Assessing the appropriateness of the Solvency II standard formula

INTRODUCTION

During 2016, all Irish insurance undertakings are required to perform an assessment of the appropriateness of the standard formula as part of their Own Risk and Solvency Assessment ('ORSA') process. Last year, companies rated "high" or "medium-high" under the Central Bank of Ireland's ('CBI''s) PRISM rating system were required to carry out this assessment as part of their Forward Looking Assessment of Own Risk ('FLAOR') process. Last year's assessment was required under the preparatory phase requirements of Solvency II and was generally carried out on a 'best efforts' basis. This year we expect to see an increased focus on this assessment following the full implementation of Solvency II in January.

The Insurance Quarterly published by the CBI in June 2016 included a heat map analysing the 2015 FLAORs. The assessment of standard formula appropriateness was rated "amber" i.e. "firms meet some of the requirements but there is a need for further improvement". This is a key area of focus for the CBI this year. Their plans for 2016 include *"detailed reviews of the ORSA documents, including Own Solvency Need assessments and the appropriateness of the standard formula, where relevant."*

Detailed reviews of ORSA documents, including the appropriateness of the standard formula are part of the CBI's plans for 2016

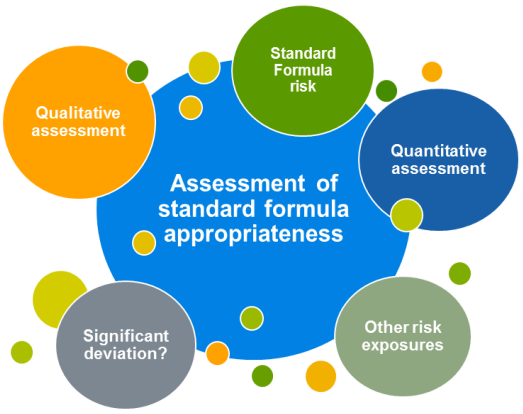
This briefing note focuses on issues for companies using the standard formula. Internal model companies will have had to carry out this assessment when setting the scope for their internal model.

EIOPA GUIDELINES

The EIOPA guidelines on the ORSA[1] state that (re)insurance undertakings can perform a qualitative analysis as a first step in this assessment. A quantitative analysis is then required if the deviation is expected to be significant following the qualitative analysis.

Consideration needs to be given to risks that are not reflected in the standard formula and risks that are either understated or overstated in the standard formula when compared to the undertaking's own risk profile.

Figure 1. Requirements of this assessment



EIOPA provided some 'explanatory text' on this assessment in its final advice on the ORSA guidelines. This focuses on what the process is expected to include, such as:

- an analysis of the risk profile and an assessment of the reasons why the standard formula is appropriate, including a ranking of risks;
- an analysis of the sensitivity of the standard formula to changes in the risk profile, including the influence of reinsurance, diversification and the effects of other risk mitigation techniques;
- an assessment of the sensitivities of the SCR to the main parameters, including undertaking-specific parameters;
- an elaboration on the appropriateness of the parameters of the standard formula or of undertaking-specific parameters;

[1] Final Report on Public Consultation No. 14/017 on Guidelines on own risk and solvency assessment.

• an explanation why the nature, scale and complexity of the risks justify any simplifications used;

• an analysis of how the results of the standard formula are used in the decision making process.

WHERE TO START?

Most companies would typically start by assessing the risks covered by the standard formula. EIOPA published a document in July 2014[2] on the assumptions underlying the standard formula calculation to aid undertakings in this assessment.

Standard Formula Risks

Initially, the standard formula risks should be ranked based on their materiality in terms of capital charges. Each risk should then be assessed by comparing the undertakings' risk profile to the standard formula assumptions outlined in the aforementioned EIOPA document. The principle of proportionality should be reflected when carrying out this assessment, with due consideration given to the nature, scale and complexity of the risk exposures.

Taking equity risk as an example, one of the assumptions underlying the equity risk capital charge for type 1 equities is that the undertaking holds an equity portfolio that is well diversified with respect to geography (developed market countries), stock size (large, mid, small, micro cap), sectors and investment style (growth, value, income etc.). Undertakings should firstly assess on a qualitative basis whether their equity investments are similarly diversified. If an undertaking has a large concentration of equities in a particular country or sector for example, then the undertaking's risk profile may deviate from the assumptions underlying the standard formula. Undertakings will also need to consider other assumptions underlying the equity risk capital charge, such as the symmetric adjustment and type 2 equities.

Supervisors have already cited possible areas where the standard formula may not be appropriate. In the UK, the Prudential Regulation Authority expects to see deviations in respect of longevity risk for deferred and impaired annuities, operational risk where there is a reliance on legacy systems, and equity risk for concentrated exposures as discussed above.

The appropriateness of the correlation factors used to calculate the impact of diversification should also be considered, particularly if the Solvency Capital Requirement ('SCR') mainly stems from a small number of risk modules.

Uncovered Risks

The next step would be to look at risks that are not covered by the standard formula i.e. 'uncovered risks'. EIOPA identified some of these risks, such as inflation risk, reputation risk, liquidity risk, contagion risk and legal environment risk, in its document on the assumptions underlying the standard formula. The CBI also mentioned governance risk, strategy / business model risk and conduct risk in its feedback on the 2014 FLAOR reports. Other risks not covered by the standard formula could include spread and concentration risk associated with government bonds, volatility risk and longevity risk associated with employee defined benefit schemes. This is not an exhaustive list - considerations will depend on the undertaking's individual risk profile.

Uncovered risks include risk exposures that are not allowed for under the standard formula. The risks to be assessed will depend on the undertaking's individual risk profile and may include volatility risk, spread risk on government bonds, liquidity risk, reputational risk and strategy / business model risk, amongst others.

When undertaking this assessment, (re)insurers generally start by considering their most material uncovered risks first. This time there are no standard formula assumptions to compare risk profiles against so instead the qualitative analysis should focus on the scale of the risk exposures and any risk mitigation techniques employed by the undertaking.

If the undertaking is unable to demonstrate that a particular uncovered risk exposure is immaterial then it is likely that there is a significant deviation from the standard formula and a quantitative analysis will be required.

[2] https://eiopa.europa.eu/Publications/Standards/EIOPA-14-322_Underlying_Assumptions.pdf

Uncovered risks have been a particular focus of the CBI's recent thematic reviews. Earlier this year a number of undertakings were selected to take part in a liquidity risk thematic review. This risk can be more pronounced under Solvency II due to the recognition of projected future profits on the balance sheet as a relatively illiquid negative best estimate liability ('BEL').

The ORSA should include a qualitative description of the liquidity risk exposure of the undertaking. Generally, it is more appropriate to address liquidity risk through the use of different risk mitigation techniques rather than holding additional capital e.g. regularly projecting and monitoring the liquidity position, opening a line of credit with a third party, changing investment strategies to invest in more liquid assets etc. The liquidity risk mitigation techniques employed by the undertaking should be discussed in full in the ORSA. The key is to be able to demonstrate that the undertaking has taken sufficient steps to mitigate liquidity risk.

NEXT STEP - QUANTITATIVE ASSESSMENT

A quantitative assessment is only required where significant deviations have been identified. However, EIOPA has not defined what level of deviation would be deemed to be significant in terms of the ORSA. Some stakeholders have referred to Article 279 of the Delegated Regulation that states that a deviation of 10% / 15% or more in the SCR would be considered significant in respect of imposing capital add-ons[3]. In practice it may be difficult to judge whether a deviation is significant without carrying out a quantitative assessment.

Undertakings can be guided by the findings of the qualitative assessments in the first instance. This should identify risk exposures that may require a quantitative assessment. The principle of proportionality should apply in the context of the materiality of the risk exposure and the potential size of the deviation. The quantitative assessment will vary by undertaking depending on risk profile – there is no "one size fits all" approach that all undertakings can follow.

Uncovered risks should also be assessed quantitatively where the qualitative assessment points to a significant risk exposure that is not captured by the standard formula. We carried out a survey last year that asked Irish insurance undertakings what uncovered risks they expected to assess quantitatively. Volatility risk, liquidity risk and sovereign credit risk were the most frequent responses.

Figure 2. The assessment process

The quantitative analysis requires undertakings to recalculate capital charges under shock scenarios appropriate to their own risk profiles. This is not a straightforward task as it will require undertakings to calibrate 1 in 200 year shocks based on their underlying risk exposures. It is likely that undertakings may use approximations to do this in some circumstances. Adjusting the standard formula shocks would be a good place to start, although this may not be appropriate in all circumstances.

Sensitivity testing can also be used to determine materiality, through testing the sensitivity of the SCR to the main parameters of the standard formula or to changes in the undertaking's risk profile, including the impact of reinsurance, diversification and other risk mitigation techniques.

The quantitative analysis is not a straightforward task – it requires undertakings to calibrate 1 in 200 year shocks based on their specific risk profiles.

One area where it may not be appropriate to simply adjust the standard formula shocks is in relation to operational risk, as many stakeholders believe that this is calculated quite crudely under the standard formula. The standard formula capital charge for operational risk is calculated as a percentage of premiums, technical provisions or expenses and makes no allowance for operational risk management. It is likely that some undertakings will

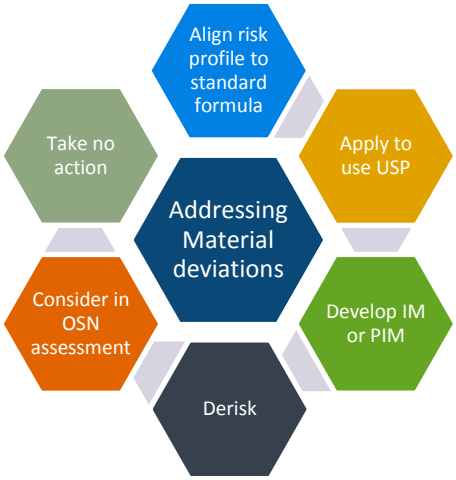
[3] A deviation of 10% or more is significant unless there is strong evidence against this, and a deviation of 15% or more is deemed to be significant, irrespective of any other evidence.

identify deviations in respect of operational risk as a result. A number of undertakings have already developed operational risk models to calculate this capital charge independent of the standard formula methodology for the purpose of the ORSA and we expect that operational risk will be an area of focus for the CBI in the future.

WHAT IF MATERIAL DEVIATIONS ARE IDENTIFIED?

(Re)insurers are expected to consider how to address any material deviations if they are identified. EIOPA expects that the record of the ORSA will document how the undertaking has reacted or will react to a material over estimation or underestimation of the SCR.

Figure 3. Addressing material deviations in risk profile



It is likely that the CBI will engage with undertakings where significant deviations exist and are not addressed. Supervisors will take into account all relevant factors when determining how to address significant deviations, including the likelihood and severity of any adverse impact on policyholders, the level of sensitivity of the assumptions to which the deviation relates and the anticipated duration and volatility of the deviation.

A key concern for companies is that significant deviations could result in capital add-ons. While the ORSA itself should not result in a capital add-on, Article 37 of the Solvency II Directive states that a capital-add on can be imposed if the risk profile of an undertaking deviates significantly from the standard formula. As mentioned above, Article 279 of the Delegated Regulations set out some guidelines with regard to what constitutes a significant deviation in terms of capital add-ons.

DECISION MAKING PROCESS

The EIOPA guidelines on ORSA state that the assessment of standard formula appropriateness should also include an analysis of how the results of the standard formula are used in the decision making process. This links to the overall requirement for the ORSA to be an integral part of the undertaking's business strategy and to be taken into account in the strategic decisions of the undertaking.

OVERLAP WITH OWN SOLVENCY NEEDS

There is some overlap between the quantitative assessment of standard formula appropriateness and the own solvency needs ('OSN') assessment required in the ORSA. Undertakings are required to recalculate capital requirements based on their own risk profiles under both assessments. However, the OSN assessment is wider than a review of the appropriateness of the standard formula.

For example, the OSN assessment may be calculated on a different basis to Solvency II, using different confidence intervals or different time horizons. The OSN assessment may also allow for differences in the calculation of the technical provisions such as contract boundaries and adjustments to the yield curve and agreed management actions. In addition, the OSN assessment should allow for shortcomings in the standard formula calibrations that are not due to different risk profiles, while the assessment of standard formula appropriateness only focuses on deviations due to different underlying risk profiles.

CONCLUSION

The CBI has noted that there is a need for further improvement in this area of the ORSA following its review of the 2015 FLAORs, so it is likely that there will be an increased level of focus on this assessment during 2016.

Whilst the standard formula is expected to be appropriate for many companies, the assessment of standard formula appropriateness is not a straightforward task. Ultimately a proportionate approach should be taken. Undertakings should not underestimate the amount of work involved in carrying out this assessment.

HOW MILLIMAN CAN HELP

Our consultants have been involved in advising our clients on Solvency II issues since its conception. We have undertaken a range of work for clients across all three Pillars of Solvency II. In relation to the ORSA in particular, this includes:

- Design and implementation of Risk Management Systems and ORSA;
- Extensive experience of modelling projected balance sheets, technical provisions and SCR calculations;
- Independent Review of Solvency II balance sheet, technical provisions and SCR.
- Assessment of standard formula appropriateness;
- Assessment of own solvency needs;
- Review and gap analysis of ORSA;
- Operational risk modelling;

Milliman also has a range of software available to support companies in the ongoing Solvency II requirements including:

- Solvency II Compliance Assessment Tool (link)
- Milliman Star Solutions - Vega®: An automated Pillar 3 reporting and standard formula aggregation system (link)
- Milliman Star Solutions - Navi®: A liability proxy modelling tool (link)

As a result, we have a wide range of experience that can be brought to bear to benefit your business.

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