How to review an ORSA

Patrick Kelliher FIA CERA, Actuarial and Risk Consulting Network Ltd.

Done properly, the Own Risk and Solvency Assessment (ORSA) can be a key tool for insurers to understand the evolution of their risk profile and financial needs over time. What is proper however depends on the size and complexity of the insurer as well as their strategy. There is no “one size fits all approach” to reviewing ORSAs but there are some common themes which should be born in mind.

1. ERM framework

An ORSA is only going to be as good as the insurer’s underlying ERM framework. If this does not capture risks properly then there will be gaps in the risk assessment part of the ORSA; while any assessment of solvency needs may be questionable if the control framework is inadequate. An ORSA review should start with an assessment of the ERM framework. There should be clearly articulated risk appetite; an appropriate limit structure to control exposures; and Board approved policies setting out how risk should be managed.

A key question is “how are risks identified?”. There should be processes in place to assess the risks arising with new insurance products and asset classes, but there is also a need to identify changes in the nature of existing asset types and liabilities. For example, there was a marked increase in the exposure of US CDOs to sub-prime mortgage assets between 2000 and 2007 which contributed to severe losses in later issues of these. Similarly, refined rating by competitors could lead to anti-selection. The review needs to consider what processes are in place to pick up on such changes and if such processes are lacking, then the insurer’s understanding of its current profile can be called into question. Another mark of the quality of the ERM framework and of risk identification is the extent to which emerging risks are considered and tracked. How well does the insurer anticipate potential threats ?

Having identified risks, a good ERM framework should monitor these and report on these to senior management and the Board. Risk reports should also be reviewed to gauge the quality of risk reporting and how risks and issues are escalated.

Finally, an ERM framework is useless if it is not complied with. An ORSA review should consider internal audit reviews and compliance breach reports to gauge the strength of the framework. Significant breaches of asset management mandates for example could lead to actual exposures being higher than expected and invalidate assumptions underpinning capital modelling.

2. Reviewing current risk profile

Having gauged the adequacy of the underlying ERM framework, the next step would be to gauge the quality of the current risk assessment which is the starting point for the ORSA. It is important to consider the granularity of the assessment. To take equity risk as an example, a good ORSA will recognise that this is comprised of many different components. There will be stock- and sector-specific risk but this should be mitigated by controls i.e. diversification. Systematic market or “beta” risk cannot be diversified away and needs to be hedged and/or capital would need to be held against it. The capital model will often be based on market index data but there is a need to also consider basis risk relating to relative performance of the insurer’s portfolio against the index. For unhedged portfolios, basis risk may be diversified away against “beta” risk if these are uncorrelated, but for hedged portfolios basis risk can be significant.

As well as price fluctuations, equity returns will also vary with fluctuations in dividends, while the value of guarantees and options will depend not just on market levels but also implied option volatilities. The ORSA should also recognise the different nature of risks associated with any private equity portfolios including potential issues with valuations. This is just one example of the intricacies of risk which a good ORSA will address.

The solvency assessment element of the ORSA will generally be based on economic capital models of risks, but such models are by definition simplifications of reality. A good ORSA will recognise this and highlight the limitations of these models. While these may not be material at present, the review should consider if they may be going material forward. For example, a crude model of private equity risk may become increasingly unsuitable if the insurer plans to increases its holdings significantly. The ORSA should also highlight risks not addressed by economic capital models and how these are mitigated by systems and controls and/or justify why the (residual) risk is immaterial, which the reviewer should challenge and verify. The key point here is the importance of the reviewer standing away from the model and thinking in first principles rather than mathematical complexities.

Operational risk requires particular attention. It is a very diverse category covering everything from power outages to compliance breaches, and from processing failures to cyber-fraud. Also, there is usually a lack of quantitative data and hence a reliance on subjective scenario analysis. The reviewer should look for evidence that a wide range of risks have been considered before arriving at the chosen scenarios, and that the scenarios have been subject to rigorous review and challenge. Ultimately operational risk is best dealt with by sound understanding of the risks and management of these rather than holding capital.

The review should also consider how well defined benefit pension scheme risks are covered. As well as obvious risks such as interest rate, inflation, equity and longevity risk, the ORSA should also cover residual risks such as those associated with swaps hedging interest rate risk; and concentrations of longevity risk to highly paid executives. Pension scheme risks are complex and may not be fully addressed in Pillar I but the ORSA should reflect this.

3. Projecting risks and solvency

Starting from the assessment of the current risk profile, the ORSA will project this profile and the associated solvency requirements over the medium term. This projection will reflect the insurer's strategy for new business, investments and distributions to participating policies. The review should consider how well these projections reflect these plans.

In terms of new business, the review should consider how well existing risk models address the evolving risks associated with new business plans. An insurer entering the variable annuity market for example is likely to encounter a complex mix of basis, implied volatility, option take-up and other risks, to say nothing of the operational risks associated with hedging variable annuity guarantees. The review should consider whether the insurer's models of these risks are fit for purpose and whether the assessment of associated solvency needs is sensible. New distribution channels can also give rise to new risks such as misselling risk which should be considered in the ORSA.

Consideration should also be given to the volume of new business and its implications for the control framework. Significant growth in protection business could place a strain on underwriting and increase the uncertainty around mortality and morbidity risk associated with this business. In general large volume growth can place a strain on new business processing and lead to increased operational risk losses.

Other strategic initiatives could involve sales and acquisitions of business units as well as outsourcing. With respect to the first, any assumed transfer of risk with the business sold should be challenged as the insurer may have to indemnify some of the risks as part of the sale process.

Proposed acquisitions could give rise to new risks in the same way as new products or asset classes which the review should pay attention to. It should also consider the potential for BAU disruption as part of the acquisition process increasing operational errors and losses.

Outsourcing may involve the transfer of operational risk where for example errors are indemnified by the outsourcer, but the reviewer should check the timetable for the outsourcer to assume these risks, as well as the allowance for new outsourcing risks such as outsourcing contract disputes and insolvency of the outsource provider.

The insurer's plans will also encompass investment strategy. Like new products, new investment classes – such as a move into hedge funds and other alternative assets – can give rise to new risks which existing models may not cope with, and which should be a target for the ORSA review. The review should also consider how the variability of cash returns is reflected in the ORSA as while this risk is rarely material for a point in time Pillar I calculation, it could be material over the medium term, particularly where cash returns are covering floating rate obligations under swaps and borrowings.

Risk strategy may envisage increased hedging and risk transfer but from above, the review should consider whether residual risks such as basis risk, counterparty risk and the operational risks associated with such risk transfer have been properly reflected in the assessment.

The bonus strategy for participating business can have a significant impact on solvency going forward. The review should consider how well assumptions for bonus distribution tie in with what has been promised to policyholders and also the potential for legal and regulatory challenges to bonus distributions.

The ORSA should reflect planned dividends as well as interest on debt obligations. In terms of maturing debt, the ORSA may assume this is rolled over. If so, the terms assumed for new debt issues should be reviewed and challenged.

Last but not least, ORSA solvency projections need to reflect two different perspectives of solvency: the insurer's own assessment of economic capital requirements based on its risks and models; and Pillar I regulatory capital requirements. There has been convergence between the two bases under Solvency II but there will still be residual differences between the two calculations which the ORSA should be able to reconcile.

By way of an example, a major difference between regulatory and economic capital may be the treatment of pension scheme risks. The Pillar I assessment may focus on increased contribution rates arising from falls in scheme assets or rises in the value of scheme liabilities whereas the economic capital assessment may consider the balance sheet impact of widening IAS19 balance sheet deficits on the solvency of the insurer. The ORSA should try capture both perspectives.

4. Stress and Scenario testing

A single base projection will rarely be enough to assess future solvency needs: it should be supplemented by alternate projections in a variety of scenarios to maintain solvency in adverse conditions.

Many insurers with significant market and credit risks may project own funds on a stochastic basis using a "real world" economic scenario generator (i.e. reflecting the higher returns expected on risky assets). While useful in highlighting the sensitivity of own funds to different market conditions, the assumptions underpinning the stochastic model should be reviewed and challenged – for example, are correlation assumptions reasonable.

Stochastic models are useful but should supplement not replace analysis of holistic scenarios encompassing market and non-market risks. A good ORSA will consider a range of economic (e.g. oil shocks) and other scenarios (e.g. pandemics); and their impact across all risk categories. For example, a pandemic scenario will increase mortality claims and depress markets, but could also lead to operational losses due to staff sickness. An oil shock may trigger an economic downturn affecting not just markets, but also persistency experience (higher unemployment may lead to higher lapses) and general insurance claims (theft often increases in a recession). The review should consider if there are any risk categories which may be impacted by the scenario but which have not been considered by the ORSA.

Scenarios will impact on new business. Recessions will have a negative impact on sales, as may fiscal and regulatory changes, but the ORSA should also consider upside scenarios which boost new business as this could place a strain on solvency at least in the short term. Examples of such scenarios are competitors leaving the market; favourable fiscal changes; and new products performing better than expected.

Ideally a wide range of subject matter experts would be consulted in deriving scenarios to ensure they are as realistic and comprehensive as possible. The ORSA review should consider who was involved in deriving the scenario analysis and any gaps in their knowledge. It should also consider the review, challenge and sign-off process to gauge how scenarios were quality assured.

It would be useful to compare stresses derived as part of the scenario with internal models for consistency and coherence. For example, a fall in equities may be equivalent to a "1-in-200 year" event under the equity risk internal model, but if the scenario involves a moderate economic shock, one has to question whether (a) the internal model is weak; and/or (b) the equity stress in the scenario is over-stated. Often economic and other scenario impacts are derived by "gut feel" in scenario workshops and may not stand up to scrutiny. Assessing these against internal model distributions can be help improve rigour of scenario assumptions, while linking internal models with scenario analysis in this way helps meet Solvency II validation and use test requirements.

5. Management actions

The ORSA will assume management actions as part of its response to adverse scenarios. The review should consider whether the timescales assumed are reasonable: for instance, the ORSA may assume that in falling markets, put options may be bought to limit the impact of further falls, but if Board approval for such derivative purchases is not in place, it may not be possible to put this protection in place in time. Markets may fall faster than expected: on "Black Monday", 19th October 1987, US markets fell by over 20%, much faster than those using dynamic hedging strategies could react.

Cuts to bonuses on participating policies may also be held up by the governance process for these.

The review should also consider market access. In falling markets like those experienced in the aftermath of Lehmans, the cost of put option protection may become prohibitive.

Similarly, a general insurer looking to buy replacement catastrophe reinsurance after a catastrophe exhausts existing cover may find it is unable to buy such cover, or again that the cost is too high. The potential impact on future market access may also deter proposed actions such as deferral of coupons on hybrid debt.

Last but not least, the review should consider the risk of legal and regulatory challenges to proposed actions such as cuts to bonuses on participatory policies or changes to employee pension schemes

6. Liquidity risk

ORSA projections typically focus on the amount of assets versus liabilities, but there is another dimension to solvency and that is the liquidity of assets and liabilities. A good ORSA should project liquid resources and requirements over the medium term allowing not just for expected outflows such as maturities but also potential outflows in stress conditions and in particular mass surrenders where policyholders lose confidence in the insurer. It should also reflect potential liquidity strains from margin and collateral calls on derivatives well as strains arising in large asset purchases such as commercial property or as part of portfolio rebalancing exercises.

The insurer should have contingency funding plans in place to mitigate liquidity strains but the review should challenge and validate these. Planned sales of marketable securities should be validated against the size of the market in stressed conditions. The market for many fixed income securities disappeared during the financial crisis in 2007-2009, while other bonds could only be sold at a significant discount. One would question any plan that involved large scale sales of corporate bonds given the contraction in market liquidity for these bonds since the crisis.

The insurer may look to access repo funding as part of its contingency plans, but the financial crisis highlighted that repo markets may seize up for all but the highest quality assets. The review should also query whether the insurer has experience of accessing repo and other markets as well as the capability to monitor its ability to access these. Note the insurer may be assuming it can roll over maturing debt obligations but the review needs to consider whether it might not be able to do so and what impact this may have on liquidity and solvency.

The insurer may have lines-of-credit available to it, but the review should confirm whether these are discretionary i.e. lenders have the right to refuse advance loans. It should also ascertain when these facilities expire as it may not be possible for the insurer to renew these.

The review should also consider liquidity risk reporting to gauge how quickly problems get escalated and hence how quickly the insurer can react to these, and whether management action timescales assumed in the ORSA are reasonable.

7. Conclusion

The review should ensure that the ORSA is not a stand-alone assessment but flows from and is consistent with the strategy and plans of the insurer. It should also look for evidence of a deep understanding of risks faced; a framework to control these as far as possible; and robust models for assessing the capital required to cover residual risks.

Overview of ORSA elements to be reviewed