	Comments Template on Discussion Paper on the review of specific items in the Solvency II Delegated Regulation	Deadline 3 March 2017 23:59 CET
Name of Company:	Gesamtverband der Deutschen Versicherungswirtschaft e. V.	
Disclosure of comments:	Please indicate if your comments should be treated as confidential:	Public
	Please follow the following instructions for filling in the template: ⇨ Do **not** change the numbering in the column "reference"; if you change numbering, your comment cannot be processed by our IT tool ⇨ Leave the last column empty. ⇨ Please fill in your comment in the relevant row. If you have no comment on a paragraph or a cell, keep the row empty. ⇨ Our IT tool does not allow processing of comments which do not refer to the specific numbers below. **Please send the completed template, in Word Format, to CP-16-008@eiopa.europa.eu** **Our IT tool does not allow processing of any other formats.** The numbering of the questions refers to the discussion paper on the review of specific items in the Solvency II Delegated Regulation.	
Reference	**Comment**	
General Comment	We appreciate the opportunity to comment on the discussion paper from EIOPA and want to encourage EIOPA to continue involving stakeholders in the upcoming review process of the next years. We believe that the approach to reduce complexity is a reasonable and necessary approach to further strengthen the Solvency II regime. Nevertheless we have considerable doubts that not even one year after coming into force and before the first public disclosure of results a process of material changes in calibration and modelling is sensible. In contrast to that a phase of several years of a stable system to gain experience with it seems the better way.	

	A second important issue is the interaction between the European system and national law. It is particularly important for all enhancements and further developments to pay attention to those interactions and to eliminate negative interference. Regarding the stability of Solvency II and to avoid pro-cyclical effects we believe that the volatility and the matching adjustment must become better fitted to individual companies or applicable with reasonable restrictions, respectively. Other issues are: – The loss-absorbing capacity of technical provisions should be considered in the operational risk module, too (with a scenario-based definition). The neglection of this effect is incompatible with economic reality. If the undertaking is hit by an operational risk, present and future profits will be lower. Thus, FDB will be lower, too. The loss absorbing effect is the same as for other market, default or underwriting risks. – There should be a more precise description of Life business, especially appreciating the separate nature of Health as a line of business. This is not recognized in the Solvency II Directive and only partly evident from the QRT reporting granularity. – It is of great importance for feasibility and complexity that IFRS 17 (insurance contracts) does not establish an additional separate valuation regime apart from Solvency II. – There is a need for an adequate consideration of effects between inforce and new business regarding risk mitigation techniques. In case new business has material impacts, it should be possible to be included into cash-flow-model and Standard formula (for example: incorporating the following year according to SII horizon or the following three years according to business plan horizon), instead of projecting a run-off portfolio.	
Q1.1		
Q1.2	The main challenge calculating the NL premium and reserve risk is to take into account the contract boundaries as drescibed in DA, to determine the future cash flows for premium reserves	

	and the future premiums for premium risk NL and Health NSLT.	
Q1.3	The diversification factor reflects the benefits of a diversified risk exposition at least to a certain extent. We therefore consider it a relevant factor.	
Q1.4		
Q1.5	This sub-module adds unnecessary complexity for a risk that is immaterial for non-life business and should be removed. Moreover, there is partly a double counting of lapse risk between the lapse risk module and the premium risk module. This is because the calibration of the premium risk module was based on historical premium volumes which also included the effect of lapses. If a separate risk module for lapses is kept, then the calibration of the premium risk must be recalculated based on data from which lapses have been removed. Finally, there is no justification of the stress factors of 40 %.	
Q1.6	As already stated in Q1.5, we believe, that the non-life lapse risk should be removed since it is immaterial for most LoBs of the non-life underwriting risk. However, if it should be retained, at least simplifications should be allowed and the stress factor of 40% should be revised. Furthermore, we propose the following simplification which is based on a simplification for the calculation of premium provisions (see Guidelines on the valuation of technical provision, Technical Annex III). At first sight this simplification slightly differs from that given in the guidelines. However, since the definition of the combined ratio is different – in the formula given below we account for a more common definition in Germany – the formulas actually should be equal. This simplification also accounts for the collective risk model since regarding individual contracts or parts of portfolios is inappropriate for non-life.	

$$BE_{premium} = (CR - AER) \cdot VM + (CR - 1) \cdot PVFP$$

Where: BE = best estimate of premium provision.
CR = estimate of combined ratio for line of business in relation to earned premiums. (Here, the estimated loss and expenses = best estimate for all claims incurred of future claims after the valuation date until full claims settlement including all unallocated and allocated loss adjustment expenses and operating expenses for underwriting business)
VM = volume measure for unearned premium. It relates to business that has incepted at the valuation date and represents the premiums for this incepted business less the premium that has already been earned against these contracts.
PVFP = present value of future premiums (discounted using the prescribed term structure of risk-free interest rates) for all those contracts of the portfolio which have to be considered at the valuation date according to the contract boundaries.
AER = estimate of acquisition expenses ratio for line of business.

As the estimation of the premium provision is based on all contracts existing, the calculation of the lapse risk can be performed using this formula twice: Once in the usual way to estimate the best estimate of the premium provision and a second time with reduced volume measures to take account of the lapse shock. The lapse risk then is the difference between these two.

The best estimate of (net) premiums provisions after shock would be equal to (with fac:=40%):
$$BE_{premium\_after\_shock} = (CR - AER) \cdot VM \cdot (1 - fac) + fac \cdot VM + (CR - 1) \cdot PVFP \cdot (1 - fac)$$

where $CR, VM, PVFP$ are all net values. The term $fac \cdot VM$ is introduced to take account of a partial refunding of unearned premiums. Here it is assumed that acquisition expenses are not

	refunded; if necessary, it could easily be included. For each line of business the lapse risk would then equal $SCR_{lapse} = \max(0, fac \cdot (1 - CR + AER) \cdot VM + fac \cdot (1 - CR) \cdot PVFP)$ with fac=0.4. The overall lapse risk would then equal $SCR_{lapse} = \sum_{LoB} SCR_{lapse,LoB}$ Again we would like to point out that the current stress factor fac=40% is much too high and should be revised. GDV stands ready to provide for data in specific LoBs and to discuss a different approach to gain a stress factor.	
Q1.7	The shock for mass lapse risk is unrealistically high.The historical evidence of actual lapses (in Germany) clearly contradicts the currently assumed high discontinuance rates of 70% resp. 40%.	
Q1.8		
Q1.9		
Q1.10	The main challenge calculating the NSLT premium and reserve risk is to take into account the contract boundaries as drescibed in DA, to determine the future cash flows for premium reserves and the future premiums for premium risk Health NSLT.	
Q1.11	If the company is geographically well diversified, it is material.	
Q1.12		
Q1.13	This sub-module adds unnecessary complexity for a risk that is immaterial for non-life and health	

	NSLT business and should be removed. Moreover, there is partly a double counting of lapse risk between the lapse risk module and the premium risk module. This is due to the fact that the calibration of the premium risk module was based on historical premium volumes which also included the effect of lapses. If a separate risk module for lapses is kept, then the calibration of the premium risk must be recalculated based on data from which lapses have been removed. Finally, there is no justification of the stress factors of 40 %. Please also see comments on Q1.5 and Q1.6.	
Q1.14	Please also see comments on Q1.6.	
Q1.15	Regarding segmentation of insurance contracts covering disability ("Berufsunfähigkeit"), a simplified approach on how to distribute the risks among the health and life submodules could be very helpful. Moreover, if the unbundling of such insurance contracts is below a materiality threshold or technically not feasible, a simplified approach to include all risks within the life module should be possible. A further challenge is the calculation of those parts that refer to contracts which are not considered as similar to life techniques in national regulation.	
Q1.16	Yes.	
Q1.17		
Q1.18		
Q1.19		
Q1.20		
Q1.21		
Q1.22		
Q1.23		
Q1.24		

	The reference values for operational risk (TP or premiums) measure business volume instead of risk volume and are therefore are not always appropriate. Furthermore, the complex calculations (parameter Op) are a major challenge.	
Q1.25		
Q1.26		
Q2.1	Yes, internal ratings should be allowed for. The internal rating has to follow clearly defined rules and the methodology needs to be reproducible and independently defined from any business interests. In this clearly defined framework internal ratings reduce the reliance on external credit ratings.	
Q2.2		
Q2.3	External credit ratings are established and play a meaningful role in the risk assessment processes of institutional investors. Despite the shortfalls of external credit ratings in some asset classes during the financial crisis their performance and value as an risk indicator has been very good in many other asset classes. Also, since the financial crisis methodologies have come under scrutiny and together with direct regulation of CRAs this should have improved the overall quality and validity of external ratings. Moreover, in many if not most instances investors will not be in a position to realisticly come to comparable or even better credit assessments than CRAs given lack of quantitative and qualitative data, frequency of such data as well as availability of and capacities for adequate models and expertise. We therefore suggest that given the often very good indication by external credit ratings any regulation on reducing mechanistic reliance on external credit ratings should not aim at replacing the use of such external credit ratings altogether but rather concentrate on strengthening the voluntary development and use of own credit risk assessment expertise. Insurers are already required to make use of internal assessments according to CRA III and national regulation. Also, insurers are already required under Solvency II to follow the PPP and to	

	form an own view on the riskiness of investments. Therefore, more analysis is required concerning the usage of both external and internal ratings/assessments and the validation of their appropriateness before applying new mandatory requirements for the use of internal ratings. Negative consequences of further requirements (in particular with respect to how and to what extend internal assessments should be performed) could comprise disproportionate cost burdens with only little or even no benefits to how risks are viewed. In general, it should be therefore down to the responsibility of insurers to decide based on their individual risk situation on the use and scope of internal rating assessment processes and models. Reducing reliance further with the help of internal assessments could for example encompass other monitoring processes such as limit management processes.	
Q2.4	In order to promote the development of internal rating and credit assessment models in a meaningful way insurers should be able to use such assessments for calculating capital requirements in the standard formula as well. Insurers are already required under Solvency II to follow the PPP and to form an own view on the riskiness of investments. Hence an adequate level of policy holders protection is already helped by the requirements in place. In order to ensure a prudent usage of such calculations the undertakings should be required to document their risk assessment approach, processes and default histories and explain them to the regulator upon request. Instead of setting up new complex and cost intense formal requirements national regulators should rather enter into an intense dialogue with insurers. In our view this would correlate much better with the spirit of Solvency II than creating new complex formal requirements. Following an intense dialogue with EIOPA or the national regulator such internal methodologies could be accepted as «certified» for subsequent years. It could also be thought about common internal rating models developed by industry associations.	
Q2.5	Using a methodology based on market implied ratings for the standard formula has a number of shortfalls. Pricing information can be very volatile due to market sentiment and rumours and not reflect the fundamental risk situation of investments and markets. As a concequence capital requirements could become more volatile with potentially negative consequences for individual	

	undertakings' and financial market stability in general. Moreover, pricing information (e.g. on Credit Default Swap spreads) is only available for a limited number of instruments an insurer typically invests in. Finally, pricing of such instruments is often (and increasingly) impaired by illiquidity in the market which is devaluing such pricing information as a meaningful indicator.	
Q2.6	Financial ratios often only take into account past data and the past performance of companies. Especially for corporates the future business perspectives are a decisive factor for the credit-worthiness. On the other hand, the use of accountancy-based measures in the standard formula seems generally more adequate given the experience with such ratios in the market. To give an example, accountancy-based financial ratios have been used for many years with good success in the German market in order to assess the credit quality of private placements (Schuldscheindarlehen) for which market implied indicators are difficult to gain.	
Q2.7	They can be both applied as part of a comprehensive rating methodology. Already existing examples in the market should be carefully examined. This should include financial indicators used by established credit rating agencies (CRA) in their rating processes. These factors are outlined in the CRAs credit rating criteria. The assessment of these indicators should be combined with the respective default statistics. Also, insurers and regulators have gained a lot of experience over decades on appropriate risk indicators for different asset classes.	
Q2.8	The usage of internal assessments should be possible for every asset class but they should not be obligatory. The listed approaches could be used in the standard formula. We also suggest that given the often very good indication by external credit ratings, insurers should also have the option to use a plausibility-check on the external credit rating as a feasible approach to validate the external rating. The plausibility-check could encompass a short assessment of the main rating factors as lined out in the CRA's criteria report, credit report or accompagnying rating action comment	
Q2.9	Undertakings should have the option to reduce risk assessments for their own sovereign to a	

	minimum. For existing legally defined covered bond regimes we also don't see the necessitiy to require in-depth analyses for every issue of a covered bond since the covered bonds have to fulfil the legal requirements in the respective jurisdiction. This is in particular true for markets with strong default histories such as the German Pfandbrief market where have been no defaults recorded so far. In-depth analysis should also not be required if the default of the instruments would have no material impact on the solvency of the insurers. Undertakings should not be required to analyse financial instruments if claims are protected by public or private protection schemes (e.g. deposit guarantee schemes). Instead the investor should form an opinion on the protection scheme. Finally, insurers should have the option to make use of pragmatic plausibility-checks as outlined above.	
Q2.10		
Q3.1	We would welcome an harmonisation of insurance and banking sector regulation in this case. Article 215 of the Delegated Regulation gives a thorough definition of a guarantee. However, this should be cascaded further in order to take the chain of responsibility into account: If a company has a guarantee of an entity which has itself a guarantee of a member state's central government, then the guarantee in behalf of the company should be treated in the same way as a guarantee directly given by the central government.	
Q3.2	We think, that especially the European regional development banks with explicit regional guarantees (like NRW.Bank, L-Bank, BayernLB etc.) and other regional owned agencies to finance local municipalities (e.g. finnish MuniFin, or Kommunekredit in Denmark) should be treated analogously under CRR and Solvency II.	
Q3.3	Yes, the recognition of partial guarantees should be possible and would be appreciated. For example, infrastructure project bonds which are partially guaranteed by the European Investment Bank (EIB) would benefit from a more risk-sensitive valuation under Solvency II. There would be one-off IT implementation costs involved. For reasons of consistency, the inclusion of the guarantee should cover a minimal amount of the notional value including coupons. The exact	

	recognition of the guarantee depends on the structure of the guarantee the protection provider is giving to the lender. With the guarantee the default probability is not necessarily effected, however the recovery rate can increase significantly depending on the structure of the guarantee. In case the structure of the guarantee is given by a “quota share mechanism” than no minimum gurantantee is required.	
Q3.4	This is the only contract design which is allowed for state agencies in the Netherlands and Italy.Even if there is currently no liquid market for bonds with partial guarantees by member states or RGLAs, this might change, in particular if EIOPA decides to introduce a recognition of partial guarantees.	
Q3.5	A possible approximation could be that the modified duration is calculated based on the whole exposure (guaranteed and unguaranteed part). The market value of the unguaranteed (resp. guaranteed) part is then multiplied with the respective shock derived. Depending on the structure of the guarantee in case of an excess protection, where the guarantee sets in after the «excess point» assume a recovery rate of 40% and reduce the resulting risk capital by the factor (1–Excess Point)/(1–Recovery Rate).	
Q3.6	The benefit of guarantees is not restricted to bonds with respect to spread risk. In our view guarantees of central governments or RGLAs for cash or derivatives should be taken into account in the counterparty default module.	
Q3.7	In a first step we would not expect a significant change in the investment strategy. A moderate spread tightening on instruments with partial guaratees could result from increased investments. However, if bonds guaranteed by entities which are themselves guaranteed by a member state’s central governement etc. will not benefit from a preferred treatment under Solvency II those exposures could probably be reduced in the future since the return of these bonds will be compared to bonds with similar SCR. Insurance investors would expect a return comparable to	

	bonds and loans in the Solvency II spread risk classification.	
Q3.8	Yes, if those RGLA are themselves guaranteed and this guarantee suffices Article 215. See also comments in Q 3.1 and Q 3.2 and below. Guarantees given by regional governments and local authorities should benefit from a specific prudential treatment and be fully recognised. If two guarantors are considered risk-free, their guarantees must be treated equally. As a result, there would be no difference between a guarantee given by a RGLA or a central government as far as the conditions - there is no difference in risk due to the specific revenue-raising power of the RGLA; - there are specific institutional arrangements in place which will reduce the counterparty-default-risk; and the qualitative criteria listed in Articles 209 and 210 and the additional criteria in Article 215 are met. The uniform application of these conditions throughout Europe must be ensured. Hence, Solvency II regulation must provide a level playing field with banks since the recognition of guarantees according to Regulation (EU) No. 575/2013 of 26 June 2013 is not restricted to central governments but also considers guarantees given by RGLAs.	
Q3.9	There is a certain spread between exposures directly guaranteed by the central governement and those guaranteed by RGLA. However, the absolute spread difference between the latter and a usual corporate are considerably higher. The spread-development between RGLA and Government guaranteed development banks and agencies are very high correlated to the respective guarantor in contrast to any private corporate. We see no higher spread risk between exposures guaranteed by RGLAs and the spread risk for exposures guaranteed by the central governments to the respective guarantor as long as the guarantee is sufficing Article 215,	

	especially in Germany (e.g. NRW.Bank guaranteed by Land NRW vs. KfW guaranteed by Germany).	
Q3.10	We think that the idea of a chain of responsibility applys to both, banks' and insurance companies' investments. There are no differences in the business model which would justify a more favorable treatment for banks in this respect. On the contrary, one could argue, that while for banks a «bank run» in stressed market conditions might pose a real threat to its liquidity position this is less likely for insurance companies due to lapse fees and fixed cancelation dates. Treatment of exposures to regional governments and local authorities EIOPA provided a list of RGLAs which can be treated as exposures to the central government. Although this list contributed to a better understanding and helped reducing uncertainty, it is not conclusive. Neither Article 85 of the Delegated Regulation nor Article 109a (2) (a) of the directive restricts the application of guarantees to member states or the EEA. The list should therefore be extended covering all member / EEA states and relevant third countries. However, such a list comes with the caveat that it needs to be updated regulary. For example, each time an undertaking invests into a an RGLA not mentioned on the list, it might not be able to benefit from a zero capital requirement. If some national supervisors in that case would nevertheless allow the undertaking to assume the RGLA is risk-free, the provisions are not applied uniformly throughout Europe. Instead of an inflexible list that does not automatically change with markets and investment decisions it would be better to give undertakings more flexibility and make principle-based decisions. Undertakings, in close collaboration with national supervisors, should therefore decide which RGLAs could be considered as risk-free. Guiding principles should help making sound decisions.	
Q3.11	No.	
Q3.12		

	If the insurance and banking sector regulation will ensure a level playing field, demand for guaranteed exposure might increase and thus, the spreads on those exposures will decrease. If there is no harmonisation in insurance and banking sector regulation, regional development banks could loose their longtime funding partnership with insurance companies for longdated SME-loans to start ups and small companies as well as local infrastructure support. In the end banks and insurance companies will buy exposure with the best risk-return profile.	
Q4.1	German life insurers experienced that reinsurers are cautious in taking longevity risk. Hence reinsurance arrangements concerning longevity are rare. For hedging against falling interest rates and avoiding a «burn through» on the asset portfolio in case of rising interest rates which might affect the P&L under local German GAAP (HGB) some life insurance companies are using receiver swaptions. Profit and loss transfer agreements between insurance companies and their mother companies (which also oblige the mother companies to ensure a sufficient equity situation compared to the quantified risks) could duly be classified as a risk-mitigating technique.	
Q4.2	Risk mitigation techniques are categorized for example as follows: - risk transfer (e.g. transfer of market risks via OTC derivatives or of insurance risk via reinsurance or by transfering risk to policyholders by means of cutting bonuses/profit participation) - risk limitation - risk avoidance (which is an extreme form of risk limitation) - risk diversification In life insurance, risk transfer to policy holders via cutting bonuses (the loss absorbing capacity of	

	technical provisions) and diversification are both very significant risk transfer tools . Reinsurance as well as derivatives play only a minor non-material role as a risk mitigation tool in this business. Reinsurance is primarily used to generate a more homogenous risk profile per policy in order enhance collective effects (so that the «law of great numbers» works more smoothly.) Finite reinsurance should be appropriately treated as a risk mitigation technique. Finite reinsurance contracts should not be systematically excluded from being recognizable in the calculation of the non-life and other risk modules, but allowance should be given to the recognition of that contract to the extent risk is transferred under such transactions. Moreover, structured reinsurance contracts should not be automatically considered as finite reinsurance and disregarded based on formal considerations of the structure of the deal, without consideration of the reality of the risk transfer involved. Profit and loss transfer agreements are legally defined by the underlying contract. Despite the risk mitigating passages of the contract (especially the introduction of the commitment to ensure sufficient equity) are considered vital for subsidiaries the risk mitigating effect can currently not be considered because of the impossibility to quantify it according to Solvency II standards. With regards to the use of financial derivatives as risk-mitigation technique, especially one aspect warrants adjustments to market practice: The requirement that the replacement of the risk-mitigation technique shall not take place more often than every three months, see Article 209(3) regarding rolling hedge arrangements, can run contrary to market practice. For example, FX hedging strategies usually use derivatives with shorter than three months original maturity and/or can also require a more frequent rebalancing based on market movements of the hedged exposure. Given an appropriate back- and stresstesting of such rolling hedge arrangements, we see no reason not to take into account effective rolling hedges with derivatives of shorter original maturities and/or with more frequent rebalancing when calculating the Solvency Capital Requirement under the standard formula. This should be reflected in the standard formula. In addition, we suggest to make the reasoning of the pro rata temporis approach stipulated in	

	Article 209(2) for the risk-mitigation effect of derivatives with shorter than 12 months maturity outside of rolling hedge arrangements according to Article 209(3) more transparent: While the negative market value change of, e.g., a three month equity future long position fully enters the Solvency Capital Requirements, the positive market value change of a three month equity future short position is only partially recognized. Given the instantaneous shocks assumed in the standard formula, see recital 72, this asymmetric treatment should be further detailed. Finally, it should be ensured that the allowance of RMTs should not be more restrictive for IM users than for users of the standard formula. Recognized reinsurance types should be more granularily regulated in order to fit the risk profiles of specialised insurers.	
Q5.1	As it is mostly impossible for NL-insurers to select the "initial recognition date" from the data systems the volume measure of premium risk should be revised as well as the definition of the contract boundaries. As stated in DA the current business plus the new business of the next 12 months has to be considered. The volume measure for premium risk only in connection with the matching parameters should represent this. For Germany (**given the current calibration of premium risk parameters**) it is important to count 1-year-contracts, although possibly automatically renewed, with the premium of one year. In the current definition this fact is mostly considered. The change of the definition as proposed would consider a 1-year-contract averaged as 1,5 years.	
Q5.2		
Q5.3	The change of the definition as proposed would consider a 1-year-contract averaged as 1,5 years.	
Q5.4	No, pricing strategies should be sufficiently included in the estimation of the future CR.	
Q5.5	If you start having higher reinsurance cover, it is not instantly considered, as the maximum of the	

	premium of the last year and next year is taken. We suggest to adjust the premium of last year according to the new reinsurance structure. Then the new reinsurance structure would be directly reflected. For Germany it is important to count 1-year-contracts, although possibly automatically renewed, with the premium of one year.	
Q5.6	Every company who extends their reinsurance cover is affected.	
Q6.1		
Q7.1	Yes, we believe that the specifications for the capital requirement for natural catastrophe risks should be simplified. Our focus is on a decrease of complexity **for users (undertakings)**. Nevertheless complexity of appropriate calibration for EIOPA may increase. 1. As a simplification for undertakings **the modelling should consist on LoBs and perils** instead of only perils as the segmentation into LoBs is usually used in undertakings. However, by aggregating Lobs per peril it is still possible to apply reinsurance per peril. 2. For each LoB it has to be considered **whether a segmentation into zones is appropriate**. For LoB 6 and 18 (MAT) a segmentation is not feasible as the risks are not necessarily located at the contractual address, particularly for moving goods. 3. Therefore, within countries a regional segmentation in zones is only appropriate for bigger countries and for LoBs with explicit allocation of risks to zones. These may be modelled as follows: In case where a segmentation into zones is considered appropriate, one could proceed as follows: The geographical spread/extent (neighbourhood, distance, location) of a 1-in-200 year event can be mapped to a matrix. Such a matrix models “concentration” and comprises some special cases:	

	a) *AGG* = (1_{ij}) then CAT_{peril} = weighted sum of *TIV* b) $AGG = \begin{pmatrix} I & \Theta \\ \Theta & I \end{pmatrix}$ with submatrices $I = (1_{ij})$ and $\Theta = (0_{kl})$ where the regions i,j are totally dependent but losses in regions k,l are uncorrelated from I,j Calibrating the aggregation matrix AGG can be done widely independently of sum insured and loss data (either historical or synthetic). And this calibration may be independent from data/systems used in calibration of F_r **and** Q_{CTRY} **.** c) Calibrate AGG by assuming an elliptical regional expansion of a 1-in-200 year event. The cells in AGG measure a combination of distances and tracks. A simplified formula for AGG could be e.g. $AGG_{r,c} = \exp\left(-\frac{distance(r,c)}{D}\right)$ with an appropriate constant D, where D may be chosen per peril and a higher D models higher correlation (e.g. $D = 100$ for hail or $D = 600$ for windstorm). This, however, is not applicable to flood risks.	
Q7.2	Yes, simplified calculations should be possible. But apart from flood and earthquake risk there is no advantage in the grouping of zones, as the original zone-calibration by EIOPA has been intransparent and with no proof that the requirement of Article 101 (3) of the Solvency II Directive is met. We doubt, that this will be different concerning groups of zones for the storm and hail risks. For companies there is no difference concerning the degree of simplification in mapping a contract to a smaller or bigger (grouped) zone. As an **optional simplification for undertakings** we suggest to allow the calculation based on one zone using the highest risk weight of the zones.	
Q7.3		

	The capital requirements are incomprehensible due to missing documentation of the calibration of the applied factors and correlations as well as a lack of recognition of national specificities. As the current model is **based on a very simple average assumption** it is impossible for the undertakings to meet the supervisory requirements in the ORSA process to estimate whether their risk profile deviates from the assumptions underlying the standard formula. Depending on the business strategy undertakings run their business usually on a limited focus (LoB: e. g. more motor, less property or vice versa; covers: more private, less industrial or vice versa). So mostly all undertakings do not meet the above mentioned average assumption. Undertakings usually segment their premium and loss data by Line of Business (LoB) and peril, not by peril alone. Segmentation by peril alone creates difficulty allocating the risk margin per LoB. Meeting the requirement of Article 101 (3) of the Solvency II Directive depends on the calibration of the underlying parameters. Especially for LoB 6 and 18 (onshore-property) a main challenge is to allocate the contracts (sums insured) to the related zones as the risks are not necessarily located at the contractual address, particularly for moving goods. This is also fact for business (industrial) risks in LoB 7 and 19. (see comments to Q 7.1 and Q 7.2.).	
Q7.4	The capital requirements are incomprehensible due to missing documentation of the calibration of the applied factors and correlations as well as a lack of recognition of national specificities. As the current model is **based on a very simple average assumption** it is impossible for the undertakings to meet the supervisory requirements in the ORSA process to estimate whether their risk profile deviates from the assumptions underlying the standard formula. Depending on the business strategy undertakings run their business usually on a limited focus (LoB: e. g. more motor, less property or vice versa; covers: more private, less industrial or vice versa). So mostly all undertakings do not meet the above mentioned average assumption. Undertakings usually segment their premium and loss data by Line of Business (LoB) and peril, not by peril alone. Segmentation by peril alone creates difficulty allocating the risk margin per LoB.	

	Meeting the requirement of Article 101 (3) of the Solvency II Directive depends on the calibration of the underlying parameters. **Especially for earthquake the correlation matrices are not useful and for example for Germany erratic. As seismic exposed areas in a specific country are well known dependencies between zones of not exposed areas are not helpful. A relativity vector is sufficient.** For smaller countries which are located mostly in seismic exposed areas like Greece one region-factor is acceptable.	
Q7.5	The capital requirements are incomprehensible due to missing documentation of the calibration of the applied factors and correlations as well as a lack of recognition of national specificities. As the current model is **based on a very simple average assumption** it is impossible for the undertakings to meet the supervisory requirements in the ORSA process to estimate whether their risk profile deviates from the assumptions underlying the standard formula. Depending on the business strategy undertakings run their business usually on a limited focus (LoB: e. g. more motor, less property or vice versa; covers: more private, less industrial or vice versa). So mostly all undertakings do not meet the above mentioned average assumption. Undertakings usually segment their premium and loss data by Line of Business (LoB) and peril, not by peril alone. Segmentation by peril alone creates difficulty allocating the risk margin per LoB. Meeting the requirement of Article 101 (3) of the Solvency II Directive depends on the calibration of the underlying parameters. Furthermore, undertakings assess their exposure to any one LoB and peril based on an exposure measure relevant for that LoB, for example sum insured for property, number of vehicles for motor etc. The current approach is not in line with standard practice for managing exposure to Nat Cat risk. **For Germany statistics prove (GDV claims statistics) that flood risk in motor is a very minor risk**	

	and not at all a catastrophe risk. It should be disregarded in this LoB.	
Q7.6	The capital requirements are incomprehensible due to missing documentation of the calibration of the applied factors and correlations as well as a lack of recognition of national specificities. As the current model is **based on a very simple average assumption** it is impossible for the undertakings to meet the supervisory requirements in the ORSA process to estimate whether their risk profile deviates from the assumptions underlying the standard formula. Depending on the business strategy undertakings run their business usually on a limited focus (LoB: e. g. more motor, less property or vice versa; covers: more private, less industrial or vice versa). So mostly all undertakings do not meet the above mentioned average assumption. Undertakings usually segment their premium and loss data by Line of Business (LoB) and peril, not by peril alone. Segmentation by peril alone creates difficulty allocating the risk margin per LoB. Meeting the requirement of Article 101 (3) of the Solvency II Directive depends on the calibration of the underlying parameters. Furthermore, undertakings assess their exposure to any one LoB and peril based on an exposure measure relevant for that LoB, for example sum insured for property, number of vehicles for motor etc. So in Germany in motor no sums insured are available. The current approach is not in line with standard practice for managing exposure to NatCat risk. **As decribed above a calculation on LoB and peril with separate parameters for motor, property and MAT risk would take into account the different risk situation of the LoBs. In this case the random selection of the factor 5 to multiply the sum insured for aggregation purposes can be dropped. Nevertheless a thorough calibration of the parameters is necessary.** **In motor hail risk is the only NatCat risk. For Germany statistics prove (GDV claims statistics) that there is no evidence to take into account flood risk for motor. So for motor the flood risk should be dropped (see comments to Q 7.5 for a similar observation for flood risk).**	

Q7.7	**Please describe the main challenges faced when calculating the subsidence risk sub-module. Do you have any suggestion to simplify the sub-module? If yes, please explain why the suggestion meets the requirement of Article 101(3) of the Solvency II Directive.** Not relevant in Germany.	
Q7.8	As we are dealing with the standard formula risk sensitivity is only generally a topic. As company exposures differ concerning zones, number of contracts, highest exposures, reinsurance program etc. there will be no model to deal with risk sensitivity sufficiently. Eventually the discussion of the very own risk of a company has to take place in the ORSA.	
Q7.9	Average contractual limits of a country are mostly irrelevant for calibration. For calibration on claims data company-specific contractual limits show up implicitly in the Euro-amount of losses. This is the reason why we would prefer to calibrate the NatCat model consisting on the market gross loss of a country and to distribute this to the companies by market share. Companies have to deal with their very own exposures. These may differ because of management rules, business plans etc.	
Q7.10	1990 Daria (25./26.01.), Hertha (03./04.02.), Vivian (25.-27.02.), Wiebke (28.02./01.03.). 1999 Anatol (2./3.12.), Lothar/Martin (26./27.12.)	
Q7.11	The approach is different between undertakings depending on the individual contract.	
Q7.12	There is not enough historical evidence.	
Q7.13	There is not enough historical evidence that considering 3 storm events (why not 4 or 5 ?) would be sufficient to appropriately take into account several consecutive storms.	
Q8.1		

We see no major challenge to perform the calculation, but the shortcomings of the whole model are as follows:

General comment:
For all man-made catastrophe risks there is currently no consistent model but rather a collection of scenarios of divergent complexity. So we repeat our proposal of a consistent and homogenous approach across all LoBs taking into account the non-linear relation between risk exposure and company size. A transparent calibration should reflect different covers and legal frameworks for each country. As mentioned in our comments to Q 7.1 for NatCat we also recommend performing the modelling of man-made Cat based on LoBs (motor, liability, fire/property, …) or sub-LoBs (marine, aviation, transport → MAT, LoB 6 and 18; fire property, fire industry → fire, Lob 7 and 19).

GDV approach for all man made risks:
The intention is to develop one closed formula for all man made risks (for all LoBs) with Solvency II principles met (requirement of Article 101 (3) of the Solvency II Directive), the calibration of the parameters reflecting the dangerousness of the underlying risk and the capital requirement of a company being calculated based on the involvement and risk exposure of the company.

The approach is based on the following considerations:
Catastrophe losses (as 1-in-200-years events) should be defined on the level of the total market per LoB and should then be broken down to the individual company by means of the insurance company's individual involvement. For man-made catastrophes the company-involvement can be calculated using a non-linear function depending on the above mentioned market loss, the market share of the company and a fixed lower threshold. Specific circumstances have to be considered separately (e. g. using partial internal models). Even though cover within a LoB generally comprises different causes of loss, all considerations are made irrespective of the cause of the loss.

The following text is mainly an overview. GDV is ready to provide for detailed descriptions

respectively precise derivations (i.e. for the company-involvement) upon asking.

Description of the model:

The first step is calculating the (gross) company-involvement VU_{200}. This term includes the 1 year's safety level of 99.5 % to meet the requirement of Article 101 (3) of the Solvency II Directive. It is depending on the size of the company, the 200 years' market loss M_{200} and a lower threshold u.

To get closer to the term „company-involvement" the following considerations are based on the idea, that the amount of the 1-in-200-years' event of the company is equal to the 1-in-$200 \cdot c$-years' event of the total market:

$$VU_{200} = M_{200 \cdot c}.$$

Thereby a company with $100 \cdot c$ % market share with respect to the risk exposure (0 < c < 1) is considered. So the company-involvement is a non-linear function of the market share c, which depends only on the exponent of the Pareto-distribution and the "annuality" t_u of the threshold u:

$$VU_{200} = u + (M_{200} - u) \cdot f(c) \quad \text{with} \quad f(c) = \frac{\left(\frac{200 \cdot c}{t_u}\right)^{\xi} - 1}{\left(\frac{200}{t_u}\right)^{\xi} - 1}.$$

Concerning the specific characteristics of the data, there is a wide scope for decision-making in setting the threshold u and the exponent $\alpha = 1/\xi$

The threshold u and the exponent α of the pareto distribution have been defined by a first approximation using graphics supported by expert's knowledge.

The following table shows as an example the calibration of selected LoBs:

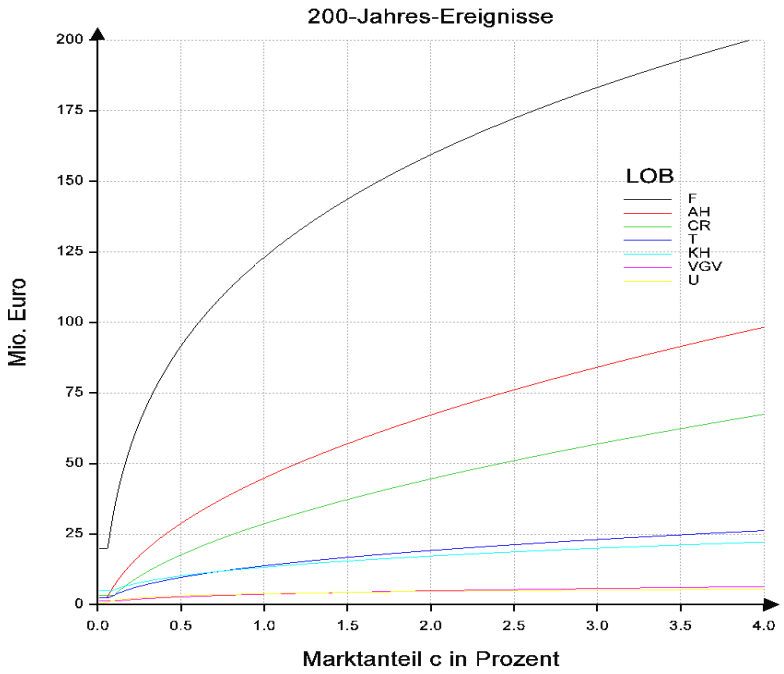
LoB	threshold Mio. EUR	Observations		annuality t_u	Exponent a	200-y-event Mio. EUR
		number	Maximum in Mio. €			
motor	5	57	34	10/57	2,9	39
liability	2,5	68	28	8/68	2,1	110
Transp (goods)	2,5	42	21	6/42	2,6	57
fire private	1,25	46	7	10/46	3,1	17
fire industry	20	81	263	10/81	4,8	473

The following table shows examples for gross losses for undertakings (in Mio €) with different market shares:

LoB	threshold	0,1 %	0,5 %	1 %	2 %	4 %	10 %	market gross loss (Germany)

								(fixed)
fire industry (F)	20,00	33,9	91,6	123,1	159,4	201,4	267,2	500
liability (AH)	2,50	6,8	28,8	44,8	67,2	98,3	158,8	500
credit&suretyship (CR)	3,30	3,3	17,6	28,7	44,5	67,4	113,8	400
MAT (T*)	2,50	3,4	9,6	13,8	19,2	26,2	39,0	100
motor (KH)	5,00	5,3	10,2	13,3	17,2	22,2	30,9	70
fire private (VGV)	1,25	1,25	2,7	3,7	4,9	6,4	8,9	20
accident (U)	0,50	1,4	3,1	3,9	4,7	5,5	6,7	10

* only transport (goods)



On the basis of well-founded expertise, taking into account the total amounts of losses of catastrophes observed in the past, it is possible to define the exponent and the 1-in-200-years-market loss even though e.g. for a LoB or a nation sufficient data to derive the pareto distribution is not available.

Given the gross company involvement is calculated, the SCR (the “net company involvement”) has to be derived. So it is essential to develop an interpretation of the “gross company involvement” per LoB to allow for undertaking specific reinsurance. (See “gross to net”)

Calibration per LoB:
As a general rule, all types of man made catastrophe risks mentioned above have to be taken into account in the lines of business concerned. As there is one model for all LoBs, the calibration has to be done separately for every LoB, if necessary depending on the risks more granular. So e. g. LoB 7 (fire) may be split into private and industrial risks.

Calibration per country or Europe-wide:
There has to be a central decision whether the calibration has to be done for each EU country, region or national economy separately or for Europe as a whole.
In addition to the individual exposure the business of undertakings depends on

- the regulatory framework of the respective national economy,
- the insurance density of the risk,
- the contractual design of the scope of cover which is usual in the market.

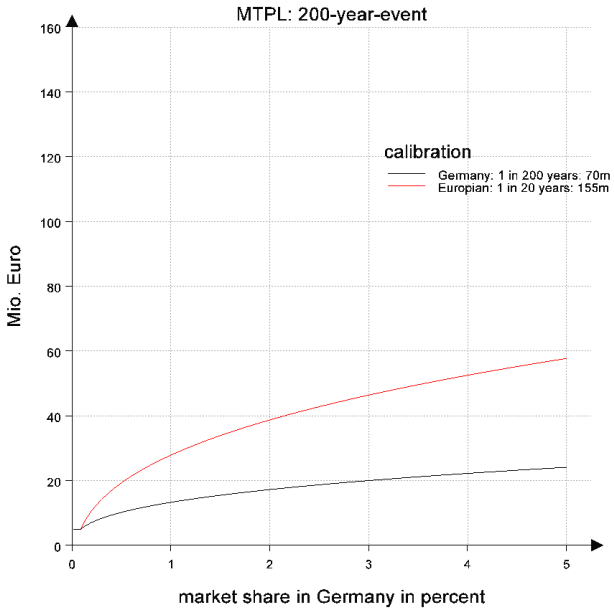
So as a minimum country-specifics have to be considered also in a Pan-European approach.

Calibration per country:
To calculate the 1-in-200-years-gross loss of an individual undertaking per LoB and country data of extreme losses of this country have to be evaluated. Total amounts of loss of catastrophes observed in the past years may, for instance, be referred to. On this basis the threshold and the pareto exponent have to be set. Given a lack of data for a specific country the calibration of a country with similar products or a similar loss expectancy can be adopted. To calculate the company involvement the market share of the concerned undertaking has to be converted to a fitting market share relating to the country compared. For undertakings with business in more than one country the results of all countries have to be aggregated. Independence between the counties concerned has to be evaluated.

Calibration for Europe:
A Pan-European calibration can be done in an analogous way. This could be organized by EIOPA as EIOPA has access to the reporting templates (e. g. S.21.01.01).

	In case of lack of data of single countries claims data of reinsurers (e.g. published) could be used additionally. In this case the business of small insurers should be particularly considered. Non-European risks have to be considered separately. **Gross to net:** The calculated gross company involvement can be interpreted as the 1-in-200-years claims burden of the following year. To allow for a specific reinsurance program for the undertaking this gross loss can be interpreted as a single loss or a cumulative loss depending on a specific LoB. A single loss (high-severity-low-frequency event) may be appropriate for motor, parts of transport (tanker, aviation) and liability. In this case the net loss will be calculated on the base of one fictive claim with the amount of the gross loss and then taking into account the corresponding reinsurance. The reinsurance relief may include facultative reinsurance given that for such a high risk the purchase of facultative reinsurance is mandatory according to internal reinsurance standards. If there are contractual limits lower than the gross loss, the net loss is restricted by the highest amount to pay for after considering the reinsurance. Cumulative loss (high-frequency-low-severity event): The impact of one or more events on several contracts may occur in fire, credit & suretyship, transport (goods) and accident. In this case as a conservative approach the sums insured of the highest contracts which sum up to the calculated gross loss can be considered. The net loss can be calculated by applying the reinsurance program to the total loss concerning all these contracts. GDV stands ready for more information.	
Q8.2	We see no major challenge to perform the calculation. Currently there is no proof that the requirement of Article 101 (3) of the Solvency II Directive is met. For an alternative model see comments to Q 8.1	
Q8.3		

	We see no major challenge to perform the calculation. Currently there is no proof that the requirement of Article 101 (3) of the Solvency II Directive is met. For an alternative model see comments to Q 8.1	
Q8.4	The data concerning all insured buildings within a radius of 200m are usually not available. Currently there is no proof that the requirement of Article 101 (3) of the Solvency II Directive is met. For an alternative model see comments to Q 8.1	
Q8.5	We see no major challenge to perform the calculation. Currently there is no proof that the requirement of Article 101 (3) of the Solvency II Directive is met. For an alternative model see comments to Q 8.1	
Q8.6	We see no major challenge to perform the calculation. Currently there is no proof that the requirement of Article 101 (3) of the Solvency II Directive is met. For an alternative model see comments to Q 8.1	
Q8.7	Currently there is no consistent model but rather a collection of scenarios of divergent complexity. The calibration is only based on expert judgement with no proof that the requirement of Article 101 (3) of the Solvency II Directive is met. **Motor:** Parallel calculations between the current DA calibration and German numbers based on the above mentioned model show:	



The DA calibration is based on a “Selby-like” event with 155 m€ as the 1-in-200-years event. The German calibration consists of 70 m€ as the 1-in-200 years event. Both assumptions are made based on expert judgement, the German calibration additional includes experience of claims data in Germany over the last 40 years.

The source of incorrectness defining the “catastrophic event” is the use of only expert judgement without taking into account appropriate claims data.

Other Cat risk (Art. 135 DA, Annex XII)

It is not clear, what kind of catastrophe risk is reflected in the OtherCat risk module. Does it reflect

	a clustering event or single big loss? What kind of events are reflected here? This should be specified.	
Q8.8	No, it is not necessary to deal with the addressed issues. With the described examples we got the notion that EIOPA presumes that undertakings deal with reinsurance programs to «cherry pick» the lowest capital requirement. At least in the ORSA and also in the reporting templates undertakings have to list the whole reinsurance program in order to enable the national supervisors to have a close look to this problem. So as described above our opinion is that this is not a problem of the standard formula. As for the mentioned risks there is currently no proof that with the scenarios of the standard formula the requirement of Article 101 (3) of the Solvency II Directive is met.	
Q8.9	As described above for fire risk establishing a 200m-radius is neither a consistent model nor has the calibration the slightest proof that the requirement of Article 101 (3) of the Solvency II Directive is met.	
Q8.10	None of the proposals listed are able to solve the mentioned problems.	
Q8.11		
Q8.12	The complexity of the sub-module consists of the fact that usually the data referring to all insured buildings in a 200-m-radius are not available. This means that the whole portfolio has to be divided in overlapping 200m-circles to find out which has the highest sum insured. For an alternative model see comments to Q 8.1	
Q9.1	As there is no proof that the requirement of Article 101 (3) of the Solvency II Directive is met we see no evidence, that including terror risk in the current standard formula calculation would improve it.	
Q9.2		

	Currently there is no proof that the requirement of Article 101 (3) of the Solvency II Directive is met.	
Q9.3	We see no major challenge to perform the calculation. Currently there is no proof that the requirement of Article 101 (3) of the Solvency II Directive is met. For an alternative model see comments to Q 8.1	
Q9.4	The complexity of the sub-module consists of the fact that usually the data of all contracts belonging to one building are not available. Currently there is no proof that the requirement of Article 101 (3) of the Solvency II Directive is met. Usually the largest risk concentration of an insurance undertaking is located in the own business building. In case of an Cat event hitting the own headquarter the undertaking has a lot more problems than the capital requirements for accident insurance. For an alternative model see comments to Q 8.1	
Q9.5	For the pandemic risk, market and country wide factors should be implemented for the unit claim costs. These factors should be determined by EIOPA.	
Q10.1	We don't suggest any other more sophisticated model than the Lee-Carter model. The Lee-Carter methodology has become the standard stochastic model for projecting the future mortality both in the actuarial literature and in the insurance industry. The Lee-Carter method is regarded as the simplest and the most robust currently available.	
Q10.2	The calculated capital requirements are clearly dependent on the choice of the model. The advantages, limitations and key assumptions of the Lee-Carter model are well understood which allows for a better understanding of the model and parameter risk.	
Q10.3	Generally, adding additional assumptions may increase the complexity and uncertainty of the model. The calibration should be processed based on the available data. Nevertheless, the scientific development in demographic research should be carefully analyzed. Furthermore,	

	additional assumptions can be included in the existing data. For instance in the best estimate mortality table published by the German actuarial association (DAV 2004R) an assumption on the future mortality has already been included.	
Q10.4	The two sources of mortality data mentioned in the paper are of good quality. Additionally, the data from national statistical offices could be included in the process, since it might be of greater granularity and hence might increase the understanding of the data from the proposed sources.	
Q10.5	The best solution would be to calibrate the model to the specific portfolio in question. In practice, the industry data (see DAV 2004R in Germany) may be considered together with modifications taking into account the specific portfolio. When calibrating to population data a basic risk might be considered for which additional risk capital could be necessary.	
Q10.6	No. The current approach is sufficient. A more granular approach would unnecessarily increase the complexity of the calculations.	
Q10.7	If a more granular approach is chosen, the Lee-Carter model seems to be appropriate for EIOPA's calibration exercise.	
Q10.8	In case that EIOPA would apply such a portfolio for its calibration exercise, this portfolio had to be respresentative for the actual portfolios of the undertakings. Given the enormous differences in life insurance products and portfolios across Europe, this seems to be a major challenge.	
Q10.9	The sensitivity of the longevity risk to the level of interest rates is a natural/logical consequence of the business model of life insurers who write longevity risk, with lower interest rates it is not suprising that the risk for the life insurerer increases concerning the payment of future guaranteed annuities.	
Q10.10	No. The current approach of instantaneous and uniform shocks is appropriate.	

Q11.1		
Q11.2	Undertakings should have the option to calculate every parameter (except correlations and calculation constants) concerning the underwriting risk as USP. Supervisors will anyway check the appropriateness in the approval process.	
Q11.3	As undertakings have to calculate every parameter of their own risk in ORSA with their specific methods, there are commonly used methods. These may serve as standardised methods. **Instead of providing a closed list of standardised methods only the requirements for standardised methods should be described.** Only priciples and assumptions should be defined to give undertakings the opportunity to allow for taking into account their individual business, data base and contractual limits. **At least, however, undertakings should be able to choose from a wide set of standardised methods** in order to calculate their undertaking-specific parameters. This would account for differences between undertakings as well as lines of business. Especially in case of premium risk this seems to be necessary since the method in DA faces several difficulties. Additionally, it is based on the method used for the calibration of the premium risk factors in the standard formula. Leading to the point that USP cannot be used instead of the standard formula, if the assumptions of the standard formula cannot be applied to the undertakings own risk. As an example GDV stands ready to discuss **additional methods for calculating the premium risk factors**: **1. Empirical Standard Deviation** Instead of using complex methods with underlying assumptions, the premium risk parameter	

could be estimated with the robust empirical standard deviation S (notation as introduced above):

$$S^2 = \frac{T}{T-1}\sum_{t=1}^{T}\frac{x_t}{T\cdot\bar{x}}\cdot\left(\frac{Y_t}{x_t}-M\right)^2, \text{ where } M=\frac{\sum_t Y_t}{\sum_t x_t}.$$

where x_t is the earned premium by accident year t, Y_t, is the aggregate loss after the first year of development, by accident year t and LoB.

2. Least Squares Estimation (Prof. Schmidt (TU Dresden, em.))

Another method uses the assumptions of the EIOPA proposal regarding the expectation and variance of aggregate loss. However, the model is more general since the lognormal distribution is not needed. The method derives unbiased estimators of β and σ^2.

A Simplified Model and Unbiased Parameter Estimation

Instead of starting with a very particular model and ending up with a rather crude method of parameter estimation, one may start with a more general model and apply a more efficient estimation method.

Assume for the moment that δ is known and put

$$Z_t := Y_t/x_t$$

and

$$a_t := (1-\delta)\bar{x}/x_t + \delta$$

Then we have

$$E[Z_t] = \beta$$

$$\text{var}[Z_t] = a_t\sigma^2$$

Using independence of the family $\{Z_t\}_{t\in\{1,\dots,T\}}$ it is not hard to show that

$$\hat{\beta} := \sum_{t=1}^{T} \frac{1/a_t}{\sum_{s=1}^{T} 1/a_s} Z_t$$

is the *best linear unbiased estimator* of β (with $\mathbf{var}\left[\hat{\beta}\right] = \frac{1}{\sum_{s=1}^{T} 1/a_s}\sigma^2$) and that

$$\widehat{\sigma^2} := \frac{1}{T-1}\sum_{t=1}^{T} \frac{1}{a_t}\left(Z_t - \hat{\beta}\right)^2$$

is an *unbiased estimator* of σ^2.

The estimators $\hat{\beta}$ and $\widehat{\sigma^2}$ depend on δ and should be computed for several values of δ to check their sensitivity under changes of δ.

Comment: The estimators $\hat{\beta}$ and $\widehat{\sigma^2}$ do not depend on the assumption of lognormality. One may, of course, use this assumption for maximum-likelihood estimation in the simplified model, but one would run into the same difficulties as in the original model. However, since maximum-likelihood estimators may be biased, maximum-likelihood estimation is not generally preferable to other methods of estimation.

Remark: Because of the general criticism with regard to the use of $\overline{x}$ one might also consider the simplified model with $\delta := 1$, in which case $a_t = 1$ and hence

$$\hat{\beta} = \frac{1}{T}\sum_{t=1}^{T} Z_t$$

$$\widehat{\sigma^2} = \frac{1}{T-1}\sum_{t=1}^{T}\left(Z_t - \hat{\beta}\right)^2$$

Then one has a neat model with only two parameters and one has unbiased estimators for each of these parameters.

3. Method Allowing for Trends and Cycles (Dr. Matitschka (GDV))

Time series of loss ratios are usually determined by underwriting cycles or trends, e.g. in the German motor liability market cycle periods of 7 years can be observed. Therefore the assumption of a global loss ratio beta is often not realistic.

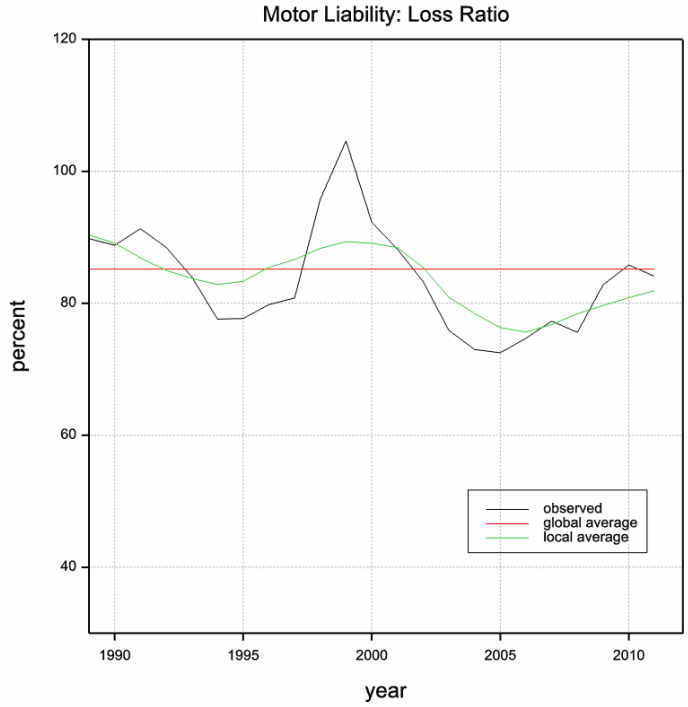
Instead we assume a time-dependent local loss ratio β_t (without specifying the type of cycle or trend) and determine the undertaking-specific parameter as average deviation from this local loss ratio. Thus, the undertaking-specific parameter is adjusted for underwriting cycles or trends.

Given observations y_t and premiums x_t, we take as estimator for β_t the m-year centered moving average:

$$\hat{\beta}_t = \frac{\sum_{|s-t| \le m} y_s}{\sum_{|s-t| \le m} x_s}$$

For $m = 7$ one obtains the 7-year moving average.

In the following example of a German undertaking both the cycle and the decreasing trend are represented by the local loss ratios:



The empirical undertaking-specific standard deviation is thus given as average deviation from the local loss ratio:

$$S^2 = \frac{1}{T-1} \cdot \sum_t \frac{x_t}{\bar{x}} \cdot \left(\frac{y_t}{x_t} - \hat{\beta}_t \right)^2$$

4. Premium Risk Considering Existing Trends (Prof. Wiedemann, University of Esslingen)

In this additional method the premium risk as USP is estimated as the standard deviation of the claims costs taking into account existing trends. It is designed for lines of business with a high predictability of the portfolio size as well as of the expenses and earned premiums (i. e. motor liability in the German market). This method could especially be used in lines of business with underwriting cycles, since premium is not used as exposure.

The method delivers an estimation of the undertaking-specific parameter for premium risk. It is intended to be designed for LoBs with a high predictability of the portfolio size as well as of the expenses and earned premiums. These assumptions seem to be thoroughly realistic for LoBs where standard products are offered on a mass market. As a direct consequence of these assumptions, the premium risk may be understood as the standard deviation of the paid claims costs. In other words, the described method fits to LoBs where the premium risk results first and foremost from the volatility of the average claims costs.
In addition, it has to be taken into consideration that the average paid claims costs might follow a trend over the years. Even though the described method can easily be modified in a way to allow any class of trend-describing functions, we restrict ourselves to the case of linear trends.

Inputs

$5 \leq T$	Number of accident years
$t = 1, \cdots, T$	Accident years
N_t	Size of the underlying portfolio in accident year t
P_t, $P_t^* := \frac{P_t}{N_t}$	Total and average earned premium in accident year t
C_t, $C_t^* := \frac{C_t}{N_t}$	Total and average paid claims costs (including claim management costs) after the first year of development by accident year t

E_t, $E_t^* := \frac{E_t}{N_t}$	Total and average expenses by accident year t
$L_t := P_t - C_t - E_t$ $L_t^* := \frac{L_t}{N_t}$,	Total and average loss by accident year t

Outputs

$\hat{a}, \hat{b}$	Estimates of the parameters a and b describing the linear trend of the expected average claims cost.
$\hat{\sigma}_{prem}$	Undertaking-specific estimate of the standard deviation of the premium risk

Assumptions

- Our main assumption is that at the beginning of every accident year t one can estimate the number of risks N_t as well as the earned premiums P_t and the expenses E_t with a sufficiently high precision. It follows that
$$\boldsymbol{Var}(L_t) \approx \boldsymbol{Var}(C_t).$$

- We furthermore assume that the expected average claims costs follows a linear trend, i.e., there are constants a and b with
$$\boldsymbol{E}(C_t^*) = at + b.$$

- We put $f_{a,b}(t) := at + b$. Accordingly, it follows that for each accident year t the difference
$$D_t^* := C_t^* - f_{a,b}(t)$$
between the average claims costs and the trend line has expected value zero, i.e.,
$$\boldsymbol{E}(D_t^*) = 0.$$

- Furthermore, we assume that these differences $D_1^*, \dots, D_T^*$ are pairwise uncorrelated and share the same variance σ^2, i.e., $\boldsymbol{Cov}(D_s^*, D_t^*) = 0$ for $s \neq t$ and $\boldsymbol{Var}(D_t^*) = \sigma^2$.

Description

- One determines the estimates $\hat{a}$ and $\hat{b}$ of the constants a and b by applying the method of least squares. More precisely, one has to minimize the sum

$$S_{a,b} := \sum_{t=1}^{T} \left(C_t^* - (at + b)\right)^2 .$$

- Accordingly, it holds true that
$(\hat{a}, \hat{b}) := \underset{(a,b)\in R^2}{\operatorname{argmin}} S_{a,b}$.

- An explicit representation of the solution to this standard optimization problem is the following:

$$\hat{a} = \frac{12 \sum_{t=1}^{T} \left(t - \frac{T+1}{2}\right) C_t^*}{(T-1)T(T+1)} \quad \text{and} \quad \hat{b} = \overline{C^*} - \frac{(T+1)\hat{a}}{2},$$

where $\overline{C^*} := \frac{1}{T}\sum_{t=1}^{T} C_t^*$ denotes the mean average of the average claims costs C_t^*.

- Due to the Gauss-Markow theorem the pair $(\hat{a}, \hat{b})$ is the best linear unbiased estimator of the coefficients of the linear trend. Moreover,

$$\hat{\sigma} := \sqrt{\frac{S}{T-1}} \quad \text{with} \quad S := S_{\hat{a},\hat{b}}$$

is an unbiased estimator of σ.

- Considering our first assumption together with $\boldsymbol{Var}(D_t^*) = \boldsymbol{Var}(C_t^*) = \sigma$, we receive that

$$\hat{\sigma}_{prem} := N_{T+1} * \hat{\sigma}$$

is an estimate of the standard deviation of L_{T+1}.

Q11.4		
Q11.5		
Q11.6	GDV can provide for a thorough derivation that the method in DA Annex XVII the factor for non-proportional reinsurance is given by $$NP' := \frac{Std(X_{net})}{Std(X)} = \frac{\sqrt{E(X_{net}^2) - E(X_{net})^2}}{\sqrt{E(X^2) - E(X)^2}}$$ This formula could also be used in case of stop loss reinsurance contracts: Consider a stop loss reinsurance with priority $[0, b_1[$ and unlimited liability of the reinsurer. The factor should be determined per LoB. Let X_i be the overall loss and v_i the earned premium of year $i \in \{1,...,T\}$ (alternative volume measures could be used). The overall losses of each year follow a lognormal distribution however are not identically distributed. They also depend on the volume measure v_i. For example, the requirements to calculate the premium risk factor according to DA Annex XVII could be postulated, however here a simplified approach for the variance is chosen: $E(X_i) = \beta v_i$ und $Var(X_i) = S^2 v_i$ The parameters β and S^2 can then be estimated (respectively with empirical estimators). The overall loss X_{T+1} of the following year therefore follows a lognormal distribution with expected value $E(X_{T+1}) = \beta v_{T+1}$ and variance $Var(X_{T+1}) = S^2 v_{T+1}$ (the future premium should be known). Let	

$$f(y \mid \theta, \eta^2) = \frac{1}{y\eta\sqrt{2\pi}} \exp\left(-\frac{1}{2}\left(\frac{\log(y) - \theta}{\eta} \right)^2 \right) \text{ für } y > 0$$

be the corresponding density function.

The first two moments are given by

$$E(X_{T+1}) = \exp\left(\theta + \frac{1}{2}\eta^2 \right) = \beta v_{T+1}$$

$$E(X_{T+1}^2) = \exp\left(2\theta + 2\eta^2 \right) = S^2 v_{T+1} + (\beta v_{T+1})^2$$

So the parameters θ and η can be written as

$$\eta = \sqrt{\log\left(1 + \frac{S^2}{\beta^2 v_{T+1}} \right)}$$

$$\theta = \log\left(\beta v_{T+1} \right) - \frac{1}{2}\log\left(1 + \frac{S^2}{\beta^2 v_{T+1}} \right)$$

Since $Std(X_{T+1}) = \sqrt{S^2 v_{T+1}}$ we only have to further consider $Std(X_{T+1,net})$.

For a random variable following a lognormal distribution with density function $f(y)$ (where Φ is the distribution function of the standardized normal distribution) the following applies:

	$E(X^2_{T+1,net,unbeschränkt}) = \int_0^{b_1} y^2 f(y)dy + b_1^2 \int_{b_1}^{\infty} f(y)dy$ $= \exp\left(2\theta + 2\eta^2\right)\Phi\left(\frac{\log(b_1) - \theta - 2\eta^2}{\eta}\right) + b_1^2\left(1 - \Phi\left(\frac{\log(b_1) - \theta}{\eta}\right)\right) =: \omega_1$ $E(X_{T+1,net,unbeschränkt}) = \int_0^{b_1} yf(y)dy + b_1 \int_{b_1}^{\infty} f(y)dy$ $= \exp\left(\theta + \frac{1}{2}\eta^2\right)\Phi\left(\frac{\log(b_1) - \theta - \eta^2}{\eta}\right) + b_1\left(1 - \Phi\left(\frac{\log(b_1) - \theta}{\eta}\right)\right) =: \mu_1$ In case of an unlimited coverage of the reinsurer this yields $Std(X_{T+1,net,unbeschränkt}) = \sqrt{\omega_1 - \mu_1^2}$. In case of a limited coverage of the reinsurer one has to proceed according to the prior description, considering the relevant formulas and respective parameters.	
Q11.7	The possibility to develop and use group specific parameters (GSP) is more reduced than USP, if not even entirely excluded. First, due to application of the restrictive requirements for GSP and, second, due to problems that arise when applying the given standardised methods on consolidated group data, e.g. the inconsistency with respect of the calculation of the best estimate of technical provisions in group context (reserve risk method 2). In addition fixed formulas to calculate GSP (especially based on USP) are less appropriate than to calculate USP due to very specific circumstances in groups. So group specific modifications of the methods or alternative group specific methods to calculate GSPs should be allowed for.	
Q11.8	The consolidated best estimate for a group shall be equal to the sum of solo best estimates. The standardized methods for USP/GSP (e.g. Merz-Wüthrich within the reserve risk module) require	

	the true consolidated data and not the sum of solo data. So the data are available to calculate the best estimate based on this data source. The best estimates calculated from single development patterns only sum up to the same amount calculated on consolidated patterns under specific circumstances: http://www.math.tu-dresden.de/sto/schmidt/dsvm/dsvm2012-01.pdf, Corollar 2.2.8 (3). These specific assumptions may not hold in groups. An alternative method could be to calculate GSP as a **weighted average** of USPs.	
Q11.9	No.	
Q12.1		
Q12.2		
Q12.3	The classification of mortgages in CDR in Article 191 is too complex. It should be simplified.	
Q12.4	The whole calculation of the counterparty default module is very onerous. The most laborious part is the calculation of the risk mitigating effect for the LGD. Given the little impact on the overall results, the calculations are not adequate but exaggerated by far. Thus, this risk module should be radically simplified. In detail : The calculation of the risk-mitigating effect for derivatives or the risk adjusted value of collateral is too complicated. For each exposure the difference of the market risk of the undertaking and the market risk without the exposure has to be calculated. For large portfolios with many hedging measures this is a costly and time consuming process. Furthermore the calculation of the risk mitigating effect of collateralised derivatives is too conservative. In fact the shortfall of risk mitigating effects of collateralised derivatives consists of the risk of buying comparable derivatives, financed by the liquidation of the collateral; a complete default of the hedge overestimates the effect.	

Q12.5

We propose to simplify the calculation of the risk mitigating effect by multiplication with a specific risk factor (as a percentage of the market value, where collateralisation is taken into account) instead of the current calculation based on a notional SCR.

With regard to non-life we suggest:
As the former formula described in 6.35 of the Technical Specifications for the Solvency II valuation and Solvency Capital Requirements calculations (Part I) (EIOPA-DOC-12/262, 18 October 2012) is currently not included in the simplifications catalogue in DA, we propose to include the formula to the simplifications in a modified form:

Simplification:

For non-life reinsurance, the following method may be applied if the reinsurance treaties with a counterparty affect only one non-life line of business. Then the difference $RM_{re,i} = SCR_{vt,i}^{hyp} - SCR_{vt}$ may be approximated by the following term:

$$\sqrt{\begin{aligned}&\left(NL_{cat}^{hyp} - NL_{cat}^{without}\right)^2 + \left(3\sigma_{prem}\left(P_{lob}^{hyp} - P_{lob}^{without}\right)\right)^2 + (3\sigma_{res}\ recoverables)^2 \\ &+9\sigma_{prem}\,\sigma_{res}\left(P_{lob}^{hyp} - P_{lob}^{without}\right) recoverables \\ &+1{,}5\sigma_{res}\ \left(NL_{cat}^{hyp} - NL_{cat}^{without}\right) recoverables \\ &+1{,}5\sigma_{prem}\left(NL_{cat}^{hyp} - NL_{cat}^{without}\right)\left(P_{lob}^{hyp} - P_{lob}^{without}\right)\end{aligned}}$$

with:

	$\left(NL_{cat}^{hyp} - NL_{cat}^{without}\right)$ Counterparty's share of CAT losses, $\left(P_{lob}^{hyp} - P_{lob}^{without}\right)$ Reinsurance premium of the counterparty in the affected line of business, $recoverables$ Reinsurance recoverables in relation to the counterparty in the affected line of business, $\sigma_{(prem,lob)}$ Standard deviation for premium risk in the affected line of business as used in the premium and reserve risk sub-module $\sigma_{(res,lob)}$ Standard deviation for reserve risk in the affected line of business as used in the premium and reserve risk sub-module Compared to the formula in 6.35 of the Technical Specifications, now the correlation between premium and reserve risk is taken into account and also the correlation 0.25 between Cat risk and premium/reserve risk. With the extended formula the former shortcomings of the old formula, which led to an underestimation, is mended.	
Q12.6		
Q12.7	Regarding the proposal for non-life in our comments to Q 12.5 : As described above the formula holds only if reinsurance treaties with a counterparty affect only one non-life LoB.	
Q13.1	More and more repos are centrally cleared.	
Q13.2	Up to our knowledge, no German insurer or reinsurer is a clearing member. German insurers and reinsurers have access to clearing services as clients of clearing members. We do not expect that many insurers become clearing members in the nearer future due to the membership models of the central counterparties: The central counterparties have, as far as we know, not yet	

	introduced direct membership models for the buy-side. The new ISA Direct membership of Eurex allows kind of direct access of the buy side firms at the clearing house, however, the default management obligation stays with the clearing agent.	
Q13.3	Not at this point in time, see above.	
Q13.4	It might already be questionable, if exposures against CCPs should be supported by capital requirements at all. The legislator of EMIR in fact intended to mitigate counterpart default risks by introducing clearing obligations. This risk mitigating effect of EMIR is not properly reflected, if one counterpart default risk (against a counterparty) is simply exchanged against another counterpart default risk (against the CCP) in insurance supervisory law. EMIR has made cleared derivatives more safe and this fact should be adequatly refelected in S II Regulation. However, if exposures against CCPs have to be supported by capital and if Article 305 CRR is used as a blue print for the capital reqirements of insurers, the following remarks could be considered: – Article 305 (1) CRR refers to very specific banking law, to which insurers are not familiar. It seems advisable, that specific insuarance regulation is taken into reference instead: In insurance regulation Article 199 of Solvency II-Delegated Acts represents the general case of consideration under the counterparty default risk module. – With reference to Article 305 (2) c) CRR, we would like to point out, that insurers do not have independent, written and reasoned legal opinions in store as those were not required so far. The new EBA and ESMA report on the functioning of CRR with the related obligations under EMIR points out, that the concept of legal opinions did not work properly in the past and adjustments to Article 305 CRR are required. Even the European Commission's current proposal of an adapted Article 305 CRR («CRR II») would still cause significant costs and burdens, which would in particular concern small and medium sized insurers. Due to the European Commission's proposal the requirements to have a «legal	

	opinion» might be reduced, so that a «legal review» is sufficient. However, it will remain burdensome and cost-intensive to provide those reviews. In order to avoide these problems, we would propose to establish a contractual standard for central counterparties and clearing members, that justifies a reduced solvency capital requirement. – It should be safeguarded, that revisions of the CRR and corresponding easenings and clarifications are also incorporated into the Solvency II-Delegated Act in order to guarantee a level playing field.	
Q13.5		
Q13.6	We have considerations regarding the LGD-formula in Article 192 (3) Solvency II-Delegated Act. This formula does not reflect the changes introduced under EMIR. In particular EMIR's clearing obligations and risk mitigation techniques significantly reduce the counterparty default risks insurers are exposed to.This reduction should be reflected in the LGD-formula and an adjustment of the current factor down to 50 (as for reinsurance contracts) seems appropriate: LGD = max(50 % (Derivative + RM_fin) – F' * Collateral; 0) As initial margins due to EMIR are usually calculated on a counterparty level, single initial margins payments can often not be allocated to single derivative contracts. It should therefore be clarified, that calculations can also be performed at a counterparty level: LGD_counterparty = max(\sum_i max(50% (Derivative_i + RM_fin_i) – F'* Collateral_i;0) – F'*Collateral_counterparty;0) Further, we would like to point out, that the short-term period required to make use of the collateral and to replace a derivative contract from a defaulting counterparty, is currently not properly reflected in Solvency II. The adjustment of a derivative-collateral under Solvency II	

	assumes a stress calibrated at 99,5% over 1 year. However, under EMIR the haircut on collateral is calibrated at 99,0% and at least every 10 days, which properly reflects the short-term replacement for derivatives. The assumption under Solvency II, that it should be stressed under the market risk module assuming a 1 year holding period seems to overstate the actual risk and leads to over-collateralisation.	
Q14.1	No.	
Q14.2		
Q14.3		
Q14.4	No.	
Q14.5		
Q14.6		
Q14.7		
Q14.8		
Q14.9		
Q14.10		
Q14.11		
Q14.12		
Q15.1	No, we do not consider FX translation risk to be a real risk. The current design of the currency risk module is already very conservative and unrealistic (see comments to Q15.4). Additional capital requirements therefore must be avoided.	
Q15.2	No, full capital fungibility shall not be put into question.	
Q15.3	Yes, it is reasonable to assume that own funds are fungible across the group to the extent there are no regulatory restrictions.	

Q15.4	We believe that the current treatment of currency risk is both overly conservative and unrealistic. This is due to the fact that the current provisions prohibit netting out negative and positive risks for each foreign currency. This holds for both the solo and the group level.	
Q16.1	We consider the extension of the look-through approach as appropriate for such related undertakings which represent "investment vehicles" for holding assets on behalf of the parent/participating company. However the application of the look-through-approach should not be mandatory, but an option to (re)-insurance undertakings. Elements of an appropriate definition could be: – The related undertaking has the purpose of holding assets – The (re-)insurance undertaking has the control over the related undertaking. Control requires exposure or rights to variable returns and the ability to affect those returns through power over the related undertaking. Undertakings, which can be considered as strategic investments, have to be excluded from the definition of "investment vehicles". However, a clear distinction and definition of investment related undertakings seems to be very difficult. The insurance company should therefore determine itself – in accordance with the prudent person principles and under materiality aspects – whether a related undertaking is considered as "investment vehicle" or not and to apply the look through or not. In order to avoid any misunderstanding, it should be clarified, that Alternative Investment Funds, which are established exclusively for institutional investors, are not considered as "investment vehicle". They are classified as collective investment vehicle, where a look-through is already applied.	
Q16.2	Elements of an appropriate definition could be:	

	– The related undertaking has the purpose of holding assets – The (re-)insurance undertaking has the control over the related undertaking. Control requires exposure or rights to variable returns and the ability to affect those returns through power over the related undertaking. Undertakings, which can be considered as strategic investments, should be excluded from the definition of "investment vehicles". The existence of a specific investment mandate could be an appropriate criterion, too. Such an investment mandate should be sufficiently proved where the insurance company has control in the related undertaking. By contrast, the level of financial leverage and the nature of liabilities do not appear as appropriate criterions. These elements will not enhance clarity. In particular it does not seem appropriate to define a fix threshold above which a look-through approach wouldn't be allowed, because there are various financing options for such investment related undertakings, whereby a 100 %debt financing is just as possible as 100 %equity financing (and just everything in between).	
Q16.3	The costs and benefits are depending on the exact definition of those "investment vehicles". In general it has to be considered, that a look-through approach generates costs in its own rights.	
Q16.4	Only minor impact is expected. Therefore, additional costs and efforts should be avoided.	
Q16.5	Applying the look-through approach for investment related undertakings should always be optional, and not mandatory. The (re-)insurer must be allowed to consider – in accordance with the prudent person principles and under materiality aspects – whether it applies the look-through on a related undertaking or not.	
Q16.6	Preliminary remarks: 1. In discussing the question of simplifications for the look-through approach on assets	

	backing unit-/index-linked business, it is necessary to consider national differences in the unit-linked business. In Germany benefits to policyholders usually are directly linked to prices of the funds backing the unit-linked contract. So, if prices fall, benefits will fall equally. Hence, using an approach of an equity stress (instead of look-trough) on assets backing unit-linked contracts will not significantly change the risk profile of the insurer. The only exception to this might be in case of variable annuity products where the life insurer (not the respective asset manager) guarantees a minimum benefit on the unit-/index-linked linked part of a contract. Even though life insurers in Germany due to local regulation/local GAAP (HGB) do not write variable annuity business look-through requirements still apply to them. Against that background the look-through approach on assets backing unit/index-linked contracts where no guarantee is given by the insurer, should be completely excluded. It would significantly reduce the effort for the insurer, especially since the look-through in this context does not add any benefit in terms of risk profile knowledge at all. Relevant risk for such unit-/index-linked contracts might be more a question of pillar II, namely, whether the policyholder has chosen the right product. 2. It is important to keep in mind the need for a high degree of synchronisation between the look-through requirements in pillar I and pillar III. The difficulties in applying the look-through approach due to data inaccessibility and/or disproportionate effort are the same in both cases. Moreover these difficulties are not limited to unit-linked business. Practice shows that for many funds it is difficult, if not impossible, to collect all data in the required level of granularity. Furthermore the collection and processing of the data always involves a high effort. Whereas the required data for Alternative Investment Funds in most cases are ensured via individual interfaces, the situation for UCITs is different and much more difficult. In case of mutual funds (UCITs) undertakings often don't receive the data for the application of the look-through in the required level of granularity. Furthermore most investment managers provide only data for funds they ultimately manage, so in case of funds of funds, with a large number of target funds the data supply is also difficult, if not impossible – irrespective whether they are UCITs or AIFs. The same applies for funds outside the EWR.	

	Comments to Q 16.6: On these premises, the 20% threshold itself seems to be appropriate for most undertakings at the moment, since the vast majority of fund investments are investments in Alternative Investment Funds (AIFs), so that the proportion of UCITs is within the 20 % threshold. However, in individual cases the threshold might be inappropriate – e.g. for insurance undertakings with a strong focus on unit-linked products and therefore higher amounts of UCITs in their portfolios. Since it can be expected, that the percentage of unit/index-linked products on the total assets will increase, even more undertakings could be affected in the future. Since the impact of unit-linked business on the SCR is negligible, the 20% threshold should not apply to unit/index-linked products or at least be substantially increased.	
Q16.7	As explained in our comments to Q 16.6 the 20% threshold might be inappropriate in individual cases, especially for insurance undertakings with a strong focus on unit-linked products and therefore higher amounts of UCITs in their portfolios. But it is important to note, that the application of the simplified approach is not only affected and limited by the respective threshold. In its current wording the application of the simplified approach in article 84 (3) is hardly practical and viable only on a case-by-case basis. These difficulties are not limited to unit-linked business. The regulation requires that the underlying assets are strictly managed according to the specific target allocation. But the target allocation of a fund is not in every individual case available in the required level of granularity or rather the fund pursues an investment strategy, which is orientated on certain key risk figures (e.g. target volatility) and provides a high level of freedom in the allocation. The application of the simplified approach seems particularly difficult with respect to fixed-income funds. Mutual fixed-income funds usually don't have a target allocation, from which e. g. an interest-rate risk can be derived. Typically there are no hard limits for residual maturity, duration and ratings. Simplifications in this regard would be highly desirable. In any case guidelines by the Authorities would be desirable, which contain a workable approach in regards to a proper interpretation of the requirements.	

	In cases where the required information is available, the application of the simplified approach in article 84 (3) for UCITs is often burdensome regarding costs and time or even involves a disproportionate effort to fulfill the requirements. It would for example involve a disproportionate effort to track – if possible at all – the allocation for many (and often small) investments. Furthermore the information provided by asset managers in the standardised format is not sufficient to calculate the market value in the interest risk stress cases or the required sensitivities for the credit spread risk properly. Thus, a neat implementation would require to source for every single investment (as far as it is possible) market data, rating and instrument data. This seems excessively burdensome.	
Q16.8	As described in our comments to Q 16.6, for some funds it is difficult, if not impossible, to collect all the required information. Even if the (re-)insurer receives the required data, the application of the look-through is burdensome regarding costs and time and involves a disproportionate effort. Particularly if the proportion of unit/index-linked business is very small in relation to other life insurance business, so that the insurers investments in UCITs are low, the application of the look-through results in a disproportionate implementation effort. Therefore the (re-) insurer should be able to apply the simplifications not only when “the look-through approach cannot be applied”, but also, when “the application involves a disproportionate effort”. Article 84 (3) should be amended respectively. As explained in our comments to Q 16.7 the simplification to calculate the SCR on the basis of the target allocation is often not possible (because a target allocation is not available in the required level of granularity) or involves a disproportionate effort (particularly with regard to the allocation-tracking for many small investments). Therefore it should be possible to use data groupings for the calculation of the market risk of UCITs even without a strictly maintained target allocation. One approach could be to amend article 84 (3) by the following wording (as new sentence 2): “Where no such target allocation is available, an aggregated actual allocation of the collective investment undertaking or fund can be used as data-grouping, provided it is unlikely to expect	

	that the allocation will change substantially in the near future and provided, that the data grouping of the actual allocation is reviewed on a regular basis (at least yearly). Such a data-grouping may be based on the last published asset allocation and may for example aggregate equity positions or fixed-income securities in an appropriate manner." In general it should be sufficient, if the data groupings are applied in an "appropriate" manner instead of a "prudent" manner as sentence 2 of article 84 (3) requires. Article 84 (3) should be amended respectively. All simplifications should apply not only to UCITs which are backing unit- or index-linked products but also for own capital investments of the (re-)insurer in UCITs, because difficulties in application of the requirements of article 84 (3) occur for both in the same manner. Since the impact of unit-linked business on the SCR is negligible, the 20% threshold should not apply to unit-/index-linked products or at least be substantially increased.	
Q16.9	For unit-linked business, the application of the look-through approach, even with the given simplifications, is excessively burdensome, as the impact of unit-linked business on the SCR is negligible. Therefore the look-through-approach should not be applied on assets backing unit/index-linked parts of contracts where no guarantee is given by the insurer.	
Q17.1	We think that the **general approach of the current interest rate risk sub-module is reasonable**. Its design and calibration are basically **data based**. It was further **amended by political decisions** of the European Commission and the European Parliament: a minimum downward shock was abolished and the application of the relative shock factor was restricted to positive interest rates. As a result, in the calculations **actually a lower bound of zero is embedded**. The special features of the interest rate risk sub-module that were introduced by the European	

legislator for **overall objectives** have shown a countercyclical effect in the extraordinary situation of an extreme low / negative yield environment. **This important countercyclical effect** should not be dropped incautiously. Thus, we understand that a review of the interest rate risk sub-module was **not part of the Call for Advice** of the European Commission.

In general, the **relative shock with an effective lower bound and without a minimum downward shock is appropriate**. However, simply to repeat the original calibration exercise with an updated data set would not produce appropriate results. Instead, if EIOPA aims to recalibrate the relative risk factors, a number of **essential requirements** have to be observed:

1. It is not plausible at all that interest rate changes observed at positive interest rate levels would occur in equal measure if rates were at a negative level. Instead of this, **in the negative area the actual downward risk substantially shrinks**, because more and more market participants would withdraw from such detrimental investments and, e.g., rather hold cash. The resulting thinning-out of demand limits any further interest rate decrease. An appropriate modelling of interest rate risk must account for this.

2. In recent years, money and capital markets have been dominated by **central banks' extremely loose monetary policy with unconventional measures**, in particular the quantitative easening. As a result, observed interest rates were **heavily distorted**. Their development hardly reflects market risk but is mainly driven by political decisions in an unparalleled situation. The observations from this special situation must not be used unchanged for the calibration of interest rate market risk in the future.

3. The overall **countercyclical effect** of the capital requirement for interest rate risk must be maintained. In fact, in the current negative yield environment, the loss of this sensible effect would even operate in a procyclical manner. Thus, it still holds that in a low yield or negative yield phase the capital requirement must not be too large but rather be lower than in normal times.

4. If interest rate observations from the positive and the negative area were taken in account, both calibration and application of risk factors must take care of a sensible consideration of the **algebraic sign** of changes. Moreover, if interest rates are **close to zero**, even small absolute changes are very large in relative terms. These artificially large relative changes of course cannot be transferred to phases when interest rates are not close to zero. These **technical issues** must not distort the calibration of meaningfull relative risk factors.

Disregarding one or several of these requirements would inevitably lead to an **inappropriate result**. In particular, this would be the case if the current approach was simply recalibrated with an extended data set and the resulting risk factors were applied to negative rates, too.

Thus, we strongly reject the assertion in the discussion paper that the current stress factors would still underestimate the actual risk even if a minimum shock of 1% was introduced, the factors were applied to negative rates, too, and the factors were recalibrated based on more recent data. In fact, the resulting risk factors would **massively overestimate actual risk.** Even if the technical issues of the 4th requirement were correctly handled, the mistake would still be made to **blindly transfer volatility of positive interest rates in the negative area where volatility in fact will gradually disappear**.

In order to avoid such mistakes, a **lower interest rate bound must be considered** in the calculation and application of the relative risk factors. This may also solve the technical issue of the 4th requirement. Moreover, the calibration sample must be **cleaned from the influence of recent central banks' distortions** which do not reflect actual market risk. Finally the **preservation of the countercyclical effect** has to be ensured.

Furthermore, the design of the interest rate risk sub-module should be consistent with the calculation of own funds and, thus, with the valuation of technical provisions, i. e. with the **definition of the risk-free interest rate term structure**. If the assumed interest rate shock would realise, then the technical provisions of the undertaking were calculated on basis of the liquid part

	of the term structure, which is extrapolated to the UFR. This differs from the current design of the interest rate risk sub-module where all tenors are shocked directly by a risk factor, thereby implicitly assuming an UFR shock of roughly 20%. This inconsistency may result in an additional asset liability mismatch, when an undertaking tries to reduce the SCR for the interest rate risk. To avoid this problem, the **interest rate shocks should only be applied to the liquid part of the term structure** which afterwards is extrapolated to the UFR.	
Q17.2	The introduction of a minimum downward shock factor would not solve the issues explained in the comment to Q17.1. Since changes of interest rate will decrease substantially the lower the rates are, a minimum shock would have to be calibrated as a function of the interest rate level and cannot be fixed for all levels. Since there is economic evidence for a lower bound on interest rates, no minimum downward shock in absolute terms can be appropriate because any minimum downward shock could potentially violate this lower bound. For further comments please see Q17.1.	
Q17.3	We strongly reject the assertion that the current stress factors would still underestimate the actual risk even if a minimum shock of 1% was introduced, the factors were applied to negative rates, too, and the factors were recalibrated based on more recent data. In fact, the resulting risk factors would massively overestimate actual risk. Even if the technical issues of the 4th requirement in the comment to Q17.1 were correctly handled, the mistake would still be made to blindly transfer volatility of positive interest rates in the negative area where volatility in fact will gradually disappear. For further comments please see Q17.1.	
Q17.4	In general, the data sets used for the current calbrations are suitable. However, in recent years, money and capital markets have been dominated by central banks'	

	extremely loose monetary policy with unconventional measures, in particular the quantitative easening. As a result, observed interest rates were heavily distorted. Their development hardly reflects market risk but is mainly driven by political decisions in an unparalleled situation . The observations from this special situation must not be used unchanged for a calibration of interest rate market risk in the future. For further comments please see Q17.1 and Q17.7.	
Q17.5	In general, the historical data set of EIOPA risk-free curves is suitable to perform the calibration of the interest rate risk factors as it ensures that the interest rate shocks are calibrated to the same data to which they are to be applied. However, the design of the interest rate risk sub-module should be consistent with the calculation of own funds and, thus, with the valuation of technical provisions (i. e. with the definition of the risk-free interest rate term structure). If the assumed interest rate shock would realise, then the technical provisions of the undertaking were calculated on basis of the liquid part of the term structure, which is extrapolated to the UFR. This differs from the current design of the interest rate risk sub-module where all tenors are shocked directly by a risk factor, thereby implicitly assuming an UFR shock of roughly 20%. This inconsistency may result in an additional asset liability mismatch, when an undertaking tries to reduce the SCR for the interest rate risk. To avoid this problem, the interest rate shocks should only be applied to the rates up to the last liquid point before the resulting term structure is extrapolated to the UFR. For further comments please see Q17.7.	
Q17.6	No.	
Q17.7	In order to ensure consistency, the risk factors should – either both be calibrated and applied to input data (e.g. swap data or zero coupon	

	government bond data) – or both be calibrated and applied to output data (Solvency II risk free term structure). However, the design of the interest rate risk sub-module should be consistent with the calculation of own funds and, thus, with the valuation of technical provisions (i. e. with the definition of the risk-free interest rate term structure). If the assumed interest rate shock would realise, then the own funds of the undertaking were calculated on basis of the liquid part of the shocked term structure and its extrapolation to the UFR. This differs from the current design of the interest rate risk sub-module where all tenors are shocked directly by a risk factor, thereby implicitly assuming an UFR shock of roughly 20%. This inconsistency may result in an additional asset liability mismatch, when an undertaking tries to reduce the SCR for the interest rate risk. To avoid this problem, the interest rate shocks should only be applied to the liquid part of the term structure which aftwerwards is extrapolated to the UFR.	
Q17.8	No.	
Q17.9	In general, principal components analysis seems to be a reasonable approach for a situation of positive interest rates (or for positive distances of interest rates from a certain lower interest rate bound). It might be useful to filter noise in the calibration data set. However, principal components analysis alone does not solve the major issues explained in the comment to Q17.1.	
Q17.10	The time window used for calibration needs to be chosen with care. The shorter the time window, the more observations are availabe on the one hand. On the other hand, these oberservations are not independent but highly autocorrelated. It is important that the effect of autocorrelation is properly taken in account by sound statistical methods, parametric or non-parametric (e.g. bootstrapping). Using weekly returns and applying square root scaling can be considered to be market practice.	
Q17.11	The introduction of an additive approach would not solve the issues explained in the comment to	

	Q17.1. Given that there is a lower bound for interest rates, no additive downward shock in absolute terms can be appropriate because any additive downward shock could potentially violate the lower bound. For further comments please see Q17.1.	
Q17.12	No.	
Q17.13	The approach is not an established approach used in the market and may therefore lack acceptance. It is no real improvement compared to the additive or to the current approach and it seems to add complexity without benefit. For negative interest rates, the method would overestimate interest rate down shocks. There is a natural level where it would be economically unreasonable that interest rates become more negative. The proposed method would lead to higher shocks the more negative interest rates become, which is completely unreasonable. For further comments please see Q17.1.	
Q17.14	No.	
Q17.15	An approach based on absolute changes in a low interest rate environment and relative changes in a high interest rate environment should not be used because it would lead to complex definition issues in both calibration and application. Such an approach is likely to miss the given security level and to result in model instability. Moreover, it would not solve the issues explained in the comment to Q17.1.	
Q17.16	Any suitable approach must regard the requirements explained in the comment to Q17.1.	

	To apply relative shocks on the unit zero-coupon bond prices might be a way to solve technical issues mentioned in the 4th requirement in the comment to Q17.1. However, taking a lower bound at the level of interest rates into account might solve these issues, too, and is necessary anway: An appropriate approach has to account for the fact that in reality many market participants are able to avoid investments with negative rates by switching to other investments or by holding cash. This means that the deeper interest rates dip into the negative area, the more former market participants refrain from buying – the demand side thins out increasingly. Thus, it is not plausible to assume that interest rates in the negative area can further go down to the same extent as in the positive area. Instead, a sensible interest rate model must exhibit a clear decrease of downward risk. For further comments please see Q17.1.	
Q18.1		
Q18.2	A harmonization is neither possible nor necessary. The projection of the local GAAP figures used for calculating taxable profits is not risk-neutral. It includes risk premia on assets which the company holds. Furthermore, tax planning must remain company-specific so that tax legislation in place can be reflected appropriately.	
Q18.3	There is no bigger problem with uncertainty then in pillar I calculations in general. The best estimate values of future cash flows are inevitably uncertain, too. Hence, there is no need to take uncertainty explicitely into account in the context of LAC DT. Furthermore, Solvency II requires undertakings to capture the best estimate of future asset returns. Requiring undertakings to additionally capture uncertainty would lead to more prudence in the calculations. As a consequence, an unbiased best estimate cannot be captured any longer.	

	Stipulations under IAS rules should not be used to justify any modifications to current Solvency II rules, as the latter intends to capture economic best estimates.	
Q18.4	We believe that economic projections are sufficient. To furthermore project fiscal profits and losses would be utterly exaggerated and is not needed in any case.	
Q18.5	In a going concern view, new business is always generated. Of course, the future is uncertain. However, assuming no new business would be completely unrealistic and would distort the results.	
Q18.6	The management of new business planning should be allowed to prove that the DTA is appropriate. In order to avoid too optimistic assumptions, a company might per default only take as much new business into accout as it was able to generate in the past few years. If the company wants to take a higher new business margin into account, it would have to be able to explain the plausibility.	
Q18.7	There is no bigger problem with increasing uncertainty than in the pillar I calculations in general. Uncertainty inevitably increases with longer time horizons. However, future cash flows have to be projected far in the future as well in order to calculate best estimates. Trying to capture the uncertainty would lead to a more prudent assessment then in a best estimate consideration.	
Q18.8	The projections in the LAC DT calculations should not be capped artificially. Such a restriction would systematically distort the results and, thus, be contradictory to the definition of the SCR in the directive.	
Q18.9	Setting LAC DT to the amount of net DTL would be a simplification which may reduce or increase LAC DT. Hence, it is not a way to get more accurate or objective results. Only the undertakings themselves are able to assess whether this simplification is sensible or not. Thus, in general the	

	decision to apply such a simplification has to be left to the undertakings.	
Q18.10	We do not consider that it is appropriate to set LAC DT standardly to the amount of net DTL.	
Q18.11	In general an explicit calculation of the full Solvency II balance sheet is not considered necessary. Even in cases where the loss is partly absorbed by policy holders (bonus rated reduction) and only partly absorbed by shareholders (which impact the tax position of the company) a simple «quota share» approach according to profit participation rules could be used.	
Q18.12	The compliance should be taken as given for a going concern, respectively it should play no role at all for the LAC DT.	
Q18.13	We do not see a need for recapitalization considerations at all since highly hypothetical questions would arise.	
Q18.14	The only case where additional guidance might be needed is for cases of fiscal unions with an ultimate parent undertaking which is not subject to Solvency II regulation. We believe that in this case the ultimate parent undertaking should be viewed as if it was eligible to LAC DT. This would better reflect similarities and dissimilarities of the risk profiles.	
Q18.15	Utilisation test: If there is no tax loss carryforward at the end of the time horizon, the recoverability will be assumed.	
Q18.16	Yes. To avoid procyclicality the application of LAC DTA should be possible and not be artificially restricted.	
Q19.1		
Q19.2	A long-term average can lead to inadequate results. For instance in the current market conditions	

	the CoC-rate appears rather high. Therefore market spread levels and interest rates or a short-term average term rate could be considered. On the other hand it should not reflect the capital market volatility. A possibility could be a regular, principle-based review.	
Q19.3	The risk margin increased significantly due to the fact that longevity as well as lapse down risk went up (due to the fact that the interest rate decreased dramatically). The SCR for longevity as well as the SCR for lapse down risk are an input to the risk margin calculation. In that sense life insurers experienced a «double hit» concerning their longevity and lapse down risk due to the low interest rates. The CoC-rate shoud be reduced regarding the SCR from longevity risk as well as the SCR from lapse down risk.	
Q19.4	The use of a risk margin is somewhat contradictory to the generally used «risk neutral approach» in other parts of the framework. Since no risk premia are allowed as best estimates on investment returns and as a result no higher discount rates on cashflows for the calculation of technical provisions, it is questionable to assume, that a third party investor could charge an additional risk premium for regulatory capital injected on the other hand. For reasons of consistency the risk margin should be eliminated.	
Q20.1	While the analysis of the different regulatory texts is thorough, it should be put into context of the broader regulation. Hence, the following important aspects should also be noted: – *There is a significant risk that the insurance Principal Loss Absorbency Mechanism ("PLAM") leads to a reduction of the SCR ratio.* The insurance PLAM may not cure the trigger breach**.** In fact, both write-down and conversion can even lead to a **reduction** of the SCR ratio under certain circumstances. Please refer to the answer to Q20.4 for a more detailed explanation. – *Bank regulators increasingly understand the importance of the hierarchy of capital:* Bank regulators appreciate that not only equity, but also bank Additional Tier 1 ("AT1") are	

sensitive instruments that signal strength or weakness to investors. While bank regulators want to ensure early loss absorbency, they want to do it constructively by e.g. considering the hierarchy of capital with respect to distributions (AT1 coupons are to be preferred to equity dividends). With this in mind, we believe that a desirable insurance PLAM not only achieves loss absorbency, but respects the hierarchy of capital, and does not worsen the SCR ratio.

- *Insolvency*: The Delegated Regulation ("DR") effectively stipulates significantly tighter insolvency triggers than the Capital Requirements Regulation ("CRR"). For example, the DR requires that all of Restricted Tier 1 ("RT1"), Tier 2 ("T2") and Tier 3 ("T3") contain a mandatory coupon deferral (T2, T3) or cancellation (RT1) trigger as well as a mandatory redemption deferral (or prohibition of early calls) to avoid insolvency due to illiquidity or breach of the asset-liability test (where applicable). The CRR does not require any such triggers for Tier 2 or AT1, and only requires AT1 to be treated as equity for purposes of the asset-liability test.

- *Absence of a meaningful and systematic definition of "loss"*: While principal and coupon "loss absorbency" are key requirements for Solvency II own funds instruments, there is no explicit definition of "loss". A "loss" that triggers PLAM, for example, occurs when capital requirements exceed own funds. However, this may occur at a time when no loss in its classical sense (e.g. under local GAAP or IFRS) has occurred. Similarly, it cannot be ruled out that such accounting profits coincide with a breach of the SCR/MCR ratio. Solvency II does not provide for a "market based" profit and loss account (only a Market Value Balance Sheet ("MVBS")), and a "loss" derived from such a profit and loss statement would not be a sufficient "loss" concept either as it only explains a reduction of own funds, while own funds may fall even though the ratio increases (via an over-compensating reduction of the SCR/MCR). Accounting losses do play a role for RT1 coupon cancellation (available distributable items) and the write-up. In case of write-up, there is a clear asymmetry to the write-down which solely depends on a Solvency II ratio breach. We question that a sensible PLAM can be designed in the absence of a clear

	concept of "loss" – as well as a clear view on what "loss absorbency" really aims to achieve. In this context there should be a clarification that the concept of "loss absorbency" does not refer to accounting losses but undercapitalisation. – <u>*Temporary relief from Tiering limits to prevent cliff effects:*</u> The current limit of RT1 at 20% of eligible Tier 1 can have adverse amplification effects for insurers which can be meaningful due to the combination of significant investment portfolios and a substantially mark-to-market regulatory regime. Resulting problems can be resolved by (i) raising the RT1 limit, and/or (ii) explicitly allowing the limit to be breached during periods of elevated market volatility as such periods can impact insurers' own funds, and consequently the RT1 allowance, negatively. This would be in line with recent recommendations from the EBA with respect to the increased market volatility introduced by the new minimum requirements for own funds and liabilities eligible for bail-in (MREL). The comments in the final MREL Report regarding potentially negative consequences of coupon suspension also strongly support our view that the SII coupon suspension trigger should not be raised.	
Q20.2	<u>*Insurance own funds instruments are characterised by contractual provisions which add considerable cost and risk of adverse unintended consequences for little regulatory benefit*</u>. Examples include the following: – ***Prohibition of extraordinary call rights in years 1-5 without replacement:*** all early calls require prior regulatory approval. It does not make sense to generally prohibit calls without replacement in cases where both regulator and issuer agree that a replacement is not necessary. See our answer to question 20.7-20.9 for further information. – ***First Call right - appropriate margin (RT1 – DR Art. 71 (1) (g)):*** The age of an instrument should be irrelevant for the decision whether or not it is appropriate to call it. Art. 71 (1) (g) DR should be replaced with more generally applicable approval EIOPA (Level 3) guidelines for regulators which could reference the respective issuer's level of the solvency ratio as well as its capital policy and plans. <u>*We also suggest improved wording of some clauses in Art. 71, 73:*</u>	

	– Redundancy of the redemption waiver in Art. 71 (1) (k) (and identical provisions for Tier 2 and Tier 3) in view of Art. 71 (2). – The wording of Art. 73 (4) (step-up), even though it is based on the UK's Genpru rulebook, is unnecessarily complicated and lengthy. – Unclear terms / clauses such as *repurchase, redemption, and repayment* should not be used synonymously as they have differing economic consequences for the insurer. The terms should be clearly differentiated and be defined in a consistent and clear way without changing the regulatory intent of the relevant articles in the DR.	
Q20.3	Extraordinary call rights should in principle be possible for RT1, T2 and T3 without replacement at all times (incl. first five years), subject to prior regulatory approval. Where necessary, issuers may obtain approval to call only based on the condition of prior replacement (of course with own funds of appropriate – potentially even higher – quality) Art. 71 (1) (g) DR should be replaced with more generally applicable EIOPA (Level 3) guidelines based on which regulators should grant approvals.	
Q20.4	– **PLAM is not required by Basel 3 for equity accounted bank AT1:** While the CRR requires PLAM for European bank AT1, PLAM is not required in many non-European jurisdictions, notably the USA. The original Basel 3 paper only requires PLAM for IFRS debt accounted AT1 instruments (Basel Committee on Banking Supervision, "Strengthening the resilience of the banking sector", No. 89, criterion 11, December 2009). – **The banking and insurance PLAM are actually identical:** The bank and insurance PLAM mechanics as defined by the CRR and DR both allow (or do not prohibit) a choice between temporary or permanent write-down and conversion. Both should lead to the same consequences (see Art. 54 No. 1(d) CRR which requires the reduction of (i) distributions, (ii) claim in liquidation and (iii) redemption amount for the banking PLAM). However, in practice, bank and insurance PLAM lead to rather different consequences**.**	

- **The consequence of bank and insurance PLAM are different due to a combination of factors:** Despite identical mechanisms the PLAM impacts bank solvency ratios very differently to insurance ratios. This is mainly due to the following reasons:

  - *Scope of trigger – justifiable difference, but need to consider consequences for the insurance PLAM therefrom:* Banking uses a Core Equity Tier 1 ("CET1") trigger (CET1 / Risk Weighted Assets ("RWA")), insurance uses a total capital trigger ((Unrestricted Tier 1 ("UT1") + RT1 + T2 + T3) / SCR). The bank (CET1) trigger ratio will always improve due to the PLAM. In insurance, the PLAM will always increase the amount of UT1 capital, too. In insurance, however, the key regulatory ratio is the SCR (total capital) ratio. Therefore, the insurance PLAM trigger is rightly based on the SCR (total capital) ratio. However, this trigger ratio can either improve, remain unchanged **or even fall** upon application of the PLAM (which we will explain further below). Bank AT1 allows the **mathematical limitation of the write-down** amount to the amount needed to cure the trigger breach. This is not possible in insurance. The need for multiple (group and solo, SCR and MCR) triggers makes it possible that the PLAM does improve one or more of the trigger ratios, but actually leads to the deterioration of one or more of the other trigger ratios at the same time, thus possibly even **leading to an additional trigger breach**. **The differing scope of triggers in banking and insurance is justified by the different business models and the consequently differing regulatory regimes. However, it cannot be justified that, as a result of applying the bank PLAM without adjustments, the insurance PLAM may not lead to a cure of the trigger ratio, may therefore be unlimited and may even result in the breach of other ratios defined by the trigger.**

  - *Role of DTA – justifiable difference, but need to consider consequences for the insurance PLAM therefrom*: Both known PLAM mechanisms (write-down and conversion) can lead to adverse tax effects, i.e. profits from PLAM can lead to (i) a reduction of DTA (and reduction of UT1/CET1), (ii) an increase of DTL (and reduction of UT1/CET1), or (iii) (least likely) an immediate tax expense (and reduction of

UT1/CET1). Both bank and insurance regulation require the deduction of net DTA from the highest quality of own funds (i.e. from CET1 or UT1 respectively).The difference is that in insurance, net DTA can be added back to own funds as Tier 3, subject to a limit (15% of the SCR).

- The MVBS requires that all balance sheet line items are marked-to-market. Consequently, the MVBS is very sensitive to such market changes, and therefore the inclusion of DTA as Tier 3 own funds (up to a limit) is both important and sensible. Net DTAs are a welcome volatility dampener of insurance solvency ratios, which are nevertheless significantly more volatile than those of banks. **The different treatment of DTA in banking and insurance is justified, in our eyes.**However, the different role of DTAs (T3) in the banking and insurance regimes does mean that the impact of PLAM differs, too. Assume that a PLAM results in a fall of DTA (and thus in an identical reduction of the insurer's reconciliation reserve or – in case of a bank – retained earnings). The reduction of the reconciliation reserves or retained earnings that results from tax on PLAM "profits" does not impact the amount of *eligible* UT1 and *eligible* CET1 since the amount of DTA that needs to be deducted from UT1/CET1 has also fallen. Therefore, if the tax on the profit resulting from the application of the PLAM "only" reduces DTA, the PLAM cannot lead to a reduction of a bank total capital ratio. Contrary to this, in insurance a PLAM that reduces DTA may result in a reduction of *eligible* Tier 3, thus leading to a **fall** of the total capital ratio. **It cannot be justified that the insurance PLAM can result in unintended consequences for the key Solvency II ratio, whereas the key solvency ratio for banks (CET1) always increases due to the bank PLAM. The difference in how and to what extend the DTA is recognised as capital, and what implications this has, including as regards the PLAM, should be further assessed. As a general point, the allowance for DTA as capital may be somewhat higher under Solvency II - however it is only admitted within the lowest quality of capital for insurers whereas it may be recognised as the highest quality of capital for banks. In contrast, the fundamental role for DTA is arguably much greater for insurers compared to banks.**

	○ *Level of Trigger – difference not justifiable*: Coupon cancellation for bank AT1 is triggered upon breach of the so-called combined buffer, i.e. typically when the CET1 ratio falls below ca. 10%. Even this AT1 coupon cancellation trigger is considered more like a gone-concern trigger (i.e. within the lowest quartile of the buffer). In insurance, the DR foresees cancellation of equity dividends at the same time as cancellation of RT1 coupons (SCR breach), whereas in banking the prioritisation of AT1 coupons is now foreseen by the draft CRR. We also note that bank Tier 2 is non-deferrable at all, whereas insurance Tier 2 requires deferral upon the same trigger level as RT1 coupon cancellation. The bank PLAM trigger is breached when the CET1 ratio falls below 5.125% and is therefore generally considered a "gone concern" trigger. Even before a bank's CET1 capital ratio falls below the trigger ratio, it will be perceived to be non-viable. The corresponding "gone concern" trigger of insurers would arguably be the MCR rather than the SCR. Instead, the insurance PLAM is essentially triggered simultaneously with RT1 coupon cancellation (and even Tier 2 coupon deferral), leaving aside the three months cure period for the PLAM trigger. **There is no reason why the insurance PLAM should apply so much earlier than the banking PLAM.** ○ *Regulation on the Minimum Policyholders' Dividend:* A specific regulation for German life insurers on minimum policyholders' dividends (Mindestzuführungsverordnung) could even further reduce the total capital ratio and increase the volatility of the SCR ratio of life insurers. In case of trigger breach, the write down would result in other income that has to be distributed 50:50 to the company and policyholders. The portion for policyholders is either attributed to a fixed reserve for premium refunds (Rückstellung für Beitragsrückerstattung, RfB) or to a free part of these reserves that can be assumed only partly as own funds (paragraph 93 section 1 VAG). The allocation to the free or fixed part of RfB is company specific and can change from one year to the other. As a consequence of the allocation to RfB the total capital ratio would not only decrease further for life insurers as a result of the write down but the	

	volatility would also increase significantly. Hence, the write down instrument would not be feasible for German life insurers at all.	
Q20.5	Full consistency between insurance and banking regulations is not a goal in itself as differences in business models between insurance and banking exist and should be adequately reflected justifying in our view some differences in respective regulatory regimes. We refer to our extensive answer to Q20.4, and summarise as follows: - We view the (i) different scope of triggers and (ii) the different role of DTA as justifiable. - However, these differences mean that copying the bank PLAM to insurance regulation does lead to unintended consequences (potential **reduction** of SCR ratio), which should certainly be avoided. - The **different trigger levels are not justifiable.** **The insurance PLAM may malfunction at the currently foreseen trigger levels – issuing a PLAM with an even higher trigger hurdle as suggested by the question only increases this risk.** We understand that some stakeholders prefer a full (100%) write-down or conversion for insurance RT1 even though this is neither required for bank AT1, nor justified by the impact on the Solvency II ratio. While full consistency is not a goal in itself, we think that **such a difference between bank and insurance PLAM cannot be justified.** The fact that the trigger level itself is arguably higher in Solvency II than is the case for AT1 adds to the argument that the triggering mechanism (i.e. full vs limited write-down) should not be more conservative. Further, we note that this **would maximise the potential reduction of the SCR ratio** in many jurisdictions described in our answer to Q20.4 above. Finally, it **would turn the hierarchy of capital upside down** (PLAM benefits equity investors at the expense of RT1 investors) even though the insurer could still be viewed as "going concern" – in addition to the problems with respect to investor hierarchy already present in Solvency II, in isolation as well as relative to AT1. **Bank regulation increasingly reflects the importance of maintaining the hierarchy of capital**, and insurance regulation should not explicitly disregard the hierarchy of capital either.	

Q20.6	– Insurance PLAM applies much earlier and has a **much higher risk of worsening a crisis than its bank counterpart.** Insurance regulation should avoid the flaws of both the current banking and insurance PLAM. – **We suggest to follow the lead of non-European bank regulators to delete the PLAM requirement altogether. PLAM may well lead to unintended consequences and is not necessary, as even 100% loss absorbency could be achieved without it.** – We note that the deletion of the PLAM is a **long term solution,** which is unlikely to be implemented in the near future given the outlined timeframe for reviewing Solvency II. Below, we therefore provide **two short term solutions** that aim to minimise the risk of unintended consequences of the insurance PLAM. **Also**, we suggest an alternative loss absorbency mechanism other than PLAM that could be implemented **in the long term**. – First, though, we deem it important to **highlight some additional** points and weaknesses of the current system: o *PLAM is not necessary for instruments to absorb losses*: Its strong resemblance of equity allows RT1 to impose 100% losses on investors without application of the PLAM: RT1 allows issuers to impose a stop on (i) any repayment of the principal amount (RT1 criterion perpetuity) and (ii) any coupon payments (RT1 criterion full coupon discretion). The value of the instrument for investors falls to zero (100% loss absorbency) upon such an announcement. Regulators have all means necessary to force issuers to make use of these rights. o *Principal loss absorbency is complex, error prone and can lead to unintended consequences*: It is not straightforward to design loss absorbency mechanisms that (i) work under all conceivable scenarios and (ii) treat investors fairly. In particular M&A scenarios may imply that PLAM does not work as intended (e.g. what happens if an	

issuer with conversion instruments is merged into another issuer that does not have listed shares). For perpetual instruments, it is unlikely that the terms and conditions can foresee all potential scenarios over the life of the instrument. Equally, the hierarchy of capital should not be undermined by the PLAM. Contrary to equity, RT1 does not provide any upside for its investors as the maximum coupon is contractually fixed, while equity dividends are not. The issuer call right at par limits the upside of market value. To compensate for this, investors in RT1 must therefore be protected in the downside scenario (equity must be "wiped out" before RT1). However, in case of write-down instruments, the hierarchy of capital is typically turned upside down as the profit resulting from the write-down benefits equity investors (increase in retained earnings), whereas RT1 investors lose out. Therefore, in banking, the solution to such weaknesses of the PLAM is that the PLAM only applies in a gone concern scenario.

- ***Short term solutions (minimising the risk of unintended consequences from current PLAM)*:**

  - **Where a write-down *reduces* a relevant ratio (e.g. the group SCR ratio), the write-down should be limited to the absolute possible minimum.** In order to meet the formal requirement of a PLAM in the current DR, only a limited write-down of e.g. [5-10%] of the nominal amount should be required. Where the write-down does not improve the trigger ratio, it would improve the UT1 ratio at the expense of the RT1 ratio. However, as mentioned above, the bank mechanism to mathematically limit the write-down amount would not work (no cure of trigger breach possible). In view of the hierarchy of capital a 100% write-down would not be justified either. We therefore suggest to equally limit the write-down in this case by a specific percentage (e.g. [5-10%]). There is no straightforward comparable solution for conversion RT1, as typically 100% of the principal amount is converted. In jurisdictions where conversion can lead to a reduction of the SCR ratio, conversion therefore maximises the risk of an SCR reduction.

	○ **PLAM as well as the cancellation trigger could be set at much lower levels (margin to MCR) rather than at the SCR.** This would not change the fundamental concerns with the PLAM, but would reduce the risk of unintended consequences. It would thereby also bring the insurance regulation closer in line with that of banking. – ***Long term solutions (deleting PLAM and using other LAMs to avoid unintended consequences)*:** ○ An alternative to PLAM that would (i) avoid a reduction of the SCR ratio, (ii) impose losses on investors, and (iii) be very simple would be to **automatically require the cancellation of e.g. [2-3] years' worth of coupons upon trigger breach.** As a rule of thumb, for an assumed coupon level of 6%-7% this mechanism would imply a permanent loss to investors worth ca. [15% to 20%] of the original principal amount – a meaningful, substantial and true amount of "loss absorbency" by investors. It would mean that Art. 71 (7) would have to be abolished as it would focus on loss imposition via coupon cancellation. It would, however, appreciate that coupon cancellation (and prohibition of repayment) is the simplest way to impose even a complete (100%) loss on investors in perpetual instruments – and without any of the negative consequences of the current insurance or bank PLAM. It would further appreciate that RT1 investors incur losses in a way that shareholders never do as equity dividends cannot economically be cancelled (only deferred). We see such coupon cancellation as a sensible and much simpler regulation than that for banking. – Designing a sensible PLAM or an alternative to it is very complex. The discussion would greatly benefit from an **exchange of views with all relevant stakeholders** including lawyers and banks with in-depth structuring and market experience.	
Q20.7	Insurance – prohibition of extraordinary call rights in years 1–5 without replacement: All calls require prior regulatory approval. It does not make sense to generally prohibit early calls without	

	replacement – there may well be cases where both regulator and issuer agree that a replacement is not necessary. This prohibition may mean that a costly and inefficient instrument must be kept for years (i.e. until the five year period has expired) even in cases where total own funds are high). While an open market repurchase may still be allowed (subject to prior approval), it is typically more costly than the exercise of a call right, and repurchases (unlike calls) very rarely allow the issuer to extinguish the entire principal amount. Equity can be reduced at all times, in some jurisdictions even without prior regulatory approval. Equity is viewed as "permanent" nevertheless, simply because there is never an obligation to repurchase equity. Similarly, call rights do not create an obligation to make use of this right – early call rights will only be used when it is economically preferable to do so. We therefore see no reason why exercising a call right should be prohibited without prior replacement particularly when regulators have to approve it in any case. Banking – tax and regulatory calls: Call rights should not be limited to tax and regulatory calls. Extraordinary call rights are rarely used, are always subject to prior approval and essentially are a risk that investors bear (calls take place at contractually pre-agreed (low) prices, typically par). There is no reason why regulation should "protect" investors by limiting such call rights for insurers.	
Q20.8	The difference in call rights is not justified by the different business models of banks and insurers. The limitations in both regimes are generally viewed as a burden that – given the obligation to obtain prior regulatory approval for any call – adds no regulatory benefit, but may cause unnecessary costs to insurers or banks.	
Q20.9	– Given the similar market environment, banks and insurers are facing, consistency is generally desirable. However, banks and insurers are different in many aspects and hence it is more important that specific rules are adequate. The regulation regarding early calls has weaknesses in both current regimes which can be addressed in both regimes as	

	follows: – **All early call rights should be subject to prior regulatory approval**. A categorical but temporary prohibition to call without replacement is not sensible and should be deleted. – **Non-binding guidelines** that support regulators when assessing the merits of calls requiring higher minimum limits (so called margins) in case of no replacement may be helpful. – A limitation of call rights is not necessary. In fact we cannot see a reason why regulation should protect investor rights in this respect. – We think that so-called "make whole" prices for early calls (make whole is typically the higher of par and the remaining cash flows discounted with a contractually agreed discount rate) could be prohibited. All early calls should be priced at par (plus accrued interest).	
Q21.1	RT1 is of weaker quality than UT1 and should therefore remain limited. A removal of the limit would make the term "Restricted" Tier 1 meaningless. We are questioning the practicability of "improving" the quality of "R"T1. Adding more onerous requirements is likely to effectively prohibit most insurers from issuing Tier 1 in the form of subordinated debt (market acceptance). At least, it would increase the cost of such instruments. **Effectively, such a change to "R"T1 criteria would imply a significant ex post subsidy to those insurers that have large amounts of transitional RT1 outstanding, which would undermine the level playing field concept.** If the 20% limit was to be removed, transitional RT1 would arguably have to be reclassified as Tier 2, which would cause significant challenges for a number of insurers.	
Q21.2		
Q21.3	For the removal of the 20% limit to have an impact on the total capital ratios of insurers, more than the entire headroom for RT1 (20% of total Tier 1 and thus (implicitly) 25% of UT1), and T2+T3	

	(50% of the SCR) would have to be utilised today. This is unlikely in the case of groups, and would be rather unusual for individual members of a group, too.	
Q21.4	**We oppose a removal of the 20% limit**. Further, we are sceptical about the ability to define sensible features to make Tier 1 in the form of subordinated debt even more akin to equity. RT1 as currently foreseen is already more risky than equity in several aspects as a consequence of the inversion of the hierarchy of capital. We are sceptical of any plans to further "improve" the quality of RT1. The proposed "improvements" only make the occurrence of unintended consequences more likely. Also, they will occur at an earlier stage of a crisis, and arguably will make it even more difficult – if not impossible - for all but the strongest insurers to issue Tier 1 in the form of subordinated debt in the capital market.	
Q21.5	We prefer a limit for RT1. We don't see reasons for removing it and cannot see a sensible way to improve the quality of RT1 further via additional (contractually fixed) requirements. Retaining the 20% limit looks more relevant since: (i) the combination of the complexity / volatility of Solvency II Pilar 1 and (ii) the existing required features to qualify as Restricted Tier1 have prevented the insurance sector to launch a Euro benchmark Restricted Tier1 in the capital markets. Strengthening the RT1 features would make even more challenging a market access that is virtually non-existent in the first place and therefore is not desirable.	
Q21.6	Given the absence of meaningful amounts of issuance of RT1 based on current criteria it is not possible to make any reliable statements on the potential marketability (or market cost) of "R"T1 instruments after the contemplated criteria changes. These changes would make the occurrence of unintended consequences likely to happen at an	

	even earlier stage as the PLAM – and the potential **reduction** of the SCR ratio therefrom – would apply already at higher capital ratios. The market for restricted Tier 1 instruments is virtually non-existent. The increase of the trigger level significantly above non-compliance with the SCR would i) entail an additional cost for the issuer while ii) increasing the risk of unintended consequences (worsening of the SCR ratio) and thus arguably reducing the quality of its own funds.	
Q21.7	– Setting the call right further from the issuance date **reduces** the quality of this own funds item as it reduces the instrument's flexibility. – The permanence of RT1 is perpetual as there is never an obligation to repay, and since incentives to redeem are prohibited. Prohibiting call rights after 5 years and allowing them only after 10 years therefore does not increase RT1s permanence in any sense. – The RT1 call right is certainly not an obligation to call. The call right allows insurers to replace the instrument with an otherwise identical, but lower cost, instrument – preventing such a replacement for 10 years rather than only 5 cannot be viewed an "improvement" of the instrument's quality. – In this context, we reiterate that all call rights are contingent on the prior approval from the regulator. – In addition, extending the first call date beyond five years would create a unjustifiable difference to bank AT1, where ordinary calls are allowed after five years. In any caseall calls are subject to the approval of the supervisory authority. It therefore does not seem appropriate to extend this first date of call. Furthermore, if the first call for repayment or redemption were set further 5 or 10 years after the date for issuance, the issue of this type of capital items would be hardly feasible in practice. – **We point out that the DR requires regulators to make certain decisions such as the approval of calls. Own funds instruments are market sensitive. Given the great degree of complexity of such instruments as well as market sensitivities, we would welcome an**	

| | **intense dialogue between regulators and insurers on the functioning of such instruments. Also, EIOPA could provide a helpful platform for exchange between national supervisors.** | |