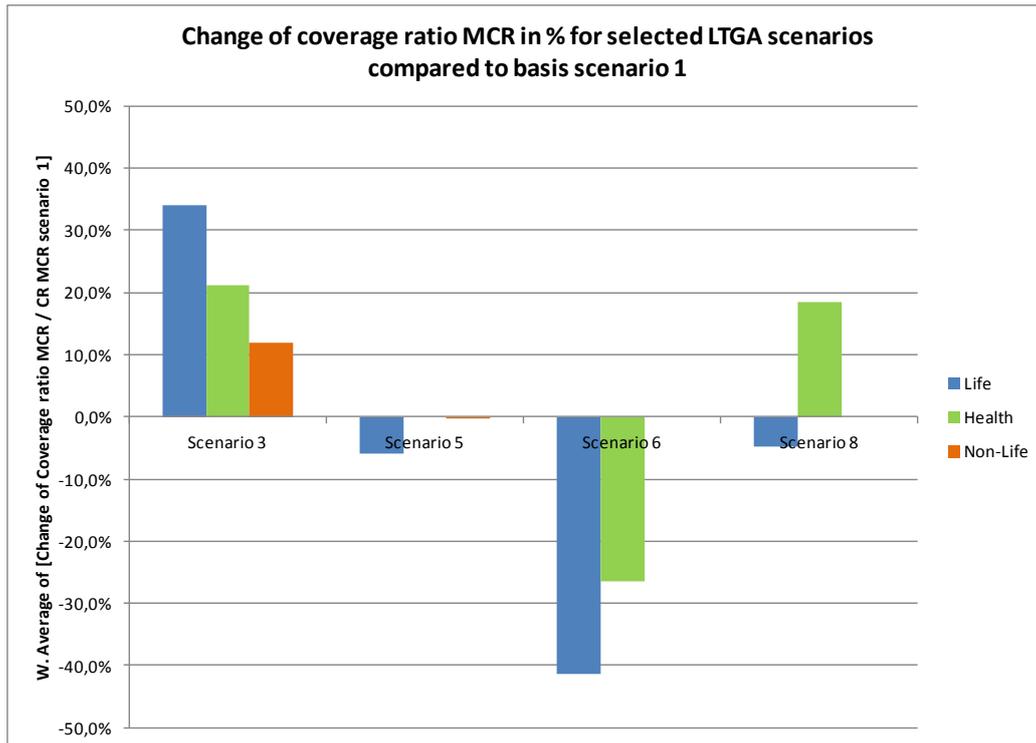
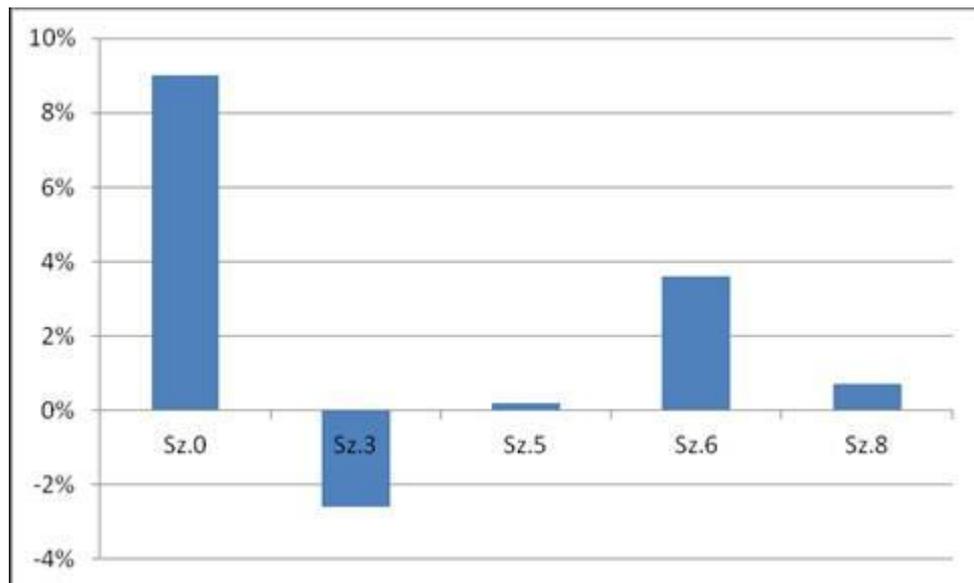


Figure 23 displays the effect of the various LTG instruments on technical provisions in the German life sector, employing the same scaling factor.

FIGURE 23 CHANGE OF TECHNICAL PROVISIONS VERSUS BASE SCENARIO 1: LIFE



In scenario 0 the technical provisions are visibly higher than in the basis scenario 1. This is due to the fact that in scenario 0 no adaptation is applied, the starting point of the extrapolation is at 30 years instead of 20, and the length of the extrapolation is 40 years instead of 10 years. The extrapolation seems to play a more important role here. This impression is confirmed when comparing scenarios 1 and 3. The difference between these two scenarios is much smaller, although the adaptation increases from 100 bps to 250 bps. This indicates that the level of the adaptation has a smaller impact on the level of the technical provisions than the design of the extrapolation. This can be explained by the fact that the discount rate is also used for projecting the assets. Thus a higher level of the adaptation leads to a higher level of future discretionary benefits which dampens the effect of an increasing adaptation.

9.7.2. Undertakings by size

No varying trends could be observed from the outcomes of small, medium or large participants. We attribute this to the fact that German life and health insurance is generally homogenous with respect to the type of business written.

9.7.3. Undertakings by type

Please refer to section 9.6.1.

9.7.4. Group aspects

Please refer to EIOPA report.

9.7.5. National market insights

n/a

9.7.6. Cross-border business

Please refer to EIOPA report.

9.7.7. SII balance sheet volatility

An extrapolation method adequately reflecting the liquidity of bond markets and ensuring a fast convergence to the ultimate forward rate in combination with the adaptation are best suited to reduce artificial volatility in technical provisions, and thus in the full solvency II balance sheet including own funds.

The **extrapolation** methodology itself, where interest rates are assumed to approach to a long-term equilibrium (UFR), does already address the problem of artificial volatility. However, the concrete design should be such that it avoids artificial volatility in the extrapolated part of the curve. It is part of the fundamentals of a macro-economic extrapolation approach that there is a reduction of volatility of the interest rates through time for increasing maturity. This in fact was the motivation to extrapolate to a fixed UFR. Therefore, this assumption should also be reflected in the choice of the rate of convergence towards the UFR.

The interest **adaptation** is an instrument specifically designed for the purpose of smoothing out artificial spread volatility in times of crisis. It compensates for excessive and temporary market spread movements which are transported into the solvency II balance sheet through the valuation of assets with market values. The adaptation then allows a corresponding adjustment on the valuation of the liabilities. The instrument allows accounting for a disrupted market situation in an objective manner by basing the measurement on market indicators rather than the individual undertaking's portfolio. However, the risk module dedicated to measure the risk of a decline in the adaptation is counteracting this effect by reducing it disproportionately, and we are wondering how the risk charge it introduces can be justified in the general setup of the LTGA package. In our understanding, this risk module is accounting for the risk that the application of the adaptation could not be justified from a market consistent point of view, which is counterintuitive to the purpose of its introduction. In general, the Solvency II framework does not foresee capital requirements for the risk of mis-valuation of balance sheet positions. Thus,

we strongly advocate removing the risk charge for the adaptation from the standard formula.

The **matching adjustment** in general serves as a dampening mechanism to changes in market values, and thus reduces balance sheet volatility. With respect to the extended matching adjustment, the framework will however need to be improved in order to prohibit the technical flaws and obstacles to its implementation to give rise to additional and un-wanted volatilities in practice.

In contrast to the matching adjustment, the design of the **interest transitional** is not intended to target balance sheet volatility, but rather provides for the smoothing in of long-term obligations into the new supervisory regime. For this purpose, it is well suited, provided its duration is adapted to appropriately account for the long-term nature of the business, which typically has a run-off horizon of more than 60 years. A design providing for interpolation over a period of only seven years is most certainly much too short.

9.8. Impact on competition

We do not anticipate distortive effects from the implementation of the LTG-measures on **competition on the German market**, with the exception of the matching adjustment

The implementation cost for the extended matching adjustment might be considerable. In order to benefit from the measure, undertakings must implement new organisational structures fulfilling the legal requirements for ring-fencing, develop the technical infrastructure and expertise to calculate the adjustment. In view of this, larger undertakings have a comparative advantage over small market participants. In addition to that, the considerably broad framework for the measure leaves some room for undertakings with respect to the design of the portfolio and the technical implementation of the adjustment. Larger undertakings may be better equipped to make best use of the options offered by the current provisions for their advantage. In addition to that, the access to financial markets and a sophisticated asset-liability-management may be contributing factors for a comparative advantage.

In addition to that, we would like to note that we consider the variety of the matching adjustment framework to be detrimental to **cross-border competition**, since by design it is targeted at various business models that might well be country-specific. Especially the 77c-matching adjustment is applicable only to business in a very limited set of national markets in Europe, but also the 77e- versions state some conditions that we currently consider not to be implementable for German life business, notably the ring-fencing requirement that is contradictory to the principle

of collective risk-sharing on firm level that defines the core of the traditional German life insurance concept.

9.9. Impact on Long Term Investments

Basically, all measures targeted at ensuring a balance sheet valuation that appropriately reflects the nature of long-term guarantees business set positive incentives towards long-term investments, because insurer's will typically strive to achieve the best economical duration match between assets and liabilities.

9.10. Other considerations

n/a

9.11. Main technical findings on the Long-term guarantee package

Our results indicate in a very clear and decisive manner towards the interest transitional as the instrument best suited for adapting the valuation model to the specificities of long-term business with guarantees. In addition to that, and having the general aim of the reduction of artificial volatility in view, our results show that an adequate design of the method for the determination of the risk free rate, in combination with the interest adaptation, are instruments well fit for purpose. But with regards to the matching adjustment, we doubt that its introduction is consistent with the general aims of risk-based supervision.

Most instruments have been tested in practice for the first time during the current exercise. We are glad to report that our results confirm that the major design elements of the extrapolation, the interest adaptation and the interest transitional, as suggested by the dialogue parties, are sound in their construction. We nonetheless also welcome the opportunity to build on the experience from this field test by suggesting some further technical refinements to the instruments at hand. This experience has been especially worthwhile on the German market, where the participation to the exercise was not limited to a pre-selected set of participants, and where a significant number of small and medium sized undertakings took up the opportunity to provide BaFin with their feedback on the efficiency and effectiveness of the instruments.

The interest **adaptation** is an effective instrument to account for distorted financial markets at YE 2011. It is effective in adjusting the valuation of liabilities by balancing out the effects of excessive and temporary spread movements which are transported into the solvency II balance sheet through the market valuation of assets. We see a limited need for further refinement only in the areas of its

procedural implementation and with respect to the design of the standard formula's capital charge

- Turning to process, the adequate use of the adaptation in times of exceptional circumstances depends on the concrete design of this measure. We consider it thus necessary that the methods applied for the purpose of determining a crisis, as well as the quantification of the adaptation, are comprehensible and made transparent for both undertakings and supervisors. Thus, we see the need to publish the process to be followed and the methodology to be applied in line with the other components of the term structure. Also, in order to accommodate the industries need for proper financial planning, it is necessary that a sensible approach is applied for both, the quantification of the adaptation but also the determination of stressed circumstances. We therefore support to introduce additional criteria in the Level 2 text to further clarify the conditions under which a crisis is present and thus an adaptation is to be applied.
- In the standard formula, inclusion of a capital charge for the adaptation massively impacts the effectiveness of the adaptation counteracting its effect by reducing it disproportionately. Also, we are wondering about the conceptual justification of this capital charge, that seems to introduce an inconsistent risk category into the Solvency II framework, by, in a way, measuring the risk of mis-valuation. We thus advocate for the removal of the stress to the interest adaptation from the standard formula.

In contrast to the adaptation as was tested in the LTGA, the recently proposed **alternative mechanism** is not targeting artificial spread volatility occurring in stressed market circumstances but intended to work as a permanent device. However, we are concerned that this new option does not serve the purpose of introducing a measure reducing artificial volatility over time. Rather than suggesting alternatives to the LTG tool box we consider that the weaknesses detected in the test should help improving the current measures.

With respect to the method for the **extrapolation** of the risk free rate, we confirm that the general approach taken to the design it such as to reduce artificial volatility in technical provisions and thus in the full Solvency II balance sheet including own funds. We welcome the fact that the most important design element working to that effect has already been decided on by the dialogue parties, namely the determination of the starting point of the extrapolation, by not mandating EIOPA to analyse the determination of last liquid point in the context of the LTGA. Also, we confirm the necessity for a rate of convergence stabilising the non extrapolated part of the curve as mirrored in the base scenario of the LTGA. However, we would like to indicate that the standard formula's interest rate stress is in need for modification in order to assure methodological consistency.

- When determining the starting point of the extrapolation, it is important to provide a good fit to market prices on the one hand, whilst not preventing insurers to manage changes between valuation dates in a credible fashion. To ensure a reliable valuation of liabilities through time, the choice of the starting point into extrapolation should consequently have due regard to the volume of the available fixed income markets (corporate and government bonds as well as swaps) with respect to the liabilities to be covered for the respective maturities, thus taking into account the hedging possibilities of the insurer. The methodology chosen by the dialogue parties is appropriately taking account for these considerations.
- Certainly, the extrapolation methodology itself, where interest rates are assumed to approach to a long-term equilibrium (UFR), does already address the problem of artificial volatility. However, the concrete design should be such that it avoids artificial volatility in the extrapolated part of the curve. It is part of the fundamentals of a macro-economic extrapolation approach that there is a reduction of volatility of the interest rates through time for increasing maturity. This in fact was the motivation to extrapolate to a fixed UFR. Therefore, this assumption should also be reflected in the choice of the rate of convergence towards the UFR, or more generally for the extrapolation approach as a whole.
- In addition, we would like to note that, in line with the proposal made for the extrapolation of the interest rate, the determination of the capital requirement for interest rate risk in the standard formula should be developed such that it reflects the reduction in volatility of interest rates for longer maturities. The approach chosen should be consistent to the approach taken for the determination of Technical Provisions. We thus propose to change the current approach to the interest rate stress to an approach which is based on an extrapolation of stressed liquid data points to a UFR. This would adequately reflect the relative invariance of the ultimate long-term forward rate. However, we do not believe that it is reasonable to keep the UFR unchanged in the interest rate stress scenarios prescribed in the standard formula. Taking into account the very long term nature of the UFR, there is a risk that economies undergo changes leading to an UFR that deviates from the one assessed today. However the risk of a sustained change in the inflation environment would also need to be reflected as the expected inflation rate - as a component of the UFR - would be affected. Therefore, we consider it technically sound to allow for a change in the UFR. and do not consider that this would add complexity to the calculation itself.

From a technical perspective we are quite sceptical about the **extended matching adjustment**. The overarching idea of the market consistent valuation under Solvency II is to ensure comparability across undertakings, by valuing liabilities in a consistent manner, when those encompass the same risks in terms of nature, scale

and complexity. The measure however introduces an artificial component by adapting the valuation of liabilities when undertakings have a specific asset structure. In the following, we shortly list our main considerations.

If the extended matching adjustment was introduced we consider it essential

- that there are specific requirements on the assets of the assigned portfolio of assets to ensure a prudent investment behaviour preventing undertakings to chase the premium (this covers both, investment rules with regard to minimum requirements on the asset quality as well as assets eligible for the assigned portfolio of assets),
- that there are requirements on the underwriting risks allowed for in the contracts for which the matching adjustment is applied which impacts on the concrete design of the application ratio in case of the extended matching adjustment,
- or more general, that all risks are reflected adequately.

In addition to that, the concept is in need of refinement with respect to the following issues.

- The volatility of the probability of default (the risk that the expectation with respect to the probability of default is not met) is not adequately reflected as it is neither reflected in the risk margin nor in the fundamental spreads.
- The SCR calculations introduced for the purpose of the matching adjustment will need to be examined in more detail, in particular the interaction between the SCR calculations and the calculation of the application ratio, implying in addition specific group considerations.
- We are not convinced that the modelling of the application ratio ensures that the part of the insurance portfolio which remains matched under stressed situations is reflected adequately, and detect the need for further analysis to ensure that the proposed calculation methodology, including the allowance of spread risk adequately reflects insurance undertakings incurring no losses through forced sales following the allowed safety level.
- More analysis and specification will be needed on the application of the matching criteria for the purpose of the classic matching adjustment according to Article 77c, on the scope of application with regard to insurance liabilities for the different versions of the matching adjustment, on the assets admissible and on the concrete determination of the fundamental spreads, in particular where a lack of data occurs

With respect to the **interest transitional**, we can conclude that it is an instrument well suited for adapting the valuation so that a gradual implementation of Solvency II for the existing life business is achieved. It is exactly targeted at addressing long-term guarantee issue in an unbiased manner and thus is avoiding band wagon effects. However, in view of the fact that it is the latest and youngest of the

instruments proposed by the dialogue parties, it is not surprising that it is still in need of technical refinement with respect to some aspects. Modifications are needed with respect to, first and foremost, the duration of the transitional period, second, the standard formula's interest charge, and last, the application of the measure on the interest curve.

- The duration of the transitional must be adapted to appropriately account for the long-term nature of long-term guarantee business, which typically has a run-off horizon of more than 60 years. The duration of average life insurance portfolio exceeds 7 years by far. The current proposal of a period of only seven years is most certainly much too short to render the instrument fit for purpose. The measure's duration will need to be expanded to a period of at least 20 years.
- The interest rate stress in the Solvency II standard formula will need to be adapted to the instrument in order to achieve a consistency in the valuation and calculation of the capital requirements. The stress' calibration is based on unadjusted market rates, leading to unreasonably high capital requirements when being applied on the transitional rate.
- Solvency II valuation models that have been developed previously when the interest transitional was not yet introduced, cannot easily be adapted to the new instrument, as its application renders the shape of the risk-free rate quite different from the shape of the Solvency II curve. BaFin seized the opportunity of building on the feedback from industry experts during the exercise, to work out a proposal that might solve these purely technical problems of the implementation of the interest transitional. It allows for a dynamic reassessment of the difference between Solvency II and Solvency I rates in the transitional period, hence accounting for the fact that the Solvency II curve will change over time, and giving applicants the necessary certainty on the development of the interest rate curve during the transitional period. It is constructed as follows:
 - For each year of the transitional period, the actual Solvency II interest rate curve is taken as a starting point.
 - The difference of the effective Solvency II interest rate and the Solvency I interest rate for each undertakings' portfolio, where positive, multiplied with a factor is added to the Solvency II interest rate term structure (dynamic approach).
 - The factor represents the share of the difference to be taken into account for each year of the transitional period, starting with 100% and decreasing linearly over the transitional period to 0%.
 - Finally, as in the original transitional proposal, the transitional curve being composed of the Solvency II interest rate curve plus maturity independent add on is used for the valuation of the best estimate.

In contrast to the interest transitional that was tested in the LTGA, the recently proposed **static transitional** is not directly targeting the long-term guarantee valuation, but intended to cover a wider range of transitional problems linked to a low Solvency I valuation. By not addressing the gap between guaranteed and risk-free rates, this new option does not serve the purpose of introducing of a measure that allows for an appropriate transition of guarantees for existing long-term business in a prolonged low-interest environment. To target this core issue, we consider it of utmost importance that the interest transitional, adjusted in some technical aspects and to an appropriate duration as elaborated above, is implemented into the Solvency II framework.

We are confident that, if BaFin's recommendations were taken up, we are on a good route towards as sound design and timely implementation of Solvency II.