

**QIS5**  
**Country Report**  
**for**

<QS\_Country>

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**Denmark**

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## 1. Executive summary

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

### Quality of data

*Provide your assessment of the overall quality of data of the QIS5 submission, explicating problem areas.*

<QS\_exsum\_quality>

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Undertakings comment that the technical specifications to QIS5 are not very specific and do not provide sufficient guidance. There is much uncertainty and room for individual interpretation. As a consequence the QIS5 results must be interpreted with caution.

Life insurance undertakings have further concerns stemming from the application of a new model for valuation of options and guarantees in technical provisions in QIS5. Life insurance undertakings have used this model, proposed by the Danish FSA, and argue that it introduces room for interpretation which to a large extent impacts the value of technical provisions. Compared to the current regime undertakings observe a much larger loss absorbing capacity in technical provisions. This reduces the SCR. A different interpretation of the methodology could increase the SCR substantially. When evaluating the SCR obtained in QIS5 this must be taken into account.

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### Overall financial impact

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

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For life insurance undertakings the solvency ratio (eligible own funds/SCR) show a large deviation. Of the 51 replies 45 are able to meet the SCR whereas 6 do not meet the SCR. The average (un-weighted) solvency ratio is approximately 5.

One of the main causes behind the large deviations between life insurance undertakings is the different levels of loss absorbency in technical provisions. It ranges from 3 per cent to 88 per cent of best estimate with an average of 36 per cent.

For some of the 6 that are not able to meet the SCR a large proportion of their insurance contracts contain high interest rate guarantees. As a result, the loss absorbing capacity is low. For some of the 6 it has been necessary to increase technical provision primarily due to the approach to calculate the risk margin.

Health insurance undertakings seem to experience the largest relative impact. Of 14 undertakings 9 are capable of meeting the SCR. For the remaining 5 undertakings the

SCR increases significantly due to higher capital requirement for workers compensation in premium and reserve risk relative to Solvency I. The capital requirement triples compared to a doubling for other undertakings.

For non-life insurance, reinsurance, and captive undertakings (excluding undertakings classified as health undertaking considered above) 53 out of 56 are able to meet the SCR. The capital requirement for the remaining 3 increases marginally compared to Solvency I. These undertakings' individual solvency ratio is, however, sensitive to marginal increases in the capital requirement due to an existing low solvency ratio in Solvency I.

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### Valuation methodology

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

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Undertakings have generally not indicated many practical or methodological difficulties concerning the QIS5 valuation methodology. The QIS5 valuation methodology is quite similar to the valuation methodology currently used in Denmark. As a consequence the quantitative impact of the QIS5 valuation methodology is – not surprisingly – very limited.

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### Technical provisions methodology

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

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### Risk margin

On average the risk margin in all insurance undertakings constitutes app. 2 per cent of the best estimate. This proportion, however, differs between the various types of undertakings. For life insurance, health similar to life and unit link the proportion is 1.65 per cent whereas it is 6.2 per cent for non-life and health non-similar to life.

According to the undertakings the principle behind the calculation of a cost-of-capital risk margin is reasonable. Concerns that the methodology is overly complex are, however, mentioned. For example, some life insurance undertakings mention that the calculation of unavoidable market risk seems unduly complex compared to its risk contribution.

The Danish FSA proposes to delete the requirement to include unavoidable market risk in the risk margin. The complexity in the calculation would be significantly reduced.

Many of the comments below on the SCR calculation should be taken into account regarding the risk margin. Any discrepancies between the real risk and the risk measured in the SCR will affect the risk margin through future SCR's.

## **Non-life:**

### Unbundling

The undertakings have trouble unbundling the technical provisions into the various lines of business when an insurance policy covers several lines of business.

The Danish FSA believes this is a process where the undertakings must improve their data quality to meet the future Solvency II requirements.

### Workers compensation

The Danish FSA has the impression that different interpretations of CEIOPS' answer to question 51 (in the Q&A as of 4 November 2010) are used across member states. Further clarification of this issue is suggested.

## **Life:**

### Options and guarantees

In general life insurance undertakings are concerned that the requirements regarding the valuation of technical provisions are too complex and that no real possibility of using the principle of proportionality exists.

Danish life insurance undertakings have been using a market consistent valuation of technical provisions since 2003. The Danish FSA believes that the main structure of this methodology can be maintained under Solvency II and it has therefore been the basis for QIS5.

For a more reliable valuation of options and guarantees the Danish FSA has introduced a model to be used in QIS5 to value surrender and paid-up-policy options. This should be seen as a first step towards a more well-documented model to be used under Solvency II.

Life insurance undertakings have used the proposed model and comment that it introduces room for interpretation which has a large impact on the value of technical provisions.

The Danish FSA and the industry will continue the process of developing a method for valuation of options and guarantees.

### Relevant risk-free interest rate term structure and the illiquidity premium

The Danish FSA agrees with the methodology used to derive the DKK term structure in QIS5 where the EUR swap curve is used as a basis with an adjustment in order to align currencies. The Danish FSA supports flexibility in the choice of relevant risk-free interest rate term structure. The Danish FSA would like to stress that the choice of term structure should be based on undertakings' ability to perform effective asset- and liability management (ALM).

The Danish FSA supports the inclusion of an illiquidity premium based on observable market data.

### Segmentation/unbundling

A general observation from the life insurance undertakings is that the unbundling of obligations does not fit most Danish products since they are integrated by nature. Furthermore on the split between life and health the specifications give contradicting guidelines – and this uncertainty is repeated in the draft implementing measures.

The Danish FSA agrees with this observation. Results show that the attempts to unbundle obligations lead to different interpretations. The outcomes do not reflect the nature of the obligations.

As a possible reduction of complexity the Danish FSA proposes to reduce the lines of business for life insurance obligations from 18 to 6 by not distinguishing between death/survival/health/miscellaneous.

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### Own funds

*Provide your assessment of the adequacy, practicability and quantitative impact of the QIS5 results for the determination, classification and limits applied to own funds.*

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The Danish undertakings have not indicated many difficulties with the QIS5 own funds methodology.

The main obstacle seems to have been the calculation of expected profits included in future premiums. While the approach set out in OF.2.4. is sufficiently clear to the majority of Danish undertakings, several non-life undertakings do not agree with this. For life insurance, there is a clear link between the classification of expected future profits and the loss absorbing capacity of liabilities. This is because of the regulation on profit sharing which allocates a significant part of future profits as liabilities towards policyholders. Life insurance undertakings state that the classification of future profits and the loss absorbing capacity of liabilities are very much interlinked. In order to achieve a confidence level of 99.5 per cent it is important to classify expected future profits as Tier 1 capital.

In general, the non-life undertakings find the approach to be too burdensome/time-consuming compared to the results achieved. The life undertakings find an appropriate balance between results and burden has been achieved.

The Danish FSA believes that expected profits in future premiums does not fulfil the requirements for Tier 1 basic own funds. As a consequence, the Danish FSA supports the notion that expected profits in future premiums should be included in undertakings' basic own funds but only as Tier 3 capital.

The total basic own funds for all undertakings under QIS5 valuation amount to 92 per cent of total basic own funds under Solvency I valuation. A total of 78 undertakings have reported a QIS5 value smaller than the Solvency I value, 14 undertakings have reported the same value and 29 have reported a larger value.

The classification of QIS5 own funds into Tiers shows that 95 per cent of the total basic own funds for all undertakings consist of Tier 1 capital items, while capital items in Tier 2 and 3 only amount to 4 and 1 per cent respectively. As the aggregated figures indicate basic own funds are equal to eligible own funds for all undertakings. None of the undertakings report to have any ancillary own funds.

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### SCR

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

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### Equivalent scenario/modular approach

Feedback from the industry shows no clear preference for either of the methods. The previous strong support for the equivalent scenario is, however, only highlighted in a few replies. In addition, some undertakings now explicitly support the modular approach.

Based on the feedback from the industry the Danish FSA supports the modular approach. This solution will contribute to reducing the complexity of the standard formula.

### Loss absorbency of deferred taxes

Many undertakings have indicated they find the criteria for recognition of deferred tax assets unclear and request clear guidance. As the deferred tax assets are potentially very significant this is an important issue for the industry.

### Danish mortgage credit bonds

The Danish FSA acknowledges and appreciates the special treatments included for covered bonds which are of great importance for the Danish financial system. The Danish FSA, however, continues to believe the capital requirement for Danish mortgage credit bonds could be calibrated in a manner that better reflects the real risk of these investments. In particular the fact that no special treatment for AA rated covered bonds is available in the spread risk module reflects this. Recent analysis by the

European Covered Bond Council shows that AA rated covered bonds should also be subject to a special treatment in the spread risk sub module.

### Interest rate risk

A significant discrepancy in the interest rate risk module is the selection of the worst interest rate shock upwards/downwards. In QIS5 undertakings should decide the scenario based on highest net risk ( $nMKT_{Int}$ ). Under the Danish regime for life insurance undertakings this introduces the risk that the loss absorbing buffers are used more than once.

The Danish FSA advised life insurance undertakings to instead base their decision on gross risk ( $MKT_{Int}$ ). Some undertakings, however, found that also this criterion introduces problems in form of an understated SCR.

Undertakings suggest the interest rate scenario is based on the overall highest SCR in order to get a correct picture.

The Danish FSA supports this suggestion and would like to highlight that the current QIS5 methodology results in an unacceptable risk of an unreliable SCR calculation when used by Danish life insurance undertakings.

### Counterparty default risk

Almost all undertakings commented that the calculations for counterparty default risk still are too burdensome compared to the risk contribution from this sub-module. On average this sub-module constitutes app. 5 per cent of the undiversified sum of risk components. The proportion, however, differs greatly between life, non-life, health and reinsurance/captives (2 per cent, 6 per cent, 6 per cent and 17 per cent respectively).

Feedback indicates the calculations of  $SCR^{Hyp}$  and  $SCR^{Without}$  are particularly burdensome.

The Danish FSA agrees that the counterparty risk module is too complex compared to the risk contribution. The Danish FSA believes the module itself should be simplified since additional simplifications only are to be used under the principle of proportionality.

### Longevity risk

The assessment of longevity risk with the current shock significantly overstates the 99.5 per cent VaR principle when applied by Danish life insurance undertakings.

The use of a best estimate to value technical provision must also include future expected changes in mortality. Likewise, the capital requirement should only cover the risk of unexpected changes in mortality.

The calibration is based on the historical developments in mortality for eight year time intervals. This does not correspond with the one year VaR horizon neither does it correspond with a 99.5 per cent value.

The underlying assumption seems to be that mortality tables are reviewed e.g. every five to ten years. In that case the jump in mortality could well be a decrease of 20 per cent. This is however not the philosophy in a market value regime where mortality assumptions are updated on a yearly basis. Current practice for Danish life insurers follows those of a market value regime.

The Danish FSA suggests that further analysis on this topic is made.

#### Mass lapse scenario for life insurance undertakings

Based on the fact that lateral pension funds in Denmark will be subject to Solvency II a significant amount of life insurance undertakings have commented that the mass lapse scenario overstates the real risk of mass lapses. The possibility to lapse (surrender) is very limited in such undertakings since only emigration and policyholder's change of collective agreement can cause surrender. Out of 51 life insurance undertakings 10 report that mass lapse is the most severe lapse scenario which does not seem to reflect the real lapse risk.

The Danish FSA agrees with this concern and suggests that a separate scenario should be defined to reflect undertakings where policyholders have very limited possibilities to lapse.

#### Adjustment for non-proportional reinsurance

Some non-life undertakings have mentioned that calculating the risk-mitigating effect of non-proportional reinsurance is too complicated. The Danish FSA believes that undertaking specific parameters or partial internal models cannot solve this issue. Since 84 per cent of the capacity of the Danish reinsurance market is non-proportional this requirement would be an unfair burden for the Danish undertakings.

Simplifications in the standard formula are recommended by the Danish FSA. Disregarding it in the standard formula could lead to an increase in the capital requirement for Danish non-life undertakings since the risk mitigating effect is not adequately reflected.

#### Non-life Catastrophe man-made scenario

Some non-life insurance undertakings state the liability scenario is inadequately specified. Almost all undertakings (who have replied) find it difficult to measure the largest exposure in a given radius.

#### Lapse shock for non-life insurance undertakings

Regarding lapse shocks in both the Non-Similar to Life Techniques Health sub-module and the Non-life module the undertakings' major problems seem to be data availabil-

ity and understanding the definition. Calculations show the lapse risk does not significantly contribute to the capital requirement in the Non-Similar to Life Techniques Health sub-module and the Non-life module. Analysing non-life insurance undertakings with a positive lapse risk the lapse risk sub module only constitutes 2.4 per cent of the sum of the risk components for the non-life underwriting risk module. Analysing all non-life insurance undertakings this number only constitutes 0.5 per cent. For Non-Similar to Life Techniques Health the figures are 0.22 and 0.21 per cent respectively. In addition, around 1/3 of the undertakings who submitted qualitative comments state lapse risk is immaterial.

Based on the above the Danish FSA suggests lapse risk in the Non-Similar to Life Techniques Health sub-module and the Non-life module is either removed or simplified. The complexity of the standard formula would be reduced.

#### Currency risk

Several undertakings are of the opinion that the capital requirement for currency risk overestimates the actual risk involved in currency positions in DKK against EUR.

The undertakings find it difficult to understand how this stress can be justified when the maximum fluctuation in DKK against EUR observed over a one-year time horizon is 0.45 per cent. This low level of observed fluctuations reflects a deliberate mandatory policy of maintaining a stable DKK rate close to the central rate.

#### Symmetric adjustment of equity risk

Some undertakings have concerns regarding the anti-cyclical dampener in the equity risk sub module. Analysis show that with the current method to calculate the dampener, the equity stress will be either in the top or in the bottom of the interval, and in far the most cases in the top.

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#### MCR

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

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There was little or no feedback regarding the MCR from undertakings. The lack of comments is interpreted by the Danish FSA as a sign that the industry is well prepared regarding the MCR calculation.

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#### Proportionality

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

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Life undertakings comment that no real possibility to use proportionality exists in the calculation of technical provisions. Especially regarding the valuation of options and guarantees proportionality is requested.

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### SCR internal models

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

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Unfortunately the Danish FSA did not receive a lot of neither quantitative nor qualitative answers regarding internal models.

From the Danish FSA's knowledge of the market it seems that non-life companies mainly focuses on modelling the insurance risk as a partial internal model and later on possibly expand to a model also covering market and counterparty risk. Life companies are considering partial internal models covering longevity risk c.f. comments on longevity risk in the SCR.

The common approach is a stochastic partial model (using Monte Carlo simulations) that is integrated with the standard formula using standard formula correlations. Undertakings do not have sufficient data to use other integration techniques.

All in all the Danish FSA expect around 6 partial internal models and one full which is a group model amended to fit the local purpose.

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### Groups

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

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The total own funds is greater than the Group SCR for all groups except one, whose total own funds is a marginally lower than the Group SCR.

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