EIOPA-Bos-15/122

30 June 2015

Final report on public consultation No. 14/060 on the implementing technical standards with regard to standard deviations in relation to health risk equalisation systems

EIOPA – Westhafen Tower, Westhafenplatz 1 - 60327 Frankfurt – Germany - Tel. + 49 69-951119-20;
Fax. + 49 69-951119-19; email: info@eiopa.europa.eu site: https://eiopa.europa.eu/

Table Contents

1. Executive summary

Introduction

In accordance with Article 15 of Regulation (EU) No 1094/2010 (EIOPA Regulation), EIOPA may develop implementing technical standards (ITS) by means of implementing acts under Article 291 TFEU, in the areas specifically set out in the legislative acts referred to in Article 1(2) of the EIOPA Regulation.

Before submitting the draft ITS to the European Commission, EIOPA shall conduct open public consultations and analyse the potential costs and benefits. In addition, EIOPA shall request the opinion of the Insurance and Reinsurance Stakeholder Group (IRSG) referred to in Article 37 of the EIOPA Regulation.

In accordance with Article 109a(4) of Directive 2009/138/EC of the European Parliament and of the Council on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II), EIOPA shall develop implementing technical standards with regard to standard deviations in relation to health risk equalisation systems.

As a result of the above, on 2 December 2014, EIOPA launched a public consultation on the draft implementing technical standards with regard to standard deviations in relation to health risk equalisation systems.

The Consultation Paper is also published on EIOPA's website[1].

Content

This Final Report includes the feedback statement to the consultation paper (EIOPA-CP-14/060) and the full package of the Public Consultation, including:

Annex I: Implementing Technical Standard

Annex II: Impact Assessment

Annex III: Resolution of comments

Annex IV: Statistical reports

[1] Consultation Paper

Next steps

According to Article 15 of the EIOPA Regulation, the draft ITS in Annex I will be submitted to the European Commission for endorsement by 30 June 2015.

According to Article 15 of the EIOPA Regulation, the European Commission shall forward the draft ITS to the European Parliament and the Council.

Within 3 months of receipt of the draft ITS, the European Commission shall decide whether to endorse it in part or with amendments, where the Union's interests so require. The European Commission may extend that period by 1 month.

If the European Commission intends not to endorse a draft ITS or intends to endorse it in part or with amendments, it shall send it back to EIOPA explaining why it does not intend to endorse it, or, explaining the reasons for its amendments, as the case may be.

Within a period of 6 weeks, EIOPA may amend the draft ITS on the basis of the European Commission's proposed amendments and resubmit it in the form of a formal opinion to the European Commission. In this case EIOPA must send a copy of its formal opinion to the European Parliament and to the Council.

If on the expiry of the 6 weeks period, EIOPA has not submitted an amended draft ITS, or if it has submitted a draft ITS that is not amended in a way consistent with the European Commission's proposed amendments, the European Commission may adopt the implementing technical standard with the amendments it considers relevant or it may reject it.

Where the European Commission intends not to endorse a draft ITS or intends to endorse it in part or with amendments, it shall follow the process as set out in Article 15 of the EIOPA Regulation.

2. Feedback statement

Introduction

EIOPA would like to thank the IRSG and all the participants to the public consultation for their comments on the draft ITS. The responses received have provided important guidance to EIOPA in preparing a final version of the draft ITS for submission to the European Commission. All of the comments made were given careful consideration by EIOPA. A summary of the main comments received and EIOPA's response to them can be found below and a full list of all the comments provided and EIOPA's responses to them can be found in Annex III.

General comments

2.1. Transparency of the calibration

a. Stakeholders asked for a more precise disclosure on the calibration process.

b. The method applied for deriving standard deviations for the relevant HRES is in full agreement with the calibration method as used in 2011 for EIOPA's technical advice on the non-life and health standard deviations. Please refer in this respect to the EIOPA's paper "Calibration of the Premium and Reserve Risk Factors in the Standard Formula of Solvency II" of 12 December 2011.[2] In particular, the standard deviations for HRES are estimated using the "Lognormal Model", and assuming the "Second Variance Parametrisation" referred to in section 6.2 of Annex III of that paper.

   Descriptive statistics on the calibration are being disclosed in Annex IV of this report.

2.2. Update of the standard deviations

a. Stakeholders expressed the concern that in case of yearly updates of the standard deviations, the result should be timely available. The IRSG commented that updated parameters should be provided sufficiently in advance for health insurers in order to use them in their pricing. It would be appropriate to update the parameters every one or two years, followed by a detailed calibration analysis.

b. The review of the standard deviations for HRES will be aligned with the review of other parameters of the standard formula. In case there are clear indications from the ongoing monitoring conducted by EIOPA that the capital requirements design and calibration are no longer adequate, EIOPA will inform the European Commission.

[2] https://eiopa.europa.eu/Publications/Reports/EIOPA-11-163-A-Report_JWG_on_NL_and_Health_non-SLT_Calibration.pdf

General nature of participants to the public consultation

EIOPA received comments from the IRSG and two responses from other stakeholders to the public consultation. All the comments received have been published on EIOPA's website.

Respondents can be classified into the category of European trade, insurance, or actuarial associations.

IRSG opinion

The particular comments from the IRSG on the ITS at hand can be consulted on EIOPA's website[3].

Comments on the Impact Assessment

No specific comments have been received from the stakeholders with respect to the Impact Assessment including the cost and benefits analysis of the proposed measures. Nevertheless, some revisions have been made to Impact Assessment to fully align it with the final drafting of the ITS.

[3] IRSG opinion

3. Annexes

Annex I: Implementing Technical Standard

EUROPEAN
COMMISSION

Brussels, XXX
[…](2015) XXX draft

COMMISSION IMPLEMENTING REGULATION (EU) No …/..

of XXX

on […]

COMMISSION IMPLEMENTING REGULATION (EU) …/.. laying down implementing technical standards with regard to standard deviations in relation to health risk equalisation systems in accordance with Directive 2009/138/EC of the European Parliament and of the Council

of [ ]

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Directive 2009/138/EC of the European Parliament and of the Council of 25 November 2009 on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II)[4] and in particular the third subparagraph of Article 109a(4) thereof,

Whereas:

(1) For the purpose of the calculation of the health underwriting risk module of the standard formula for the Solvency Capital Requirement, it is essential to lay down standard deviations for premium and reserve risk for business subject to a health risk equalisation system (HRES).

(2) Such standard deviations should be laid down only in relation to the Zorgverzekeringswet (Health Care Insurance Act) providing for a mandatory basic health insurance (basisverzekering) in the Netherlands (hereinafter the 'health risk equalisation system in the Netherlands') because, according to a survey of the European Insurance and Occupational Pensions Authority, the health risk equalisation system in the Netherlands is the only HRES within the Union that complies with the criteria of Articles 109a(4) and (5) of Directive 2009/138/EC.

(3) The standard deviations laid down in this Regulation have been determined by taking into account the calculations provided by De Nederlandsche Bank.

(4) This Regulation is based on the draft implementing technical standards submitted by the European Insurance and Occupational Pensions Authority to the Commission.

(5) The European Insurance and Occupational Pensions Authority has conducted open public consultations on the draft implementing technical standards on which this Regulation is based, analysed the potential related costs and benefits and requested the opinion of the Insurance and Reinsurance Stakeholder Group established in accordance with Article 37 of Regulation (EU) No 1094/2010 of the European Parliament and of the Council[5].

HAS ADOPTED THIS REGULATION:

[4] OJ L 335, 17.12.2009, p.1.

[5] Regulation (EU) No 1094/2010 of the European Parliament and of the Council of 24 November 2010 establishing a European Supervisory Authority (European Insurance and Occupational Pensions Authority), amending Decision No 716/2009/EC and repealing Commission Decision 2009/79/EC (OJ L 331, 15.12.2010, p. 48).

Article 1

Standard deviations

For medical expense insurance and proportional reinsurance subject to the health risk equalisation system in the Netherlands, insurance and reinsurance undertakings shall use in the calculation of the health underwriting risk module the following standard deviations:

(a) 2.7 % for the NSLT health insurance premium risk;

(b) 5 % for the NSLT health insurance reserve risk.

Article 2

Entry into force

This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, [ ]

[For the Commission
The President]

[On behalf of the President]
[Position]

Annex II: Impact Assessment

Section 1: Procedural issues and consultation of interested parties

According to Article 15 of Regulation (EU) No 1094/2010 (EIOPA Regulation), EIOPA conducts analysis of costs and benefits when drafting implementing technical standards. The analysis of costs and benefits is undertaken according to an Impact Assessment methodology.

The draft ITS and its Impact Assessment were subject to public consultation between 3 December 2014 and 2 March 2015. The comments received from the stakeholders were duly taken into account and served as a valuable input in order to improve the draft technical standards.

The comments received and EIOPA's responses to them are summarised in the section Feedback Statement of the Final Report.

Section 2: Problem definition

According to the Solvency II Directive, the calculation of the Solvency Capital requirement (hereinafter SCR) for health insurance should reflect national health risks equalisation systems (hereinafter HRES), which permit the sharing of claims payments in respect of health risk amongst insurance and reinsurance undertakings and meet certain specific criteria. Otherwise the underlying risks of those health insurance undertakings would not be properly reflected in their SCR.

For that purpose, EIOPA is required to develop draft implementing technical standards, taking into account the calculations provided by the supervisory authorities of the Member States concerned, on standard deviations in relation to specific national HRES.

In case standard deviations for health premium and reserve risk for business subject to HRES were not properly calculated and publicly provided by EIOPA, this would imply a too large level of the SCR for underwriting risk. This would cause a non-optimal allocation of capital and distort risk management as well.

Evidence

A survey was launched across the Member States to identify the national legislative measures meeting the eligibility criteria. According to the survey only one case was identified: the Dutch legislative measure – basisverzekering – providing for a mandatory basic health insurance in accordance with the Zorgverzekeringswet (Health Insurance Act).

The calculations provided by the De Nederlandsche Bank used a dataset for premium risk on 25 portfolios for accident years 2006-2012 and a dataset for reserve risk on 25 portfolios for accounting years 2007-2012.

Baseline

When analysing the impact from proposed policies, the Impact Assessment methodology foresees that a baseline scenario is applied as the basis for comparing policy options. This helps to identify the incremental impact of each policy option considered. The aim of the baseline scenario is to explain how the current situation would evolve without additional regulatory intervention.

The baseline is based on the current situation of EU insurance and reinsurance markets, taking account of the progress towards the implementation of the Solvency II framework achieved at this stage by insurance and reinsurance undertakings and supervisory authorities.

In particular the baseline will include:

- The content of Directive 2009/138/EC as amended by Directive 2014/51/EU;
- The Commission Delegated Regulation 2015/35.

Article 109a(4) of the Solvency II Directive contains the legal requirement for EIOPA to develop draft implementing standards on standard deviations in relation to specific national HRES. Article 149 of the Commission Delegated Regulation provides the requirements applicable to such standard deviations.

Section 3: Objective pursued

The objective of this ITS is to set out the standard deviations for premium and reserve risk for business subject to a HRES for facilitating the calculation of the health underwriting risk module of the SCR.

This objective is consistent with the following objectives for the Solvency II Directive:

- improved risk management of EU undertakings;
- better allocation of capital resources; and
- harmonised risk sensitive and prospective solvency standards.

Section 4: Policy options

The Kingdom of the Netherlands is the only Member State in which a HRES is currently in place that meets the criteria of the Directive and the Commission Delegated Regulation. The calculations provided by the Dutch supervisory authority have been duly taken into account when developing the draft implementing technical standards. Following these calculations, a single option for calibration has been considered technically admissible: use of a lognormal probability distribution.

The methodology to derive the standard deviations for Dutch HRES completely adheres to the methodology that EIOPA used for the calibration of non-life and non-similar to life techniques health underwriting risk parameters. Then both the normal probability distribution and the lognormal probability distribution served to derive and compare numerical results in order to arrive at a final calibration. In case of HRES, only the lognormal distribution serves this purpose.

The impact of this lognormal choice on the numerical results for the standard deviations can be depicted in a quite general way based on the properties of elementary probability distributions. Both normal and lognormal distribution are such that parameter estimation for the mean and standard deviation cannot diverge too much and a divergence should decrease with increasing sample size, even though the normal distribution is known to have light tails whereas the lognormal distribution is heavier tailed. For probability distributions such as Gamma, inverse Gaussian and Weibull, that have tails in-between the normal and lognormal distribution, this property will even hold stronger.

For the implementation of the Dutch HRES, the standard deviation under a normal distribution was derived as a comparative shadow analysis. The numerical result for the normal and lognormal distribution appeared to coincide.

Section 5: Analysis of impacts

Benefits

- There is a lower risk that undertakings have to build a partial internal model because the standard formula does not adequately reflect their risk profile. They are also not forced to hold more own funds than necessary;
- The likelihood that supervisory authorities have to enter into a dialogue with undertakings regarding the compliance of their SCR with Article 101(3) Solvency II is reduced. There might also be fewer situations where the approval of a partial internal model is necessary;
- Policyholders benefit from adequate capital requirements. They ensure a proper coverage of risks while avoiding premiums that are higher than necessary.

Costs

- No additional costs are foreseeable for the concerned undertakings;
- The maintenance of templates for the calculation of the standard deviations creates resourcing costs for EIOPA and the supervisory authorities involved;
- No additional costs have been identified for policyholders.

Section 6: Monitoring and evaluation

The following indicators may be relevant in assessing whether the ITS has been effective and efficient in respect of the objective specified above:

To set out the standard deviations for premium and reserve risk for business subject to a HRES for facilitating the calculation of the health underwriting risk module of the SCR.	Possible indicators of progress towards meeting the objective may be: • Number of undertakings involved with each national legislative measure considered HRES; • Standard deviations for health premium and reserve risk for business subject to HRES compared to the pan-European parameters.

Annex III: Resolution of comments

Summary of Comments on Consultation Paper EIOPA-CP-14/060 CP-14-060-ITS on health risk equalisation systems				
EIOPA would like to thank Insurance and Reinsurance Stakeholder Group (IRSG), AMICE, and Insurance Europe. The numbering of the paragraphs refers to Consultation Paper No. EIOPA-CP-14/060.				
No.	**Name**	**Reference**	**Comment**	**Resolution**
1.	IRSG	General Comment	There is insufficient transparency in how the standard deviations for premium and reserve risk are derived. The details of the calculation and any adjustments which have been made should be disclosed in a Technical Annex. Updated parameters should be provided sufficiently in advance for health insurers in order to use them in their pricing. It is unclear whether this estimate of the standard deviation must be updated annually: it would be appropriate an update every 1 or 2 years, followed by a detailed calibration analysis, that allows to maintain a long term consistency.	The methodology is fully transparent and in full agreement with the methodology for the calibrations of standard deviations of other nonlife and health risks carried out in 2011. A statistical report on the calibration for HRES is disclosed in this report. The issue of review of parameters is not specific to HRES and will be in agreement with other review or updates.
2.	AMICE	General Comment	AMICE welcomes the opportunity to comment on the Consultation Paper on the proposal for Implementing Technical Standards with regard to standard deviations in relation to health risk equalisation systems. We note a lack of transparency in the derivation of the standard deviations for premium and reserve risk. EIOPA should provide all details on the calculations performed.	

			The HRES factor is calculated on an annual basis, but if the factor changes from year-to-year this can cause a significant change in the capital requirements. EIOPA should allow some time for implementation. We also request EIOPA to publish the premium and reserve risk factors at least 6 months before the application date. (Firms have to publish their premiums before year –end. If the premium risk factor is published after that date, firms will not be able to adjust their premiums). We therefore suggest that if the factors are published later, the premium and reserve factor would have to be applied to the year after next.	See second remark on comment 1.
3.	Insurance Europe	General Comments	1. Insurance Europe welcomes the Implementing Technical Standards (ITSs) with regards to the standard deviations in relation to health risk equalisation systems (HRES) in the Dutch health insurance market, and the opportunity to comment on them. Our issues of primary concern related to this paper are the following: The lack of transparency in the derivation of the standard deviations for premium and reserve risk: we would like to see the details of the calculation, the data used, and the eventual adjustments which have been made. The consistency between the calibrations of the pan-European parameters and the parameters of business subject to HRES is disputable, since the normal distribution is used for the former, while the log-normal is used for the latter. In the impact assessment EIOPA states that the DNB has used data for accounting years 2006-2012 and 2007-2012. What is the impact of the year 2013 and why this was not taken into consideration. The HRES factor is calculated on a regular basis annually, but if the factor changes from year-to-year, this can cause a significant change in capital requirements. We therefore ask EIOPA that should there be a material change in the underlying data used to derive the factor for it to be	See first remark on comment 1. The pan-European parameter calibration used both normal and lognormal distribution in order to verify whether they give rise to material differences. Only data for 2007-2012 was available at the time. It is believed that having added data for 2013 would have had limited impact on the results.

			updated, time should be allowed for health insurers to adapt to this new parameter. For instance, it will take insurers one year in order to raise the necessary funds to cover the new capital requirements by raising premiums, which reflect the updated parameter.	See second remark on comment 1.
4.	Insurance Europe	Article 1	For the purposes of transparency, we request the disclosure of the manner in which the standard deviations have been derived. While the calibration methodology is provided in Appendix II and Recital 3 mentions that the standard deviations were determined by taking into account calculations provided by De Nederlandsche Bank, the specificities of the calculation and justifications for use remain unclear. In addition, government budget considerations have an impact on the composition of the "calculation" premium (ie the government contribution of an insurer's premium income under HRES). An example from the Netherlands for which a comparison of the expected growth of health care losses between 2006 and 2012 to the calculation premiums in the same period shows large differences. The calculation premium of 2009 was below the calculation premium of 2008 and similarly for 2012 compared to 2011. This difference is not a result of the volatility of the inherent risks or effects of risk equalisation but due to the government and political choices in the division of calculation premium and payments, together with the expected losses. We hope this has been taken into account in the calculations, and would appreciate to receive more details about it. In the Dutch healthcare system the prices of health services are generally known and agreed upon in advance. The limits on the available capacity of healthcare providers and facilities, for example in an event of a catastrophe can cause the premium and reserve risks to be overstated. In considering the volume factor we ask EIOPA to confirm whether the potential limits of healthcare systems capacity as a result of a catastrophic1-in-200 year were taken into account.	See first remark on comment 1. The premium risk process in Solvency II is analysed according to the methodology documented in the calibrations of standard deviations of other nonlife and health risks carried out in 2011. The HRES-analysis is fully embedded to this approach. The methodology for the analysis of premium risk requires purification for any element of catastrophe risk. Furthermore in this particular calibration we do not recall a catastrophe for health

			In the event of a catastrophic 1-in-200 year event, there are limits on the available capacity of health care providers and facilities, for example, in such a situation the capacity of any hospital cannot be easily increased, and the professionals who provide healthcare services would likely be subject to the effects of the event. As a result the calculations for HRES should take into account those parts of the health insurance obligations which are sensitive to premium and reserve risk and should exclude parts which are not. The consistency between the calibrations of the pan-European parameters and the parameters of business subject to HRES is not ensured, even though we acknowledge that the methodology is the same, the distributions chosen are different. The normal distribution is used for the former, while the log-normal is used for the latter. Since it is stated in section 4 of Annex I (Impact Assessment) that the numerical result coincided for the normal and lognormal distributions, this choice seems even more questionable. We request for the purposes of clarity the justification for why two different distributions were chosen.	medical costs in the recent years. Hence, there is no risk of contamination. This is about calibration of health catastrophe risk and outside the scope of HRES premium and reserve risk. See second remark on comment 3. 2011-calibration used both normal and lognormal. As no material differences were noted, HRES was chosen as lognormal.
5.	Insurance Europe	Appendix II (4)	The symbol p at the bottom of page 14 should in fact be the Greek letter rho ρ representing the factor for the compliant share.	ρ is a control parameter that defines the metric for deriving the compliant share, that itself will result in the number p.
6.	Insurance Europe	Appendix II (8)(b)	The definition of the standard deviation for reserve risk is not aligned to Article 149(2)(c)(ii)(B) of the Level 2 text. The definition in this ITS is: "y_{ti} is the aggregate loss for accident <t, incurred during financial year t for insurance portfolio i, that is: incremental claim payments plus current claims provision."	It is indeed meant to be the same. However, it was found useful to be more explicit when

			Whereas in the Level 2 text: "the sum of the best estimate provision at the end of the year for claims that were outstanding at the beginning of the year and any claims and expense payments made during the year for claims that were outstanding at the beginning of the year" We believe the amount will be the same but for the sake of clarity and in order to avoid any confusion, it would be helpful to align the two defintions.	implementing the 2011-calibration that also was followed for HRES now.

Annex IV: Statistical reports

Statistical report on the calibration of the standard deviation for premium risk of the Dutch HRES

As stated in the description of the calibration methodology for HRES, standardised residuals are calculated. Observations with absolute values of standardised residuals that exceed the Normal quantile are put aside. Next follows a further round of parameter estimation, again followed by identifying and putting aside outlying observations. With the resulting dataset the final parameter estimates are obtained. Below the results of this three-step process are shown:

Step 1: Analysis of the original dataset of 25 portfolios for accident years 2006-2012

mean x	cfuesd	cvuesd			unbiased			Jarque-Bera test	
1313	1,087	0,060			sigma			104,05	0,00
					0,035				
specific	sample		standard						
parameters	size	mean	deviation	skewness	kurtosis		minimum	maximum	threshold
25	166	0,01	1,00	0,44	6,78		-3,98	4,54	2,51

Step 2: New analysis after putting aside 4 outlying observations

mean x	cfuesd	cvuesd			unbiased			Jarque-Bera test	
1307	1,089	0,060			sigma			2,35	0,31
					0,030				
specific	sample		standard						
parameters	size	mean	deviation	skewness	kurtosis		minimum	maximum	threshold
25	162	0,00	1,00	-0,01	3,59		-2,65	3,11	2,50

Step 3: Final analysis after putting aside additional 3 outlying observations

mean x	cfuesd	cvuesd			unbiased sigma			Jarque-Bera test	
1318	1,091	0,061			model	sample		1,25	0,53
					0,027	0,027			
specific	sample		standard						
parameters	size	mean	deviation	skewness	kurtosis		minimum	maximum	threshold
25	159	0,00	1,00	-0,17	3,26		-2,67	2,52	2,50

The calibration process results in a standard deviation of 2.7% for premium risk.

Statistical report on the calibration of the standard deviation for reserve risk of the Dutch HRES

As stated in the description of the calibration methodology for HRES, standardised residuals are calculated. Observations with absolute values of standardised residuals that exceed the Normal quantile are put aside. Next follows a further round of parameter estimation, again followed by identifying and putting aside outlying observations. With the resulting dataset the final parameter estimates are obtained. Below the results of this three-step process are shown:

Step 1: Analysis of the original dataset of 25 portfolios for accounting years 2007-2012

mean *x*	cfuesd	cvuesd			unbiased			Jarque-Bera test	
472	1,105	0,066			sigma			5,32	0,07
					0,133				
specific	sample		standard						
parameters	size	mean	deviation	skewness	kurtosis		minimum	maximum	threshold
25	141	0,01	1,00	0,47	3,19		-2,27	2,81	2,46

Step 2: New analysis after putting aside 3 outlying observations

mean *x*	cfuesd	cvuesd			unbiased			Jarque-Bera test	
477	1,108	0,067			sigma			1,69	0,43
					0,120				
specific	sample		standard						
parameters	size	mean	deviation	skewness	kurtosis		minimum	maximum	threshold
25	138	0,01	1,00	0,27	3,05		-2,49	2,69	2,45

Step 3: Final analysis after putting aside additional 3 outlying observations

mean *x*	cfuesd	cvuesd			unbiased sigma			Jarque-Bera test	
465	1,110	0,067			model	sample		1,40	0,50
					0,105	0,122			
specific	sample		standard						
parameters	size	mean	deviation	skewness	kurtosis		minimum	maximum	threshold
25	135	0,01	1,00	0,20	2,70		-2,48	2,58	2,44

The calibration process results in a standard deviation of 10.5% for reserve risk. That standard deviation is capped at 5%.