	Comments Template on Consultation Paper on EIOPA's second set of advice to the European Commission on specific items in the Solvency II Delegated Regulation	Deadline 5 January 2018 23:59 CET
Name of Company:	Munich Re	
Disclosure of comments:	Please indicate if your comments should be treated as confidential:	Public
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Reference	**Comment**	
General Comment		
Introduction		
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2.3	Ad 92: We are convinced that FP_existing also needs to be adjusted. As EIOPA describes in section 2.4.2 of the consultation paper (p. 39), this part of the premium risk volume measure is not affected by "unexpected risk 2" which only influences P_s (future and existing business). Therefore it is not appropriate to treat both components FP_existing and P_s with equal measure. (see also our comment on section 2.4.2)	
2.4.1		
2.4.2	Ad. 137: The result of the analysis is that both FP_future and FP_existing have lower risk than the premiums to be earned in the next 12 months. It is also stated that FP_existing should have more risk than FP_future. But we do not agree with the conclusion to only adjust FP_future. In our group we have a portfolio with ten year contracts, this leads to a huge amount of	

	FP_existing. Unexpected losses of type 2 for P_s have only limited effect on FP_existing. Therefore the current EIOPA proposal (option 2) would lead to an overestimation of the risk for this portfolio. We think that it is appropriate to introduce an adjustment factor also for FP_existing where differences between FP_future und FP_existing can be reflected (higher factor for FP_existing than for FP_future). Ad. 153: It seems that the proposed alpha is geared to the outcome of option 1 (current method). We don't understand why this should hold. If the rational behind this approach is to leave the premium risk SCR (roughly) unchanged we want to point out, that this would not be the case for individual companies. We propose to derive adjustment factors for FP_future and FP_existing from deeper analysis of further data (e.g. from variation analysis and profit & loss attribution results). In the first step one can start with interim factors, after collection of experience data (e.g. from variation analysis and profit & loss attribution results) EIOPA can set the final adjustment factors.	
2.4.3	Ad. 176: we think option 2 has to include also a factor for FP_existing Ad. 177: we prefer option 2, but with inclusion of a factor for FP_existing. The result of the analysis in section 2.4.2 is that both FP_future and FP_existing have lower risk than the premiums to be earned in the next 12 months. It is also stated that FP_existing should have more risk than FP_future. But we do not agree with the conclusion to only adjust FP_future. In our group we a portfolio with ten year contracts, this leads to a huge amount of FP_existing. Unexpected losses of type 2 for P_s have only limited effect on FP_existing. Therefore the current EIOPA proposal (option 2) would lead to an overestimation of the risk for this portfolio. We think that it is appropriate to introduce an adjustment factor also for FP_existing where differences between FP_future und FP_existing can be reflected (higher factor for FP_existing than for FP_future). It seems that the proposed alpha is geared to the outcome of option 1 (current method). We don't understand why this should hold. If the rational behind this approach is to leave the premium risk SCR (roughly) unchanged we want to point out, that this would not be the case for individual companies. We propose to derive adjustment factors for FP_future and FP_existing	

	from deeper analysis of further data (e.g. from variation analysis and profit & loss attribution results). In the first step one can start with interim factors, after collection of experience data (e.g. from variation analysis and profit & loss attribution results) EIOPA can set the final adjustment factors.	
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7.1	EIOPA should obey the **work programme given by the European Commission** which does not	

	include this topic at this point in time.	
7.2		
7.3	436: Interest rate risk is closely interconnected with issues of the upcoming **long term guarantees (LTG) review**. Thus, there should be no isolated change of the interest rate risk at this point but only in the greater context of the LTG review. 438: When changing interest rate risk, it must be avoided to fortify **pro-cyclicality**. The current provision so far operated in a counter-cyclical manner. A departure from this in the present interest rate situation could have a dangerous pro-cyclical effect. In "bad times", capital requirement should not be increased but, for stability reasons, rather tend to be lower than in "good times". It should be acknowledged that the industry already faces a low interest rate environment-stress scenario. 439: see 436 440, 441: Any sensible modelling of interest rate risk must obey the empirical fact that interest rate **changes are smaller in a low-yield environment**. Bigger changes observed in past times of high interest rates must not be blindly transferred into a setting of low or even negative rates. Thus, some kind of relative model should be chosen but not an absolute (minimum) shock. This would also help to avoid pro-cyclicality. Moreover, in recent years, money and capital markets have been dominated by **ECB's extremely loose monetary policy** with its unconventional measures (in particular the quantitative easing). As a result, observed interest rates were heavily distorted. In particular short to medium term rates were heavily affected by the interferences of central banks into capital markets. Their development hardly reflects market risk but is mainly driven by political decisions in an unparalleled situation. The observations from this special situation should not be used unchanged for the calibration of interest rate market risk in the future. As a modelling of future decisions of	

centrals banks is extremely difficult / probably even impossible we think that an interest model does not have to capture any possible future decision of central banks. Based on that we do not think it is appropriate to determine a minimum absolute shock based on a period with extreme central bank interferences. This period of distorted interest rates in the meantime covers a material part of the data basis used for calibration.

442: There should be no minimum shock.

443: Interest rate down risk decreases in the negative range because more and more market participants would withdraw from such detrimental investments and rather switch to other investments or, e.g., hold cash or cash equivalents. The resulting thinning-out of demand limits any further interest rate decrease. An appropriate modelling of interest rate risk must account for this. This should be done with a **lower interest rate bound**.

446: The shortcomings of the current relative approach in the low interest rate environement can be remedied by a **shifted log-normal approach**.

447: There should be no minimum shock.

452, 455: The stress factors must only be applied until the last liquid point (LLP). Afterwards the shocked curves have to be **extrapolated on their own**. This is the only way to generate scenarios for the interest rate risk which are in line with the requirements of the Directive concerning the risk free interest rate curve. Only with correctly extrapolated shocked curves the true loss of own funds can be calculated which impends in case of changed market interest rates. According to the Directive, this loss of own funds is decisive for the SCR.

EIOPAs **simulations** indicating that the maximum annual change at the 90Y tenor point is 19% are no proper argument for refraining from a separate extrapolation of shocked curves. Actually, only a correct extrapolation is able to yield the right changes beyond the LLP. If interest rates until the LLP drop significantly, the extrapolation results in a marked drop of extrapolated rates, too. Thus,

	the given example of a 19% decrease as well as any other big or small change are automatically modelled in the right way. In contrast, just to apply a factor in the extrapolation area which is based on a maximal change would overstate the risk in almost all situations massively. **Complexity** is not at all increased by a proper extrapolation of shocked curves. Exactly the same Smith-Wilson methodology which is already applied to the best estimate curve should be applied to another two curves. In addition, this will lead to smooth and realistic yield curves, which is under the proposed method not the case. From a **legal point**, this is possible for EIOPA as EIOPA already calculates and publishes shocked curves. There is neither a further empowerment in the Directive needed for continuing to calculate and publish these shocked curves nor for to do the calculations in a proper manner according to the requirements of the Directive w.r.t. to the risk free interest rate curve.	
7.4.1	The treatment of interest rate risk in the standard formula without a mimum downward shock has been set as part of the Omnibus II compromise on LTG measures. This **political decision of the legislator** has to be obeyed at least until the high-level review of the entire LTG package.	
7.4.2	**<u>Shifted approach</u>** 467–473: **We support EIOPA's assessment that a shifted approach has many advantages** (however we prefer the "shifted log-normal approach" instead of the "shifted approach"): • It considers adequately the main empirical fact that shocks in times of low interest rates are smaller than shocks in times of high interest rates, • works well with low and negative interest rates, • it is a transparent approach, • it allows to calibrate to the 99.5% quantile as required by the Directive, • is quite robust in terms of the shift parameter,	

- is a transparent, data-driven approach,
- well accepted as basis for internal models.

477: **Given that the shifted log-normal approach has so many advantages, it is a good option for modelling interest rate risk. In comparison to the other options, mainly the proposal A and B, presented by EIOPA which suffer from severe draw backs (see below), this shifted approach has to be chosen.**

<u>Symmetric 200 bp miminum shock with static interest rate floor (Proposal A)</u>

479: The depicted annual changes as a function of the observed interest rate level clearly show that **interest rate changes are much smaller in times of a low level than in times of a medium or high level**. Thus, absolute amounts of shocks observed at times of much higher rates must not be used to calibrate interest rate in times of very low rates. **Any sensible modeling of interest rate risk much obey this very basic feature.** This can easily be implemented by some kind of relative approach. Due to problems of the previous relative approach with interest rates near to zero and below zero, this should in fact be a shifted relative approach.

480: We do not see **any proper calibration** of the proposed 2% shock. This approach seems not to be a data-driven approach. Thus, it must be assumed that this approach does not comply with the requirement of a 99.5% protection leven given by the Directive. For a proper capital requirement it is not sufficient to ensure that the calibration does not underestimate the risk. It is also compulsory not to overestimate the risk. Thus, for both reasons – the approach cuts across the observed data pattern of shrinking risk at time of low rates and it seems not to meet the required level of protection – proposal A is not appropriate and has to be discarded.

481: **Stress factors must only be applied until the last liquid point (LLP).** Afterwards the shocked curves have to be extrapolated on their own. This is the only way to generate scenarios for the interest rate risk which are in line with the requirements of the Directive concerning the risk free

interest rate curve. In case the UFR was changed in the future according to a predefined method as currently proposed by EIOPA, the algorithm for annual changes to the UFR can easily be taken into account by extrapolating to the (changed) UFR expected for the next year.

In any case, only with corrrectly extrapolated shocked curves the true loss of own funds can be calculated which impends in case of changed market interest rates. According to the Directive, this loss of own funds is decisive for the SCR. In contrast, the proposed "phasing out " massively overstates the shocks in most situations.

Of course, this already holds for the current standard formula. However, if interest rate risk is recalibrated and shock factors increase, then the effect of the wrong calculation beyond the LLP increases, too. Thus, it gets even more urgent to correct this mistake and to extrapolate the shocked curves on their own.

485: The **backtesting** figure exhibits that the proposal seems not to underestimate risk. However, it does not show that the proposal performs good or better than an other option because it can not be inferred whether risk is overestimated in many situations.

486: Proposal A

- is simplistic,
- is not a data-driven approach,
- cuts across the observed data pattern,
- seems not to comply with the 99.5% quantile as required by the Directive,
- massively overstates risk at time of low rates.

Thus, Proposal A is not appropriate and has to be discarded.

<u>Combined approach (Proposal B)</u>

488: We fully support EIOPA's assessment that **for low or negative interest rates no extreme annual movements have been observed** and that, thus, the minimum shock of Proposal A can be challenged as overly prudent.

489–507: The figures confirm that big interest rate changes, in particular big decreases, do not happen in times of low rate levels. In fact, the depicted quantiles exhibit a more or **less linear relation between the extent of changes (x-axis) and the lowest level at which these changes occur** (0.05% quantile or min at the y-axis). This is good evidence for a (shifted) relative approach.

510–511: **Stress factors must only be applied until the last liquid point (LLP).** Afterwards the shocked curves have to be extrapolated on their own. This is the only way to generate scenarios for the interest rate risk which are in line with the requirements of the Directive concerning the risk free interest rate curve. In case the UFR was changed in the future according to a predefined method as currently proposed by EIOPA, the algorithm for annual changes to the UFR can be taken into account: extrapolation to the changed UFR which is expected for the next year.

In any case, only with corrrectly extrapolated shocked curves the true loss of own funds can be calculated which impends in case of changed market interest rates. According to the Directive, this loss of own funds is decisive for the SCR. In contrast, the proposed "phasing out " massively overstates the shocks in most situations.

Of course, this already holds for the current standard formula. However, if interest rate risk is recalibrated and shock factors increase, then the effect of the wrong calculation beyond the LLP increases, too. Thus, it gets even more urgent to correct this mistake and to extrapolate the shocked curves on their own.

512–520: Due to the **high absolute shock components** of +1.4% and –1.0%, Proposal B also fails to suffiently model the basic data pattern of shrinking interest rate risk in times of low rates. Moreover, Proposal B is obviously more composed than Proposal A and needs more external parameters that are not deduced from market data ("+/–2%"; "–1%"; "+1,4%"). Being an artificial,

	compounded approach it is likely that the inherited choices perform poorly when market conditions change. All in all, although Proposal B is less bad than Proposal A, it seems to be inappropriate, too. The data pattern in times of low interest rates is much better modelled by a shifted relative approach. 521: Proposal B • is quite complex with its combination of several max and min operators, • does not sufficiently account for the observed data pattern, • noticeably overstates risk at time of low rates, • needs a couple of choices and external parameters. **Thus, Proposal B is less bad than Proposal A but still not appropriate. It should also be discarded.**	
7.4.3	523: We agree that the simple shifted approach is not fully appropriate and prefer the shifted log-normal approach as it has **many advantages** • It considers adequately the main empirical fact that shocks in times of low interest rates are smaller than shocks in times of high interest rates, • works well with low and negative interest rates, • it is a transparent approach, • it allows to calibrate to the 99.5% quantile as required by the Directive, • is quite robust in terms of the shift parameter, • is a transparent, data-driven approach, • well accepted as basis for internal models. 524: Proposal A • is simplistic, • is not a data-driven approach, • cuts across the observed data pattern,	

	• seems not to comply with the 99.5% quantile as required by the Directive, • massively overstates risk at time of low rates. Proposal B • is quite complex with its combination of several max and min operators, • does not suffiently account for the observed data pattern, • noticeably overstates risk at time of low rates, • needs a couple of choices and external parameters. **Thus, Proposal A is not appropriate and has to be discarded. Proposal B is less worse than Proposal A but still not appropriate. It should also be discarded.** 525: The current interest rate model should be adjusted twofold: • **A shifted log-normal approach should be applied.** • **In any case, stress factors must only be applied until the last liquid point (LLP).** Afterwards the shocked curves have to be extrapolated on their own. This is the only way to generate scenarios for the interest rate risk which are in line with the requirements of the Directive concerning the risk free interest rate curve. Only with corrrectly extrapolated shocked curves the true loss of own funds can be calculated which impends in case of changed market interest rates. According to the Directive, this loss of own funds is decisive for the SCR. In contrast, the proposed "phasing out " massively overstates the shocks in most situations.	
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14.4.3	We agree with the approach of EIOPA to calibrate the default risk of CCPs with respect to the framework of Art. 305 (2)-(3) CRR. We prefer option 2 as it presents a transparent and feasible calculation of the default risk and it reflects the system of safeguards in an appropriate manner. Furthermore, option 2 is in line with the solvency II method of calculating the counterparty default risk. For non-centrally cleared transactions we want to point out that the obligation to exchange initial margin depends on the trading volume of the counterparty and not on the volume of the derivative transaction (see no. 1134). Since most insurance companies have a trading volume below 8 bn. EUR, these companies are subject to the exchange of variation margin only. Insurers with a larger trading volume have the obligation to exchange initial margin, and this reduces the counterparty default risk substantially. Thus we prefer option 1 (no. 1161) for bilateral transactions, if only the exchange of variation margin is required, and we propose to calculate the LGD with a higher recovery rate for transactions with an exchange of initital margin. For example a recovery rate of 10% corresponding to the factor 90% of the LGD calculation, can be replaced by	

	a recovery rate up to 50%. This reflects comparable levels of collateralisation between transactions with CCPs referred to Art. 305 CRR and transactions with initial margin requirement. Option 2 (no. 1162) is not appropriate in our view, since the calibration of the factors x, y, z in the LGD calculation is crucial and the database mentioned may be insufficient for this calibration.	
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