



EIOPA-BoS-20/107
2 March 2020

Technical specification of the information request on the 2020 review of Solvency II Holistic impact assessment

Version 1.1 (updated on 18 March 2020):

- Deadline for participants extended to 1 June (originally 31 March)
- New footnotes 14 and 15 on page 27 for clarification on the segments listed in the MCR section

1. Introduction

1. The European Commission issued in February 2019 a request to EIOPA for technical advice on the review of Solvency II.¹ EIOPA will provide this advice until June 2020. The advice will be accompanied by an impact assessment quantifying in particular the impact of proposed changes on the solvency position of insurance and reinsurance undertakings. In order to collect data for the impact assessment EIOPA carries out information requests to the insurance industry.
2. EIOPA published on 15 October 2019 a consultation paper on the Opinion that will set out its advice on the review of Solvency II (in the following just called “consultation paper”). Stakeholders provided comments on the consultation paper by 15 January 2020. In parallel to the consultation EIOPA received data on the impact of single proposals of the consultation paper from the insurance industry and national supervisory authorities.
3. The objective of this new information request is to collect data on the combined impact of proposals with a material impact on the solvency position of insurance and reinsurance undertakings. Such a holistic impact assessment is explicitly requested in the call for advice of the European Commission.
4. The consultation paper set out EIOPA’s tentative proposals to change Solvency II. In light of the consultation feedback and the data received so far EIOPA further developed its position in order to arrive at the proposals included in this information request. Nevertheless, **EIOPA’s position as reflected in this information request is not final**. The information collected through the information request will inform EIOPA’s final decision on the advice on the review of Solvency II in June 2020.
5. This information request is about the combined impact of changes relating to the derivation of the following parts of the solvency calculations:
 - Risk-free interest rate term structures
 - Technical provisions
 - Own funds
 - Solvency Capital Requirement
 - Minimum Capital Requirement
6. The information request does not cover all the proposals to change the solvency calculation that EIOPA currently intends to put forward because proposals with expected non-material impact have not been included.
7. This information request is addressed to a sample of insurance and reinsurance undertakings.

2. Timing

8. Insurance and reinsurance undertakings participating in the information request should submit results to their national supervisory authorities. After validating the submissions, national supervisory authorities will report this information to EIOPA.
9. EIOPA plans to disclose results from the information request as part of its Opinion on the 2020 review of Solvency II in June 2020. Results will only be disclosed in

¹ https://ec.europa.eu/info/files/190211-request-eiopa-technical-advice-review-solvency-2_en

anonymised or aggregated way in order to ensure the confidentiality of company data.

10. The timeline for these steps is as follows:

2 March 2020	Launch of the information request
1 June 2020	Deadline for participants to submit results to their national supervisory authorities
2 to 15 June 2020	Validation of results by national supervisory authorities
15 June 2020	Deadline for reporting of information from national supervisory authorities to EIOPA

Participants should stand ready to reply to possible requests of their national supervisory authorities for clarifications or resubmissions after the submission until June 2020.

3. Specification of the sample

11. The information request is addressed to a representative sample of insurance and reinsurance undertakings subject to Solvency II. The sample should be representative of:

- the different types of undertakings (life, non-life, composite insurance undertakings and reinsurance undertakings),
- the use of the standard formula and/or internal models to calculate the SCR,
- the use of matching adjustment and the volatility adjustment,
- risk profile and risk management of undertakings in particular the extent of asset liability matching and use of interest rate risk derivatives.

National supervisory authorities should aim for a sample that is representative with regard to the different sizes of undertakings (small, medium, large).

12. For each EEA country the undertakings belonging to the sample will be selected by the national supervisory authorities and should cover at least 50% of the business of undertakings in the local market subject to Solvency II (measured in technical provisions for life insurance obligations and measured in premiums for non-life insurance obligations). Changes to the scope of Solvency II (proposed amendments to Article 4 of the Solvency II Directive) can be taken into account in composing the sample and determining its market share.

4. General approach of the information request

13. Participants are requested to provide information on their solvency position in accordance with three scenarios:

- Baseline scenario: the current legal framework for Solvency II
- Scenario 1: changes to the baseline in accordance with EIOPA's tentative advice
- Scenario 2: the same as scenario 1, but without a change to the interest rate risk calibration of the SCR standard formula

14. For each scenario the following type of information needs to be provided:

- in case the VA is used the undertaking-specific VA per currency
 - technical provisions (best estimate, risk margin, technical provisions calculated as a whole)
 - available own fund and eligible own funds to cover SCR and MCR
 - the SCR and, to the extent it is calculated with the standard formula, information on modules, sub-modules, adjustments for loss-absorbing capacity of deferred taxes and technical provisions and the capital requirement for operational risk
 - the MCR and its components (floors, ceiling, linear life component, linear non-life component)
 - in addition, background information on some of these calculations.
15. In addition to the scenarios participants that calculate their capital requirement for spread risk with the SCR standard formula and apply the VA should recalculate the spread risk sub-module while allowing for a dynamic VA.
 16. In addition to the scenarios participants should provide information on the maximum impact of an own funds buffer for compressed spreads that EIOPA is currently considering.
 17. In addition to the scenarios participants that calculate their capital requirement for interest rate risk with the SCR standard formula are invited to calculate that requirement in accordance with two alternative calibrations. These calculations are optional.
 18. The reference date for the calculation of the scenarios is **31 December 2019**.
 19. Participants should submit their results to national supervisory authorities in the provided Excel reporting template.
 20. These technical specifications are supplemented by an Excel file Technical Information that sets out the following information for scenarios 1 and 2:
 - Basic risk free interest rate term structures
 - Risk-free interest rate term structures including a VA
 - Risk-corrected spreads and scaling factors for the calculation of volatility adjustments
 - SCR standard formula shocks for the interest rate risk sub-module

Furthermore, this Excel file on hidden tabs includes detailed information on the calibration parameters of the new method proposed for the basic risk free interest rate term structures as described in 5.1.1.

5. Technical specification of scenario 1

5.1. Risk-free interest rate term structures

5.1.1. Basic risk-free interest rates

21. For the valuation of insurance and reinsurance obligations the risk-free interest rate term structures set out in the file Technical Information should be used. These term structures were derived with the alternative extrapolation method specified

in annex 2.6 of the consultation paper and take into account the implications from the DLT assessment set out in section 2.2.4.4.5 of that paper.²

22. For currencies where the Technical Information file does not provide term structures no change compared to the base case should be assumed.

5.1.2. Volatility adjustment

23. Participants which apply the VA should recalculate the VA applicable to their undertaking and use them to determine their solvency position. They should report about the VA calculation in the tab "Volatility adjustment".
24. Note that as part of EIOPA's tentative proposal for the design of the VA, the VA will consist of a permanent VA that can be increased by a macroeconomic VA. The macroeconomic VA is calculated as a country specific increase, which is triggered whenever the country risk corrected spread (measured on the basis of the national representative portfolio) is higher than both an absolute and a relative threshold. For further background please see option 7 in the consultation paper, paragraph 2.478 ff.
25. As at year-end 2019, the macroeconomic VA would not have been triggered for any country. The following thus only describes the permanent VA.
26. As the first step of the VA calculation, participants need to determine the relevant currencies of their liabilities. Information reported by currency shall cover the five most material currencies of the business³. These currencies should be selected in row 10. Row 12 reflects the value of the gross best estimate in the respective currency, but should be given in the reporting currency. For this purpose, the values of the best estimate liabilities should be based on the term structures with the alternative extrapolation method without VA and without transitional measures. In row 14, the average modified duration (in years) of the insurance and reinsurance obligations underlying the best estimate should be specified. The duration is background information that is not used in the calculation of the VA.
27. Row 11 reflects the value of the fixed income investments in the respective currency, but should be given in the reporting currency. In row 13, participants need to specify the average duration of the fixed income investments. For this purpose, the term 'duration' is to be interpreted in the same manner as in cell C0360 in the 'List of assets' template S.06.02.⁴ The duration is background information that is not used in the calculation of the VA.
28. To determine the VA, the following input information is needed:

² For the Swedish krona a different mean reversion parameter of 40% was used to derive the term structures. This reflects the higher speed of convergence used to derive the currently applicable risk-free interest rate term structures for that currency.

³ Where undertakings have only liabilities in one currency or business in a particular currency already makes up more than 90% of the business, it is sufficient to fill in column C, the others can be left blank. Where undertakings have liabilities in more than one currency, a reporting by currency is requested (where currencies are added in descending order of materiality) up and until the business reported exceeds the threshold of 90% or the maximum of five currencies is reached.

⁴ Note that, according to the Commission Implementing Regulation (EU) 2015/2450, this cell is defined as the 'residual modified duration' (modified duration calculated based on the remaining time for maturity of the security, counted from the reporting reference date). For assets without fixed maturity the first call date shall be used. The duration shall be calculated based on economic value.

- The risk-corrected spread of the representative portfolio of the relevant currency;
- The scaling-factor for the relevant currency.

Note that, within the calculation of the VA, the scaling-factor leads to an increase of the value of the VA. For details see paragraph 59.

29. The input data referred to in paragraph 28 are included in the Technical Information file provided by EIOPA for the holistic impact assessment.
30. To determine the permanent VA by currency, the undertaking has to calculate the following two factors:
- application ratio 4 (AR₄)
 - application ratio 5 (AR₅).

The names of these application ratios are chosen in line with the options on the VA set out in the consultation paper.

Calculation of application ratio 4

31. The application ratio 4 aims to correct for mismatches in the fixed income assets and insurance liabilities in respect of duration and volume. For further background on this ratio, please cf. the consultation paper, paragraph 2.361 ff. The application ratio 4 is calculated as

$$AR_4 = \min \left\{ \frac{PVBP(MV_{i,c}^{FI})}{PVBP(BEL_{i,c})}; 1 \right\}$$

where

- $MV_{i,c}^{FI}$ denotes the market value of undertaking's i investment in fixed income investments in currency c^5 ; the fixed income investments should be identified on the basis of their CIC, according to the following table:

CIC third position	Asset class	Fixed income Assets
1	Government bonds	Yes
2	Corporate bonds	Yes
3	Equity	No
4	Collective Investment Undertakings	For investment funds look through should be performed and fixed income assets within should be identified. If no look through is possible, only debt funds (CIC 42) are eligible
5	Structured notes	Only CIC 52 (structured notes mainly exposed to interest rate risk) and 54 (structured notes mainly exposed to credit risk)
6	Collateralised securities	Only CIC 62 (collateralised securities mainly exposed to interest rate risk) and 54 (collateralised securities mainly exposed to credit risk)

⁵ Note that undertakings do not have to assign investments to either backing or not backing the liabilities when determining $MV_{i,c}^{FI}$, but only consider the investments in the currency of the liabilities.

7	Cash and deposits	No
8	Mortgages and loans	Yes
9	Property	No

- $PVBP(BEL_{i,c})$ equals the price value of a basis point of the best estimate of the liabilities of undertaking i in currency c ;
- $PVBP(MV_{i,c}^{FI})$ equals the price value of a basis point of the fixed income investments of undertaking i in currency c .

32. For the purpose of the data collection, where undertakings have already participated in the information request of EIOPA in autumn 2019 and have already calculated the application ratio 4 as at year end 2018, they can use that application ratio also for this holistic impact assessment provided that according to their assessment the application ratio 4 would not materially change for year end 2019. In this case, the undertaking should provide an explanation in its response.
33. Similarly, for the purpose of the data collection, where according to the undertaking's assessment the spread duration of the assets exceeds the duration of the liabilities and the volume of fixed income compares to the volume of the best estimate, the application ratio 4 can be set to 1. In this case, the undertaking should provide an explanation in its response.

Calculation of $PVBP(BEL_{i,c})$

34. The price value of a basis point of the best estimate of the liabilities should be calculated as a sensitivity with regard to the value of the VA. This means that $PVBP(BEL_{i,c})$ is calculated as the difference in the value of the best estimate⁶ with and without applying the part of the VA that does not depend on the undertaking specific application ratios: $GAR \cdot Scale_c \cdot RC_{S_c}$:

$$PVBP(BEL_{i,c}) = \frac{BEL_{i,c}(RFR_c) - BEL_{i,c}(RFR_c + GAR \cdot Scale_c \cdot RC_{S_c})}{GAR \cdot Scale_c \cdot RC_{S_c}}$$

where

- RFR_c denotes the basic risk-free interest rate term structure for currency c
- $RFR + GAR \cdot Scale_c \cdot RC_{S_c}$ denotes the basic risk-free interest rate term structure, to which a volatility adjustment of size $GAR \cdot Scale_c \cdot RC_{S_c}$ is applied⁷
- RC_{S_c} denotes the risk corrected spread of the reference portfolio in currency c
- GAR denotes the general application ratio. It is set to 85%.
- $Scale_c$ is a scaling factor for the relevant currency reference portfolio bringing the weight of fixed income instruments to 1. For details see paragraph 59.

35. To determine $PVBP(BEL_{i,c})$, a revaluation of the best estimate needs to be performed taking into account the effect of future discretionary benefits (i.e. including the loss-absorbing capacity of technical provisions). For the purpose of that calculation, asset values stay unchanged - no impact of a change in credit spreads on undertakings assets should be taken into account. Where an

⁶ not including TP as a whole and net of reinsurance recoverables.

⁷ i.e. $GAR \cdot Scale_c \cdot RC_{S_c}$ is applied as the current VA up to the last liquid point (LLP) and then extrapolated to the UFR

undertaking has liabilities denoted in several currencies, $PVBP(BEL_{i,c})$ should be determined separately for each currency. Please note that it is expected that all figures are entered in your reporting currency to the Excel template.

Calculation of $PVBP(MV_{i,c}^{FI})$

36. The price value of a basis point of the fixed income investments of the undertaking should be calculated based on the difference in their market value against current spreads and when spreads would have increased by the part of the VA that does not depend on the undertaking specific application ratio, i.e. $GAR \cdot Scale_c \cdot RC_{S_c}$:

$$PVBP(MV_{i,c}^{FI}) = \frac{MV_{i,c}^{FI}(CS) - MV_{i,c}^{FI}(CS + GAR \cdot Scale_c \cdot RC_{S_c})}{GAR \cdot Scale_c \cdot RC_{S_{i,c}}}$$

where CS denotes the current level of spreads.

37. The application ratio 4 is on this basis derived as a result.

Calculation of application ratio 5

38. The application ratio 5 intends to account for the illiquidity characteristics of liabilities in the valuation of technical provisions. For further background on this application ratio, please cf. the consultation paper, paragraph 2.396 ff. For the purpose of this information request, the application ratio 5 is calculated following a "bucketing approach" as described below.
39. Participants should determine application ratio 5 for each relevant currency, taking into account the characteristics of the undertaking's individual insurance obligations in that currency.
40. As the determination of illiquidity intends to assess the stability of insurance liabilities and is not expected to change materially over time, the calculation of AR_5 can be based on the information as at the previous year end. However, where the illiquidity of liabilities is expected to have changed materially since then, the determination of AR_5 should have regard to the information as at the reference date.
41. To determine AR_5 for life obligations, the following four steps have to be performed. For non-life obligations only the steps 3 and 4 are relevant.

Step 1: Only life obligations - Assessment of surrender/cancellation options

42. Under this step, obligations contained in a homogeneous risk group (HRG) have to be classified according to their surrender/cancellation options.
- Group 1:
 - HRGs where no obligations contain surrender or cancellation options
 - HRGs where no obligations include surrender or cancellation options where the take up of the surrender option or the cancellation of the contract can ever lead to a loss in own funds of the insurance or reinsurance undertaking
 - Group 2: All other HRGs
43. As a result of step 1, each HRG should be allocated to one of the two groups described above.

44. For the purposes of paragraph 42, all options should be considered for which an increase or a decrease in the option exercise rate results in payments arising earlier than expected. This should at least include all legal or contractual policyholder rights:
- to fully or partly terminate or surrender the insurance cover⁸;
 - to permit the insurance policy to lapse; and
 - to restrict or extend the length of the insurance cover.

Step 2: Only life obligations - Assessment of underwriting risks

45. Under this step, the relevance/materiality of specific underwriting risks is assessed. For this purpose, the change of the best estimate for each homogeneous risk group (HRG) within the undertaking is assessed with respect to the following standard formula risk sub-modules⁹:
- a) Mortality risk sub-module according to Art. 137 Delegated Regulation
 - b) Risk of a permanent increase in lapse rates in the lapse risk sub-module according to Art. 142 Delegated Regulation
 - c) Health mortality risk sub-module according to Art. 152 Delegated Regulation
 - d) Risk of a permanent increase in SLT health lapse rates of the SLT health lapse risk sub-module according to Art. 159 Delegated Regulation
46. Where each of these risks has an impact of less than 5% on the best estimate, the liabilities in the homogeneous risk group are considered to have "low best estimate impact of underwriting risk" for the purpose of determining the illiquidity of liabilities.
47. The next steps have to be performed for all obligations including non-life obligations.

Step 3: All obligations - Bucketing of obligations

48. The following applies to each homogeneous risk group (HRG).
49. The insurance and reinsurance obligations belonging to a HRG of life obligations are classified as "category I" liabilities where:
- i. the obligations of the HRG belong to group 1 (according to step 1) **and**
 - ii. the obligations of the HRG are considered to have "low best estimate impact of underwriting risk" according to step 2
50. Where for a HRG of life obligations the insurance and reinsurance liabilities comply with condition ii but not condition i set out above, the liabilities in the HRG are classified as "category II" liabilities.
51. All other life obligations as well as all non-life insurance obligations are classified as "category III" liabilities.

⁸ For annuity obligations, this includes lump-sum options

⁹ These standard formula shocks are also applied by internal model users.

52. This can be summarized as follows:

Illiquidity category	Criteria	Application factor
Category I – High illiquidity	<ul style="list-style-type: none"> No surrender/cancellation options or where the take up of the surrender option or the cancellation of the contract can never lead to a loss in own funds for the insurer Low best estimate impact mortality risk 	100% (AR _{5,I})
Category II – Medium illiquidity	<ul style="list-style-type: none"> Low best estimate impact of permanent increase in lapse rates Low best estimate impact of mortality risk 	75% (AR _{5,II})
Category III – Low illiquidity	Contracts that do not fall into category I or II	60% (AR _{5,III})

Step 4: All obligations - Determination of AR5

The final application ratio 5 (AR₅) is then determined by aggregating the application factors AR_{5,I}, AR_{5,II} and AR_{5,III}.

AR₅ is a weighted average of the application factors that are allocated to the different illiquidity categories:

$$AR_5 = \max\left(\min\left(\frac{BE_I \cdot AR_{5,I} + BE_{II} \cdot AR_{5,II} + BE_{III} \cdot AR_{5,III}}{BE_I + BE_{II} + BE_{III}}; 100\%\right); 60\%\right)$$

where

- BE_I is the best estimate of the category I liabilities;
- BE_{II} is the best estimate of the category II liabilities and
- BE_{III} is the best estimate of the category III liabilities.

53. These best estimates are determined using the basic risk-free rates without the volatility adjustment and without transitionals, where the basic risk-free rate is the term structure based on the alternative extrapolation method.

54. The best estimate for these different categories should be reported in rows 41 to 43.

55. Note that this formula also applies in case the best estimate for a category is negative. In this case the overall application ratio would be reduced and a smaller VA would finally apply.

56. The final application ratio 5 should be provided in row 30.

57. Participants are invited to comment on the method to classify illiquid liabilities used in the information request.

Calculation of the VA

58. The permanent VA is finally determined on that basis and given in row 32. It is calculated as

$$VA = GAR \cdot AR_4 \cdot AR_5 \cdot Scale_c \cdot RC_{S_c}$$

where

- GAR is the general application ratio
- AR_4 denotes the application ratio 4
- AR_5 denotes the application ratio 5
- $Scale_c$ denotes the scaling-factor for currency c
- RC_{S_c} denotes the risk-corrected spread of the representative portfolio for currency c

For all currencies the macroeconomic VA is zero at the end of 2019. The VA therefore coincides with the permanent VA.

Background on the derivation of risk-corrected spreads and scaling factors

59. The scaling-factor $Scale_c$ is determined as:

$$Scale_c = \frac{1}{w_{gov,c} + w_{corp,c}}$$

where

- $w_{gov,c}$ denotes the weight of the government bond portfolio in the representative portfolio for currency c ; and
- $w_{corp,c}$ denotes the weight of the corporate bond portfolio in the representative portfolio for currency c

60. For the determination of the risk-corrected spread RC_{S_c} EIOPA computed the risk correction RC of a spread S as follows:

61. For government bonds issued by EEA countries, the risk correction is determined as

$$RC = 30\% \cdot \min(S^+, LTAS^+) + 20\% \cdot \max(S^+ - LTAS^+, 0)$$

where

- S denotes the average spread of government bonds in the respective sub-class¹⁰ of government bonds in the representative portfolio for currency c ;
- $S^+ = \max(S, 0)$ is the maximum of S and zero;
- $LTAS$ denotes the long-term average spread of government bonds in the respective sub-class of government bonds in the representative portfolio for currency c ;
- $LTAS^+ = \max(LTAS, 0)$ is the maximum of the long-term average spread and zero.

62. For other fixed income investments in the representative portfolio, the risk correction is determined as

$$RC = 50\% \cdot \min(S^+, LTAS^+) + 40\% \cdot \max(S^+ - LTAS^+, 0)$$

where

- S denotes the average spread of fixed income investments in the respective sub-class¹¹ within the representative portfolio for currency c ;
- $S^+ = \max(S, 0)$ is the maximum of S and zero;
- $LTAS$ denotes the long-term average spread of fixed-income investments in the respective sub-class within the representative portfolio for currency c ;
- $LTAS^+ = \max(LTAS, 0)$ is the maximum of the long-term average spread and zero.

5.2. Technical provisions

5.2.1. Best estimate

5.2.1.1. Contract boundaries

63. Best estimates should be calculated under the assumption that the exception of the third paragraph of Article 18(3) Delegated Regulation is only applicable where the undertaking does not have the right to repeat the individual assessment, i.e. as if that paragraph read:

"However, in the case of life insurance obligations where an individual risk assessment of the obligations relating to the insured person of the contract is carried out at the inception of the contract and the undertaking does not have the right to repeat the assessment before amending the premiums or benefits, insurance and reinsurance undertakings shall assess at the level of the contract whether the premiums fully reflect the risk for the purposes of point (c)."

64. Participants should indicate in the reporting template whether they apply that exception and in that case whether this amendment increases, decreases or leaves unchanged their best estimates.

¹⁰ Cf. section 8 in the technical documentation of the methodology to derive EIOPA's risk-free interest rate term structures

¹¹ Cf. section 8 in the technical documentation of the methodology to derive EIOPA's risk-free interest rate term structures

5.2.1.2. Expenses

65. Best estimates should be calculated using realistic assumptions on new business for the projection of expenses, i.e. as if Article 31(4) Delegated Regulation read:
"4. Expenses shall be projected taking into account the decisions of the administrative, management or supervisory body of the undertaking with respect to writing new business".¹²
66. Participants should indicate in the reporting template whether this amendment increases, decreases or leaves unchanged their best estimates.

5.2.2. Risk margin

67. Risk margins should be calculated in accordance with the following modified calculation (compare Article 37 Delegated Regulation):

$$RM_{scenario} = CoC \cdot \sum_{t \geq 0} \frac{SCR(t) \times \max(\lambda^t, 0.5)}{(1+r(t+1))^{t+1}}, \text{ where } \lambda = 0.975$$

68. Where undertakings apply one of the simplifications for the calculation of the risk margin, which are detailed in the Technical Annex IV of the EIOPA Guidelines on the Valuation of Technical Provisions (EIOPA-BoS-14/166), the following adaptations should be made:

- Level (1) of the hierarchy of simplifications: approximate the individual risks or sub-risks within some or all modules and sub-modules to be used for the calculation of future SCRs

Application of the λ^t parameter for each future SCR, as defined for the full calculation.

- Level (2) of the hierarchy of simplifications: approximate the whole SCR for each future year, e.g. by using a proportional approach

Application of the λ^t parameter for each future SCR, as defined for the full calculation.

- Level (3) of the hierarchy of simplifications: estimate all future SCRs "at once", e.g. by using an approximation based on the duration approach

Multiply the amount obtained with the simplification by a parameter $\lambda^{\frac{Duration}{2}}$.

- Level (4) of the hierarchy of simplifications: approximate the risk margin by calculating it as a percentage of the best estimate

Multiply the amount obtained with the simplification by a parameter λ^1 .

69. These simplifications above should only be used if they are currently used by the undertaking and considered as appropriate simplifications.
70. In addition to the recalculated risk margin, participants are requested to report the value of the future SCR amounts ($SCR(t)$) which were used as a basis to calculate the risk margin in the Scenario 1 calculation, as well as the corresponding duration of insurance liabilities. The template sets different granularity of the information request depending on the methodology applied by the undertaking.

¹² This amendment includes in the Delegated Regulation the clarification already provided by EIOPA in Q&A 1037.

5.3. Own funds

71. This section is only relevant for undertakings that use the matching adjustment.
72. The own funds of the whole undertaking will be calculated ignoring the adjustment prescribed in Art. 81 Delegated Regulation with regard to matching adjustment portfolios. That means the excess of assets over liabilities, obtained by comparing the restricted own-fund items within the matching adjustment portfolio and the notional Solvency Capital Requirement for the matching adjustment portfolio, should not be reduced.

5.4. Solvency Capital Requirement

5.4.1. Standard formula

5.4.1.1. Interest rate risk calibration

73. The interest rate risk sub-module should be calculated based on the interest rate shocks for scenario 1 set out in the file Technical Information. The shocks are derived in accordance with paragraphs 5.27 to 5.35 of the consultation paper.
74. For currencies where the Technical Information file does not provide interest rate shocks no change compared to the base case should be assumed.

5.4.1.2. Correlation between spread and interest rate risk

75. The SCR standard formula correlation parameter for interest rate risk (downward shock) and spread risk should be set to 0.25 instead of 0.5. The parameter for interest rate risk (upward shock) and spread risk should stay at 0. All other correlation parameters remain unchanged. In particular, the two-sided correlation in the market risk module according to Art. 164 Delegated Regulation remain unchanged.

5.4.1.3. Forborne and defaulted loans

76. Forborne and defaulted loans for which a credit assessment by a nominated ECAI is not available should not be included in the spread risk sub-module of the standard formula. Instead their credit risk should be captured in the counterparty default risk module as type 2 exposures. For that purpose the loss given default of forborne and defaulted loans should be calculated as follows:

$$\text{LGD} = 6.67 \cdot \max(\text{Loan value} - \text{Recoverables}; 36\% \cdot \text{Loan value});$$

where

- *Loan value* denotes the value of the loan in accordance with Article 75 of the Solvency II Directive;
 - *Recoverables* denotes the actualised value of the debt recoveries calculated according to the chapter 6 of the EBA guidelines EBA/GL/2017/16.
77. For the calculation of the capital requirement for counterparty default risk, these loss given default amounts should enter the second term of the formula set out in Article 202 of the Delegated Regulation, i.e. they are multiplied with 15% to determine the decrease of value in the stress scenario described in that article.

78. In the tab "SF only – Forborne+def. loans" participants should provide the following additional information:
79. In order to compare the capital requirements for forborne and defaulted loans in the base case and under scenario 1, the gross SCR for these loans in columns J and K.
80. Information on the forborne and defaulted loans for which a credit assessment by a nominated ECAI is not available. For that purpose the first 50 exposures are to be reported in decreasing value order (i.e. from the highest value to the lowest).
81. Defaulted loans are defined in Article 178 of the CRR (Regulation (EU) No 575/2013), meanwhile forborne loans are laid down in par. 163 of Annex V, Part II of the Commission Implementing Regulation (EU) 2015/227.
82. The column "Stress_(i)" should include the relative decrease factors used by the company to calculate the actual capital absorption, pursuant to Article 176(4) of the Delegated Regulation.
83. The columns "Loan value" and "Recoverables" should be completed in line with the specification provided above.

5.4.1.4. Recognition of partial guarantees on mortgage loans

84. In the case of guarantees provided by a counterparty which is in turn guaranteed by one of the counterparties mentioned in points (a) to (d) of the first subparagraph of Article 180(2) Delegated Regulation, the requirements in Article 215(d) of the Delegated Regulation shall be considered to be satisfied where the insurance undertaking has the right to obtain in a timely manner a provisional payment by the first guarantor that meets both the following conditions:
 - it represents a robust estimate of the amount of the loss, including losses resulting from the non-payment of interest and other types of payment which the borrower is obliged to make, that the insurance undertaking is likely to incur;
 - it is proportional to the coverage of the guarantee.

5.4.1.5. No recognition of contingent capital or contingent convertible bonds as risk-mitigation techniques

85. Contingent capital or contingent convertible bonds should not be recognised as risk-mitigation techniques in the calculation of the SCR with the standard formula.

5.4.1.6. Additional specification on the recognition of risk-mitigation techniques in the standard formula

86. Risk-mitigation techniques should only be recognised in the calculation of the SCR standard formula if they comply, in addition to the current legal requirements, with the following requirements:

The undertaking shall be able to show the extent to which there is an effective transfer of risk in order to ensure that any reduction in SCR or increase in available capital resulting from its risk transfer arrangements is commensurate with the change in risk that the insurer is exposed to.

The SCR and available capital shall reflect the economic substance of the arrangements that implement the technique. When calculating the Basic Solvency Capital Requirement, insurance or reinsurance undertakings shall only take into account risk-mitigation techniques as referred to in Article 101(5) of Directive 2009/138/EC where:

- *the reduction in the SCR requirements, or increase in the available capital is commensurate with the extent of risk transfer, and*
- *there is an appropriate treatment within the SCR of any corresponding risks that are acquired in the process.*

5.4.1.7. Long-term equity investments

87. The calculation of the equity risk sub-module should take into account the Long Term Equity (LTE) provisions according to Article 171a of the Delegated Regulation. However, the criteria set out in the provisions are amended. Participants should assess the applicability of the amended criteria for the application of the LTE provisions and identify those equity that can be classified as LTE.
88. The calculation of the equity risk sub-module includes the Long Term Equity (LTE) provisions according to Article 171a of the Delegated Regulation.
89. In the tab "SF only - Equity risk" information is requested on the composition of the equity risk sub module. Information has to be reported in the base case (based on the existing requirements on equity risk and LTE) as well as under scenario 1 (with alternative requirements on the application of LTE as outlined below). Information on the base case is collected in cells D13 to F33 and in cells D36 to F39, information on the equity risk under scenario 1 is collected in cells H13 to J33 and in cells H36 to J39.
90. For the purpose of applying LTE under scenario 1, participants should assess the applicability of the amended criteria for the application of the LTE provisions and identify those equity that can be classified as LTE.
91. The following table provides an overview of the current requirements compared to the amendments for the purpose of scenario 1:

Existing requirements (base case scenario)	Change in requirements that form the basis for scenario 1
1. For the purpose of this Regulation, a sub-set of equity investments may be treated as long-term equity investments if the insurance or reinsurance undertaking demonstrates, to the satisfaction of the supervisory authority, that all of the following conditions are met:	
a) the sub-set of equity investments as well as the holding period of each equity investment within the sub-set are clearly identified;	The requirement is changed as follows: the sub-set of equity investments is clearly identified;
b) the sub-set of equity investment is included within a portfolio of assets which is	For the purpose of the holistic assessment, undertakings should assess the relevance of the LTE provision without this criterion. So numbers

<p>assigned to cover the best estimate of a portfolio of insurance or reinsurance obligations corresponding to one or several clearly identified businesses, and the undertaking maintains that assignment over the lifetime of the obligations;</p>	<p>provided in cells H13 to J33 and in cells H36 to J39 should be filled in as if that criterion would not apply.</p> <p>In addition, undertakings are asked to report the value of equity in scope of LTE if this criterion applies. This information is to be reported in cells D46 to F47.</p>
<p>c) the portfolio of insurance or reinsurance obligations, and the assigned portfolio of assets referred to in point (b) are identified, managed and organised separately from the other activities of the undertaking, and the assigned portfolio of assets cannot be used to cover losses arising from other activities of the undertaking;</p>	<p>Cf. above.</p>
<p>d) the technical provisions within the portfolio of insurance or reinsurance obligations referred to in point (b) only represent a part of the total technical provisions of the insurance or reinsurance undertaking;</p>	<p>Deletion of the requirement.</p>
<p>e) the average holding period of equity investments in the sub-set exceeds 5 years, or where the average holding period of the sub-set is lower than 5 years, the insurance or reinsurance undertaking does not sell any equity investments within the sub-set until the average holding period exceeds 5 years;</p>	<p>The requirement is changed as follows:</p> <p>A policy for long term investment is set up for each long-term equity portfolio and reflects undertaking's commitment to hold the global exposure to equity in the sub-set of equity investment for a period that exceeds 5 years in average. Undertakings shall not use high frequency algorithmic trading techniques¹³.</p> <p>For the purpose of the information request, undertakings should consider if this policy is intended to be put in place.</p>
<p>f) the sub-set of equity investments consists only of equities that are listed in the EEA or of unlisted equities of companies that have their</p>	<p>No change</p>

¹³ High frequency algorithmic trading techniques in accordance with Article 4(1)(40) of the Directive 2014/65/EU.

<p>head offices in countries that are members of the EEA;</p>	
<p>g) the solvency and liquidity position of the insurance or reinsurance undertaking, as well as its strategies, processes and reporting procedures with respect to asset-liability management, are such as to ensure, on an ongoing basis and under stressed conditions, that it is able to avoid forced sales of each equity investments within the sub-set for at least 10 years;</p>	<p>The requirement is changed as follows:</p> <p>Where undertakings can demonstrate that either</p> <ul style="list-style-type: none"> i. particular homogeneous risk groups (HRGs) of the life insurance and reinsurance liabilities belongs to category I as defined for the purpose of the calculation of the VA (see paragraph 49) and the Macaulay duration of the liabilities in this HRG exceeds 12 years or ii. a sufficient liquidity buffer is in place for the portfolio of non-life insurance and reinsurance liabilities and the assigned portfolio of assets; <p>The sub-set of equity investments backing the liabilities identified in i. or ii. can be applied a risk charge of 22% provided the other conditions of this Article are met.</p> <p>The calculation of the liquidity buffer is outlined in paragraphs 93 to 96.</p>
<p>h) the risk management, asset-liability management and investment policies of the insurance or reinsurance undertaking reflects the undertaking's intention to hold the sub-set of equity investments for a period that is compatible with the requirement of point (e) and its ability to meet the requirement of point (g).</p>	<p>An addition is made to the requirement:</p> <p>Those elements are reported in the ORSA of the undertakings.</p> <p>For the purpose of the data collection, no such report is requested.</p>
	<p>i) the sub-set of equity investments shall be properly diversified in such a way as to avoid excessive reliance on any particular issuer or group of undertakings and excessive accumulation of risk in the portfolio as a whole.</p>
<p>2. Where equities are held within collective investment undertakings or within alternative investment funds referred to in points (a) to (d) of Article 168(6), the conditions set out in paragraph 1 of this Article may be assessed at the level of the funds and not of the underlying assets held within those funds.</p>	<p>No change</p>
<p>3. Insurance or reinsurance undertakings that treat a sub-set of equity investments as long-</p>	<p>No change</p>

<p>term equity investments in accordance with paragraph 1 shall not revert back to an approach that does not include long-term equity investments. Where an insurance or reinsurance undertaking that treats a sub-set of equity investments as long-term equity investments is no longer able to comply with the conditions set out in paragraph 1, it shall immediately inform the supervisory authority and shall cease to apply Article 169(1)(b), (2)(b), (3)(b) and (4)(b) to any of its equity investments for a period of 36 months.’;</p>	
	<p>4. Controlled intra-group equity investments shall be excluded from the sub-set of equity investments.</p>

92. Information on the application of LTE should be provided in the tab “SF only - Equity risk”. Where undertakings apply the provision to equity backing their life obligations, they should provide more information on the life obligations identified for the purpose of criteria g) i. In particular, undertakings are in this case asked to provide information on the Macaulay duration and best estimate per HRG in category I (for further background on category I please cf. paragraph 49) in rows 66 to 5065.
93. The liquidity buffer used for the purpose of criteria g)ii should be tested on the level of the whole non-life insurance and reinsurance liabilities. The liquidity buffer should be calculated on the basis of the assets backing the undertaking’s non-life insurance and reinsurance obligations. Where the liquidity buffer as outlined in the following paragraph is bigger or equal than 1, all equity backing the non-life insurance and reinsurance obligations fall under the scope of the provisions of Article 171a can apply a risk charge of 22% (unless the other criteria set out above are met).
94. Where undertakings apply the provision to equity backing non-life obligations they should provide more information on the calculation of the liquidity buffer identified for the purpose of criteria g) ii. The liquidity buffer for the purpose of criteria g) is to be calculated as follows:
- $$\frac{HQLA}{BE_portfolio}$$
- where the numerator are high-quality liquid assets (HQLA) backing the non-life liabilities, applying a liquidity haircut as defined below;
 - the denominator is the non-life best estimate liabilities net of reinsurance.
95. HQLA is comprised of two categories of assets: “Level 1” and “Level 2” assets. Level 1 assets can be included without limit, while a haircut is applied to Level 2 assets which can comprise up to 40% of the stock of HQLA. Level 2 assets are further split into Level 2A and Level 2B. Level 2B assets cannot represent more than 15% of the stock of HQLA.

96. The list of HQLA for the purpose of the data collection is as follows.

Item		Haircut
Level 1 assets	Cash and cash equivalent	0%
	Bonds and loans from: <ul style="list-style-type: none"> • The European Central Bank • EU Member States' central government and central banks denominated and funded in the domestic currency of that central government and the central bank • Multilateral development banks referred to in paragraph 2 of Article 117 of Regulation (EU) No 275/2013 • International organisations referred to in Article 118 of Regulation (EU) No 275/2013 	0%
Level 2A assets	Bonds and loans rated CQS 0 or 1, excluding those from financial institutions	15%
Level 2B assets	Covered bonds rated CQS 0 or 1, excluding those emitted by a bank which is part of the same group	25%
	Qualifying RMBS	50%
	Bonds and loans rated CQS 2 or 3, excluding those from financial institutions	50%

5.4.1.8. Diversification effects regarding matching adjustment portfolios

97. This section is only relevant for undertakings that use the matching adjustment.

98. The SCR of the whole company should be calculated considering 100% diversification benefits in matching adjustment portfolios, that is, SCR calculated applying full diversification benefits regarding the matching adjustment portfolios and the rest of portfolios.

5.4.1.9. Recognition of non-proportional reinsurance in non-life premium risk

99. Participants should take into account an improved recognition of the risk mitigating effect of non-proportional reinsurance in the SCR for non-life premium and reserve risk and provide data on the underlying calculations, including on premium risk, both gross and net of reinsurance.

100. In order to recognise non-proportional reinsurance, the SCR is first calculated for the premium risk gross of reinsurance and then corrected for the reinsurance covers for premium risk as far as the reinsurance contracts of the undertaking can be recognized for this purpose. The gross-to-net correction is risk-based, as it depends on the actual reinsurance in place.
101. The new approach is based on a formula that can be applied directly if the non-proportional reinsurance covers a layer of the possible losses of the original premium risk between a retention and a limit.
102. To determine the reduction per segment, a partition of the portfolio of insurance policies is necessary, according to the reinsurance contracts in force. Therefore, the complete portfolio is divided in groups of insurance policies for which a reinsurance contract is present, and a rest group.
103. The final reduction per segment will follow by summing the results of the formula over all groups of insurance policies within that segment.

Recognition of reinsurance contracts

104. Participants are asked to determine whether any of its reinsurance contracts may qualify for reduction of the SCR under the new approach.
105. First, participants should make a partition of the insurance policies in a segment (gross of reinsurance) into groups of insurance policies based on the scopes of the reinsurance contracts.
106. Secondly, participants should list the reinsurance contracts that qualify, and apply the formula to determine the reduction.
107. Apart from the general requirements, as set out in Articles 208 to 214 Delegated Regulation, a reinsurance contract can be recognized only if
 - a) it covers risks in policies that are part of premium risk;
 - b) its scope exactly corresponds to one of the groups of insurance policies from the partition;
 - c) the cover of the contract corresponds unconditionally to a layer of the possible losses on these insurance policies;
 - d) it is not in scope of non-life catastrophe or lapse risk.
108. The layer should be specified by a retention (a), a limit and a cession rate. The limit should follow the contract details unless the retention is specified per risk. Then the retention (a) should be calculated on the basis of the "per risk retention" ($a_{per\ risk}$) as follows

$$a = \min(a_{per\ risk}, L) \cdot (2.5 \sqrt{\lambda} + \lambda),$$

where L and λ are the average severity (amount of loss) and the average number of losses within the applicable contract over the last five years (if available).

109. Note that the groups of insurance policies should not overlap. In case of overlapping scopes of reinsurance contracts, participants have to make a choice.
110. Note that the cover specified by the layer should pay out unconditionally in any 1:200 scenario ('indemnity based'). Deviations of this will be regarded as basis risk as there is a difference between the exposure and the cover. Moreover, as this

basis risk is not reflected in the SCR, the cover cannot be taken into account when the basis risk is material. (See Article 210, Delegated Regulations).

111. This is especially important when considering “per event” contracts, or in cases where the reinsurance covers is more restricted than the original insured risks, e.g. the reinsurance only covers flood, while the original policy covers both flood and fire.

Alternative Solvency Requirement

112. Let A be the part of the current capital requirement (gross of reinsurance regarding premium risk) as far as it can be assigned to this group of risks. It is computed on the basis of the gross premium V_{gross} for the group of insurance policies and the standard deviation σ_s for segment s from Annex II of the Delegated Regulation, as

$$A = 3 \sigma_s V_{gross}$$

113. Note that this standard deviation is gross of reinsurance regarding premium risk. So in this calculation the adjustment factor for premium risk should be set at 100% for all segments.
114. The reinsurance cover will also reduce the best estimate. We take the reinsurance premium C as a proxy of the difference between the gross and the net best estimate, and also as proxy of the best estimate of the reinsurer for the accepted risk.
115. The expected payout in a 1:200 event is capped at the 99.5% percentile of the risk accepted by the reinsurer, which according to the standard formula is

$$3 \cdot \sigma_s^{INP} C + C$$

in which σ_s^{INP} denotes the standard deviation for incoming non-proportional reinsurance associated with segment s specified in Annex II of the Delegated Regulation (the appropriate segments 10, 11 and 12).

116. The limit of the reinsurance contract can only be recognized as far as it is below the 99.5% percentile. This percentile is equal to the sum $A + V_{gross}$ of the capital requirement and the best estimate gross of reinsurance (in this we take the direct premiums payed as a proxy of the ‘best estimate’). In particular this implies that if the retention is higher than the 99.5% percentile, the contract cannot be recognized.
117. So, given a reinsurance layer with retention a and cover b , and cession rate CR , the relevant part of the cover (B) in a 1:200 event is

$$B = \min \left(CR \cdot b, 3\sigma_s^{INP} C + C, CR \cdot (A + V_{gross} - a) \right)$$

118. The standard formula is calibrated on averages of the segment. However, for the individual undertaking, the 1:200 event may differ. Therefore, a risk adjustment factor is necessary. For this impact study, the risk adjustment factor ϕ is set at 100%.
119. The reduction for capital requirement for this group of insurance policies is determined as

$$Red = \phi \cdot (B - C).$$

If Red would be negative the outcome should be set at 0.

120. So, the risk adjustment to the volume measure for this group of policies is

$$\frac{Red}{3\sigma_s}$$

121. The reduction for the volume measure for the segment is determined by adding together all the reductions of the groups, in which the resulting volume measure may not become negative.
122. Note Article 116.6 Delegated regulation should not be applied to this group of policies, as otherwise double counting might occur.

Remarks

Reinsurance contracts in scope

123. Only non-proportional and non-catastrophic covers for premium risk are taken into account in this approach. Both facultative and non-facultative reinsurance may be taken into account.

Instructions on making the partition

124. The insurance portfolio is already divided into Solvency II segments. Each Solvency II segment consists of a collection of insurance policies. Within each segment, the insurance policies can be partitioned into groups. There can be no overlap between the groups. This grouping of insurance policies is done in such a way that each group can be mapped to exactly one reinsurance contract. Every reinsurance contract can only be mapped to one group of policies. In case one group of insurance policies can be mapped to more than one reinsurance contract, only one reinsurance contract will be taken into account in this approach. However, if a reinsurance contract consists of several layers, all layers may be taken into account.
125. For every part of the partition (group of insurance policies), all the requested data fields need to be provided. Undertakings are asked to also report the reinsurance covers not (fully) eligible for recognition.

No double counting

126. If the risk mitigating effect of a non-proportional reinsurance contract is taken into account in the CAT modules of the standard formula, it cannot be taken into account again for the premium and reserve risk sub-module.
127. If an insurance policy has a facultative reinsurance cover and the undertaking decides to consider this cover in this approach, then no other reinsurance covers are taken into account for this insurance policy in this approach.
128. If for the same group of risks there are several non-overlapping layers reinsured, all of these layers can be recognized, each with own cession rate.
129. If a group of insurance policies can be mapped to two different reinsurance contracts with a different cover (e.g. flood and fire), then these contracts will be taken into account into this approach only if the total cover coincides with the insured risk.
130. For a reinsurance contract that covers more than one segment, the contract can only be recognized for one (typically the most material) segment.

5.4.2. Internal models

5.4.2.1. Contingent capital or contingent convertible bonds

131. Contingent capital or contingent convertible bonds should not be able to reduce the SCR within internal models.

5.4.2.2. Volatility adjustment in internal models

132. This section is only relevant for internal models covering market and credit risk and including a "constant VA" (CVA) or "dynamic VA" (DVA).

CVA – canonic translation of new VA concept

133. Regarding CVA, changes to the VA translate in a canonical manner and beyond the data request as described above and relevant for all undertakings applying the VA, only additional information on market & credit risk is required as described in the paragraphs in the instruction relevant to DVA users.

DVA – background and motivation

134. With reference to EIOPA's 'Opinion on the supervisory assessment of internal models including a dynamic volatility adjustment' ('DVA'), EIOPA-BoS-17/366, 'DVA opinion' in the following, approaches to the DVA are classified as 'direct approaches', if designed with the ambition to closely replicate the EIOPA VA methodology. Approaches are classified as 'holistic', if deviating from closely modelling the EIOPA VA methodology with the aim to solve undesirable risk management incentives.

135. Furthermore, the DVA opinion introduces the so called "prudency principle". This principles requires, that any deviations from the VA methodology as described in the Solvency II Directive, the Delegated Regulation and EIOPA VA Methodology should be addressed in a way that the internal model produces an SCR guaranteeing a level of policyholder protection that is at least as high as if replicating the EIOPA VA Methodology. Concretely, this means that the undertaking shall demonstrate that its SCR is at least as high as if replicating the EIOPA VA Methodology.

136. In the call for advice the European Commission requested EIOPA to advice on whether or not to maintain the DVA in internal models and, in case of maintaining, to advice on criteria to improve harmonisation of the modelling. With respect to this request, EIOPA suggested the following principles in the consultation paper:

- No disincentives for risk and investment management, especially no 'overshooting' (or 'undershooting');
- DVA benefit should be risk sensitive, reflecting the risks present in assets and liabilities covered. In particular, there should be no full elimination of credit spread SCR, and the DVA benefit should reflect expected losses, unexpected credit risk (esp. migration & default) and other risk of the assets.

DVA – Enhancement of the prudency principle

137. The data collected with the information request supporting the public consultation on EIOPA's tentative advice, provided evidence that for some undertakings and currencies the risk corrected spread as calculated on their own asset portfolio is materially lower than the risk corrected spread calculated on the reference portfolio relevant for this currency. The most likely reason identified are structural

differences in the undertakings' own portfolios compared to the reference portfolios.

138. In certain cases the VA resulting from the reference portfolio was higher than the risk corrected spread of own assets. To counteract potential overshooting caused by such structural difference ('quality overshooting'), EIOPA considers to advice to enhance the 'prudency principle' as follows:

For any DVA approach undertakings should demonstrate that the SCR is at least as high as if

1. Replicating the EIOPA VA methodology
2. Replicating the EIOPA VA methodology but calculating the risk corrected spread on basis of the undertaking's own asset portfolio.

This principle should apply to any holistic DVA approach but also to any direct DVA approach.

DVA – Description of the data request

139. Changes to the baseline in accordance with EIOPA's tentative advice

- If implementing a 'direct DVA' under the VA regime of scenario 1 ('direct DVA(RefPF)' in the following).
- If implementing a 'direct DVA' under the VA regime of scenario 1, but using the undertaking's own portfolio to calculate the risk corrected spread, which is used as input for the VA under scenario 1 ('direct DVA(own PF)' in the following).

Please note:

- (1) Own funds have to be determined by applying the VA regime under scenario 1 to your technical provisions.
- (2) In the 'direct DVA(own PF)' calculation the switch to your own portfolio only concerns the SCR. But, in your simulations generating the distribution in your model, "t=0" has to be calculated also on your own asset portfolio to have a distribution consistent in all data points regarding the choice of the portfolio to determine the risk corrected spread.
- (3) In case you are using a holistic DVA approach it is not expected that your approach would be redesigned anticipating the VA regime under scenario 1. The holistic impact assessment does only attempt to estimate the lower bound of the SCR under the enhanced prudency principle. However, the template offers cells for an optional submission of values according to an adjusted holistic DVA model.

Application ratios 4 and 5 should be treated as follows:

- Application ratio 4: Please determine a prudent estimate of application ratio 4 under your simulations and use this value as 'constant' parameter in your simulations. If considered necessary please differentiate between 'direct DVA(RefPF)' and 'direct DVA(own PF)'.
- Application ratio 5: Please use the value of application ratio 5 as determined for the calculation of technical provisions as constant parameter in your simulations. You need not to differentiate between 'direct DVA(RefPF)' and 'direct DVA(own PF)'.

Portfolio weights and scaling factor:

Scenario 1 includes the change of 'market value freeze' to 'cashflow freeze' for the VA methodology (see 2.4.4.3.1 of the consultation paper).

This implies a variation of weights of the portfolios under simulations.

Consequently you are requested to recalculate the weights and the scaling factor (see paragraph 59) within the portfolios used under 'direct DVA(RefPF)' and 'direct DVA(own PF)'.

If this cannot be implemented with reasonable effort for the purpose of this holistic impact assessment, please contact your national supervisory authority

Spread data to calculate the risk corrected spread:

It is expected that you use the spread data as included in your internal model.

This includes the LTAS used in the calculation of the risk corrected as described in paragraphs 60 to 62. As a reference of LTAS values please consider the file "EIOPA_RFR_20191231_PD_Cod.xlsx" as published with the EIOPA monthly RFR information for key date 31.12.2019.

Different from the algorithm used in the reference portfolio, also for EEA government bonds you are expected differentiate spread data by issuer as implemented in your internal model.

140. Additionally to the total SCR figures requested on the tab "Solvency position" the following should be provided on market and credit risk:

- Market & credit risk SCR [stand-alone]: 'Marginal risk' for financial instruments including credit migration and credit default risk; if this combined risk SCR cannot be provided with reasonable effort, please contact your national supervisory; in such cases an alternative might be to only provide the market and the credit spread risk as described below.
- Market risk SCR [stand-alone]: 'Marginal risk' for financial instruments except credit migration and credit default risk; if the latter components cannot be excluded with reasonable effort, please contact your national supervisory authority; in such cases an alternative might be to only provide the combined market and credit risk.
- Credit spread risk SCR (or proxy) [stand-alone]: 'Marginal risk' for financial instruments, i.e. credit risk without migration and default.

141. Furthermore, please also provide the risk corrected spread as determined on your own asset portfolio in "t=0", i.e. as if using your own asset portfolio to determine the VA for technical provisions.

142. EIOPA is aware that DVA models in some case include margins like for example an application ratio lower than 65% to cater for model uncertainty. Although it is expected that such margins will also be needed in the future, for the purpose of this impact assessment, in the 'direct DVA(RefPF)' and 'direct DVA(own PF)' you are expected to not apply any margins of that kind, which are related to your current DVA approach.

5.5. Minimum Capital Requirement

143. The currently applicable risk factors for the calculation of the MCR set out in Annex XIX of the Delegated Regulation should be replaced by the following factors:

Segment	Factor for technical provisions	Factor for premiums written
Credit & suretyship	16.0%	17.7%
Legal expenses	5.2%	7.8%
Assistance	20.3%	6.0%
Accident ¹⁴	5.4%	No change
Sickness ¹⁵	No change	8.0%
Workers compensation	10.3%	9.0%
NPR health	15.9%	No change

For the segments not listed in the table the risk factors should not be changed.

6. Technical specification of scenario 2

144. The calculations under scenario 2 should be carried out in accordance with the specifications 5.1 to 5.5 of scenario 1, but without the recalibration of the interest rate risk sub-module of the SCR standard formula.

145. Interest rate shocks in accordance with the current calibration of the interest rate risk sub-module are set out in the file Technical Information.

7. Additional specifications

7.1.1. Dynamic volatility adjustment in the standard formula

146. The consultation paper includes the advice not to allow for the dynamic VA in the standard formula (see section 2.4.7 of the consultation paper). EIOPA has not changed its position on the dynamic VA in the standard formula. Nevertheless, in order to be able to carry out an impact assessment that, in line with the impact assessment methodology of the European Commission, considers the impact of all relevant policy options, EIOPA requests data on the impact of applying the dynamic VA in the standard formula. EIOPA will decide on its final advice in June 2020.

147. In order to test the potential impact of the introduction of a dynamic volatility adjustment (DVA) in the standard formula all users of the VA are asked to provide additional information in the tab "SF only - SCR details" on the impact of the DVA on the spread risk module and the SCR of the undertaking. This impact shall be calculated on basis of the balance sheet according to scenario 1

¹⁴ This class of business refers to the segment "Medical expense insurance" of the Delegated Regulation (ANNEX XIX). Please also refer to the relevant Q&A (number 29).

¹⁵ This class of business refers to the segment "Income protection insurance" of the Delegated Regulation (ANNEX XIX). Please also refer to the relevant Q&A (number 29).

148. To determine the spread risk by applying a DVA the following steps should be followed.
149. The spread risk for bonds and loans according to Article 176 of the Delegated Regulation should be recalculated. The spread risk on securitisation positions and credit derivatives should be left unchanged.
150. As currently, for each bond and loan, the relevant spread risk stress needs to be derived based on the parameters provided in the Delegated Regulation. The resulting shocks "stress_i" are then amended to reflect the assumptions in the VA, namely that a share of the spread can be allocated to the risk correction (and is unchanged under stress) and the residual is at least partly reflected in the VA and is mitigated by the VA. The calculation is to be performed for each bond and loan and is dependent on the currency *c* of the investment:

$$\begin{aligned} \text{stress}_i(\text{with DVA}) &= \text{stress}_i \cdot \max((RC + (1 - GAR \cdot AR_5 \cdot \min(\frac{PVBP(BEL_{i,c})}{PVBP(MV_{i,c}^{FI})}, 1)) \cdot (1 - RC)), RF_{CQS}) \\ &= \text{stress}_i \cdot \max((1 - GAR \cdot AR_5 \cdot \min(\frac{PVBP(BEL_{i,c})}{PVBP(MV_{i,c}^{FI})}, 1) \cdot (1 - RC)), RF_{CQS}) \end{aligned}$$

where

- RC is the risk correction applied to corporate bonds (set here to 50% of the spread),
- GAR is the general application ratio,
- AR₅ denotes the application ratio 5 in the determination of the VA,
- RF_{CQS} is a reduction factor which is applied depending on the credit quality step of the bond to which the stress is applied
- $PVBP(BEL_{i,c})$ equals the price value of a basis point of the best estimate of the liabilities of undertaking *i* in currency *c*; the value used for the calculation of AR₄ for the VA for the currency *c* may be used here.
- $PVBP(MV_{i,c}^{FI})$ equals the price value of a basis point of the fixed income investments of undertaking *i* in currency; the value used for the calculation of AR₄ for the VA for the currency *c* may be used here as well.

151. With $GAR \cdot (1 - RC) = 85\% \cdot (1 - 50\%) = 42,5\%$ This can be condensed to

$$\text{stress}_i(\text{with DVA}) = \text{stress}_i \cdot \max(1 - 42,5\% \cdot AR_5 \cdot \min(\frac{PVBP(BEL_{i,c})}{PVBP(MV_{i,c}^{FI})}, 1), RF_{CQS}).$$

152. The values for RF_{CQS} are set as follows:

	0	1	2	3	4 and higher
RF _{CQS}	45%	50%	60%	75%	100%

153. The calculation of $\frac{PVBP(BEL_{i,c})}{PVBP(MV_{i,c}^{FI})}$, both of numerator and denominator, are specified in section 5.1.2. (application ratio 4). The values are assumed to be constant post shock so can be taken from the calculation of the VA.

154. To bonds and loans for which a credit assessment by a nominated ECAI is not available a threshold_{CQS} of 100% applies. Thus, the DVA has no impact on the spread risk for those bonds and loans.
155. AR₅ is kept constant post stress and should be set to the value reported in the tab “Volatility adjustment” in row 30. The value of AR₅ should be chosen according to the currency in which the bond is denominated.

7.1.2. Own funds buffer when spreads are compressed

156. EIOPA is considering measures to ensure that buffers of own funds are build up during times when risk premia on fixed income assets are excessively compressed. This could be achieved by means of an own funds adjustment. The adjustment would not be automatic and would take into account an assessment of the national supervisory authority of the need to increase the resilience of the national insurance industry in view of bond market developments. The symmetric VA proposed by the ESRB¹⁶ could serve as an indicator to detect compressed risk premia. In case the national supervisor requires a buffer, the size of the buffer would depend on the market situation and the need for resilience. The framework could include a limit to the buffer that the national supervisor can impose.
157. In this information request participants are asked to quantify a buffer whose size is derived by means of a negative adjustment to the spreads of the fixed-income assets. This buffer could serve as the maximum buffer that the national supervisory authority could request in accordance with the framework outlined above. The calculation should be carried out by all participants, irrespective of whether they apply the VA or not.
158. The maximum buffer is calculated as follows:

- (a) Calculate the annual effective rate (*AER*) of the fixed-income portfolio of the participant. This corresponds to the single discount rate that, where applied to the cash flows of the fixed income assets, results in a value that is equal to the value of the fixed income portfolio (*FIP*). *AER* is calculated such that:

$$\sum_{n=1}^N \frac{Cash\ Flows_n}{(1 + AER)^n} = FIP$$

- (b) Recalculate the value of the fixed income portfolio (*FIP*) by adding to the annual effective rate (*AER*) the negative spread adjustment (*NSA*) explained below. It results in a new value of the fixed income portfolio (*FIP**).

$$FIP^* = \sum_{n=1}^N \frac{Cash\ Flows_n}{(1 + AER + NSA)^n}$$

- (c) The size of the own funds buffer (*OFB*) is equal to the difference:

$$OFB = FIP^* - FIP$$

- (d) One calculation of the buffer should be carried out and all fixed-income assets, irrespective of the currency they are denominated in.
- (e) The fixed-income assets relating to index and unit linked insurance and fixed-income assets in matching adjustment portfolios should not be included in the calculation of the buffer.

¹⁶ See European Systemic Risk Board: Response of the ESRB to EIOPA’s Consultation Paper on the 2020 review of Solvency II, 2020

159. The negative spread adjustment per country is set out in the following table:

AT	-9
BE	-7
BG	-14
CY	-31
DE	-12
DK	-9
EE	-7
ES	-24
FI	-12
FR	-7
GR	-57
HR	-8
HU	-9
IE	-4
IS	-8
IT	-13
LT	-24
LU	-5
LV	-4
MT	-4
NL	-5
PL	-1
PT	-31
RO	-2
SI	-14
SK	-7

160. For CZ, LI, NO and SE the adjustment is positive at the end of 2019 and therefore no buffer would be possible.
161. All insurers of other countries should calculate the own funds buffer corresponding to the negative spread adjustment of their country.
162. Where it facilitates the calculation of the own funds buffer participants may also apply the following formula. This may in particular be helpful for participants that apply the VA because the calculation is similar to the calculation of application ratio 4.

$$OFB_{i,c} = MV_{i,c}^{FI}(CS + NSA) - MV_{i,c}^{FI}(CS)$$

where

- $MV_{i,c}^{FI}(CS)$ denotes the market value of undertaking's *i* investment in fixed income investments in currency *c*¹⁷ at current spread level *CS*, specific for any individual instrument in that portfolio.

¹⁷ Note that undertakings do not have to assign investments to either backing or not backing the liabilities when determining $MV_{i,c}^{FI}$

- $MV_{i,c}^{FI}(CS + NSA)$ denotes the market value of undertaking's *i* investment in fixed income investments in currency *c* at spread level $CS+NSA$, i.e. each spread for each instrument in the fixed income portfolio is adjusted by the same uniform value *NSA* and the market value newly calculated under this spread level.

The overall buffer is determined by summing $OFB_{i,c}$ over all investments.

163. Participants are invited to comment on the method to derive the maximum own funds buffer for compressed spreads.

Background on the calculation of the negative spread adjustment

164. The negative spread adjustment is calculated per country as follows:

$$NSA_t = 0.35 \cdot (CS_t - Av(CS_t))$$

where:

- CS_t corresponds to the credit spread at time *t* for the reference portfolio of a given country; the credit spread is calculated as the difference between the yield of the assets of the reference portfolio and the basic risk-free interest rate term structure¹⁸;
- $Av(CS_t)$ corresponds to the 7-years average of the credit spread for the reference portfolio of a given country.

165. For countries that fall under the peer country approach for determining the government bond spreads of the VA, for the purpose of this information request, the negative spread adjustment was chosen to be equal to the adjustment of the peer country.¹⁹ The negative spread adjustment for Liechtenstein was based on the CHF currency portfolio.

7.1.3. Alternative interest rate risk calibration 1 – Floor to interest rates

166. Participants that calculate the SCR for interest rate risk with the standard formula are invited to additionally calculate that SCR with a modified calibration: the calibration is the same as for scenario 1, but with a floor to shocked interest rates of -1.25%.

167. This additional calculation should be carried out on the basis of assets and liabilities as determined under scenario 1.

168. The interest rate shocks for this calculation are set out in the Technical Information file.

7.1.4. Alternative interest rate risk calibration 1 – FSP-specific calibration

169. Participants that calculate the SCR for interest rate risk with the standard formula are invited to additionally calculate that SCR with a modified calibration:

- For currencies with a first smoothing point of 15 years or higher, in particular for the euro, the calibration is the same as for scenario 1.

¹⁸ Note that the full credit spread is taken, i.e. no risk correction is deducted from the credit spread.

¹⁹ See table 12 on page 62 of the technical documentation of the methodology to derive EIOPA's risk-free interest rate term structures.

- For all other currencies a calibration is applied that takes into account a lower first smoothing point of the term structure. The calibration approach is otherwise the same as under scenario 1. The shocks are derived with a relative shift approach and parameters are chosen consistently with the calibration applied under scenario 1. This calibration applies in particular to the currencies CZK, HRK, HUF, CHF, NOK, PLN, RON and SEK.

170. This additional calculation should be carried out on the basis of assets and liabilities as determined under scenario 1.

171. The interest rate shocks for this calculation are set out in the Technical Information file.