

QIS4 feedback and suggestions for future implementing measures

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Introduction

The industry appreciates the high quality of the work done to date on Solvency II and the constructive dialogue it has had with the European Commission and CEIOPS. The industry also welcomed the opportunities to discuss the QIS3 results last year and particularly more recently the consultation period with industry on the draft QIS4 technical specifications before the study was launched. This was an efficient way to identify and address concerns prior to the exercise. The CEA would like to work closely with CEIOPS now and over the next important phase to help ensure that any future QIS and eventually the final implementing measures are appropriate.

This note is a follow up to the 20 October 2008 meeting with CEIOPS in Frankfurt and sets out indications on how we think the industry's QIS4 concerns might be addressed in the development of any possible future quantitative impact studies and ultimately the implementing measures.

May we once again highlight the good cooperation we have had with CEIOPS in the past. We look forward to this continuing in the future. We hope that this note provides constructive and encouraging input for the future work required.

We should note that this paper is not meant to contain an extensive list of issues that we believe should be worked on for the implementation of Solvency II; rather this paper sets out some of the key issues that were highlighted by the European insurance industry during the QIS4 exercise.

The comments expressed in this document represent the CEA's views at this stage of the project. As our work develops, these views may evolve depending, in particular, on other elements of the framework which are not yet fixed. The comments in this document also need to be considered in the context of the other publications by the CEA, including those listed in the Appendix. The rejection of elements of our positions may affect the remainder of our comments.

1. General Comments

More guidance and examples was welcomed, but further work is still needed

1.1 The QIS4 technical specifications were significantly improved over QIS3 in terms of providing companies with guidance on the rationale underlying the methodology and how to apply this methodology. These helped ensure consistency across participants and the efficiency of the exercise. We do believe, however, that further improvements can still be made, particularly on the issues of Own Funds and Groups for future implementing measures.

1.2 Recommendation:

- Although we appreciate the vast improvements to the specifications, more guidance and examples are requested, notably on Groups and Own Funds.

QIS4 Process was satisfactory but could be improved

1.3 The CEA believes that the consultation during pre-test phase was an efficient way to identify and address concerns prior to the exercise. We hope that any future QIS exercises will be approached in a similar manner.

1.4 Providing additional time for the group calculations was beneficial and, together with increased guidance on these issues, helped produce a significant increase in the participation of groups in comparison to QIS3.

1.5 The extensive documentation and guidance was appreciated; however, only having English language versions caused difficulties in many markets.

1.6 Some members requested that a currency converter for non-Euro currencies be added to each spreadsheet.

1.7 While the CEA appreciates the efforts of the EU Commission and CEIOPS, there were difficulties during the QIS4 process because:

- Countless changes were made to both the solo and group spreadsheets right up to the submission dates (31 July and 12 August respectively), which caused a significant increase in the workload for participants.
- Automatic error checks in the spreadsheets were limited.

1.8 Recommendations:

- Continue to get industry input and advice.
- Allocate more resources to develop the spreadsheets, start the work on the spreadsheets earlier and have more rigorous testing prior to their launch.
- Changes in the spreadsheets should be avoided as much as possible, especially in the last two months before the submission deadline.
- Translate at least the essential parts of the QIS packages into the languages required for the different EU markets.
- Integrate a currency converter into the spreadsheets for non-Euro currencies.
- Incorporate more automatic error checking in the spreadsheets, especially for balance sheet items.

Proportionality

- 1.9 QIS4 introduces a number of simplified methods and proxies along with a number of qualitative and quantitative criteria/thresholds to determine when they can be used.
- 1.10 The CEA strongly supports the principle of proportionality and as such supports the testing of different approaches in QIS4. Further work is required to determine the appropriateness of these approaches and the criteria determining whether simplifications may or may not be used by undertakings. The QIS4 results should be useful in this regard.
- 1.11 Our feedback on QIS4 indicates that:
- Criteria/thresholds should be applied to sub-risk modules and should allow large companies to use simplifications for relatively immaterial risks.
 - In some markets, simplifications were thought to be excessively conservative, but participants generally agree that a certain degree of conservatism is required to reach the same level of policyholder protection.
- 1.12 Recommendation:
- Further work needs to be carried out on how the proportionality principle should be applied in Pillar I. The CEA is currently cooperating on this issue with CEIOPS¹.

Segmentation (for BEL, SCR and Pill disclosure)

- 1.13 The CEA Paper on Segmentation² (20 November 2008), provides input to CEIOPS in respect of segmentation (requested 8 August 2008) and also certain aspects of the market value risk margin calculation.
- 1.14 The CEA's view is that the principles in the Framework Directive Proposal (recast dated 26 February 2008) require the following:
- Technical provisions should be consistent with the market cost to the insurance undertaking of transferring or settling the liabilities
 - The cost of capital approach should be used to obtain proxy for market prices where they do not exist
 - Homogeneous risk groups should be used to achieve more accurate best estimate liability figures by avoiding the statistical distortions that can arise when combining dissimilar (heterogeneous) data sets
- 1.15 As laid out in the CEA's Segmentation Paper, the segmentation currently proposed in QIS4 for the SCR calculations has raised concerns in some markets when certain non-life lines of business (see TS.XIII.B.6) are combined even though they have very different risk characteristics. This results in potentially important diversification effects across lines of businesses not being captured.

¹ CEA working paper on Proportionality (ECO 8370

http://www.cea.eu/uploads/DocumentsLibrary/documents/1229957895_cea-working-paper-on-proportionality.pdf)

² CEA working paper on Segmentation (ECO 8334 -

http://www.cea.eu/uploads/DocumentsLibrary/documents/1227261508_cea-final-response-to-ceiops-on-segmentation.pdf)

1.16 In our paper we advocate using the segmentation approach that best suits the purpose to which it is being put. For this to work it is important that companies are able to map the segments they use for internal purposes to those required for statutory purposes. Mapping best estimate liability segmentation to statutory reporting segmentation should be not be hampered by restrictive disclosure requirements. Similarly, mapping best estimate liability segments to SCR risk segments should also be taken into consideration.

1.17 Recommendations:

(As taken from our paper)

- The segmentation used for different purposes should potentially vary depending upon what is best for that purpose, e.g. companies should not necessarily be required to use the same segmentation for the purposes of determining best estimate liabilities, standard approach SCR calculations and statutory reporting.
- Companies are best placed to decide what segmentation is most appropriate for determining best estimate liabilities.
- Further sub-division of the risk segments used in QIS4 to derive the SCR using the standard approach should be possible where this is needed to obtain accurate results and in particular to properly capture diversification between lines of business (via the correlation matrix).
- For statutory reporting purposes, the diversity of products sold in different EU member states means that it is difficult to have a common and concise number of statutory reporting technical liability classes that enable all lines of business in all member states to be classified to a single reporting segment.
- However, the CEA strongly supports harmonisation under Solvency II and is therefore working with its members to assess the feasibility of having high level harmonised statutory reporting segmentation.

2. Best Estimate of Liabilities – Life issues

- 2.1 On technical provisions, our industry feedback suggests that many life companies are still experiencing difficulties. The main concerns are:
- The valuation of options and guarantees and the modelling of policyholder behaviour and management actions.
 - How to split risks between their hedgeable and non-hedgeable components.
 - The risk-free rate used for discounting for certain types of product.

These difficulties are discussed further below along with some suggestions.

Some companies had difficulty valuing options and guarantees and modelling policyholder behaviour and management actions

- 2.2 The feedback we received is that there are still companies that did not fully use market-consistent techniques and some companies did not have appropriate models or systems to be able to value the time value associated with options and guarantees. The CEA welcomes the simplifications included within QIS4, and notes that a degree of pragmatism should be used in line with the proportionality principle when valuing options and guarantees. This is an area where further work is needed.
- 2.3 On a related note, when using stochastic methods to value these types of liabilities, some companies had difficulty determining and modelling policyholder behaviour and management actions in extreme circumstances, in particular where they are dependent upon the overall solvency position of the company.
- 2.4 The CEA agrees that it is necessary to consider the impact of different policyholder behaviour in different economic conditions. For example, modelling higher take-up rates of options during adverse economic conditions which will make the options more valuable. However, the CEA also acknowledges the likely absence of data to assess possible changes in policyholder behaviour.
- 2.5 Recommendations:
- Further guidance and practical examples should be provided, allowing a certain degree of pragmatism in this area, and on alternatives to the simulation approach to valuing options and guarantees, showing for example when a deterministic approach might be appropriate.
 - Companies should be provided with principles and examples for setting the assumptions relating to policyholder behaviour and management actions, understanding that these assumptions are likely to vary widely across Europe and, for example, will depend on company strategy and market practices.

A pragmatic definition of “hedgeable risks” is needed

- 2.6 Although the technical specifications (TS.II.A.16 - TS.II.A.31) do go into a lot more detail in this area than previous QISs, some companies still found QIS4 unclear as to which risks were deemed hedgeable and which were not. We should highlight, however, that the concept of hedgeable and non-hedgeable risks is one which is supported by the industry, despite these teething problems, and we are very willing to assist on this issue.
- 2.7 In practice few hedges for insurance liabilities can be considered as theoretically perfect as, for example, persistency or mortality experience may be difficult to replicate in the market, or directly observable market data may not exist for the exact durations of the liabilities. Therefore, a degree of pragmatism is required as to how to split liabilities into hedgeable or non-hedgeable components.

- 2.8 The specifications do state that if in practice the hedge is not perfect but the remaining basis risk is immaterial then the risk may be considered as hedgeable. However:
- There is no clarification in the specifications as to what constitutes an immaterial basis risk.
 - There is no specification in the section on hedgeable risks that reasonable interpolation or extrapolation of market data is allowed (although this is covered in the non-hedgeable risks section). We think this was the intention, but believe that it would be more helpful to make this more explicit.
- 2.9 Due to the absence of guidance and examples in these two areas, companies often assumed all risks were non-hedgeable for the QIS4 exercise.
- 2.10 Recommendations:
- Provide clearer guidance and examples on when a liability is deemed to be hedgeable and in particular as to what constitutes an immaterial basis risk. We are very willing to provide assistance in this area.
 - The QIS4 technical specifications need to clearly state that reasonable interpolation and extrapolation of market data using proven and reliable actuarial techniques is allowed when calculating the market value of hedgeable risks.

The risk-free rate used for discounting purposes may need re-investigation

- 2.11 The QIS4 technical specifications state that for QIS4 purposes, the prescribed risk-free interest rate has been derived from swap rates (TS.II.B.11) which is aligned with the methodology usually seen in the pricing of financial markets instruments.
- 2.12 The valuation of certain types of products with low liquidity risk associated to their liabilities was an issue in some markets, and so may require a prompt re-investigation into the appropriateness of the calibration of the risk-free rate for discounting purposes.
- 2.13 Indeed, for these products, it could be argued that they are not exposed to the same risk of being forced to sell the assets in the short term. Therefore, consideration should be given as to whether a more appropriate discount rate for this type of liability would be a risk-adjusted rate including a liquidity premium. If this ends up to be the case, work would be needed to define the calculation of the liquidity premium.
- 2.14 Examples of liabilities for which there is low liquidity risk are annuity and retirement products for which there is generally little uncertainty in the amount and the timing of annuity payments.
- 2.15 We note that the QIS4 specifications do make explicit reference to the fact that more work needs to be done to determine the appropriateness of swap rates as the risk-free rates, once liquidity considerations have been taken into account (footnote to TS.II.B.11). We would be keen to work with CEIOPS on this issue.
- 2.16 Recommendations:
- Consideration should be given to the relationship of the discount rate for insurance liabilities with their financial characteristics.
 - We note that the QIS4 specifications highlight that there is more work needed in this area and we would be keen to work with CEIOPS on this issue.

3. Market Value Risk Margin – Life and Non-life

- 3.1 The feedback received from the industry is that there is generally strong support for the cost of capital approach. However, many companies believe that the standard methodology used in QIS4 still needs some development.
- 3.2 As laid out in our Cost of Capital Methodology paper³, the three key attributes that the CEA believes should be required of any approach used to derive market value risk margins are:
- Unnecessary complexity is unwarranted and should be avoided as there is not a “right answer”. This method is a proxy - a reliable market from which to determine a correct price does not exist for unhedgeable risks.
 - Diversification effects should be fully allowed for, with a sensible proxy for this being the current entity specific diversification effects.
 - The cost of capital rate should be set so as to produce a reasonable estimate of the current market price for risk.
- 3.3 The current QIS4 default approach is not in line with these specific attributes as laid out below:

The standard approach should not include unnecessary complexity

- 3.4 The current methodology requires companies to project their SCRs for each line of business. Although simplifications can be used, as a standard approach, this is viewed as unnecessarily and disproportionately complex.
- 3.5 A very complex calculation method will not necessarily result in more accurate answers, especially given the use of an industry wide cost of capital rate. Therefore, we propose that the standard approach be much simplified.
- 3.6 A majority of companies used the simplified approach whereby future SCRs are assumed to run-off in proportion to the liabilities. This method gave appropriate results and we would propose that this was set as the standard approach.

The standard approach should fully allow for diversification effects

- 3.7 The QIS4 specifications required the market value risk margin to be calculated separately for each segment or line of business. This meant that all inter-line of business diversification in calculating the quantum of capital (to which the 6% cost was applied) was ignored.
- 3.8 The industry believes that all diversification effects should be fully taken into account, in line with an economic risk-based approach whereby the economic reality of the whole entity should be taken into account.

³ Cost of Capital Methodology (ECO 8128 - <http://www.cea.eu/index.php?mact=DocumentsLibrary,cntnt01,details,0&cntnt01documentid=519&cntnt01returnid=75>)

The 6% Cost of Capital rate needs to be justified

- 3.9 There were concerns in the industry that there is no rationale or basis for the 6% cost of capital rate.
- 3.10 The rate of 6% may not be appropriate as it is a figure that originates from the Swiss Solvency Test which uses a different methodology to Solvency II.
- 3.11 The cost of capital rate used in Solvency II should be set at the level needed to ensure that the combined value of the market value risk margin and best estimate liability is a good proxy for the market consistent value of the liabilities.
- 3.12 Recommendations:

- We recommend that the cost-of-capital approach would be better aligned with a proportional and economic approach to calculating risk margins if it was amended as follows:
 - The default approach should be simplified and should assume that future SCRs are a fixed % of the best estimate liabilities such that the SCR decreases over time in line with the run off of the business.
 - Diversification effects should be fully allowed for in order to obtain appropriate market value risk margins for Solvency II purposes.
 - Further work is done on the cost of capital rate, in the light of the latest research⁴.
- For more details of our suggested simplifications, we would like to refer to our papers titled “Cost of Capital methodology”⁵ and “Additional CEA Guidance on the cost-of-capital calculation”⁶. We also developed a spreadsheet for QIS4⁷ which used several simplifications and calculated the market value margin fully allowing for diversification.

⁴ Market Value of Liabilities for Insurance Firms – Implementing elements for Solvency II – CRO Forum July 2008

⁵ Cost of Capital Methodology (ECO 8128 -

http://www.cea.eu/index.php?mact=DocumentsLibrary,cntnt01_details,0&cntnt01documentid=519&cntnt01returnid=75)

⁶ Additional CEA guidance on, the Cost of Capital calculation (ECO 7113 -

http://www.cea.eu/uploads/DocumentsLibrary/documents/1202376345_annexe328.pdf)

⁷ Spreadsheet (http://www.cea.eu/uploads/DocumentsLibrary/documents/1202375834_coc-spreadsheet-v3.xls)

4. Other assets and liabilities

Intangible assets and goodwill

- 4.1 The QIS4 technical specifications require that intangible assets and goodwill are valued as nil (TS.III.A). This is because it is thought that the value of many intangible assets and goodwill would tend to nil in stress circumstances.
- 4.2 However, Article 74 of the Framework Directive requires assets and liabilities to be valued at the amount that they could be settled or transferred between knowledgeable willing parties. Some intangible assets, such as computer software, licenses and intellectual property, as well as goodwill, have an economic value, recognisable in exchanges between parties. These may be of some value even under stress circumstances and may be expected to generate future profits.
- 4.3 Recommendation:

- Further work is required on the valuation of intangible assets and goodwill and on how these may be valued in stress conditions.

Other Liabilities

- 4.4 QIS4 indicated that IFRS may be a good proxy for the market consistent value of “other liabilities”.
- 4.5 However, some companies had difficulty determining market values for certain “other liabilities” mainly when they did not use IFRS and where local GAAP’s were significantly different to market consistent values.
- 4.6 Recommendation:

- Greater guidance, including valuation methods based on market consistent models built for such a specific purpose. Examples and possible proxies would also be appreciated by the industry.

5. SCR Standard Approach

5.1 There were still a number of concerns expressed by many companies in relation to the SCR standard approach. The main concerns were related to:

- The calibration of some SCR modules remaining unjustifiably high
- Parts of the SCR design being disproportionately complex

These concerns are discussed further below along with some recommendations on how to address them.

Non-life underwriting risk

5.2 The standard factors for reserve risk under QIS4 are considered to be excessive. Some reasons why the calibration was not appropriate are:

- The technical specifications use market-wide factors for reserve risk, which were calibrated against only a few markets. Therefore the experience of a large number of EU markets was not taken into account and resulted in an inappropriate calibration for some markets.
- The calibration may have been based on the volatility of reserves over all the development years until run-off instead of being based on the volatility of reserve estimates over one development-year. The one-year volatility should be the key measure, following the Solvency II principles.
- The underwriting cycle was not properly considered. The underwriting cycle would imply changing future volatility for loss ratios.

5.3 QIS4 did not allow for the full use of entity specific parameters for non-life underwriting risk. The QIS4 technical specifications mix the company's own experience for the premium risk charge with a standard factor approach for the reserve risk charge. However, we would also support the use of company specific factors for the reserve risk charge as, without which, distortions are introduced for those companies with different historic experience from those implied by the standard factors.

5.4 Where scenario approaches were not available for catastrophe risk, the factor-based approach in the QIS4 technical specifications was overly conservative and did not allow properly for the effect of non-proportional reinsurance (as an aside, this will always be the case for any factor-based approach).

5.5 Possible double counting between non-life underwriting risk and non-life catastrophe risk modules was a concern. The technical specifications implicitly include catastrophes in the calculation of premium and reserve risk charges since the historic data used for these risk modules cannot be adjusted to exclude catastrophic events (TS.XIII.B.13). On the other hand, the specifications (TS.XIII.C.1) allow calibration of scenarios to avoid double counting of catastrophes under premium risk, reserve risk and catastrophe risk. However, this approach is excessively complicated since it requires undertakings to estimate which parts of catastrophe risks are already included in the calculations of premium and reserve risk and then exclude these from those taken into account in the catastrophe risk module.

- 5.6 The introduction of geographical diversification into QIS4 was a valuable improvement in the SCR standard formula compared to QIS3 - it enabled a much more realistic recognition of insurers' risk profiles. However, the geographical diversification proposed in the standard formula does not yet sufficiently reflect the risk profile of entities and furthermore the defined splits could be refined. In some areas where significant volumes of business are written, such as the USA, the recognition of diversification is inadequate, for example no diversification is given between business written in Florida and in California or Alaska (where the risks are materially different). In other areas the diversification is perhaps too granular, and requires separate reporting for geographical segments where risk diversification may be limited. We thus recommend that the parameters be reviewed in detail to reflect this.
- 5.7 Many non-life companies are subject to insurance cycles, which results in a cyclical trend for the profitability of the underlying contracts. Consideration should be given to when and how the effects of underwriting cycles are taken into account. Under QIS4 there was no such allowance, which made QIS4 unresponsive to the underwriting cycles.
- 5.8 Recommendations:
- Use entity specific and internal model results obtained under QIS4 to revise the non-life calibration.
 - Encourage the further use of entity specific parameters.
 - Extend the number of available regional non-life catastrophe scenarios to all jurisdictions.
 - Exclude catastrophe risk from premium and reserve risk calculations by clearly defining catastrophes and removing this data from that used in the calculation of the premium and reserve risk charges. Address catastrophe risk only in the catastrophe risk module.
 - Review the geographical segmentation used to calculate geographical diversification to ensure that it properly reflects risk diversification.
 - Where underwriting cycles may have a material impact of the profitability of the non-life portfolio over the year to come, consideration should be given to whether or not undertakings should be allowed to take into account expected future profits and losses from next year's business.

Life underwriting risk

- 5.9 The QIS4 technical specifications do not allow for the use of entity specific parameters for life underwriting risk. Life insurers would be keen to be treated in a similar manner to non-life insurers and so to allow the use of entity-specific parameters to some extent as part of the standard formula. Typically, the larger the life portfolio is, the less uncertain the assumptions for the best estimates become and this would have to be recognised through, for example, the use of credibility weighted entity specific parameters.
- 5.10 For mortality risk, QIS4 assumes a permanent increase in mortality of 10% for each age. However, we believe that consideration should also be given as to whether a uniform increase may be appropriate due to the different underlying risk-profiles of non-overlapping segments of the insured population. It is unlikely that any mortality stress may be experienced uniformly across the population, but we do understand that this may be an appropriate simplification to more accurate age-dependent modelling.

- 5.11 The calibration of longevity risk in the QIS4 technical specifications (a 25% permanent decrease in mortality rates) is considered firstly to be too high and secondly, for material risks, it is not considered appropriate to have a rate which is independent of age. Longevity risk can be significant for certain portfolios and so its accurate modelling is considered essential. We would request that the size of the stress is re-considered and also that alternative methods are considered:
- First, for the type of shock - such as fixed rather than percentage decreases to mortality rates or the use of annual longevity improvement factors rather than a sudden shock, and
 - Second, for age-dependent alternatives - which could be simply based on the average portfolio age or could be based on more complex alternatives such as stresses dependent on year-birth cohorts.
- 5.12 The mass lapse component of lapse risk in QIS4 is still thought to be excessive, despite its significant reduction from the QIS3 calibration. Recent financial events have highlighted that in some markets the assumption resulting from the QIS4 technical specifications is too conservative.
- 5.13 On an issue also related to market events, consideration should be given as to whether the calibration of lapse risk needs to be adjusted to reduce any pro-cyclical effects it may cause.
- 5.14 Many insurers are concerned that this stress has been calibrated using data which is not appropriate for their market (we understand that this was based on data solely from the German life insurance market).
- 5.15 The disability risk stress under QIS4, of an increase of 35% next year and 25% the following years, is deemed too high by many participants.
- 5.16 We believe the correlation of 50% between disability and mortality needs to be reviewed. Participants expressed concern with this correlation percentage due to:
- Different definitions of disability risk (such as risks from critical illness, income protection or morbidity) which would mean that one rate is not suitable for all.
 - Significant differences in the correlations seen in historical data for individual companies compared to 50%.
 - The fact that higher disability experience can often lead to higher mortality experience, but the converse is not true. This needs to be factored into the correlation assumption.
- 5.17 Recommendations:
- The use of entity specific parameters should be allowed for life business where the undertaking's experience differs from the market average.
 - More information is needed on the calibration of the standard factors and correlations.
 - A consideration of age-dependency is requested in both the mortality stress and the longevity stress when these risks are significant. This could be done using, for example, the simple weighted average age of the policyholders or annual improvement factors; although the materiality of these risks should be borne in mind and a flat % shock could be retained for those who do not consider this risk material.
 - The level of the longevity stress needs to be reconsidered.
 - The mass lapse risk stress is still considered to be excessive.
 - The disability risk stress is considered to be too high.
 - The correlation between disability and mortality needs further work.

Market risk

- 5.18 Many participants in QIS4 were concerned that concentration risk is dealt with in a disproportionately complex manner for a risk that is typically relatively immaterial. We strongly urge CEIOPS to develop a simplified method as standard.
- 5.19 Additionally, concerns were raised on the concentration sub-risk module as to how QIS4 deals with collective investment funds. In practice it is often impossible to use a look-through approach for investment funds in order to disclose all the counterparties to which the insurer is exposed when investing in these assets.
- 5.20 Lastly, on the concentration sub-risk module, for harmonised investment funds at EU level, subject to the UCITS Directive, consideration should be given to the possibility of double counting concentration risk for investments which already follow diversification requirements.
- 5.21 We would request that there is a consistent treatment of participations between concentration and equity risk modules. The approach included in QIS4 for participations in the equity risk module recognises the particular nature of the investment they represent (i.e. participations have a different stress compared to other equity investments). We believe the particular nature of participations should also be taken into account in the concentration risk module.
- 5.22 We do not believe that the correlations between property and equity (75%) and also between property and interest rates (50%) are in line with observed market data. Publicly available studies⁸, together with the correlations experienced in practice by insurance undertakings, indicate much lower correlations. Although it is commonly accepted that correlations may be greater in stress circumstances, the correlations proposed in QIS4 between property and equity as well as property and interest rates should be reviewed, taking into account current market experience without generating overly conservative factors.
- 5.23 Recommendations:
- Develop a simplified method as standard for concentration risk.
 - Further consideration should be given to the concentration risk sub-module for the cases where it is impossible to use a look-through approach, or for harmonised investment funds which are already subject to diversification requirements.
 - We would request that there is a consistent treatment of participations between concentration and equity risk modules.
 - The correlations of property to other types of investments should be reviewed, using more updated research and industry experience.

⁸ http://www.fsa.gov.uk/pubs/international/market_risk.pdf

Counterparty Default risk

- 5.24 Many participants in QIS4 were concerned that counterparty default risk is dealt with in a disproportionately complex manner for a risk that is typically relatively immaterial. We strongly urge CEIOPS to develop a simplified method as standard.
- 5.25 In addition, the proposed approach for counterparty risk based on ratings was considered inappropriate by some, in particular with regard to non-rated reinsurers and intermediaries. An approach based on the counterparty's solvency level should be considered as a possible alternative.
- 5.26 Recommendations:
- Develop a simplified alternative approach for counterparty default risk which is not necessarily dependent on external ratings.

The QIS4 approach to the risk absorption of profit sharing business is still causing some difficulties

- 5.27 The QIS4 specifications (TS.VI.H) require the calculation of "the lower boundary SCR" which represents the required capital under each SCR stress assuming that profit-sharing to policyholders is reduced as far as possible to absorb the losses under the stress. In addition to this, the specifications require gross and net capital charges calculated for each risk module, where the net figures allow for the potential risk absorbing effect of future profit sharing (on a best estimate basis) and the gross figures do not make any allowance for changes in profit-sharing to absorb losses.
- 5.28 We would argue that a requirement for three separate calculations for each risk module is excessive. The net (of risk-absorbing effects of profit sharing) figure is the realistic capital requirement based on the insurer's realistic allowance of adjustments to profit-sharing following a stress event. Each insurer will follow its own strategy in this regard, based on established market practice, past company practice and communications to policyholders. For this reason we believe that these additional two calculations (gross SCR and lower-boundary SCR) are excessive and meaningless requirements for insurers.
- 5.29 The specifications state that the lower boundary SCR is required as "it is difficult to benchmark the results and check that the assumed management actions are realistic and achievable". However, we would propose that the disclosure of the assumptions used, together with appropriate justification for these assumptions is a more suitable method for supervisors to check whether they believe results are realistic and achievable.
- 5.30 The gross SCR is required by the technical specifications as part of the "three-step bottom-up approach" which calculates the final capital requirements for the insurer by first calculating them assuming the insurer cannot vary profit-sharing rates in times of stress and then secondly reducing these capital requirements to allow for a certain extent of the losses the insurer would in practice pass to policyholders in times of stress.
- 5.31 Many firms have already built dynamic models, some of which adjust profit-sharing based on solvency positions, profits and losses earned over the last year, allowing for smoothing from previous profit-sharing rates etc. Therefore these models automatically adjust bonus rates following shocks and as such some insurers have had major difficulties deriving liability values excluding the adjustments that would in practice be made to bonus rates (for gross figures) or increasing the adjustments that would be made in practice to bonus rates (for lower-boundary figures).

5.32 We should note, when discussing the methods to measure risk absorbency, that many participants appreciated the testing of the “single equivalent scenario” as an alternative method for calculating the loss absorbing capacity of future profit sharing (TS.VIII.C.8). We would support the inclusion of this alternative approach for those who wish to use it.

5.33 Recommendations:

- An approach for risk mitigation from profit sharing business should be developed that does not require figures to be calculated “gross” of risk absorption.
- The requirement to calculate a “lower boundary SCR” is excessive and would be better replaced by appropriate disclosure.

6. MCR

Strong industry preference remains for the compact approach, although the combined approach is an improvement over the linear approach

- 6.1 The industry appreciates the move away from the inappropriate linear method that was used in QIS3 to an approach that gives results more in line with the risk-based SCR and allows sufficient room for an increasing ladder of supervisory intervention.
- 6.2 The industry would still prefer the CEA's Compact approach (% of SCR) instead of the combined approach that was tested in QIS4 (linear approach with a 50% cap and a 20% floor of the SCR). However, the combined approach of QIS4 does go some way to correct the linear formula BUT
- The compact approach is a far more accurate way of quantifying risk.
 - The different characteristics and risk sensitivities of the combined MCR and SCR will complicate how companies manage their business.
 - It is unfair that some companies have a MCR equal to 50% of the SCR and the others 20% of the SCR because of the arbitrary nature of the linear approach.
- 6.3 The industry believes that the corridor tested in QIS4 of 20% to 50% is excessively broad. A significant reduction of the corridor would go some way to alleviating the industry's concerns over the use of the combined instead of the compact approach. We note that the European Parliament voted in the ECON Committee on the 7th October for a corridor from 25% to 45% which goes some way to alleviate our concerns.

Improvements to the calibration are needed for the linear formula for Life business

- 6.4 Life companies saw that the calibration of the linear formula in the QIS4 specifications gave results that were not in line with the SCR. The formula could give results well in excess of 50% of the SCR for long term business.
- 6.5 Recommendations:
- The Combined approach should be re-tested with a much narrower corridor.
 - Significant work should be done to attempt to calibrate the linear formula to be more in line with the SCR, particularly for life business.

7. Own Funds

Treatment of Hybrid capital

- 7.1 Insurers are concerned that hybrid capital is treated inappropriately under QIS4. Hybrid capital is an important source of financing for insurers, especially for groups.
- 7.2 Under QIS4, inclusion into tier 1 requires hybrid capital to be able to be temporarily written down or converted into equity in times of stress. However, we believe that hybrid instruments can satisfy the requirements of tier 1 capital without satisfying these QIS4 requirements and a more appropriate assessment of the characteristics is required for the tiering of hybrid capital.
- 7.3 The following loss absorption criteria were used in the QIS4 Technical Specifications (TS.V.D.7):
- For inclusion in tier 1 capital, a hybrid capital, instrument or subordinated liability must be able to be written down or converted into equity in times of stress, notwithstanding a possible later write up in case of subsequent profits.
 - For inclusion in tier 2 capital, any payment (principal or coupon) on a hybrid capital instrument or subordinated liability must be able to be deferred in times of stress until the financial position is restored.
- 7.4 This treatment is confusing as it treats conversion into equity with the possibility of a later write up (tier 1 attributes) differently to payment deferral (tier 2) even though both actions achieve the same loss absorption and effective policyholder protection on a going-concern basis and on a gone going-concern basis. It is hence inappropriate to treat deferral less favourably than temporary write-downs.
- 7.5 Furthermore, insurers saw no reason for the optional and rather subjective reporting under TS.V.J which requested the split of hybrid capital into debt and equity components.
- 7.6 Recommendations:
- Hybrid capital should be eligible to be part of tier 1 capital if:
 - It ranks after all policyholders and non-subordinated creditors in winding-up
 - It is perpetual (undated or sufficient duration)
 - The issuer can cancel payments at a pre-determined trigger point on a non-cumulative basis or for an undefined period without triggering a default.
 - Deferrals should be treated consistently with temporary write-downs.
 - The CEA is ready to work with CEIOPS on adjusting the treatment of hybrid capital for implementing measures.

Treatment of Ring-Fenced Funds

Proper account is not taken of all the value within ring-fenced funds

- 7.7 The current QIS4 specifications do not allow for proper account to be taken of all the shareholder value which is contained within certain types of with-profits funds.
- 7.8 Despite the requirement under TS.I.A.3 for all cash flows in and out of ring-fenced funds to be taken into account, shareholder capital which is locked within the ring-fenced fund is currently valued as nil under the requirements of TS.V.C. For example, in a with-profits fund that distributes 90% of all realised profits to policyholders and 10% to shareholders, 10% of any unrealised gains in the fund belong to shareholders and should be recognised as such.
- 7.9 Restricting the own funds of the ring-fenced fund to be equal to its proportional contribution to the SCR of the company ignores any value held within the ring-fenced fund that is the property of shareholders.
- 7.10 Recommendation:
- Proper allowance needs to be given at entity level for shareholder funds held within ring-fenced structures.

Some participants believed the treatment of ring-fenced funds was overly burdensome

- 7.11 Some insurers in the EU have a very large number of ring-fenced funds. Therefore, it is essential to ensure a pragmatic approach is used for ring-fenced fund calculations and appropriate simplifications are in place where necessary.
- 7.12 Some insurers believe that the treatment of ring-fenced funds in QIS4 is overly burdensome, in particular the requirement to calculate individual SCRs for each ring-fenced fund. However, members supported the simplification for this given in *Annex Own Funds 1*.
- 7.13 Participants found it difficult to know how to split certain company-level assets and liabilities between ring-fenced funds and insurers request further guidance in this area.
- 7.14 Recommendations:
- Overly burdensome ring-fenced fund calculations should be avoided.
 - Consideration needs to be given as to how to split company-level assets and liabilities between ring-fenced funds.

Consideration needs to be given as to the appropriateness of the allocation of equal diversification effects to each fund

- 7.15 Under the QIS4 approach, diversification effects are allocated to each ring-fenced fund in a proportionate manner.
- 7.16 Further work needs to be done to consider whether this allocation is appropriate or whether, for example, it would be preferable to take certain risk-drivers for each ring-fenced fund into account when allocating diversification effects.
- 7.17 Recommendation:
- Further work needs to be done to consider whether the allocation of diversification effects to ring-fenced funds is appropriate or whether, for example, it would be preferable to take certain risk-drivers into account.

8. Other Key Issues

Allowance for Future Premiums in Technical Provisions

- 8.1 Many companies experienced difficulties when determining which future premiums should and should not be allowed for when calculating the best estimates of technical provisions. Companies cited a lack of guidance and examples in this area as the reason for a lack of consistency in interpretation of the specifications, with different member states and different insurers within each member state interpreting the specifications in different ways.
- 8.2 The QIS4 technical specifications deal with the issue of future premiums in TS.II.B.32 - TS.II.B.35. Here it states that only those future premiums should be included that are associated with the current insurance contracts and any existing ongoing obligation to service policyholders. It allows for the inclusion of recurring premiums with an assessment of their future persistency, but not the inclusion of expected future renewals if these are not priced into the current contract. Also, it states that options and guarantees, that provide rights for policyholders to obtain a further contract on favourable terms, should be included.
- 8.3 The distinction between new and existing business can be highly dependent on policy type which can vary significantly by location, so we would expect that there may be some difficulty with harmonisation across member states. However, guidance issued at national level, together with a lack of guidance in the specifications, accentuated issues with harmonisation.
- 8.4 Some life insurers used the CFO Forum MCEV principles for QIS4, while others used more restrictive assumptions often due to national guidance. More specifically some issues/inconsistencies with approaches for the inclusion of future premiums were:
- Some considered only those future premiums for policies where no re-pricing was possible, while others included future premiums where re-pricing was possible allowing for future lapse assumptions.
 - Some set technical provisions to be at least as high as the lapse value or paid-up value of each contract – thereby implicitly assuming no future premiums.
 - Some ignored the probability of future lapse if this would reduce the estimate of future technical provisions.
 - Some companies only included future premiums if the insurer would be obliged to receive them on terms that may be disadvantageous, and included no future premiums if the insurer would receive them on advantageous terms.
- 8.5 For non-life insurers, there appears to have been even greater inconsistencies under QIS4 than for life business. The main issue/inconsistency for non-life business appeared to be:
- Some insurers made no allowance for future premiums while others made full allowance, allowing for persistency assumptions.
- 8.6 When considering the inclusion of future premiums, it needs to be borne in mind that a fundamental feature of an economic approach is that all expected economic value is recognised (i.e. all future profits and losses of the current policy). Technical provisions should not allow for any additional margins and in particular, the CEA does not support any approaches which are set out by some individual national guidance to require insurers to assume 100% lapse rates or paid-up rates or arbitrary take-up rates of options on future premiums which do not represent expected future experience. The aim of this practice is to establish higher technical provisions than best estimate and so it departs from the economic approach envisaged under Solvency II.

8.7 The approach for inclusion (or not) of future premiums, in particular for annual renewable policies, clearly needs further guidance and examples. The CEA has produced a position paper⁹ with the CFO Forum which deals with this issue from an accounting perspective, but which we believe would equally be appropriate for solvency purposes. In this paper we specify:

- A proposed principle for a contract boundary definition – where the objective of the principle is to determine when an existing contract ends and a new contract begins. Once that boundary has been determined the expected value of all the cash flows falling within the existing contract should be included in the measurement of the liability. These cash flow estimates should be based on the best expectation in respect of both amount and timing.
- That the boundary of a given contract is defined by the cash in-flows that are expected to fall within the contract's term. For these purposes the term of a contract is the shorter of the contract's life and the point, if any, at which the policy can be freely re-priced by the insurer at the individual policyholder level, (i.e. up until the point at which the insurer has the ability both to reassess the risk profile of the individual policyholder and change the price for an individual without contractual constraint).

8.8 A handful of examples to illustrate how this Insurance Contract Boundaries Principle would apply in practice are below (further examples can be found in our paper):

- Individual annual motor policy, where the contract is annually renewable and there is no restriction on the price or underwriting for further 1-year contracts. The policyholder is not obliged to renew, although in practice a vast number may do so.
 - Only the premiums for the current 1-year contract should be taken into account.
- Universal life type products, where there is flexibility over premium payments and the charge for life cover can be increased to allow for adverse mortality experience.
 - Risk charges are assessed at portfolio level and not individual policyholder level and so all future premiums expected under the contract should be included, allowing for persistency assumptions.
- Term insurance with premium reviews, where the insurer can review the premium rate based on experience at set points in time. The policyholder can reject the premium change and the contract will be cancelled if this occurs.
 - Premium reviews are done at portfolio level. Therefore all future premiums expected under the contract should be included, allowing for persistency assumptions.

8.9 Recommendations:

- The CEA/CFO Forum Insurance Contract Boundaries Principle should be applied to allow the inclusion of all future cash flows from a policy in the calculation of technical provisions up until the shorter of the term of the contract or the point at which the policy can be freely re-priced at individual policy level.
- National guidance should not require insurers to depart from the economic principles underlying Solvency II and in particular technical provisions should not include additional margins for prudence.

⁹ Insurance Contract Boundaries - Proposal to replace the guaranteed insurability criteria, Joint paper by the CEA, CFO Forum.

Treatment of Taxes

8.10 There is still confusion over the treatment of tax:

- A wide variety of approaches were used to determine pre SCR stress liability values with particular confusion over what adjustment, if any, to make to a local GAAP based figure.
- Difficulties were also experienced when determining the risk absorbing effect of deferred tax liabilities in the SCR stress scenarios.

8.11 The confusion firstly related to how to derive future tax liabilities, e.g. whether local GAAP/IFRS tax liabilities should be used/adjusted and to how changes in their values under stress conditions should be allowed for when determining the SCR.

8.12 TS.VIII.C.5 notes that the Directive Proposal (Article 106) requires the risk absorbing capacity of tax to be taken into account. Rather than giving guidance on how participants should do this, the technical specifications ask participants to suggest how it might be done. This leaves the reader unclear whether or not this should be done for QIS4 and if so, how.

8.13 Recommendations:

- It is of particular importance that there is a common understanding of the treatment of taxes. More work is indeed needed on this issue, in particular on the principles to apply.
- For Solvency II purpose, the following principles should apply with regard to taxes:
 - Under an economic approach all expected future cash flows are recognised on a best estimate basis, including taxes
 - The determination of required capital should reflect that in adverse circumstances less tax will be payable , i.e. tax is risk absorbing liability
 - Solvency II does not change the way taxes are calculated for balance sheets

Groups

General issues

- 8.14 QIS4 was the first time a significant proportion of groups participated at group level in an impact study for Solvency II. This was thanks to the much improved specifications for groups and the extra time for completion allocated to groups but also thanks to a big effort from the industry and its associations to attempt to reach the Commission's goal on the group participation rates.
- 8.15 Groups appreciated the extra time given to complete the study compared to solo entities but there were still practical issues for groups in performing all the required calculations (given for example the number of different group calculations which were requested) or giving sufficient qualitative information.
- 8.16 Although the groups section of the technical specifications represents a significant improvement to QIS3 we would still request that more guidance be given in this section.
- 8.17 Recommendations:
- The excessive number of alternative calculations requested should be reduced (as we highlighted in our feedback in advance of QIS4).
 - Clear guidance on the default calculation is necessary.

Allowance for diversification effects

- 8.18 Diversification effects are expected to vary widely for a multitude of reasons such as due to the way groups are structured, the size of groups and whether they cross national boundaries as well as due to the type of business written and the investment strategy. Therefore, we believe it is important to interpret the results of QIS4 looking at the range of diversification effects in the industry, rather than concentrating on trying to interpret average results. For example, mixing national direct insurance groups with worldwide active reinsurers is not appropriate.
- 8.19 There are a few areas in QIS4 in which groups believe the default method does not sufficiently allow for the full sources of diversification:
- QIS4 does not allow for diversification between insurance and non-insurance entities of the group. Although we agree that more work is required in this area to determine the most appropriate treatment of these diversification effects, we do believe that this can be an important source of diversification.
 - QIS4 does not allow for diversification between all risk-types at individual policy level. For example, the treatment of geographic diversification was considered overly crude and simplistic. In particular, there is no allowance for diversification between life insurance risks across different geographic areas, although this is taken into consideration for non-life risks.
 - QIS4 requires an assumption that upward and downward shocks on interest rates cannot occur at the same time. This is not necessarily the case when parts of the group are located in different economic areas. On the same note, shocks on exchange rates are also assumed to be either only upwards or downwards.

- Although the QIS4 specifications require world-wide consolidated figures they also request that groups split out their EEA and non-EEA entities as part of a set of additional calculations. Although we understand that the issue remains as to how best to determine and allow for the extent transferability between EEA and non-EEA entities, it can be an important source of diversification for groups.

8.20 Recommendations:

- We believe it is important to interpret the results of QIS4 looking at the range of diversification effects in the industry, rather than concentrating on trying to interpret average results.
- More work is required to ensure that the full range of possible diversification effects is taken into account appropriately for the default method for groups. In particular future work is requested in the areas of:
 - Diversification between insurance and non-insurance entities of the group.
 - Diversification between all risk-types at individual policy level and across geographic areas.
 - Interest rate and exchange rate shocks, which are currently assumed to be either only upwards or downwards.
 - Diversification between EEA and non-EEA entities.

Allowance for the transferability of capital

- 8.21 We believe that more work is required to determine the most suitable way to firstly assess and secondly take account of the extent of the transferability of capital within the group in the group solvency calculations.
- 8.22 These issues are conceptually similar to those which arise when dealing with ring-fenced funds.
- 8.23 Recommendation:

- The industry is keen to work with CEIOPS in the future to determine how best to assess and take account of the transferability of capital in the group solvency calculations.

9. Conclusions

- 9.1 QIS4 plays a key role for the development of the implementing measures for which CEIOPS is expected to finalise its advice by November 2009. The European insurance industry has always strongly supported the Solvency II directive proposal and the quantitative impact studies, which have played an important role in the development of the Pillar I aspects of Solvency II. The CEA was similarly committed to supporting QIS4.
- 9.2 QIS4 was a major step forward in a number of areas but also highlighted a number of areas where companies experienced difficulties. Some key ones were:
- The calculation of the best estimate.
 - The default approach for risk margins was overly complex.
 - The treatment of future premiums and future taxes not being understood resulting in different treatments across the industry.
 - The calibration of some SCR modules remaining unjustifiably high.
 - Parts of the SCR design being disproportionately complex.
 - The MCR being insufficiently risk sensitive and not ensuring a level playing field.
- 9.3 We would also note that QIS4 was, for Internal Models and Groups, primarily a data gathering exercise and did not contain firm proposals.
- 9.4 For the first time, QIS4 introduced a number of simplified methods and proxies along with a number of qualitative and quantitative criteria/thresholds for when they could be used. We recognise that CEIOPS has made some significant efforts to address the practical issues related to the implementation of the proportionality principle.
- 9.5 We are convinced that the Solvency II regime will bring significant benefits to both the industry and consumers. It is essential that the current momentum in the legislative timetable is maintained and the new regime is in place when expected. The CEA would like to take this opportunity to offer its full support in helping to achieve this goal.

We look forward to continued co-operation

- 9.6 We understand that many issues require further work and we look forward to close cooperation with CEIOPS on key areas where we believe we can help develop Solvency II.

Appendix A

It is important to note that the comments in this document should be considered in the context of other publications by the CEA. These can be found under the Solvency II section of the CEA website (www.cea.eu) and include:

- **CEA response to the EC consultation on the harmonisation of Solvency rules applicable to IORPs**
Date : 2008-11-28
- **CEA position paper on Segmentation**
Date : 2008-11-21
- **CEA Response to CEIOPS' SRP and Reporting Requirements**
Date : 2008-11-14
- **Joint CEA-PEIF-CFO Forum-CRO Forum Letter on Current Solvency II Directive Negotiations**
Date : 2008-11-13
- **CEA Response to CEIOPS' Own Risk and Solvency Assessment**
Date : 2008-09-18
- **Solvency II working paper: Legal FAQs on group support**
Date : 2008-08-12
- **CEA QIS4 questionnaire for groups**
Date : 2008-07-01
- **CEA QIS4 questionnaire for solo companies**
Date : 2008-07-01
- **Position paper: cost of capital methodology**
Date : 2008-06-03
- **CEA Guidance on Quantitative Impact Study 4 (QIS4)**
Date : 2008-06-03
- **CEA Helper Tab QIS4 - Risk Margin Simplification**
Date : 2008-06-03
- **CEA Helper Tab QIS4 - Equity Risk Dampener**
Date : 2008-06-03
- **CEA response on the principle of proportionality in the Solvency II framework directive proposal**
Date : 2008-04-28
- **CEA response on aspects of the Solvency II Framework Directive Proposal related to Insurance Groups**
Date : 2008-04-28
- **CEA Position paper on the own funds eligibility criteria**
Date : 2008-04-25
- **CEA position on Solvency II and pension funds**
Date : 2008-04-08
- **CEA Guidance on QIS4 Simplification of the Market Interest Rate Risk Sub Module**
Date : 2008-02-20
- **CEA Response to EU Commission's Draft Call for Advice on QIS4**
Date : 2008-02-20
- **Simplifications for calculating risk margins using the cost-of-capital approach**
Date : 2008-02-20
- **Instruments Working Paper on Marketability**
Date : 2008-02-20

- **QIS 4 TS Comments Consolidation**
Date : 2008-02-20
- **Solvency II working paper: How the Group Support Regime works in practice (Case Studies)**
Date : 2008-02-12
- **Solvency II working paper: FAQs on Group Supervision & Group Support Regime**
Date : 2008-02-12
- **Joint CEA-CRO Forum letter to European Commissioner McCreevy on the Methodology of the Calculation of the MCR**
Date : 2008-01-30
- **CEA Position paper on the Solvency II Framework Directive published by the European Commission on the 10 July 2007**
Date : 2007-10-01

About the CEA

The CEA is the European insurance and reinsurance federation. Through its 33 member bodies, the national insurance associations, the CEA represents all types of insurance and reinsurance undertakings, eg pan-European companies, monoliners, mutuals and SMEs. The CEA, which is based in Brussels, represents undertakings that account for approximately 94% of total European premium income. Insurance makes a major contribution to Europe's economic growth and development. European insurers generate premium income of €1 122bn, employ one million people and invest more than €7 200bn in the economy.