PÉNZÜGYI SZERVEZETEK
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HUNGARIAN FINANCIAL
SUPERVISORY AUTHORITY

# QIS5

# Country Report

# for

# Hungary

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## General remarks

The QIS5 Country Reports will serve as the key input in the final European QIS5 Report. The Country Report focuses on the main conclusions to be drawn from the QIS5 exercise in the country concerned, providing the reader with a useful insight in the QIS5 results. The Country report highlights the QIS5 results with respect to QIS5 key priorities (e.g. complexity, simplifications) and topical issues (e.g. deferred taxes, illiquidity premium). The country report also covers the QIS5 results for the country concerned that deserve special attention on the European level (e.g. branches that are particularly affected, areas needing further guidance or raising debate, etc.).

In general, the structure of the Country report follows the structure of the qualitative questionnaire. Whenever a question in this country report refers to a question in the qualitative questionnaire, this is indicated by a link (e.g. "-> *Q.123*").

When filling the country report, please observe the following:

- Give an indication of the representativeness in respect to your industry of a statement. E.g., report if only a few undertakings at all did provide input to a certain question, if a certain problem is considered of high importance for a specific branch only, or if similar feedback was given by many participants.
- Whenever appropriate, volunteer your opinion or proposed solution to an issue indicated by your industry
- When the tags before and after the answer start by QS (<QS_…> and </QS_…>), then the view of the supervisor should be reported
- When the tags before and after the answer start by QP (<QP_…> and </QP_…>), then the view of the participants should be reported.

Country reports should be:

➔ In English
➔ The executive summary should be included
➔ The rest of the text does not have to be fully drafted (bullets points are also fine as long as the content is included.

# 1. Executive summary

*Please include at least the following headings in the executive summary and distinguish, if possible, between the size and type of undertakings.*

Quality of data

Provide your assessment of the overall quality of data of the QIS5 submission, explicating problem areas. (2. Participation and data collection)

<QS_exsum_quality>

**Participation:** Relative to QIS4, the number of participants doubled. A total of 30 solo undertakings participated in the Hungarian QIS5 exercise, including 9 composite, 11 life and 10 non-life undertakings with a total market share exceeding 97% both on the life and on the non-life side.

**Overall quality of submissions:** The general quality of submissions varied by undertaking, with first-time participants generally facing steeper challenges than veterans of previous QIS exercises. Among the recurring problem areas, the following ones are highlighted:

- the calculation of future discretionary benefits (FDB) and the SCR adjustment for the loss absorbency of technical provisions,
- deferred taxes and the SCR adjustment for the loss absorbing capacity of deferred taxes,
- the counterparty default risk module of the SCR standard formula.

Undertakings participating in the exercise expressed a view that data quality issues were complicated by tight deadlines, considering the late arrival, perpetual updating and embarrassing errors of the spreadsheets and helper tabs, which made the impact study a distressing experience. The supervisor can only confirm this view.

The supervisor's QIS analyst team checked all submissions for completeness and plausibility of the results, requesting corrections from undertakings where necessary. During this process, nearly all undertakings were asked to perform some revisions to their spreadsheets. Following the above quality checks, 2 undertakings were excluded from the quantitative analysis altogether, 2 undertakings were excluded from the analysis of capital requirements (SCR and MCR) and one undertaking was excluded from the analysis of own funds.

However, the overall impression gained by the supervisor is that, despite these efforts, a significant number of data quality issues still remain unresolved or undetected.

Therefore, on the one hand, the quantitative results of QIS5 do allow to identify major tendencies and to draw conclusions about the big picture. On the other hand, the supervisor considers that the detail of the quantitative results should be treated with caution.

</QS_exsum_quality>

Overall financial impact

Provide your assessment of the overall financial impact of the QIS5 specifications on your industry, highlighting areas most impacted and main drivers of the shifts identified. (4. Overall financial impact)

<QS_exsum_impact>

Compared to the current regime, the magnitude of the basic components of QIS5 financial requirements can be described as follows (aggregate data of 26 undertakings):

million EUR

| | **Solvency 1** | **QIS5** |
|---|---|---|
| technical provisions (gross) | 7 096 | 5 377 |
| other liabilities | 695 | 810 |
| capital requirements | 410 | 1 071 |
| surplus capital | 549 | 1 225 |
| **balance sheet total** | **8 750** | **8 483** |

Or, expressed as a percentage of the current balance sheet total:

| | **Solvency 1** | **QIS5** |
|---|---|---|
| technical provisions (gross) | 81,1% | 61,4% |
| other liabilities | 7,9% | 9,3% |
| capital requirements | 4,7% | 12,2% |
| surplus capital | 6,3% | 14,0% |
| **balance sheet total** | **100,0%** | **96,9%** |

Following these shifts, the available surplus capital above capital requirements increased more than twofold (223.4%) relative to the current regime (the distinction between net asset value and eligible own funds is noted, however the importance of deductibles and off-balance sheet capital items is marginal in the Hungarian case).

At the same time, solvency ratios dropped as capital requirements grew in weight relative to the overall financial requirement. Compared to an average solvency ratio of 220.6% under the current regime, the average solvency ratio of undertakings was 214.6% with reference to the SCR standard formula. The average solvency ratio with reference to the MCR was 712.7%.

Out of 26 undertakings included in the analysis of capital requirements, 2 undertakings reported insufficient eligible own funds to meet the SCR and 3 undertakings reported insufficient eligible basic own funds to meet the absolute

floor of the MCR, including one undertaking that reported a negative net asset value.

</QS_exsum_impact>

Valuation methodology

Provide your assessment of the adequacy, practicability and quantitative impact of the QIS5 valuation methodology, highlighting areas with practical or methodological difficulties in your market. (6. Valuation)

<QS_exsum_valuation>

**Quantitative impact:** It is difficult to draw clear trends as the new valuation brought both upward and downward changes. The value of total assets dropped slightly relative to current accounting figures (to 97.0%), while the value of total investments increased slightly (to 102.4%) and the value of liabilities other than technical provisions increased materially (to 119.2%). None of these changes were so significant as the changes affecting technical provisions, see further below.

**Adequacy and practicability of methodology:** Almost all comments on valuation issues concerned the calculation of technical provisions, see further below. Issues raised in respect of assets and liabilities other than technical provisions included the following:

- difficulty regarding the treatment of strategic vs. non-strategic participations, especially in cases when the participation is not a financial institution and only contributes services to the insurer, as the criteria for strategic participation were not defined in detail,
- difficulty regarding the application of the look-through approach in case of unit-linked asset funds, as no look through approach is required under the current regulation,
- valuation of new balance sheet items, such as deferred taxes were difficult for those undertakings that do not report under IFRS.

</QS_exsum_valuation>

Technical provisions methodology

Provide your assessment of the adequacy, practicability and quantitative impact of the QIS5 valuation methodology regarding technical provisions, highlighting areas with practical or methodological difficulties in your market. Comment also on application and further requirement of simplifications.
(7. Technical provisions).

<QS_exsum_tp>

**Quantitative impact:** Generally, most participants reported a decrease of technical provisions in all or most lines of business. As a percentage of current statutory technical provisions, the following levels of total QIS5 gross technical provisions were reported:

- non-life technical provisions: 55.2%
- life technical provisions (excluding unit-linked): 73.6%

- unit-linked technical provisions: 86.2%

Health technical provisions were generally marginal and in the above statistics were taken into account under life or non-life technical provisions according to whether the underlying obligations were technically similar to life (SLT) or to non-life (NSLT).

Only a few insurers calculated part of their technical provisions as a whole. 96.2% of gross technical provisions, including most unit-linked technical provisions, were calculated as the sum of best estimate and risk margin. For life and health-SLT obligations, the total risk margin was 2.1% of total gross technical provisions. For non-life and health-NSLT obligations, the total risk margin was 10.4% of total gross technical provisions.

The distribution of reported gross technical provision between illiquidity premium buckets was the following:

- 50% bucket: 65.5%
- 75% bucket: 30.9%
- 100% bucket: 3.6%

It is noted however that, in the supervisor's view, most technical provisions reported in the 100% bucket did not fulfil the QIS5 criteria of being eligible for 100% illiquidity premium.

**Adequacy of methodology:** Following the QIS5 exercise, we would highlight the following methodological points:

- The **separate calculation of future discretionary benefits (FDB)** gave rise to difficulties on our local market. In the current Hungarian profit sharing regime, almost all future benefits are legally and contractually based on the realised investment return of a pool of assets held by the undertaking. Therefore in most cases the distribution of future benefits leaves no room for management discretion. The lack of management discretion led many undertakings to assign all of their technical provisions to guaranteed benefits and to assign a zero value to FDB, disregarding the definition of FDB in the technical specifications. Accordingly, these undertakings considered that the loss-absorbing capacity of technical provisions in the SCR standard formula should also be valued as zero. Other undertakings did calculate FDB, sometimes in a way clearly inconsistent with QIS5 definitions. A common understanding of the FDB concept among participants was apparently absent in our local market. A consistent interpretation was also complicated by the fact that the term "future discretionary benefits" is a misnomer: under the current definition it actually refers to conditional benefits rather than discretionary ones.

  While the supervisor understands that the current definition of FDB has been adopted with the aim of harmonisation across different profit sharing systems, she has sympathy for the view expressed by local undertakings: that is, a definition where legally or contractually determined benefits were not included in the valuation of FDB, or dropping the requirement to calculate FDB separately would better suit the profit sharing arrangements

existing in our market. If the current definition remains unchanged in Level 2, we consider that careful implementation into national law and clarifying guidelines at Level 3 will be necessary to achieve consistent appliaction.

- Regarding the question of the **definition of the contract boundary**, undertakings' views were divided. A number of undertakings found the QIS5 definition satisfactory. On the other hand, a number of undertakings suggested changes to the definition. Some undertakings suggested to adapt the definition either to final IFRS on insurance contracts or to the IASB exposure draft. Other undertakings expressed a strong view that the QIS5 definition was too restrictive, particularly for the non-life side. These undertakings suggested to extend the contract boundary definition to cover the value-in-force (ViF) of the portfolio, including all future renewals.

  The supervisor is open to further clarification of the definition, but strongly opposes any further major extension of the contract boundary definition. She does not support either the introduction of a value-in-force (ViF) concept as the basis of determining technical provisions, or cherry-picking elements from IFRS whose expected impact is a thinning-out of technical provisions. In the supervisor's view, a major extension of the contract boundary definition would greatly increase the measurement uncertainty in all elements of Solvency 2 financial requirements, which she believes is contrary to the prudential objectives of the new regime.

- Regarding the **illiquidity premium,** undertakings appeared to be supportive of the concept, although some would like to increase illiquidity premia still further. However, a number of undertakings had difficulty allocating their liabilities between illiquidity premium buckets.

  The supervisor fundamentally disagrees with the application of illiquidity premia to insurance liabilities, except for obligations displaying the highest degree of illiquidity (the current 100% bucket). Considering that most obligations have the potential to become highly liquid under stressed market conditions, the supervisor believes that extending the scope of the illiquidity premium to the whole range insurance obligations is not justified, let alone the high arbitrary factors of 50% and 75%. The supervisor is concerned that technical provisions calculated with such assumptions would not reflect realistic transfer prices. Furthermore, she is not convinced about the reliability of the proposed methodology to determine illiquidity premia. She also notes that the quantitative impact reflecting and end-of-year 2009 situation may understate the magnitude of the impact under stressed market conditions, where illiquidity premium were to be used as a countercyclical tool.

**Practicability:** On the non-life side undertakings could in most cases successfully adapt their deterministic reserving methods to QIS5 requirements. However, applying the contract boundary definition to the calculation of premium provisions was not always straightforward. Various simplifications were used regarding segmentation and both of claims provisions and premium provisions.

On the other hand, life technical provisions presented a significant challenge, depending on the preparedness of each undertaking. The valuation of options and guarantees caused difficulties in almost every case. While some

undertakings were able to use stochastic simulation, less resourceful undertakings had to rely on deterministic techniques and were able to perform the valuation of contractual options and guarantees only partially.

Undertakings noted that the risk margin methodology was rather complex compared to its quantitative impact. Almost all undertakings had to resort to some degree of simplification when calculating the risk margin. On the basis of the QIS5 experience, regarding the unavoidable market risk component of the risk margin – while acknowledging that in theory this is an existing element of the cost of capital – the supervisor is not convinced that this component is so significant as would justify the added complexity of including it in the calculation.

</QS_exsum_tp>

Own funds

Provide your assessment of the adequacy, practicability and quantitative impact of the QIS5 results for the determination, classification and limits applied to own funds. (710. Own Funds)

<QS_exsum_of>

**Quantitative impact:** Almost all own fund items reported in QIS5 were Tier 1 basic own funds (97.9%). Four participants reported limited amounts of Tier 2 basic own funds and one participant reported a marginal amount of Tier 3 basic own funds. No ancillary own funds were reported. Accordingly, the limit system did not cause a breach of capital requirements.

**Adequacy and practicability of methodology:** Given that reported own fund items were overwhelmingly classified as Tier 1, the treatment of own funds generally did not generate controversy, with one notable exception:

- Regarding **expected profits included in future premiums (EPIFP),** undertakings expressed a strong view that EPIFP should remain Tier 1 capital. They reject relegating EPIFP to Tier 3 as a violation of the principle of market-consistency and as double-counting of risks with the SCR. A number of undertakings also pointed out potential technical difficulties with the QIS5 approach of quantifying EPIFP, which in their view make the calculation complex, onerous and inaccurate.

  The supervisor finds it difficult to avoid the conclusion that EPIFP may include an element of double-counting of risk. She also regards the quantification of EPIFP questionable and adding futher unwelcome complexity to the solvency regime.

  On the other hand, the supervisor is concerned that the softening-up of the contract boundary definition has the potential to encourage a Ponzi dynamics where existing obligations are increasingly covered by uncertain future premiums. She notes that the calibration of the SCR lapse risk submodules largely dates back to previous QIS exercises that have not been designed with the present scope for future premiums in mind. The supervisor believes that the QIS5 definition of the contract boundary would require counter-balancing requirements addressing the uncertainty of future premiums, optimally in the form of strengthened SCR lapse risk charges (e.g. higher mass lapse shocks and/or lapse shocks increasing with time, treating remote future premiums as progressively more

uncertain). It should be ensured that the progressive uncertainty of future premiums is properly addressed not only in the standard formula, but in internal models as well.

If the uncertainty of future premiums cannot be addressed by strengthening lapse risk in the SCR, then unfortunately the supervisor will not be in a position to support the classification of the full amount of EPIFP as Tier 1.

</QS_exsum_of>

SCR

Provide your assessment of the adequacy, practicability and quantitative impact of the QIS5 methodology regarding the SCR determination, highlighting areas with practical or methodological difficulties in your market. Comment also on application and further requirement of simplifications. (8. SCR)

<QS_exsum_scr>

**Quantitative impact:** On the average, the amount of standard formula SCR calculated in QIS5 was almost three times the required solvency margin in Solvency I (271.9%).

The overall composition of the SCR standard formula by risk module was the following (expressed as percentages of the total SCR standard formula):

- total BSCR: 103.6%
  - market risk: 34.5%
  - counterparty default risk: 17.1%
  - life underwriting risk: 26.7%
  - health underwriting risk: 1.8%
  - non-life underwriting risk: 57.8%
  - BSCR diversification: –36.0%
  - intangible asset risk: 1.7%
- operational risk: 10.4%
- adjustment for the loss absorbency of technical provisions and deferred taxes: -14.0%

Relative to QIS4, a major increase in the volume and relative weight of the counterparty default risk module was observed.

**Adequacy and practicability of methodology:** Regarding the SCR standard formula methodology, the following issues need mentioning:

- A typical difficulty concerned the interpretation and calculation of the **adjustment for the loss absorbing capacity of technical provisions (Adj_TP).** As described above, most undertakings, disregarding the technical specifications, considered that there was no room for future discretionary benefits under the local profit sharing regime. Accordingly, most undertakings considered that the loss-absorbing capacity of technical provisions should also be valued as zero. In effect these undertakings typically ignored the gross scenario calculations, aggregating the net risk charges instead to arrive at the BSCR. When the supervisor pointed out

the discrepancy with the specifications, some of these undertakings were reluctant to repeat the calculations as they felt that the gross scenarios would be both unrealistic and burdensome to calculate. Other undertakings did attempt to calculate the gross and net scenarios separately, but their efforts were complicated by misunderstandings.

While the supervisor understands that the current definition of FDB has been adopted with the aim of harmonisation across different profit sharing systems, she has sympathy for the view expressed by local undertakings, that is, calculating both the gross and net scenarios is disproportionately burdensome under local circumstances, where aggregating the net risk charges would almost certainly lead to the same results.

- Undertakings found the **single equivalent scenario method** to be technically very complex. This approach clearly failed to gain support from the local industry. The supervisor also considers that this method is not well suited to become the default approach on the local market.

- Regarding the **counterparty default risk module**, a number of undertakings expressed a view that the calculations were unduly complex and burdensome. Instances of anomalies affecting the outcome of this module were also reported.

- Regarding the **non-life premium and reserve risk submodule**, the calibration of the risk factors was not heavily criticised in undertakings' responses. Some undertakings noted that the adjustment for non-proportional reinsurance cannot capture all non-proportional reinsurance structures except the most basic ones. The supervisor notes that the adjustment formula may lead to anomalous results, as increasing the standard deviation of claims severity will result, all else being equal, in a lower final risk factor.

- Regarding the **non-life catastrophe risk submodule**, availability of input data was a problem for a number of undertakings. Undertakings that calculated the CAT risk charge with several different methods (standardised scenarios, factor method, internal model) reported major differences between the results of different approaches. Finally, it appeared that the specification of the motor CAT scenario was inadequate.

Regarding the application of simplifications, 6 undertakings reported that they did not use standard formula simplifications. 14 undertakings reported to have used simplifications, most frequently in the counterparty default risk module. All SCR simplifications provided in the specifications were used by some undertakings.

</QS_exsum_scr>

MCR

Provide your assessment of the adequacy, practicability and quantitative impact of the QIS5 methodology regarding the MCR determination, highlighting areas with practical or methodological difficulties in your market. (9. MCR)

<QS_exsum_mcr>

**Quantitative impact:** The ratio of the linear calculation to the SCR standard formula varied between 1.1% and 272.8%, with an average of 33.4%. The effect of the various floors and caps was as follows:

Out of a total of 26 cases,

- the linear result fell into the corridor in 12 cases,
- the linear result was lower than 25% of the standard formula in 13 cases,
- the linear result was higher than 45% of the standard formula in 1 case,
- the absolute floor determined the final MCR result in 13 cases.

**Adequacy and practicability of methodology:** While a few undertakings expressed disagreement with the Level 1 design of the MCR, none of the undertakings reported difficulties with the calculation.

The specifications required composite undertakings to calculate notional MCRs for their life and non-life activities separately. The corresponding split of basic own funds between the life and non-life activities was missing in QIS5, which complicated the analysis of the results. However, a comparison between notional life/non-life MCR results and current eligible basic own funds (which are reported separately for life and non-life in local supervisory reporting) indicated that all composite undertakings had sufficient eligible basic own funds to cover the notional MCR of each activity, without transferring basic own funds from one activity to the other.

</QS_exsum_mcr>

Proportionality

Comment on the extent to which the QIS5 methodology takes into account the proportionality principle, indicating areas where further explicit guidance or simplification for small undertakings might be required.

<QS_exsum_simpl>

Following the proportionality principle, simplifications were used in the QIS5 exercise by practically all undertakings.

In the area of technical provisions, undertakings emphasised the need for an open range of simplifications, as all but the most resourceful undertakings had to resort to some simplifications, beginning from the segmentation. Only in one case did the supervisor feel that the use of a simplification was not justified on the basis of the proportionality principle.

Existing SCR simplifications were apparently well received, yet the need for further simplifications was highlighted.

The supervisor expresses a view that there are indications that the development of the Solvency 2 framework has reached a point where adding further complexity might impair effective implementation and enforcement. There are already signs that both the quality of submissions and their processing suffered from the sheer complexity and constant changes of the specifications. The addition of simplified alternative calculation methods will not fully address this

problem. In the supervisors' view, stabilising the system and stopping its complexity from spiralling out of control should become a priority.

</QS_exsum_simpl>

SCR internal models

Description of the quantitative impact of the QIS5 results based on full and partial internal model calculations (SCR results, risk margin), description of how insurance undertakings integrate the partial internal model with the standard formula, description of main difference between structure of internal models and standard formula and number of intended internal models for calculating SCR. Please provide the results for risk margin. Please refer to the IM.Internal Model Results, IM "blank" sheet results in the QIS5 spreadsheet and the qualitative questionnaire to analyse the structure of internal models and other risks not covered by the standard formula. (Reference to Tables 1, 3, 5, 6, 8, 9, 10, 11, 13, 15)

<QS_exsum_view_SCR_IM>

Internal models being developed on the local market are mostly local implementations of group internal models. The parent groups are typically planning to apply for internal model approval at the earliest possible date, the entry into force of Solvency 2; one undertaking would even aim for an earlier application date.

At least 6 undertakings are known to have plans to use an internal model to determine their SCR. Although all of these undertakings participated in QIS5, only 3 of them submitted internal model SCR results. Two of the submissions were full internal model results, while the third one was a partial result covering Nat-CAT risk. The average ratio of full internal model results to the SCR standard formula was 46%, while the partial model covering a single submodule resulted in a marginal increase of the overall SCR of the undertaking.

The risk measure was mostly 99.5% Value-at-Risk on a one-year time horizon, one undertaking used quarterly time horizon for market risk, and one undertaking reported the use of TailVaR for some risks e.g. mortality-CAT. All risks covered by the standard formula were covered by internal models, except possibly intangible asset risk on which we do not have full information.

Internal model modules which are absent from the standard formula include: interest rate volatility, equity volatility, credit migration, mortality trend, mortality volatility, persistency, persistency uncertainty, future premium re-rating. Aggregation of risks is clearly a key challenge of internal modelling.

Undertakings also reported that existing internal model documentation does not yet meet Solvency 2 approval standards.

</QS_exsum_view_SCR_IM>

Groups

Provide your assessment of the overall financial impact of the QIS5 specifications on your industry, highlighting areas most impacted and main drivers of the shifts identified. Provide also additional key trends or element you would like to mention on groups. That section is included in the country report for the preparation of the early messages based on the executive summary by CEIOPS.

<QS_exsum_Groups>

Not applicable.

</QS_exsum_Groups>

## 2. Participation and data collection

1. Please complete the following tables on the number of undertakings that provided quantitative data for solo undertakings in QIS5.

*These tables will be provided as a spreadsheet integrated in the IT tool – you are asked to copy/paste the tables into this report.*

### Table A Number and size of respondents (by legal status under the EU Directives)

| | **Small** | | | **Medium** | | | **Large** | | | **Number of respondents part of a group** |
|---|---|---|---|---|---|---|---|---|---|---|
| | No | % of S II affected | % of total | No | % of S II affected | % of total | No | % of S II affected | % of total | % of total |
| **Life undertakings** | 10 | 83 | 77 | 1 | 100 | 100 | - | | | |
| **Non-life undertakings** | 10 | 71 | 71 | - | | | | | | |
| **Pure reinsurers** | - | | | | | | | | | |
| **Captives** | - | | | | | | | | | |
| **Composites (including respondents providing data for both life and non-life business)** | 4 | 100 | 100 | 5 | 100 | 100 | - | | | |
| **All respondents** | 24 | 80 | 77 | 6 | 100 | 100 | | | | |
| **- *of which* Health (included above)** | - | | | | | | - | | | |
| **- *of which* Mutual undertakings (included above)** | 4 | | | | | | - | | | |

### Table B Market coverage (by type of business written)

| | **Total Market Share** | ***Of which*: Composites** |
|---|---|---|
| | **%** | **%** |
| **Life business** | 97,3% | 55,5% |
| **Non-life business** | 97,2% | 93,2% |

| | | |
|---|---|---|
| **Health business** | 83,9% | 88,4% |

2. Please complete the following tables for the total *number* of respondents that provided figures for the various parts of QIS5, and for the corresponding *percentage (%).* This percentage should be calculated as the number of respondents for the relevant part of the QIS5 exercise divided by the total number of respondents (which can be found in the final column of table A), excluding where possible from the denominator, those firms that are known to have no exposure to that risk.

**Table C Coverage of provisions (by type of business written)**

| **Respondents with only Life Business** | Best estimate Provisions | | Risk margin Provisions | | Based on Internal Model | |
|---|---|---|---|---|---|---|
| | *Number* | *%* | *Number* | *%* | *Number* | *%* |
| Total gross provisions | 11 | 100 | | | - | |
| Total net of reinsurance provisions | 11 | 100 | 11 | 100 | | |

| **Respondents with only Non-Life Business** | Best estimate Provisions | | Risk margin Provisions | | Based on Internal Model | |
|---|---|---|---|---|---|---|
| | *Number* | *%* | *Number* | *%* | *Number* | *%* |
| Total gross provisions | 10 | 100 | | | - | |
| Total net of reinsurance provisions | 10 | 100 | 10 | 100 | | |

| **Respondents with Life and Non-Life Business (composites)** | Best estimate Provisions | | Risk margin Provisions | | Based on Internal Model | |
|---|---|---|---|---|---|---|
| | *Number* | *%* | *Number* | *%* | *Number* | *%* |
| Total gross provisions | 9 | 100 | 9 | 100 | - | |
| Total net of reinsurance provisions | 9 | 100 | | | | |

| **Respondents with only Health Business** | Best estimate Provisions | | Risk margin Provisions | | Based on Internal Model | |
|---|---|---|---|---|---|---|
| | *Number* | *%* | *Number* | *%* | *Number* | *%* |
| Total gross provisions | - | | - | | - | |
| Total net of reinsurance provisions | - | | - | | - | |

3. Please indicate the number of undertakings that responded to the individual answers in the qualitative questionnaire

| Question | Respondents | Question | Respondents | Question | Respondents | Question | Respondents |
|---|---|---|---|---|---|---|---|
| QS.0 | 5 | QS.28 | 11 | QS.56 | 14 | QS.84 | 6 |
| QS.1 | 12 | QS.29 | 11 | QS.57 | 2 | QS.85 | 3 |
| QS.2 | 22 | QS.30 | 10 | QS.58 | 20 | QS.86 | 1 |
| QS.3 | 21 | QS.31 | 9 | QS.59 | 4 | QS.87 | 6 |
| QS.4 | 22 | QS.32 | 17 | QS.60 | 12 | QS.88 | 21 |
| QS.5 | 8 | QS.33 | 8 | QS.61 | 11 | QS.89 | 10 |
| QS.6 | 22 | QS.34 | 11 | QS.62 | 10 | QS.90 | 2 |
| QS.7 | 21 | QS.35 | 12 | QS.63 | 7 | QS.91 | 2 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| QS.8 | 7 | QS.36 | 15 | QS.64 | | QS.92 | 5 |
| QS.9 | 21 | QS.37 | 15 | QS.65 | 3 | QS.93 | 7 |
| QS.10 | 15 | QS.38 | 20 | QS.66 | 9 | QS.94 | 4 |
| QS.11 | 18 | QS.39 | 7 | QS.67 | | QS.95 | 3 |
| QS.12 | 2 | QS.40 | 5 | QS.68 | | QS.96 | 7 |
| QS.13 | 16 | QS.41 | 20 | QS.69 | 16 | QS.97 | 3 |
| QS.14 | 11 | QS.42 | 8 | QS.70 | 10 | QS.98 | 4 |
| QS.15 | 10 | QS.43 | 3 | QS.71 | 3 | QS.99 | 4 |
| QS.16 | 15 | QS.44 | 16 | QS.72 | 12 | QS.100 | 17 |
| QS.17 | 15 | QS.45 | 14 | QS.73 | 8 | QS.101 | 11 |
| QS.18 | 8 | QS.46 | 20 | QS.74 | 8 | QS.102 | 9 |
| QS.19 | 8 | QS.47 | 14 | QS.75 | 1 | QS.103 | 9 |
| QS.20 | | QS.48 | 16 | QS.76 | 19 | QS.104 | 9 |
| QS.21 | 20 | QS.49 | 12 | QS.77 | | QS.105 | 6 |
| QS.22 | 9 | QS.50 | 15 | QS.78 | 14 | QS.106 | 7 |
| QS.23 | 6 | QS.51 | 7 | QS.79 | 20 | QS.107 | 0 |
| QS.24 | 8 | QS.52 | 5 | QS.80 | 21 | QS.108 | 0 |
| QS.25 | 13 | QS.53 | 12 | QS.81 | 0 | QS.109 | 0 |
| QS.26 | 3 | QS.54 | 13 | QS.82 | 3 | QS.110 | 0 |
| QS.27 | 11 | QS.55 | | QS.83 | 1 | | |

4. Did undertakings in your market complete the entire QIS5-spreadsheet or are areas missing (e.g. calculation of equivalent scenario, SCR submodules left out, additional information requests on assets)? Please give your assessment on the completeness of submissions provided by undertakings per size.

Completeness of submission by **large** undertakings:

<QS_completeness_large>

Not applicable.

</QS_completeness_large>

Completeness of submission by **medium sized** undertakings:

<QS_completeness_medium>

All medium sized undertakings completed the full QIS5 spreadsheet except the loss absorbing capacity of technical provisions and the calculation of the single equivalent scenario method.

</QS_completeness_medium>

Completeness of submission by **small** undertakings:

<QS_completeness_small>

First-time QIS participants had difficulties completing their submissions. All undertakings calculated technical provisions, but only 3 undertakings calculated

the value of future discretionary benefits (FDB) separately, and none of them calculated the loss absorbing capacity.

All but two undertakings presented the balance sheet under QIS5, but only 3 undertakings reported it under the equivalent scenario method. Some submodules of the SCR standard formula were the weakest areas of the impact study: 3 undertakings did not calculate the capital charge for market risk, and 6 out of 22 small undertakings did not calculate the counterparty default risk module.

</QS_completeness_small>

5. a) Please summarize the views of **undertakings** about the appropriateness, completeness and accuracy of the QIS5 input data and results, differentiating by size or line of business where appropriate.

➔ *QS.6*

<QP_undertakings_view_quality>

Medium sized undertakings typically rated the appropriateness, completeness and accuracy of their data higher than small undertakings. The weakest point, regarding the reliability of both inputs and outputs, was the SCR counterparty default risk submodule, yet undertakings rated even this item as fair. Evaluation of own funds and technical provisions received the highest marks from undertakings, where the average rating was better than 'good'.

</QP_undertakings_view_quality>

b) From your experience of analyzing the QIS5 submission, do you share the views of undertakings about the appropriateness, completeness and accuracy of the QIS5 input data and results? Please elaborate.

<QS_supervisors_view_quality>

Undertakings that had participated in previous QIS exercises attempted to surpass the 'best effort' approach, yet some of them still used QIS4 methodologies (e.g. for FDB, for future premiums or the contract boundary definition). A number of small undertakings have just started preparing for Sovency 2, however their overall results were regarded as acceptable.

Our QIS analyst team checked all submissions for completeness and plausibility of the results, requesting corrections from undertakings where necessary. During this process, nearly all undertakings were asked to perform some revisions to their spreadsheets. Following the above quality checks, 2 undertakings were excluded from the quantitative analysis altogether, 2 undertakings were excluded from the analysis of capital requirements (SCR and MCR) and one undertaking was excluded from the analysis of own funds.

However, our overall impression is that, despite these efforts, a significant number of data quality issues still remain unresolved or undetected.

Therefore, on the one hand, the quantitative results of QIS5 do allow to identify major tendencies and to draw conclusions about the big picture. On the other hand, we consider that the detail of the quantitative results should be treated with caution.

Regarding the completeness of submissions, please refer to Question 4.

</QS_supervisors_view_quality>

6. Please describe the most important **practical** difficulties of your industry when completing QIS5.
(Please rank your answers starting with difficulty 1. Please provide one difficulty per input box, 5 max.)

If applicable, please provide suggestions to solve these issues, distinguishing between undertakings size and line of business where appropriate.

➔ *QS.7, QS.8*

Participants views
<QP_difficulty1>

Most undertakings reported difficulties obtaining complete and sufficiently detailed data necessary for the SCR standard formula implementation. In particular, undertakings highlighted the difficulty of retrieving the data on reinsurance arrangements required for the calculation of the SCR counterparty default risk module.

</QP_difficulty1>

Supervisor suggestions

<QS_difficulty1>

</QS_difficulty1>

Participants views
<QP_difficulty2>

Undertakings participating in the exercise expressed a view that data quality issues were complicated by tight deadlines, considering the late arrival, perpetual updating and embarrassing errors of the spreadsheets and helper tabs, which made the impact study a distressing experience. Undertakings noted that the quality of the submissions may have suffered for these reasons.

</QP_difficulty2>

Supervisor suggestions

<QS_difficulty2>

</QS_difficulty2>

Participants views
<QP_difficulty3>

Some undertakings expressed a view that the technical specifications were not sufficiently clear e.g. with regard to segmentation of health business, contract boundaries, the loss absorbing capacity of technical provisions, illiquidity premium and expected profits included in future premiums (EPIFP).

</QP_difficulty3>

Supervisor suggestions

<QS_difficulty3>

</QS_difficulty3>

Participants views
<QP_difficulty4>

Some small undertakings commented that it was difficult to interpret the requirements of the technical specifications in the context of specific niche undertakings.

</QP_difficulty4>

Supervisor suggestions

<QS_difficulty4>

</QS_difficulty4>

Participants views
<QP_difficulty5>

</QP_difficulty5>

Supervisor suggestions

<QS_difficulty5>

</QS_difficulty5>

7. Please share any conclusions on organizational and practical issues of the upcoming Solvency II supervisory regime that can be drawn from your experience of supervising and evaluating the QIS5 study in your country (e.g. on reporting issues, feasibility of supervisory duties).

<QS_supervisors_insights>

In our view, there are indications that the development of the Solvency 2 framework has reached a point where adding further complexity might impair effective implementation and enforcement. There are already signs that both the quality of submissions and their processing suffered from the sheer complexity and constant changes of the specifications. The addition of simplified alternative calculation methods will not fully address this problem. In our view, stabilising the system and stopping its complexity from spiralling out of control should become a priority.

</QS_supervisors_insights>

8. Please provide an outline of any general **national guidance** that was given to undertakings for the completion of QIS5, the reasons for providing this guidance, and the perceived effectiveness of this guidance in helping undertakings to complete QIS5 appropriately.

<QS_natguid>

No national guidance was given, however we organised a national Q&A forum and arranged consultation meetings with the industry, helping undertakings to complete QIS5.

</QS_natguid>

## 3. Preparedness for Solvency II

9. a) Please summarize your industries report on overall preparedness for the upcoming Solvency II regime.

➔ *QS.2, QS.4, QS.5*

<QP_overall_preparedness_ind>

Almost all undertakings felt that there were 'not all resources available and implementation plan in place, but sufficiently planned to be ready until end of 2012'. One undertaking considered that she was 'fully prepared, all resources available and implementation plan in place'.

Medium-sized undertakings estimated the resources required to complete QIS5 at 4.6 skilled person months (most of them actuarial); small undertakings estimated it at 4.3 skilled person month. The total resource requirement of the implementation of Solvency 2 was estimated at 42.0 person month by medium-sized undertakings and at 52.7 person months by small undertakings.

Some undertakings commented that the lack of finalised regulation makes it difficult to roll out the requirements to lower levels of management.

</QP_overall_preparedness_ind>

b) Please give your supervisory view on your industries overall preparedness for the upcoming Solvency II regime.

<QS_overall_preparedness_sup>

We carried out a GAP analysis exercise in 2009, requesting undertakings to fill a questionnaire including 21 questions on a range of Solvency 2 issues (governance, financial requirements, internal models). According to the responses, some of the medium-sized undertakings appeared to be well prepared, but most undertakings' preparedness level could be described as moderate. We requested undertakings to appoint a responsible person for Solvency 2 issues and to prepare a plan for the implementation of Solvency 2.

The general level of preparedness we experienced in QIS5 varied by undertaking, with first-time participants generally facing steeper challenges than veterans of previous QIS exercises.

</QS_overall_preparedness_sup>

10. Please describe the measures your industry deems most important in preparation for Solvency II.

(Please rank your answers starting with the most important measure. Please provide one measure per input box, 5 max.)

➔ *QS.3*

<QP_measure1>

Most undertakings responded that they take part in the group-wide activities to foster Solvency 2-compliance, therefore the most important measure is to adapt the groups' methods and systems.

</QP_measure1>

<QP_measure2>

The training of competent persons and understanding the requirements and methodologies was mentioned as a task almost as important as the one mentioned above.

</QP_measure2>

<QP_measure3>

Small undertakings mentioned the importance of understanding and configuring ORSA as part of the business decision process.

</QP_measure3>

<QP_measure4>

Some undertakings highlighted the importance of establishing data bases and tools for automatic data treatment and implementing automated processes in order to perform calculations.

</QP_measure4>

<QP_measure5>

A number of undertakings highlighted the importance of the preparation for Pillar 2 and Pillar 3 requirements. They noted that these requirements are not yet fully defined, while there is a need for a clear set of requirements as a starting point for implementation.

</QP_measure5>

## 4. Overall financial impact

11. Please provide a broad description of the potential quantitative impact on the **overall financial position** of solo undertakings from applying the QIS5 quantitative requirements. Please differentiate between standard formula and internal model outcomes. The impact on the overall financial position should refer where appropriate to the impact on capital surplus and to the impact on the solvency ratios (eligible own funds/SCR).

a) Overall impact

<QS_impact_all>

Compared to the current regime, the magnitude of the basic components of QIS5 financial requirements can be described as follows (aggregate data of 26 undertakings):

million EUR

| | Solvency 1 | QIS5 |
|---|---|---|
| technical provisions (gross) | 7 096 | 5 377 |
| other liabilities | 695 | 810 |
| capital requirements | 410 | 1 071 |
| surplus capital | 549 | 1 225 |
| **balance sheet total** | **8 750** | **8 483** |

Or, expressed as a percentage of the current balance sheet total:

| | Solvency 1 | QIS5 |
|---|---|---|
| technical provisions (gross) | 81,1% | 61,4% |
| other liabilities | 7,9% | 9,3% |
| capital requirements | 4,7% | 12,2% |
| surplus capital | 6,3% | 14,0% |
| **balance sheet total** | **100,0%** | **96,9%** |

Following these shifts, the available surplus capital above capital requirements increased more than twofold (223.4%) relative to the current regime (the distinction between net asset value and eligible own funds is noted, however the importance of deductibles and off-balance sheet capital items is marginal in the Hungarian case).

At the same time, solvency ratios dropped as capital requirements grew in weight relative to the overall financial requirement. Compared to an average solvency ratio of 220.6% under the current regime, the average solvency ratio of undertakings was 214.6% with reference to the SCR standard formula. On an undertaking by undertaking basis, both major upward and downward shifts were observed.

Where internal model results were reported (only in a few cases), the SCR was typically lower than under the standard formula.

The average solvency ratio with reference to the MCR was 712,7%.

Out of 26 undertakings included in the analysis of capital requirements, 2 undertakings reported insufficient eligible own funds to meet the SCR and 3 undertakings reported insufficient eligible basic own funds to meet the absolute floor of the MCR, including one undertaking that reported a negative net asset value.

</QS_impact_all>

b) Impact on Life undertakings

<QS_impact_life>

Compared to the current regime, the impact on life undertakings can be described as follows (aggregate data of 9 undertakings, expressed as a percentage of the current balance sheet total):

| Life undertakings | Solvency 1 | QIS5 |
|---|---|---|
| technical provisions (gross) | 88,4% | 73,5% |
| other liabilities | 4,6% | 7,0% |
| capital requirements | 3,0% | 7,6% |
| surplus capital | 4,0% | 8,9% |
| **balance sheet total** | **100,0%** | **97,0%** |

Surplus capital under QIS5 was 224.7% of the Solvency 1 amount.

Compared to an average solvency ratio of 217.8% under the current regime, the average solvency ratio of life undertakings was 223.8% with reference to the SCR standard formula.

However on an undertaking-by-undertaking basis these results varied widely. One medium-sized undertaking reported a significant increase of her solvency ratio. On the other hand 2 small life undertakings reported insufficient eligible own funds to meet the SCR, and 2 small life undertakings reported insufficient eligible basic own funds to meet the absolute floor of the MCR.

</QS_impact_life>

c) Impact on Non-life undertakings

<QS_impact_nonlife>

Compared to the current regime, the impact on non-life undertakings can be described as follows (aggregate data of 8 undertakings, expressed as a percentage of the current balance sheet total):

| Non-life undertakings | Solvency 1 | QIS5 |
|---|---|---|
| technical provisions (gross) | 63,1% | 48,0% |
| other liabilities | 11,7% | 11,7% |
| capital requirements | 13,8% | 28,9% |
| surplus capital | 11,4% | 5,5% |
| **balance sheet total** | **100,0%** | **94,1%** |

In our country the pure non-life undertakings are the small (in some cases niche) companies, who were strongly affected by the increase of capital requirements. Surplus capital under QIS5 fell to 48.2% of the Solvency 1 amount. Compared to an average solvency ratio of 173.2% under the current regime, the average solvency ratio of non-life undertakings fell to 140.2% with reference to the SCR standard formula.

One small non-life undertaking reported insufficient eligible basic own funds to meet the absolute floor of the MCR .

</QS_impact_nonlife>

d) Impact on composite undertakings

<QS_impact_composite>

Compared to the current regime, the impact on composite undertakings can be described as follows (aggregate data of 9 undertakings, expressed as a percentage of the current balance sheet total):

| Composite undertakings | Solvency 1 | QIS5 |
|---|---|---|
| technical provisions (gross) | 78,5% | 56,8% |
| other liabilities | 9,2% | 10,1% |
| capital requirements | 5,1% | 13,7% |
| surplus capital | 7,1% | 16,4% |
| **balance sheet total** | **100,0%** | **97,0%** |

Surplus capital under QIS5 was 230.5% of the Solvency 1 amount.

Compared to an average solvency ratio of 224.6% under the current regime, the average solvency ratio of composite undertakings was 219.3% with reference to the SCR standard formula.

Old-composite undertakings play a dominant role on the local insurance market. All of these undertakings reported sufficient own funds to meet the QIS5 capital requirements.

</QS_impact_composite>

e) Impact on reinsurance undertakings and captives

<QS_impact_re>

Not applicable.

</QS_impact_re>

f) Impact on health undertakings

<QS_impact_health>

Not applicable.

</QS_impact_health>

12. Please describe how the overall financial impact on undertakings varies by

a) Size of undertaking (e.g. small, medium, large)

<QS_impact_size>

- There are **no large undertakings** on the local market.
- For **medium undertakings**, surplus capital under QIS5 was 251.4% of the Solvency 1 amount (a more than twofold increase). Compared to an average solvency ratio of 215.6% under the current regime, the average solvency ratio of medium undertakings was 223.1% with reference to the SCR standard formula. All 6 medium undertakings reported sufficient own funds to meet QIS5 capital requirements.
- For **small undertakings**, surplus capital under QIS5 was 142.6% of the Solvency 1 amount (a substantial overall increase). Compared to an average solvency ratio of 237.7% under the current regime, the average solvency ratio of small undertakings was 195.0% with reference to the SCR standard formula. 4 out of 20 small undertakings reported insufficient own funds to meet either the SCR or the MCR.

</QS_impact_size>

b) Structure of undertaking (e.g. independent entity or part of a group)

<QS_impact_structure>

- For **undertakings belonging to a group**, surplus capital under QIS5 was 231.7% of the Solvency 1 amount (a more than twofold increase). Compared to an average solvency ratio of 223.2% under the current regime, the average solvency ratio of these undertakings was 221.6% with reference to the SCR standard formula. One of these undertakings reported insufficient own funds to meet the SCR.
- For **independent entities,** surplus capital under QIS5 turned negative. Compared to an average solvency ratio of 179.1% under the current regime, the average solvency ratio of these undertakings was 69.9% with reference to the SCR standard formula. One of these undertakings reported insufficient own funds to meet the SCR, and 3 of them reported insufficient basic own funds to meet the absolute floor of the MCR.

</QS_impact_structure>

c) Legal structure (e.g. mutual or proprietary)

<QS_impact_legal>

- For **proprietary undertakings,** surplus capital under QIS5 was 226.5% of the Solvency 1 amount (a more than twofold increase). Compared to an average solvency ratio of 220.6% under the current regime, the average solvency ratio of these undertakings was 218.1% with reference to the SCR standard formula. 2 of these undertakings failed to meet either the SCR or the MCR.

- For **mutual undertakings**, surplus capital under QIS5 was 45.0% of the Solvency 1 amount (dropped to less than half). Compared to an average solvency ratio of 225.8% under the current regime, the average solvency ratio of these undertakings was 189.1% with reference to the SCR standard formula. 2 of these undertakings failed to meet the absolute floor of the MCR.

</QS_impact_legal>

13. Please also identify any type of undertaking (by specialized line of business or size) with significant changes in the financial position (e.g. systemically not meeting the QIS5 SCR, increase in surplus funds by more than 50 %).

<QS_impact_special>

-

</QS_impact_special>

14. Which items on the insurers' balance sheets are the most impacted by the QIS5 valuation principles for assets and liabilities?

<QS_impact_valuation>

By far the most significant changes affected technical provisions. Compared to current amounts, the total value of technical provisions decreased to 75.8% in QIS5 (55.2% for non-life provisions and 83.4% for life provisions).

</QS_impact_valuation>

15. Which items on the insurers' balance sheets are the most impacted by the SCR capital requirement? (please use the asset and QIS5 insurance obligations tabs of the spreadsheets)

<QS_impact_scr>

We do not understand this question.

</QS_impact_scr>

## 5. General assessment of the QIS5 methodology

16. Please describe your industries most important points of discrepancy with the QIS5 methodology. If appropriate, comment on these discrepancies from a supervisory perspective.
(Please rank your answers starting with the most important discrepancy. Please provide one discrepancy per input box, 5 max.)

➔ *QS.10 (see also QS.9, QS.12)*

Participants views

<QP_discrepancy1>

The single most important point of discrepancy we encountered was the definition and separate calculation of **future discretionary benefits (FDB)**, combined with the calculation of the **adjustment for the loss absorbing capacity of technical provisions (Adj_TP)** in the SCR standard formula.

In the current Hungarian profit sharing regime, almost all future benefits are legally and contractually based on the realised investment return of a pool of assets held by the undertaking. Therefore in most cases the distribution of future benefits leaves no room for management discretion. The lack of management discretion led many undertakings to assign all of their technical provisions to guaranteed benefits and to assign a zero value to FDB, disregarding the definition of FDB in TP.2.88 of the technical specifications. Other undertakings did calculate FDB, sometimes in a way clearly inconsistent with QIS5 definitions. A common understanding of the FDB concept among participants was apparently absent in our local market.

Having valued FDB as zero, most undertakings considered accordingly that the loss-absorbing capacity of technical provisions in the SCR standard formula should also be valued as zero. In effect these undertakings typically ignored the gross scenario calculations, aggregating the net risk charges instead to arrive at the BSCR. When the supervisor pointed out the discrepancy with the specifications, some of these undertakings were reluctant to repeat the calculations as they felt that the gross scenarios would be both unrealistic and burdensome to calculate.

Other undertakings did attempt to calculate the gross and net scenarios separately, but their efforts were complicated by misunderstandings. Some undertakings reported higher net risk charges than gross ones (and were unable to correct their calculations before the deadline for this country report).

</QP_discrepancy1>

Supervisor suggestions

<QS_discrepancy1>

It appears that the QIS5 framework for future discretionary benefits and the loss absorbency adjustment was designed mainly in view of profit sharing systems different from ours. Therefore this framework is not well suited to the circumstances of our market and its application is likely to cause difficulties.

Furthermore, a common understanding of the FDB concept is complicated by the fact that the term "future discretionary benefits" is a misnomer: under the current definition it actually refers to future conditional benefits rather than discretionary. Observing that, in the local regime, the distribution of future benefits is typically not subject to management discretion, most undertakings chose to disregard the specifications and bypass this part of the calculation.

The definition of the net scenarios in SCR.2.4 also gave rise to ambiguity, leaving room for arguments whether or not loss absorbing capacity can exist in the absence of management discretion.

During the exercise we adopted a posture that the specifications should be followed. On the other hand, we have sympathy for the view expressed by undertakings i.e. that legally or contractually determined benefits should not be included in the valuation of FDB.

Furthermore, we agree with undertakings that, in the SCR standard formula, calculating both the gross and net scenarios is disproportionately burdensome under our local circumstances, where aggregating the net risk charges would almost certainly lead to the same results.

We understand that the current definition of FDB has been conceived for the sake of harmonisation across different profit sharing systems. In our case we however question whether the burden of the full harmonisation of FDB/Adj_TP methodology is proportionate to its benefits. If the current definition remains unchanged in Level 2, we consider that careful implementation into national law and clarifying guidelines at Level 3 will be necessary to achieve consistent appliaction. Simplified calculations tailored to profit sharing regimes similar to ours would also be welcome.

</QS_discrepancy1>

Participants views
<QP_discrepancy2>

Regarding **expected profits included in future premiums (EPIFP),** undertakings expressed a strong view that EPIFP should remain Tier 1 capital. They reject relegating EPIFP to Tier 3 as a violation of the principle of market-consistency and as double-counting of risks with the SCR. A number of undertakings also pointed out potential technical difficulties with the QIS5 approach of quantifying EPIFP, which in their view make the calculation complex, onerous and inaccurate.

</QP_discrepancy2>

Supervisor suggestions

<QS_discrepancy2>

The supervisor finds it difficult to avoid the conclusion that EPIFP includes an element of double-counting of risk. She also regards the quantification of EPIFP questionable and adding further unwelcome complexity to the solvency regime.

On the other hand, the supervisor is concerned that the softening-up of the contract boundary definition has the potential to encourage a Ponzi dynamics where existing obligations are increasingly covered by uncertain future premiums. She notes that the calibration of the SCR lapse risk submodules largely dates back to previous QIS exercises that have not been designed with the present scope for future premiums in mind. The supervisor believes that the QIS5 definition of the contract boundary would require counter-balancing requirements addressing the uncertainty of future premiums, optimally in the form of strengthened SCR lapse risk charges (e.g. higher mass lapse shocks and/or lapse shocks increasing with time, treating remote future premiums as progressively more uncertain).

If the uncertainty of future premiums cannot be addressed by strengthening lapse risk in the SCR, then unfortunately the supervisor will not be in a position to support the classification of the full amount of EPIFP as Tier 1.

</QS_discrepancy2>

Participants views
<QP_discrepancy3>

</QP_discrepancy3>

Supervisor suggestions

<QS_discrepancy3>

</QS_discrepancy3>

Participants views
<QP_discrepancy4>

</QP_discrepancy4>

Supervisor suggestions

<QS_discrepancy4>

</QS_discrepancy4>

Participants views
<QP_discrepancy5>

</QP_discrepancy5>

Supervisor suggestions

<QS_discrepancy5>

</QS_discrepancy5>

Participants views
<QP_discrepancy6>

</QP_discrepancy6>

Supervisor suggestions

<QS_discrepancy6>

</QS_discrepancy6>

Participants views
<QP_discrepancy7>

</QP_discrepancy7>

Supervisor suggestions

<QS_discrepancy7>

</QS_discrepancy7>

Participants views
<QP_discrepancy8>

</QP_discrepancy8>

Supervisor suggestions

<QS_discrepancy8>

</QS_discrepancy8>

17. Please list the parts of the elements of the QIS5 methodology your industry judges most difficult to apply. Please add any suggestions on simplifications if provided.
(Please rank your answers starting with the most important difficulty. Please provide one difficulty per input box, 5 max.)

➔ *QS.11 (see also QS.12)*

<QP_stdifficulty1>

- The single equivalent scenario method

</QP_stdifficulty1>

<QP_stdifficulty2>

- The valuation of options and guarantees in the best estimate

</QP_stdifficulty2>

<QP_stdifficulty3>

- The SCR counterparty default risk module

</QP_stdifficulty3>

<QP_stdifficulty4>

- Certain elements of the standardised CAT risk scenarios

</QP_stdifficulty4>

<QP_stdifficulty5>

</QP_stdifficulty5>

## 6. Valuation

18. a) Please describe the mayor **preparedness issues** of your industry with respect to data availability or methodologies regarding the QIS5 valuation of balance sheet items, as well as the **difficulties** to apply the QIS5 valuation principles.

➔ *QS.1, QS.11 (see also QS.12)*

<QP_prep_valuation_ind>

Almost all comments on valuation issues concerned the calculation of technical provisions, see further below. Issues raised in respect of assets and liabilities other than technical provisions included the following:

- Difficulty regarding the treatment of strategic vs. non-strategic participations, especially in cases when the participation is not a financial institution and only contributes services to the insurer, as the criteria for strategic participation was not defined in detail. One undertaking noted that it had problem with the treatment of a subsidiary that it fully owns. The subisidiary performs marginal service for the insurer and if it were assessed as a participation, it would lead to an SCR that the undertaking finds disproportionately high. Alternatively, it could be treated as a strategic participation or as real estate investment with lower SCR requirement but there was hardly any specification for this classification.

- Difficulty regarding the applcation of the look-through approach in case of unit-linked asset funds, as no look through approach is required under the current regulation. Undertakings writing unit-linked business remarked that applying the look-through approach in the valuation of unit-linked funds is not in line with the cost-benefit principle: That is, the look-through approach of investment funds line by line is a burden whose benefits in term of risk assessment are not significant, and the method is even more complex when there is an external fund manager. They would propose the use of benchmarking in the above cases.

- Valuation of new balance sheet items, such as deferred taxes were difficult for those undertakings that do not report under IFRS.

</QP_prep_valuation_ind>

b) Please comment on these issues from a supervisory perspective.

<QS_prep_valuation_sup>

Solvency 2 will introduce a completely different approach from what most undertakings are used to under Solvency 1. This requires a more sophisticated modelling toolkit and, in some respect, a change of mind. An apparent problem is that in Hungary on the asset side no look-through approach is required under the current regulation in case of indirect investments. The granularity of quarterly data submitted by undertakings is not detailed enough to assess the ultimate risks and the look-through approach is very burdensome because of the high number of funds and fund managers.

</QS_prep_valuation_sup>

19. a) Please describe your industries most important points of discrepancy with the QIS5 valuation methodology.

➔ *QS.10 (see also QS.9, QS.12)*

<QP_discrepancy_val>

Please refer to Question 18.

</QP_discrepancy_val>

20. Please summarize your industries feedback on the applicability of the QIS5 valuation approach. Please comment on any regulations you deem relevant in respect to the implementation of the proportionality principle.

<QP_simplval_ind>

</QP_simplval_ind>

b) Please comment on these issues from a supervisory perspective.

<QS_simplval_sup>

A problem of applicability is that the technical specifications assumed that each item could unambiguously be classified into a certain category of liability or asset. However, there are situations when the direct application of technical specification principles would lead to inappropriate assessment.

</QS_simplval_sup>

21. Please summarize your industries feedback on the significance of the accumulated effects of materiality decisions on the final QIS5-balance-sheet.

➔ *QS.13*

<QP13>

Most undertakings belonging to an insurance group used the group concept of materiality for the valuation of assets and liabilities.

According to one undertaking, materiality decisions should depend to a certain extent on the difficulty and time associated with providing an exact solution, as well as the size of the resulting impact. Besides, complexity and duration of the business written are more appropriate criteria for determining whether simplifications should be used, e.g. use of simplifications might be inappropriate for small companies underwriting complex risk, whereas for a large business writing simple risk, simplifications might be appropriate.

Many undertakings used IFRS figures in case of non-material balance sheet items where mark-to-model valuation was difficult to implement.

Some small undertakings reported that they used book values as proxies for the best estimates of non-insurance liabilities or some assets as the impact was considered immaterial.

</QP13>

22. Which assets and liabilities did your industry prefer to apply a mark to model approach? Why was it not possible to apply a mark to market approach?
    Did your industry report the quantitative impact of not considering an existing market value to be appropriate following V12, and applying a mark to model approach instead? Please give an indication of this quantitative impact. How did your industry assess the uncertainty included in the valuation?

➔ *QS.14*

<QP14>

Around half of the undertakings did not use mark-to-model approaches for the valuation of assets and liabilities other than technical provisions.

The other half used mark-to-model valuation especially for reinsurance, policy loans, participations, unlisted equities, property and plants (where no market value was observable), receivables, bank deposits, other liabilities, etc.

</QP14>

23. According to the QIS5 technical specifications undertakings are required to recognise contingent liabilities for the solvency valuation (see page 17). Please provide a description of the contingent liabilities that were recognised in QIS5 and any practical difficulties encountered in their valuation.

➔ *QS.15*

<QP15>

Most undertakings did not recognise any contingent liability or recognised only such contingent liabilities that had already been taken on the balance sheet, e.g. drawn guarantees.

One undertaking reported that, due to practicability reasons, she had not carried out the analysis of contingent liabilities that are disclosed under the requirements set in IAS 37. This undertaking considered that it was very difficult to assess probabilities and future cash flows associated with such contingent liabilities over their lifetime. The undertaking's parent group has plans to discuss this issue at an internal workshop about the economic balance sheet.

</QP15>

24. Intangible assets should be valued as set out on page 11 of the QIS5 technical specifications. Please describe the intangible assets that were recognised in QIS5 with a market value and provide input on the valuation basis used and on the compliance with the requirements set in the IAS38.

➔ *QS.16*

<QP16>

Most undertakings set the value of intangible assets as nil.

A minority used the amortised cost or book value in the balance sheet, some undertakings ignored the value due to insignificance, while a few undertakings used calculations to value intangible assets (e.g. min(Gross value*0.7; max(Gross value*0.1; Book value))).

</QP16>

25. According to page 15 of the QIS5 technical specifications, deferred tax assets should only be set up to the extent that future taxable profits are probable and where the realisation of the deferred tax asset is probable within a reasonable timeframe. Please indicate whether these provisions had an influence on the valuation of deferred tax assets in QIS5 and report on the quantitative impact.

➔ *QS.17*

<QP17>

Most undertakings reported that these provisions had no influence on the valuation of deferred tax assets.

Some undertakings – contrary to IAS18 principles – valued deferred tax assets as the discounted value of the projected accumulated tax losses/credits. In this way an economic value for deferred tax assets was calculated.

Most small undertakings did not calculate deferred taxes at all. Others assumed that the probability of future taxable profit is high or it is at least probable within a reasonable timeframe

One undertaking noted that this provision was not applicable since she had deferred tax liabilities rather than deferred tax assets.

One undertaking, instead of estimating the probability of realisation of future taxable profits, decreased the value of deferred tax assets by 10% as a rule of thumb.

</QP17>

26. Please indicate the methodology used to determine the initial recognition of financial liabilities (including own credit risk) as well as the impact of the adjustment on the fair value (spread and amount) on the subsequent measurement (no adjustment for own credit risk) for each category of financial liabilities.

➔ *QS.18*

<QP18>

One undertaking responded that at initial recognition financial liabilities were to be measured at the value of the considerations received plus transaction costs that are directly attributable to the issue of financial liabilities.

All other undertakings responded that they did not use any methodology other than specified in the Technical Specifications or that their financial liabilities were marginal.

</QP18>

27. Did your market report using an internal economic model for the calculations of benefit obligations falling in the scope of IAS 19? Please summarize any documentation provided on the model, its rationale regarding an economic valuation, and the expected impact compared to the IFRS approach.

➔ *QS.19*

<QP19>

All but one undertaking reported that this question was irrelevant for them since they had no or immaterial benefit obligations.

One undertaking responded that no internal economic model was used as employee benefit obligations were valued as IFRS post-employment benefits with the elimination of the smoothing corridor.

</QP19>

## 28. Supervisory view on previous questions on valuation

<QS_valuation>

In Hungary local GAAP accounting is used and IFRS accounting is only required for listed undertakings as to date. There is currently only one insurance undertaking listed on the stock exchange, therefore IFRS figures are rarely used, mainly for the purpose of consolidation into parent undertakings' annual accounts.

We consider that preparing balance sheets according to Solvency 2, local GAAP and IFRS requirements at the same time will pose a considerable burden on the local industry. It is also a question which balance sheet would form the basis of supervisory measures in which situations.

The QIS5 experience regarding the recognition of deferred tax assets and liabilities was also two-sided: on the one hand, insurers having experience in IFRS accounting carried out the calculation, while on the other hand smaller insurers preferred to neglect it rather than assess the effects.

</QS_valuation>

## 29. Additional comments on valuation.

### Participants views

<QP_addval>

No additional comments.

</QP_addval >

### Supervisor views

<QS_addval>

Under current local regulation, undertakings are allowed to create a special reserve on the balance sheet for expected future losses.

It was not always clear in QIS5 submissions how undertakngs allowed for emergency taxes imposed by the government (a financial sector special tax applicable to insurers on a premiums basis, introduced retro-actively in 2010 and supposed to last until 2012, its future rates are not yet determined). This has the potential to alter the amount of deferred tax assets on the QIS5 balance sheet as the future taxable profits could vanish due to the tax loading, and therefore deferred tax asets would not be realised witihin a reasonable timeframe.

We consider that this one-time effect should be neglected in the calculation as this tax burden is expected to be a temporary event (supposed to expire before Solvency 2), so including it in the calculation would not serve the purpose of the QIS5 excercise.

The Commission proposal raised the question whether the uncertain timing of unwinding deferred tax assets justified the principle that accumulated tax credits

should not be discounted (as stipulated in IAS 18). There were some undertakings who used discounting in the valuation of deferred tax assets.

</QS_addval>

## 7. Technical provisions

30. a) Please describe the mayor **preparedness issues** of your industry with respect to data availability or methodologies regarding the calculation of Technical Provisions, and the **difficulties** applying QIS5 valuation principles regarding technical provisions

➔ *QS.1, QS.11 (see also QS.12)*

<QP_prep_tp_ind>

Few undertakings commented on their preparedness, and then primarily about achievements rather than issues.

One small non-life undertaking reported difficulties with respect to data availability. There were several comments about difficulties with the methodologies regarding the calculation of technical provisions. In particular, the following sources of difficulty were mentioned:

- application of illiquidity premium buckets,
- segmentation and unbundling of contracts,
- valuation of future discretionary benefits,
- potentially onerous stochastic modelling requirements especially in life insurance, including options and guarantees with dynamic policyholder behaviour,
- interpretation of contract boundary definition for calculating the premium provision,
- calculation of the risk margin.

</QP_prep_tp_ind>

b) Please comment on these issues from a supervisory perspective.

<QS_prep_tp_sup>

We perceive that individual QIS5 participants represent widely differing levels of preparedness, from the beginner to the almost fully prepared. Furthermore, our plausibility checks on the submissions indicated that undertakings face more difficulties with the methodology than reported to us in the questionnaires. It appears that even some of the participants of previous QIS exercises may have difficulties with the understanding of the complex (and still constantly changing) methodology.

Segmentation issues were apparent throughout the exercise. We consider that such issues inevitably follow from the move to a new harmonised segmentation,

regardless of the definition of segments. This however should not preclude the move to a harmonised segmentation.

Regarding the other difficulties in the list above, we comment on these issues in the respective subsections further below.

</QS_prep_tp_sup>

31. a) Please describe your industries most important points of discrepancy with the QIS5 valuation methodology regarding technical provisions.

➔ *QS.10 (see also QS.9, QS.12)*

<QP_discrepancy_tp_ind>

- The single most important point of discrepancy with the methodology concerned the definition and separate calculation of **future discretionary benefits (FDB)**. In the current Hungarian profit sharing regime, future benefits are legally and contractually based on the realised investment return of a pool of assets held by the undertaking. The definition of future benefits thus leaves virtually no room for management discretion. The lack of management discretion led many undertakings to assign all of their technical provisions to guaranteed benefits and to assign a zero value to FDB, disregarding the definition of FDB in TP.2.88 of the technical specifications. Accordingly, these undertakings considered that the loss-absorbing capacity of technical provisions in the SCR standard formula should also be valued as zero. Other undertakings did calculate FDB, sometimes in a way clearly inconsistent with QIS5 definitions. A common understanding of the FDB concept among participants was apparently absent in our local market.

- Some undertakings expressed disagreement with the contract boundary definition (see question 38 below).

- One undertaking does not regard it as appropriate to identify the risk margin by making reference to a pre-tax capital base.

</QP_discrepancy_tp_ind>

b) Please comment on these issues from a supervisory perspective.

<QS_discrepancy_tp_sup>

- Regarding future discretionary benefits, we have sympathy for the view that legally or contractually determined benefits should not be included in the valuation of FDB. Furthermore, a common understanding of the FDB concept is complicated by the fact that the term "future discretionary benefits" is a misnomer: under the current definition it actually refers to future conditional benefits rather than discretionary. If the current definition remains unchanged in Level 2, we consider that careful implementation into national law and clarifying guidelines at Level 3 will be necessary to achieve consistent application.

- Regarding the contract boundary issue, while there is room for clarification of the definition, for prudential reasons we do not favour extending the contract boundary further than QIS5.

- Regarding the suggestion to calculate the risk margin on a post-tax base, we are not convinced that deferred taxes are an intrinsic part of the portfolio of insurance obligations being transferred, rather than a function of the balance sheet to the undertaking transferring the obligations. Furthermore, introducing such an adjustment to the risk margin would lead to further unwelcome complexity in the system.

</QS_discrepancy_tp_sup>

32. Please describe the actuarial methods used by industry when determining the best estimate, differentiating between methods frequently used and incidentally applied.

➔ *QS.44*

<QS44>

- On the non-life side, deterministic techniques were used. In particular, claims provisions were predominantly calculated by the Chain Ladder method and its variants.

- On the life side, some undertakings used stochastic simulation techniques for all or part of their life obligations. Other undertakings used deterministic techniques, including simplifications. One undertaking used a deterministic simulation method based on a limited number of external scenarios. One life undertaking approximated its technical provisions as the current (Solvency 1) technical provisions less expected present value of future profits.

- Reinsurance recoverables were calculated by various methods. Some undertakings used net of reinsurance cash flow projections. Where the reinsurance program allowed, pro rata approximations were used. One undertaking reported having used separate claims triangles for non-proportional reinsurance. Several undertakings used the gross-to-net proxy method.

</QS44>

33. Description of material problems or uncertainty in the application of QIS5 criteria on segmentation for the purposes of calculating technical provisions.

➔ *QS.45*

<QS45>

Most undertakings reported no problems with the segmentation. Those who reported difficulties mentioned the following problem areas:

- second-level segmentation of life insurance obligations,

- the segmentation of health business (between SLT and NSLT, or between NSLT lines of business),

- unbundling of riders or multiple-risk contracts.

</QS45>

34. How many undertakings reported the use of historic and implied volatilities for the calibration of their asset model respectively?

➔ *QS.49*

<QS49>

It appears that most undertakings concerned either did not build an asset model for the valuation of technical provisions, or used an asset model of very limited sophistication, not requiring volatilities as an input.

Most of those undertakings that built an asset model reported to have exclusively or primarily relied on implied volatilities. Two undertakings reported that they used historic volatilities for the valuation of technical provisions.

</QS49>

35. Please report on problems your industry might have had considering taxes appropriately in the calculation of technical provisions.

➔ *QS.53*

<QS53>

Most undertakings reported no problems regarding taxes in the calculation of the technical provisions. One undertaking felt that more detailed specifications regarding taxes would have been helpful.

Some undertakings however raised a question concerning the treatment of the Hungarian emergency taxes (a financial sector special tax applicable to insurers on a premiums basis, introduced retro-actively in 2010 and supposed to last until 2012, its future rates are not yet determined).

</QS53>

36. Does your industry expect the rules for calculating technical provisions to lead to significant changes in the way she runs her business? Please describe

➔ *QS.54*

a) which are the expected changes, if any;

<QP54a>

Some undertakings believe that the impact on the way on running business will be limited, as they already run internal systems compatible with Solvency 2.

On the other hand, several undertakings expect an impact on product design and pricing. The following possible changes were explicitly mentioned:

- products with guarantees may become less affordable,
- the introduction of premium provisions may significantly affect non-life tariffs,
- the introduction of an illiquidity premium may impact product pricing and the product sales mix.

It was also mentioned that reinsurance programs will likely be affected. In addition, one undertaking expressed a view that the new rules would lead to more efficient overhead expense distribution techniques.

</QP54a>

b) the areas where those changes might have an impact.

<QP54b>

Respondents identified the following impact areas:

- capital allocation and product design,
- accounting, management and business planning,
- modeling and risk management,
- reinsurance,
- ALM.

</QP54b>

37. Please summarize your industries input on the significance of the allowance of future premiums in technical provisions

➔ *QS.55*

<QP55>

Expected profits included in future premiums (EPIFP) amount to 3% of gross non-life technical provisions and 8% of gross life technical provisions excluding the risk margin.

</QP55>

38. Does your industry consider that the boundary of an existing (re)insurance contract should be defined differently from what is set out in paragraphs TP.2.15-19 of the QIS5 technical specifications? What would the new definition be and what is its underlying rationale? How would you industries technical provisions change if the definition of the contract boundary was changed suggested?

➔ QS.56

<QP56>

Roughly one-third of the respondents suggest that no change to the contract boundary definition is necessary.

Another third of the responses commented that the definition was too restrictive, and in some cases they questioned the clarity of the definition. One undertaking considered that the definition was conceptually correct for the non-life side, but it was too restrictive for the life side.

There were further comments suggesting consistency with the IFRS definition.

Accordingly, a number of undertakings would suggest to consider changes to the definition, including the following:

- the final definition should be consistent with the final IFRS definition,
- the definition should be consistent with the 2010 IASB Exposure Draft,
- as a market-consistent or economic approach, the definition should be extended to cover the value-in-force of the portfolio, including all future renewals,
- one undertaking expressed a view that only the ability to reassess premiums at the individual policyholder level (as opposed to the portfolio level) should be considered as the boundary of the contract.

The impact of the suggested changes on technical provisions is difficult to assess, all the more so as the final IFRS definition is not available yet. However, would a value-in-force (ViF) definition be introduced, the single most important effect would almost certainly be a significant decrease of non-life technical provisions.

</QP56>

39. Supervisory view on previous questions on technical provisions

<QS_tp>

Regarding the **contract boundary question**, changes to the definition suggested by the industry are familiar from the Level 2 discussion.

As the Hungarian supervisor, we are open to further clarification of the definition. However, we are fundamentally opposed to any further major extension of the contract boundary definition. We do not support the introduction of a value-in-force (ViF) concept as the basis of determining technical provisions. Neither do we support cherry-picking elements from IFRS only where the expected impact is a thinning-out of technical provisions.

In our view, a major extension of the contract boundary definition would exponentially increase the measurement uncertainty in all elements of Solvency 2 financial requirements, which we believe is contrary to the prudential objectives of the new regime. We do not believe that an attempt to capture the lapse risk of renewals in the SCR could properly solve the issue of a greatly increased measurement uncertainty.

Furthermore, an extension of the contract boundary definition would also put into question (1) the current Level 2 position on illiquidity premium, i.e. the assumption that all insurance obligations are 50 to 100 per cent illiquid and (2) the industry claim that the whole amount of the value of in-force cash flows, aka. expected profits included in future premiums (EPIFP), should be recognised as fully loss-absorbent Tier 1 capital.

</QS_tp>

## 7.1 Illiquidity Premium

40. Please list the products your industry applied the following risk free term structures to when discounting the best estimate.

➔ *QS.21 (see also QS.20)*

50% bucket:
<QP21a>

- all non-life lines of business including health,
- unit-linked products, in some cases unbundled,
- life insurance products without profit participation.

</QP21a>

75% bucket:
<QP21b>

- all life insurance products with profit participation (predominantly savings products).
- one undertaking classified its unit-linked products as belonging to the 75% bucket.

</QP21b>

100% bucket:
<QP21c>

Most undertakings classified none of their products as belonging to the 100% bucket, with the following exceptions:

- some undertakings allocated non-life annuities (mostly MTPL) to this bucket (contrary to the specifications as such annuities are subject to revision risk), and
- one life undertaking allocated all single-premium and unit-linked products to this bucket (possibly contrary to the specifications as such policies are typically subject to surrender and mortality risk).

</QP21c>

41. Please describe the types of contract your industry reported as applicable for transitional provisions, separately for each interest rate that would be used as a discount rate under these transitional provisions.

➔ *QS.22*

<QP22>

Such transitional provisions are not applicable in our market.

</QP22>

42. Supervisory view on previous questions on illiquidity premium

<QS_illprem>

We fundamentally disagree with the application of illiquidity premia to insurance liabilities, except for obligations displaying the highest degree of illiquidity (the current 100% bucket).

We believe that extending the scope of the illiquidity premium to the whole range insurance obligations is not justified, let alone the high arbitrary factors of 50% and 75%. For the most part, such obligations have the potential to become

highly liquid, especially under stressed market conditions (all the more so if the contract boundary is pushed forward to allow for a greater range of future premiums). We are concerned that the technical provisions calculated with such illiquidity premium assumptions would not reflect realistic transfer prices. Furthermore we are not convinced about the reliability of the proposed methodology to determine illiquidity premia.

We note that, although under the current Level 2 text the application of illiquidity premia would be triggered by EIOPA, they were automatically applied in QIS5 regardless of whether the application criteria held at end-of-year 2009. The resulting illiquidity premia appeared to have a moderate impact in QIS5, however in periods of stressed liquidity the quantitative impact might be more dramatic.

</QS_illprem>

## 7.2 Transitional Provisions

43. For each contract where transitional provisions could be used, undertakings shall provide the result of the best estimate calculation applying the transitional provisions on the discount rate.

➔ *QS.23*

*(will be included in the tables based on the data in the tab QIS5 insurance obligations)*

44. Are there contracts other than those already identified in these technical specifications that undertakings would see as eligible for transitional provisions on the discount rate? Which ones? Why? What would be the impact?

➔ *QS.24*

<QP24>

Such transitional provisions are not applicable in our market.

</QP24>

45. Supervisory view on previous questions on transitional provisions on TP

<QS_tptrans>

Such transitional provisions are not applicable in our market.

</QS_tptrans>

## 7.3 Technical provisions Non-life

46. Please summarize your industries feedback on assumptions and methods used to calculate non-life technical provisions.

➔ *QS.25, QS.26*

<QP24>

Overwhelmingly deterministic methods were used to determine non-life technical provisions. Undertakings mostly relied on internal data, in most cases series covering 3 to 10 years' experience. In most cases, undertakings were confident that their methods provided satisfactory outputs. Those areas where undertakings relied more on expert judgement, and where they often regarded

the results as open to challenge were generally the following: expense payments, claims inflation, CAT claims and exercise rate of policyholder options.

</QP24>

47. Please explain the main methods used to calculate the best estimate of non-life premiums provisions.

➔ *QS.27*

<QP27>

- Most undertakings used an expected loss ratio approach to calculate premium provisions. Expected loss ratios were either derived from past experience, or were taken from projections used for planning or product pricing. One undertaking reported that it used the expected claims ratio based simplification provided in the technical specifications.
- One undertaking reported to have used run-off triangles.
- Some undertakings reported that they relied on current statutory unearned premium reserves.

</QP27>

48. Please report on your industries intentions and plans for enhancement of the methods used in QIS5 to calculate the best estimate of non-life premiums provisions.

➔ *QS.28*

<QP28>

One undertaking reported that it did not intend to further develop the methodology as it found that premium provisions are immaterial. Other undertakings have intentions or plans for the enhancement of their methods. However, some also expressed a view that no clear methodological guidance or market best practice regarding premium provisions have emerged yet.

Plans to improve methods to calculate premium provisions include:

- back-testing the validity of assumptions,
- linking premium provisions to internal modeling,
- improving cash flow projections,
- better fitting the granularity of the calculation to QIS5 segments.

</QP28>

49. Please explain the main methods used to calculate the best estimate of non-life claim provisions, especially for long-tail claims.

➔ *QS.29*

<QP29>

Typically undertakings used the Chain Ladder method or some of its variants (Bornhuetter-Ferguson and Munich Chain Ladder were mentioned). In long-tail

cases the tail factor was determined via extrapolation and/or expert judgement. In MTPL, several undertakings reported a separate treatment for bodily injury/annuity payments from material damage claims.

One small undertaking reported that it did not have sufficient data to build run-off triangles except for MTPL, and even there it was unable to build separate triangles for different currencies. This situation may be typical for small undertakings (we note that MTPL may generate foreign claims even for small undertakings for whom the requirement to calculate the best estimate separately for all currencies may be onerous, or only possible via gross simplification).

One non-life undertaking used the best estimate tool to test different parameter settings and then selected the result deemed the most appropriate.

Some undertakings reported to have used the market development factors provided by the supervisor.

</QP29>

50. Please report on your industries intentions and plans for enhancement of the methods used in QIS5 to calculate the best estimate of non-life claims provisions.

➔ *QS.30*

<QP30>

Some undertakings expressed a view that their claims provisioning methods are well established so there is no special need for improvement.

Those undertakings who reported to seek future improvement identified the following ares for future development:

- better reflection of claims inflation and large claims,
- linking claims provisions to internal modeling,
- improving the granularity of the calculation.

</QP30>

51. Did your industry obtain negative best estimates? Please describe the products leading to these estimates.

➔ *QS.31*

<QP31>

Negative premium provisions relating to various types of products were frequently encountered. Negative gross claims provisions were not observed in QIS5 but undertakings noted that due to salvage and subrogation they too may sometimes be negative. In some cases in QIS5 the net claims provisions were negative due to the timing of reinsurance cash flows.

</QP31>

52. Supervisory view on previous questions on non life technical provisions

<QS_tpnl>

On the non-life side undertakings could in most cases successfully adapt their deterministic reserving methods to QIS5 requirements. However, no market best practice methodology emerged yet for the calculation of premium provisions. Undertakings used various simplifications were used regarding segmentation and both of claims provisions and premium provisions.

We did not have the means yet to fully investigate the drivers of the major drop of non-life technical provisions relative to Solvency 1 standards (to 55.2% of the current total). However it appears that the drop was mainly attributable to the following factors:

- removal of built-in prudency such as equalisation-type provisions,
- current case-by-case claims provisions appear to highly overestimate the best estimate,
- introduction of future profitability through premium provisions,
- the effect of discounting, although we estimate this as moderate.

</QS_tpnl>

## 7.4 Technical provisions Life

53. Please summarize your industries feedback on assumptions and methods used to calculate life technical provisions.

➔ *QS.32, QS.33*

<QP32>

On the life side, some undertakings used stochastic simulation techniques for all or part of their life obligations. One undertaking reported to have modeled dynamic lapsation for specific products. Other undertakings used deterministic techniques, including simplifications.

Undertakings generally appeared less confident about their methodology and assumptions than on the non-life side. They mostly rated their biometric assumptions as satisfactory, and many undertakings also felt confident about their assumptions relating to the exercise of policyholder options. On the other hand, the majority of undertakings reported that their assumptions regarding expenses, inflation and revision rates were open to challenge.

Internal and external data sources were both used in the calculations (external data mostly related to biometric assumptions and inflation/revision rates). Some undertakings mentioned limited own experience as a difficulty.

</QP32>

54. Please provide mean, median and standard deviation of the reported proportions of best estimate for future discretionary benefits compared to total best estimate.

➔ *QS.34*

<QP34>

Computing the requested statistics mechanically from the data submitted, we get a mean of 4.8%, a median of 0.0% and a standard deviation of 8.4% (excluding unit-linked technical provisions from the total best estimate).

However there were apparently so many misunderstandings among undertakings about the QIS5 definition of future discretionary benefits that we regard the submitted data, and the above statistics, as completely unreliable.

</QP34>

55. Please, provide the following information in respect of the **calculation of technical provisions as a whole**

➔ *QS.35*

a) Mean, median and standard deviation of reported proportions of technical provisions for unit-linked calculated as a whole.

<QP35a>

- Mean: 17%
- Median: 0%
- Standard deviation: 37%

A few undertakings calculated a high proportion of technical provisions for unit-linked as a whole. On the other hand, the large majority of undertakings calculated all technical provisions for unit-linked as best estimate plus risk margin.

</QP35a>

b) Mean, median and standard deviation of the proportion of other technical provisions calculated as a whole

<QP35b>

- Mean: 0%
- Median: 0%
- Standard deviation: 0%

</QP35b>

c) Description of the main products included in (b) where technical provisions have been calculated as a whole.

<QP35c>

One life undertaking did not calculate separately the best estimate and risk margin for its minor life products. However we regard this as an approximation rather than calculating technical provisions "as a whole" (that is, on the basis of replicating financial instruments).

</QP35c>

56. Did your industry obtain negative best estimates? Please describe the products leading to these estimates.

➔ *QS.36*

<QS36>

While negative best estimates were far from typical on the life side, there were some examples of negative best estimates. These include:

- term risk insurance,
- young regular premium business with high expected cash inflows,
- life products with profitable health riders.

</QS36>

57. Valuation of options and guarantees.

➔ *QS.37*

a) Please describe the options and guarantees your industries insurance obligations include, distinguishing between typical and special settings.

<QP37a>

Typical guarantees and options include:

- guaranteed interest rate,
- fixed rate of profit sharing (based on book value of investment returns),
- surrender option,
- indexation option.

More special options mentioned in the answers include the following (some of these are relatively widespread for certain product types):

- partial surrender and top-up option mainly for unit-linked products,
- paid-up option,
- principal guarantee or guaranteed expense rates for certain unit-linked products,
- annuity conversion option,
- premium holiday option.

</QP37a>

b) How many undertakings, respectively, reported using the following methods for capturing the time value of options and guarantees?

a) Monte Carlo simulation approach
b) Closed form stochastic approach
c) Attributed approach (as defined in TP.2.81)
d) Deterministic approach
e) Other (please explain)

<QS37b>

- 4 undertakings reported that they used Monte Carlo simulation. Two of these undertakings also used deterministic approaches, either for a non-material part of the portfolio or for non-financial options.

- 9 undertakings reported the use of deterministic approaches.
- One undertaking reported the use of a closed form stochastic approach for unit-linked products with financial guarantees.
- Two undertakings reported that they used simulation approaches based on a limited number of fixed scenarios. In one case, these scenarios were externally developed. These undertakings did not report in detail how or whether they attributed probability weighting to the scenarios.

It also appears that a number of undertakings used simplified approaches, sometimes simply ignoring some options and guarantees in the valuation.

</QS37b>

c) If using a Monte Carlo stochastic approach, how many scenarios are used? (mean, median and standard deviation)

<QP37c>

Those undertakings that used Monte Carlo simulation reported that they used 1000 scenarios.

</QP37c>

d) How many undertakings, respectively, reported the following Monte Carlo error statistics?

a) Less than 2% error
b) Between 2% to 4% error
c) Between 4% and 6% error
d) More than 6% error

<QS37d>

3 undertakings using Monte Carlo simulation reported less than 2% error, one undertaking reported more than 6% error.

</QS37d>

e) If using the attributed probabilities approach, what method was used to derive the attributed probabilities?

<QP37e>

Undertakings did not provide information regarding this question.

</QP37e>

f) If a deterministic approach was used, please provide a brief description of the approach together with the tests carried out to ensure market consistency?

<QP37f>

Few of the undertakings using deterministic approaches provided information regarding the details.

- One undertaking used different shifts in the yield curve and took into account the average duration of the liabilities we attributed value to the technical interest rate guarantee. Given the fact that this value was not material no check has been performed to ensure market consistency.

- Another undertaking based the deterministic parameters on company experience or, where this was not available, on management experience. Parameters were checked against publicly available market data where possible.

</QP37f>

g) In case you industry reported practical problems in the valuation of options and guarantees please list the relevant options and guarantees.

<QP37g>

- Typically the difficulties related to policyholder behavior and, in particular, to the dynamic effects of policyholder options. The options explicitly mentioned in the answers include the surrender, lapse, premium holiday options, but other policyholder options may well be affected.

- One undertaking reported that it had difficulty calculating the value of the minimum interest rate guarantee.

</QP37g>

h) What was the reason for the problems?

<QP37h>

The following were mentioned as sources of the difficulties: lack of company experience, limited computing capacity, limitations to available statistics and a limited understanding of the interaction between market conditions and policyholder behavior.

</QP37h>

i) How does your industry intend to solve the problems until the implementation of Solvency II?

<QP37i>

Responses include plans for the development of IT solutions (both hardware and software) and collecting further statistical data. One undertaking highlighted the need for development in the theoretical background/academic literature.

</QP37i>

58. Please comment on your industries feedback on future management actions.

➔ *QS.38*

<QS38>

Most undertakings either responded that future management actions did not have a material impact, or they acknowledged that future management actions might have some material impact although they did not model them.

Where undertakings reported that they have modelled future management actions, the management actions most often related to changing the investment mix for assets backing liabilities.

</QS38>

59. Please summarize your industries feedback on assumptions and methods used to calculate health SLT technical provisions.

➔ *QS.39, QS.40*

<QP39>

Feedback regarding this question was very limited since most undertakings either do not pursue health SLT business or have only minor health SLT segments.

</QP39>

60. Supervisory view on previous questions on life technical provisions

<QS_tpl>

The Solvency 2 methodology for life technical provisions is a major departure from the standard Solvency 1 methodologies currently used on our market. Therefore the calculation of life technical provisions in QIS5 presented a significant challenge for the industry, depending on the preparedness of each undertaking. The valuation of options and guarantees caused difficulties in almost every case. While some undertakings were able to use stochastic simulation, less resourceful undertakings had to rely on deterministic techniques and were able to perform the valuation of contractual options and guarantees only partially.

We note the significant effect of future premiums, also with respect to unit-linked obligations. Few undertakings calculated unit-linked provisions "as a whole"; most undertakings applied the best estimate plus risk margin methodology. This led to technical provisions typically lower than the nominal amount of unit-linked funds reported to policyholders, including one case where the total unit-linked technical provision was negative. This may raise some interesting questions regarding the funding and liquidity of unit-linked obligations, particularly for start-up portfolios.

</QS_tpl>

## 7.5 Reinsurance Recoverables

61. Please summarize your industries feedback on assumptions used to calculate the technical provisions with respect to reinsurance recoverables.

➔ *QS.41, QS.42*

<QP41>

According to the different reinsurance programs of undertakings, reinsurance recoverables were calculated by various methods. Some undertakings used net of reinsurance cash flow projections. Where the reinsurance program allowed, pro rata approximations were used. One undertaking reported having used separate claims triangles for non-proportional reinsurance. Several undertakings used the gross-to-net proxy method.

One life undertaking reported on a non-standard intra-group reinsurance arrangement. The cash flows associated with this reinsurance arrangement were not explicitly modeled, instead the undertaking used an allocation method based on reinsurance quotas.

One non-life undertaking fell back to current statutory figures as an approximation of reinsurance recoverables.

</QP41>

62. Please summarize your industries comments on the treatment of SPV in the calculation of reinsurance recoverables.

➔ *QS.43*

<QP43>

SPV risk transfer arrangements are not present on our market.

</QP43>

63. Supervisory view on previous questions on reinsurance recoverables

<QS_tprec>

We note that in some cases undertakings' cash flow models led to a negative best estimate of reinsurance recoverables. This then resulted in a negative counterparty default adjustment, indicating paradoxically that the undertaking would profit from the default of the counterparty.

</QS_tprec>

### 7.6 Risk margin

64. QIS5 specifications allow for five methods to calculate the risk margin (nb: simplifications are only applicable under the principle of proportionality). Please provide mean, median and standard deviation of your industries feedback on the application of these methods.

➔ *QS.46*

a) Full calculation for all future SCR values without using approximations;

<QP46a>

Across all undertakings, 4% of the total risk margin was calculated by this method. (The following statistics are not weighted by the amount of risk margin per undertaking:)

- Mean: 4%
- Median: 0%
- Standard deviation: 19%

</QP46a>

b) Calculation of future SCR values using approximate methods for individual risks or sub-risks;

<QP46b>

Across all undertakings, 12% of the total risk margin was calculated by this method.

- Mean: 11%
- Median: 0%
- Standard deviation: 31%

</QP46b>

c) Approximate method for whole SCR for future years (proportional approach);

<QP46c>

Across all undertakings, 68% of the total risk margin was calculated by this method.

- Mean: 52%
- Median: 84%
- Standard deviation: 48%

</QP46c>

d) Estimate all future SCRs "at once" (duration approach); or

<QP46d>

Across all undertakings, 10% of the total risk margin was calculated by this method.

- Mean: 15%
- Median: 0%
- Standard deviation: 36%

</QP46d>

e) Calculating risk margin as a fixed % of the best estimate

<QP46e>

Across all undertakings, 6% of the total risk margin was calculated by this method.

- Mean: 17%
- Median: 0%
- Standard deviation: 37%

</QP46e>

65. Regarding the calculation of 'unavoidable market risk', please provide information on

➔ *QS.47*

a) Quantitative importance (mean, median, and standard deviation)

<QP47a>

All undertakings reported either zero or an unspecified insignificant amount.

</QP47a>

b) Method used to calculate SCR unavoidable market risk

<QP47b>

Most undertakings did not calculate the unavoidable market risk element of the risk margin since they regarded it as either insignificant or not applicable. Those

undertakings that calculated unavoidable market risk submitted the following notes on the methodology:

- Some undertakings defined unavoidable market risk as liquidity premium risk plus interest rate downward risk for policies with duration of more than 30 years.
- Some undertakings followed a simplified approach reflecting an unavoidable mismatch between the cash flows of the insurance liabilities and the financial instruments available to cover the liabilities, usually leading to a capital requirement for interest rate risk under the downward scenario.
- Some undertakings followed the simplification provided in TP.5.71.

</QP47b>

66. Supervisory view on previous questions on risk margin

<QS_tprm>

We note that the mechanical application of the fifth simplified method for calculating the risk margin (based on percentages of the best estimate) sometimes lead to negative risk margins where the best estimates were negative. In our view, the application of the cost-of-capital principle should not allow negative risk margins. Therefore we requested undertakings to revise their calculations where the simplification leads to negative risk margins (one undertaking however insisted that under the technical specifications, negative margins were the correct results).

Regarding unavoidable market risk, we acknowledge that in theory this is an existing element of the cost of capital. However, on the basis of the QIS5 experience we are not convinced that it is so significant as would justify the added complexity of including it in the calculation of the risk margin.

</QS_tprm>

## 7.7 Simplifications and Proportionality

67. Please comment on your industries feedback on simplifications used.

➔ *QS.50*

<QP50>

The use of simplifications varied by undertaking, generally the largest market participants reported the use of simplifications only to a very limited extent. On the other hand, almost all simplifications provided in the specifications were used by some undertakings. On the life side, the most frequently reported simplifications related to biometric risk factors, the surrender option and financial options and guarantees. On the non-life side, the expected claims ratio based simplification for premium provisions was the most often reported. For the calculation of the risk margin, almost all undertakings used some level of simplification.

</QP50>

68. Please describe the additional simplification methods used by your industry, report on the relevance in respect to total technical provisions of undertakings, and provide an assessment of the relevance of that method for your market overall.

➔ QS.51

<QP51>

- One life undertaking approximated its technical provisions as the current (Solvency 1) technical provisions less expected present value of future profits.

- Another life undertaking reported on a non-standard intra-group reinsurance arrangement. The cash flows associated with this reinsurance arrangement were not explicitly modeled instead the undertaking used an allocation method based on reinsurance quotas.

There are indications that other simplifications or approximations (not always reported in questionnaires) were also used, sometimes relying on elements of current (Solvency I) technical provision calculations.

</QP51>

69. Does your industry consider that any other simplified method should be developed in the future on a standardized basis? Do you share this view? Please these methods.

➔ QS.52

<QP52>

- One undertaking expressed a view that standardized simplifications are not always appropriate, therefore scope should be allowed for undertaking-specific simplifications where these can be justified and supported.

- Regarding the claims provisions simplifications, one undertaking commented that, for the discounting of provisions where a simplification is used, a table with the average duration for each line of business should be provided as in earlier QIS.

- One non-life undertaking expressed a view that more simplifications should be provided to help small undertakings, and commented that the specifications of existing simplifications are not always sufficiently clear. This undertaking agreed with the principle of keeping the list of simplifications open.

</QP52>

70. Does your industry consider the QIS5 specifications on the application of '*proportionality principle'* with respect to calculation of the technical provisions to be sufficiently clear?

➔ QS.48

<QP48>

Undertakings' views were divided on this question, with a slight majority of respondents expressing the view that the specifications were sufficiently clear.

One of those undertakings who answered no felt that the following aspects would need further clarification: (1) whether the scale of risks should be assessed from the point of view of the solo entity or that of the group, (2) how to apply the principle where the more complex risks are small in scale, hence there is a difficulty to decide whether these are "proportional" or not, as the "complexity" and "scale" parameters are at the opposite spectrums. This undertaking expressed some concern that in real life methodology decisions would be driven by supervisors' biases rather than the direct application of the proportionality principle.

Another undertaking felt that the specifications are too rigid and that the application of the proportionality principle should be based on the undertaking's judgement.

</QP48>

71. Supervisory view on previous questions on simplifications and proportionality for technical provisions

<QS_tpsimp>

No specific views on these questions.

</QS_tpsimp>

### 7.8 Additional comments

72. Room for additional comments on technical provisions.

➔ QS.57

Participants views

<QP_addtp>

Undertakings submitted no answers to this question.

</QP_addtp>

Supervisor views

<QS_addtp>

No additional comments.

</QS_addtp>

## 8. SCR

73. Please describe the mayor **preparedness issues** of your industry with respect to data availability or methodologies regarding the calculation of SCR and MCR, and the **difficulties** applying the QIS5 standard formula

➔ *QS.1, QS.11 (see also QS.12)*

<QP_prep_scr_ind>

The following elements of the SCR standard formula calculation were identified as causing significant difficulties:

- A typical difficulty concerned the interpretation and calculation of the **adjustment for the loss absorbing capacity of technical provisions (Adj_TP)** in the SCR standard formula.

  In the current Hungarian profit sharing regime, future benefits are legally and contractually based on the realised investment return of a pool of assets held by the undertaking. The definition of future benefits thus leaves virtually no room for management discretion. The lack of management discretion led many undertakings to assign all of their technical provisions to guaranteed benefits and to assign a zero value to FDB, disregarding the definition of FDB in the technical specifications.

  Having valued FDB as zero, most undertakings considered accordingly that the loss-absorbing capacity of technical provisions in the SCR standard formula should also be valued as zero. In effect these undertakings typically ignored the gross scenario calculations, aggregating the net risk charges instead to arrive at the BSCR. When the supervisor pointed out the discrepancy with the specifications, some of these undertakings were reluctant to repeat the calculations as they felt that the gross scenarios would be both unrealistic and burdensome to calculate.

  Other undertakings did attempt to calculate the gross and net scenarios separately, but their efforts were complicated by misunderstandings. Some undertakings reported higher net risk charges than gross ones (and were unable to correct their calculations before the deadline for this country report).

- The **single equivalent scenario method** for calculating the loss absorbing capacity of technical provisions and deferred taxes: Several undertakings found this method to be technically very complex and challenging to complete, in particular because of the need to calculate the effect of simultaneous shocks.

- The **counterparty default risk module:** Several undertakings expressed a view that the calculations for type 1 exposures by counterparty were unduly burdensome, especially where the specifications required repeated SCR calculations assuming the default of each counterparty separately. It was also less than straightforward to determine the counterparties' share of CAT losses, given that the CAT risk charge is normally determined per each peril, whereas the formula in SCR.6.29 required a split by line of business.

- The **non-life catastrophe risk sub-module**: Several undertakings reported difficulties calculating the CAT risk charge, including challenges of data availability, and the difficulty of netting the capital charge where facultative reinsurance arrangements were involved. There were also some complaints about the errors in the helper tabs. Finally, it appeared that the specification of the motor CAT scenario was inadequate.

- One undertaking commented that modelling the effect of the lapse shock on options was difficult. More generally, another undertaking commented that the asset and liability cash flow projection re-runs necessary to calculate all standard formula scenarios were onerous, with over 40 re-runs necessary just to calculate the SCR standard formula.

No particular difficulties or preparedness issues were reported in respect of the MCR calculation.

</QP_prep_scr_ind>

b) Please comment on these issues from a supervisory perspective.

<QS_prep_scr_sup>

- Regarding the adjustment for the loss absorbing capacity of technical provisions, it appears that the QIS5 framework for future discretionary benefits and the loss absorbency adjustment was designed mainly in view of profit sharing systems different from ours. Therefore this framework is not well suited to the circumstances of our market and its application is likely to cause difficulties.

  Furthermore, a common understanding of the FDB concept was complicated by the fact that the term "future discretionary benefits" is a misnomer: under the current definition it actually refers to future conditional benefits rather than discretionary. Observing that, in the local regime, the distribution of future benefits is typically not subject to management discretion, most undertakings chose to disregard the specifications and bypass this part of the calculation.

  The definition of the net scenarios in SCR.2.4 also gave rise to ambiguity, leaving room for arguments whether or not loss absorbing capacity can exist in the absence of management discretion.

  During the exercise we adopted a posture that the specifications should be followed. On the other hand, we have sympathy for the view expressed by some undertakings i.e. that, in the SCR standard formula, calculating both the gross and net scenarios is disproportionately burdensome under our local circumstances, where aggregating the net risk charges would almost certainly lead to the same results.

  If the current FDB/Adj_TP framework remains unchanged in Level 2, we consider that careful implementation into national law and clarifying guidelines at Level 3 will be necessary to achieve consistent application. Simplified calculations tailored to profit sharing regimes similar to ours would also be welcome.

- Regarding the single equivalent scenario method, this approach clearly failed to gain support from our industry, partly because the development of this approach was motivated by profit sharing regimes completely different from our local market. Because of this, many undertakings had a difficulty understanding the underlying concept and bypassed the calculation. We agree with undertakings that this method is not well suited to become the default approach on our market.

- Regarding counterparty default risk, we agree with undertakings that the complexity of the calculation should be reduced.

- Regarding non-life and health CAT risk, we see the need to further develop and clarify the specifications, however on the other hand undertakings should also improve their level of preparedness.

</QS_prep_scr_sup>

74. Did your industry report any modules or submodules in the standard formula to be significantly inadequate for the measurement of her risk position? Please rank your answers, starting with the most important discrepancy, and elaborate. Please give also your supervisory assessment of these issues.

➔ *QS.10 (see also QS.9, QS.12)*

Participants views
<QP_SCRcrap1>

Undertakings submitted critical comments on several standard formula modules, including the following:

- There were a number of critical comments about the appropriateness of the counterparty default risk module. One undertaking commented that the risk charge based on the square root of probability of default is too harsh. Another undertaking noted that the module charges cash at bank as riskier than derivatives and reinsurance contracts. The latter undertaking also commented that for type 1 exposures, formula SCR.6.13. gives incoherent results as it does not guarantee that SCR increases when new exposures are added to the existing ones; furthermore for type 2 exposures, in particular for receivables from intermediaries, the period of 3 month is too short to define an exposure as being "at default". Yet another undertaking opined that the granularity for intermediaries was insufficient.

- One undertaking commented that it the result of the Motor CAT scenario was too low, lower than the undertaking's largest single claim in most years.

- One undertaking commented that the adjustment factors for non-proportional reinsurance in the non-life and non-SLT health premium and reserve risk submodules can only be applied in some particular cases and therefore are not appropriate to properly reflect the risk mitigation effect of the non-proportional reinsurance structure.

- One undertaking expressed a view that the non-life premium and reserve risk submodule does not take into account an undertakings pricing decisions that affect the following year, which in particular may adversely affect the market position of those undertakings whose premium volumes are decreasing.

- Some undertakings found the illiquidity premium risk submodule inappropriate, and one undertaking even regarded it as unnecessary.

- One undertaking expressed a view that the calculation of the non-life lapse risk submodule was inappropriate as it simply mirrored the life lapse risk submodule.

- One undertaking commented that the calculation of the operational risk module was not appropriate for its business.

</QP_SCRcrap1>

Supervisor suggestions

<QS_SCRcrap1>

While we acknowledge that the standard formula calculations may not appropriately reflect the risk profile of each individual undertaking, wish lists regarding the standard formula are easier to compile than to properly address. Furthermore, trying to satisfy all respondents would inevitably lead to an even more complex standard formula. We note that some of those undertakings that raised the above issues are currently building internal models that will hopefully address the problems.

Nonetheless, we agree that some standard formula submodules would need to be revisited to address the anomalies that emerged; these in our view include the counterparty default risk module, the motor CAT scenario and the adjustment factors for non-proportional reinsurance.

</QS_SCRcrap1>

Participants views

<QP_SCRcrap2>

</QP_SCRcrap2>

Supervisor suggestions

<QS_SCRcrap2>

</QS_SCRcrap2>

Participants views

<QP_SCRcrap3>

</QP_SCRcrap3>

Supervisor suggestions

<QS_SCRcrap3>

</QS_SCRcrap3>

Participants views

<QP_SCRcrap4>

</QP_SCRcrap4>

Supervisor suggestions

<QS_SCRcrap4>

</QS_SCRcrap4>

Participants views

<QP_SCRcrap5>

</QP_SCRcrap5>

Supervisor suggestions

<QS_SCRcrap5>

</QS_SCRcrap5>

75. Report on equivalent scenario method:
➔ QS.78

a) Number of undertakings that reported gross calculation:

<QS78gross>

3 undertakings reported having performed the gross calculation, yet none of these undertakings completed the calculation of the adjustment for the loss absorbing capacity of technical provisions (Adj_TP) via the single equivalent scenario method.

</QS78gross>

b) Number of undertakings that reported net calculation:

<QS78net>

None.

</QS78net>

## 8.1 SCR Aggregation

76. Please describe your industries most important points of discrepancy with the QIS5 SCR-Aggregation methodology.

➔ *QS.10 (see also QS.9, QS.12)*

<QP_discrepancy_Aggregation>

One undertaking commented that correlation matrices are "crude and possibly inappropriate" for its business. Another undertaking commented that the correlation matrices do not reflect the reality observed by the undertaking.

</QP_discrepancy_Aggregation>

77. Please describe your industries difficulties when applying the QIS5 SCR-Aggregation methodology.

➔ *QS.11 (see also QS.12)*

<QP_stdifficulty_Aggregation>

No difficulties were reported regarding this aspect of the calculation.

</QP_stdifficulty_Aggregation>

78. Supervisory view on previous questions on SCR aggregation

<QS_scraggr>

By the very nature of the standard formula, its correlation structures are simplified and judgmental. Therefore the few vague criticisms received from undertakings are understandable, but offer little help in the way of improvement.

</QS_scraggr>

## 8.2 Market Risk

79. Report on ratings:

-> QS.58

a) How many undertakings reported to be unrated?

<QS58unra>

All undertakings (solo entities) except one reported to have no external rating.

</QS58unra>

b) How many undertakings reported to be rated? How many in each rating category?

<QS58ra>

Only one insurance undertaking reported to have an external rating (« A+ » or « A1 »). Some undertakings belonging to international groups reported that their group and/or the parent undertaking has an external rating, however, it is certainly not the rating of the subsidiary.

</QS58ra>

80. Undertakings were asked to provide information on the amount invested in each financial instrument based on repackaged loans together with a description of the underlying exposure. Please summarize this information in percentage of the total assets, reporting mean, median and standard deviation if appropriate.

➔ QS.62

<QS62>

No such investments were reported.

</QS62>

81. For each investment based on repackaged loans, undertakings were asked to provide a reasoned estimate of the investments that would not meet the 5% retention of net economic interest criteria and what the impact would be in terms of capital requirement. . Please summarize this information, in percentage of the total assets reporting mean, median and standard deviation if appropriate.

➔ QS.63

<QS63>

Not applicable.

</QS63>

82. Supervisory view on previous questions on SCR market risk

<QS_scrmkt>

Most Hungarian insurance undertakings belong to either an international insurance group or to a financial conglomerate. In practice, either the group or the leading entity has an external rating, while the subsidiaries do not. This is attributable to many reasons, such as the small size of their business or the fact that they are not listed on the stock market, have no IPO history, etc. and that these facts would lead to a worse rating than that of the group. Another reason might be that when the subsidiary enters into a contract, then usually the parent undertaking provides guarantee to the third party to achieve more favourable financial conditions. Since reinsurance arrangements are usually concluded at the group level, there is no need for the subsidiary to have an external rating.

In case of those insurance undertakings that do not belong to an international group, the size of the business is usually so small that it is not a significant exposure to any of the large international reinsurers (since most of their transactions that would need an external rating are limited to reinsurance).

Branches of EEA entities take over the credit rating of the parent undertaking.

The Hungarian Act on Insurance lists the types of assets that are allowed to cover technical provisions. Depending on the construction of the financial assets based on repackaged loans, they could be eligible if these assets are accessible at any time and without any restriction.

</QS_scrmkt>

## 8.3 Counterparty default risk

83. Please describe your industries most important points of discrepancy with the QIS5 SCR-Counterparty methodology.

➔ *QS.10 (see also QS.9, QS.12)*

<QP_discrepancy_Counterparty>

There were a number of critical comments about the appropriateness of the counterparty default risk module:

- One undertaking commented that the risk charge based on the square root of probability of default is too harsh (e.g. a default probability of 0.05% gives an SCR around 6.5% of LGD: square root is 2.2%, multiplied by a factor of 3).

Another undertaking submitted the following comments:

- Cash at bank has the same probabilities of default as derivatives and reinsurance contracts, but in case of default its recovery rate is set to 0%. As a consequence, cash turns out to be riskier than derivatives and reinsurance contracts, which have a positive recovery rate.

- For type 1 exposures, formula SCR.6.13. give incoherent results: the formula does not guarantee that SCR increases when new exposures are added to the existing ones.

- For type 2 exposures: concerning receivables from intermediaries which are due for more than 3 months, the period of 3 month is too short to define an exposure as being "at default".

Yet another undertaking expressed a view that

- the granularity for intermediaries not paying was insufficient, potentially leading to an underestimation of risk.

</QP_discrepancy_Counterparty>

84. Please describe your industries difficulties when applying the QIS5 SCR-Counterparty methodology.

➔ *QS.11 (see also QS.12)*

<QP_stdifficulty_Counterparty>

- Several undertakings expressed a view that the calculations for type 1 exposures by counterparty were unduly burdensome, especially where the specifications required repeated SCR calculations assuming the default of each counterparty separately. In particular for derivatives backing life obligations, per each single counterparty, the life actuarial models are to be re-run to calculate the relevant liability absorption by each single counterparty which is very time-consuming.

- It was also less than straightforward to determine the counterparties' share of CAT losses, given that the CAT risk charge is normally determined per each peril, whereas the formula in SCR.6.29 required a split by line of business.

</QP_stdifficulty_Counterparty>

85. Please summarize on the nature of the composition of your industries Type 1 exposures to counterparty default risk and the respective number of entities. (use mean, median and standard deviation where appropriate.)

➔ *QS.76a*

<QS76a>

Type 1 exposures amounted to 92% of the overall counterparty default risk charge. The main counterparties were banks and reinsurers, an average of 8-15 counterparties per undertaking. The resulting capital charges varied widely by undertaking.

- Mean: 7680 thousand EUR
- Median: 441 thousand EUR
- Standard deviation (relative): 296%

</QS76a>

86. Please summarize on the nature of the composition of your industries Type 2 exposures to counterparty default risk. (Use mean, median and standard deviation where appropriate.)

➔ *QS.76b*

<QS76b>

Type 2 exposures amounted to 8% of the overall counterparty default risk charge. The main types of exposure were recoverables from intermediaries, recoverables from policyholders, policy loans and mortgages.

- Mean: 1162 thousand EUR
- Median: 431 thousand EUR
- Standard deviation (relative): 152%

</QS76b>

87. Supervisory view on previous questions on SCR counterparty default risk

<QS_scrdef>

Relative to QIS4, a major increase in the volume and relative weight of the counterparty default risk module was observed. (In QIS4, the module accounted for 4% of the BSCR, compared to 8% in QIS4bis and 15% in QIS5.)

That said, we do not have specific comments about the calibration of the module. However we agree with undertakings that the complexity of the calculation should be reduced.

</QS_scrdef>

## 8.4 Life Underwriting Risk

88. Please describe your industries most important points of discrepancy with the QIS5 SCR-Life methodology.

➔ *QS.10 (see also QS.9, QS.12)*

<QP_discrepancy_Life>

Only one undertaking commented on the SCR-Life methodology. This undertaking argued that the lapse risk methodology was inappropriate, and suggested the following changes:

- the lapse up and down shocks should affect all policies, regardless whether the surrender strain is positive or negative (as opposed to QIS5 where only those policies causing a loss were considered in each case),
- the current lapse mass shock should affect policies without significant surrender penalties, but a different/reduced shock should be considered for traditional business with significant surrender penalties.

As a justification for these suggestions, the undertaking argued that the impact of rational policyholder behaviour is already captured in the best estimate, whereas the lapse risk should refer to extreme lapse events, however not fully rational.

</QP_discrepancy_Life>

89. Please describe your industries difficulties when applying the QIS5 SCR-Life methodology.

➔ *QS.11 (see also QS.12)*

<QP_stdifficulty_Life>

Only two undertakings reported difficulties applying the SCR-Life methodology. One undertaking commented that the modelling the effect of lapse risk on options was difficult. Another undertaking noted that the different shocks for different policy years were not programmed in her model.

</QP_stdifficulty_Life>

90. Please summarize the difficulties reported by your industry on the calculation of Life lapse shocks.

➔ *QS.72*

<QP72li>

Some undertakings reported technical difficulties applying the lapse shock to policyholder options, obtaining data on the policy level or allocating the renewal expenses.

One undertaking commented that the policy-by-policy evaluation is burdensome and not viable. Furthermore in this undertaking's view the methodology assumes a high level of policyholders' rationality. She argued that such rationality is not linked to the financial markets (this risk usually is already captured in market risk), but only to the best estimate valuation, based on information generally not available to the policyholders. She also noted that her observed historical lapse rates were much lower, and that it is unreasonable to assume the same surrender probabilities for unit linked and traditional contracts.

</QP72li>

91. Supervisory view on previous questions on SCR life underwriting risk

<QS_scrlife>

Contrary to some views expressed by undertakings in QIS5, we do not consider that lapse shocks should be weakened. We are also not convinced that past observations from the last few decades will appropriately reflect future levels of lapse risk.

We note that lapse risk is linked to the contract boundary question and the issue of expected profits included in future premiums (EPIFP). We are particularly concerned that the softening-up of the contract boundary definition has the potential to encourage a Ponzi dynamics where existing obligations are increasingly covered by uncertain future premiums. We note that the calibration of the SCR lapse risk submodules largely dates back to previous QIS exercises that have not been designed with the present scope for future premiums in mind. The supervisor believes that the QIS5 definition of the contract boundary would require counter-balancing requirements addressing the uncertainty of future premiums, optimally in the form of strengthened SCR lapse risk charges (e.g. higher mass lapse shocks and/or lapse shocks increasing with time, treating remote future premiums as progressively more uncertain).

</QS_scrlife>

## 8.5 Health Underwriting Risk

92. Please describe your industries most important points of discrepancy with the QIS5 SCR-Health methodology.

➔ *QS.10 (see also QS.9, QS.12)*

<QP_discrepancy_Health>

No responses received.

</QP_discrepancy_Health>

93. Please describe your industries difficulties when applying the QIS5 SCR-Health methodology.

➔ *QS.11 (see also QS.12)*

<QP_stdifficulty_Health>

Regarding Health-CAT, one undertaking commented that undertakings usually do not report according to the division of personal accident (PA) products specified in the CAT submodule. Therefore it might be required to work out the division by business lines specified in the CAT submodule, policy by policy or at least product by product (time consuming). It was not explicitly specified in the CAT submodule how to assign products with several overages (accidental cover as well as disability cover in one product etc.). Some products might be designed and sold as one package and one plan code can cover even three or four risks.

</QP_stdifficulty_Health>

94. Please summarize the difficulties reported by your industry on the calculation of Health lapse shocks.

➔ *QS.72*

<QP72he>

No responses received.

</QP72he>

95. Supervisory view on previous questions on SCR health underwriting risk

<QS_scrhe>

The importance of this module is marginal for the local industry, therefore there was practically no feedback.

</QS_scrhe>

## 8.6 Non-life Underwriting Risk

96. Please describe your industries most important points of discrepancy with the QIS5 SCR-Non-Life methodology.

➔ *QS.10 (see also QS.9, QS.12)*

<QP_discrepancy_Non-Life>

Undertakings rated the QIS5 SCR-Non-Life methodology on the average as almost "good" (almost all undertakings rated the implementation of the standard formula, the correlation matrices, the standard formula's segmentation, design and calibration as fair or good).

The following points of discrepancy with regard to the SCR-Non-Life methodology were submitted:

- Concerning the proposed method for the calculation of the **adjustment factors for non-proportional reinsurance**, one undertaking noted that the formula can only be applied in some particular cases and therefore it is not appropriate to properly reflect the risk mitigation effect of the non-proportional reinsurance structure. For example it is impossible to apply the suggested method whenever a line of business is covered by more than one XL treaty (this could be the case for Marine, Aviation and Transport line of business where typically the three risks are covered by different reinsurance treaty). Moreover there is no way to take into account the mitigating effect of facultative reinsurance, which may have a major impact on the capital charge. Finally, the definition of data concerning the reinsurance treaty requested for the calculations was not entirely clear; in particular it was not straightforward how to take reinstatements into account.

- Another undertaking found that CAT-Motor risk charge was too small, her largest single loss being higher in most years than the calculated result.

- Some undertakings that calculated the CAT risk charge with several different methods (standardised scenarios, factor method, internal model) reported major differences between the results of different approaches. These undertakings generally felt that the factor method was highly disadvantageous.

- Another undertaking expressed a view that the standard formula does not allow adequately for inflation risk, because standard factors and USPs are likely to have been established from data in a non-inflationary period.

- Another undertaking commented that the correlation matrix and diversification factors provided in the specifications did not reflect the reality that she observed.

</QP_discrepancy_Non-Life>

97. Please describe your industries difficulties when applying the QIS5 SCR-Non-Life methodology.

➔ *QS.11 (see also QS.12)*

<QP_stdifficulty_Non-Life>

Three undertakings reported difficulties with the QIS5 SCR-Non-Life methodology.

One undertaking commented that the introduction of elements such as the future premiums and the boundaries of contracts was conceptually correct; however the data to be collected in order to take these elements into account were hardly available and that the difficulty of data collection was not proportional to the quantitative impact.

Two undertakings reported difficulties regarding the **non-life catastrophe risk sub-module,** including the following:

- difficulty of data-gathering, especially for some of the Man-made perils,
- the process of netting down, in particular whenever facultative contracts were to be taken into consideration,
- some parameters were not defined precisely.

</QP_stdifficulty_Non-Life>

98. Please summarize the difficulties reported by your industry on the calculation of Non-Life lapse shocks.

➔ *QS.72*

<QP72nl>

Three undertakings calculated the capital requirement for non-life lapse risk. None of the comments were specifically directed at the non-life lapse submodule, but rather lapse risk in general, the main difficulty being typically to take into account the whole range of policyholder options.

</QP72nl>

99. Please explain what practical issues your industry reported on determining the adjustments for non proportional reinsurance in the premium risk factors, including availability of data, any data adjustments and any key assumptions made.

➔ *QS.71a*

<QP71a>

It appears that a number of undertakings did not use the approach, either because of the limitations on its applicability, or because of the limitations of available data.

- Two undertakings responded that they had no issues applying the method.
- One undertaking expressed a view that the USP approach fits better and ensures a homogeneous treatment between lobs.
- One undertaking noted that the formula can only be applied in some particular cases and therefore it is not appropriate to properly reflect the risk mitigation effect of the non-proportional reinsurance structure. For example it is impossible to apply the suggested method whenever a line of business is covered by more than one XL treaty (this could be the case for Marine, Aviation and Transport line of business where typically the three risks are covered by different reinsurance treaty). Moreover there is no way to take into account the mitigating effect of facultative reinsurance, which may have a major impact on the capital charge. Finally, the

definition of data concerning the reinsurance treaty requested for the calculations was not entirely clear; in particular it was not straightforward how to take reinstatements into account.

</QP71a>

100. Please summarize your industries practical suggestions for improvements that could be made.

➔ *QS.71b*

<QP71b>

Only one undertaking made a suggestion which was the following:

- If the capital charges for premium risk and reserve risk were calculated separately, the same procedure of netting down as in CAT risk could be applied for premium risk as well, avoiding the problem of adjusting the standard deviations. This would allow taking into account a different non-proportional reinsurance structure, even a more complex one, closer to the actual reinsurance structure of the undertaking, which would give more reliable results. However this method would not solve the problem of taking facultative reinsurance into account correctly.

</QP71b>

101. Please summarize to what extent your industry made use of approximations when estimating total insured values by zone for natural catastrophe scenarios, including the extent to which actual data was available.

➔ *QS.73*

<QS73>

One undertaking indicated that as she has insurance policies only in Hungary, she had no problem calculating the total sums insured by each zone. Two other undertakings reported that they had good data, so approximations were not needed. Four undertakings used national and internal benchmarks or other estimates where the information was not available (partially or entirely).

One undertaking submitted detailed information about the approximation used when data on the total insured lives in a particular zone were not available: The approximation made was done by assuming that the largest catastrophic risk would occur in the biggest business building in the capital city of the country. The estimated calculation would then be based on the assumption that on each floor (40 floors in one building) of such a building a particular number of people would occupy each floor. The area surrounding the building within a specified radius could contain at most the same number of people. After deriving market proportion of a particular product line in a country, this percentage was then applied to the number of people subject to the catastrophic risk. The undertaking considers this a rough approximation as there were no publically available market data on the product market share for the largest cities (only country level data). [As the supervisor we note that this method was certainly not adopted to Hungary, as the tallest building in our country's capital city is a far cry from approaching 40 floors.]

</QS73>

102. Please describe the practical difficulties your industry reported in calculating the various different man-made catastrophe scenarios, including the extent to which actual data was available or assumptions needed to be made.

➔ *QS.74*

<QP74>

- The **Motor-CAT scenario** was found to be problematic. One undertaking commented that the calculation was difficult to follow and the definition of input data was unclear. Another undertaking noted that the Motor-CAT model is possibly incorrect, as the equation in the formula had no solution.

- Regarding the **Fire and Terrorism scenario**, a number of undertakings found it impossible to measure the 150 to 300 meter radius exposure. Some undertakings reported that they used approximations such as the sum insured of their largest single exposure. Some undertakings suggested to replace the QIS5 approach by some other method, relying on data typically available in practice.

</QP74>

103. Please summarize on the comparison of results from the standardised scenario / factor method versus the partial internal model results.

➔ *QS.75*

<QS75>

Some undertakings that calculated the CAT risk charge with several different methods (standardised scenarios, factor method, internal model) reported major differences between the results of different approaches. These undertakings generally felt that the factor method was highly disadvantageous.

</QS75>

104. Supervisory view on previous questions on SCR non life underwriting risk

<QS_scrnlu>

- We note that the adjustment for non-proportional reinsurance may lead to anomalous results, as increasing the standard deviation of claims severity will result, all else being equal, in a lower final risk factor. This is due to the fact that entity-specific adjustment factors are applied to market-average standard deviations.

- It appears that the specification of the Motor-CAT scenario was inadequate in QIS5.

</QS_scrnlu>

## 8.7 Simplifications and Proportionality

105. Please comment on the extent your industry made use of simplifications for the SCR calculation. Differentiate between simplifications provided by the technical specifications, by undertakings or by other sources.

➔ *QS.79, QS.80, QS.83*

<QP79>

20 undertakings completed the related Excel questionnaire. 6 undertakings indicated that they did not use any SCR simplifications. The following table shows

the results (number of undertakings using each simplification, and the average proportion of BSCR) of the remaining 14 undertakings:

| SCR simplification | No. of undertakings using simplification | Proportion of BSCR (average) |
|---|---|---|
| Credit Spread | 5 | 2,0% |
| Mortality | 4 | 4,2% |
| Longevity | 2 | 0,2% |
| Disability-Morbidity | 2 | 0,2% |
| Life expense | 7 | 12,1% |
| Life lapse | 5 | 27,3% |
| Health | 1 | 43,3% |
| Counterparty default | 12 | 6,6% |

The QIS5 standard formula simplifications were rated by undertakings on the average as almost "good" (all participants considered the simplifications of the standard formula were fair or good).

One undertaking commented on the application criteria of QIS5 simplifications. She expressed a view that justifying the use of a simplification in general according to the current specifications will be difficult to do without doing the "full" calculation, which is onerous. It is important to note that these justifications will by their very nature involve some implicit simplifications - otherwise everyone would just do the "full" calculation in the first place.

</QP79>

106. Did your industry consider any of the QIS5 simplifications in the standard formula to be insufficient or inadequate for the measurement of her risk position?. Please rank your answers starting with the most important criticism.

➔ *QS.81*

<QP81a>

None of the undertakings indicated insufficient or inadequate risk measurement regarding the standard formula simplifications.

</QP81a>

<QP81b>

</QP81b>

<QP81c>

</QP81c>

107. Please describe the additional simplifications to the standard formula proposed by your industry, ranking them by necessity and importance especially with respect to the proportionality principle.

➔ *QS.82*

<QP82a>

**Counterparty default risk module:** a number of undertakings found the calculations unnecessarily complex. The following simplifying suggestions were submitted:

- the formula from QIS3 should be allowed again,
- the variance term should be replaced by a (fixed) factor for each rating,
- instead of a reassessment of the best estimate resulting from each counterparty defaulting individually, a single calculation should be performed (including a diversification effect).

</QP82a>

<QP82b>

**Single equivalent scenario method:** It was suggested that this approach was unduly complex, therefore it should be dropped and replaced by the modular approach.

</QP82b>

<QP82c>

**Adjustment for the loss absorbing capacity of technical provisions (Adj_TP):** It was suggested that a deterministic proxy approaches should be accepted (as proposed in CP39).

</QP82c>

<QP82d>

**Market risk module:** It was suggested that, regarding the look-through approach of investment funds (mutual funds backing unit-linked products) line by lin, the use of benchmarking would be relevant.

</QP82d>

<QP82e>

**Spread risk:** It was noted that the formula required the calculation of duration of floating rate bonds. It was suggested to include an option of using a proxy to estimate the duration of floating rate bonds.

</QP82e>

<QP82f>

**Catastrophe risk:** It was suggested that an alternative approach should be based on national scenarios; the risk charge should be determined on taking into account the market share of the undertaking (market loss approach).

</QP82f>

<QP82g>

</QP82g>

<QP82h>

</QP82h>

<QP82i>

</QP82i>

<QP82j>

</QP82j>

108. Supervisory view on previous questions on SCR simplifications and proportionality

<QS_scrsimp>

</QS_scrsimp>

## 8.8 Additional comments

109. Room for additional comments on SCR.

Participants views

<QP_addscr>

- One undertaking commented that, in her view, the 80% factor for the intangible asset risk charge was too high.
- Another undertaking expressed a view that the concentration risk submodule for cash at bank and savings deposits resulted in an inproportionately high SCR since a BB or lower rated counterparty is heavily penalised compared to a counterparty having BBB rating, i.e. factor $g_i$ of 73% has to be applied compared to 27% in the latter case.

</QP_addscr>

Supervisor views

<QS_addscr>

- Regarding the issue of intangible asset risk we note that a large part of intangible assets are likely to disappear in a stressed financial condition. Therefore we would prefer to increase rather than decrease the risk factor for intangible asset risk.
- Regarding the issue of concentration risk, our view is that the undertaking concerned did not follow the specifications when she took into account her cash at bank exposure under concentration risk instead of the counterparty default risk module. If the undertaking had properly followed the specifications, the resulting capital charge would have been far less penalising.

</QS_addscr>

## 9. MCR

110. a) Please describe the mayor **preparedness issues** of your industry with respect to data availability or methodologies regarding the calculation of MCR, and its **difficulties** determining the MCR.

➔ *QS.1, QS.11 (see also QS.12)*

<QP_prep_mcr_ind>

No preparedness issues or difficulties were reported regarding the calculation of the MCR.

</QP_prep_mcr_ind>

b) Please comment on these issues from a supervisory perspective.

<QS_prep_mcr_sup>

No specific comments on this question.

</QS_prep_mcr_sup>

111. a) Please describe your industries most important points of discrepancy with the QIS5 MCR methodology.

➔ *QS.10 (see also QS.9, QS.12)*

<QP_discrepancy_mcr_ind>

Two undertakings expressed a view that the MCR calculation methodology is not sufficiently risk sensitive.

</QP_discrepancy_mcr_ind>

b) Please comment on these issues from a supervisory perspective.

<QS_discrepancy_mcr_sup>

The combined design of the MCR is a hybrid or compromise solution between different methodological preferences. Via the SCR corridor, it captures all risks reflected in the SCR. As the fundamental design of the MCR is settled in the Solvency 2 framework Directive, we do not find it necessary to repeat our critical views about the MCR methodology, which we had an opportunity to express in the QIS4 country report.

</QS_discrepancy_mcr_sup>

112. Room for additional comments on MCR.

Participants views

<QP_addmcr>

No additional comments.

</QP_addmcr>

Supervisor views

<QS_addmcr>

The specifications required composite undertakings to calculate notional MCRs for their life and non-life activities separately. On the other hand, the corresponding split of basic own funds between the life and non-life activities was missing in QIS5, which complicated the analysis of the results.

We compared the notional life and non-life MCR results of undertakings to current eligible basic own funds, which in our current supervisory reporting templates are reported separately for life and non-life. (We expect that Solvency 2 basic own funds are typically higher than current basic own funds figures.) The results indicated that all composite undertakings had sufficient eligible basic own funds to cover the notional MCR of each activity, without transferring basic own funds from one activity to the other. However, these results give no indication how the notional MCR scheme would work in the case of a composite undertaking in a stressed financial condition.

</QS_addmcr>

## 10. Own Funds

113. Please describe the mayor **preparedness issues** of your industry with respect to data availability or methodologies regarding the determination of own funds, and mayor difficulties when applying the QIS5 Own funds methodology.

➔ *QS.1, QS.11 (see also QS.12)*

<QP_prep_of>

Most undertakings responded that they had no problem with the methodologies regarding the determination of own funds. Those who participated in the previous QIS exercise have already acquired the necessary knowledge by now and/or through the EV calculations and analyses prepared to their parent undertakings.

One small undertaking responded that she found the concept of distribution of own funds between tiers still not clear and not easy to implement in practice.

Another undertaking reported that up till now its own fund structure has been rather simple, however in the future it might raise difficulties.

</QP_prep_of>

114. Please describe your industry most important points of discrepancy with the QIS5 Own Funds methodology, and mayor difficulties

➔ *QS.10 (see also QS.9, QS.12)*

<QP_discrepancy_of>

- Regarding **expected profits included in future premiums (EPIFP)**, undertakings expressed a strong view that EPIFP should remain Tier 1 capital. They reject relegating EPIFP to Tier 3 as a violation of the principle of market-consistency and as double-counting of risks with the SCR. A number of undertakings also pointed out potential technical difficulties with

the QIS5 approach of quantifying EPIFP, which in their view make the calculation complex, onerous and inaccurate.

- There were also comments that the tiering of own funds caused difficulties for some undertakings.

</QP_discrepancy_of>

### 10.1 Features of other paid in capital instruments

115. Please report on your industries feedback on write-down-mechanisms.

➔ QS.93

<QP93>

Most undertakings reported that they had no such own fund items. Only one undertaking indicated that it had a sale option, expiring in 2012. This was valued at the recoverable amount and no write-off was necessary.

</QP93>

116. Please report on your industries feedback on instruments with conversion features/options.

➔ QS.94

<QP94>

All undertakings except one reported that they did not have capital instruments with conversion features. One insurer reported that she had an option to sell a participation at a fixed amount.

</QP94>

117. Please report on your industries feedback on alternative coupon satisfaction mechanisms (ACSM).

➔ QS.95

<QP95>

Not applicable.

</QP95>

118. Supervisory view on previous questions on features of other paid in capital information

<QS_of_paidin>

These additional paid in capital instruments are usually linked to alternative capital items, such as hybrid debts issued by listed entities and usually serve for tax benefits. The overwhelming majority of Hungarian insurance undertakings only has Tier 1 capital, only one undertaking is listed on the stock exchange.

Capital conversion features are, however, present in the market. The usual structure is a loan issued by the undertaking, where the investor has the option to convert the amount of loan into capital at maturity.

</QS_of_paidin>

## 10.2 Restricted reserves

119. Please describe the nature of restricted reserves in your market. For each restricted reserve, indicate details on the legal environment that gives rise to the restriction, on the risks the reserve is not available to cover, and the average amount that reported by your industry as not included in Tier 1.

➔ QS.96, QS.97, QS.98, QS.99

<QS96>

One undertaking categorised its current "provisions for large losses" (an equalisation-type provision) as restricted reserves.

</QS96>

120. Supervisory view on previous questions on restricted reserves

<QS_of_rest>

We anticipate that current equalisation-type provisions will probably no longer be relevant after the implementation of Solvency 2.

</QS_of_rest>

## 10.3 Expected profits included in future premiums

121. Does the approach set out in OF.2.4 provide sufficient clarity as to the nature and scope of the calculation?

➔ *QS.100*

<QS100>

- Four undertakings commented that there was no indication on how to treat policies that have no paid-up value (e.g. term life contracts). They noted that for products which do not have paid-up values, or have various surrender penalties contingent on the timing of the surrender, the calculation of EPIFP could become very onerous as well as very approximate. The calculation of EPIFP requires a paid-up benefit specified even for contracts where no such benefit exists, and therefore it may lead to arbitrary decisions.

- One undertaking noted that the level of granularity used in calculating technical provisions varies depending on the materiality of the underlying products, and hence the model sophistication. Therefore a clarification would be needed whether the level of EPIFP calculations should be done at the same level as the calculation of technical provisions of the underlying product was performed; perhaps by taking the answers directly from the best estimate projection of future cash flows.

- Some undertakings questioned the clarity of concept of EPIFP itself and the motivation of its separate identification.

- One undertaking commented that capturing EPIFP presents a heavy burden as the calculation of life technical provisions have to be re-run on a policy-by-policy basis. That was also the reason why some undertakings omitted the calculation, or considered EPIFP so small that it was not worth calculating.

- One undertaking criticised the EPIFP methodology at length, pointing out the following:

  The methodology underlying EPIFP is not consistent with the way the business is managed. For this reason it is not always possible to capture the requested effect of paid-up, which is an option not always modelled in the existing platforms: (1) either because the products themselves do not provide for the paid-up option, or (2) because, due to the complexity of the precise modelling of the paid-up option, the existing platforms use some forms of alternative modelling, giving equivalent results to the precise modelling for all purposes except in the case of the requested EPIFP calculation. Furthermore, when the existing platforms are forced to work in the extreme case where no future premiums on in-force business are received, also other distortions take place (for instance due to the impact on the ALM policy of the unrealistic lack of future premiums) which would need ad-hoc adjustments and consideration, especially in term of revision of the management actions. Note that the latter management actions should be ad-hoc developed for an unrealistic case for which no reference can be made to historical experience or internal guidance (hence it would be difficult to prove that the assumed future management actions are realistic and consistent with the undertaking's current business practice and business strategy).

</QS100>

122. Has an appropriate balance been achieved to ensure that the calculation is sufficiently granular to obtain meaningful results without imposing an undue or unnecessary burden on undertakings?

➔ *QS.101*

<QS101>

All undertakings agreed that the methodology of EPIFP calculations was burdensome.

They noted that, on the one hand, their existing models are not prepared to carry out this calculation and this would require significant model changes. On the other hand, the methodology of calculation requires treating policies effectively as paid-up. Besides that, some option rates were overestimated because of the unrealistic assumption of the calculation.

One undertaking mentioned that as this concept is currently not allowed for the current systems, the calculation creates various implementation problems which may seriously impact the final results, creating a misalignment between the targeted value and the obtained results.

</QS101>

123. Are there any specific technical aspects for which additional clarification is needed, e.g. as between life and non-life business?

➔ *QS.102*

<QS102>

One undertaking noted that the specification needs additional clarifications on the treatment of those life contracts for which a paid-up option doesn't exist

contractually, taking into consideration both contracts with negative technical provisions and contracts with positive technical provision.

</QS102>

124. What are your industries views on the general appropriateness of the methodology? If methodology is considered to be appropriate, were any suggestions provided as to how the methodology can be developed further for practical application? If not, have alternative methods been proposed?

➔ *QS.103*

<QP103>

Undertakings expressed a strong view that EPIFP should remain Tier 1 capital. They reject relegating EPIFP to Tier 3 as a violation of the principle of market-consistency and as double-counting of risks with the SCR.

A number of undertakings also pointed out potential technical difficulties with the QIS5 approach of quantifying EPIFP, which in their view make the calculation complex, onerous and inaccurate.

</QP103>

125. Supervisory view on previous questions on expected profits in future premiums

<QS_of_epifp>

We find it difficult to avoid the conclusion that EPIFP may include an element of double-counting of risk. We also regard the quantification of EPIFP questionable and adding further unwelcome complexity to the solvency regime.

On the other hand, we note the link between EPIFP and the contract boundary question. We are concerned that the softening-up of the contract boundary definition has the potential to encourage a Ponzi dynamics where existing obligations are increasingly covered by uncertain future premiums. We note that the calibration of the SCR lapse risk submodules largely dates back to previous QIS exercises that have not been designed with the present scope for future premiums in mind. We believe that the QIS5 definition of the contract boundary would require counter-balancing requirements addressing the uncertainty of future premiums, optimally in the form of strengthened SCR lapse risk charges (e.g. higher mass lapse shocks and/or lapse shocks increasing with time, treating remote future premiums as progressively more uncertain). It should be ensured that the progressive uncertainty of future premiums is properly addressed not only in the standard formula, but in internal models as well.

If the uncertainty of future premiums cannot be addressed by strengthening lapse risk in the SCR, then unfortunately we will not be in a position to support the classification of the full amount of EPIFP as Tier 1.

</QS_of_epifp>

### 10.4 Ancillary own funds

126. What existing items does your industry currently count as own funds to meet the solvency margin that would, subject to supervisory approval, constitute ancillary own funds under Solvency II?

➔ *QS.104*

<QP104>

No ancillary own fund items were reported in QIS5. Under the current local regulation, only basic own fund items are recognized as available solvency capital.

</QP104>

127. What other items does your industry currently not count as own funds to meet the solvency margin? Please summarize on your industries intention to apply for supervisory approval in order to count those items as ancillary own funds under Solvency II?

➔ *QS.105*

<QP105>

These items include e.g. guarantees, letters of credit and, in case of mutual undertakings, supplementary members' calls. All but one undertakings responded that these items were "not relevant", as most undertakings currently do not have plans to apply for supervisory approval of ancillary own fund items.

</QP105>

128. To what extent does your industry envisage entering into new arrangements that would, subject to supervisory approval, constitute ancillary own funds?

➔ *QS.106*

<QP106>

All undertakings except one responded that they do not have plans to enter into such arrangements in the foreseeable future.

One small undertaking responded that, in order to improve her solvency position, she might apply for supervisory approval of guarantees provided by third party financial institutions as ancillary own funds.

</QP106>

129. Supervisory view on previous questions on ancillary own funds

<QS_of_anc>

The current situation is that the existing capital items of Hungarian undertakings qualify overwhelmingly as Tier 1 basic own funds. We consider that the most obvious ancillary own fund item that undertakings would apply for in exceptional cases would be the inclusion of guarantees provided by the parent companies, or legally binding commitments received from credit institutions. There is also a possibility that some mutual would apply for approval of supplementary members' calls.

We believe that a harmonised approach to supervisory approval should be achieved in order to prevent regulatory arbitrage between Member States' markets.

</QS_of_anc>

## 10.5 Transitional provisions

130. Please describe the instruments your market considers transitional provisions for **Tier 1** basic own funds applicable. Elaborate on the criteria not met by these instruments and the proportion scale and proportion of these instruments within your markets balance sheets.

➔ *QS.107, QS.108*

<QS107>

No responses were submitted.

</QS107>

131. Please describe the instruments your market considers transitional provisions for **Tier 2** basic own funds applicable. Elaborate on the criteria not met by these instruments and the proportion scale and proportion of these instruments within your markets balance sheets.

➔ *QS.109, QS.110*

<QS109>

No responses were submitted.

</QS109>

132. Supervisory view on previous questions on transitional provisions

<QS_of_trans>

Given that almost all existing own fund items qualify as Tier 1, grandfathering is not a relevant issue on the local market.

</QS_of_trans>

## 10.6 Additional comments

133. Room for additional comments on own funds.

➔ QS.57

Participants views

<QP_addof>

No additional comments on own funds.

</QP_addog>

Supervisor views

<QS_addof>

We have concerns about the possible introduction of alternative capital items, such as paid in capital instruments (write-down and alternative coupon satisfaction mechanisms). These are instruments typical of other jurisdictions, and we have no experience or sufficient knowledge about them.

</QS_addof>

# 11. Special topics

## 11.1 Undertaking specific parameters

134. Please describe your industries most important points of discrepancy with the QIS5 USP methodology.

➔ *QS.10 (see also QS.9, QS.12)*

<QP_discrepancy_usp>

- One small undertaking noted that when an undertaking wishes to calculate its SCR applying USP, it needs to recalculate the technical provisions of previous years according to Solvency 2, which is very difficult for a small undertaking. This undertaking suggested elaborating an interim solution for this problem, like e.g. calculating loss ratios of previous years using Solvency 1 technical provisions.

- On the other hand, a medium-sized undertaking indicated some concern that the use of USP might function as "internal modelling lite", that is, a way to reduce the SCR without the rigorous qualitative requirements of internal modelling. This undertaking also noted the difficulty of obtaining historic best estimates.

- Another undertaking noted that the determination of undertaking specific parameters solely by reference to past data does not necessarily give a true view of the future volatility of results.

</QP_discrepancy_usp>

Please describe your industries difficulties when applying the QIS5 USP methodology.

➔ *QS.11 (see also QS.12)*

<QP_stdifficulty_usp>

4 undertakings used USP in QIS5. Only one of these undertakings indicated a difficulty applying the methodology: net best estimate ultimate after one year were not available, therefore net local GAAP figures were used instead to determine USPs.

</QP_stdifficulty_usp>

135. Please list the standard formula parameters indicated by your industry that could be replaced by undertaking specific parameters.

➔ *QS.84*

<QP84>

The following modules were suggested for potential application of USP:

- operational risk,
- the non-life CAT factor method,
- some parameters of market risk, e.g. the property shock,
- biometric risks in the life underwriting risk module.

</QP84>

136. Please summarize the alternative methods for the determination of USP described by your industry.

➔ *QS.85*

<QP85>

- One undertaking suggested the introduction of the Mack Formula and of the method developed by Merz and Wüthrich.
- Another undertaking felt that the proposed methods were largely fit for purpose, however the calculations allowed little flexibility for changes in conditions to be applied. For example, recent management actions aiming to reduce claims volatility may not be observable in past claims experience.

</QP85>

137. More on USP:

➔ QS.86

a) Summarize methods.

<QP86a>

Only one undertaking provided information on the methods used to calculate USPs. For premium risk she used the coefficient of variation of ultimate loss ratios and for reserve risk she used the Merz-Wüthrich formula.

</QP86b>

b) Summarize data sources, including adjustments/assumptions.

<QP86b>

One undertaking commented that for premium risk, it is supposed to get the volatility of the ultimate loss ratio based on the information available after 1 year. In practice, this sample was not available with the right segmentation. In QIS5 this undertaking was not able to perform such a calculation. The only alternative was to work directly on ultimate loss ratios based on the current triangles, which do not exactly correspond to the 1-year volatility for premium risk.

</QP86b>

c) Description practical issues data collection.

<QP86c>

One undertaking indicated that they had mainly segmentation issues: business interruption is usually not disconnected from the underlying fire event (BI is supposed to go to Miscellaneous).

</QP86c>

d) Practical issues.

<QP86d>

One undertaking noted that the threshold between premium risk and CAT risk was not easy to define.

</QP86d>

138. Insurance and reinsurance undertakings shall adjust their data for inflation where the inflationary experience implicitly included in time series used is not representative of the inflation that might occur in the future, where this is considered to have a material impact.
Please summarize your industries explanation on approaches taken.

➔ *QS.87*

<QP87>

Undertakings responded that adjustment for inflation did not cause material problems. They considered the time series they used were acceptable, since inflation in the projection period is assumed to follow a path similar to past experience. Only one undertaking indicated that there may be issues with cost inflation.

</QP87>

139. Supervisory view on previous questions on undertaking specific parameters

<QS_usp>

For concerns of cherry-picking, we are opposed to extending the scope of USP to further standard formula modules. Furthermore we doubt that local undertakings had sufficient own data to calibrate USPs for some modules they suggested as possible further USP applications (e.g. CAT risk, property risk).

We are strongly opposed to softening-up data quality standards like e.g. allowing reference to Solvency 1 technical provisions when determining USPs. We note that USP are not a proportionality measure in Solvency 2. In case of material data adequacy problems, we would rather suggest an undertaking not to use USP, or to use a time series only as long as allowed by the availability of adequate data.

</QS_usp>

## 11.2 Risk mitigation techniques

140. Please comment on the nature and extent of your industries mitigation techniques (e.g. different types of reinsurance used, SPVs, risk mitigation instruments, rolling hedge programme etc).

➔ *QS.88, QS.89, QS.90, QS.91*

<QS88>

The main risk mitigating technique used by undertakings is reinsurance arrangements (mainly QS and XL, in some case stop loss arrangements). There are some examples for finite reinsurance arrangements. Two undertakings reported hedging arrangements for currency risk.

We could not evaluate the answers regarding the quantitative impact as the dimension of the figures was unclear.

</QS88>

141. Where in the case of credit derivatives the amount that the protection provider has undertaken to pay is higher than the exposure value then undertaking should provide further information on the nature of the risk mitigation technique. Please summarize.

➔ *QS.92*

<QS92>

Not applicable.

</QS92>

142. Supervisory view on previous questions on risk mitigation

<QS_riskmit>

No specific views on these questions.

</QS_riskmit>

### 11.3 Participations

143. Which criteria did your industry follow to consider a participation as strategic?

➔ QS.69

Industry view

<QP69>

According to undertakings' responses, mainly those participations were considered as strategic that were either fully consolidated subsidiaries or fully owned (directly or indirectly) by the undertaking on a long term.

One undertaking regarded participations as "strategic" for QIS 5 purposes when the following two conditions were met: (1) long-term relationship and (2) the purpose of developing the activity of the participating undertaking. Another undertaking expressed a similar interpretation, with the additional key criterion of (3) having an interest in the development of future cash flows.

Another undertaking defined long-term relationship as follows: a participation is considered to be strategic if it is used to serve the undertaking's business for a longer period (more than 5 years).

One undertaking attempted to follow the draft Level 2 text, but had trouble assessing the criteria that "the value of such equities is likely to be materially less volatile for the following 12 months than the value of other equities over the same period as a result of both the nature of such investments and the influence

exercised by the participating undertaking in the related undertaking". This undertaking does not believe that this assessment can be put in practice properly, therefore she would recommended to delete it. She considers that, especially in the case of a limited liability subsidiary, it would be inappropriate to consider the participation as an equity exposure.

</QP69>

Supervisory view

<QS69>

We understand that it is difficult to prove that participation is a strategic one: it is always a matter of decision and refers to a point in time (a restructuring of participations may have a result that the undertaking is no longer be willing to hold the participation for long term.) However, we share the opinion of the undertakings that a long term relationship and a majority share are necessary criteria. The intention of a strategic relationship can also be underpinned by playing an active role in the related entity (e.g. business development, equity contribution, etc.) or by proving a mutual long-term interest by e.g. cross-holding of participations in each other.

</QS69>

### 11.4 Ring Fenced Funds

144. What is the nature of the arrangement giving rise to ring fenced funds and the nature of the restrictions which apply?
➔ QS.70

Industry view

<QP70>

Not applicable.

</QP70>

Supervisory view

<QS70>

Ring-fenced funds are currently not relevant for the local market.

</QS70>

## 12. Internal models (solo) including partial internal models

Please be aware that answers are both in the Word and Excel file. The number of tables provided (IM.XX) refer to the upcoming quantitative tables to be extracted from the national databases.

### 12.1 Questions regarding quantitative results (QIS5 spreadsheet)

145. Please comment on the outcomes of the internal model (full and partial) results relative to standard SCR calculations and to insurance undertakings' own structure of internal models (full and partial). Please provide which modules, sub-modules are mainly covered by the partial internal models.

Please refer to the IM.Internal Model Results and IM "blank" sheet results in the QIS5 spreadsheet to analyse the structure of internal models (full and partial) and other risks not covered by the standard formula. (Reference to Tables IM.1 to IM.5, IM.10 to IM.12)

<QS_outcomes_IM>

Internal models being developed on the local market are mostly local implementations of group internal models. At least 6 undertakings are known to have plans to use an internal model to determine their SCR. Although all of these undertakings participated in QIS5, only 3 of them submitted internal model SCR results. Two of the submissions were full internal model results, while the third one was a partial result covering Nat-CAT risk.

The average ratio of full internal model results to the SCR standard formula was 46%, while the partial model covering a single submodule resulted in a marginal increase of the overall SCR of the undertaking.

The risk measure was mostly 99.5% Value-at-Risk on a one-year time horizon, one undertaking used quarterly time horizon for market risk, and one undertaking reported the use of TailVaR for some risks e.g. mortality-CAT. All risks covered by the standard formula were covered by internal models, except possibly intangible asset risk on which we do not have full information.

Internal model modules which are absent from the standard formula include: interest rate volatility, equity volatility, credit migration, mortality trend, mortality volatility, persistency, persistency uncertainty, future premium re-rating.

</QS_outcomes_IM>

146. Please describe the differences between risk margin results calculated with internal model and standard formula. (Reference to Table IM.15)

<QS_RMIM>

Not applicable.

</QS_RMIM>

147. Please provide a statistical comparison (median, 75th and 25th percentiles, including sample size) of the reported standard formula and internal model parameters. Please carefully indicate the parameter in question and group the information according to the standard SCR risk classification. Please refer to the IM.Internal Model Parameters sheet to see parameters used in the internal model. (Reference to Table IM.14)

<QS_parameters>

Not applicable.

</QS_parameters>

148. Concerning insurance undertakings using correlation matrix please indicate the correlation parameters which insurance undertakings use for the other risks not covered by the standard formula or the standard formula correlation parameters if insurance undertakings think that they are incorrect. Please refer to the IM.Internal Model Parameters sheet to see parameters used in the correlation matrixes. .Please analyse to what extend

the undertakings base on the standard formula integration methods. (Reference to the table IM.13 and IM.Internal Model Results sheet)

<QS_correlation>

Those undertakings who used correlation matrices for aggregation reported to have used the standard formula correlation parameters. One undertaking used a different aggregation technique.

</QS_correlation>

## 12.2 Questions concerning insurance undertakings which plan to build, are currently building or already use internal models in order to get an approval to calculate SII SCR or only for internal risk management

149. Concerning a solo company which is part of a group but its solo internal model is not based/part of the internal model used for the calculation of the group SCR, please provide a brief rationale for building a separate internal model. (Question QIM2)

<QP_QIM2>

There was no such case.

</QP_QIM2>

150. Please provide the number of undertakings which are an "author" of the model and the number of undertakings which main part of the model is created by an undertaking from the higher level of the group (Question QIM3). Please notice that this question allows also to distinguish between the answers given by both kinds of undertakings in the further analysis. If you identify a difference in the both sets of answers please indicate it in the relevant questions. These questions also help not to double count one model in the analysis.

<QS_QIM3>

Undertakings did not respond to this question. To our best knowledge, internal models being developed on our local market are mostly local implementations of group internal models.

</QS_QIM3>

151. Please provide the number of insurance undertakings which already using internal models for some individual aspects of their business and number of insurance undertakings which currently developing internal models. (Questions QIM4 and QIM5, Reference to Table IM.7)

<QS_QIM4>

Only two undertakings answered this question, however, according to our knowledge, 6 undertakings are developing internal models as part of a group-level project. Some of these undertakings already use internal models for group internal reports.

</QS_QIM4>

152. Please describe how advanced are undertakings in implementation of their internal model for SII purposes and submitting the application. (Question QIM6 (a, b ,c))

<QS_QIM6>

Those undertakings who answered this question intend to use their internal models for Solvency 2 purposes. One undertaking specified that she is planning to formally apply for internal model approval at the earliest possible date, i.e. the entry into force of Solvency 2. Another undertaking is planning to apply for internal model approval by March 2012. [We note that the latter plan may not be feasible as March 2012 will possibly predate the implementation of Solvency 2 in our jurisdiction.]

</QS_QIM6>

153. Please provide the main reasons why internal models' risk profile deviates from the assumptions underlying the standard formula. Please identify also risk modules that might lead to inappropriate capital requirements if the standard formula is adopted. (Question QIM6 (d, e))

<QS_QIM6bis>

Undertakings submitted the following reasons why an internal model risk profile deviates from standard formula assumptions:

- Volatility is a significant risk driver. The internal model includes separate capital charges for volatility risk (for interest rates and equity). These risks are not reflected in the standard formula, which may lead to an underestimation of risk.
- Internal model aggregation approach is more granular than the SCR standard formula aggregation and allows for a calibration which is specific to the company's risk profile.
- The group internal model is calibrated with reference to the group specificities and peculiarities, instead of market average positions, therefore capturing group conservative investment strategy and focus on retail business as market strategy.

Undertakings mentioned the following cases where the standard formula might lead to inappropriate capital requirements:

- structured assets where the standard model is possibly over-calibrated (shock is based on S&P tables that go beyond 99.5% default probability),
- the long-term interest rate charge does not take into account that risk decreases in the extrapolated part of the curve,
- the standard formula submodules for man-made and natural catastrophes are inconsistent with an undertaking's views of the underlying risks,
- other risk modules where the calibration may not be appropriate: property risk, spread risk, counterparty risk, non-life underwriting risk.

</QS_QIM6bis>

154. Please describe the reasons which can increase the number of applications. (Question QIM7)

<QS_QIM7>

Undertakings did not respond to this question.

</QS_QIM7>

## 12.3 Questions concerning insurance or reinsurance undertakings which are currently building or already using an internal model for assessing economic capital and for which they plan to apply for approval to use to calculate the SCR under Solvency II

*(Please provide two sets of answers for undertakings which belong to group and will use the group model to calculate the solo SCR. Please, see the second point of the Guidance how to fill in the questionnaire).*

155. Please describe the scope of internal models and main differences from the standard formula structure. Please refer to the IM.Internal Model Results and IM "blank" sheet results in the QIS5 spreadsheet to analyse the structure of internal models and other risks not covered by the standard formula. (Questions QIM8, QIM9, and to Tables 8, 9)

<QP_QIM8_set1>

All risks covered by the standard formula were covered by internal models, except possibly intangible asset risk on which we do not have full information.

Internal model modules which are absent from the standard formula include: interest rate volatility, equity volatility, credit migration, mortality trend, mortality volatility, persistency, persistency uncertainty, future premium re-rating.

In one undertaking's case the modelling of mortality risk is more granular than in the standard formula, distinguishing between trend uncertainty, level uncertainty, volatility and calamity. Level, trend and volatility are combined into life non-CAT and calamity is separated. Concentration risk is not separately modelled, but is part of the credit risk model. This model also includes an FX translation risk component for the risk of non-euro surplus holdings losing value (in case of an EURO reporting undertaking).

</QP_QIM8_set1>

<QP_QIM8_set2>

</QP_QIM8_set2>

Supervisory view

<QS_QIM8>

None.

</QS_QIM8>

### External models and data

156. Concerning insurance undertakings using external models please provide main features of these models, areas where they are used, limitations and adjustments of them. (Questions QIM11, QIS12, QIM13)

<QP_QIM11_set1>

One of the responses mentioned that the group internal model is being developed with the assistance of consultants, but the model itself is considered an own product.

The following uses of external software and database tools were reported:

- some undertakings use models for which the basis software is provided by third parties and is configured internally (Like Igloo, Prophet, Moses and VIPitech),
- use of market data from GMDB for stochastic scenario generators,
- use of SAS for the calculation of operational risk; key model data inputs are Algorithmics operational loss data and a number of external size drivers,
- use of commercial Nat-CAT models such as Eqecat or broker models.

One undertaking reported that the output of external Nat-CAT models is investigated and recalibrated in order to arrive at a best practice model.

</QP_QIM11_set1>

<QP_QIM11_set2>

</QP_QIM11_set2>

Supervisory view

<QS_QIM11>

None.

</QS_QIM11>

**Internal model changes**

157. Please describe the processes and criteria used by insurance undertakings to distinguish major and minor changes in preparing internal model change policy and the scope of potential regular major changes. (Questions QIM14, QIM15)

<QP_QIM14_set1>

One undertaking responded that, in her case, the two main reasons for changing the model are (1) alignment with the industry evolution on modelling of specific risks and (2) improving operational risk monitoring to develop the measurement of that type of risk. There was no input about the treatment of minor versus major changes.

Another undertaking responded that natural catastrophe models are managed according to the group's Model Management Framework. Models are recalibrated on annual basis and approved by local risk bodies on an annual basis. Validations are performed by the independent validation unit on a regular basis.

</QP_QIM14_set1>

<QP_QIM14_set2>

</QP_QIM14_set2>

Supervisory view

<QS_QIM14>

The feedback from QIS5 do not allow any profound conclusions at this time.

</QS_QIM14>

**Use test**

158. Please describe to which extent internal models are used in the system of governance, risk management and decision making. (Questions QIM17, QIM21)

<QP_QIM17_set1>

The following main areas of internal model use were reported:

- Risk Governance: the internal model provides a common group-wide risk assessment platform to support a value oriented risk governance system.
- Group strategic management: group financial planning and capital management processes consider also return on economic capital metrics as well as the evolution of the overall economic solvency; merger & acquisition opportunities are evaluated by risk based approach regarding impact on solvency, financial returns and RoEC; the link of internal model with management incentivation and reward is planned.
- Group operational management: risk taking limits are set with reference to risk tolerance and earnings volatility; strategic asset allocation decision making process is supported by risk vs. return profile; a risk based approach to insurance product pricing is currently under development for both life and non-life business.
- Optimisation of non-life reinsurance structure and limits are supported by internal models.
- Other areas of use: it provides support for IFRS impairment test on goodwill and is a platform for the implementation of future Solvency 2 and IFRS 4 (insurance contracts) Phase II reporting requirements. It also provides an internal assessment of solvency and risk capital supporting the rating agencies view of capital adequacy and overall risk management.

</QP_QIM17_set1>

<QP_QIM17_set2>

</QP_QIM17_set2>

Supervisory view

<QS_QIM17>

In the answers mostly group-level objectives were emphasised. We have little experience yet how these models are used in the real practice. We are planning to asses these questions via on-site inspections (pre-application process) during the following years.

</QS_QIM17>

159. Please describe to what extend and how undertakings are going to ensure that the use test is satisfied according to various requirements (pressure to improve the model, implementation of the results to business strategy with the identification of gaps, reporting to the administrative, management or supervisory body and understanding of the model and its limitation among them). (Questions QIM16, QIM 18, QIM 20)

<QP_QIM16_set1>

According to undertakings' responses the main fields of using the internal model results are: Asset Liability Committee, Insurance Model Committee and Management.

Achievement of full compliance with articles 120-125 is guaranteed by the different work streams. Areas of improvement have been structured according to Framework Directive requirements, considering the results of the gap analysis.

One undertaking reported as a gap the lack of properly formalized process documentation. As already planned, process documentation is being developed in compliance with Solvency 2 requirements.

Undertakings seek to improve the knowledge of the administrative, management or supervisory body by presenting results at face-to-face meetings, which offer possibilities to discuss different questions. Parent groups organize various workshops and regular meetings between corporate centres and business units in order to improve internal model and Solvency 2 knowledge.

</QP_QIM16_set1>

<QP_QIM16_set2>

</QP_QIM16_set2>

Supervisory view

<QS_QIM16>

Our general impression is that the use test and documentation of internal models still need significant improvement. Training programmes are also at the beginning stage.

</QS_QIM16>

160. Please describe the features of the re-running process (triggers, necessary time period to re-run the internal model). (Question QIM22)

<QP_QIM22_set1>

Possible triggers of re-running include: negative outcome of stress testing (need for update of input data), significant intra-group merger & acquisition operations, change of reinsurance programme, important Non-Life CAT events, financial markets collapse, etc.

The necessary time period of re-run is several weeks (1 to 2 months) in case of a full or almost full internal model, depending on the nature and scale of the update. In the case of a partial internal model covering a single submodule, a re-run can be performed in a matter of hours.

</QP_QIM22_set1>

<QP_QIM22_set2>

</QP_QIM22_set2>

Supervisory view

<QS_QIM22>

None.

</QS_QIM22>

**Statistical quality**

161. Please describe the main characteristics of the probability distribution forecast (PDF), methods used to calculate PDF. For undertakings which base PDFs on only key points please describe the reasons and how its appropriateness can be nevertheless provided. (Question QIM23)

<QP_QIM23_set1>

One undertaking reported that its probability distribution forecast (PDF) is the distribution of the net asset value (NAV) derived through Monte Carlo simulation (20.000 scenarios). In this undertaking's case, the PDF is not only based on key points of the distribution.

Another undertaking reported that statistical quality standards are currently under definition for every risk module and for every area (data, probability distribution forecast, assumptions, etc.). This undertaking foresees that the appropriateness of the PDF will be tested.

Another undertaking reported that the PDF output for its partial model covering natural catastrophes is the full distribution.

</QP_QIM23_set1>

<QP_QIM23_set2>

</QP_QIM23_set2>

Supervisory view

<QS_QIM23>

None.

</QS_QIM23>

162. Please describe the issues faced by undertaking with regard to inconsistencies of PDF and technical provisions and valuation of assets and liabilities with possible solutions. (Questions QIM24)

<QP_QIM24_set1>

One undertaking responded that the calculation methods of the PDF, technical provisions and the valuation of assets and liabilities are consistent.

Another undertaking responded that the calculation of technical provisions is more accurate for balance sheet purposes. For deriving the effect of shocks, an approximation (replicating portfolio) is taken which for most of the technical provisions is very accurate.

</QP_QIM24_set1>

<QP_QIM24_set2>

</QP_QIM24_set2>

Supervisory view

<QS_QIM24>

None.

</QS_QIM24>

### Ability to rank the risks

163. Concerning those undertakings that consider that their internal model does not have the ability to rank risk sufficiently for risk management purposes, please briefly describe the shortcomings referring to the criteria that they have applied to risk ranking. (Question QIM25)

<QP_QIM25_set1>

Undertakings were confident that their internal models had the ability to rank risk sufficiently for risk management purposes.

</QP_QIM25_set1>

<QP_QIM25_set2>

</QP_QIM25_set2>

Supervisory view

<QS_QIM25>

None.

</QS_QIM25>

### Accuracy, completeness and appropriateness of the data

164. Please provide description of the processes of assessing data quality by the insurance undertakings. (Questions QIM26, QIM27)

<QP_QIM26_set1>

One undertaking responded that market data are taken from a publicly available source and are considered sufficiently accurate, complete and appropriate. Another undertaking reported that data are currently analyzed mainly with reconciliations and sample techniques. For a wider assessment/improvement however, in the group master plan a specific key sub-stream related to data quality and controls is scheduled.

Another undertaking responded that data integrity is checked thoroughly as part of the parent group's model risk assessment framework.

</QP_QIM26_set1>

<QP_QIM26_set2>

</QP_QIM26_set2>

Supervisory view

<QS_QIM26>

None.

</QS_QIM26>

165. Please provide the main characteristics of the sources of input data. (Question QIM28)

<QP_QIM28_set1>

One undertaking reported the following main sources of input data:

- historical financial data series;

- current financial market structures, volatilities, relevant parameters;
- internal portfolio data referring to company's own business both life and non-life.
- more detailed examples for input data for market risk:
    - risk driver indices for equity risk, interest rate risk and currency risk,
    - swap curves and exchange rates that are weekly sampled with a sampling period of a rolling 5 year (the sampling period to be extended),
    - property values and credit spreads as drivers for property risk and credit spread risk,
    - for interest rate volatility risk, swaption implied volatilities are used if available and historic volatility if not available,
    - for equity volatility risk, at-the-money options implied volatilities.

Another undertaking identified the following sources of data: Indices, swap curves, exchange rates and implied volatilities are publicly available. Property values are external but not publicly available and spreads are entity specific.

Another undertaking reported that natural catastrophe risks are modeled on the basis of sum insured information, combined with zip codes or other regional identifiers. Claims data are used to benchmark results obtained from the models.

</QP_QIM28_set1>

<QP_QIM28_set2>

</QP_QIM28_set2>

Supervisory view

<QS_QIM28>

None.

</QS_QIM28>

**Expert judgement**

166. In which areas expert judgment is used. Please provide the main gaps of justification for using expert judgement or examples of such justification. (Question QIM29)

<QP_QIM29_set1>

The following areas were mentioned where expert judgement is used: the assessment of non-market risks like life underwriting risk, operational risk and business risk; best practice choices between catastrophe models; risk aggregation.

Undertakings reported that not all expert judgment is documented or challenged. One undertaking noted that expert judgment requires ad-hoc analyses to be

performed in all the areas where it is adopted; expert judgment is already planned to be appropriately and formally justified.

</QP_QIM29_set1>

<QP_QIM29_set2>

</QP_QIM29_set2>

Supervisory view

<QS_QIM29>

None.

</QS_QIM29>

167. Please describe the dependency structure, aggregation mechanism and modelling of diversification benefit used by the insurance undertakings especially in the case of PDF with only key points. Please indicate which methods of aggregation are used by the insurance undertaking in their internal models. (Question QIM30, reference to Table 13)

<QP_QIM30_set1>

In those two undertakings' cases who submitted a full or almost full internal model result, the dependency structure is based on the Variance-Covariance (VCV) method similar to the standard formula.

In one case the aggregation is performed already at a lower level (aggregating risks instead of capital charges). In the other case, a non-linearity adjustment factor is applied to the VCV method. One undertaking expressed an opinion that the standard formula approach is more intuitive, as it is a simplified and relatively conservative representation of the reality. In her view the mathematical basis for the internal model dependency structure is more rigorous.

A third undertaking whose internal model covered only the Nat-CAT submodule reported that the dependency structure followed the specifications of commercial CAT models; such models follow an event-by-event modeling methodology (the impact of a certain event is modeled on all relevant portfolios simultaneously).

</QP_QIM30_set1>

<QP_QIM30_set2>

</QP_QIM30_set2>

Supervisory view

<QS_QIM30>

None.

</QS_QIM30>

168. Please describe the risk mitigation techniques used by the insurance undertakings. (Question QIM 31)

<QP_QIM31_set1>

- Underwriting risk mitigation: The main risk mitigation techniques are the reinsurance programmes.

- Market risk mitigation: For Variable Annuity business, there are examples of hedge programs based on a delta hedging strategy where positions are updated on a daily or weekly basis. The main risk mitigation instruments used are equity futures, interest rate swaps and FX forwards. Other instruments used are equity options (mitigating second-order effects and volatility exposures) and total return swaps (mitigating basis or spread risk).

- Moreover, the internal models do take into account the loss absorbing capacity of liabilities, management actions, as well as asset and liability hedging strategies. Also tax issues are properly taken into account.

</QP_QIM31_set1>

<QP_QIM31_set2>

</QP_QIM31_set2>

Supervisory view

<QS_QIM31>

None.

</QS_QIM31>

**Future management action**

169. What kind of future management actions are taken by the undertakings in their internal models and processes in cases when they are impossible to apply. (Questions QIM32, QIM33)

<QP_QIM32_set1>

Undertakings responded that the implemented management actions they take into account reflect the actions that the management would reasonably expect to be able to take and carry out in the circumstances being considered. In particular, some of the most sensitive management actions an internal model takes into account are the following:

- Allowing the realization of a certain target investment return, set with reference to a pool of targets: liability driven, asset driven and target driven-target.

- Allowing the maintenance of a certain asset mix throughout the projection.

- Ensuring consistency between assets and liabilities for each year of projection.

- Allowing for future discretionary benefits/bonuses where subject to legal/contractual rules.

</QP_QIM32_set1>

<QP_QIM32_set2>

</QP_QIM32_set2>

Supervisory view

<QS_QIM32>

None.

</QS_QIM32>

**Replicating portfolio and other techniques**

170. Please describe approximations used by the insurance undertakings (scope of application, in which cases more accurate techniques are nevertheless applied, calibration, time saving issue, assessment of their quality). (Question QIM34)

<QP_QIM34_set1>

One undertaking reported the use of the replicating portfolio technique for all market risks, for shocking the complete market value balance sheet. The undertaking reported that the complex and accurate technique is used for valuing the technical provisions and for comparison reasons. This is done for some liabilities when replication is less accurate to develop a better replication. The curve fitting is calibrated to the accurate technique.

With approximation techniques there is circa 1 to 2 months calculation time reduction.

The undertaking has a written policy on replicating portfolios. The risk profile of the replicating portfolio is compared to the original portfolio. This is done on solo entity level.

</QP_QIM34_set1>

<QP_QIM34_set2>

</QP_QIM34_set2>

Supervisory view

<QS_QIM34>

None.

</QS_QIM34>

171. Please describe the main features of the replicating portfolio techniques used by the insurance undertakings (scope of application, frequency of determination and the problems face by undertakings, assessment of their quality). (Question QIM34)

<QP_QIM34b_set1>

One undertaking reported the use of the replicating portfolio technique. The technique is used for shocking the balance sheet to calculate capital charges for market risks as well as for aggregation and diversification.

</QP_QIM34b_set1>

<QP_QIM34b_set2>

</QP_QIM34b_set2>

Supervisory view

<QS_QIM34b>

None.

</QS_QIM34b>

## Calibration

172. What kind of risk measure / time horizon / confidence level do undertakings use in their internal model for economic capital calculations. Please specify also what attachment point use insurance undertakings in order to derive economic capital from the probability distribution forecast? If the risk measure is different from the standard formula risk measure, please explain the reason and how would insurance undertakings perform the recalibration? Please refer to the tables in the QIS5 main spreadsheet regarding internal models to analyse what kind of risk measure / time horizon / confidence level undertakings use in their internal models for economic capital. (Questions QIM36, QIM37)

<QP_QIM36_set1>

The risk measure was mostly 99.5% Value-at-Risk on a one-year time horizon; one undertaking used quarterly time horizon for market risk.

</QP_QIM36_set1>

<QP_QIM36_set2>

</QP_QIM36_set2>

Supervisory view

<QS_QIM36>

None.

</QS_QIM36>

173. Please summarise whether undertakings use different risk measures, confidence levels or time horizons for different modules or risk drivers. And if yes briefly describe the justifications of the undertakings and how results coming from different calibrations are aggregated. (Questions QIM38, QIM39)

<QP_QIM38_set1>

One undertaking reported that the model is based on Value-at-Risk, but some shock-based risk types e.g. mortality CAT risk are based on TailVaR. Non-market risks are transformed by a curve fitting technique into a distribution of the net asset value (NAV) changes. Afterwards, correlation with market risk takes place through the variance-covariance matrix.

</QP_QIM38_set1>

<QP_QIM38_set2>

</QP_QIM38_set2>

Supervisory view

<QS_QIM38>

None.

</QS_QIM38>

## Profit and loss attribution

174. Concerning insurance undertakings having a process demonstrating how the categorisation of risk explains the causes and sources of profits and losses

(P&L), please briefly describe the processes and any other links of P&L to the internal models. (Questions QIM40, QIM42)

<QP_QIM40_set1>

Not all undertakings concerned have in place processes demonstrating the appropriateness of the categorization of risks. Undertakings did not provide a description of the process itself. Some undertakings admitted explicitly that they do not use profit and loss attribution results in their planning process.

</QP_QIM40_set1>

<QP_QIM40_set2>

</QP_QIM40_set2>

Supervisory view

<QS_QIM40>

None.

</QS_QIM40>

**Validation**

**Validation policy**

175. Please provide information how many insurance undertakings have validation policy. (Question QIM43)

<QP_QIM43_set1>

Only one undertaking reported that she had a validation policy.

</QP_QIM43_set1>

<QP_QIM43_set2>

</QP_QIM43_set2>

Supervisory view

<QS_QIM43>

None.

</QS_QIM43>

176. Please describe the areas of validation, gaps identified by undertakings or justification of the sufficient degree of validation and the process of validation itself. What kind of triggers are identified which incorporate validation results. (Questions QIM44, QIM46)

<QP_QIM44_set1>

Undertakings reported that almost all elements of the model are validated to a large degree, expect from expert judgement and system IT, which are validated mostly at a medium degree. Group models and material risk and liability models at business unit level are in scope for validations. The validation policy describes tools for validating assumptions, outcome analysis, model performance, data, system translation review, documentation etc.

One undertaking indicated that for natural catastrophe risk an important weak spot is that the Event Loss Tables (ELTs) computed by vendor CAT tools (EQECAT, RMS, etc.) are black boxes for the undertaking. As the vendors of such tools do not divulge most of what lies under the hood of their models, It is

impossible to fully validate such ELTs. The valuators can only make an appreciation of the efforts of Insurance Risk Management to scrutinize these ELTs via back testing, stress testing, and comparisons of outcomes of different vendor CAT models.

</QP_QIM44_set1>

<QP_QIM44_set2>

</QP_QIM44_set2>

Supervisory view

<QS_QIM44>

None.

</QS_QIM44>

**Independence of validation**

177. Concerning insurance undertakings which have set up totally or partly an internal model validation department/unit, please describe to which extend this validation department/unit is independent and separated from other tasks connected with the model or how can the independency be ensured. How many undertakings have external/internal validation? (Questions QIM47, QIM48, QIM49, QIM50)

<QP_QIM47_set1>

Some undertakings established a separate unit for internal model validation. Some undertakings indicated that they might also consider external review to validate the internal model.

Undertakings reported an effective separation of duties: the people in charge of the validation process execute the validation activities, and are not involved in the design or development of the internal model.

</QP_QIM47_set1>

<QP_QIM47_set2>

</QP_QIM47_set2>

Supervisory view

<QS_QIM47>

None.

</QS_QIM47>

178. Please provide information about validation tools used by the insurance undertakings. (Question QIM51)

<QP_QIM51_set1>

One undertaking reported that the validation tools are to be described in the validation policy currently under finalization.

Another undertaking reported models are subject to a yearly validation cycle. The following elements of the validation process are in place:

- Performance analysis: Data and outcome analysis - review of the statistical performance of the model across time and backtesting; P&L attribution; change analysis; sensitivity and stability analysis.

- Conceptual soundness: logic and transparency of the model design; correctness of the statistical and financial theory underpinning the model; whether all material risks are captured in an appropriate way; plausibility of the assumptions and calibration methods.

- Developmental evidence: quality and relevance of the data; thoroughness and transparency of the model development process; quality and completeness of the model documentation; translation review of the implementation in systems. Models are subject to yearly validation cycle.

Another undertaking reported that the validation unit constructs its own 'challenger codes' that aim at reproducing the full internal model results. Adequacy of data and processes related to the models is validated using sample-based checks. Stress tests are also used to validate Nat-CAT models.

</QP_QIM51_set1>

<QP_QIM51_set2>

</QP_QIM51_set2>

Supervisory view

<QS_QIM51>

None.

</QS_QIM51>

179. Please provide detailed information about the stress tests and reverse stress test conducting by the insurance undertakings (design and calibration). (Questions QIM52, QIM53)

<QP_QIM52_set1>

An undertaking using a partial Nat-CAT model reported that the validation unit does not set up its own stress tests for challenging the natural catastrophe model; such stress testing is done by the Insurance Risk Management teams. Validation will only assess the adequacy of the said stress tests.

</QP_QIM52_set1>

<QP_QIM52_set2>

</QP_QIM52_set2>

Supervisory view

<QS_QIM52>

None.

</QS_QIM52>

180. What kind of shortcomings/weaknesses of the internal models were identified by the undertakings. (Question QIM54)

<QP_QIM54_set1>

The following potential model weaknesses were indicated by undertakings:

- Aggregation: Gaussian copula can underestimate tail dependency; more analysis needed for the aggregation of the risk capital charges, especially the analysis of non-linearity and non-additivity of risk capital charges;
- Market risk factor shocks are log-normal while more realistic heavier tailed distributions could be preferred;
- Interest rate module: the currently used one-factor Hull-White model generates negative interest rates and nearly parallel interest rate movements. Better (two factor) model could improve replication; more analysis needed for the interest rate movements.
- Number of scenarios: current number of scenarios may be insufficient and can be increased to properly replicate portfolio and reduce distortions; substantiation of expert based correlations.

The following potential group-wide weaknesses were identified:

- Need for IT systems convergence throughout the group for fully consistent data-flows
- Need for group-wide harmonized validation policy and increased documentation of the validation process.
- Need for enhanced understanding/use of the internal model as a business tool by business units' senior management;
- Need for enhanced timeliness and wide spread availability of internal model results; need for increased granularity of internal model results.

</QP_QIM54_set1>

<QP_QIM54_set2>

</QP_QIM54_set2>

Supervisory view

<QS_QIM54>

None.

</QS_QIM54>

**Documentation**

181. Please describe what documents exist for internal models and to what extent documentation fulfils the requirements. Please provide also some, the most interesting, insurance undertakings' comments to this questions. (Questions QIM55, QIM56)

<QP_QIM55_set1>

Undertakings' existing internal model documentation does not yet meet Solvency 2 approval standards.

According to undertakings' responses, existing documentation includes the following documents:

- Solvency 2 balance sheet
- Group aggregation methodology
- Life EV methodology
- Documentation by risk module (methodology)

</QP_QIM55_set1>

<QP_QIM55_set2>

</QP_QIM55_set2>

Supervisory view

<QS_QIM55>

None.

</QS_QIM55>

## 12.4 Questions for insurance undertakings using partial internal model

182. Please, provide a detail description of the quantitative impact of the QIS5 results (SCR, economic capital) based on partial internal model calculations in comparison with the standard formula results. Please refer to the IM.Internal Model Results and IM "blank" sheet results in the QIS5 spreadsheet to analyse the results of each modules/submodules covered by the partial internal models. (Reference to Tables IM.3 to 4, IM.10 to IM.12)

Participant view

<QP_PIM>

One undertaking submitted a partial internal model result covering only the non-life Nat-CAT submodule. The comparison with the standard formula result in this case depends on which standard formula method is used (scenarios or factor method), yet the explanation submitted by the undertaking indicated that the internal model result was comparable to an intelligent (not word-by-word) application of the standardised scenario method.

</QP_PIM>

Supervisory view

<QS_PIM>

</QS_PIM>

183. Please describe the scope of the partial internal models and compare this with the justifications of them. What kind of criteria is used to specify major business units? Please refer to the QIS5 main spreadsheet regarding internal models to analyse the structure and scope of partial internal models. (Question QIM10, reference also to Tables IM.8, IM.9)

Participant view

<QP_QIM10>

- One undertaking indicated that she will possibly apply for approval of a partial internal model as operational risk, at least initially, will be

calculated by the standard formula. The development of an appropriate methodological framework for operational risk monitoring has been planned, including a pilot project for quantitative internal evaluation. In the QIS5 exercise this undertaking submitted an internal model result for operational risk also, however this was the outcome of a simple factor-based calculation which in the undertaking's view does not yet qualify as a mature internal model.

- Another undertaking reported that her partial internal model currently covers only natural catastrophes, where the deviation of the group risk profile from the standard formula methodology is deemed to be the most significant. The undertaking's parent group indicated plans for the gradual roll-out of internal modelling to other risk modules (stochastic ALM, non-life underwriting risk) based on criteria such as materiality and appropriateness of the standard formula.

</QP_QIM10>

Supervisory view

<QS_QIM10>

</QS_QIM10>

184. Please provide a detail description of how insurance undertakings integrate the partial internal model with the standard formula also regarding risks which are not covered in the standard formula. Please provide information what methods of aggregation insurance undertakings use in their partial internal models, to what extend they use standard formula integration methods. (Question QIM57, reference to Table IM.13)

Participant view

<QP_QIM57>

There were no complex integration challenges: In the case of the undertaking with a partial Nat-CAT model, the internally-modelled Nat-CAT submodule simply replaced the standard formula submodule, otherwise the standard formula aggregation structure was unchanged.

</QP_QIM57>

Supervisory view

<QS_QIM57>

</QS_QIM57>

## 12.5 Questions for solo insurance undertakings using an internal model used for the calculation of the group SCR

185. How different intra-group transactions are treated in the solo internal models from a quantitative point of view. (Question QIM58)

Participant view

<QP_QIM58>

One undertaking responded to this question. In her case external reinsurance is immaterial. Internal reinsurance is treated by estimations as the solo entity has not built a full cash flow projection model in this respect.

</QP_QIM58>

Supervisory view

<QS_QIM58>

</QS_QIM58>

186. Please provide detailed information about features (methodology, assumptions, risks, risk factors, calibration, use test etc.) of the internal model used for the calculation of the group SCR for which the internal model used for the solo SCR calculation deviates from the calculation of the model used for the group SCR. Are there cases where related undertaking would prefer to use the standard formula and why? (Questions from QIM 59 to QIM 62, QIM 64, QIM 65)

Participant view

<QP_QIM59>

Undertakings reported no such deviations from the group internal model.

</QP_QIM59>

Supervisory view

<QS_QIM59>

</QS_QIM59>

187. To what extend the related undertakings participate in the group internal model creation process and in which area? (Question QIM63)

Participant view

<QP_QIM63>

One undertaking responded that the internal model is built by the group but local specificities are discussed with the solo entity. Some parts of the model are calculated locally while other parts are calculated by the group based on inputs from the solo entity.

</QP_QIM63>

Supervisory view

<QS_QIM63>

</QS_QIM63>

188. What are the main reasons of the differences in the amount of capital requirement for the internal models and standard formula? (Question QIM66)

Participant view

<QP_QIM66>

One undertaking’s internal model covered only natural catastrophes. Based on own experience the undertaking’s group is convinced that the standard formula submodules for man-made and natural catastrophes are inappropriate and inconsistent with her views of the underlying risks. In this undertaking’s opinion, certain risks are overstated in these standard formula modules while others are understated.

</QP_QIM66>

Supervisory view

<QS_QIM66>

</QS_QIM66>

06.01.2011.