ISLE OF MAN
FINANCIAL SERVICES AUTHORITY

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QIS4 EXERCISE FOR LONG TERM INSURERS

CONSULTATION PAPER
CP17-03/T04

This paper is issued by the Financial Services Authority ("the FSA"), the regulatory authority responsible for the supervision of the financial services, insurance and pensions sectors in the Isle of Man.

What is it for?

This paper sets out the timescales for the fourth Quantitative Impact Study ("QIS4") exercise for life insurers and reinsurers, describes changes to the Standard Formula being tested in QIS4 compared with that for QIS3, and provides additional guidance on some aspects of the calculation in order to promote consistency of approach across respondents.

Who is affected by it?

This document will be of direct interest to all existing and prospective insurance companies undertaking long term insurance business in or from the Isle of Man. In particular, it will be of interest to those with functional responsibility and oversight of the finance, actuarial and risk management functions within those companies. The accompanying Technical Specification will be of interest to those with technical expertise in, and responsibility for, modelling, calculating, and reviewing and/or using the calculation of technical provisions, capital resources and risk-based capital requirements.

Other parties with an interest in the Isle of Man life assurance sector may also find this paper and the issues raised of interest.

What action is required?

We require all Isle of Man life insurers and reinsurers to complete the QIS4 exercise and return completed results templates and questionnaires at their earliest convenience and by 30 June 2017 at the latest.

Issue date	***7 April 2017***
Closing date for responses	***30 June 2017***

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1. QIS4 launch and timing

1.1.1. In line with the FSA's 2017 Roadmap, we are launching the QIS4 exercise for life insurers and reinsurers. As part of the launch we are providing:

- this consultation paper;
- a QIS4 technical specification;
- a set of Excel results templates;
- a results questionnaire;
- the risk-free yield curves and probabilities of default as at 31 December 2016;
- helper spreadsheets to assist in calculating the counterparty default risk, spread risk, and health risk capital requirements.

1.1.2. QIS4 calculations are to be carried out as at 31 December 2016.

1.1.3. The submission deadline for QIS4 results is 30 June 2017, however we encourage insurers to submit their results earlier where possible. **Please note there is one question in section 2.3 'Future Management Actions' which requires a response by 30 April 2017**.

1.1.4. Following feedback from QIS3, the Excel results templates have been simplified. Insurers now have the option to either complete the tabs which relate to each risk module, or to complete the 'Alternative Data Entry' column in the 'Raw Results' tab.

1.1.5. The submitted templates should not be linked to backing spreadsheets. In the template, insurers can now break the links to backing spreadsheets by going into the 'Index' tab and selecting Data/Edit Links/Break link. This only works when you are in the 'Index' Tab. All links in the input templates should be broken before the 'update results' macro is run in the 'Total' template.

1.1.6. The submission should be sent to sian.eltman@iomfsa.im and include:

- Two sets of completed results templates, one including future management actions and one excluding future management actions (see section 2.3 Future Management Actions);
- Completed qualitative questionnaire;
- Operational risk documentation;
- Commentary on any significant changes since QIS3, either to the business, products or underlying assumptions that are reflected in the QIS4 results, and explanations for any significant changes in the components of the SCR and to overall solvency.

1.1.7. Insurers are requested to submit any questions or requests for clarification relating to the QIS4 documents listed in 1.1.1 as soon as possible, in order that we may provide any further guidance required. The contact for queries and responses is sian.eltman@iomfsa.im.

1.1.8. Insurers are invited to respond to the questions raised in this paper. The questions are set out in ***bold italics***, and responses should be provided in the questionnaire to be returned with the QIS4 results.

2. QIS4 new requirements

2.1. Operational Risk Solvency Capital Requirement ('SCR')

2.1.1. QIS3 was the first exercise to include capital requirements for operational risk for life insurance contracts where the investment risk is borne by the policyholders.

2.1.2. For QIS4 we are further refining the proposed approach to the calculation of the SCR for operational risk by defining "expenses associated with unit-linked business, excluding acquisition expenses" and including all lines of business.

2.1.3. In QIS4 the operational risk SCR will be calculated as two separate components SCR_{op_UL} and SCR_{op_nonUL}. Where:

- SCR_{op_UL} is the operational risk SCR in respect of life insurance contracts where the investment risk is borne by the policyholders (i.e. type 1 unit-linked business).
- SCR_{op_nonUL} is the operational risk SCR for all other lines of business (i.e. types of business 2 to 5).

Operational Risk SCR for linked business, SCR_{op_UL}

2.1.4. The standard formula component for SCR_{op_UL} is calibrated to 100% of the expenses associated with unit-linked business, excluding acquisition expenses, with an allowance for diversification assuming a 50% correlation between the Basic Solvency Capital Requirement ("BSCR") and the operational risk component. This is unchanged from QIS3.

2.1.5. For QIS4 we have defined expenses associated with unit-linked business to exclude acquisition expenses (including initial commission) but include all other administration expenses, such as renewal commission; one-off/development expenses; maintenance expenses; and investment management expenses. Furthermore the expenses should reflect the actual expenses incurred in the previous 12 months, including any overspends.

2.1.6. The results templates now require a full breakdown of the expenses insurers have allocated to unit-linked business for use in the calculation of the SCR for operational risk, for both the 2016 year end and 2015 year end.

Operational Risk SCR for non-linked business, $\mathbf{SCR_{op\_nonUL}}$

2.1.7. The proposed operational risk SCR for non-unit-linked business calculation is essentially the same as the Solvency II calculation. Further details can be found in TS17-03/T04 Section 2.4 SCR Operational Risk.

Standard Formula for the SCR

2.1.8. The standard formula for the SCR has been amended as follows:

$$SCR = \sqrt{BSCR^2 + BSCR \cdot SCR_{op\_UL} + SCR_{op\_UL}^2} + Adj + SCR_{op\_nonUL}$$

2.1.9. ***We request insurers provide comments on the proposed approach to determining the operational risk SCR for non-linked business, above.***

Calibration of Operational Risk SCR for linked business, $\mathbf{SCR_{op\_UL}}$

2.1.10. The different approaches used by insurers to derive the expenses used in the QIS3 operational risk SCR mean we were unable to refine the calibration of the operational risk SCR against insurers' own assessments of operational risk. We propose to carry out this work using the results of the QIS4 exercise.

2.1.11. ***We request all life insurers to provide us with full details of their internal assessment of their operational risk exposure and the associated capital requirement as at 31 December 2016, if available. Where relevant this should include:***

- Details of any changes to the methodology, processes and models used at 31 December 2016 compared with those at 31 December 2015;
- The sub-risks considered, with reasoning for any changes (or lack of change) from those considered in 2015;
- Where used, the scenarios (typically 1-in-10 and 1-in-100 year events) used for calibrating the loss distributions. For each scenario please provide:
  - The likelihood level;
  - Details of the scenario event giving rise to the gross loss;
  - Details of any mitigation (controls, management action, insurance etc.) reducing the gross loss to a net loss;
  - The amounts of the gross and net losses.

- Where used, details of the loss and frequency distributions used in the modelling of each sub risk;
- The amount of capital required for each sub risk on a stand-alone basis;
- The assumed correlations between each pair of sub risks;
- The capital requirement for operational risk allowing for diversification between the sub risks;
- The assumed correlations between operational risk and other risks in the capital model; and
- The capital requirement for operational risk allowing for diversification with other risks.

2.1.12. ***If you have already supplied your most recent assessment, please notify us as such in the QIS4 Qualitative Questionnaire***.

2.1.13. The Excel templates have been updated accordingly to reflect the new information required to calculate the operational risk SCR.

2.1.14. We will further refine the standard formula based on consultation feedback and the additional data gathered in QIS4.

2.1.15. Insurers will be required to consider the appropriateness of the standard formula for operational risk for their own business, and provide details of their own assessment of operational risk in the Own Solvency and Risk Assessment ('ORSA') process or equivalent assessment. See 2.4 'Deviations from the standard formula'. We will be consulting on the ORSA process later this year.

2.2. Non-linearity

2.2.1. In QIS3 we requested additional sensitivity scenarios to test for possible non-linearity effects between different risks. We believe these effects may be relevant to Isle of Man Life insurers as they largely affect unit-linked business and hence may not be captured in the Solvency II standard formula.

2.2.2. The results of the non-linearity exercise indicate that certain insurers are likely to benefit from non-linearity effects, which would in theory reduce their SCR.

2.2.3. The impact varies by insurer due to the different nature of the products, charging structures, expense structures, equity backing ratios, and currency mix. The size of the impact is also dependent on the management actions triggered by the single and combined stresses.

2.2.4. The FSA has therefore decided not to allow for non-linearity within the standard formula and instead, will request insurers to consider possible non-linearity effects in their ORSA process. See 2.4 'Deviations from the standard formula'.

2.2.5. No additional non-linearity sensitivities are therefore required in QIS4.

2.2.6. ***We request insurers to comment on the proposed approach for non-linearity, including whether they believe non-linearity will have a significant effect on their SCR.***

2.3. Future management actions

2.3.1. TS17-03/T04 paragraphs 1.2.3.109 – 1.2.3.118 enable insurers to allow for potential future management actions when determining their provisions for insurance liabilities.

2.3.2. TS17-03/T04 paragraph 1.2.3.118 states that management actions should be clearly documented and have been approved by the Appointed Actuary, and the Board of the insurer.

2.3.3. The results of the QIS3 exercise indicated that the majority of insurers are allowing for future management actions when applying the stress scenarios, however not all of these management actions have been formally documented and/or do not have Board and Appointed Actuary approval.

2.3.4. In QIS4 we want to understand what management actions are being applied by insurers, the scenarios they are being applied in and the impact of the management action on the SCR.

2.3.5. ***We request all life insurers provide us with full details of all management actions to be modelled in the QIS4 results, including details of each action, the rationale behind taking the action and confirmation of whether the action has been formally approved by the Board and the Appointed Actuary and if not, why the action has been allowed for. We request this information ahead of the results of the QIS4 exercise and no later than the 30 April 2017.***

Specifically for each management action we would like to know:

- ***What the action is and the circumstances in which it is triggered?***
- ***Is the action documented?***
- ***Has the action been approved; by the Appointed Actuary? By the Board?***
- ***If the action is not currently documented and/or approved, the reasoning behind allowing for it in the SCR calculation?***

- ***Details of any management actions currently awaiting documentation/ approval that you hope to allow for in the SCR once the regime is launched?***
- ***Any other comments you have regarding the use of management actions.***

2.3.6. ***We also request that where management actions are used in the QIS4 results, life insurers prepare and provide <u>two</u> sets of results templates. The main set should include the impact of management actions documented above. The second set of templates should exclude management actions and will allow us to assess the impact of management actions on each insurer's solvency coverage ratio.***

2.4. Deviations from the standard formula

2.4.1. The ORSA process will require insurers to consider the appropriateness of the standard formula against all risks faced by the insurer, and quantify each deviation.

2.4.2. Alongside QIS4, and/or in our ORSA consultation, we will be considering and may consult on possible approaches to dealing with situations where the insurer's ORSA process reveals that either:

- the standard formula significantly understates the risk profile of an insurer (for example the operational risk inherent in the insurer);
- the standard formula doesn't appropriately capture the risks of the insurer's business (for example non-linearity effects and operational risk).

2.4.3. Once the new risk-based capital regime has been implemented, the FSA will review ORSA submissions alongside the standard formula results.

2.4.4. Possible actions being considered by the FSA to resolve the situations in 2.4.2 include: consideration of the use of an internal model (where proportionate); using undertaking specific parameters ('USPs') and the application of a capital adjustment.

2.4.5. In the first instance, the FSA intends to use the ORSA data received to refine the calibration of the standard formula parameters, to ensure the standard formula remains appropriate for the Isle of Man life insurance industry.

2.4.6. Where an insurer's ORSA indicates that the standard formula significantly understates the insurer's solvency capital requirement, the FSA will be likely to take immediate steps with the insurer to correct the situation using one of the actions mentioned above.

2.4.7. In other cases, where an insurer is able to supply sufficient evidence, over a suitable period, that the standard formula does not appropriately capture the risks of their business, the FSA will consider the extent of the deviation from the standard formula against a set of criteria (to be consulted upon) and subject to the criteria being met, may take one of the actions above to correct the issue.

2.4.8. At this stage, for life insurers, the FSA does not expect to be in a position to take actions which would adjust the standard formula result downwards until at least two sets of annual returns and ORSAs have been completed by an insurer under the new regulatory regime.

2.4.9. ***We request insurers to provide initial comments on the possible approaches set out in this section 2.4.***

2.5. Look-through to underlying assets

2.5.1. TS17-03/T04 requires insurers to examine the economic substance of their collective investment entities and other investments packaged as funds, in order to properly assess the market risk inherent in them.

2.5.2. The results of QIS3 revealed that there is still confusion surrounding the requirement to do a full look through of the assets when determining the SCR. The guidance in TS17-03/T04 has been expanded to assist insurers in meeting this requirement:

Full look through approach

2.5.3. Paragraph 2.6.4.1 of TS17-03/T04 states that wherever possible, and where proportionate, the above should be achieved by applying a look-through approach in order to assess the risks applying to the assets underlying the investment vehicle.

Target underlying asset allocation approach

2.5.4. Where the full look-through approach cannot be applied or is not proportionate, paragraph 2.6.4.7 states that the SCR may be calculated on the basis of the target underlying asset allocation of the collective investment entity or fund, provided such a target allocation is available to the insurer at the level of granularity necessary for calculating the SCR, and the underlying assets are managed according to this target allocation.

Equity type 2 charge approach

2.5.5. Where the full look-through approach and target underlying asset allocation approach cannot be applied, paragraph 2.6.4.8 states that the collective investment entity or fund should be treated as equity type 2. Insurers are asked to discuss this with the FSA, demonstrating why this approach has been used, in advance of submitting the QIS4 results.

2.6. SCR for risk of a mass lapse event

2.6.1. TS17-03/T04 sets out the method to use to determine the SCR for the risk of a mass lapse event ('$Lapse_{mass}$'). The results of QIS3 showed that there is still some confusion about how the shock to determine the SCR is to be applied in practice.

2.6.2. 2.7.8.10 states that the $LapseShock_{mass}$ is the combination of the following instantaneous shocks:

1) The discontinuance of 40% of the insurance policies for which discontinuance would result in an increase of technical provisions without the risk margin.
2) Where reinsurance contracts cover insurance or reinsurance contracts that will be written in the future, the decrease of 40% of the number of those future insurance or reinsurance contracts used in the calculation of technical provisions.

2.6.3. Discontinuance means the situation where a policyholder:

- surrenders an in-force policy;
- lapses a policy without value;
- makes a contract paid-up;
- exercises an automatic non-forfeiture provision or other discontinuity option;
- chooses not to exercise a continuity option.

2.6.4. Discontinuance does not include policyholder options such as reductions in premium and part surrender. These should only be stressed, along with the above options, in the lapse up and lapse down shocks.

2.6.5. The policies to be included within the $LapseShock_{mass}$ scenario are those for which discontinuance results in a reduction in VIF (and an increase in technical provisions – interpreted in the sense that the amount which is paid on surrender, or the technical provisions following the policy being made paid-up, is/are higher than the technical provisions before the shock is applied). For each policy the type of discontinuance to be assumed should be that which produces the highest increase in technical provisions (i.e. the largest reduction in VIF).

3. Additional exercises and consultations

3.1. Liquidity risk

3.1.1. Liquidity risk is not directly covered by the standard formula approach set out in QIS4. It is currently covered by the requirements in the Corporate Governance Code of Practice for Regulated Insurance Entities ("CGC") where paragraph 5.5 requires entities to "maintain sufficient asset liquidity to meet the cash flows of [their] liabilities as they fall due" and the "Liquidity Risk" section of Schedule 1 sets out a number of characteristics of liquidity risk which entities must consider in their risk management system as required by paragraph 15.2. In particular entities must identify, assess and measure, monitor and control, and where appropriate mitigate all relevant risks including liquidity risk.

3.1.2. In order to assess how liquidity risk can best be reflected in the FSA's new regulatory regime, we carried out an investigation in 2016 into the exposure of authorised life insurers to liquidity risk, and how this is addressed and measured in their current risk management system. The results of this thematic will be released shortly.

3.2. Investment-linked asset matching

3.2.1. There is currently no requirement for the assets backing investment-linked liabilities to actually be invested in the assets to which the liabilities are linked. The Insurance (Valuation of Long Term Liabilities) Regulations 2007 require insurers to hold reserves sufficient to cover the effect of any mismatch between assets and liabilities. The CGC requires insurers to have an asset-liability management system and to include within its risk management system the assessment and management of risks associated with mismatches between its assets and liabilities.

3.2.2. Under the approach proposed to the standard formula, the degree to which investment-linked liabilities are matched with the underlying assets can have a material effect on the capital requirements. For example it would be possible to match the full face value of the investment-linked funds with the underlying assets, the face value less the present value of future charges, the surrender value, the best estimate provision, the unit component of the best estimate provision, etc. Some of these matching choices would be limited if, for example, the insurer did not have control of (or knowledge of) the actual assets invested in by the policyholder, as might be the case for portfolio bonds.

3.2.3. We issued a 'Consultation on possible approaches to investment-linked asset matching' in November 2016 which set out our thinking in this area, and sought the views of individual insurers on how they currently expect to match investment-linked liabilities in the new regulatory regime. The results of this exercise will be released shortly.

3.3. Group solvency

3.3.1. Alongside QIS4 we will be consulting on group solvency requirements, through QIS4g. The consultation will only apply to insurers where we believe the FSA will be Group Supervisor. We will shortly be confirming to all insurers whether or not the FSA will be the Group Supervisor with initial discussions on group solvency planned for mid-2017.