Longevity Risk

The keys to understanding longevity risk lie in the future, not the past.

BENEFITS

- Evaluate longevity risk using medical-based modeling and analytics
- More accurately assess capital requirements for pension and annuity longevity risk
- Inform risk transfer decisions for longevity swaps, pension buyouts, and securities transactions
- Meet Solvency II requirements
- Establish longevity improvement assumptions for statutory reporting
- Quantify the hedge between longevity and mortality portfolios and optimize accordingly

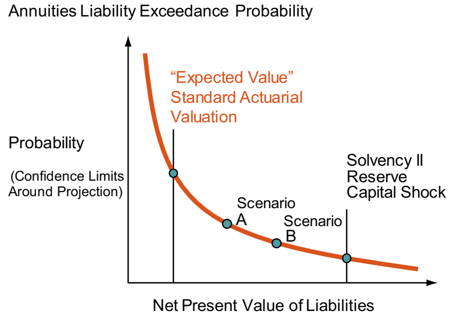
OVERCOME THE CHALLENGES OF LONGEVITY RISK

Founded in medical science, the RMS® Longevity Risk Model analyzes the complex interplay of factors expected to drive future mortality rates:

- **Lifestyle Trends:** Attitudes toward personal health and fitness
- **Health Environment:** Quality of health care and living conditions
- **Medical Intervention:** Drugs and treatments to reduce premature death
- **Regenerative Medicine:** The repair of damaged body systems to prolong life
- **Retardation of Aging:** Changing the biology of aging to extend healthy life

Understand the drivers of future mortality trends to more accurately project longevity risk.

Annuities Liability Exceedance Probability



The RMS® Longevity Risk Model quantifies the probability of exceeding different liability levels for a scheme. Use results to define shock tests and capital adequacy limits at explicit probability levels.

QUANTIFY FUTURE RISK

- Estimate the impacts of future medical technologies that are not yet available
- Relate causes of death to a population's health risk factors
- Incorporate the effectiveness of medical interventions in preventing premature death

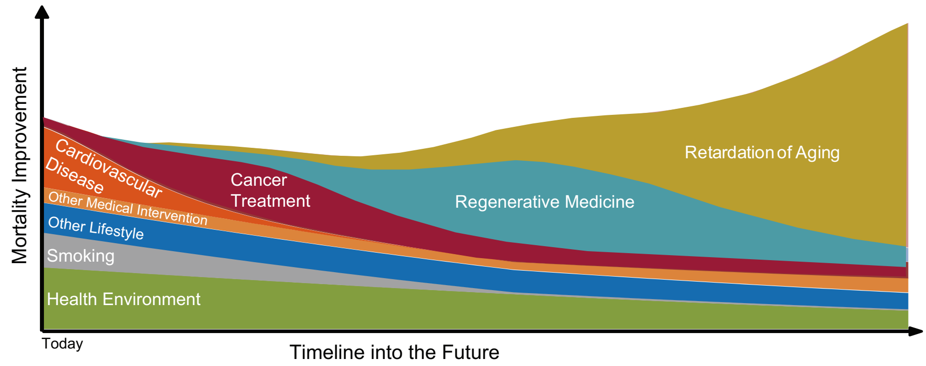
ACCESS NEW INSIGHT

- Understand the impact of lifestyle trends and medical advances on future mortality rates
- Model the severity, frequency, and duration of mortality improvement scenarios
- Identify and manage risk correlations in new and existing business

INFORM DECISIONS

- Optimize reserves for longevity and mortality business
- Inform risk transfer negotiations for longevity swaps, pension buyouts, and securities transactions
- Respond to Solvency II requirements and qualify for longevity-mortality diversification credit

Future phases of mortality improvement will dictate future liability risk—the surrounding uncertainty will determine the level of capital reserves needed to cover the risk.



Structural modeling of medical-based mortality improvement explores the timing, magnitude, and impact of different phases of new medical advances on the horizon.

RISK PROJECTIONS

Reduce uncertainty in longevity risk projections with improved constraints on the medical and social feasibility of mortality improvement.

Forward-Looking Methodology

- Methods capture current mortality trends, as well as the medium and long-term dynamics of mortality change
- Dynamic monitoring of thousands of new drugs in clinical trials directly links drug development to mortality improvement

Confidence in Results

Mortality improvement scenarios analyze the full spectrum of future risk, from incremental advances to medical break-throughs. Scenarios incorporate:

- Historical phases of change
- Past and emerging patterns of disease
- Future waves of mortality improvement from new phases of medical science

Model results are validated through the hindcasting of historical events.

PORTFOLIO MANAGEMENT

Manage risk, assess capital reserves, and improve liability forecasting.

Differentiate Portfolios

- Differentiate portfolios based on age, gender, and socio-demographic mix
- Understand the impact of a portfolio's unique risks on mortality rates

Understand Risk

- Quantify the probability of exceedance for key event or return period liabilities
- Evaluate the impacts of different mortality improvement scenarios

Optimize Your Book

- Quantify the hedge across mortality and longevity risk
- Balance life and annuity portfolios

Facilitate Solvency II Compliance

- Respond to Solvency II requirements
- Inform internal models
- Qualify for diversification credit

RISK TRANSFER

Inform risk transfer decisions, both selling and buying.

Longevity Swaps, Pension Buyouts

- Quantify the economics of longevity swaps and de-risking strategies for pension schemes
- Stress-test deals for mortality and longevity shocks
- Evaluate the economics of longevity hedging
- Identify risk correlations across portfolios
- Identify mortality improvement scenarios that could weaken the deal

Securities

- Structure securities that trigger according to differences in mortality change by age group
- Increase investor confidence with transparent views into risk parameters and causes of future mortality change

Risk Management Solutions, Inc.
7575 Gateway Blvd.
Newark, CA 94560, USA

RMS Ltd.
Peninsular House
30 Monument Street
London, EC3R 8NB, U.K.

Website: www.rms.com
Email: info@rms.com

ABOUT RMS

RMS is the world's leading provider of products, services, and expertise for the quantification and management of catastrophe risk. More than 400 leading insurers, reinsurers, trading companies, and other financial institutions rely on RMS models to quantify, manage, and transfer risk. As an established provider of risk modeling to companies across all market segments, RMS provides solutions that can be trusted as reliable benchmarks for strategic pricing, risk management, and risk transfer decisions.