



EIOPA-19/511

15 October 2019

Technical specification of the information request on the 2020 review of Solvency II

Volatility adjustment

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 its impact on the solvency position of insurance undertakings. In order to collect data for the impact assessment EIOPA is carrying 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. Specific options and proposals from the consultation paper are subject to this information request. The information collected will inform EIOPA's final decision on the advice in 2020.
3. This information request is about the impact of specific changes to the volatility adjustment (VA) to the risk-free interest rates used to calculate technical provisions.
4. An information request on the combined impact of all changes advised by EIOPA will be carried out in 2020.

2. Timing

5. Following the launch of the information request, undertakings will be requested to submit results to their national supervisory authorities. After validating the submissions, national supervisory authorities will report this information to EIOPA.
6. 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 anonymised or aggregated way in order to ensure the confidentiality of company data.
7. The timeline for these steps is as follows:

16 October 2019	Launch of the information request
6 December 2019	Deadline for participants to submit results to their national supervisory authorities
9 December 2019 to 8 January 2020	Validation of results by national supervisory authorities
8 January 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 and until March 2020.

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

3. Technical specification

3.1. Specification of the sample

8. The information request is addressed to a representative sample of solo European insurance and reinsurance undertakings subject to Solvency II which apply the volatility adjustment as at year-end 2018. Participants will be selected by the national competent authorities to represent at least 50% of VA users of each local markets, measured in technical provisions. The sample should be representative of the different types of undertakings (life, non-life and composite insurance undertakings and reinsurance undertakings) and size (small, medium and large), including both being part of a group and not.
9. The information request does not apply to insurance groups. However, for solo undertakings and groups using an approved internal model to calculate the Solvency Capital Requirement (SCR), the following holds: (1) all solo undertakings having participated in the DVA questionnaire in spring 2019 should also participate in this information request. (2) Groups using a Dynamic Volatility Adjustment (DVA), are invited to provide figures using the same templates but marking it as group submission on the tab 'Participant information'.
10. The information request asks for information on the impact of particular design changes of the VA on the balance sheet of undertakings and their SCR.
11. Participants are requested to submit the relevant information in a reporting template provided for this purpose. Further specifications on the timeline and on the contents of the reporting template are provided below.
12. During the information request, participants can submit questions relating to the interpretation of the technical specifications or the reporting template to their national supervisory authority.

3.2. Specification of the requested information

Specifications relating to all tabs

13. All monetary figures should be given in units (i.e. not in millions or thousands) and in the reporting currency of the participant. I.e. where a split according to currencies is requested, monetary figures should still be given in reporting currency.
14. All participating undertakings need to submit the information contained in the tabs:
 - "Participant Information"
 - "Results_Financial Impact"
 - "Results_VA Approach 1_2"

- “Assets per currency – details”
 - “Assets per currency – summary”
 - “Cashflows per currency”
15. Participants using the standard formula or a partial internal model not covering market and credit risk, additionally have to submit information on the tab
- “SF only – SCR details”
16. Participants using an approved internal model to calculate the SCR, which covers market and credit risk and includes a DVA or a constant VA (CVA), need to submit additional information on dedicated tabs which are described in a specific section at the end of this document. This section also includes instructions how to calculate the SCR under this information request.

Tab “Participant Information”

17. In this tab information about the participant and the reported figures should be provided. Please provide the contact details of at least one contact point.
18. Note that lines 17 to 19 do not need to be filled in by participants but will be provided by National Supervisory Authorities.

Cells C34 – reporting reference date

19. The reporting reference date is 31 December 2018.² It applies to all quantitative information provided in the template.

Tab “Results_Financial Impact”

20. In this tab, information on the impact of a redesign of the VA according to approach 1 and approach 2 on the balance sheet of undertakings is collected.
21. Approach 1 and Approach 2 are further outlined in the consultation paper on the opinion on the 2020 review of Solvency II, see section 2.4.5.2.3 and 2.4.5.2.4 respectively.
22. To allow for an assessment of the functioning of the VA also in different financial circumstances another “baseline” is tested. This baseline assumes a one-off, instantaneous and simultaneous shift in asset prices. It assumes an absolute increase of credit spreads by 100 bps compared to the reference date of 31.12.2018. The shock is identical for all durations and credit quality steps. Calculations for this alternative baseline only apply to undertakings in those countries in which the risk-free interest rate is derived on the basis of swap rates (thus excluding HU, HR, IS, PL, RO).

² In case the undertaking’s financial year differs from the calendar year, the reporting reference date should be set as the end of the undertaking’s financial year (ending on or after 30 June 2018 but before 1 January 2019).

23. The shock should be applied to all assets that are sensitive to credit spreads, in particular including government, corporate bonds as well as mortgages and loans.
24. When calculating the requested absolute values after application of the VA according to approach 1 and approach 2 in the base case as well as in the alternative baseline the application of the VA should mirror the current practice of the undertaking when applying the VA (e.g. where the VA is only applied for particular currencies, this should also be assumed for the purpose of this information request).
25. Information to be provided in columns C to F are similar to the information provided in QRT S.22.01. In particular, information on the Base Case (lines 12-34) can partly be taken from the annual QRT. Column C corresponds to C0010, column D to C0020, column E corresponds to C0040 and column F corresponds to C0060 in the annual QRT. Thus, only absolute amounts should be provided, no impact figures.
26. Columns H to K include the information on the values after applying alternative designs of the VA, namely a VA according to approach 1 or approach 2. Columns H and I correspond to the values including the transitional measures on technical provisions and interest rates. Columns J and K reflect the values without application of these transitional measures. Also, these columns should include absolute amounts, no impact figures.
27. The values of the VA according to approach 1 and approach 2 for the base case as well as the alternative baseline are provided in the tab "Results_VA Approach 1_2" separately for each currency. These values should be used for the valuation of technical provisions to be reflected in this tab. To determine the risk-free interest rates including the VA according to approach 1 and approach 2, the tool available on the EIOPA website regarding the Smith-Wilson risk-free interest rate extrapolation can be used. For this purpose, the risk-free rate as at year end 2018 needs to be included in the tab "input data", the "Calculation date" in the tab "SmithWilson RFR" needs to be set accordingly. In the same tab, the "Input annual rates" have to be selected as Zero and the "CRA applied to input rates" as 0. The "UFR" and "Convergence point" are chosen according to the RFR without VA, the VA according to approach 1 or 2 have to be included under "Volatility adjustment". In column J ("Spot rate ac") the risk free rate including the VA is then displayed.
28. Lines 39 to 56 are intended to capture the same information but under the alternative baseline (see paragraph 22) and excluding SCR.
29. The following table sets out the information needs for the lines not reflected in the QRT S.22.01.:

Template	Row	Column
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Technical provisions - non-life (excluding life and index-linked and unit-linked)	S.02.01	R0510	C0010
Technical provisions calculated as a whole - non-life (excluding life and index-linked and unit-linked)	S.02.01	R0530	C0010
Best estimate - non-life (excluding life and index-linked and unit-linked)	S.02.01	R0540	C0010
Reinsurance recoverables - non-life	S.02.01	R0280	C0010
Technical provisions - life (excluding non-life and index-linked and unit-linked)	S.02.01	R0600	C0010
Technical provisions calculated as a whole - life (excluding non-life and index-linked and unit-linked)	S.02.01	R0620	C0010
Best estimate - life (excluding non-life and index-linked and unit-linked)	S.02.01	R0630	C0010
Reinsurance recoverables – life	S.02.01	R0310	C0010
Technical provisions - index-linked and unit-linked	S.02.01	R0690	C0010
Technical provisions calculated as a whole - index-linked and unit-linked	S.02.01	R0700	C0010
Best estimate - index-linked and unit-linked	S.02.01	R0710	C0010
Reinsurance Recoverables - index-linked and unit-linked	S.02.01	R0340	C0010
Future Discretionary benefits	S.25.01	R0460	C0100
Deferred tax liabilities	S.02.01	R0780	C0010
Deferred tax assets	S.02.01	R0040	C0010
Holdings in related undertakings, including participations	S.02.01	R0090	C0010
Total Assets	S.02.01	R0500	C0010
Excess of assets over liabilities	S.02.01	R1000	C0010

30. Note that the impact of approach 1 and approach 2 (columns H to K) only needs to be calculated for the five most material currencies of the business (see paragraph 32) or for a lower number of currencies if it is sufficient to cover more than 90% of the business. For all other currencies, no VA should be applied for the calculation of results for columns F to G.

Tab "Results_VA Approach 1_2"

31. Undertakings are required to determine the VA according to approach 1 and approach 2 prior to calculating the impact thereof on the financial position. This tab intends to reflect the results of the intermediate steps necessary to do so.
32. At first, 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 then be selected in line 10. Line 12 reflects the value of the gross best estimate in the respective currency, but should be given in the reporting currency. Here, the values of the best estimate liabilities are based on the term structures without VA.
33. The tab includes a differentiation similar to that reflected in the tab "Results_Financial Impact". The VA according to approach 1 and approach 2 is calculated for the base case (as at year-end 2018) as well as for the alternative baseline.

Base Case

34. For the purpose of determining the VA according to approach 1, the risk corrected currency spread to which the general application ratio is applied is required as input (see line 16). This input will be provided by EIOPA. The "Basic VA" includes the general application ratio of 65% and is given in line 17.
35. To determine the permanent VA by currency as applicable under approach 1, the currency Basic VA is multiplied by the minimum of two undertaking-specific factors, an application ratio for option 4 and one for option 5.
36. The application ratio for option 4 intends to correct for mismatches in the fixed income assets and insurance liabilities in respect of duration and volume. For further background on option 4 please cf. the consultation paper on the draft opinion on the 2020 review, paragraph 2.361 ff. The application ratio under option 4 is calculated as

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 required (where currencies are added in descending order of materiality) up and until the business reported covers the threshold outlined above or the maximum of five currency is reached.

$$AR_{i,c}^{Option 4} = \min \left\{ \frac{PVBP(MV_{i,c}^{FI})}{PVBP(BEL_{i,c})}; 1 \right\}$$

where

- $MV_{i,c}^{FI}$ denotes the market value of undertaking's i investment in fixed income investments in currency c^4
- $PVBP(BEL_{i,c})$ 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

37. We note the following aspects of the calculation as outlined above:

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

The price value of a basis point of the best estimate of the liabilities should be calculated as a sensitivity in the value of the VA. This means that $PVBP(BEL_{i,c})$ is calculated as the difference in the value of the best estimate⁵ with and without applying the part of the VA that does not depend on the undertaking specific application ratio, i.e. the Basic VA: $65\% \cdot RC_{S_{i,c}}$ ($RC_{S_{i,c}}$ is provided in line 16):

$$PVBP(BEL_{i,c}) = \frac{BEL_{i,c}(RFR_c) - BEL_{i,c}(RFR_c + 65\% \cdot RC_{S_{i,c}})}{GAR \cdot RC_{S_{i,c}}}$$

where

- RFR_c denotes the basic risk-free interest rate term structure for currency c
- $RFR + 65\% \cdot RC_{S_{i,c}}$ denotes the basic risk-free interest rate term structure, to which a volatility adjustment of size $65\% \cdot RC_{S_{i,c}}$ is applied⁶
- $RC_{S_{i,c}}$ denotes the average risk corrected spread of the fixed income investments of the reference portfolio in currency c
- GAR denotes the general application ratio, it is set at 65%

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 LAC TP). 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. Note that the revaluation accounts for the

⁴ Note that undertakings do not have to assign investments to either backing or not backing the liabilities when determining $MV_{i,c}^{FI}$

⁵ not including TP as a whole and net of reinsurance recoverables.

⁶ i.e. $65\% \cdot RC_{S_{i,c}}$ is applied as the current VA up to the last liquid point (LLP) and then extrapolated to the UFR

effect of future discretionary benefits, i.e. including LAC TP. Where an undertaking has liabilities denoted in several currencies, $PVBP(BEL_{i,c})$ should be determined separately for each currency. The PVBP per currency should then be converted to euro and added up to arrive at one final figure for $PVBP(BEL_{i,c})$.

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

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. $65\% \cdot RC_{S_{i,c}}$ ($RC_{S_{i,c}}$ is provided in line 16):

$$PVBP(MV_{i,c}^{FI}) = \frac{MV_{i,c}^{FI}(CS) - MV_{i,c}^{FI}(CS + 65\% \cdot RC_{S_{i,c}})}{GAR \cdot RC_{S_{i,c}}}$$

where CS denotes the current level of spreads.

38. The application ratio according to option 4 is on this basis derived as a result.

39. The application ratio for option 5 intends to account for the illiquidity characteristics of liabilities in the valuation of technical provisions. For further background on option 5, please cf. the consultation paper on the draft opinion on the 2020 review, paragraph 2.380 ff. The application ratio under option 5 is calculated as

$$AR_{i,c}^{Option\ 5} = \min \left\{ \frac{PVBP^{CF}(ILL_{i,c})}{PVBP^{CF}(BEL_{i,c})}; 1 \right\}$$

where

- $PVBP^{CF}(BEL_{i,c})$ equals the price value of a basis point of the best estimate cash flows of undertaking i in currency c
- $PVBP^{CF}(ILL_{i,c})$ equals the price value of a basis point of the illiquid liabilities of undertaking i in currency c

40. For further explanations on the determination of $PVBP^{CF}(BEL_{i,c})$ and $PVBP^{CF}(ILL_{i,c})$ please cf. the consultation paper on the draft opinion on the 2020 review, paragraph 2.404 ff.

41. For the purpose of calculating the application ratio for option 5 in this information request, the cashflows information for the relevant currencies (see paragraph 32) needs to be provided in the tab "Cashflows per currency" (see paragraph 97 ff.). The application ratio is then determined automatically with the help of tab "helper tab_application ratio 5".

42. The permanent VA according to approach 1 is finally determined on that basis and given in line 29.

43. Note, that approach 1 includes option 8 reflecting an additional macro-economic element. This is triggered where the spreads in a country exceed a certain level above the long-term average of spreads. For further background on that macro-economic VA please cf. the consultation paper on the draft opinion on the 2020 review, paragraph 2.489 ff.

44. As at year-end 2018, the macro-economic VA would have triggered only for IT – the VA according to approach 1 for the EUR for undertakings situated in IT amounts to 26 bps.

45. The final VA for each currency is then determined automatically and is provided in line 31. Note that the numbers are only automatically provided for the first five currencies. No calculation is expected for additional currencies. The final results per currency should then be reported in line 31 in column G with comma separation. These figures in line 31 should be used to estimate the impact of the VA according to approach 1 as to be provided in the tab "Results_Financial_Impact".

46. For the purpose of determining the VA according to Approach 2, the undertaking specific risk corrected spread as specified in option 1 is required as an input (line 35). This input is calculated automatically on the basis of data provided by undertakings in the section "base case" (columns C-V) of the tab "Assets per currency - details" (see paragraph 63 ff.).

47. The undertaking-specific risk-corrected spread $RC_{S_{i,c}}$ is calculated as

$$RC_{S_{i,c}} = \sum_{d,g} W_{d,g,i,c} \cdot RC_{S_{d,g,c}^{gov}} + \sum_{d,r,f} W_{d,r,f,i,c} \cdot RC_{S_{d,r,f,c}^{corp}}$$

where:

- $W_{d,g,i,c}$ are the weights⁷ of undertaking's i investments in government bonds⁸ of issuer country g with duration in duration bucket d in currency c ;
- $W_{d,r,f,i,c}$ are the weights of undertaking's i investments in corporate bonds with credit quality step r and duration in duration bucket d in currency c , where f is either 'financial' or 'non-financial';
- $RC_{S_{d,g,c}}$ is the risk corrected spread on government bonds of country g with duration bucket d in currency c ;
- $RC_{S_{d,r,f,c}}$ is the risk corrected spread on corporate bonds with credit quality step r and duration bucket d in currency c , where f is either 'financial' or 'non-financial'.

The risk corrected spreads on government bonds and corporate bonds are calculated as

$$RC_{S_{d,g,c}^{gov}} = \begin{cases} (1 - RC\%_{gov}) \cdot S_{d,g,c}^{gov} & \text{in case } S_{d,g,c}^{gov} \geq 0 \\ S_{d,g,c}^{gov} & \text{else} \end{cases}$$

⁷ Relative to the market value of the undertaking's fixed income investments in currency c

⁸ EEA government bonds issued in the domestic currency, other government bonds are treated as in the case of corporate bonds

and

$$RC_{S_{d,r,f,c}^{corp}} = \begin{cases} (1 - RC\%_{corp,r}) \cdot S_{d,r,f,c}^{corp} & \text{in case } S_{d,r,f,c}^{corp} \geq 0 \\ S_{d,r,f,c}^{corp} & \text{else} \end{cases}$$

where:

- $RC\%_{gov}$ is the risk-correction for government bonds, relative to the current bond spreads;
- $RC\%_{corp,r}$ is the risk-correction for corporate bonds with credit quality step r , also relative to the current bond spreads;
- $S_{d,g,c}$ is the current spread on government bonds of country g with duration bucket d in currency c ;
- $S_{d,r,f,c}$ is the current spread on corporate bonds with credit quality step r and duration bucket d in currency c , where f is either 'financial' or 'non-financial'.

For further background on option 1 please cf. the consultation paper on the draft opinion on the 2020 review, paragraph 2.333 ff.

48. To determine the VA by currency under Approach 2, the risk corrected currency VA is first multiplied with the general application ratio of 65%. This result is outlined in line 36. Then, the "Basic VA" is multiplied by two undertaking-specific factors, an application ratio for option 4 and one for option 5, as for Approach 1. These application ratios are derived according to paragraphs 36 - 41.

49. The VA according to approach 2 is given in line 45 and should be used to estimate the impact of the VA according to approach 1 as to be provided in the tab "Results_Financial Impact".

Alternative baseline - after 100 bps shock

50. For the purpose of determining the VA according to approach 1 for this alternative baseline, again the risk corrected currency VA is required as input (see line 55). This input will be provided by EIOPA.

51. Again, for approach 1, two application ratios are required.

52. The application ratio for option 4 is recalculated according to the alternative baseline. For this purpose, a revaluation of the fixed income investments as well as of the best estimate is required. The information on the investments is taken from the tab "Assets per currency - details", the information on the best estimate should be provided in line 51.

53. On this basis, the application ratio for option 4 should be calculated, cf. paragraph 36ff.

54. Although contractual features may be constant over time, actual liability cashflows may differ under a range of circumstances including economic changes. For the purposes of this exercise, we ask that undertakings use a simplification, in which the Option 5 application ratio is assumed to be constant under the revised baseline scenario.

55.The permanent VA according to approach 1 under the alternative baseline is finally determined on that basis and given in line 65.

56.Note again, that approach 1 includes option 8 reflecting an additional macro-economic element. The alternative baseline assumes an instantaneous shift of the level of spreads of 100bps. In such a situation, the macro-economic VA is triggered and should be applied to estimate the impact of the VA according to approach 1 as to be provided in the tab "Results_Financial Impact".

57.The macro-economic VA is calculated by EIOPA and provided in the table below. Please note that for approach 1, countries without a government bond yield curve (see table in paragraph 77) are not included in the test. This approach is in line with the current VA methodology which does not envisage a country-specific increase for these countries. This should however not anticipate EIOPA's position about allowing for a macroeconomic VA for these countries under approach 1.

Country	Macro-economic VA	Currency of that country
AT	88bps	EUR
BE	90bps	EUR
BG	70bps	BGN
HR	Not tested	HRK
CY	Not tested	EUR
CZ	111bps	CZK
DE	84bps	EUR
DK	77bps	DKK
EE	Not tested	EUR
ES	83bps	EUR
FI	93bps	EUR
FR	92bps	EUR
GR	25bps	EUR
HU	Not tested	HUF
IE	86bps	EUR
IS	Not tested	ISK
IT	124bps	EUR
LI	Not tested	CHF
LT	Not tested	EUR
LU	Not tested	EUR
LV	Not tested	EUR

MT	Not tested	EUR
NL	89bps	EUR
NO	100bps	NOK
PL	Not tested	PLN
PT	72bps	EUR
RO	Not tested	RON
SE	87bps	SEK
SI	85bps	EUR
SK	88bps	EUR
UK	83bps	GBP

58. For undertakings in these countries, the macro-economic VA as outlined should be applied where this exceeds the permanent VA. The macro-economic VA is also provided in line 66. The final VA according to approach 1 that should be applied for the different currencies is then outlined in line 67. This should be used to determine the impact as to be provided in the tab "Results_Financial Impact".

59. Note again, that the numbers are only automatically provided for the first five currencies. No calculation is expected for additional currencies.

60. For the purpose of determining the VA according to Approach 2 for this alternative baseline, also in this case the undertaking specific risk corrected spread as specified in option 1 is required as an input (line 71). This input is calculated automatically on the basis of data provided by undertakings in the section "Alternative baseline – after 100 bps shock" (columns X-AQ) of the tab "Assets per currency - details" (see paragraph 63 ff.).

61. Again, the general application ratio as well as the application ratios for options 4 and 5 are required, recalculated according to paragraphs 36 - 41.

62. The VA according to approach 2 under the alternative baseline is finally determined on that basis and given in line 81. These figures should be used to estimate the impact of the VA according to approach 2 as to be provided in the tab "Results_Financial Impact".

Tab "Assets per currency – details"

63. This tab provides information on the amount of fixed income assets (in the corporate and government bond portfolios) which are eligible for the calculation of the undertaking-specific risk-corrected spreads under option 1 and for the calculation of the application ratio under option 4.

64. Undertakings are requested to report on the amount of bonds and other assets exposed to credit spread changes as at the reference date and under the alternative baseline differentiated by the relevant currencies. Exposures

via credit derivatives like CDS or swap spread instruments are added or deducted to the specific line to which their exposure corresponds. Investments in mortgage loans are allocated proportionally to all other corporate investments of the undertaking.

65. The information contained in this tab should be based on the asset information contained in the QRT S.06.02 (the asset-by-asset template). The value of assets reported in this tab should be taken from the reporting field "Total SII amount", expressed in the currency of the reporting.
66. The information should be reported as follows:
 - Government and corporate portfolio information, lines 12-344:
67. The information is split by government and corporate portfolios. For the government portfolio (lines 11-244) a differentiation by country of issuance and by duration bucket is introduced. For each issuer, government bonds are split into seven duration bands: 0-5y, 5y-10y, 10y-15y, 15y-20y, 20y-25y, 25y-30y, >30y.
68. For the corporate portfolio (lines 246-344) the template differentiates by issuer sector (financial or non-financial), by credit quality steps (CQS), and by duration bucket. For each issuer sector and CQS, the corporate portfolio is split into five duration bands: 0-3y, 3y-5y, 5y-7y, 7y-10y, >10y.
69. For each bucket the risk corrected spread to be applied is provided automatically for each currency selected in the tab "Results_VA Approach 1_2" (line 10).
70. The information needs to be provided in a look-through approach, e.g. also collective investment undertakings as well as mortgages and loans are included.
71. The assets held for index-linked and unit-linked contracts should be included. This information should be however provided separately for each bucket (columns E, I, M, Q, U for the base case, columns Z, AD, AH, AL, AP for the alternative baseline).
72. The value of assets should be reduced by the value of assets covering technical provisions as a whole.⁹
73. Assets held in a matching adjustment portfolio should be excluded from the calculation. For that purpose, the matching adjustment assets have to be identified and are to be considered as non-eligible.
74. The eligible assets in the portfolio should be identified according to the table below, which also provides indications for their allocation in the different buckets.

⁹ see specifications on tab "Assets per currency – summary" for further explanations. Where a "scaling approach" is used to determine the volume of assets covering technical provisions valued as a whole, the scaled asset values should be reported in this tab.

CIC: Third and fourth position		Eligible	Bucket
1	Government bonds		
11	Central Government bonds	YES	Government portfolio, in the appropriate Issuer and Duration bucket
12	Supra-national bonds	YES	Government portfolio, in the appropriate Issuer and Duration bucket
13	Regional government bonds	YES	Government portfolio if they are listed in the Commission Implementing Regulation (EU) 2015/2011 (https://eur-lex.europa.eu/eli/reg_impl/2015/2011/oj), in the appropriate Issuer and Duration bucket. Otherwise Non-financial Corporate portfolio, in the appropriate CQS and Duration bucket
14	Municipal government bonds	YES	Government portfolio if they are listed in the Commission Implementing Regulation (EU) 2015/2011 (https://eur-lex.europa.eu/eli/reg_impl/2015/2011/oj), in the appropriate Issuer and Duration bucket. Otherwise Non-financial Corporate portfolio, in the appropriate CQS and Duration bucket
15	Treasury bonds	YES	Government portfolio, Duration bucket < 1, in the appropriate Issuer bucket
16	Covered bonds	YES	Government portfolio, in the appropriate Issuer and Duration bucket
17	National Central banks	YES	Government portfolio, in the appropriate Issuer and Duration bucket
19	Other	YES	Government portfolio, in the appropriate Issuer and Duration bucket
2	Corporate bonds		
21	Corporate bonds	YES	Corporate portfolio, in the appropriate Issuer sector (Financial/Non financial), CQS and Duration bucket
22	Convertible bonds	YES	Corporate portfolio, in the appropriate Issuer sector (Financial/Non financial), CQS and Duration bucket.
23	Commercial paper	YES	Corporate portfolio, Duration bucket < 3, in the appropriate Issuer sector (Financial/Non financial) and CQS bucket
24	Money market instruments	YES	Corporate portfolio, Duration bucket < 3, in the appropriate Issuer sector (Financial/Non financial) and CQS bucket
25	Hybrid bonds	YES	Corporate portfolio, in the appropriate Issuer sector (Financial/Non financial), CQS and Duration bucket
26	Common covered bonds	YES	Corporate portfolio, in the appropriate Issuer sector (Financial/Non financial), CQS and Duration bucket
27	Covered bonds subject to specific law	YES	Corporate portfolio, in the appropriate Issuer sector (Financial/Non financial), CQS and Duration bucket
28	Subordinated bonds	YES	Corporate portfolio, in the appropriate Issuer sector (Financial/Non financial), CQS and Duration bucket

29	Other	YES	Corporate portfolio, in the appropriate Issuer sector (Financial/Non financial), CQS and Duration bucket
3	Equity	NO	
4	Collective Investment Undertakings		
41	Equity funds	YES*	
42	Debt funds	YES	Corporate portfolio, in the appropriate Issuer sector (Financial/Non financial), CQS and Duration bucket, provided that this information is available
43	Money market funds	YES*	
44	Asset allocation funds	YES*	
45	Real estate funds	YES*	
46	Alternative funds	YES*	
47	Private equity funds	YES*	
48	Infrastructure funds	YES*	
49	Other	YES*	
5	Structured notes		
51	Equity risk	NO	
52	Interest rate risk	YES	Corporate portfolio, in the appropriate Issuer sector (Financial/Non financial), CQS and Duration bucket
53	Currency risk	NO	
54	Credit risk	YES	Corporate portfolio, in the appropriate Issuer sector (Financial/Non financial), CQS and Duration bucket
55	Real estate risk	NO	
56	Commodity risk	NO	
57	Catastrophe and Weather risk	NO	
58	Mortality risk	NO	
59	Other	NO	
6	Collateralised securities		
61	Equity risk	NO	
62	Interest rate risk	YES	Corporate portfolio, in the appropriate Issuer sector (Financial/Non financial), CQS and Duration bucket
63	Currency risk	NO	
64	Credit risk	YES	Corporate portfolio, in the appropriate Issuer sector (Financial/Non financial), CQS and Duration bucket
65	Real estate risk	NO	
66	Commodity risk	NO	
67	Catastrophe and Weather risk	NO	
68	Mortality risk	NO	
69	Other	NO	

7	Cash and deposits		
71	Cash	NO	
72	Transferable deposits (cash equivalents)	NO	
73	Other deposits short term (less than or equal to one year)	NO	
74	Other deposits with term longer than one year	YES	Corporate portfolio, in the appropriate Issuer sector (Financial/Non financial), CQS and Duration bucket. If the CQS is not available, the issuer's CQS should be used
75	Deposits to cedants	NO	
79	Other	NO	
8	Mortgages and loans		
81	Uncollateralized loans made	YES	Corporate portfolio, in the appropriate Issuer sector (Financial/Non financial), CQS and Duration bucket
82	Loans made collateralized with securities	YES	Corporate portfolio, in the appropriate Issuer sector (Financial/Non financial), CQS and Duration bucket
84	Mortgages	YES	Corporate portfolio, in the appropriate Issuer sector (Financial/Non financial), CQS and Duration bucket
85	Other collateralized loans made	YES	Corporate portfolio, in the appropriate Issuer sector (Financial/Non financial), CQS and Duration bucket
86	Loans on policies	YES	Corporate portfolio, in the appropriate Issuer sector (Financial/Non financial), CQS and Duration bucket
89	Other	YES	Corporate portfolio, in the appropriate Issuer sector (Financial/Non financial), CQS and Duration bucket
9	Property	NO	

* For investment funds look through should be performed and eligible assets within should be identified. Eligible assets should then be allocated to the appropriate bucket, following instructions for assets included in the other CIC codes. See below for further specifications.

75. The information in the QRT S.06.02.01 can be used to allocate the investments into the government and corporate portfolio as this template includes the CIC of each investment position (Column C0290).
76. For allocating the government portfolio by country of issuance, S.06.02.01 provides information in Column C0270 on the Issuer Country. Where undertakings hold only immaterial amounts of government bonds issued in particular countries (market value < 1 % of total assets) these can be included in the lines "other" ((lines 237-244), according to the appropriate duration bucket (Column C0360)).
77. In case there is no government bond yield curve for a country of the euro area, spreads are approximated with the ones of a peer country, considering those countries with similar credit quality and level of interest rates for the financial instruments used for the respective basic risk-free curves. The following peer countries are used:

Country without govts. yield curve	Peer country
Cyprus	Portugal
Estonia	Belgium
Latvia	Ireland
Liechtenstein	Switzerland
Lithuania	Spain
Luxemburg	Netherlands
Malta	Ireland

78. For Icelandic government bonds the government bond spreads of Croatia and for corporate bonds denominated in ISK the spreads of bonds denominated in HRK should be used as a proxy.
79. For the allocation to financial and non-financial sector in the **corporate portfolio**, the information on the Issuer Sector (Column C0230) is relevant. This field corresponds to the NACE code¹⁰. Section K is used to identify “Financial and Insurance activities”. The code can be
- 64: financial service activities, except insurance and pension funding
 - 65: insurance, reinsurance and pension funding, except compulsory social security
 - 66: activities auxiliary to financial services and insurance activities
80. All those assets where the issuer sector field starts with a “K” have to be allocated to the financial part of the corporate portfolio. All other assets have to be allocated to the non-financial part of the corporate portfolio; instruments issued by individuals should be allocated to the unrated/other non-financial category. Where the information on the issuer sector is not available, the asset is non-eligible for the calculations.
81. Information on the credit quality steps is provided in Column C0340. Please note, that information on whether an asset is included in the assets held in unit linked and index linked contracts is provided in Column C0090.
82. For investment funds (CIC 4) a full look through should be performed and eligible assets within should be identified. Eligible assets should then be allocated to the appropriate bucket, following instructions for assets included in the other CIC codes.
83. Where only a partial look through is possible, the assets grouped into asset classes should be allocated to the CQS and duration bucket corresponding to the average CQS and duration of the asset class. If this information is not

¹⁰https://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST_NOM_DTL&StrNom=NACE_R EV2&StrLanguageCode=EN

available, the CQS and/or duration of the fund's target asset allocation can be used.

84. When no look through is possible, the whole investment fund should be considered as not eligible, except for debt funds (CIC 42).
85. Debt funds (CIC 42) for which no look-through is possible should be allocated for their entire value to the Corporate portfolio, in the CQS and Duration bucket equal to the average CQS and duration of the fund's target asset allocation. If the CQS and/or duration of the target asset allocation is not known, the asset is non-eligible for the calculation.
86. Information on the total amount of investments in funds should be however provided in line 308, along with the amount of investments for which a full (line 350) or partial (line 351) or no look-through (line 352) has been performed.
87. Unrated assets should be allocated to the appropriate issuer sector (financial/non-financial) and duration buckets (lines 237-244 and 339-344). The spread for each duration bucket (for each issuer sector) is given by the weighted average of spreads in that duration bucket, with weights given by the relative amount of assets in each CQS.
88. The duration information should be taken from Column 360 in QRT S.06.02, where available. Where no duration information is available (typically for assets in CIC 8), undertakings should approximate duration and allocate those assets in the appropriate buckets.

Tab "Assets per currency - summary"

89. This tab provides summary information on fixed income investments. The total volume of fixed income assets is split between:
 - Fixed income assets covering technical provisions valued as a whole;
 - Eligible fixed income assets; and
 - Other non-eligible fixed income assets
90. Participants are requested to specify the amount of fixed income assets covering technical provisions as a whole in rows 13 and 14 of this tab. Note that these assets are not eligible for the calculation of the application ratio under option 4, or for the calculation of undertaking-specific VA values under Approach 2. Therefore, the assets backing the technical provisions as a whole should not be included in the detailed list.
91. If the assets backing the technical provision as a whole cannot be identified, participants should use a "scaling approach" as follows (based on S.02.01):
 - The participants calculates, per individual currency, two scaling factors as specified in rows 40 to 52 of this tab;

- All investment in currency X that make up row R0070 should be scaled with the following factor: $1 - ([Non-life TP calculated as a Whole in currency X; R0530] + [Health non-life TP calculated as a Whole in currency X; R0570] + [Life TP calculated as a Whole in currency X; R0660] + [Health life TP calculated as a whole in currency X; R0620]) / ([Investments in currency X; R0070] + [Loans and mortgages; R0230])$
 - All investments in currency X that make up row R0230 should be scaled with the same factor: $1 - ([Non-life TP calculated as a Whole in currency X; R0530] + [Health non-life TP calculated as a Whole in currency X; R0570] + [Life TP calculated as a Whole in currency X; R0660] + [Health life TP calculated as a whole in currency X; R0620]) / ([Investments in currency X; R0070] + [Loans and mortgages; R0230])$
 - All unit- and index-linked assets in currency X that make up row R0220 should be scaled with the following factor: $1 - ([Unit- and index-linked TP calculated as a Whole in currency X; R0700]) / ([Unit- and index-linked assets in currency X; R0220])$
 - The participant then uses these scaling factors to compute the volume of eligible assets in tab "Assets per currency – details" by applying the factor to the full value of fixed income assets in the respective bucket of investments.
92. For example, suppose that the participant determined scaling factors of 70% (for unit-linked or index-linked assets) and 80% (for non-unit and non-index-linked assets) in the respective currency, and that the full volume of fixed income investments in bucket "Financial CQS 1" in the corporate portfolio is 100, of which 70 relate to unit- or index-linked assets. Then the amount of eligible assets in this bucket (to be specified in tab "assets per currency – details) is $70*70\% + 30*80\% = 73$, of which $70*70\% = 49$ are unit-linked. The remaining volume of 27 fixed income assets then contributes to the value of fixed income assets covering TP as a whole in corporate portfolio (to be specified in row 14 of the summary asset tab).
93. Note that, where a "scaling approach" is used, the participant should specify this in cell C 35 of this tab.
94. The amount of eligible fixed income assets are summarized from the information provided in the tab "Assets by currency – details".
95. Where the participant has other non-eligible fixed income investments not covered under the first two positions mentioned in paragraph 89 (e.g. investments in matching adjustment portfolios), relevant information should be provided in rows 25 to 26 of this tab.
96. Additionally, in columns E, H, K, N, Q (base case) and U, X, AA, AD, AG in rows 19, 20, 25, 26, the market value of those unit- or index-linked fixed income assets for which policyholder bear the investment risk should be reported. For the purposes of this information request, this is understood to be assets for which policyholders directly or indirectly determine which and

how assets are invested (e.g. by an explicit decision, or by selecting a 'program' for investments) and for which their claim is essentially determined by the value of these assets.

Tab "Cashflows per currency"

- 97. To determine the application ratio for option 5, the cash-flow information is required.
- 98. Participants are asked to provide, separately by relevant currency, the information on the cashflows of the gross best estimate (gross of reinsurance recoverables) in the respective underwriting shocks of the standard formula as well as for the base case. Information is separately provided for life and non-life obligations. The liability cashflows require some further specification where a stochastic valuation for the technical provisions is performed. In this case, the cashflows should be equivalent to the stochastic set. This means that the discounted value of this cash-flow should be equal to the best estimate. The cash-flow should be determined as follows: for each maturity, the market value of cashflows with that maturity is calculated by discounting the scenario-dependent cashflows at the scenario dependent interest rates and then averaging these discounted values over all scenarios. Subsequently, this market value per maturity is accrued at the prevailing risk-free interest rate for that maturity. This implies that discounting the reported cashflows correspond to the best estimate.
- 99. Undertakings that use an approved internal model for the determination of their solvency capital requirement should also provide the cash-flow information according to the respective standard formula shocks. However, they are also invited to provide alternative figures according to their internal models in the tab "IM details"; these alternative figures are not used for the calculation of the application ratios".

Tab "SF only – SCR details"

- 100. This tab asks for the details of the SCR when the current VA is, or is not, applied. For the base case, where the current VA is applied, these data are already available in templates S.25.01 and S.26.01. For the situation where transitional measures and the VA are not applied the final SCR is currently already reported in S.22.01, but the intermediate results necessary for this final SCR are not reported. The SCR under approaches 1 and 2 are obviously not available in the existing templates, but several intermediate results already reported may be used, either as output or as input for the submodule under the VA for approach 1 and 2.
- 101. The table below indicates which information is to be reported on the tab "SF only – SCR details" and how it corresponds to existing information already provided in the QRT templates.

Line	Template	Row	Column
Solvency Capital Requirement	S.25.01	R0220	C0100
Capital add-on already set	S.25.01	R0210	C0100

Line	Template	Row	Column
Solvency Capital Requirement excluding capital add-on	S.25.01	R0200	C0100
Capital requirement for business operated in accordance with Art. 4 of Directive 2003/41/EC	S.25.01	R0160	C0100
Loss-absorbing capacity of deferred taxes	S.25.01	R0150	C0100
Loss-absorbing capacity of technical provisions	S.25.01	R0140	C0100
Operational risk	S.25.01	R0130	C0100
Adjustment due to RFF/MAP nSCR aggregation	S.25.01	R0120	C0100
Basic Solvency Capital Requirement - net	S.25.01	R0100	C0030
Basic Solvency Capital Requirement - gross	S.25.01	R0100	C0040
<i>Intangible asset risk - gross</i>	S.25.01	R0070	C0040
<i>Diversification - gross</i>	S.25.01	R0060	C0040
Non-life underwriting risk – gross	S.25.01	R0050	C0040
<i>Health underwriting risk – gross</i>	S.25.01	R0040	C0040
<i>Life underwriting risk - gross</i>	S.25.01	R0030	C0040
<i>Counterparty default risk - gross</i>	S.25.01	R0020	C0040
Market risk - gross	S.25.01	R0010	C0040
<i>Interest rate risk - gross</i>	S.26.01	R0100	C0080
<i>Interest rate risk - down shock - gross</i>	S.26.01	R0110	C0080
<i>Interest rate risk - up shock - gross</i>	S.26.01	R0120	C0080
<i>Equity risk - gross</i>	S.26.01	R0200	C0080
<i>Property risk - gross</i>	S.26.01	R0300	C0080
<i>Market risk concentrations - gross</i>	S.26.01	R0500	C0080
<i>Currency risk - gross</i>	S.26.01	R0600	C0080
<i>Diversification within market risk module - gross</i>	S.26.01	R0700	C0080
Spread risk - gross	S.26.01	R0400	C0080
<i>bonds and loans - gross</i>	S.26.01	R0410	C0080
<i>credit derivatives - gross</i>	S.26.01	R0420	C0080
<i>Securitisation positions - gross</i>	S.26.01	R0450	C0080

Tab “helper tab_application ratio 5”

102. No information needs to be provided for that tab. This tab takes the information of the cashflows as reported in the tab “Cashflows per currency” as input to determine the application ratio for option 5. The results of this helper tab are then automatically transferred to the tab “Results_VA Approach 1_2”.

Specifications relating only to undertakings using an approved internal model to calculate the SCR

IM.1. Background

103. EC in the CfA under no. 3.6 especially asks EIOPA to advice on whether or not to maintain the “Dynamic Volatility Adjustment” (DVA) in internal models and in case of maintaining, EIOPA should also advice on criteria to improve harmonisation of the modelling.

104. In this context with reference to the EIOPA ‘Opinion on the supervisory assessment of internal models including a dynamic volatility adjustment’,

EIOPA-BoS-17/366, approaches to the DVA could be 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.

105. In the draft opinion EIOPA with respect to the DVA advises as follows (add reference):

1. *The DVA could be maintained, if disincentives are solved in the VA ('at source'). This could open the way for more harmonization, as solving at source would allow more insurers to directly model the EIOPA VA methodology with acceptable outcomes and would avoid unintended risk management incentives. Depending on the concrete future design of the VA, this approach to internal models might potentially need to be supported in regulation.*
2. *If no or partial VA solution would be introduced, measures (in regulation) are needed. Such measures would have the ambition to avoid disincentives and ensure that the DVA is risk sensitive and protect the level playing field. This might impact the use of 'direct approaches' as well as the design of 'holistic approaches'.*

The following principles should be used to design an appropriate solution:

1. *No disincentives for risk and investment management, especially no 'overshooting' (or 'undershooting');*
2. *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.*

106. This information request should contribute to explore in how far the VA approach 1 and VA approach 2 as described in the draft opinion (see sections 2.4.5.2.3 and 2.4.5.2.3) could serve as a basis to allow for a broad use of direct approaches. Consequently, the information request for the DVA asks undertaking to replicate VA approach 1 and VA approach 2 in their models, i.e. implementing both as 'direct approach'.

107. Important to note: This does not indicate any EIOPA preference to advise to only allowing direct modelling in the future. Regarding pros and cons of the VA approaches which are expected to transfer to the DVA please refer to the respective sections of the consultation paper). The purpose is to collect data and experience on potential challenges with implementation and complexity.

108. The information request continues from the questionnaire issued in spring 2019.

IM.2. Undertakings in scope of this data request

109. This data request in general is applicable for all undertakings and groups with an approved full or partial internal model for market and credit (spread) risk, using either a DVA or CVA approach. The information request will in general

be based on the same sample as for the DVA questionnaire in spring 2019, but group figures are requested on a voluntary basis.

IM.3. Specification of the data request

110. The data request asks for type of data as regularly reported by undertakings in the quantitative reporting templates (QRTs) but under a changed VA design and changed economic conditions, which are described below. Furthermore, undertakings should provide capital requirements for the market and the credit spread risk as defined in their internal models.
111. Recalculated SCR figures will only be requested under the economic conditions of year-end 2018 ('baseline').
112. To allow for a better understanding of the 'dynamics' of the VA approaches under a DVA, VA calculations and the impact on selected balance sheet positions are asked for under further 'deterministic scenarios'. These scenarios will be undertaking specific, to explore the relevance for the SCR for this undertaking, but also uniform scenarios motivated by historic experience of financial stress will be used. The type of data for these scenarios is the same as for the 'baseline' and 'alternative baseline'.
113. Also CVA users are asked to provide data in those scenarios to check for indications that a constant VA might not be appropriate from a prudency point of view.
114. Internal model users need to submit information on the following tabs relevant for all participants:
 - "Participant Information"
 - "Results_Financial Impact"
 - "Results_VA Approach 1_2"
 - "Assets per currency – details"
 - "Assets per currency – summary"
 - "Cashflows per currency"

Additionally internal model users need to submit information on tabs

- "IM only - SCR details"
- "IM only - Scenarios basic data"
- "IM only - Scenarios VA details"
- "IM only – Distribution data"
- "IM only - Asset PF variations"
- And optional: "IM only - Option 5 alternative"

115. Details are specified in the following subsections.

IM.3.1. Configuration of the internal model

DVA users

116. As the information request tries to explore how far the VA approach 1 and VA approach 2 as described in the draft opinion solve identified VA deficiencies and could serve as a basis to allow for a broad use of direct approaches, undertakings are asked to change their DVA model and provide SCR figures under this changed model. More concretely, undertakings are asked to replicate VA approach 1 and VA approach 2 in their models, i.e. implementing both as 'direct approach'.

117. Important to note: This request does not imply any preferences for a future regulation on DVA modelling. The only purpose is to assess whether the VA approaches satisfy the criteria laid out in the draft advice with regard to the DVA.

118. Direct modelling in its literal sense means that within the model in each simulated scenario the VA would have to be determined according to VA approach 1 and VA approach 2 respectively. For these calculations, the credit spread data in the simulated scenarios would have to be used. Important to note: As stated in paragraph XX of the consultation paper, the VA under approach 1 in the DVA simulations should not include the macro-economic VA but only the permanent VA.

119. Under a direct DVA according to VA approach 1, in each scenario the risk-corrected spreads would have to be determined based on the representative portfolio for the relevant currency. Under VA approach 2 the risk-corrected spreads would have to be determined based on the undertaking's own portfolio. Please note that the risk correction has to be applied according to the VA approach. Also should be taken into account that the weights will typically change according to the changed market values of fixed income assets in the scenario.

120. With respect to the undertaking specific application ratios:

- Option 4: As this application ratio considers the sensitivity of assets and liabilities to economic conditions, it is in general expected to change with economic conditions depending on the risk profile. This especially is expected if options and guarantees are material. Consequently, a direct modelling implies a re-calculation of the option 4 application ratio, implying a re-valuation of assets and liabilities under each scenario ('full stochastic implementation').

However, for the purpose of this information request, if a full stochastic implementation should not be possible or not considered to be necessary, please contact the responsible supervisor to agree on the way forward. The option 4 application ratio in such cases could be assumed to be constant, i.e. be identical to the ratio used in the calculation of the solvency II balance sheet ("t=0") in all simulated scenarios.

To support the future considerations, the information request also collects data to assess the variability of the option 4 application ratio under specific economic scenarios as described below.

- Option 5: This application ratio considers the illiquidity characteristics of liabilities, from a conceptual point of view this ratio could be expected to be constant, which is also the assumption under the alternative baseline (see par. **Error! Reference source not found.**). For the purpose of simplification for this information request the application ratio according to option 5 should be kept constant under a DVA approach.

But, also this assumption will be subject to further considerations.

Please note: The shocks to determine the illiquid liabilities are standard formula shocks and have to be applied also by internal model users. In case you would consider this approach not to be appropriate, you are invited to provide proposals and additional alternative figures in the tab 'IM only – Option 5 alternative'.

121. An SCR calculation under the modified model is only requested for the 'baseline-scenario', i.e. year-end 2018. But, from this calculation scenarios and further data are to be provided (see below).

122. Participants are requested to describe any approximations they might have used compared to a replication of VA approach 1 and/or VA approach 2 in the model.

CVA users

123. For CVA users only the VA in the base case would be changed but no changes to the model are expected.

124. But as data from the DVA questionnaire in spring showed that application ratios might also materially decrease in stressed scenarios, CVA users are not only asked to provide the SCR but also VA calculations under stressed scenarios.

IM.3.2. Internal model specific parts of the information request

Tab "IM only - SCR details"

125. Total SCR figures are requested for the baseline-scenario only. Figures will be collected in the tab "Results_Financial Impact".

126. Additionally to the total SCR figures requested on the tab "Results_Financial Impact" 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 the responsible supervisor; 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 the responsible supervisor; 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.

127. Please note, that also the questionnaire in spring 2019 asked for such SCR on the level of market and credit risk.

Tab "IM only - Scenarios basic data"

128. To better understand the 'dynamics' of the VA approaches under a DVA, VA calculations and the impact on selected balance sheet positions are asked for under two types of 'deterministic scenarios':

- Scenarios relevant for the participants' individual SCR
- Scenarios of spread stress inter alia motivated by historic experience

129. These scenarios are described below.

130. The data collected for these scenarios correspond to the data requested on the tabs "Results_Financial Impact" and "Results_VA Approach 1_2" for the 'baseline' and the 'alternative baseline'.

Scenarios relevant for the undertakings SCR

131. 'Relevant scenario' in terms of risk drivers describes the scenario or set of scenarios that is relevant to determine the SCR, i.e. the 99.5% VaR of own funds in the probability distribution generated by your model and owing to the statistical estimator for the 99.5 percentile (e.g. including any interpolation or smoothing scheme). Please take into account any further aspects of your model e.g. instantaneous shocks, 'ageing effects' form a one year projection or trends.

132. Supervisors are aware that the SCR and its variations cannot be determined on one unique scenario in which the change in own funds corresponds to the SCR. But for the purpose of this information request you are requested to select one scenario relevant under the VA perspective from your currently used internal model including VA (as DVA or CVA as applicable). I.e. the scenario you select should show an impact on own funds near to the amount of the SCR and should include relevant credit risk stresses. Furthermore, to explore potential 'cross effects' in your selection especially consider a scenario, which includes stressed risk-free interest rates.

133. Additionally you are invited to provide an additional 'stochastic scenario' which would be determined as an 'average' across several scenarios and which is better reflecting your chosen statistical estimator.

134. The template was designed to allow for a description of those scenarios granular enough as to (1) perform a plausibility check on the results of your VA calculations under these scenarios and (2) roughly understand also the stresses included for other risks than market and credit risk, especially any kind of underwriting risk.
135. Impacts on own funds and balance sheet positions should be provided under VA approach 1 and VA approach 2 compared to the values under the current VA regime as implemented in your model. I.e. you need to provide three data sets for each selected scenario: For the first, it is assumed that your internal model for the selected scenarios provides you with an impact on own funds and ideally more granular on balance sheet positions. For the second and third data set, under the economic conditions given by the two selected scenarios ('relevant' and 'average'), you would re-calculate your solvency II balance sheet, but using the VA according to VA approach 1 and VA approach 2.

Prescribed stressed economic scenarios

136. Additionally to the undertaking specific scenarios you are requested to provide data in the following deterministic scenarios with stressed spread conditions:

- 'Differentiated corporate spread stress': This scenario different from the 'alternative baseline' includes stressed spreads for corporate bonds according to sector ('financial' and 'non-financial') and credit quality steps ('CQS') which should be applied to the economic situation as in the official year-end 2018 calculations.

The spread levels are motivated by the observations at year-end 2008 as well as the EIOPA insurance stress test 2018 and calibrations observed in EIOPA's comparative studies on internal models. Similarly to the stressed baseline, for the purpose of the information request this scenario is described by one off, instantaneous increases in spreads according to the tables on tab 'IM only - shock scenarios'. Please note that these are not maturity dependent.

The following table provides an overview:

Credit Quality Step	Shock (bps)	
	Financial	Non-Financial
CQS 0	175,0	100,0
CQS 1	250,0	150,0
CQS 2	500,0	250,0
CQS 3	1.400,0	500,0
CQS 4	1.700,0	1.000,0
CQS 5	3.000,0	2.000,0
CQS 6	6.000,0	4.500,0

- 'Combined differentiated corporate and sovereign spread stress': Additionally and similarly to the corporate stress as defined above, this

scenario is motivated by historic observations (as at year-end2011), EIOPA Insurance Stress Test 2018 and EIOPA's comparative studies.

The following table provides an overview of the spread stresses to be applied to government bonds at the same time as the stresses to corporate bonds in the corporate scenario:

Bucket	Shock (bps)	Bucket members
SOV 1	50,0	AT, DK, FI, FR, DE, LU, NL, NO, SE, UK, US
SOV 2	100,0	BE, CZ, EE, MT
SOV 3	250,0	BG, CY, IE, IT, LV, SI, SK, ES
SOV 4	300,0	GR, PT

Tab "IM only - Scenarios VA details"

137. This tab collects the same information as the tab 'Results_VA Approach 1_2' but for the scenarios as described above:

- One scenario relevant for the SCR
- Optional: an average scenario relevant for the SCR
- Two prescribed spread stress scenarios

Tab "IM only – Distribution data"

138. On the tab 'IM only – Distribution data' you are requested to provide data from the distributions generated by your internal model under the combined market & credit risk and the implementation of VA approach 1 and 2 as a direct DVA approach.

139. More concretely you are asked to provide on a scenario-by-scenario basis the following:

- VA under approach 1
- VA under approach 2
- Value of total assets
- Value of Excess of Assets over Liabilities, applying VA under approach 1 and under approach 2

Additionally along the technical possibilities of your implementation:

- Value of Excess of Assets over Liabilities without VA
- Application ratio for option 4 and PVBP(FI) as well as PVBP (BEL) used to determine this ratio.

140. Only in the case that your model simulates more than 50,000 Monte Carlo scenarios for the combined market & credit risk, it is – for practical reasons – not necessary that the entire scenario set is transmitted, but you should

assure that the number of scenarios is sufficient to provide high quality results.

Tab “IM only – Asset PF variations”

141. Furthermore, to collect information on the potential “quality overshooting” per credit quality, you are requested to recalculate stresses based on differing asset portfolio. To this end, we would ask you to construct 3 alternative asset portfolios based on the following principles:

1. These variations from your own portfolio are built by adding another corporate bond position with credit quality step 1, 3 and 4. This increase will equal a corporate bond with a market value of 1% of the balance sheet total and a maturity of 5 years. This will however not take the form of a reinvestment, but of an additional investment, which we be financed by a ‘capital injection’, i.e. by capital shares or member accounts in the case of mutuals. Other investments remain unchanged and therefore the total balance sheet is expected to increase. If the model has further granularity (e.g. per sector or seniority), the characteristics of the additional corporate bond position would ideally correspond to the following instruments as specified for the ‘Market & Credit Risk Comparative Study 2018’:

CQS 1: CORP-FI-NA-FIN-AA-SEN_UN-05

CQS 3: CORP-FI-NA-FIN-BBB-SEN_UN-05

CQS 4: CORP-FI-NA-FIN-BB-SEN_UN-05

If it would not be possible to choose these instruments, you can be chosen freely, but importantly, your choice should be consistent across the different asset portfolios.

To avoid undue concentration please take this investment with respect to 10 counterparties.

2. This increase in assets would impact the calculation of the volatility adjustment under approach 1 and 2. It would be expected that the volatility adjustment would be recalculated according to the same principles as those put forward under section IM.3.1 for DVA users.
 3. The additional corporate bond should impact the valuation of the Best Estimate through its cash-flow model. However, this investment should be incorporated in the ALM segment where the initial impact on management actions within the Best Estimate cash-flow model is minimal (e.g. in terms of initial rebalancing of assets, etc.), but also no changes to the implemented investment rules should be applied.
142. If a full revaluation of the Best Estimate using the cash-flow model would not be feasible in this short timeframe, the undertaking would be asked to make use of the appropriate loss proxy technique, which is used within the context of the internal model to this end. The undertaking should however justify

that the applicability of the loss proxy function for the given portfolio, the economic scenario in question and the resulting volatility adjustment.

143. Information to be provided is similar to the information requested under the tab "Results_Financial Impact".
144. The impact of the different asset portfolios would be asked to be recalculated under two specific scenarios, namely:
 1. Under the economic conditions of year-end 2018 ('baseline'),
 2. Under the relevant scenario as described for the tab "IM only – Scenarios basic data" in par. 135.