

ReMetrica for Life, Health and Pensions

Insurers, reinsurers and pension funds are being driven by regulation, rating agencies and shareholders to develop a stochastic view of their key life related and long term benefit risks, rather than traditional scenario-based modelling. In response, Aon Benfield has launched ReMetrica® for Life, Health & Pensions to help actuaries and firms better understand the risks they face within a fully stochastic framework.

Focus on stochastic modelling

Its powerful modelling capabilities enable us to test a range of different strategies and scenarios for a variety of applications. The platform can help determine optimal capital and risk transfer strategies, whether reinsurance or capital market solutions, on an individual lives or Model Point basis. The model also has the flexibility to be run on a purely deterministic basis.

ReMetrica's intuitive graphical user interface makes model development quick and easy – reducing the time it takes to get to meaningful results. This coupled with the fact that no programming is needed to build models means training costs are kept to a minimum.

We're here to empower results:

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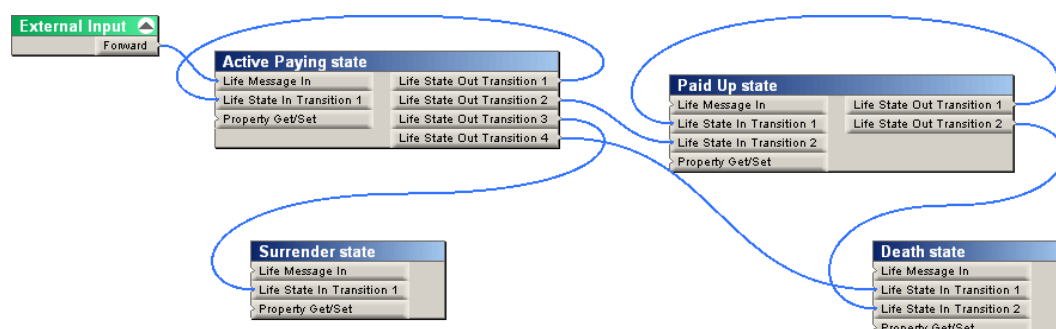
Key benefits for our clients

- **Optimise capital requirements:** Models a comprehensive suite of risks in order to optimise capital requirements across all risk spectrums.
- **Stress testing functionalities:** Improve understanding of key risks and their sensitivities, including diversification benefits - particularly important for composites.
- **Regulatory requirements:** Bespoke modelling helps insurers meet the requirements for any regime, such as Solvency II or US GAAP, to be incorporated into the tool. ReMetrica also provides the extra focus on reinsurance solutions to help clients reduce their capital requirements.
- **Effective evaluation of reinsurance structures:** Assessment of different reinsurance structures on a stochastic or deterministic basis.
- **Risk appetite:** With ReMetrica's clear and open model architecture the process of risk management, from assessment to mitigation, becomes clear and allows companies to take control by modelling real decisions that ensure they remain within their defined risk appetite.
- **Transparency:** The model allows the user to follow and dissect inputs and outputs from any nominated scenario, as well as analysing interactions. The components and methodologies are fully documented, with example case studies.
- **Model new business stochastically:** Insurers can use a wide range of inbuilt statistical distributions and attach these to their expected new business projections to capture the effects of variations in new business in a stochastic fashion.

Multiple-state transition model

ReMetrica offers a unique and intuitive modelling style, particularly useful for non-programming actuaries. Using the multi-state transition idea for actuarial applications is not a new concept, but making the visual state diagram, one would normally only sketch on a piece of paper, part of the actual model itself is unique and a software first. This, without any programming, then becomes the tool to make stochastic modelling more accessible for anyone with just their own business and product knowledge.

By minimising the IT, software and programming knowledge often needed in modelling packages, ReMetrica allows the user to concentrate on the real business of calibration of assumptions and uncertainty and their corresponding impact on cash flows and reserves.



State diagram set up in ReMetrica for a typical whole of life product. Users can add or remove states to intuitively mimic any life, health or pension product

Specialist components

The platform is geared to modelling any product that benefits from the tracking of lives, in particular:

General insurance (non-life): motor periodic payment orders, workers' compensation and medical benefits

Pensions/annuities: pre and post retirement with stochastic longevity and reinsurance swaps

Health: incorporates multiple state modelling making it easy to replicate and model existing business

Life: full model office that can incorporate pandemics and other shocks such as lapse risk and correlations with economic variables

Longevity risk

The impact of increasing longevity can be easily incorporated by specifying improvement factors deterministically or stochastically, or generated by our longevity component which contains the industry-recognised longevity models, Lee Carter and Cairns-Blake-Dowd.

Catastrophic risk

A catastrophe transition component allows a shock to apply to any transition stochastically and then quantify the impact of the event on an insured portfolio. For example, a mass lapse shock or mortality shock in the case of a pandemic. With regards to Pandemics Aon Benfield's in-house expertise can calibrate the model specifically for an insured portfolio, considering both regional and diversification factors, to give clients the confidence that the risk being modelled is relevant to their business.

The component allows the user to specify the expected frequency of occurrence, duration of the catastrophe event and attack rate in terms of percentage of population affected for geographical diversification. It can handle any number of age bands – each one holding its own parameters to be used with a range of probability distributions. It also allows functionalities to scale the catastrophe rate simulated in any interval during the catastrophe event period.