

# **Manual for the completion of the QIS5 spreadsheet (for solo undertakings)**

*Please note that this manual is not part of the formal QIS5 documentation as issued by the European Commission. It is not intended to, and does not, replace the QIS5 Technical Specifications or any other part of the QIS5 documentation. The European Commission documentation takes precedence.*

*The manual is based on the QIS5 spreadsheets from 23<sup>rd</sup> of August.*

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# Introduction

1. For a number of years, work has been going on throughout Europe on a substantially revised and improved regime for insurance and insurance supervision: Solvency II. The development of Solvency II is regularly tested, and supported, by so-called Quantitative Impact Studies – in short QIS. In 2010 the fifth Quantitative Impact Study is being carried out: QIS5.
2. The QIS5 exercise is carried out by CEIOPS (Committee of European Insurance and Occupational Pensions Supervisors), at request of the European Commission. The request is formulated as a Call for Advice from the European Commission to CEIOPS. CEIOPS has a major advisory role in the development of Solvency II. The Technical Specifications to be used for QIS5, however, have been issued by the European Commission.
3. The documents for the QIS5 exercise are available on the website of CEIOPS: [www.ceiops.eu](http://www.ceiops.eu). From a technical perspective, the core documents are an extensive Technical Specifications, with annexes, and a number of spreadsheets and qualitative questionnaires to be completed by (re)insurance undertakings and groups.
4. QIS5 tests the financial position of individual insurers ('solo') whose solvency capital requirement (SCR) is calculated using the Standard Formula. QIS5 also applies to insurance groups and to individual insurers and insurance groups intending to apply to use a full or partial internal model for the determination of the SCR.
5. From previous QIS exercises, it appears that the volume of documentation, and the fact that translation of the complete set into national languages was not feasible, may have made participation in QIS less inviting to some companies, notably where less overall capacity is available. At the same time, broad participation, across a broad spectrum of companies, is highly desirable, both for the development of Solvency II and for a timely preparation by all companies that fall under the scope of Solvency II.
6. It is for this reason that CEIOPS has offered to provide a 'QIS5 manual': a more concise document which can more easily be translated into the national languages and which hopefully will contribute to a successful QIS5.
7. *Please note that this manual is not part of the formal QIS5 documentation as issued by the European Commission. It is not intended to, and does not, replace the QIS5 Technical Specifications or any other part of the QIS5 documentation. The European Commission documentation takes precedence.*

## Aim of this manual

8. The aim of this manual is to offer assistance in the completion of the QIS5 exercise, in particular to those insurers that have not previously taken part in a QIS. This manual is especially intended for smaller insurers offering relatively straightforward products, and holding non-complex investments. Given this aim, the manual is limited to the 'solo' aspects of the spreadsheet, for insurers using the standard formula for the determination of the SCR.
9. The manual is intended to supplement the Technical Specifications and provide practical assistance by:
  - briefly setting out the main concepts of Solvency II; and
  - discussing in outline the input tabs of the spreadsheet relevant to 'solo' insurers.
10. The manual aims to do so in accessible, non-technical wording where possible, over a relatively small number of pages. However, this reduces the level of detail and nuance of the full Technical Specifications to a considerable extent.
11. *Please note, therefore, that this manual is intended only as a supplementary practical 'hand-out'. It is important that insurers consult the Technical Specifications when completing the spreadsheets.*
12. The main concepts of Solvency II are included in the European Directive (2009/138/EC<sup>1</sup>). The elaboration of these concepts is still ongoing, and will take place in two steps. The first step is the formulation of so-called level 2 implementing measures. These will then be followed in a number of areas by so-called level 3 guidance.
13. QIS5 is a test. Undertakings should bear this in mind. A major objective of QIS5 is to assess the impact on insurers and reinsurers' balance sheets and solvency position of the introduction of level 2 implementing measures under Solvency II compared to Solvency I (the current EU regime). The Technical Specifications, however, should not be seen as purporting to represent or pre-judge the final outcome of the discussions on the level 2 implementing measures<sup>2</sup>.
14. QIS5 also tests the feasibility of the calculations. Solvency II emphasises the principle of proportionality. QIS5 thus contains a number of simplifications. Insurers who meet the conditions to use the simplifications are nevertheless encouraged to try, if possible, to carry out the standard calculations, so that the practicality of these is sufficiently tested.

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<sup>1</sup> Please also see the website of the European Commission. This website also contains a wealth of other information on Solvency II.

<sup>2</sup> Please also see the letter of 5 July 2010 of the European Commission to CEIOPS, available on the CEIOPS website.

15. The qualitative questionnaire includes a number of general questions on the feasibility and practicability of QIS5. Insurers are again encouraged to complete these carefully.
16. QIS5 is also being used to collect additional data on underwriting risk for non-life and short-term health insurance, which will be used in a further calibration exercise. Please also complete this additional data request.

# Concepts of Solvency II

## Solvency II: 3-pillar structure

17. Similar to the current regime for insurers, the upcoming Solvency II regime addresses both how insurers run their company and the supervision of insurers. The quantitative financial aspects – the prudential balance sheet, determination of available capital, calculation of capital requirements, and comparison of available and required solvency – are embedded in a broader framework of adequate risk management, fit and proper testing of management, supervisory reporting etc.
18. Under Solvency II, the different aspects are neatly grouped under 3 'pillars'. In essence:
  - Pillar 1 contains the quantitative financial requirements, regarding both the balance sheet and capital adequacy;
  - Pillar 2 addresses the more qualitative aspects, such as governance and risk management in a broader sense, but also the role of the supervisor and the supervisory process; and
  - Pillar 3 considers supervisory reporting and public disclosure.
19. These three pillars are, of course, inextricably linked and attuned, to provide for a balanced and adequate regime. The core principle is that the insurance company itself should identify, clarify and manage its risks.

## Pillar 1: market consistent valuation and risk sensitive capital requirements

20. This manual addresses the quantitative aspects of QIS5, limited to the 'solo' aspects of the spreadsheet for an insurer using the standard formula to calculate the solvency capital requirement (SCR). These calculations follow a prescribed standard approach.
21. Pillar 1 of Solvency II is based on the following concepts:
  - The best insight into the current financial position of an insurer is obtained by valuing all balance sheet items at market value. Where no such market value is readily available and observable in a liquid market, a model-based valuation which makes optimal use of and is consistent with current market information should be used<sup>3</sup>. Market value is thus seen as the most relevant indicator of the economically realistic value at any point in time.
  - The balance sheet based on market values is a 'snapshot', a representation of the financial position of the insurer at a particular point in time. The financial position of an insurer is subject to a range of risks, such as underwriting risk (also called insurance technical risk)

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<sup>3</sup> This does not stand in the way of using undertaking specific parameters (USP), as provided for in the Technical Specifications (chapter 10).

and market risk (investment risk). To ensure that an insurer can fulfil its obligations towards policyholders and beneficiaries as and when they fall due, it is necessary to identify these risks and understand the possible effects of these risks, should they crystallise, on the balance sheet items. The risks would thus also impact on eligible own funds (capital resources), and possibly also required capital, of the insurer.

- In addition to adequate technical provisions, an insurer is required to hold capital (eligible own funds) to cover these risks. Own funds act as a buffer, such that even after such risks have crystallised, at least the technical provisions at that time are still covered by the market value of the assets held after the event has occurred. This should enable the insurer to transfer the insurance portfolio, or to recapitalise. Under Solvency II the effects of material quantifiable risks on the solvency position of the insurer are determined, and combined into a Solvency Capital Requirement (SCR). In addition, there is a Minimum Capital Requirement (MCR).

22. The completion of the QIS5 spreadsheet puts into practice the concepts outlined above:

- Preparation of a balance sheet based on market values or at least market consistent values. This also provides a 'surplus' or *net asset value* (very briefly: the value of assets minus liabilities) on a market consistent basis.
- For each of the identified risks, the effect of a prescribed scenario ('shock') on the net asset value is calculated (in some cases a simple formula gives the result). A deterioration of the net asset value under such a scenario for a specific risk may also be seen as equal to a partial capital requirement, which would just be able to cover the financial consequences of that scenario. These partial requirements can subsequently be combined to give the total SCR capital requirement.

## **Preparation of the balance sheet**

23. The concept of market consistent valuation is elaborated on as follows:

- With respect to the asset side of the balance sheet, for at least some of the assets, directly observable market prices are available: for example government bonds or exchange traded shares. For other investments valuation models may be required. For real estate, a recent valuation report may be used. Reinsurance recoverables are presented on the asset side of the balance sheet; the technical provisions on the liability side of the balance sheet are reported gross of reinsurance. This serves to enhance the transparency of the regime and reporting. If the gross technical provisions as reported under QIS5 have a value which differs from the current Solvency I amount, this may also affect the value of the reinsurance recoverables under QIS5.
- Participations (please see Technical Specifications SCR 15.2) also need to be reported at market consistent values. Please see the separate section on participations, which discusses their valuation, and the

treatment of participations in own funds and in the determination of required capital.

- On the liability side of the balance sheet, the technical provisions are often the most important item. The current European regime requires adequate or prudent technical provisions, without much further detailing or guidance. In essence, this may be accomplished by allowing for some prudence in each of the relevant underlying assumptions. Under Solvency II, the concept of market consistent valuation also extends to the technical provisions: as a principle, but also because otherwise an inconsistent balance sheet would result. However, there is no liquid market providing directly observable market prices for transactions of insurance portfolios. Under Solvency II, the value of the technical provisions therefore needs to be 'constructed' as the sum of two elements: the so-called Best Estimate of the value of the insurance obligations plus a Risk Margin<sup>4</sup>.
- The Best Estimate (of the current insurance portfolio) is, mathematically speaking, the expected value of the outgoing cash flows minus the incoming cash flows<sup>5</sup>. These are estimated using realistic probability assumptions for the factors that may affect these cash flows, whilst discounting with the relevant risk free interest rate term structure<sup>6</sup>. In simple terms: what is the best estimate of the cost to the insurer of meeting the insurance obligations as and when they fall due, taking into account the premiums which are expected still to be received. The crucial point here is that the Best Estimate contains no prudence, no margin or buffer to deal with misfortune or unexpected developments<sup>7</sup>. When calculating the Best Estimate, the underlying assumptions used must also contain no (implicit) prudence, or 'safety margin'. A further difference from the current regime is that discounting is always applied, using the relevant current risk free rate. For non-life insurers, separate Best Estimates should be calculated for the claims provision and the premium provision. The Best Estimate of the premium provisions will most likely differ from the current unearned premium reserve, as the insurer will try to set a premium which is profitable, i.e. higher than the expected cash outflows – claims and expenses – due to that policy. Expected future premiums stemming from existing (in-force) policies need to be taken into account in the calculation of the premium provision.
- A Risk Margin is added to the Best Estimate to arrive at a market consistent value of the technical provisions. The Risk Margin is determined with the so-called Cost-of Capital (CoC) method. This method is based on the idea that an insurer (or provider of capital to the insurer) wishes to be rewarded for the assumption of risk. The CoC method can be summarised as follows. Assume that an insurer wishes to transfer, or acquire, an existing insurance portfolio. The acquiring insurer will not accept the transfer if the value of assets transferred

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<sup>4</sup> In specific cases technical provisions may be calculated 'as a whole'. This will usually not be the case for most companies. Please note that the valuation of unit-linked liabilities is also beyond the scope of this manual.

<sup>5</sup> Please also see the remarks on the testing of 'expected profits included in future premiums', in the section on own funds.

<sup>6</sup> The issue of discounting is discussed later in this manual.

<sup>7</sup> It should further be noted that the Solvency I 'surrender floor' does not apply in Solvency II.

with the insurance portfolio equals the Best Estimate. The future outgoing payments may well differ from, and possibly exceed, the cash flows associated with the Best Estimate, and the acquiring insurer does not wish to accept this risk without an expected positive return. The acquiring insurer will thus demand an additional amount, on top of the Best Estimate: i.e. a Risk Margin.

The amount of the Risk Margin may be determined as follows. An insurer not only needs to establish technical provisions; it also needs to hold further risk-absorbing capital. The insurer, or provider of capital, wishes to be rewarded for providing this capital. The Risk Margin is simply the amount of capital required multiplied by the Cost of Capital rate. The capital requirement in the calculation of the Risk Margin only relates to the SCRs for the risks inherent in the current insurance portfolio; this also includes operational risk and counterparty default risk with respect to reinsurance recoverables<sup>8</sup>. Key is that the SCR for 'voluntary' (sometimes called 'avoidable') market risk is not included. The amount of risk margin is driven by the characteristics of the insurance portfolio. Risks which can be hedged are not included in the calculation of the Risk Margin.

The CoC rate is set at 6%. The Best Estimate will, on average, just suffice to run off the insurance portfolio. The Risk Margin will then be released, and this amount is then exactly enough to provide a return of 6% (above the risk free rate) to the provider of capital. Only the required return above the risk free rate is included in the calculation of the Risk Margin. The capital that had been made available to the insurer can simply be invested at the current risk free rate.

*Illustration of the calculation of the Risk Margin. For sake of simplicity the example abstracts from discounting.*

An insurer holds an insurance portfolio which will run off in 1 year, without any further premium payments made. The Best Estimate is 200. Suppose the required capital the insurer needs to hold in respect of the non hedgeable risks – also for only 1 year – is 100. The CoC rate is 6% (above the risk free rate), The Risk Margin is  $100 \times 6\% = 6$ . The technical provisions are  $200 + 6 = 206$ . The insurer invests the 100 of capital at the risk free rate, say 3%.

After 1 year, the insurer will have paid out, on average, 200. The released amount of technical provisions is 6. The invested capital of 100 has earned 3 in interest. The provider of the capital can now be repaid the invested 100 plus the risk free 3 plus the return of 6.

Where the run off of the portfolio extends over a number of years, then risk absorbing capital will be required over this longer period. The (discounted) costs thereof -required reward- will then similarly be included in the Risk Margin. The Risk Margin will, again on average, be released in accordance with the run-off pattern.

<sup>8</sup> There may also be residual market risk.

- The technical provisions determined in this way will thus generally differ from the current Solvency I technical provisions; the Risk Margin is not equal to the difference between the current Solvency I technical provisions and the QIS5 Best Estimate.
- Insurance (and reinsurance) obligations should be segmented as a minimum by line of business (LoB) in order to calculate the technical provisions. The segmentation should be applied to both components of the technical provisions, the best estimate and the risk margin. A more granular segmentation into homogeneous risk groups may be called for where it allows for a more accurate valuation of the technical provisions. Insurance obligations should be allocated to the line of business that best reflects the nature of the underlying risks. Please note that this principle means that the segmentation into lines of business does not follow the legal classes of non-life and life insurance activities used for the authorisation of insurance business or accounting classification. Insurance obligations of business that is pursued on a similar technical basis to that of life insurance should be considered as life insurance obligations, even if they are non-life business from a legal perspective. Similarly, insurance obligations of business that is not pursued on a similar technical basis to that of life insurance should be considered as non-life insurance obligations, even if they are life insurance from a legal perspective. In particular, annuities stemming from non-life insurance contracts are life insurance obligations. For health insurance, two types of health insurance can be distinguished according to their technical nature:
  - SLT Health: health insurance which is pursued on a similar technical basis to that of life insurance
  - Non-SLT Health: health insurance which is not pursued on a similar technical basis to that of life insurance
- Insurers are strongly advised to refer to the Technical Specifications (section V.2.1) for a more detailed description of the segmentation in QIS5. The segmentation is of course reflected in the spreadsheet. The nature of the underlying risks not only determines the segmentation in the technical provisions; it is also reflected in the determination of required capital (please see the section on required capital later in this manual).

## Discounting in QIS5

24. *NB: Insurers are advised to study themselves the relevant sections of the Technical Specifications<sup>9</sup>.*
25. Under Solvency II, the discount rate applied is the 'risk free' interest rate term structure. The determination of this risk free rate and the issue of discounting in QIS5 differ from QIS4, with a number of consequences for the required calculations and requested information.

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<sup>9</sup> Please see in particular section V2.3 on discount rates and section SCR 5.11. on illiquidity premium risk.

26. For QIS5, interest rates are provided in the spreadsheets. These can be found in the QIS5 documents as issued by the European Commission:
- QIS5: Relevant risk-free interest rate term structures
27. These have been derived, in a first step, from swap rates, with a small adjustment for credit risk. The longer rates are determined under the assumption that there is a stable very long term rate<sup>10</sup>; the rates are developed 'drawing a line' between the last point where the market is still assumed to be liquid and this long term rate, in the rather distant future. The QIS5 rates provided also incorporate an 'illiquidity' premium<sup>11</sup>. This illiquidity premium does not apply to the longer – extrapolated – end of the curve.
28. In total, the QIS5 spreadsheets provide, in first instance, four complete interest rate term structures, for a range of currencies, with, respectively:
- A 100% illiquidity premium
  - A 75% illiquidity premium
  - A 50% illiquidity premium
  - No illiquidity premium
29. For durations less than one year, the discount rate to be used is the same as the one year rate.
30. The approach chosen, and more particularly the inclusion of an illiquidity premium, has consequences for:
- The determination of the (Best Estimate) technical provisions:
    - Different types of insurance obligations are to be discounted with different interest rates.
  - The determination of required capital (SCR):
    - The scenarios (sub-modules) for market risks now include not only 'general' interest rate risk – rates could be higher or lower – but also specifically illiquidity premium risk – the risk that the illiquidity premium falls. Briefly:
      - The interest rate risk scenario relates to a change in the swap rate component; the illiquidity premium remains constant
      - The illiquidity premium risk scenario relates to a change in the illiquidity premium component; the swap rate component remains constant
31. The Technical Specifications set out which liabilities should be discounted with which curve as mentioned in paragraph 28. Undertakings should indicate which liabilities (i.e. insurance liabilities that are considered in the

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<sup>10</sup> For most currencies this rate is 4.2%. This is composed of an assumed long term real interest rate of 2.2% and an assumed long term inflation rate of 2%.

<sup>11</sup> Please refer to the report 'Task Force Report on the Liquidity premium', dated 3 March 2010, on the CEIOPS website.

technical provisions) they discount with the different curves and fill in the relevant questions in the questionnaire.

32. The Technical Specifications set out that:

- For the purposes of QIS5, participants should identify the liabilities that may be discounted with the risk-free interest rate term structures that includes a 100% illiquidity premium by assessing that they meet all of the following criteria:
  - the only underwriting risks connected to the contracts are longevity risk and expense risk;
  - the undertaking does not bear any risk in case of any form of surrender
  - the premiums have already been paid and no incoming cash-flows are allowed for in the technical provisions of the contracts;

The assessment of these requirements should be carried out at the level of each contract, with all the cash flows of a contract receiving the same treatment.

- For the purposes of QIS5, participants should identify the liabilities that should be discounted with the risk-free interest rate term structures that includes a 75% illiquidity premium as the following ones:
  - life insurance contracts with profit participation other than those specified in the previous paragraph.
- All liabilities not falling under one of the two previous paragraphs should be discounted with the risk-free interest rate term structures with a 50% illiquidity premium<sup>12</sup>.

33. The discount rates provided by the QIS5 package should thus be used for discounting, when calculating the Best Estimate and the Risk Margin. The Risk Margin is calculated using the curve without an illiquidity premium.

34. As mentioned, as this discount rate includes an illiquidity premium, an 'illiquidity premium risk' is also included in QIS5: the risk of an increase in value of the technical provisions due to a decrease in the illiquidity premium. An illiquidity premium risk 'shock' is thus included in the scenarios, under market risks. The prescribed scenario consists of a 65% fall in the size of the illiquidity premium<sup>13</sup>. The 65% fall is restricted to the illiquidity premium that is used for the calculation of technical provisions (please also see the CEIOPS Q&A on illiquidity premium risk).

35. CEIOPS will aim also to provide the interest rate term structures after this scenario – thus with the reduced illiquidity premium - in the Helper tabs.

36. The QIS5 Technical Specifications further describe, amongst others, the Transitional provision on the discount rate.

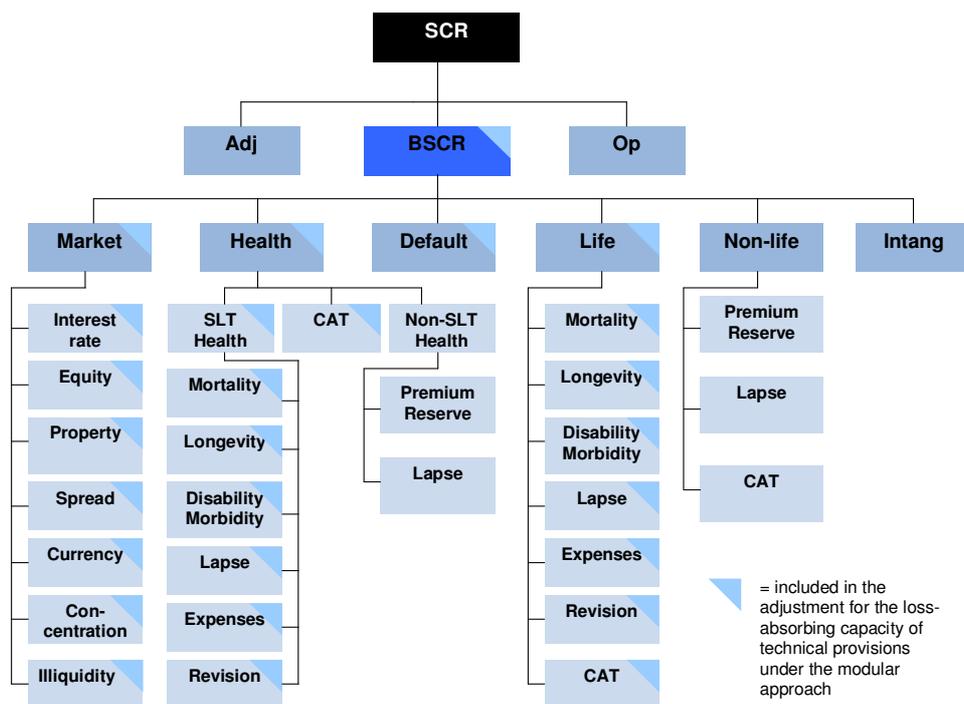
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<sup>12</sup> Unit-linked contracts are beyond the scope of this manual. Please refer to the Technical Specifications.

<sup>13</sup> Please see Technical Specifications section SCR.5.11.

## Required capital

37. Solvency II provides for two different solvency requirements, the SCR (Solvency Capital Requirement) and the MCR (Minimum Capital Requirement). Although these may not be compared exactly with the requirements under the current Solvency I regime, the *role* of the SCR may be compared roughly with the current required solvency margin and the MCR with the current guarantee fund (1/3 of the required solvency margin). Solvency II will also include an absolute minimum capital requirement (AMCR), as does Solvency I.
38. The *amount* of the SCR is determined differently from the current required solvency margin. The underlying idea is that all potentially important and reasonably quantifiable risks should be included in the required capital, as these may all affect the financial position of the insurer.
39. The calculation of the SCR follows a structured step-by-step approach. This can be illustrated by the figure below, taken from the QIS5 Technical Specifications.



40. It is easiest to start with the six main risk categories:
- Market :Market risk
  - Health :Underwriting risk of health insurance obligations
  - Default :Counterparty default risk, including reinsurance default risk
  - Life :Underwriting risk of life insurance obligations
  - Non-life :Underwriting risk of non-life insurance obligations
  - Intang :Risk associated with the value of intangible assets

41. The figure shows that all but one of these main risk categories can be subdivided into several components, or sub-modules. For example, market risk consists of:
- Interest rate: the risk of a change in the interest rate term structure
  - Equity: the risk of lower equity prices
  - Property: the risk of lower property prices
  - Spread: the risk of a higher spread (e.g. the excess yield of a corporate bond above the risk free rate); a higher spread will lead to lower prices
  - Currency: the risk of – detrimental – changes in exchange rates
  - Concentration: the additional risk of a concentrated rather than well diversified asset portfolio
  - Illiquidity: the risk of changes in market liquidity (please also see the earlier section on discounting and the illiquidity premium)
42. As mentioned earlier, the characteristics of the insurance obligations, and not their legal classification, determine their allocation to a line of business. They also determine which underwriting risks and sub-risks, and their potential impact, the insurer needs to consider in the calculation of the SCR<sup>14</sup>. The segmentation of the technical provisions and the applicability of the SCR modules need to be consistent, as both aspects are driven by the same underlying characteristics.
43. The calculation of the SCR now proceeds as follows<sup>15</sup>.
44. Calculate for each of the relevant sub-risks the impact of a specified scenario on the net asset value of the insurer (in some cases a simple formula gives the result). A deterioration of the net asset value by the crystallisation of a specific sub-risk, in the form of the specified scenario or shock, may also be seen as the partial amount of capital that would be able to absorb such a shock – and form a partial capital requirement. These partial capital requirements are now combined, in a stepwise approach, working from 'bottom to top'. Firstly, the outcomes for the sub-risks are combined to give a number for the main risk categories. These in turn are combined into a BSCR (Basic Solvency Capital Requirement). A charge for operational risk is added to this BSCR. There may also be further adjustments due to effects of deferred taxes and discretionary profit sharing.
45. In combining these different (partial) capital requirements a so-called diversification effect is taken into account, in both the first and the second step. The underlying concept is that not all risks (in the form of the specified scenarios) necessarily crystallise at the same time. The total capital requirement may then be set at less than the simple sum of the

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<sup>14</sup> The investments held will of course determine the applicability of the market risk sub-modules.

<sup>15</sup> Profit sharing is not discussed here. Please see the next section. For the acknowledgement of risk mitigation please refer to the Technical Specifications.

partial requirements. From a mathematical point of view this is achieved by using prescribed correlation matrices in the various steps (these calculations are performed automatically in the QIS5 spreadsheet). It should be emphasised that the amount of the ultimate SCR is determined to a considerable extent by the assumed correlation – degree of dependence between the risks – in addition to the specification of the scenarios for the individual sub-risks.

46. The calculation of the MCR is not dissimilar to the determination of the current required solvency margin under Solvency I: a fairly straightforward formula based on some indicators for the size of the insurance business. For life companies, the MCR is based on the amount of technical provisions and capital at risk. For non-life companies the MCR is based on the technical provisions and amount of annual premiums. In order to guarantee a link between the MCR and the SCR, the MCR is restricted to a corridor of 25-45% of the SCR. Such a link is necessary since the supervisory intervention needs to be scaled-up as the financial position of an insurer, of which the MCR and SCR are representations, deteriorates.

## **SCR: modular approach and equivalent scenario**

47. In QIS5 two approaches to the SCR are tested: the modular approach and the equivalent scenario.
48. Calculating the SCR according to the standard formula as described immediately above is also called the modular approach, as it is based on the calculation of a set of modules, with the outcomes subsequently aggregated. In this aggregation a diversification effect is taken into account, based on the presumption that risks – as represented by the scenarios – do not necessarily crystallise at the same time. The SCR is less than the simple sum of the SCRs for the individual sub-risks.
49. The underlying idea of the equivalent scenario is in essence as follows. Under the equivalent scenario approach, a new set of scenarios (shocks) – the equivalent scenario - is calculated that would lead to this same original outcome *if the scenarios would all crystallise at the same time*. The diversification benefit under the modular approach is, in a way, 'allocated back' to the individual risks: the 'size' of the underlying shock or scenario and its impact under the equivalent scenario are less, for a given sub-risk, than under the modular approach. The nBSCR is the decrease in net asset value if all these scenarios were to crystallise at the same time.
50. Technically, the equivalent scenario builds on the output of the modular approach. The spreadsheet calculates the reduced shocks under the equivalent scenario. It takes the 'modular risks' that contribute to the BSCR, but then reduces the individual shocks by taking into account the diversification effects mirrored in the correlation matrices. This approach can be used especially in determining the loss absorbing capacity of future profit sharing and deferred taxes. It also provides further insight into the risks drivers that contribute to the SCR. When subsequently applying the

complete equivalent scenario to their balance sheet, insurers can take into account non-linear effects of stresses to their balance sheet, for example due to hedging strategies.

51. Insurers are referred to the Technical Specifications, in particular chapter SCR2. Insurers should in particular note paragraph 2.8. The adjustment for loss absorbency of technical provisions and deferred taxes (please see below) should be calculated according to both approaches.
52. For calculations that depend on the SCR (like the risk margin or the eligible own funds) the result of the *equivalent scenario* should be used.

## Profit sharing and deferred taxes

53. The 'SCR-tree' illustrates that the outcomes of the six 'intermediate' risks are combined into a BSCR: Basic Solvency Capital Requirement. This BSCR is then, on the one hand, increased by a capital charge for operational risk, and on the other hand decreased by adjustments for the loss-absorbing capacity of technical provisions and deferred taxes.
54. In relation to the technical provisions, the adjustment for profit sharing takes account of the risk mitigating effect provided by future discretionary benefits to the extent undertakings can establish that a reduction in such benefits may be used to cover unexpected losses when they arrive. The issue of profit sharing is beyond the scope of this manual, as this manual is especially intended for smaller insurers offering relatively straightforward products, and holding non-complex investments. Even so, it seems useful to spend just a few words on profit sharing, to assist a proper understanding and completion of the spreadsheet by all companies. Insurers offering with profit products, however, are urged to refer to the Technical Specifications.
55. First of all, it should be noted that profit sharing (future discretionary benefits) encompasses both 'contractual' profit sharing and 'pure' discretionary profit sharing, as outlined in Technical Specifications TP.2.88.
56. Profit sharing relates to both the determination of the best estimate and the calculation of the SCR sub-modules. When calculating the best estimate, the outgoing cash flows include an expected amount for profit sharing. In essence, the best estimate thus consists of a guaranteed part and a second part which has a more conditional nature, which may thus be said to have a potentially loss absorbing capacity. This part is called the FDB, the value of Future Discretionary Benefits. When calculating the SCR sub-modules, two calculations need to be made: a calculation which assumes that any amount of profit sharing remains unaltered compared to the original best estimate calculation, and a calculation which takes into account an adjustment to (i.e. lowering of) the amount of profit sharing, as a result of the scenario in question. The first outcome is called the 'gross' outcome; the second outcome the 'net' outcome, denoted by nSCR for the risk considered in the sub-module. Aggregating these outcomes

gives a 'gross' BSCR and a 'net' nBSCR. The difference between these numbers is a first indicator for the loss absorbing capacity of the technical provisions. This difference, however, has a further ceiling of the amount of the FDB: the total loss absorbing capacity can not exceed the 'conditional' part of the technical provisions.

57. *When completing the tab SF.SCR\_G in the spreadsheet, all insurers need to complete the input cells for both the 'gross' and 'net' numbers. Insurers who do not offer profit sharing products need to fill in the same numbers, for the spreadsheet to work properly. The spreadsheet will perform the aggregation. For the equivalent scenario, the spreadsheet will also calculate both 'gross' and 'net' scenarios parameters.*
58. The loss absorbing capacity of deferred taxes is, briefly, approached as follows. If risks were to crystallise, as reflected in the scenarios used to determine the SCR, then this might change the tax position of the insurer; the tax position may provide for some loss absorption. This is taken into account in the QIS5 calculations.
59. In essence, the adjustment for the loss-absorbing capacity of deferred taxes should be equal to the change in deferred taxes of undertakings that would result from an instantaneous loss of an amount equal to the BSCR + the adjustment in the technical provisions due to profit sharing (a negative number) + the capital requirement for operational risk. Insurers are referred to the Technical Specification for a full description of this issue. Please note that for the purpose of this calculation, a decrease in deferred tax liabilities or an increase in deferred tax assets should result in a negative adjustment for the loss absorbing capacity of deferred taxes, i.e. the BSCR is 'decreased' by the adjustment.

## Own funds

60. The current solvency regime already differentiates between different forms of capital. Some forms of capital are taken fully into account, whilst others only to a reduced extent or only when some further conditions have been met. Furthermore, under the existing regime, the quality demands on capital held to meet the guarantee funds are stricter than capital held to meet the required solvency margin.
61. Solvency II also ranks capital according to its quality. Basic own funds are the capital resources on an insurer's balance sheet; they comprise the excess of assets over liabilities (net assets) and subordinated liabilities. Basic own funds are classified into three tiers based on their availability to absorb losses, either in a going concern or in a winding up. The highest quality capital (based on criteria outlined in QIS5 Technical Specifications, OF 8) makes up Tier 1 basic own funds. Other own funds items are arranged into tiers 2 and 3 based on their quality.
62. Ancillary own funds are items of capital other than basic own funds which can be called up to absorb losses. These are off-balance-sheet items,

whilst basic own funds items appear on the balance sheet. For the purpose of QIS5 only items which are currently being used to meet solvency requirements under Solvency I should be classified as Tier 2 or Tier 3 (depending on which tier the item would be classified as when it is called up and paid-in) ancillary own funds at the amounts at which they are currently recognised.

63. Under Solvency II the requirements for own funds covering the MCR are different from those covering the SCR, e.g. Tier 3 basic own funds and ancillary own funds cannot count towards meeting the MCR. Section OF.3 of the QIS5 Technical Specifications discusses the eligibility of own funds and the limits applicable to Tiers 1, 2 and 3. Briefly:
- To meet the SCR:
    - the proportion of Tier 1 items must be at least 50% of the SCR;
    - the amount of Tier 3 items must be less than 15% of the SCR.
  - To meet the MCR only Tier 1 items and Tier 2 basic own funds items are eligible. At least 80% of the MCR should be met by Tier 1 items.
  - Within the limits above, other paid in capital instruments (paragraph OF.4(1)(g)) should be no greater than 20% of total Tier 1 own funds.

## Participations

64. The QIS5 Technical Specifications devote a specific chapter (SCR 15) to participations, which discusses their valuation, treatment under own funds and determination of required capital (SCR), at solo level. QIS5 participants are advised to consult the Technical Specifications.
65. Some important points in the Technical Specifications – not exhaustive – are:
- Definition:  
Participation means ownership, directly or by way of control, of 20% or more of the voting rights or capital of an undertaking.
  - Valuation:  
Participations need to be valued on the balance sheet at market consistent valuation. This could be, depending on the circumstances, a directly observable market price, or a valuation using the 'adjusted equity method'. In essence this means the net asset value of the participation. This should be determined on a market consistent basis i.e. according to Solvency II valuation principles. The term 'adjusted' is used because assets and liabilities are adjusted to their Solvency II (market consistent) values. A pro rata adjustment needs to be applied where the participation is less than 100%. As a last option marked to model may be used.
  - Approach when determining own funds:  
For participations in financial and credit institutions (e.g. banks and investment firms, but not insurers), the value of participations is excluded

from own funds by deducting the amount of their value from Tier 1 capital. Any investment in Tier 2 own funds of the participation should be deducted from Tier 2 basic own funds.

- Other types of participations (e.g. in entities that are not banks or investment firms) are dealt with via the SCR. (please see SCR 15.3 of the Technical Specifications for a more precise description).
- Approach to the SCR capital charge:
  - For participations in financial and credit institutions there is no further capital charge, as their value has already been deducted from own funds.
  - Participations attract a different treatment depending on whether they are strategic or not. Strategic participations attract a lower equity risk charge, of 22%; non-strategic participations are subject to the standard equity risk charge in QIS5, of 30% or 40%. Reference should be made to the Technical Specifications for the risk charges for participations to be applied, their treatment under the concentration risk sub-module, and for additional information on participations which is being collected.
  - Where the effect of holding a participation is the same as having a direct holding in property, the participation should be treated as property, and included in the property risk sub-module (please see SCR 15.7 of the Technical Specifications).

# The QIS5 spreadsheets

## Overview QIS5 spreadsheets

66. All spreadsheets which are necessary for QIS5 are available on the CEIOPS website. National supervisors may also make these available on their own website, possibly with further practical information about submission, workshops etc. Please note that there also will be both a national and a European Questions and Answers procedure. The European Q&A can be found on the CEIOPS website, on the dedicated QIS5 pages. CEIOPS also provides a QIS5 Email-alerts service. Insurers are advised regularly to check the website for any updates.
67. From the point of view of this manual, the most important spreadsheet is the QIS5 spreadsheet:
  - QIS5 spreadsheet
68. This spreadsheet is intended to capture the QIS5 submission of individual companies, but it also applies to insurance groups. Companies which are part of a group are also expected to complete the spreadsheet for each company. This spreadsheet is used to present the balance sheet and solvency under QIS5, also comparing with the Solvency I position.
69. When completing this spreadsheet, undertakings can make use of a number of ancillary programmes that CEIOPS aims to make available:
  - QIS5 Simplification tabs
  - QIS5 Helper tabs
70. Simplification tabs help to carry out the simplified calculations as specified and allowed for in the Technical Specifications. Helper tabs are not part of the Technical Specifications but are additional calculation tools provided by CEIOPS on its own initiative.
71. The outcomes of the calculations in these ancillary programmes can then be inserted in the main spreadsheet.

## Structure of the QIS5 spreadsheet: where can the core concepts be found in the spreadsheet?

72. The QIS5 spreadsheet is subdivided into a number of tabs, as shown below.

### *Spreadsheet Technicalities*

In the tab '0.Language' the preferred language can be chosen. Please note that the language option is not functional at the launch of the spreadsheet, but will

be added soon after.

The spreadsheet is protected by a blank password, so that insurers can easily access the formulae and perform additional calculations. Please be careful to submit your response using an unaltered spreadsheet. All tabs contain blocks of protected cells. Unprotected cells can be used for own calculations when completing the spreadsheet.

The spreadsheet contains hyperlinks to the Technical Specifications, directing the user to the relevant paragraphs.

The QIS5 spreadsheet is fairly substantial. Calculation may be quicker if the 'calculation function' is set to manual. Recalculation will take place when pressing the F9 key.

A number of input cells are to be filled using a 'drop down menu'. By clicking on these cells a 'pointer' appears. By clicking on the pointer a limited number of options to choose from appears.

73. The Index tab shows the structure of the spreadsheet, with a colour code relating to the type of tab. Solo companies that are not part of a group and that use the standard formula to calculate the SCR need to complete only part of the spreadsheet.

|   |   |
|---|---|
| <i>A grey introduction tab</i>  | <ul style="list-style-type: none"> <li>▪ P. Index</li> </ul>  |
| <i>Light blue tabs<br/>(I: Input)</i>                                   | <ul style="list-style-type: none"> <li>▪ I. Participant</li> <li>▪ I. Valuation</li> <li>▪ I. Assets</li> <li>▪ I. Participations</li> <li>▪ I. Own funds items details</li> <li>▪ I. Current situation</li> <li>▪ I. Premiums</li> <li>▪ I. QIS5 insurance obligations</li> <li>▪ I. Geographical diversification</li> <li>▪ I. SCR Adjusted</li> <li>▪ Insurers that are not part of a group may ignore the tab SCR.Adjusted</li> </ul> |
| <i>Dark blue tabs<br/>(SF: Standard Formula)</i>                        | <ul style="list-style-type: none"> <li>▪ SF.SCR_G</li> <li>▪ SF.RFF</li> <li>▪ SF.MCR_G</li> <li>▪ O.Overview</li> </ul>  |
| <i>Purple tabs related to internal models<br/>(IM: Internal Models)</i> | <ul style="list-style-type: none"> <li>▪ Insurers using the standard model to calculate the SCR may ignore these tabs. Internal models are beyond the scope of this manual. These tabs are not discussed further in this manual. CEIOPS will provide a separate manual to assist with the completion of these tabs.</li> </ul>  |
| <i>Orange tabs relating to groups<br/>(G: Group)</i>                    | <ul style="list-style-type: none"> <li>▪ Solo companies shall ignore these tabs. These tabs are not discussed further in this manual.</li> </ul>  |
| <i>A grey data tab that stores all input</i>                            | <ul style="list-style-type: none"> <li>▪ D.Datasets</li> </ul>  |

|   |   |
|---|---|
| <i>variables and results in one long data column</i>                      |   |
| <i>Grey language tabs, that contain the terms used in the spreadsheet</i> | <ul style="list-style-type: none"> <li>▪ 0.Language</li> <li>▪ Tabs with translated terms, for the languages that have been made available. These tabs thus also provide an overview of the technical terms used in QIS5, and their translation.</li> </ul> |

74. The spreadsheet also uses a colour code for the individual cells.
- The light blue cells are the input cells. These light blue cells can be found in both the light blue and dark blue tabs.
  - Terracotta coloured cells contain the result of intermediate calculations.
  - Purple cells give the final outcome of the relevant calculation.
  - Yellow cells also are output cells, often containing simple formulae.
75. *It should be noted that various 'types' of cells can occur in a tab, irrespective of the colour of the tab itself.*
76. The previous chapter discusses the core concepts underlying Solvency II:
- Preparation of a balance sheet, based on market consistent valuation, and
  - Determination of risk sensitive capital requirements
77. Within the spreadsheets these main concepts can be found, broadly speaking, as follows. The next chapter provides a more detailed description of each of the tabs.

|                      |  |
|----------------------|--|
| <i>Balance sheet</i> | <ul style="list-style-type: none"> <li>▪ Information on the balance sheet, including own funds, is primarily contained in the light blue tabs.</li> <li>▪ There is no dedicated separate output tab for a summary of just the balance sheet and composition of own funds. The light blue tab 'Valuation' fulfils that role. The dark blue 'Overview' output sheet also contains a summary of this information, but then in conjunction with the capital requirements.</li> <li>▪ The light blue tab 'Valuation' contains the balance sheet. The asset side needs to be filled out in section 1; the liability side in section 2. The balance sheet data are requested on three valuation bases: current basis, Solvency I and QIS5. To ease the comparison – the changes due to the transition from Solvency I to QIS5 – additional information is required: which part of a change is due to a possible reclassification of a balance sheet item, and which part is due to a change in value as a result of a change in valuation basis. Of course, a difference in valuation basis will usually imply a change in</li> </ul> |
|----------------------|--|

|   |   |
|---|---|
|   | <p>available capital. Please note that some elements of the balance sheet in this tab can be filled out only after the more detailed tabs (e.g. 'Current situation' and 'QIS5 insurance obligations') have been completed.</p> <ul style="list-style-type: none"> <li>▪ The light blue tab 'Valuation' also requests, in section 3, information on the own funds. This includes information about transitional measures. Under both Solvency I and Solvency II, capital elements need to fulfil certain requirements to count as eligible capital, i.e. capital that may cover a capital requirement (under Solvency I the required solvency margin or the guarantee fund, under Solvency II the SCR and MCR). These conditions differ, however, to some extent between Solvency I and QIS5. Capital instruments that are already held and recognised as eligible capital under Solvency I and which would normally not qualify as such under QIS5, may in some cases nevertheless yet be recognised as eligible own funds, to ease the transition to Solvency II.</li> <li>▪ Section 4 of this tab requests information about the valuation methods applied to arrive at the QIS5/Solvency II values.</li> <li>▪ The light blue tab 'Assets' requests more detailed information about some assets and asset related risks. The totals in the balance sheet of course need to be consistent with the more detailed figures to be provided here.</li> <li>▪ The light blue tab 'Participations' requests more detail on the nature and value of any participations held. Please note that this tab in principle also applies to solo insurers that are not part of a group. The nature of the participation needs to be indicated by means of a code, to be selected from a drop down menu.</li> <li>▪ The light blue tab 'Own funds items details' gives a summary of the results of own funds already provided in the tab 'Valuation', but also requests additional information on other capital elements.</li> <li>▪ The light blue tab 'Current situation' requests a more detailed breakdown of the technical provisions, on the current Solvency I basis. This tab also uses the Solvency I segmentation. The totals in the balance sheet of course need to be consistent with the more detailed figures to be provided here. This tab also asks for the current (Solvency I) required and available solvency margin, and guarantee fund.</li> <li>▪ The light blue tab 'QIS5 insurance obligations requests, similarly, a more detailed breakdown of the technical provisions on a QIS5 basis. This tab uses the QIS5 segmentation. Again, the totals in the balance sheet of course need to be consistent with the more detailed figures to be provided here.</li> </ul> |
| <p><i>Capital requirements:<br/>SCR and MCR</i></p> | <ul style="list-style-type: none"> <li>▪ The dark blue tab SF.SCR_G contains both most of the input cells to determine the SCR, and the results. The term SF relates to Standard Formula. For each of the risks identified in QIS5, the impact of a predefined scenario on the net asset value of the insurer needs to be calculated here. The input requested generally consists of the value of the assets and liabilities both before and after the relevant specified scenario. For each scenario, only the value of the assets and</li> </ul>  |

|  |  |
|--|--|
|  | <p>liabilities sensitive to the specific scenario should be included. For some risks – e.g. premium and reserve risk for non-life - no such scenario results are required; the spreadsheet applies a different formula to calculate the capital requirement.</p> <ul style="list-style-type: none"> <li>▪ The calculation of the SCR also depends, to a lesser extent, on information collected in other tabs. The light blue tab 'Premiums' asks for premium volumes, which are used for the calculation of the SCR for non-life and non-SLT Health premium risk. The light blue tab 'Geographical diversification' is used to calculate a possible diversification effect in the calculation of the SCR for non-life and non-SLT Health underwriting risk.</li> <li>▪ The tab SF.MCR_G request additional information necessary for the calculation of the MCR. Much of this information is already available elsewhere. The relatively straightforward formulae for the MCR allow for a quick understanding of the calculation.</li> <li>▪ The dark blue tab SF.RFF relates to ring fenced funds. A discussion of ring fenced funds is beyond the scope of this manual. It is expected that this issue does not apply to many smaller companies.</li> </ul> |
| <p><i>Overall financial position: balance sheet and capital position</i></p> | <ul style="list-style-type: none"> <li>▪ The dark blue tab 'Overview' presents an overview of the financial position under QIS5, with a comparison to Solvency I. Solvency II implies, as outlined above, changes to both the preparation of the balance sheet and the determination of the solvency position. These should be seen in conjunction. The overview sheet thus also addresses both.</li> <li>▪ The 'Overview' tab also contains information on the application of eligibility criteria to available own funds in relation to the SCR and MCR.</li> </ul>  |

## Completing the QIS5 spreadsheet

78. This chapter describes in more detail the way in which the QIS5 spreadsheet may be completed. The reporting date to be used by all participants should be end December 2009. In the following only the input tabs are considered, for insurers using the standard formula.
79. For a few aspects of the standard formula, in QIS5:
- Two alternative approaches are tested; or
  - One approach is tested but data are collected which will facilitate an assessment of the impact of alternative approaches.
80. This is indicated in this manual. Insurers are strongly encouraged to complete both approaches and supply the requested data. Such information is very helpful in further discussions.
81. The order of completion of the spreadsheet is important. Generally this needs to be done starting with the more detailed information. Also, the risk margin can only be calculated after the relevant SCR sub-modules have been completed. Where relevant, the order of completion is indicated.
82. The spreadsheet contains some control cells to check consistency of completion. Insurers are requested also to check themselves the consistency of the completed spreadsheet and any used Helper tabs before submission.

| Tab Participant  |
|--|
| Section 1 Participant information  |
| <ul style="list-style-type: none"> <li>▪ In this section general information is requested about the insurer. Please only complete the light blue input cells. The first section also provides a reminder of the colour code used in this tab. Most input cells are self-explanatory.</li> <li>▪ In cell D9 please insert the name of the company. In cell D10 please insert an abbreviation of the name of the company.</li> <li>▪ Cell D11: the legal form of the company can be reported in the national language.</li> <li>▪ Cell D13 asks for the reporting basis, by means of a drop down menu. For solo entities the basis for the reporting is 'legal entity'. The text in cells G-I in this row then indicates that the tabs related to group issues may be deleted. Alternatively, solo insurers not part of a group may just ignore these tabs.</li> <li>▪ For cell D14, under 'type of reported data' please fill in, by means of choosing from a drop down menu, the type of company: life, non-life, composite, reinsurance, captive.</li> <li>▪ In cell D15 please indicate if the assets include investments in participations or related entities. If not, the tab Participations may be ignored (or deleted). Please note that insurers that are not considered part of a group may still hold participations, e.g. a non-life company that is 100% owner of a technical expertise bureau. Such participations need to be reported in the tab 'Participations'.</li> <li>▪ In cell D16 please indicate if non-life or health insurance is pursued in more than</li> </ul> |

one geographical area. If not, the tab 'Geographical diversification' may be ignored (or deleted). If the answer is 'yes', the tab 'Geographical diversification' should be completed. Please also see, however, the comments on this tab in this manual.

- The same principle applies to cells D17 and D18. Cell D17 relates to ring fenced funds. Ring fenced funds are beyond the scope of this manual. It is expected that ring fenced funds do not apply to many smaller companies. Cell D18 relates to internal models.
- The reporting year has already been set at 2009 (cell D19).
- Cell D20 has a default date of 31-12-2009. Please adjust this date if a different reporting date applies.
- In the next cells, please select the currency used (D21), and whether the reporting is in thousands or millions (D22). The spreadsheet then automatically generates a conversion factor, which is necessary for aggregation across companies.
- The remaining questions are self-explanatory. The first level EEA Supervisor is the national supervisory authority.
- In cell D29 please indicated if the insurer is part of a group. If 'yes', some further questions appear. These need to be completed only by insurers which are part of a group.
- Cells D35-D37 are reserved for further use by the supervisor.

#### Section 2 Contact information

- Insurers are requested to provide the contact details of two contact points for QIS5 purposes

#### Tab Valuation

##### Section 1 Balance sheet - Assets

- In this section information is required on the value of the assets, on three bases:
  - Current accounting bases
  - Solvency I valuation principles
  - QIS5 valuation principles

The 'current bases' may best be compared to the current annual accounts; the 'Solvency I valuation principles' to the current prudential reporting to the supervisor.

The 'QIS5 valuation principles' refer to a market consistent valuation, as outlined earlier.
- Please see the comment in column G. The spreadsheet automatically copies the values inserted in column F, the current accounting bases, to column G, the Solvency I valuation principles. Insurers need to check for each balance sheet item if these amounts are indeed equal. If not, the formula in the relevant cell in column G needs to be overwritten, by inserting the correct amount under the Solvency I valuation principles. Please do not change the yellow cells: the totals are calculated by the spreadsheet.
- It is important that for the QIS5 basis a best effort is made to provide market consistent values. Please also see section 4 of this tab on the valuation method used.
- The columns J, K and L are added to provide more detail on the consequences from a change in valuation approach, and a possible reclassification of items. Please indicate in column J if any reclassification has taken place from Solvency I to QIS5; the reclassification amount is to be entered on a Solvency I valuation basis. A reclassification leading to an increase of an amount should be entered as a positive value; a decrease as a negative value. Columns K and L ask for

information on differences in valuation due to moving from Solvency I, after any reclassification, to a QIS5 valuation basis. For balance sheet items that show an increase in value under QIS5, please provide the increase (so not the final value) in column K, as a positive number. If balance sheet items show a decrease in value, please use column L, and insert the decrease as a negative value.

- The value of goodwill is set at nil under QIS5.
- Intangible assets may have a value under QIS5. Please see section V1.4 of the Technical Specifications.
- Where investments are held in collective investment funds, a 'look through' approach should be applied, i.e. assessing the nature of the underlying assets and reporting accordingly. Similarly, in the calculation of the SCR the underlying assets are then subjected to the relevant sub-modules.
- For the valuation of participations, please refer to Technical Specifications, chapter 15, and the earlier section on participations in this manual.
- Mortgages with the property provided as collateral should be included under 'collateralised loans made'.
- Under QIS5, reinsurance is reported on a 'gross' basis. On the liability side of the balance sheet the technical provisions are reported on a gross basis; reinsurance recoverables are reported on the asset side of the balance sheet. Please follow the same approach for the reporting in columns F and G, even if your current reporting is on a 'net' basis, to improve comparability. The QIS5 values of any Reinsurance recoverables should be completed after the determination of the technical provisions on a QIS5 basis, as the expected amount of the reinsurance recoverables will in principle depend on the valuation of the technical provisions.
- The calculation of the value of recoverables from reinsurance is in two steps, as follows:
  - Calculate the Best Estimate of the recoverables. Do not include a risk margin.
  - The result from that calculation should be adjusted to take account of expected losses due to default from the counterparty (unexpected losses are reflected in the SCR). The adjustment should be based on an assessment of the probability of default of the counterparty and the average loss resulting there from (loss-given-default).
  - CEIOPS aims to make Helper tabs available to assist with this calculation.
- Deferred acquisitions costs are not recognised on a QIS5 basis. Solvency II is based on an estimation of future cash flows; 'deferred' acquisition costs are a cash outflow that took place in the past. The (future) premiums may indeed include an expense charge to cover these acquisitions costs; this is then reflected in the determination of the technical provisions. When completing this line on a 'current' and Solvency I basis, insurers are requested to include any deferred acquisition costs explicitly on the asset side of the balance sheet, and not deduct the amount at the liability side. This will improve the comparability of the results.

#### Section 2 Balance sheet - Liabilities

- The liabilities are to be reported under the same three valuation bases as the assets:
  - Current accounting bases
  - Solvency I valuation principles
  - QIS5 valuation principles
- Similarly, there are additional columns that provide more detail on the consequences from a change in valuation approach, and a possible reclassification of items. Insurers are urged carefully to consider and report any reclassification, as the segmentation under QIS5 differs to some extent from the Solvency I segmentation.
- The explanation in section 1 also applies to this section. Also here, the light blue input cells in column G contain a formula which sets them equal to the value in column F. Again, insurers need to check for each balance sheet item if these amounts are indeed equal. If not, the formula in the relevant cell in column G

needs to be overwritten, by inserting the correct amount under the Solvency I valuation principles.

- However, please first go to the tabs 'Current situation' and 'QIS5 insurance obligations' and complete the relevant sections there as the requested information on the technical provisions can only be provided after these more detailed tabs have been completed. Please note that the gross figures are requested here.
- The Solvency I amounts are to be reported as 'calculated as a whole'. As outlined earlier, under Solvency II the technical provisions are – in most cases – determined as the sum of Best Estimate and Risk Margin. The value under QIS5 will thus also usually differ from the Solvency I figure. The Risk Margin is determined by the Cost-of Capital method, and is thus not simply the difference between the current Solvency I technical provisions and the QIS5 Best Estimate. The Risk Margin depends on the calculation of the relevant SCR components, and can thus be completed only at a later stage.
- In the valuation of financial liabilities (for example senior liabilities and subordinated liabilities), the credit standing at inception applies. Later changes in the credit standing are not taken into account in the valuation. On the other hand, changes in the general risk free interest rate do apply.
- Rows 100 – 102 do not apply to solo companies which are not part of a group. These cells need to be completed, however, for the solo submission by companies which are part of a group.
- Row 104 calculates the value of the assets minus the liabilities; this is the 'balancing item'.

### Section 3 Information on own funds

- Insurers are strongly advised to study for themselves the section in the Technical Specifications on Own funds, including transitional provisions to be used in QIS5.
- The excess of assets over liabilities (minus holdings of own shares) plus subordinated liabilities and ancillary own funds gives us a company's Own Funds.
- Adjustments (deductions or changes of tier) should be made in respect of the following:
  - Participations – Participation means the ownership, directly or by way of control, of 20% or more of the voting rights or capital of an undertaking, or otherwise exerts significant control. The approach when determining own funds is outlined earlier in this manual.
  - Ring-fenced funds (RFF) – If an item of capital has a reduced capacity fully to absorb losses on a going concern basis because this capital is not transferable and can only be used within the fund, an adjustment is required to eligible own funds and to the SCR. A notional SCR is calculated for each RFF and an SCR for the risks arising from the rest of the business outside the RFF. Any restricted own funds (i.e. those in the ring-fenced fund) that are in excess of the notional SCR of each RFF are deducted.
  - Restricted reserves – In certain jurisdictions, reserves may be required, by national law or by a company's articles of association to be established and used only for certain prescribed purposes. For the purpose of QIS 5, these should not be considered to be ring-fenced funds. Reserves of this nature should only be eligible for inclusion in own funds in relation to the risks they cover. Any amount in excess of that covering the related risks should therefore be excluded from own funds if it is not available at all (On the spreadsheet, data should be entered in the appropriate cell under Deduction), or deducted from Tier 1 and included in Tier 2 if it would be available for all losses in a winding up (On the spreadsheet, data should be entered in the appropriate cell under Change of Tier).
  - Deferred tax assets – An amount representing net deferred tax assets should be moved from Tier 1 to Tier 3.
- Transitional measures allow an existing capital instrument (or one to be issued

|   |
|---|
| <p>before the implementation of Solvency II) to be included as capital under Solvency II if it meets a minimum set of criteria but falls short of the full Solvency II criteria.</p> <ul style="list-style-type: none"> <li>▪ The criteria in QIS5 aim to make transitional measures practicable for the purposes of QIS5 only and are not indicative of the content of the final transitional provisions (please also see Technical Specifications section OF.4).</li> <li>▪ Firms should complete these cells using data based on the criteria in OF40 – OF45 and Annex Q of the Technical Specifications.</li> </ul> |
| <p><b>Section 4 Information on valuation methods applied to determine the Solvency II balance sheet</b></p>   |
| <ul style="list-style-type: none"> <li>▪ This section requests information on the valuation methods used. Please note that all values are to be reported as a percentage of the total QIS5/Solvency II balance sheet.</li> </ul>  |
| <p><b>Section 5 Intragroup asset and liabilities, for undertakings belonging to a group.</b></p>  |
| <ul style="list-style-type: none"> <li>▪ Solo companies (not part of a group) may ignore this section.</li> </ul>   |

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| <p><b>Tab Assets</b></p>   |
| <p><b>Section 1 Information on bonds</b></p>   |
| <ul style="list-style-type: none"> <li>▪ This section asks for a detailed breakdown of investments in borrowings by or demonstrably guaranteed by a national government, exposures to multilateral organisations and to the European Central Bank. The exposures need to be reported with their value in the reporting currency of the insurer.</li> </ul> |
| <p><b>Section 2 Information on currency risk exposures (in the currency used to fill the QIS5 spreadsheet)</b></p>   |
| <ul style="list-style-type: none"> <li>▪ This section asks for more detailed information on currency risk exposures. As above, the exposures need to be reported with their value in the reporting currency of the insurer.</li> </ul>   |
| <p><b>Section 3 Information on spreads - aggregates</b></p>  |
| <ul style="list-style-type: none"> <li>▪ This section asks for more detailed information on spread products, broken down into various types and rating classes. The information on the modified duration facilitates a further sensitivity analysis. The relevant Helper tab may be used to provide the numbers required in the input cells.</li> </ul>    |
| <p><b>Section 4 Information on the concentration of assets used for market risk concentration calculation</b></p>  |
| <ul style="list-style-type: none"> <li>▪ The relevant Helper tab may be used to provide the numbers required in the input cells.</li> </ul>  |
| <p><b>Section 5 Information on the counterparty default risk</b></p>   |
| <ul style="list-style-type: none"> <li>▪ The relevant Helper tab may be used to provide the numbers required in the input cells.</li> </ul>  |

## Tab Participations

- This section asks for a detailed breakdown of the nature and value of any participations held by the insurer.
- As mentioned before, please note that 'solo' insurers (not part of a group for QIS5 purposes) may still hold participations, e.g. a non-life company that is 100% owner of a technical expertise bureau. Such participations need to be reported here.
- Such participations may be any of the types described in rows 16-18. If the participation is deemed to be of a strategic nature, the category in row 16 (RUS) applies.
- If the participation is not deemed to be of a strategic nature, then categories 17 or 18 will apply. These categories are similar to the categories used for equities: 'global' (RUG) or 'other' (RUO).
- Please use row 27 and further to provide the requested information. The cells in column C can be used to select the correct category.
- Rows 7-19 provide a summary overview, based on the data provided in the input cells in row 27 and further.

## Tab Own fund items details

### Section 1 Information given on the Valuation tab on other capital elements

- This section contains no input cells. The information in this tab has already been supplied in the Valuation tab.

### Section 2 Calculation based on the detailed list of capital elements

- This section contains no input cells. This section provides a summary overview, based on the information provided in section 3 of this tab.

### Section 3 Detailed list of other capital elements

- This section asks for detailed information on any other capital elements. The columns C, D and E contain drop down menus. The codes in column C refer to the categories which are described in the earlier sections. Please refer to the Technical Specifications when completing this section.

## Tab Current situation

### Section 1 Current Solvency I position

- Please note that cell F14 concerns the guarantee fund – i.e. in essence one third of the required solvency margin, and not the absolute minimum amount. Of course, this value may be impacted by the absolute minimum amount (AMCR).

### Section 2 Provisions calculated according to the current accounting bases - totals

- The totals in this section are calculated by the spreadsheet, based on the more detailed information to be provided in section 3.
- Please note that these data concern the Solvency I valuation basis.

### Section 3 Detailed information on the technical provisions valued according to current bases

- ***NB Please note that the information requested here should be reported on a Solvency I valuation basis.***
- This section asks for the amount of technical provisions, per line of business. The segmentation in this tab thus also reflects the Solvency I segmentation. The upper half of this section concern the gross technical provisions; the lower half the net technical provisions.
- For non-life obligations a distinction is made between proportional and non-

proportional reinsurance. Columns H – R relate to both direct business and proportional incoming reinsurance. Columns S – V relate to non-proportional incoming reinsurance. The segmentation of non-proportional incoming reinsurance is more aggregated.

- Reinsurers thus report their proportional incoming (non-life) reinsurance in the columns H – R.
- Insurers are requested to ensure consistency between the numbers provided here (and summarised in section 2) and the amounts reported in the balance sheet in the tab 'Valuation'.

## Tab Premiums

### Section 1 Premiums by lines of business and volume measures for underwriting risk

- This tab requests information about written and earned premiums, per line of business. The information is used later in the calculation of the capital requirements, especially for non-life.
- In columns D and E please provide the gross written respectively earned premiums, i.e. before any premiums paid to reinsurers. Columns F and H request the ceded premiums, i.e. the premiums paid to reinsurers. Column G asks which part of the written premium is ceded for the purpose of finite reinsurance. The net written and earned premiums, in columns I and J, are calculated by the spreadsheet.
- Please see the comment in cell K11. For non-life business and health similar to non-life business (Health non SLT), the blue input cells in the columns K, L and M are derived from the tab 'Geographical diversification' if that tab has been completed.
- If not, in columns K and L please provide the expected net premium turnover for the next year; for QIS5 this means 2010. These numbers are used in the calculation of the capital requirements, for non-life and Non-SLT Health (premium risk).
- Often column M will not apply to many smaller non-life companies.
- The term  $P_{lob}^{PP}$  in column M is defined as the present value of net premiums of existing contracts which are expected to be earned after the following year (i.e. for QIS5 from 2011 onwards) for each LoB<sup>16</sup>. This term is only relevant for contracts with a coverage period that exceeds the following year. For annual contracts without renewal options  $P_{lob}^{PP}$  is zero. Undertakings may not calculate  $P_{lob}^{PP}$  where it is likely not to be material compared to  $P_{lob}^{t,earned}$ .

### Section 2 Premiums and expenses information needed for SCR and MCR calculations

- In cell E66 please input the annual expenses in respect of unit-linked business. This amount concerns the expenses incurred by the insurer, and not the expense loadings charged to the policyholders.
- The gross earned premium amounts in cells H63-H65 relate to the year before the reporting year; for QIS5 this is 2008.

<sup>16</sup> Please refer to Technical Specifications section SCR.9.2 on Non-life premium and reserve risk.

## Tab QIS5 insurance obligations

### Section 1 Allocation of Health to the QIS5 segmentation

- As outlined earlier in this manual, the segmentation under Solvency II is based on the characteristics of the underlying risks. This section asks for information on how the business currently regarded as Health insurance will be allocated to the QIS5 segmentation. The amounts requested are the technical provisions on a Solvency I basis, both gross and net. Please note that this only relates to obligations reported as health business under Solvency I.
- In row 8 please report the business that in QIS5 will be allocated to Health SLT. The amounts in rows 9-11 have a non-SLT character, and will be allocated to non-life.

### Section 2 Segmented calculations of the best estimate and recoverables (before risk margin) (title to be amended)

- This section asks for detailed information on the gross best estimate, and on the reinsurance recoverables.
- Columns G-J asks for the gross amounts of best estimates. In some cases, however, technical provisions may be calculated 'as a whole', whereby no distinction is made between Best Estimate and Risk Margin. This will often not apply to smaller companies<sup>17</sup>. However, if this approach applies, please insert the appropriate numbers in column G.
- With regard to the segmentation, each insurance contract should be allocated to the line of business that best reflects the underlying risk at the inception of the contract.
- Direct insurers offering non-life insurance report direct insurance in rows 21-32. Any incoming reinsurance accepted by direct insurers is to be reported in rows 34-45 (for proportional reinsurance) or 47-50 (for non- proportional reinsurance).
- Reinsurers report any incoming non-life reinsurance business as follows. Reinsurers ignore rows 21-32. Proportional incoming reinsurance is reported in rows 34-45. Incoming non-proportional reinsurance is reported in rows 47-50.
- Different from QIS4, technical provisions established for annuities stemming from *non-life* contracts, but which are estimated using actuarial life techniques, are reported under life insurance obligations, in row 75. In row 76, please report any amount thereof (subset) which is based on health insurance pursued on a similar to life technique (SLT) basis.
- For non-life business, separate best estimates are required for the premium and the claims provisions. These are reported in columns I and J. Please report the total in column H (including any amount of technical provisions calculated 'as a whole' if this would apply).
- For life type business there is no distinction between premium and claims provisions.
- Columns K- V are used to report the reinsurance recoverables. For non-life business a distinction is made between recoverables related to either the premium or the claims provisions. For non-life business, special columns are also available to report recoverables from special purpose vehicles or finite reinsurance. These are beyond the scope of this manual. Companies that have no such recoverables may limit themselves to completing column R, for recoverables due to the premium provision, and column V, for recoverables due to the claims provision. The totals in the yellow cells are calculated by the spreadsheet.
- For life business only columns K-N are used, as there is no distinction between premium and claims provisions.
- As outlined earlier, the calculation of the value of recoverables from reinsurance is in two steps, as follows:

<sup>17</sup> Please see the Technical Specifications section V.2.4. for the conditions for this calculation method.

- Calculate the Best Estimate of the recoverables. Do not include a risk margin.
- The result from that calculation should be adjusted to take account of expected losses due to default from the counterparty (unexpected losses are reflected in the SCR). The adjustment should be based on an assessment of the probability of default of the counterparty and the average loss resulting there from (loss-given-default).
- CEIOPS aims to make Helper tabs available to assist with this calculation.

**Section 3 (a) Risk margin, (b) technical provisions, (c) underwriting risks volume measures, (d) expected profits in future premiums (EPIFP)**

- Columns G and H relate to the risk margin, to be calculated separately for each of the identified segments. Please report the calculated amount in column G; in column H please report the method used for the calculation, by selecting from a drop down menu.
- Please note that under QIS5, differently from QIS4, diversification between lines of business in the SCR is recognised in the calculation of the risk margin for individual companies. As the SCR for a company with more lines of business is less than the simple sums of the SCRs for each line of business, the risk margin calculated based on such a 'diversified' SCR is also less than when the risk margin for each line of business were to be calculated using its 'own' SCR<sup>18</sup>.
- CEIOPS aims to provide Helper tabs to assist the calculation of the risk margin, for both life and non-life companies.
- The Technical Specifications allow for a number of approaches to the calculation of the risk margin. The simplest method, for non-life companies, consists of taking a fixed percentage of the Best Estimate as the risk margin. Insurers who meet the conditions to use the simplifications, are nevertheless encouraged to try, if possible, to carry out the standard calculations, so that the practicality of these is sufficiently tested. The Helper tabs may be of use in this case.
- Columns O and P of this section are related to an issue termed 'expected profits in future premiums' (EPIFP). The Solvency II valuation of technical provisions is based on expectations regarding outgoing (benefits etc.) and incoming (premiums) cash flows, of the existing (in-force) business. Higher agreed (future) premiums imply – ceteris paribus – lower technical provisions and an increase in net asset value and own funds. The so-termed 'expected profits in future premiums' are thus 'recognised' at balance sheet date (please note that also a risk margin still needs to be held). The question has arisen whether this 'recognition' of profit margins in future premiums might lead to a representation of the financial position of an insurer that may turn out to have been too optimistic, especially in times of stress. To shed some more light on this issue, QIS5 also asks for the calculation of the Best Estimate under the assumption termed '100% lapse'. More precisely, the assumption to be made is that no further premiums will be received in the future (on the existing (in force) business). For some policies the prescribed scenario implies termination; for some policies it implies a change to a paid-up status. It should be stressed that the prescribed scenario does not equate to full surrender with payment of all surrender values.
- Please note that this approach applies equally to life and non-life business. Please refer to the Technical Specifications (OF 2.4) for a more precise description of the scenario to be applied.
- The Best Estimate numbers calculated under this scenario need to be reported in column O. The spreadsheet then calculates the EPIFP component, reported in row column P, as the difference between these two best estimates, with a floor of nil.

<sup>18</sup> As mentioned earlier, only the SCR components representing risks inherent in the insurance portfolio are relevant here.

Section 4 (a) expected profits in future premiums (EPIFP) and (b) illiquidity premium information

- Columns F-K request the reporting of the allocation of the insurance obligations to the different illiquidity buckets, in terms of the amount of (best estimate) technical provisions in each bucket, for each line of business. Please also report the corresponding modified durations.
- These additional data are requested to facilitate a possible further analysis of the sensitivity of the (best estimate) technical provisions to the discount rate used, more particularly the illiquidity premium component thereof. CEIOPS aims to provide Helper tabs that calculate the requested (modified) duration.
- Columns M-U relate to transitional provisions on the discount rate, for life obligations. This issue is beyond the scope of this manual. Insurers are referred to the Technical Specifications.

Section 4 Other information needed for the SCR and MCR

- The technical provisions to be reported here again are the best estimate amounts.
- Insurers are reminded that the capital at risk numbers required also are on a QIS5 basis, and thus probably different from the numbers under Solvency I

Tab Geographical diversification

Section 1 Total and calculation of diversified volume measures for the non-life and Health non-SLT underwriting risks modelling

- The information in this tab is used to calculate a possible diversification benefit – reduction in the capital requirement – due to geographical diversification<sup>19</sup>, for premium and reserve risk.
- This first section contains no input cells. The spreadsheet uses the information provided in the second section to calculate totals and the size of a possible diversification effect.

Section 2 Net written premium and forthcoming premiums, net claims outstanding by geographical areas

- This section request information on the amounts of premiums and claims provisions per line of business and per geographical area. Please note that net premiums and the net (best estimate) provisions for claims outstanding (net PCO) are requested here. The geographical segments are defined in Annex M to the Technical Specifications.
- *Undertakings may choose to allocate all of their business in a line of business to the main geographical segment in order to simplify the calculation.* This may be relevant to many smaller firms operating largely or solely on their home market.
- The Technical Specifications state that the diversification factor DIVlob should be set to 1 for the line of business credit and suretyship *and where the standard deviation for premium or reserve risk of the line of business is fed by an undertaking-specific parameter.* Please also see the sections in the tab SF.SCR\_G on premium and reserve risk.

Tab SF.SCR\_G

- This tab contains both most of the input cells required to calculate the SCR and the outcomes of the subsequent calculations.
- Please note that the spreadsheet may be 'expanded' or 'reduced' by clicking on the 'plus' or 'minus' symbols at the left of the spreadsheet. In this way the user

<sup>19</sup> Please refer to Technical Specifications section SCR.9.33.

can 'hide' the non relevant parts of the tab.

- The structure of the tab may usefully be compared to the 'SCR tree' included earlier in this manual.
- Sections 1-3 contain the 'top end' of the tree: the SCR and how the SCR is derived from the BSCR, with the inclusion of operational risk and possible adjustments due to profit sharing and deferred taxes.
- Sections 4-9 contain the 'lower end' of the tree, with each section containing a further subdivision as also symbolised in the SCR tree:
  - Section 4: intangible asset risk
  - Section 5: market risk
  - Section 6: counterparty default risk
  - Section 7: life underwriting risk
  - Section 8: health underwriting risk
  - Section 9: non-life underwriting risk
- As outlined earlier, for most of the sub-modules, the impact of a prescribed scenario on the net asset value needs to be calculated, thereby considering a possible impact on both sides of the balance sheet. Different from QIS4, the QIS5 spreadsheet requires as inputs the value of both assets and liabilities, both before and after the 'shock'. The spreadsheet then calculates the difference, also before and after the shock. This provides a better insight into the effects of a scenario than just the net result.
- For each scenario, only the value of the assets and liabilities sensitive to the specific scenario should be included. Please note that the spreadsheet uses the terms 'initial net asset value' and 'net asset value after shock' etc. in the sub-modules. This then only refers to the difference between the assets and liabilities included in the scenario, and not the overall net asset value. The manual uses the same interpretation when describing the sub-modules.
- For some risks – e.g. premium and reserve risk for non-life - no such scenario results are required; the spreadsheet applies a different formula to calculate the capital requirement. Some examples:
  - In section 2, on deferred taxes, the amounts to be reported are deferred tax assets (on the asset side) and deferred liabilities (on the liability side). These amounts are requested at their initial values and their values after the relevant scenario. Both the equivalent scenario and modular approach are tested.
  - In section 5, on interest rate risk, first of all the initial values are to be reported: on the asset side the total value of all assets subject to interest rate risk (and thus included in the scenario); on the liability side all liabilities subject to interest rate risk (please note that discounting applies to all insurance liabilities). In the next two rows ('gross'), the values of assets and liabilities after the prescribed upward and downward interest rate scenarios are to be reported, without taking the effect of any profit sharing into account. The remaining two rows concern the same scenarios but now with the effect of any profit sharing taken into account.
  - For equity risk, more detailed information is requested about the initial values of the equity holdings, given the varied treatment under the equity scenario.
  - In section 7, on life underwriting risk, the same approach applies: please provide the values of assets and liabilities sensitive to the relevant life scenario.
- QIS5 also tests the feasibility of the calculations. Solvency II emphasises the principle of proportionality. QIS5 thus contains a number of simplifications. However, also insurers who meet the conditions to use the simplifications, are nevertheless encouraged to try, if possible, to carry out the standard calculations, so that the practicality of these is sufficiently tested.
- In the spreadsheet, two calculations of the impact of each of the prescribed scenarios on the net asset value of the insurer are requested: without and with taking profit sharing into account. In the spreadsheet this is referred to as 'gross'

and 'net' (of profit sharing effects). ***Insurers that do not offer products with profit sharing features should complete both input cells, with of course the same numbers.***

- To avoid circularity in the calculation, any reference to technical provisions within the calculations for the individual SCR modules is to be understood to exclude the risk margin. In other words, when calculating the impact of a scenario on the net asset value, it is assumed that the risk margin stays the same.
- In their calculations, insurers may take into account the effect of financial risk mitigation (e.g. hedging), provided certain conditions are met. Importantly, the risk mitigation technique must be legally effective and there must be an effective transfer of risk to a third party. So-called rolling hedge programmes are recognised, if certain conditions have been met. Dynamic hedging should not be treated as a risk mitigation technique. Please note that risk mitigation may entail other risks, e.g. counterparty default risk, and these should be reflected in the SCR calculation. Insurers using financial risk mitigation should refer to the Technical Specifications, chapter 12.

#### SCR QIS5 Standard formula components

- This section summarises, in column H, which of the sub-modules are 'available', i.e. if a calculation has been performed. The spreadsheet indicates this by checking for each sub-module whether an SCR has been calculated.
- Please note that in the various sub-modules the insurer should indicate whether a particular risk is 'applicable'. It is important that these input cells are completed carefully, so that a comparison can be made between the two.
- Furthermore, in this section the insurer is asked which approach has been taken in the calculation of the sub-modules. The reply is by means of a drop down menu. The terracotta cells in column H, calculated by the spreadsheet concern the availability of an SCR risk charge; column J concerns the calculation method. Please note that this tab concerns the standard formula and not an internal model.
- Please select the relevant option in the cells in column J. Insurers that have used a Helper tab should indicate so. Insurers that have used some own other approach should elect 'other'. If none of these apply, please choose 'standard model'. 'NA' refers to 'not applicable'. 'Not modelled' refers to risks to which an insurer is subject, and for which an SCR thus should have been calculated, but where the insurer has not carried out this calculation.
- Simplifications are not included as an option as they are addressed in the qualitative questionnaire.
- Solo insurers (not part of a group) which do not have ring fenced funds may ignore rows 52-57.

#### Section 1 Solvency Capital Requirement and Basic Solvency Capital Requirement under the standard formula

- This section gives an overview of the outcome and composition of the SCR and BSCR. The only input required is the applicability of the main risk categories.
- The results also present information about the so-called 'equivalent scenario'. This may be calculated both before and after taking the effects of any profit sharing into account. Insurers not offering products with profit sharing features should also consider these numbers, as explained earlier.

#### Section 2 Adjustment for the risk absorbing effect of technical provisions and deferred taxes

- This section considers two adjustments: for the risk absorbing capacity of technical provisions and deferred taxes. *Undertakings are requested to carry out the calculation of the adjustment under both the modular approach and the equivalent scenario. Please see in particular Technical Specifications SCR 2.8*

- As outlined in the introduction to this tab, the effect is calculated by explicitly considering the situation both before and after the relevant scenario.
- Rows 101-245 present information about the equivalent scenario, both 'gross' and 'net', as calculated by the spreadsheet. As mentioned before, the calculation of the equivalent scenario can only take place after the SCRs for the sub-modules under the modular approach have been calculated.
- Insurers can recalculate their economic balance sheet under the equivalent scenario; this calculation can then take account of any non-linear characteristics.
- For the equivalent scenario:
  - For the adjustment for the risk absorbing capacity of technical provisions:
    - In rows 92-99 insurers can report a condensed balance sheet after applying the equivalent scenario.
    - In cell F88 please indicate which equivalent scenario was used, 'gross' or 'net', i.e. based on the 'gross' SCRs or the 'net' SCRs. As a default, the 'gross' capital requirements should be used to determine the equivalent scenario, but sometimes the 'net' equivalent scenario may be more appropriate (please refer to the Technical Specifications).
    - In cell F85 please provide the nBSCR under the equivalent scenario.
  - For the adjustment for deferred taxes:
    - The prescribed scenario for this risk is the 'instantaneous loss amount': the adjustment is equal to the change in the value of deferred taxes that would result from an instantaneous loss equal to the BSCR + the adjustment for the loss absorbing capacity of technical provisions (due to profit sharing) under the *equivalent scenario* + the capital requirement for operational risk.
    - Cells I 249 and J 249 already contain the initial values of any deferred tax assets or liabilities.
    - In cells I and J 250 please insert the values of any deferred tax assets or liabilities after the shock. The spreadsheet then calculates the differences.
- For the modular approach:
  - For the adjustment for the risk absorbing capacity of technical provisions:
    - This amount is calculated by the spreadsheet, based on information already provided.
  - For the adjustment for deferred taxes:
    - This is similar to the equivalent scenario. The prescribed scenario for this risk is the 'instantaneous loss amount': the adjustment is equal to the change in the value of deferred taxes that would result from an instantaneous loss equal to the BSCR + the adjustment for the loss absorbing capacity of technical provisions (due to profit sharing) under the *modular approach* + the capital requirement for operational risk.
    - Cells I 256 and J 256 already contain the initial values of any deferred tax assets or liabilities.
    - In cells I and J 257 please insert the values of any deferred tax assets or liabilities after the shock. The spreadsheet then calculates the differences.

### Section 3 Operational risk

- The spreadsheet calculates the SCR for operational risk, based on information already provided.
- The formula for the determination of operational risk is fairly straightforward, and based on the volume of the business. Three indicators are used: gross earned premiums and their growth (if higher than 10%), gross technical provisions and for unit linked business the expenses. For the calculation, in a first step a percentage is taken of on the one hand premiums and if relevant their growth and on the other hand technical provisions, and the higher outcome is used in the determination of the capital requirement. To this outcome applies a ceiling of

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|---|
| <ul style="list-style-type: none"> <li>30% of the BSCR, and a percentage of the annual expenses is added.</li> <li>The data required for this calculation are derived from elsewhere in the spreadsheet.</li> </ul>   |
| <b>Section 4 Intangible asset risk</b>  |
| <ul style="list-style-type: none"> <li>The capital requirement for intangible asset is equal to 80% of the value of the intangible assets. As this amount has already been provided in the balance sheet in the tab 'Valuation', the spreadsheet calculates the capital requirement without further input.</li> </ul>   |
| <b>Section 5 Market risk</b>  |
| <ul style="list-style-type: none"> <li>The outcomes for the individual sub-risks distinguished under market risks are combined to give an SCR for market risk, thereby assuming the existence of a diversification benefit: the total for SCR market risk is less than the simple sum of the SCRs for each of the sub-risks. Mathematically this is achieved by using a correlation matrix, in which the correlation between sub-risks is less than one. For the calculation of market risk, two matrices are being used: one that represents the assumed 'interdependence' between each of these outcomes for a scenario with falling interest rates, and one for the scenario with increasing interest rates. The spreadsheet takes care of this and calculates the total SCR for market risk for both scenarios; the SCR market risk is then the higher of these two outcomes.</li> <li>Where investments are held in collective investment funds, a 'look through' approach should be applied, i.e. assessing the nature of the underlying assets. The underlying assets are then subjected to the relevant sub-modules. An exception applies to participations. Please see the earlier section on participations.</li> </ul>   |
| <ul style="list-style-type: none"> <li>The first section requests information on the applicability of the various market risks, similar to the main introduction to this tab, by selecting from the drop down menu.</li> <li>Cell F282 refers to market risk due to regulated related undertakings excluded from the scope of group supervision. Insurers not part of a group may disregard this input cell.</li> </ul>   |
| <b>Interest rate risk</b>   |
| <ul style="list-style-type: none"> <li>This sub-module requests the calculation of the effect of a change in interest rate on the net asset value<sup>20</sup>. As outlined in the earlier section on 'Discounting', this sub-module relates to the swap rate component of the interest rate term structure.</li> <li>Both the asset and the liability side of the balance sheet are in principle affected by a change in interest rates. The scenarios of a higher or lower interest rate are essentially defined by multiplying the interest rate term structure at balance sheet date (end of 2009) by a factor, the size of which is greater at the shorter end of the curve<sup>21</sup>.</li> <li>CEIOPS aims to provide Helper tabs which contain the relevant interest rate term structures, before and after the 'shock'.</li> <li>Please note that in QIS5 discounting also applies to non-life obligations.</li> <li>The first row with input cells (row 312) concerns the initial value, i.e. before a shock. Please report in cell I312 the value of assets that are sensitive to (a change) in interest rates and in cell J312 the value of liabilities that are sensitive to (a change) in interest rates.</li> <li>In the next rows the insurer should report the value of assets and liabilities after the prescribed scenario. Both an upward and a downward shock apply, both</li> </ul> |

<sup>20</sup> Interest rate volatility is mentioned in Technical Specifications SCR 5.15, but not separately distinguished in the prescribed scenarios.

<sup>21</sup> Please see Technical Specification SCR 5.21 for an overview of these factors, and an example.

before a change in profit sharing is taken into account (gross) and with profit sharing taken into account (net).

- The spreadsheet calculates the relevant changes in net asset value.

#### Equity risk

- This sub-module requests the calculation of the effect of a fall in equity prices on the net asset value of the insurer. For the determination of the capital requirement for equity risk, the following split is considered:
  - Equities listed on regulated markets in EEA or OECD countries ('Global'): a fall of 30%
  - Other equities (e.g. in emerging markets, non-listed, hedge funds etc): 40%
  - Please note that these numbers already include the effect of a so-called 'symmetric adjustment mechanism', as indicated in the Solvency II Directive. In essence, the equity shock will be higher after equity markets have risen, and lower after equity markets have fallen. The numbers of 30% and 40% are derived from the base levels of 39% and 49%, to which an adjustment of -9% has been applied.
- Participations are subject to a different approach<sup>22</sup>:
  - The equity shock is nil for participations in financial and credit institutions. Please note that in the determination of own funds the value of participations in financial and credit institutions is deducted; applying a further shock would then be inconsistent.
  - The equity shock is 22% for strategic participations, whether listed or not
  - Other participations are subject to the general shock in QIS5 as above, i.e. 30% or 40%.
- In specific cases, for life companies, a special approach may apply: the so-called 'duration based approach', as described in the Directive art. 304. This is beyond the scope of this manual. Please refer to the Technical Specifications SCR 5.30 and 5.42
- Insurers should please note that the top half of this section (rows 327-341) concerns this 'duration based approach'. Insurers not using this special approach only need to complete the input cells in rows 344-357.

#### Property risk

- This sub-module requests the calculation of the effect of a fall in property prices on the net asset value of the insurer. The scenario to be applied is a fall of 25%. The shock applies in principle to direct and indirect property investments, including property investment for the own use of the insurer.
- Please note<sup>23</sup> that not all property-related investments are considered as property but rather as equity; these need to be included in the equity risk sub-module. These are:
  - An investment in a company engaged in real estate management, or
  - An investment in a company engaged in real estate project development or similar activities, or
  - An investment in a company which took out loans from institutions outside the scope of the insurance group in order to leverage its investments in properties.The underlying idea is that these investments are no longer comparable to 'straightforward' property investments.

#### Spread risk

- Spread risk arises from the sensitivity to changes in the level (or volatility) of credit spreads over the risk free interest rate term structure. The capital requirement for spread risk relates not only to bonds, but also to structured

<sup>22</sup> Please see the earlier section on participations.

<sup>23</sup> Please see Technical Specifications SCR 5.44 and 5.45.

products and credit derivatives. A proper description of this module is beyond the scope of this manual. Insurers holding more complex investments exposed to credit risk are referred to the Technical Specifications.

- Nevertheless a few observations:
  - No capital requirement should apply for the purposes of this sub-module to borrowings by or demonstrably guaranteed by a national government of an EEA state, issued in the currency of the government, or issued by some international organisations or the European Central Bank<sup>24</sup>. There is a capital requirement, however, for exposures to non-EEA governments and central banks dominated and funded in the domestic currency.
  - CEIOPS aims to provide Helper tabs to assist in the calculation of the spread risk capital requirements.
  - The Technical Specifications also allow for Simplified calculations.
  - Reinsurance default risk is included in the counterparty default risk sub-module. More generally, the counterparty default risk associated with a risk-mitigating transaction should be addressed in the counterparty default risk module rather than in the spread risk sub-module.
- CEIOPS aims to make a Helper tab available to assist with the calculation of this sub-module.

#### Currency risk

- The insurer may have investments or liabilities in other than the local currency, i.e. the currency in which the insurer prepares its financial statements (and its QIS5 submission). All other currencies are referred to as foreign currencies. Since foreign currency exposure may exist on either side of the balance sheet, two scenarios are prescribed: an upward shock, defined as an increase in the value of the foreign currency against the local currency, and a downward shock, defined as a fall in the value of the foreign currency against the local currency.
- The scenario to be applied is an instantaneous rise or fall in the value of 25% of the foreign currency against the local currency. Please note that the size of the shock (vis-à-vis the euro) is lower for some currencies pegged to the euro<sup>25</sup>.
- The outcomes of these two scenarios should be calculated separately for each foreign currency; the relevant capital charge for each foreign currency is the outcome which is most detrimental to the net asset value of the insurer. The total SCR for currency risk is the sum of these outcomes.

#### Concentration risk

- Concentration risk as included in this sub-module is the risk related to an accumulation of exposures with the same counterparty. It extends to assets covered in the equity risk, spread risk (e.g. corporate bonds etc.) and property risk sub-modules<sup>26</sup>. It excludes assets already covered in the counterparty risk module, to avoid overlap.
- In essence, a capital requirement results if an exposure to (an investment in) an individual counterparty<sup>27</sup> exceeds a certain threshold. The threshold is defined as a percentage of total assets, with the percentage dependent on the rating of the counterparty. 'Total assets' includes government bonds, although these (often) do not attract a capital charge under this module, as indicated below (please refer to the CEIOPS Q&A on concentration risk).
- The total assets do not include:
  - assets held in respect of life insurance contracts where the investment risk is borne by the policyholders
  - exposures of an insurer (or reinsurer) to a counterparty belonging to the

<sup>24</sup> Please see Technical Specifications SCR.5.88.

<sup>25</sup> Please see Technical Specifications SCR 5.63.

<sup>26</sup> Property concentration risk was not included in QIS4.

<sup>27</sup> Exposures to the same group as defined in the Solvency II directive or the Financial Conglomerate Directive should be treated as one exposure.

- o same group, under certain conditions
  - o assets covered in the counterparty default risk module
- The capital requirements resulting from individual 'excess' exposure are then combined to a total capital requirement.
- For property concentration risk, insurers should identify the exposures to a single property higher than 10% of 'total assets'<sup>28</sup>. For this purpose the insurer should take into account direct and indirect property, ownership and other real estate exposure. Properties located in the same building or sufficiently nearby should be considered as a single property.
- Please refer to the Technical Specifications (and Errata) for the treatment of participations in the concentration risk module (SCR 5.127 and chapter 15 Participations).
- No capital requirement should apply for the purposes of this sub-module to borrowings by or demonstrably guaranteed by a national government of an EEA state, issued in the currency of the government, or issued by some international organisations or the European Central Bank<sup>29</sup>.
- Bank deposits can be exempted from this sub-module if fully and properly covered by a government guarantee scheme in the EEA area.
- The concentration risk sub-module by its nature does not request to report changes to the value of assets and liabilities. The 'initial asset value' is the net asset value before any shock. The net asset value after the shock (gross) is the initial asset value minus the SCR for concentration risk, without any change in profit sharing taken into account. The net asset value after the shock (net) is the initial asset value minus the SCR for concentration risk, with any change in profit sharing taken into account.
- CEIOPS aims to make a Helper tab available to facilitate the calculation. Please note that there is no need to list all investments in this Helper tab. A concentration risk charge only results if exposures exceed a certain threshold.

#### Illiquidity premium risk

- As an illiquidity premium is recognised in the interest rate term structure, a scenario with a lower illiquidity premium is included. As outlined in the earlier section on 'Discounting', this sub-module relates to the illiquidity premium component of the interest rate term structure.
- The scenario consists of an assumed 65% reduction of the illiquidity premium.
- The 65% fall is restricted to the illiquidity premium that is used for the calculation of technical provisions (please also see the Errata to the Technical Specifications issued by the European Commission).
- As mentioned earlier, CEIOPS aims to make Helper tabs available that present the interest rate term structures relevant for QIS5.

#### Section 6 Counterparty default risk

- Counterparty default risk is the risk of possible losses due to unexpected default, or deterioration in the credit standing, of the counterparties and debtors of an insurer. Please note that the exposures to credit spread risk that are covered under the credit spread risk sub-module – in essence investments – do not come under the counterparty default risk sub-module, and vice versa.
- The sub-module differentiates between two types of exposures, denoted by type 1 and type 2, with a different treatment according to their varying characteristics.
  - o Type 1 covers exposures which may not be diversified and where the counterparty is likely be rated. These exposures can be more or less considered on an individual basis. They include, inter alia, reinsurance arrangements, securitisations and derivatives or other risk mitigating

<sup>28</sup> To determine the amount of total assets, also here investments in government bonds should be included.

<sup>29</sup> Please see Technical Specifications SCR.5.88.

contracts, cash at bank, deposits with ceding institutions and letters of credit and guarantees.

- Type 2 covers exposures which are usually diversified and where the counterparty is likely to be unrated. These exposures are considered on a more aggregated basis. They include, inter alia, receivables from intermediaries, but also, importantly, mortgage loans. Type 2 also includes, inter alia, deposits with ceding institutions or letters of credit if the number of independent counterparties exceeds 15.
- The main variables in the calculation are the estimated loss-given-default (LGD) of an exposure, and the probability of default (PD) of a counterparty. The calculations take collateral into account. Importantly, the sub-module also covers the counterparty default risk of risk mitigation contracts. For example: a reinsurance programme may reduce the net loss of an event to an insurer, but also generate an increase of the reinsurance recoverables, and thereby the associated counterparty default risk.
- The input cells in this section require the insurer to indicate the applicability of both types, and the outcomes of the calculation of type 1 and type 2 exposures. CEIOPS aims to provide a more detailed Helper tab to assist with the calculations prescribed by this sub-module.
- The input cells 'counterparty default risk of type 1 exposures' or 'type 2 exposures' relate to the outcomes of this sub-module before any profit sharing is taken into account ('gross' results). In the third input cell (F429) the insurer can report any loss absorbing capacity of the technical provisions if counterparty risk were to crystallise. It is expected that this may not apply to many smaller companies.

#### Section 7 Life underwriting risk

- The Technical Specifications, and the input cells in the spreadsheet, also provide for Simplifications for these risks. As mentioned before, insurers are encouraged to aim, if possible, to apply the standardised approach.
- Insurers are reminded that, as elsewhere in this tab, the term technical provisions is to be understood to exclude the risk margin.

#### Mortality risk

- Mortality risk is the risk of dying early (technically: earlier than in the assumptions underlying the Best Estimate). Mortality risk is applicable to obligations where the amount currently payable on death exceeds the technical provisions, and consequently, an increase in mortality rates leads to an increase in the technical provisions.
- In QIS5, the capital requirement for mortality risk is calculated by assuming a permanent 15% increase of mortality rates for each age and each policy subject to mortality risk.
- Some insurance policies provide benefits in case of both death and survival, contingent on the life of the same insured person. These obligations do not need to be 'unbundled'. For these contracts the mortality scenario can be applied allowing for the natural hedge between death benefits and survival benefits. Please note, however, that a floor of nil applies at the level of the contract if the net result of the scenario is favourable to the insurer.

#### Longevity risk

- Longevity risk is more or less the 'mirror image' of mortality risk. It applies to policies where a decrease in mortality rates would lead to an increase of the technical provisions. Typical examples are pension annuities or policies providing a lump sum in the event of survival of the insured life to a specified date.
- In QIS5, the capital requirement for longevity risk is calculated by assuming a (permanent) 20% decrease of mortality rates for each age and each policy subject to longevity risk.

- As mentioned under 'mortality risk', some insurance policies provide benefits in case of both death and survival, contingent on the life of the same insured person. These obligations do not need to be 'unbundled'. For these contracts the longevity scenario can be applied, again allowing for the natural hedge between death benefits and survival benefits. Also here, a floor of nil applies at the level of the contract if the net result of the scenario is favourable to the insurer.

#### Life disability-morbidity risk

- Morbidity or disability risk is the risk of loss, or adverse changes in the value of insurance liabilities, resulting from changes in the level, trend or volatility of disability or morbidity rates.
- It is expected that the majority of insurance obligations for which this risk is relevant will be included under the health module rather than the life underwriting module. The Technical Specifications state that this life sub-module is likely to be applicable only where it is not appropriate to unbundled contracts, i.e. where this insurance cover is provided as a 'rider' (addition) to a life contract.
- The specified scenario consists of both an increase of disability rates and a decrease of recovery rates:
  - An increase of 35% in disability rates for the next year, together with a (permanent) 25% increase (over best estimate) in disability rates at each age in following years
  - Plus, where applicable, a permanent decrease of 20% in morbidity/disability recovery rates.

#### Life lapse risk

- Lapse risk is the risk of loss or change in liabilities due to a change in the expected exercise rates of policyholders' options. Please note that the term 'lapse' should be seen in a broad sense. The sub-module covers e.g. surrender, termination, conversion to a paid-up status, restriction but also increase, extension, resumption of insurance cover etc. Insurers should carefully consider all exercise options their policyholders may have.
- For some policies, a lapse – in any form – may be beneficial to (the net asset value of) the insurer, for other policies a lapse may be detrimental to the insurer. The sub-module thus includes a scenario with a decrease in lapse rates (take-up rates) and a scenario with an increase in lapse rates (take-up rates). Capital requirements should be calculated based on a policy-by-policy comparison of the surrender value and best estimate provisions. The so-called 'surrender strain' of a policy is defined as the difference between the amount currently payable on surrender and the best estimate provisions held. 'Surrender value' again should be read with the mentioned broad meaning. In particular, the surrender value may be nil if no compensation is paid on termination.
- The sub-module specifies three calculations:
  - *Lapse shock down*: a reduction of 50% in the assumed take-up rates for policies *without* a positive surrender strain (i.e. where surrender is beneficial to the net asset value of the insurer). The change in the rate has a ceiling of 20% points in absolute terms.
  - *Lapse shock up*: an increase of 50% in the assumed take-up rates for policies *with* a positive surrender strain (i.e. where surrender is detrimental to the net asset value of the insurer). The resulting shocked rate should not exceed 100%.
  - *Lapse mass shock*: this consists of the combination of the following:
    - The surrender of 30% of the insurance policies with a positive surrender strain, excluding policies for non-retail business
    - The surrender of 70% of the insurance policies with a positive surrender strain for non-retail business.
- The outcome of the sub-module is the maximum of these three outcomes. The spreadsheet requests the outcomes of all three calculations.

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| <b>Expense risk</b>   |
| <ul style="list-style-type: none"> <li>▪ The expense risk scenario is defined as the combination of: <ul style="list-style-type: none"> <li>○ An increase of 10% in future expenses compared to the best estimate anticipations, and</li> <li>○ An increase by 1% per annum of the expense inflation above the anticipations.</li> </ul> </li> <li>▪ An expense payment should not be included in the scenario if the amount is already fixed at the valuation date.</li> <li>▪ For policies with adjustable expense loadings, realistic management actions regarding these loadings should be taken into account.</li> </ul>   |
| <b>Revision risk</b>  |
| <ul style="list-style-type: none"> <li>▪ This risk module should only be applied to annuities where the benefits payable under the underlying insurance could increase as a result of changes in the legal environment or in the state of health of the person insured.</li> <li>▪ This includes annuities arising from non-life claims, but excludes annuities arising from health obligations which are treated in the Health SLT module.</li> <li>▪ The prescribed scenario consists of an increase of 3% in the annual amount payable for annuities exposed to revision risk. The impact should be assessed considering the remaining run-off period of the annuities.</li> <li>▪ Please note that this sub-module also provides for the use of an undertaking specific parameter (USP). Insurers using an USP should report the parameter used in the relevant input cell. The reported USP parameter should already include the credibility weighting (i.e. already be the relevant weighted average of the own historic volatility and the standard market-wide parameter).</li> </ul> |
| <b>Life CAT risk</b>  |
| <ul style="list-style-type: none"> <li>▪ The life CAT sub-module is restricted to policies contingent on mortality risk, i.e. where an increase in mortality leads to an increase in technical provisions.</li> <li>▪ The scenario consists of an absolute increase in the rate of policyholders dying over the following year of 1.5 per mille.</li> </ul>   |
| <b>Section 8 Health underwriting risk</b>   |
| <ul style="list-style-type: none"> <li>▪ The section on Health underwriting risks differentiates between products that actuarially are similar to life (SLT) or not similar (non SLT). This corresponds with the structure of the tabs on premiums and technical provisions.</li> <li>▪ Correspondingly, the sub-modules that apply to calculate the SCR reflect either those of the Life section or the Non-life section. For this reason the explanation in this section will regularly refer to the sub-modules there, rather than copying the text.</li> </ul>  |
| <b>Capital requirement for Health underwriting risk</b>   |
| <ul style="list-style-type: none"> <li>▪ The input cells in this first section only relate to the applicability of a certain risk. Other data are derived from elsewhere in the spreadsheet.</li> </ul>   |
| <b>SLT Health (similar to life technique) underwriting risk</b>   |
| <ul style="list-style-type: none"> <li>▪ The only input cells in this subsection again only relate to the applicability of a certain risk.</li> </ul>   |
| <b>Mortality risk</b>   |
| <ul style="list-style-type: none"> <li>▪ The calculation here is similar to that in the Life sub-module.</li> </ul>   |
| <b>Longevity risk</b>   |
| <ul style="list-style-type: none"> <li>▪ The calculation here is similar to that in the Life sub-module.</li> </ul>   |

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| Disability-morbidity risk  |
| <ul style="list-style-type: none"> <li>QIS5 distinguishes between medical expense and income protection.</li> </ul>  |
| Disability-morbidity risk for medical expense  |
| <ul style="list-style-type: none"> <li>This sub-module for medical expenses has no direct equivalent in the Life section.</li> <li>The sub-module contains two main scenarios: claims shock up and claims shock down. The scenario claims shock down needs only be analysed for policies that include a premium adjustment mechanism which foresees an increase of premiums if claims are higher than expected and a decrease of premium if claims are lower than expected. Otherwise undertakings may assume that the result of this scenario is nil.</li> <li>The claims shock up consists of an assumed increase of 1 percentage-point in claims inflation, together with a 5% permanent relative change of claims.</li> <li>The claims shock down, if applicable, consists of the mirror image.</li> </ul> |
| Disability-morbidity risk for income protection  |
| <ul style="list-style-type: none"> <li>The calculation here is similar to that in the Life sub-module.</li> </ul>  |
| Life lapse risk  |
| <ul style="list-style-type: none"> <li>The methodology of this scenario is similar to that under 'Life', but with differences in parameters. For lapse up and lapse down the assumed change in lapse rates is 20% instead of 50%.</li> </ul>   |
| Expense risk   |
| <ul style="list-style-type: none"> <li>The calculation here is similar to that in the Life sub-module.</li> </ul>  |
| Revision risk  |
| <ul style="list-style-type: none"> <li>The methodology of this scenario is similar to that under 'Life', but a difference in a parameter: the assumed stress is 4% instead of 3%.</li> <li>Please note that this sub-module also provides for the use of an undertaking specific parameter (USP). Insurers using an USP should report the parameter used in the relevant input cell. The reported USP parameter should already include the credibility weighting (i.e. already be the relevant weighted average of the own historic volatility and the standard market-wide parameter).</li> </ul>   |
| Non-SLT Health (similar to non-life technique)   |
| <ul style="list-style-type: none"> <li>In general the approach taken is comparable to non-life. A potential point of attention for Non-SLT Health, however, is the existence of a health risk equalisation system (HRES). The risk mitigating effect of such a system is reflected in the premium and reserve risk calculation by means of an HRES adjustment parameter.</li> <li>The input for the HRES is requested in rows 645-648.</li> </ul>  |
| Premium and reserve risk   |
| <ul style="list-style-type: none"> <li>The underlying methodology and calculation is similar to that in the non-life sub-module, including the allowance of undertaking specific parameters. Please note that the reported USP parameters should already include the credibility weighting (i.e. already be the relevant weighted average of the own historic volatility and the standard market-wide parameter).</li> </ul>   |
| Health non-SLT lapse risk  |
| <ul style="list-style-type: none"> <li>The underlying methodology and calculation is similar to that in the non-life sub-module.</li> </ul>  |

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| <b>Health CAT risk</b>   |
| <ul style="list-style-type: none"> <li>▪ The Health CAT risk module has changed considerably from the QIS4 specification. The aim has been to make this module more risk sensitive, both regarding the possible effects of the perils covered, and the mitigation of the reinsurance programme.</li> <li>▪ CEIOPS will provide Helper tabs that generate the data that are requested in the input cells in this sub-module.</li> </ul>   |
| <b>Section 9 Non-life underwriting risk</b>  |
| <ul style="list-style-type: none"> <li>▪ Non-life underwriting risk is composed of premium and reserve risk, non-life lapse risk and non-life CAT risk.</li> </ul>   |
| <b>Non-life premium and reserve risk</b>   |
| <ul style="list-style-type: none"> <li>▪ This module combines the treatment of two main sources of underwriting risk: premium risk and reserve risk. Summarising very briefly: <ul style="list-style-type: none"> <li>○ Reserve risk relates to the risk that the (best estimate) claims provisions (PCO: provision for claims outstanding) may turn out to be insufficient, and in essence thus relates to a past risk period</li> <li>○ Premium risk relates to the coming period and the risk that premiums (including premium provisions) turn out to be insufficient</li> </ul> </li> <li>▪ The capital requirement for both premium and reserve risk is in essence based on the multiplication of two components: <ul style="list-style-type: none"> <li>○ An indicator for the volume of the business (exposure)</li> <li>○ An indicator for the volatility of the business (exposure)</li> </ul> </li> <li>▪ For premium risk the volume indicator is basically the size of the (expected) net premiums for the forthcoming year; for reserve risk the volume indicator is the best estimate provision for claims outstanding, net of recoverables from reinsurance and special purpose vehicles.</li> <li>▪ For the indicator of the volatility, use can be made of standard market-wide parameters or of undertaking specific parameters (USP), for both premium and reserve risk. These parameters are based on the standard deviation of the underlying risk; the parameters are approximately three times the standard deviation.</li> <li>▪ Insurers may opt to use undertaking specific parameters to reflect the volatility. These parameters are based on the own history of loss ratios of the individual insurer. In this case the volatility is determined as a weighted average of the own historic volatility and the standard market-wide parameter: a longer history of own data gives a greater weight to the own figures and a correspondingly lower weight to the standard market-wide parameters. CEIOPS aims to provide Helper tabs to assist with the calculation of the undertaking specific parameters. These USP numbers per line of business need to be inserted in the relevant cells in column I.</li> <li>▪ Please note that the reported USP parameters should already include the credibility weighting (i.e. already be the relevant weighted average of the own historic volatility and the standard market-wide parameter).</li> <li>▪ The spreadsheet also requires the input of the factor DIV, representing a geographical diversification benefit, as already mentioned when discussing the tabs 'Premiums' and 'Health non SLT and non-life'. As mentioned there: <ul style="list-style-type: none"> <li>○ Undertakings may choose to allocate all of their business in a line of business to the main geographical segment in order to simplify the calculation. This may be relevant to many smaller firms operating largely or solely on their home market. <i>The DIV factor should then be set at 1 (100%).</i></li> <li>○ The Technical Specifications state that the diversification factor DIV<sub>lob</sub> should be set to 1 (100%) for the line of business credit and suretyship <i>and where the standard deviation for premium or reserve risk of the line of business is fed by an undertaking-specific parameter.</i></li> </ul> </li> </ul> |

- The spreadsheet also provides for the input of an adjustment factor NP for non-proportional reinsurance, allowing undertakings to take into account the risk-mitigating effect of particular per risk excess of loss reinsurance. The calculation of this factor is outlined in Annex N of the Technical Specifications, and beyond the scope of this manual. Insurers not calculating this factor should input a value of 100% in the cells for the NP adjustment factor.
- The other data necessary to perform the calculation of premium and reserve risk are already available elsewhere in the spreadsheet, and need not be provided again.
- The input data are requested by line of business. The spreadsheet takes care of the aggregation.

#### Non-life lapse risk

- Non-life insurance contracts can include policy options which significantly influence the obligations arising from them. These may include options to terminate the contract before the end of the previously agreed insurance period or options to renew contracts according to previously agreed conditions.
- Where non-life contracts contain no such policyholder options, or where the assumptions of the exercise rate of such options have no material influence on the premium provisions, these contracts need not be included in the calculations. Where this applies to the whole portfolio (except possibly for a non-material part), the three components requested may be set to nil.
- This may well be the case for smaller non-life companies offering fairly straightforward products. These insurers should input a value of nil in the three input cells.
- Insurers for which this lapse risk is more material should refer to the Technical Specifications.

#### Non-life CAT risk

- The non-life CAT risk module has changed considerably from the QIS4 specification. The aim has been to make this module more risk sensitive, both regarding the possible effects of the perils covered, and the mitigating effect of the reinsurance programme.
- CEIOPS aims to provide Helper tabs that generate the data that are requested in the input cells in this sub-module.

#### Tab SF MCR

##### Section 1 MCR Top level calculation

- Section 1 contains the top level calculation for the MCR. As the MCR is subject to an absolute minimum, this section requests the relevant amount of AMCR (Absolute Minimum Capital Requirement). Life insurers are requested to complete cell J17, non-life companies cell J22. Composites complete both.

##### Section 2 MCR Detailed calculation

- This section requests, in four subsections, more detailed information required to calculate the MCR. Composites need to complete both the life and non-life sections. *Please note carefully which section applies.*
- Only section 2.4 contains input cells. All other information necessary for these calculations is derived from elsewhere in the spreadsheet..

## Results

83. The completed spreadsheet provides insight in the major components of the financial position of an insurer, and the potentially most important quantifiable risks. The spreadsheet also presents a comparison between the financial position under the current regime and under QIS5.
84. Insurers are encouraged to use this exercise in their further preparation for Solvency II. The spreadsheets – QIS5 spreadsheet and Helper tabs - may also be of use for further analysis by the insurer, e.g. considering the impact of a possible change in investment strategy or reinsurance programme. Insurers are also invited to consider whether the SCR standard formula as tested in QIS5 is deemed to be a sufficiently sound method to represent their risk position.
85. QIS5 also includes qualitative questionnaires. It is important for a successful QIS5 that insurers complete the relevant questionnaires.

## Submission of the spreadsheets

86. National supervisors will specify the precise form of submission<sup>30</sup>. Insurers are encouraged to submit not only the completed QIS5 spreadsheet, but also any Helper tabs and similar programmes used to complete the main spreadsheet. These data greatly assist an assessment of the submission by the supervisor, and also, importantly, a productive feedback of the findings to the individual insurers.
87. Insurers are also reminded to submit the qualitative questionnaires. These also provide further opportunity to submit any comments the insurer may have.

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<sup>30</sup> Group submissions are beyond the scope of this manual.