



# LONGEVITY AND EXCESS MORTALITY MODELING

Catastrophic natural or man-made events such as pandemics, natural hazards, and terrorism can cause significant mortality shocks. Conversely, medical advancements, lifestyle changes & the health environment can significantly accelerate mortality improvements therefore increasing average life expectancies.

These events associated with mortality risk can have cascading effects across society, businesses, governments and geo-political borders.

Mitigating risk for future events depends on having the best understanding of a broad range of factors, such as what drives longevity, and what can happen when catastrophe strikes.



RMS has developed longevity and extreme mortality modeling tools which blend best-practice actuarial techniques with medical science to help clients better balance risk.

We help clients effectively manage their mortality risks, meet regulatory challenges, and capitalize on business opportunities.

To this end, RMS offer a range of consulting services.



**Model / Portfolio  
Understanding**



**Model Advisory**



**Own View of Risk**



# MODEL / PORTFOLIO UNDERSTANDING

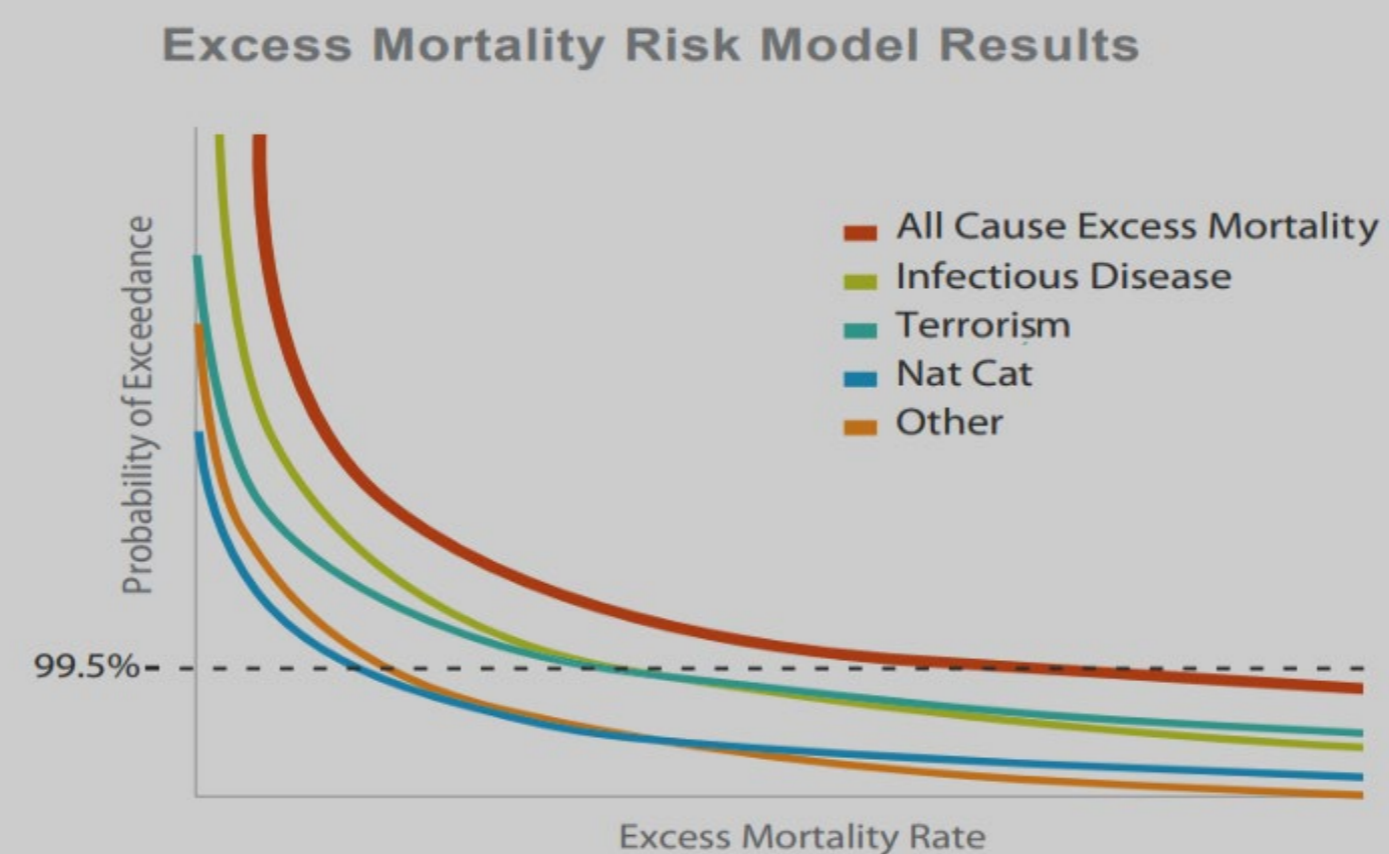
Identify and quantify the longevity and mortality risk within a portfolio.

**Concern:** Having a granular view in order to gain insights into a portfolio



**Outcome:** Determine risk associated with separate portfolios by age, sex, location & other factors driving the risk using risk grouping

**Concern:** Economic capital modeling requires a full loss distribution



**Outcome:** Full probabilistic outcomes from the RMS models are provided for input into internal processes

**Concern:** Using insights from leading scientific research to better understand modeled outcomes

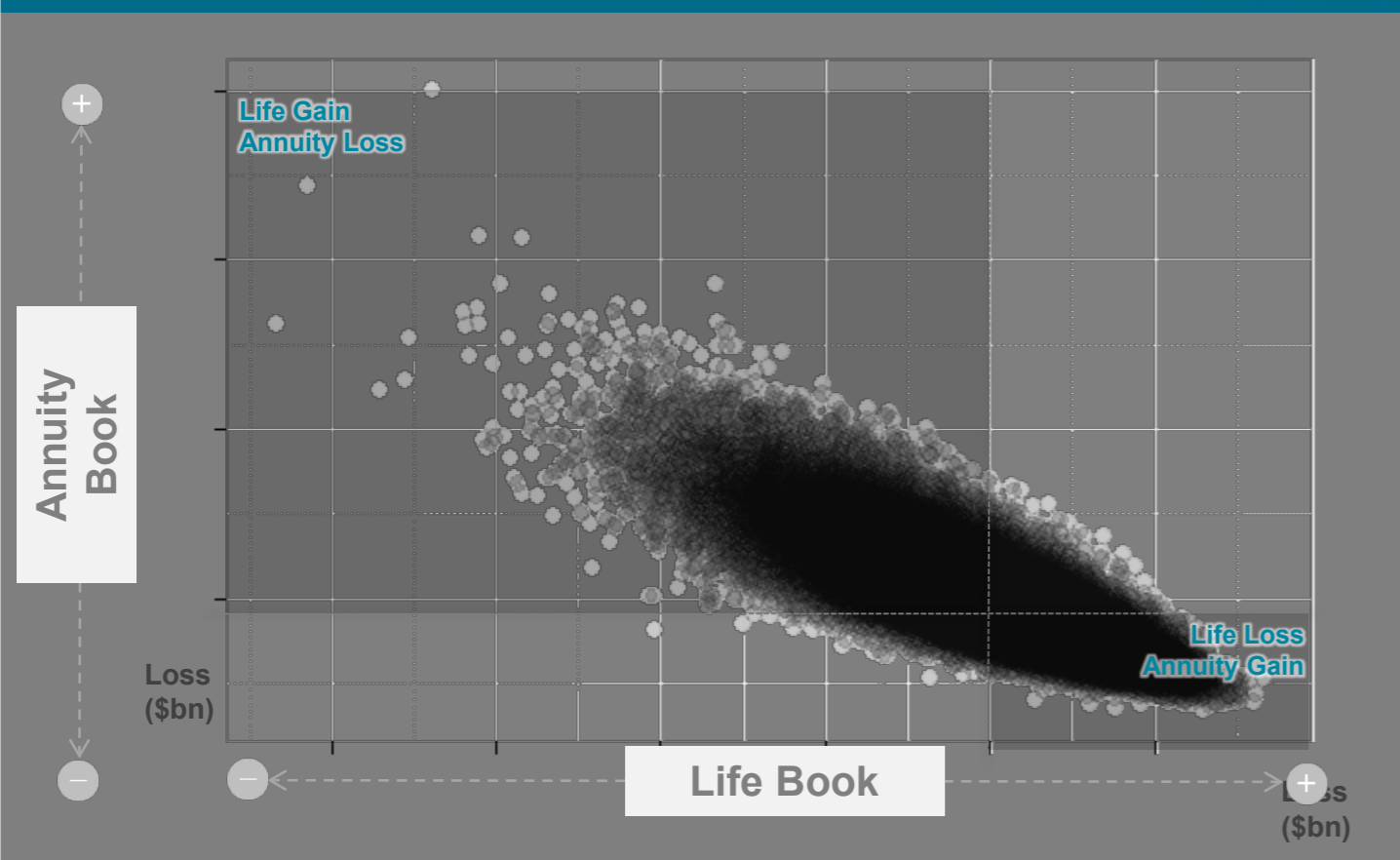


**Outcome:** We drill down into modeled results to better understand properties of specific scenarios driving the risk in exposures

# MODEL ADVISORY

Help companies to inform or validate their views for risk management, risk transfer and annuity/life insurance pricing.

**Concern:** Understanding life & annuity books hedge impact by age, sex, country & product type



**Outcome:** Full stochastic outcome for life & annuity book mortality shock & trend scenarios enables quantification of loss offset capacity

**Concern:** Insurer has limited expertise in risk transfer and/or requires an independent trusted view of the risk



**Outcome:** RMS models have been used for many public and private transactions and are trusted by regulators & the market

**Concern:** Multi-country portfolio requires a consistent approach to quantifying risk concentrations & accumulation



**Outcome:** RMS models are multi-country, developed using a consistent framework while being specific to that country's risk profile

# OWN VIEW OF RISK

Create a custom view of risk that better suits a client's business to improve underwriting and portfolio management decisions.

**Concern:** External provider models are a black box



**Outcome:** RMS software allows clients to alter parameters & carry out sensitivity analytics. RMS provides expert support during this process.

**Concern:** View of the longevity risk differs per portfolio due to underlying risk factors



**Outcome:** RMS longevity risk model can be calibrated to your portfolio. RMS provides expert support during this process.

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Further information:  
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RMS is the world's leading catastrophe risk modeling company. From earthquakes, hurricanes, and flood to terrorism, agriculture, and infectious diseases, RMS helps financial institutions and public agencies understand, quantify, and manage risk.

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