

**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:	Institut des actuaires français (French institute of actuaries)	
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Disclosure of comments:	Please indicate if your comments should be treated as confidential:	Public
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The numbering of the reference refers to the sections of the consultation paper on EIOPA's second set of advice to the European Commission on specific items in the Solvency II Delegated Regulation. Please indicate to which paragraph(s) your comment refers to.

Reference	Comment	
General Comment		
Introduction		
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2.4.3	<p>The issue of premium volume is notoriously one of the most debated aspect of the Standard Formula. Institut des Actuaire thus welcomes EIOPA decision to clarify this topic.</p> <p>In her Consultation Paper, EIOPA considers two options</p> <ul style="list-style-type: none"> - Remain with the current definition of premium volume - Correct the so called "premium gap", but mitigate the increase on SCR by allowing a 	

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reduction factor on FP future that could be set around 30%.

Institut des Actuaire believes both these solutions to have weaknesses, and that the approach should be further refined.

- Option 1 appears robust, as it would to no change on the capital requirement. Yet, it is poorly founded on a theoretical basis since it would maintain the premium gap which is questionable from a risk point of view.
- Option 2 corrects the premium gap, but leads in our opinion to an overestimation of the premium risk. The formula also raises questions about robustness (strong variation in infra year calculations) and does not lead to a level playing field since there would be material differences between actors based on the period where the policies are renewed. We thus suggest some adjustment.
 - o We believe that the discount factor should be applied to both FP existing and FP future
 - o Studies have been performed on the appropriateness of the 30% discount factor. They suggest that this level is conservative and that a slightly lower factor could be considered. A distinction between premium to be earned within the next 24 months and premiums to be earned after those 24 months could be introduced.
 - o In order to allow for robustness and level playing field, we believe that the amount of future premiums included in the calculations could be calculated as an average over the different closing.

Consistency between premium risk and risk volume:

As noted by EIOPA in its analysis, losses could arise from three sources:

- Expected risk, in case a policy is underpriced.
- Unexpected risk 1, corresponding to a permanent increase in claim frequency or severity.
- Unexpected risk 2, corresponding to an unusually high claim level for next year.

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- Expected risk:

Expected risk is dealt with via the premium provision, and should thus not be included in SCR calculation. It is thus not further analysed in this document.

- Unexpected risk 1:

UR1 corresponds to a permanent increase in claim level, such as inflation, change in policyholder behaviour or change in legal environment. In this case, insurers would certainly reconsider their tariffs, and increase premiums accordingly to restore the technical equilibrium.

The losses would depend on the delay between the time where sinistrality increases and the time where tariffs are adjusted.

As an example, let us consider a one year policy beginning on the 01/01/N with a two months advance notification period (situation fairly typical of the European insurance market).

- If the claim deviation occurs before the 31/10/N, the insurer can readjust its tariffs. Thus the losses would only be suffered on the period ranging from the 01/01/N to the 31/12/N, so twelve months at most.
- If the claim deviation occurs after the 01/01/N+1, then losses will be suffered on the period 01/01/N+1 to 31/12/N+1, so again twelve months at most.
- If the claim deviation occurs between the 31/10/N and the 31/12/N, then the insurer will not be allowed to adjust its premiums for the year N+1, and the exposure will be at most 14 months.

- Unexpected risk 2:

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Losses could come from an unusually large claim level. This volatility could come from large claims, acts of god or an unusual claim frequency.

In this case, even though the insurer might offer protection for several years, the corresponding risks should not be summed. Indeed, applying a one in two-hundred-year shock repeatedly would lead to a quantile that is far more severe than one in two hundred.

EIOPA position is that diversification over time is taken into account via discounting of future premiums. Institut des Actuaire cannot support this point of view. Indeed, there is no technical or actuarial evidence that would support the idea that discounting would be a way to measure correlations.

Studies were performed to try to quantify this diversification effects.

- Simulation of future claims for each future year, via a Monte Carlo method.
- Each year sinistrality is assumed to follow a lognormal distribution whose volatility is set equal to the standard formula sigmas.
- Since the whole volatility has been attributed to UR2, the sinistrality can be assumed to be independent.

This analysis lead to the conclusion that the following formula, though slightly conservative, would be a reasonable proxy for the risk calculation:

$$V_{(prem,s)} = \max(P_s, P_{last}) + \alpha \cdot FP_{Year\ 1} + \beta \cdot FP_{Following}$$

FP_{Year 1} covers the expected present value of premiums to be earned during the 12 months following the 12 months following closure date and belonging to FPs

FP_{Following} defined as FPs - FP_{Year 1}

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- Overall risk assessment:

Volatility factors have been estimated by EIOPA. They aim to cover both UR1 and UR2.

- Should UR1 prove by far the dominant risk, we could assume that the sigmas only refer to it. Based on the analysis above, premium volume should at most be equal to one year plus advance notification period. In most countries, the advance notification delay is of two months, which would lead to a volume of fourteen months for an annual contract beginning on the 01/01/N.
- Should UR2 prove by far the dominant risk, we could assume that the sigmas only refer to it. Based on the analysis above, for an annual contract beginning on the 01/01/N, volume measure could be premiums of year N+1 plus 30% of premiums for year N+2, or 15,6 months.
- Sigma factors are estimated as historical standard deviation of loss ratios. Thus, they encompassed both UR1 and UR2. These two risks should be seen as mutually independent. In this case, a diversification effect should be applied that would lead to a premium volume that is probably lower than both figures above (14 months and 15,6 months).

Based on those considerations, we consider that EIOPA proposal to apply an adjustment of 30% to FP future as conservative:

- In case the dominant risk is UR2, the formula above show that the 30% factor is slightly overestimated
- In case we consider that volatility should be split between UR1 and UR2, the overestimation becomes even more material.
- The decision to apply the adjustment only to FP future is not risk based and does not offer

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a correct vision of an insurer risk. EIOPA considers that the issue is not material since it only affects multiyear contracts which are not a material part of the insurance market. Institut des Actuaire points out that the proportion of multiyear contracts could vary over time, and that in any case, products should not be charged more capital on the ground that they do not represent a major part of the market.

Based on the following analyses, the following approach would appear actuarially sound:

$V = \max(P, P_s) + \alpha (FP \text{ existing} + FP \text{ future})$ where the α factor could be set at most at twenty percent.

Stability and level playing field:

Under option 2, the premium volume would vary, both between closing dates and between entities. To illustrate this point, we studied the two following examples, which cover the vast majority of non-life European portfolios.

- Portfolio 1 is comprised of annual contracts which are all renewed on the first of January. The policies include a two-month advance notification clause.
- Portfolio 2 is comprised of annual contracts whose renewal dates are spread evenly within the year. The policies also include a two-month advance notification clause.

The premium volume that would be used at each closing date is given below:

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		Premium volume 31/12	Premium volume 31/03	Premium volume 31/06	Premium volume 30/09	Average premium volume
Portfolio 1	P	12 months	12 months	12 months	12 months	
	FP	12 months	nil	nil	nil	
	Volume under option 2 = $p + 0,3 * FP$	15,6 months	12 months	12 months	12 months	12,9 months
Portfolio 2	P	12 months	12 months	12 months	12 months	
	FP	7,5 months	7,5 months	7,5 months	7,5 months	
	Volume under option 2 = $p + 0,3 * FP$	14,3 months	14,3 months	14,3 months	14,3 months	14,3 months

These figures points to the fact that EIOPA option 2 formula would lead to both a strong volatility of infra-annual SCR and to an uneven playing field between insurers.

A possible option could be to use an average of the four positions for each quarterly closing. A simplified approach could be to define FP in the following way:

- Regarding annual contracts FP could be set equal to six months of earned premiums
- Regarding pluriannual contracts, FP would stay equal to the remaining length of the contracts

Under this definition, SCR would be stable over the year, and would not rely on the renewal date convention. This definition would also suppress the need to make a distinction between FP existing and FP future which proves complex and time consuming. It would thus be consistent with the aim of simplifying the standard formula.

Alternative proposal for premium volume:

The ideas underpinning option 2 of EIOPA Consultation Paper, and especially the closing of the gap in premiums and the introduction of discount factor to be applied to future premiums, appear sound and consistent from a risk point of view. Yet, we believe that several modifications should be applied to make it both more risk consistent and more robust.

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Thus, we suggest an alternative formula:

$$V_{(prem,s)} = \max(P_s, P_{last}) + \alpha \cdot FP_{Year\ 1} + \beta \cdot FP_{Following}$$

Where P_s and P_{last} definition remain unchanged and

FP_s is set equal to:

- six months of premiums for annual contracts
- the premiums to be earned after the following twelve months on contracts existing at the closing date or underwritten during the twelve months following the closing date for pluri-annual contracts

$FP_{Year\ 1}$ covers the expected present value of premiums to be earned during the 12 months following the 12 months following closure date and belonging to FPs

$FP_{Following}$ defined as $FPs - FP_{Year\ 1}$

It is to be noted that under this definition, there is no need to distinguish between FP existing and FP future. coefficient α could be set at 20% and the coefficient β at 10%.

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The 2009 CEIOPS' Advice for Level 2 Implementing Measures on Solvency II about Life underwriting risk referred to a sample size of 21 internal model, where the median mortality

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	<p>stress was 22%, with an inter quartile range of 13% to 29%. That showed a large heterogeneity and we noticed that no sensitivity tests about geographical or time calibration have been included in the discussion paper. The USP's approach appears as a useful alternative method. We welcome the proposal to keep the current granularity of the mortality and longevity stresses to avoid too much complexity in calculation.</p>	
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4.5.3	<p>The inclusion of ten year disability victims created additional complexity in the calculation. We welcome EIOPA decision to suppress this category of victims which is consistent with the aim of simplifying the standard formula. At this stage, we have no visibility on the impact this change would have for the market. It might be interesting to quantify it.</p>	
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5.7.2.3	EIOPA decision to base catastrophe risk on the largest net exposure rather than on the largest gross exposure seems actuarially sound, and consistent with good risk management	
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7.4.3	<p>This section concerns interest rate risk calibration.</p> <p>First, we consider that the current approach with no decrease of negative interest rates may appear as inadequate to measure interest risk.</p> <p>However, we consider that approach A presents many economic and statistical limitations, among which: pro-cyclicality (absolute shock) and market-inconsistency (floor). Moreover, as underlined in 488.: in a low yield environment, the minimum shock of 2% can be challenged to be an overly prudent approach.</p> <p>Elsewhere, we deem that the proposal B seems to be more efficient than the approach A, however we consider that the accuracy of this approach strongly depends on the calibration of different yield environments. In this way, EIOPA should provide more statistical analysis to test this approach.</p> <p>Consequently, given that the back-testing results showed by EIOPA seems not to be enough relevant, we cannot conclude on what is the best approach. In any case, EIOPA should draw its attention to operational consequences and in this way should avoid an approach that may lead to overcomplexity.</p>	
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18.1	The French Institute of actuaries is disappointed with EIOPA's recommendation not to change the CoC rate. In fact, the current 6% calibration is much higher than necessary and is a major reason why the RM is excessive. This leads to a Risk Margin which does not reflect the realities of the transfer market and is unduly sensitive to changes in interest rates. Moreover the French institute of actuaries would like to emphasize that the current formula causes technical issues for the valuation of the RM due to the complexity for actuarial models to project the SCR.	
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18.3	According to EIOPA some stakeholders argue the reference undertaking should be allowed to use the MA and the VA The VA and MA are part of the Solvency II framework and should be allowed to be taken into account. The calculation have to been run twice (with and without LTG measures to determine both best estimate and risk margin), which is operationally burdensome.	
18.4.1		
18.4.2	The french Institute of Actuaries woud recommend EIOPA to review the CoC rate calibration derived from the CAPM methodology in order to reflect that insurers are not funded uniquely with equity. Debt §1410: EIOPA is assuming that insurers are uniquely funded with equity. As an argument, EIOPA is quoting the results of QIS4. The reference to the QIS 4 exercise is out of date, as in the meantime Solvency II has entered into force and the contribution of debt financing on the CoC rate is underestimated. Debt funding can be significant: for large insurance groups subordinated liabilities can represent more than 20%, of the total eligible own funds. The use of debt funding will tend to lower the cost of financing, and hence disregarding this will	

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	<p>lead to an overestimate of the true weighted average cost of capital. Therefore it is important that the cost of capital rate used takes into account the cost of debt as well as equity. A study about the weight of equity or debt in order to take over and meet the underlying insurance and reinsurance obligations could usefully complete the analysis.</p> <p>Value of future profits The risk margin is designed to represent the amount an insurance company would require to take on the obligations of an insurance company. As stipulated in the delegated acts, in order to perform the valuation of the cost of tied up capital, its formula is based on the projection of the SCR (excluding market risk). However, the amount of eligible own funds to cover the SCR includes a (potentially significant) share of the portfolio's future profits. The current formula therefore implicitly includes a cost of capital for the value of future profits that are, actually, not tied up by the insurance company. This leads to an application of a cost of capital on the value of future profits and could overestimate the value of the risk margin. This point could be addressed:</p> <ul style="list-style-type: none"> • either by taking into account the share of value of future profits in the calibration of CoC rate • or by reviewing the formula of the risk margin by taking into account the projection of the SCR decreased by the value of future profits 	
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