Solvency II
Quantitative Impact Study 5 ("QI S5")
Summary Report for Belgium

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Executive summary

In the context of the Solvency II project and in particular the measures to implementing it, EIOPA and the EC have conducted a fifth quantitative impact study (QIS5) on the proposed solvency calculation. The purpose of QIS5 was to gain insight into the impact of the proposed methodology on the financial position of insurance undertakings as per end 2009, and to test the standard formula calculation of solvency capital requirements. The exercise also aimed at identifying any remaining methodological and practical difficulties in applying the standard formula, such that areas for further refinement or simplification can be proposed. Hence, the results of QIS5 are only partially indicative of what the final impact of Solvency II will be. This report gives an overview of the results for the Belgian market and provides, where relevant a comparison against European benchmarks. For a comprehensive overview of European results we refer to the EIOPA QIS5 report 1.

For the Belgian market 58 undertakings participated on a solo basis and 4 on a groups basis. The sample of solo undertakings represents a broad domestic market coverage both for the activities Life (92% of market premiums) and Non-Life (64% of market premiums). The results of QIS5 point out that for the sample of participants the solvency capital requirement (SCR) under the standard formula would increase substantially by 68% compared to Solvency I. This is mainly the result of a more comprehensive quantification of the underlying risks under Solvency II, as well as the risk tolerance level set at 99.5% VaR over a one year horizon instead of at a lower level. Of the total SCR, 59% can be attributed to covering market risks, 17% to underwriting risks for Non-Life business, 13% to underwriting risks for Life business and the remaining 11% to other less material risks. It should be noted that the calibration of the parameters in the standard formula takes into account the financial market situation during 2008-2009, and that the methodology for quantifying individual risks remains complex for a standard formula approach. It can be expected that the final standard formula quantification of risks under Solvency II will be somewhat simplified compared to the QIS5 approach.

The overall QIS5 results also reveal that available own funds would increase by 32% compared to the current statutory balance sheets. This is essentially reflecting the transition to a market consistent valuation approach for assets and liabilities, where buffers are released into own funds. Such buffers mainly stem from unrealized capital gains on investments as well as the reduction in the level of technical provision when compared to the current statutory provisions. On aggregate this implies that the SCR would be covered for 179% by eligible own funds, whereas the current solvency ratio for the sample of firms is 230%. The minimum capital requirement, which acts as the ultimate solvency control point, would be covered for 271% by eligible own funds. Overall however, the excess of own funds above the SCR would increase by 2%, meaning that the financial soundness would have slightly improved at that point in time. It should however be emphasized that a comparison of solvency ratio’s between the two standards is less meaningful, given the differences in valuation principles and different frameworks used for quantifying risks to determine capital requirements.

As can be expected, there are important differences in QIS5 results across participating undertakings, depending on the risk profile of investments, types of insurance business written, size of the

1 The report is available on the EIOPA website via the link: https://eiopa.europa.eu/fileadmin/tx_dam/files/publications/reports/QIS5_report_final.pdf
undertaking, use of proxies and simplifications in the standard formula as well as diverging interpretations in some areas of the QIS5 technical specifications. Furthermore, some data submissions were incomplete, inaccurate or not calculated according to the QIS5 specifications. Therefore, the results provided in this report should be interpreted with caution and should not be regarded as highly indicative for the impact of the final Solvency II system.

The QIS5 exercise also shows that there are areas where further work is needed, such as the concept of contract boundaries, catastrophe risk and non-life calibration, simplifications and the importance of finding appropriate transitional measures. There will also be a challenge in finding the right balance between the volatility of a risk-based market model and the long-term nature of business that is inherent to significant parts of the insurance activities.
1. Introduction

EIOPA has been asked to deliver advice to the EU Commission on the introduction of a new risk-based solvency regime, commonly known as Solvency II. For this purpose EIOPA has conducted a series of quantitative impact studies (QIS) to support the implementation of a directive for Solvency II. A more comprehensive impact study (QIS5) has now been conducted in 2010 with the main focus on testing a standard formula for calculating a risk-based threshold level of solvency capital (SCR) as well as a minimum floor of capital (MCR), given an almost final design of the SCR and a closed set of calibration parameters. While the purpose of the standard formula is to provide a harmonised process for calculating capital requirements, it should also be sufficiently complete and risk-sensitive in order to capture the main risk drivers. Further work will be needed before a final SCR standard formula can be adopted and this work will aim at achieving a right balance between feasibility and risk-sensitivity.

The large scale of the QIS5 was also intended to encourage insurance undertakings to prepare for the introduction of Solvency II and identify which areas of internal systems and processes would need major adaptations.

This report summarises the main findings and conclusion to be drawn from the QIS5 output received from participating insurers for the Belgian market. For a cross country comparison of QIS5 results for the EEA we refer to the EIOPA QIS5 summary report. The results provided in this report are best effort estimates at a point in time (31/12/2009), based on the methodology prescribed in the QIS5 Technical Specifications. They should be interpreted with caution and should not be regarded as highly indicative for the impact of the final Solvency II system. Indeed the final requirements under Solvency II are likely to be different from what was tested in QIS5. In addition, transitional measures will become available to avoid an abrupt transition from Solvency I to Solvency II.

2. QIS 5 participation and process

In total 58 undertakings participated in the exercise, which represents 63% of the number of undertakings that are likely to be under the scope of Solvency II. The participation is significantly more than in QIS4 where 27 undertakings participated.

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The sample of participants for Belgium covers 92% of market premiums for Life business and 64% for Non-Life business, making the exercise both highly representative for the Belgian market and creating involvement of most part of the industry in the Solvency II project. On a European scale 2,520 undertakings participated in the QIS5 exercise.

**QIS5 market coverage : Based on aggregated figures**

<table>
<thead>
<tr>
<th>Market coverage</th>
<th>Gross premium</th>
<th>Technical Provisions (excluding Unit-Linked)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Market Share (%)</td>
<td>Of which: Composites (%) total</td>
</tr>
<tr>
<td>Life business</td>
<td>91,8%</td>
<td>41,5%</td>
</tr>
<tr>
<td>Non-life business</td>
<td>63,8%</td>
<td>29,3%</td>
</tr>
<tr>
<td>Health business³</td>
<td>26,0%</td>
<td>8,6%</td>
</tr>
</tbody>
</table>

Given the number of participants and the extent and complexity of the QIS5 exercise, a two stage approach to the processing of results has been adopted by the CBFA. Data submissions and questions from participants have been coordinated through the prudential policy department, followed by an in-depth analysis of individual company results by the relevant operational supervisory departments for the purpose of identifying irregularities or inconsistencies. These identified issues were then discussed with individual participants, followed by updated submissions and further clarifications. In a second stage, overall results for the Belgian market were analysed by the prudential policy department for the purpose of submitting country results and qualitative feedback to EIOPA.

³ Including workers compensation.
3. Quality of data

Although the quality of the data submitted is generally satisfactory, in some cases data was incomplete or inaccurate. It should also be noted that many "first time" participants were included in the QIS5 exercise. For some of these participants the quality and completeness of data was less satisfactory. As in previous QIS exercises, the analysis of results is often based on the segmentation of data into sub-samples by type of firm (Life, Non-life, Composite, Reinsurer, Captive and all firms) and by size (Small, Medium and Large). For the Belgian situation, this segmentation produces relatively small sub-samples. As a result the representativeness of each sub-sample is strongly reduced and the conclusions drawn from it are obviously less reliable.

4. Main changes compared to QIS4

Whereas QIS4 was intended to be a last calibration exercise based on year-end 2007 financial figures, the purpose of QIS5 was to test the final impact and the practicability of the use of a standard formula for Solvency II purposes using end 2009 data. Although the main valuation principles and design of risk-sensitive solvency capital requirements have been retained, the QIS5 exercise has introduced several new and more extensive elements, such as:

- introduction of illiquidity premium in the discounting of future liability cash flows
- recognition of expected profit in future premiums as an element of own funds
- more advanced treatment of and revised calibration for spread risk and counterparty default risk
- introduction of a scenario approach for distinct catastrophe risks
- revision in the way health business (including workers compensation) should be attributed (Similar to Life or Non-Similar to Life)

As a consequence of these changes compared to QIS4, different valuation dates as well as different sample sizes, the results of QIS5 are not meaningfully comparable to the QIS4 outcome. Moreover, the financial crisis has had a major impact on asset values as at end 2009 and changes in investment strategies have lead to different asset compositions as compared to QIS4.
5. Overall impact on solvency positions

Solvency impact: Aggregated figures

<table>
<thead>
<tr>
<th></th>
<th>Solvency Capital Requirement</th>
<th>Available Own Funds</th>
<th>Own Funds Surplus</th>
<th>Solvency ratio BE</th>
<th>Solvency ratio EU</th>
</tr>
</thead>
<tbody>
<tr>
<td>QIS 5 basis</td>
<td>14.000</td>
<td>25.000</td>
<td>11.200</td>
<td>179 %</td>
<td>165 %</td>
</tr>
<tr>
<td>MCR⁴</td>
<td>9.000</td>
<td>24.000</td>
<td>15.000</td>
<td>271 %</td>
<td>466 %</td>
</tr>
<tr>
<td>Solvency I</td>
<td>8.000</td>
<td>19.000</td>
<td>11.000</td>
<td>230 %</td>
<td>310 %</td>
</tr>
</tbody>
</table>

On aggregate level, there is a material impact on the solvency position of the sample participants for the Belgian market. Under the QIS5 solvency methodology, the solvency capital requirement would be covered for 179% by eligible own funds and the minimum capital requirement (MCR) by 271%. The aggregate solvency ratio stands at 230% under the current statutory basis. These are aggregate indications which are difficult to generalize given material differences across undertakings. For comparison, the European wide benchmark for the QIS5 solvency ratio is 165% on aggregate and 310% under Solvency I. The European average minimum solvency ratio is 466%. Comparisons with EU benchmarks should be interpreted carefully, as the sample of 2.520 European undertakings is much larger and covers a much more diversified risk profile.

5.1. Solvency capital requirement

The aggregate solvency capital requirement (SCR) would increase from 8 bio € under Solvency I to 14 bio € under the QIS5 basis. In contrast to Solvency I, the aim of the Solvency II standard formula is to quantify all risks when calculating the solvency capital requirement as the higher solvency control level. The increase in solvency requirements is a reflection of this more elaborate risk quantification under the standard formula. The appropriateness of the increase in the level of solvency requirements needs to be further considered, especially with regards to the calibration of risk factors.

When considering the distribution of undertakings across different solvency ratio buckets per country (more than 200%, 120% - 200%, 75% - 120%, below 75%), it appears that for Belgium the situation is comparable to the EEA average distribution.

It should also be noted that Solvency II capital ratios are different from Solvency I ratios, mainly due to differences in balance sheet valuation standards, risk tolerance levels and different categorizations of own funds items eligible to cover the SCR or MCR. Therefore, a comparison between both ratios is not an adequate reflection of the Solvency impact and can

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⁴ Minimum Capital Requirement: minimum level of available own funds, below which an insurance undertaking would be put in run-off. In case available own funds reaches a level between SCR and MCR, supervisory intervention will be triggered.
be a misleading indicator. In addition, in most cases surpluses of own funds over and above the SCR are likely to be higher as well due to the release of balance sheet items into own funds. This means that financial resources can increase even if solvency ratios are lower than at current levels. Under Solvency II however, the market valuation of financial resources will induce volatility in available resources.

Regarding the minimum capital requirement (MCR) of 9 bio €, which acts as the ultimate solvency control point, the level is comparable to the current solvency requirement of 8 bio €. Its coverage by eligible own funds is at 271%, compared to the EU average of 466%. At an undertaking specific level, the coverage of the MCR does in general not create difficulties.

5.2. Own Funds

The aggregate level of own funds under QIS5 would reach 25 bio €, compared to 19 bio € under Solvency I. The main driver for this increase is the release of asset and liability buffers into own funds due to the switch from statutory valuation basis to market consistent valuation basis. The net decrease in technical provisions seems to contribute more than the net increase in the valuation of assets from net unrealized capital gains. These valuation changes also contribute to the moderate increase of 2% in the surplus of own funds over and above the SCR.

The own funds items that are eligible to cover the MCR (24 bio € vs. 9 bio € for MCR) should consist of Tier 1 items. Given that the total amount of eligible own funds (25 bio €) is only slightly higher than the eligible items to cover the MCR, we conclude that also the SCR is mainly covered by Tier 1 items. In addition, the Tier 1 items are to a large extent (90% of own funds) composed of unrestricted capital items.
Under QIS5 it was assumed as a working hypothesis that Expected Profits in Future Premiums (EPIFP) are to be considered as Tier 1 items. For the Belgian market, the proportion of EPIFP in own funds is slightly above the European average considering all types of undertakings, and that this proportion is significantly higher for the Belgian pure Life insurers. The quantification of EPIFP and its classification as own funds is subject to interpretation, as it is linked to the treatment of boundaries of insurance contracts for the purpose of determining which obligations arise from existing contracts. It is not certain that EPIFP will be classified as Tier 1 items in the final Solvency II regime.

6. Impact on balance sheet

6.1. Impact on Assets

The current structure of assets for the aggregate balance sheet is mainly composed of sovereign (43%) and corporate bonds (22%), followed by equity (8%) and investment assets covering unit-linked contracts. This composition remains unchanged under the QIS5 valuation basis, except for the equity positions which would be lower due to unrealized capital losses, and which are not revealed under the statutory valuation basis.

Composition assets: Based on aggregated figures

<table>
<thead>
<tr>
<th>Current Asset structure</th>
<th>QIS5 Asset structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit linked</td>
<td>8.2%</td>
</tr>
<tr>
<td>Corp bonds</td>
<td>22.4%</td>
</tr>
<tr>
<td>Sovereign</td>
<td>43.1%</td>
</tr>
<tr>
<td>Equity</td>
<td>8.2%</td>
</tr>
<tr>
<td>Mortgage</td>
<td>2.3%</td>
</tr>
<tr>
<td>Property</td>
<td>2.6%</td>
</tr>
<tr>
<td>Cash</td>
<td>3.2%</td>
</tr>
<tr>
<td>Reinsurance</td>
<td>2.4%</td>
</tr>
<tr>
<td>Investment funds (*)</td>
<td>2.9%</td>
</tr>
<tr>
<td>Deferred tax assets</td>
<td>0.2%</td>
</tr>
<tr>
<td>Goodwill</td>
<td>0.4%</td>
</tr>
<tr>
<td>Other</td>
<td>4.2%</td>
</tr>
</tbody>
</table>

All Composite Health Life Non-Life Reinsurance

Amount of EPIFP divided by Tier 1 at EEA vs BE level

BE

EEA

8.2% 22.4% 43.1% 6.6% 2.5% 3.8% 3.1% 2.0% 2.8% 0.3% 3.7%
The valuation of assets under QIS5 would primarily be driven by the revaluation of property investments and the bond portfolio. The total unrealized capital gain on these elements is 5.8 bio €. This increase in asset valuation is partly reduced by the unrealized capital loss of 3.7 bio € on equity holdings. It should be noted that the value of technical provisions will also be reduced such that the assets (including the most liquid assets) covering insurance liabilities will be largely sufficient.

**Composition of assets: Aggregated figures**

<table>
<thead>
<tr>
<th>mio €</th>
<th>Solvency I basis</th>
<th>QIS5 basis</th>
<th>QIS5/Sol I (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property</td>
<td>5.914</td>
<td>8.610</td>
<td>146 %</td>
</tr>
<tr>
<td>Equity</td>
<td>18.758</td>
<td>15.030</td>
<td>80 %</td>
</tr>
<tr>
<td>Sovereign bonds</td>
<td>98.637</td>
<td>100.834</td>
<td>102 %</td>
</tr>
<tr>
<td>Corporate bonds</td>
<td>51.175</td>
<td>52.052</td>
<td>102%</td>
</tr>
</tbody>
</table>


It is likely that reductions in the level of technical provisions due to market consistent valuations will have a larger impact on the increase in own funds compared to the release of asset revaluations. These changes in the volume of technical provisions obviously depend on the choice of discount rates, the inclusion of the illiquidity premium as well as the treatment of future premiums from existing contracts amongst others.

**Composition of gross technical provisions: Aggregated figures**

<table>
<thead>
<tr>
<th>mio €</th>
<th>Solvency I basis</th>
<th>QIS5 basis</th>
<th>QIS5/Sol I (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical provisions Life</td>
<td>147.143</td>
<td>143.372</td>
<td>97 %</td>
</tr>
<tr>
<td>Technical provisions Non-Life</td>
<td>18.427</td>
<td>12.262</td>
<td>67 %</td>
</tr>
<tr>
<td>Technical provisions Health</td>
<td>7.537</td>
<td>8.922</td>
<td>118 %</td>
</tr>
</tbody>
</table>

The technical provisions for Non-Life business is on aggregate substantially lower under QIS5 compared to Solvency I, with an overall reduction of 33%. This result was anticipated, given the implicit prudence in statutory technical provisions but also the impact from realistic projections of future cash flows and the discounting of these cash flows under Solvency II. In addition, certain existing statutory provisions (provisions for equalisation and catastrophe that relate for a large part to future obligations) would be eliminated and reconciled into own funds. The lower levels of technical provisions are confirmed across the main lines of business and are in line with European averages. The exceptions are Credit & Suretyship and
Legal Expense insurance, partly due to the specific profiles of participants in this very limited sample.

The technical provisions for Life business are grossly in line with current provisions in total and for most business segments. Due to the broad segmentation under QIS5, the allocation of contracts into each segment was not always performed in the same manner by participants. As a result for the Without Profit segment, results are less reliable and not comparable to the European benchmark.

For Health business (including workers compensation) the technical provisions under QIS5 are substantially higher than current provisions. This in part reflects the recognition of future premiums on long term business as well as the Belgian specificity of indexation of annuities. The classification of medical expense, income protection and workers compensation is problematic and by no means comparable with Solvency I and across EU countries given national specificities. The comparative results are therefore not meaningful at this stage. Further work on segmentation, valuation and SCR risk module for the Health business is needed.
7. Standard formula BSCR and SCR

The aggregate Basic SCR for the Belgian market amounts to 19 bio €, being the sum of the solvency capital requirements for market risk, counterparty default risk, underwriting risks, taking into account diversification effects across risk modules which amounts to 11 bio € (out of 30 bio € Basic SCR without diversification).

7.1. Main components of overall SCR

Main components of SCR: Aggregated figures

<table>
<thead>
<tr>
<th>mio €</th>
<th>Standard Formula (BE)</th>
<th>Solvency Ratio (BE)</th>
<th>Standard Formula (EU)</th>
<th>Solvency Ratio (EU)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCR market</td>
<td>17.610 (59%)</td>
<td>(57%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCR counterparty default</td>
<td>1.170 (4%)</td>
<td>(7%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCR underwriting Life</td>
<td>3.810 (13%)</td>
<td>(15%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCR underwriting Non-Life</td>
<td>5.070 (17%)</td>
<td>(16%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCR underwriting Health</td>
<td>2.280 (8%)</td>
<td>(4%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diversification across modules</td>
<td>-11.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic SCR</td>
<td>19.000</td>
<td>132 %</td>
<td></td>
<td>105%</td>
</tr>
<tr>
<td>Loss absorbing effect of profit sharing and deferred taxes</td>
<td>-7.590</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCR operational</td>
<td>2.160</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCR</td>
<td>14.000</td>
<td>179 %</td>
<td></td>
<td>166%</td>
</tr>
</tbody>
</table>

Considering all types of firms, the Basic SCR is mainly composed of market risks (59\%), underwriting risk in Non-Life (17\%), underwriting risk in Life (13\%), underwriting risk in Health (8\%), followed by all other less material risks (3\%). This BSCR composition is broadly in line with the European aggregates, although these are based on a much larger and diversified sample.

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\textsuperscript{5} SCR per risk module as % of Basic SCR
For Life firms only, the proportion of SCR for market risk is generally higher (76%), followed by underwriting risk for Life (20%). For Non-Life firms the main risk driver is the underwriting risk for Non-Life (50%), followed by market risk (28%) and underwriting risk for Health (16%). The European benchmarks for these proportions are slightly different, although the order of magnitude remains similar to the situation for Belgian participants.

The final aggregate SCR of 14 bio € is obtained by taking into account the loss absorbing capacity of technical provisions for profit sharing and deferred taxes and by adding the SCR charge for operational risk (7%).

The impact of loss absorbing elements on the reduction of the SCR is substantial and totals 7.6 bio €, which represents 25% of the BSCR. This reduction is on top of the effects of diversification (11 bio €). The methodology used by participants for making these adjustments (especially for deferred taxes) has not been uniform and the extent of these adjustments are very disperse. This obviously creates important distortions in the final SCR calculations.
Overall, the final SCR solvency ratio is 179% compared to the BSCR ratio of 132%. On an EU aggregate level the solvency ratio (166%) is lower compared to the Belgian sample ratio.

### 7.2. Main components of individual risk modules

Based on the decomposition of the main risk modules for all firm types, we can assess the exposure to the underlying risk drivers. For market risk, the main risk exposures are equity risk (38%), spread risk (37%) and interest rate risk (31%), and to a lesser extent property risk (10%) and the risk of an increase in technical provisions due to a downward shock on the illiquidity premium (10%). Currency risk (4%) and concentration risk (1%) are not surprisingly quite low. The impact of diversification benefits across the market risk components is quite substantial (30% of the sum of market risk components). These orders of magnitude are similar to the EU figures.

For the Life underwriting risk module the capital charges are mainly driven by lapse risk (59%) and expense risk (41%), all other underwriting risk factors being relatively small contributors to the SCR. This is related to the specificity of the Belgian sector, where the
proportion of benefits taken in the form of annuity payments is significantly lower than for other EU countries. At EU level, longevity risk appears to be the second largest underwriting risk component.

For Non-life underwriting risk the general trend for the SCR components are premium & reserve risk (76%) and catastrophe risk (44%), very similar to the EU benchmarks of 70% and 50% respectively.

For the Health business, the SCR for underwriting risk is mainly driven by the portion of business that is treated as non-similar to life business (NSLT). The results on the underlying risk drivers for NSLT are however less reliable than expected.
8. Group results

Regarding group results, 4 submissions were received. Given significant differences in the structures, balance sheets and geographical scope between these groups, there is a wide dispersion in the groups results. Group SCR coverage ratio's are in the range of 140% - 300%, with group own funds increasing by 30% - 60%. As a result, there is an increase in excess group own funds above the group SCR in the range of 4% - 170%, mainly as a result of diversification effects. However, given the small sample of groups for Belgium, it is more appropriate to consider group results and their conclusions on the basis of EU figures covering a sample of 167 major European groups.

Some generalized conclusions on the treatment of group specific issues can however be made. The adjustments for non-availability of own funds can have a sizeable impact depending on interpretation. Some groups consider that unrealized capital gains on less liquid assets are not transferable within the group, and these have been deducted from group available own funds. Also the classification of hybrid capital instruments into most appropriate own funds Tiers needs further guidance, as the transitional measures were not always free of misinterpretation.

9. Internal model results

Although a vast number of participants provided information on the use and features of internal models, few quantitative results were provided on the SCR calculation based on internal models, partly because these are still in a development phase and partly due to time constraints. Based on the limited data provided no firm conclusions can be drawn from this comparison at this stage.

10. Methodological issues

The areas of the QIS5 methodology which had been tested in a very similar manner as in previous exercises, has in general been well accepted and "digested". However, some areas
are new in QIS5 or have been tested differently as compared to previous studies. As a result these areas created methodological issues as to their application and interpretation. The following list highlights the main issues raised by participants, either in the answers to the qualitative questionnaire or during the Q&A process:

- **Undertaking-specific parameters in the Non-life underwriting risk module**: It was not always clear how to deal with 3 different methods for using undertaking specific parameters. Whereas the idea of USP is to reduce the volatility in the expected loss ratio compared to the standard parameters, this has not always been the case.

- **Calibration of Non-life underwriting risk parameters**: Strong concern was raised on the complexity of the non-life module and the appropriateness of the calibration of risk parameters, which lead to significant capital requirements.

- **Catastrophe scenarios in underwriting risk sub-modules**: The cat risk sub-modules for Non-life were thought to be oddly calibrated given the lack of historical data and too complex to be suitable for most business lines, in particular for Credit & Suretyship insurance.

- **Segmentation of Health business**: There were methodological problems in appropriately segmenting the Health business portfolio into SLT and NSLT. This has been particularly problematic for the treatment of workers compensation business.

- **Contract boundaries and EPIFP**: The prescribed criteria for determining the inclusion of liabilities linked to future premiums on existing contracts as well as the quantification of expected profits derived from these have not been interpreted in the same way across participants. Further guidance is necessary, although it will be very challenging to make methodological progress in this particular area.

- **Counterparty default risk treatment and use of collateral**: It has been overly complex to split exposures into both types of classes, depending on diversified and rated counterparts. In addition, taking into account the risk mitigation effect from risk-adjusted values of collateral created additional market risk charges, in case the collateral or deposit is reinvested in risk-bearing assets.

- **Equivalent scenario for calculating loss absorbing capacity of technical provisions**: Only a few participants tried (unsuccessfully) to use the equivalent scenario calculation, but the calculation was deemed to be too complex, and thus might as well be discarded.

- **Loss absorbing capacity of deferred taxes**: Although participants appreciate the SCR reduction due to the loss absorbing capacity of deferred taxes, it was not obvious how to value the loss absorbing effect of these taxes and which volume of deferred taxes could be taken into account.
Methodology for using illiquidity premium: It has not been obvious how to allocate the book of products and contracts into the different illiquidity buckets. As a result, in most cases the 100% bucket was used.

11. Concluding remarks and next steps

QIS5 has revealed interesting results on the possible impact of a transition from Solvency I to the risk-based Solvency II regime. QIS5 was announced as being the last opportunity to comprehensively test the standard formula design and calibration before the final implementation of Solvency II in 2013. The results and qualitative feedback received from participants also revealed remaining methodological and practical difficulties and areas where further improvement is justified. Proposals for such improvements will therefore need to be worked out and tested on an ad-hoc basis, if these are to be included as part of the implementation of Solvency II, possibly through additional transitional arrangements. Undoubtedly, industry input will be needed during these ongoing work streams.