





Translation Service





Program & list of attendees are now available online Ask your questions here as well

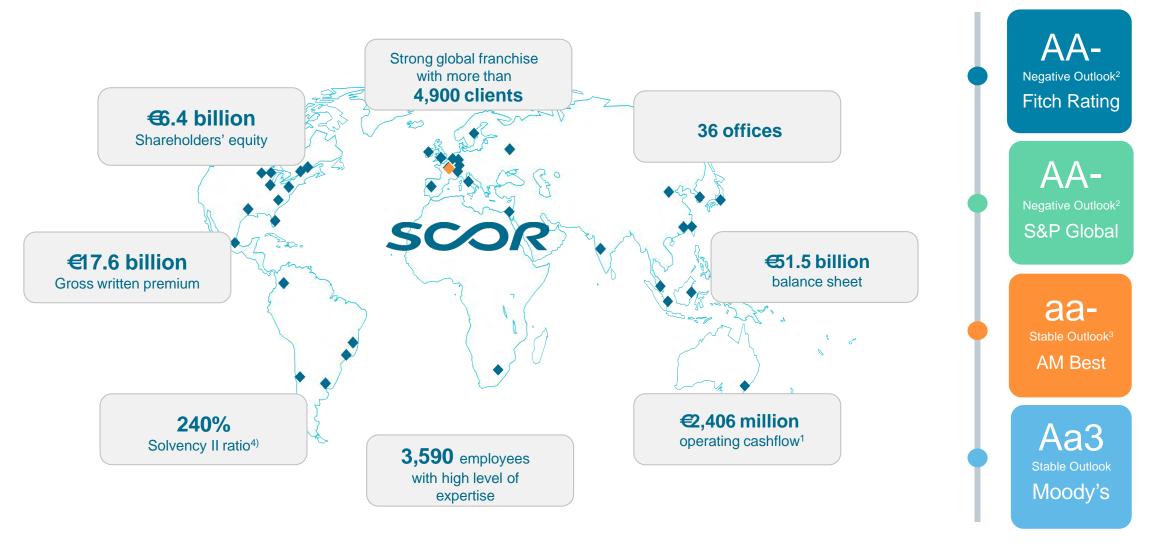
www.beekast.live and enter the code 063723







SCOR is a Tier 1 Global Reinsurer



Note: All figures are as of December 31, 2021, except Solvency II ratio.

- 1) Y2021 operating cashflow includes EUR 860 million relating to the Life in-force transaction
- 2) SCOR was put on negative outlook by S&P on January 31, 2022 and by Fitch on May 10, 2022
- 3) Long-Term Issuer Credit Ratings (ICR) "aa-", Financial Strength Rating (FSR) of A+ under AM Best scale
- 4) Estimated Solvency II ratio at end of H1 2022



We are SCOR Life & Health

















By embracing the evolving insurance ecosystem, creating partnerships, and leveraging digital solutions, we are:

Putting clients at the center

- Exploring partnerships that bring additional value to our clients and policyholders
- Simplifying access to insurance through streamlined digital interfaces
- Identifying opportunities for increased engagement throughout life of the policy

Increasing our understanding of risk through data

- Leveraging additional sources of data and predictive analytics to improve risk knowledge
- Responding to emerging and evolving risks with adapted services (e.g., Cyberthreats)

Improving operations and risk management

Reducing the resources invested into operations by developing Al and automation (e.g., Claims management)



SCOR Sweden Re Service & Toolkit

Medical Underwriting

We do everything from second opinion to full medical underwriting

- All products
- Medical Manuals & Tools













Market Analysis / Data Insights

Building and sharing market knowledge to the benefit of our clients

- Benchmark survey
- Solvency II QRT Overview
- Global Consumer Study
- Underwriting guidelines advising
- Data analyses & Data pooling



Product Development

Developing new as well as improve existing products

- Tariffs
- Terms and conditions wording
- Underwriting guidelines
- Medical UW guidance





SCOR Sweden Re Service & Toolkit

Actuarial Support

Sharing the workload to save our clients time and resources

- Actuarial analyses
 - Standardized and recurring
 - Ad hoc
- Reinsurance administration
- Pricing
- Reserving
- R-programming courses



Risk Transfer, Solvency & Balance Sheet Improvement

Bespoke financial solutions, in addition to traditional reinsurance protection

- Traditional reinsurance
- Loss portfolio transfer
- Mass Lapse cover
- Value-in-Force financing
- Outsourcing- & run off solutions



Education / Inspiration

We regularly share with our clients the knowledge of our multidisciplinary expert teams

- Medical Seminars
- Conference
- Workshops
- Trainings
- SCOR Campus
- Medical reports and research









Our white-labelled API solution...

Online or by phone

- Online platform for fast & reliable access 24/7.
- Dynamic online health questionnaires
- Secure & confidential health assessments.

Modular and flexible with agile Data Analytics

- In-depth insights with process evaluation, customer analytics and data visualisation in real time.
- Increase the accuracy and speed of underwriting results.

Engineered for next-gen underwriting

- Backed by SCOR's SOLEM underwriting expertise
- Secure treatment and hosting governed by our ISO 27.001 certification.

•90+% of underwriting decisions within 1 minute

•5% of applications require human underwriting





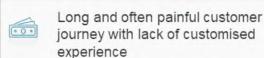




Deploying our Claims Rules Engine

to reduce end consumer complexity and save insurers' costs and time while deepening their knowledge through enhanced data

Claiming can be a stressful experience with poor outcomes





Labour intensive and inefficient workload distribution leading to higher cost per claim



Risk of manual errors and inconsistency



Time-consuming end-to-end processing / Slow turnaround time



Lack of data organisation and monitoring

Using data, medical knowledge and technology to simplify the claims process

B

Efficient claims process for the end consumer:

- Paperless process for the consumer
- Immediate customer clarity on claims requirements
- Fast track decisions and focused support



Smart in-built rules to accelerate claims payment:

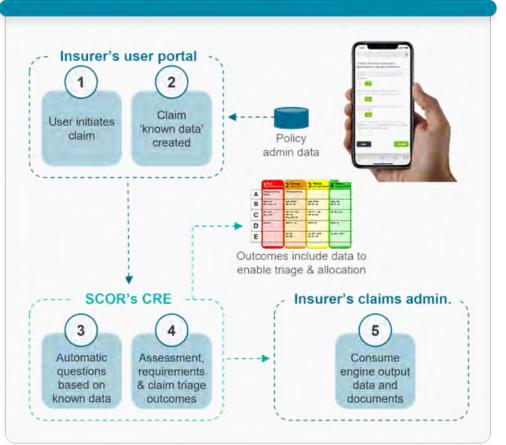
- Triage scoring to identify claims for autopayment
- Early intervention & rehab. support for complex claims
- Allocation of claims to the most appropriate skill sets



Enriched customer journey with our cedants

- Structured data and real-time dashboards
- Improved customer journeys
- · Enhanced risk modelling and pricing

How are claims processed with the Claims Rules Engine?







ReMark's Global Consumer Study increases client's understanding of the end consumer

Giving a voice to consumer priorities since 2013

customer journeys

The largest global survey of insurance consumers

- 12,728 consumers
- 22 markets
- 1st expansion to P&C insurance products in 2022 Study



their insurers on critical illnesses

	P&C Hot trends	L&H Hot trends
Consumers are open to digital	of drivers are willing to use telematics data to improve their driving	of consumers are willing to share EHR data at the underwriting stage
Growth opportunities for insurers	of consumers would consider being protected against cybersecurity risks	of Gen Z consumers exercise more than 20min weekly – a huge jump compared to 47% in 2021
Empowering consumers with simpler	71% of consumers are aware that insurance can be embedded within	96% of consumers are open to receiving personalized risks assessments from

the purchase of goods and services



Se detta e-postmeddelande online



Multipel skleros-sjukdom i förändring

Föreläsning Onsdagen den 9:e november 2022. Kl. 14:00-15:45



Välkommen till SCOR Sweden Re:s föreläsning i ämnet:

Multipel skleros-sjukdom i förändring

Föreläsare: Jan Hillert, professor/överläkare i neurologi vid Karolinska Institutet Onsdagen den 9:e november 2022.

> KI. 14:00-15:45 inkl. kaffepaus Plats: GT30/Turbine, Grev Turegatan 30, Stockholm Anmälan till mig senast den 24 oktober 2022.

> > Anmal dig har:

Vid frågor kontakta: Johan LIDSTRÖM johan.lidstrom@swedenre.se Tel:070-7585330

Foreläsare



Professor/överläkare i neurologi

Välkommen till SCOR Sweden Re:s webinar i ämnet: "MAGKÄNSLA" IBD/IBS Föreläsare: Markus Birk, Med dr Specialist i gastroenterologi, hepatologi, internmedicin och infektion. Tisdagen den 18 maj 2021. KI. 14:00-15:30

Länk för att ansluta till webinariet kommer att skickas ut dagarna innan.



Anmälan till mig senast den 14:e maj Tel:070-7585330 johan.lidstrom@swedenre.se



Life



SCOR Campus Providing international best-in-class client training

40+

Years serving our clients' needs for training

Expend your proficiency on technical subjects, learn about hot topics, and get your junior staff master the basics of our industry..

1,000

International clients trained in 2021

Grow your professional network and share own experience with global peers during dedicated networking activities.

Access all content from your personal space and watch webinars replays year round on the SCOR Campus website.

365

Days of access to the online content library

Get exclusive inputs from SCOR experts in limited group fit for interactivity, practical exercises, and concrete case studies.

120

SCOR Experts sharing their know-how in 2021



Knowledge sharing is in our DNA: expert-led publications and trainings

2022 Special Interest Publications

- Activity Report
- Emerging Risks







Climate Change

Sustainable Investment



In-person or Virtual Training Seminars

- **Product development:** critical illness, longevity, Vitae calculators
- Technical training: engineering, marine/aviation, pre-disability earning calculations, onshore energy
- Medical updates: long Covid, cardiac investigation, impact of coronavirus on cancer, blood abnormalities, Alzheimer's and dementia
- Transversal training: claims, climate change, cyber, ESG, natural catastrophes, underwriting
- Reinsurance knowledge transfer

2022 Expert Articles



- COVID-19 & the Rise in Consumer Awareness of Risk
- · Staying in Your Bike Lane
- What Insurers Need to Know about Monkeypox
- Rising Inflation and Volatile Markets
- Falls are Increasing among Older Adults
- Lessons from the Ever Given
- Assessing Risk for Alzheimer's Disease and Dementia
- Diving Deeper: Underwriting Scuba
- Is Long-COVID Here to Stay?



- Consumer Survey on Robo-Advice for Life Insurance
- The Relevance of Climate Change for Life Insurance
- Building a Healthy Lifestyle Using Behavioral Science



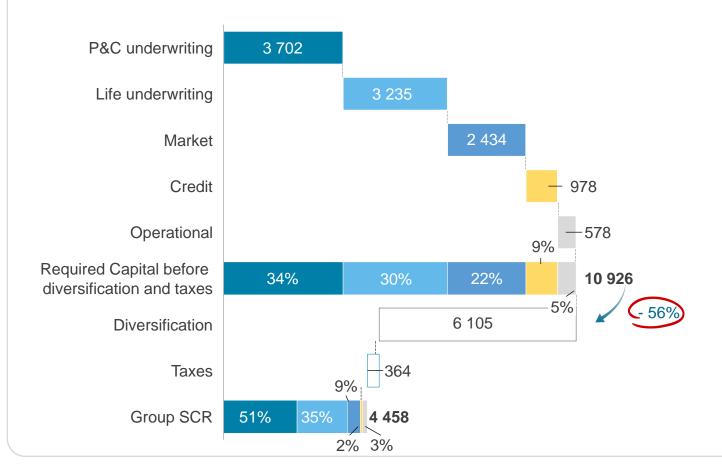
- A New Era for Globalization?
- Crop Insurance in India and Brazil
- The Impact of COVID-19 on Mortality and Morbidity
- Will Green Inflation Become a Reality?
- Reinsurance Demand and Liquidity Creation
- Demystifying Health Risks and Comorbidities
- The Care and Protection Gaps





Appendix K: SCOR's well-balanced risk portfolio creates an excellent diversification benefit

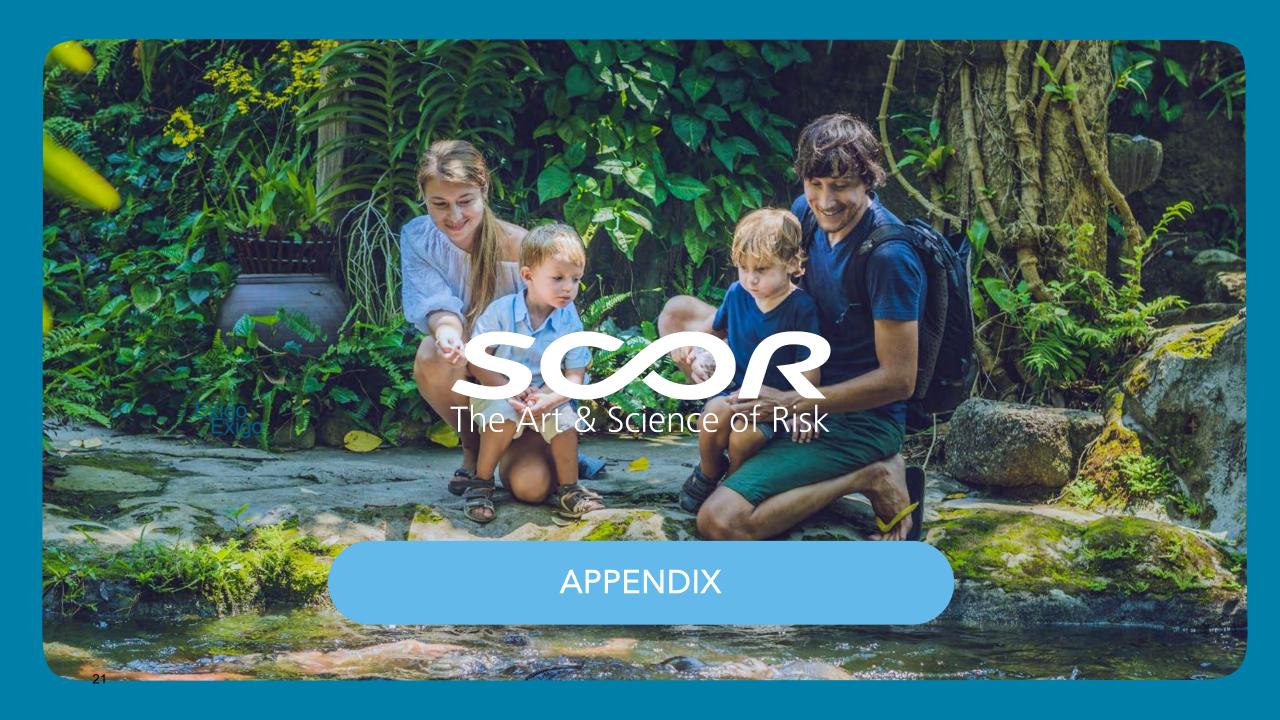




- SCOR mainly requires capital for underwriting risks
- Life in-force transaction reduces materially the Life contribution to SCR
- P&C capital remains stable as planned growth focuses on non-Cat lines
- SCOR's balanced P&C and Life portfolio and strong business model ensure very strong diversification benefits







Our solutions leverage four pillars to maximise the impact for clients And help them achieve further growth, profitability and customers experience



Solutions for Clients

Insurance Expertise & Marketing



- Access to SCOR expertise on risk comprehension
- Global Consumer studies
- Behavioural science studies
- Risk consulting
- Training
- Experience analysis and benchmarking

Data Analytics & Digital Capabilities



- Data management and advanced modelling (including Machine Learning, Optimization, etc.)
- Software engineering
- API delivery
- Infrastructure hosting

Product Development & Innovation Capabilities



- On the shelf products available
- Development of tailor-made products
- Scouting for the best available technology/ Ventures
- Access to SCOR network of partners at best market conditions
- Project management

Capital Solutions



- Solutions to optimize the balance sheet or the P&L
- Access to additional thirdparty capital
- Risk transfer

Life & Health

Property & Casualty



Optimizing our clients' capital and managing volatility



through tailor-made financial solutions, focusing strictly on biometric risks

Financial Solutions is one of many options for Capital Management (including corporate finance tools) and it offers more flexibility in sizing, ease of execution, and avoids impacting shareholders or ratings

Managing the volatility of solvency ratio

For high sensitivity to solvency ratio

 Contingent VIF reinsurance financing

Providing capital and cash

 Coinsurance cash commission financing

For long term business

Powerful capital management tool

Reducing solvency capital requirement and improving risk diversification

- Loss portfolio transfer
- Mass lapse stop loss

For capital Intensive blocks

Increasing available capital to optimise redundancies and conservatism

Non cash VIF reinsurance financing

For long term business





Helping clients assess risks with Solem, our underwriting manual

Our online expert underwriting manual...



...is helping our clients to assess risks thanks to:

Complete guidelines

+ comprehensive information pages on each risk

Multilingual
versions adapted
to the specifics of
each market

Easy access to information

- Life
- Disability
- Critical illness
- Long Term Care
- English
- French
- German
- Spanish
- Italian

- Medical Expenses
- Claims management
- Dutch
- Portuguese
- Chinese
- Japanese
- Efficient search engine
- "Top 10" most frequently viewed pages
- Feedback button

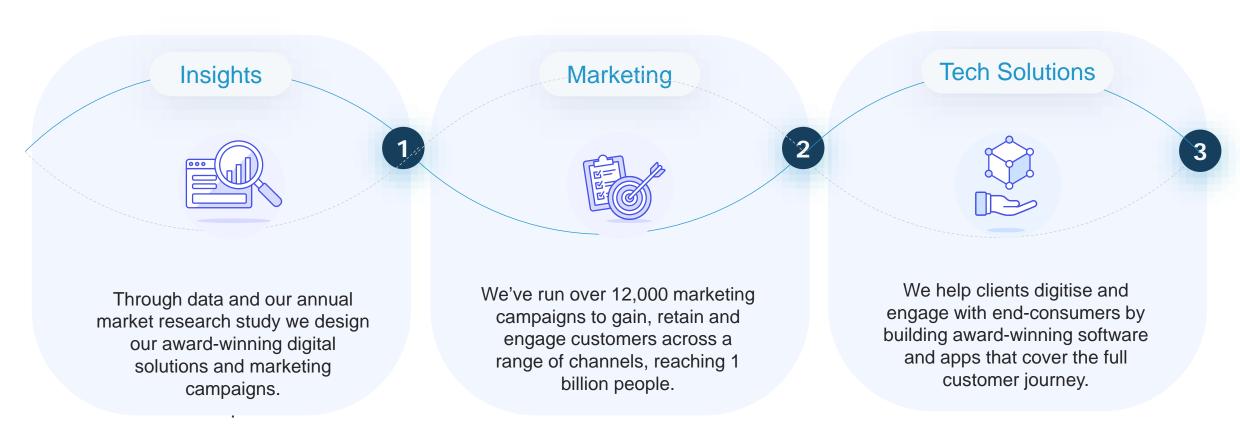
SOLEM has been updated with COVID-19 UNDERWRITING GUIDELINES



ReMark, SCOR's global insurance consultancy entity



Enabling banks and insurers gain, retain and engage policyholders through three core areas of expertise







Leveraging machine learning to power a range of biometric risk calculators for improved underwriting solutions

Vitae Cardio and Vitae Breast Cancer open the door to more inclusive insurance and fairer pricing tailored to each individual, leveraging data science techniques and a wide range of traditional and innovative risk factors





UNDERWRITING MANUAL SOLEM



Vitae proposes to assess a wide set of biometric risks together in Solem, simplifying our clients' underwriters experience. The assessment of non-biometric risks remains unchanged.

E-UW SOLUTIONS

Vitae enhances our E-UW solutions by allowing to automatically assess 50% of substandard risks traditionally handled manually

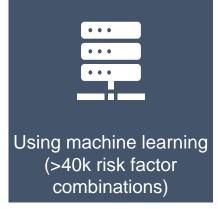
INNOVATIVE CLIENT SOLUTIONS

Vitae calculators can be used across a wide range of innovative solutions developed by SCOR for its clients across the customer journey (Vitae can for example power chatbots)

Added value for the client













Addressing mental health throughout the customer journey to respond to the mental health epidemic, improve well-being and reduce claims frequency and costs.

Learning

Underwriting

Monitoring and engaging

Handling claims —

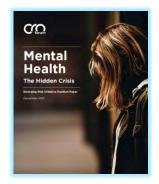
With the support of doctors and psychologists, SCOR has strong in-house knowledge based on the latest research that we share with our clients through paper publications and trainings.

SCOR has developed a matrix to easily and accurately assess anxiety and depression risk, with a first launch in the Australian & New Zealand market

with the Ifeel start-up, SCOR can offer policyholders access to a digital platform to help them better control their emotions and allow for early intervention

In Germany, SCOR provided disability policy holders with a wrist band to monitor their health. It showed huge positive impact on mental well-being with a clear drop in depression and elimination of suicidal thoughts

SCOR built a six-pillar claims training program to support best practice claims management, including enhancing skills in motivational interviews.









Therapy via chat, video call







SCOR's sustainability strategy Is shaped by our raison d'être with the goal of...



Contributing to people's health and wellness

- Develop accessible solutions, products and partnerships that will encourage our policyholders to live healthier lives while providing more protection and services
- Improve the current understanding of climate change's potential impact on human health



Contributing to the well-being of the planet

- Contribute to achieve Net-Zero emission by halting support for new oil field production products by 2050 and by setting new decarbonization targets on investments by 2029
- In Specialty Insurance no coverage for new oil field production projects from 2023 and the ambition to double the coverage for low carbon energies by 2025.
- Support clients in their own commitments to follow credible transition pathways



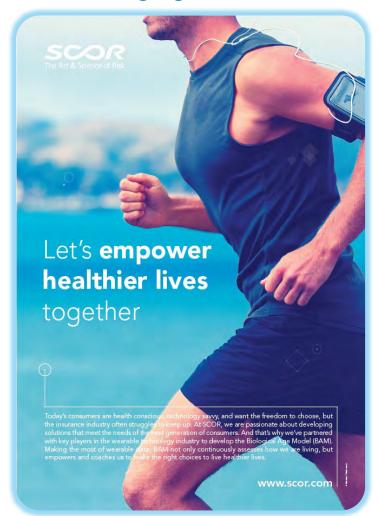
Closing the protection gap

- Understand ever-evolving client needs brought on by an expanding risk universe and leverage our expertise to adapt solutions to respond to changing trends
- Harness the power of data and embrace digitalization to reach new and underserved populations





Rolling out the Biological Age Model, leveraging wearables to reinvent underwriting and empower healthy lives





Engaging the customer with tailored incentives to live healthier



DAILY STEPS, DAILY ACTIVITY

Enables high-level of accuracy in assessment of mortality risk

- Reinventing underwriting with the simple input of 7 days of lifestyle data predicting a tailored mortality and morbidity risk
- Transforming the customer experience by developing new products and incentivizing health & wellness through an app made for consumer engagement

>120,000 USERS

since launch in October 2019









GEOPOLITIK & GEOEKONOMI

ASLE TOJE

LIFE INSURANCE CONFERENCE, 14 OKTOBER 2022

GEOPOLITIKK

- KAMPEN OM MAKT, INFLYTANDE OCH TILLGÅNG I VÄRLDSPOLITIKEN
- NATIONALSTATEN ÄR TILLBAKA LIKSOM INTRESSESFÄRERNA
- INSTABIL MULTIPOLARITET
- EN VÄRLD, FLERA SYSTEM: LIBERALISMENS KRIS
- KRIGET I UKRAINA: VESTEN I RECESSION
- FRIHANDELNS FRAMTID KEDJANE SLITAS

Emerging markets will dominate the world's top 10 economies in 2050 (GDP at PPPs)

	2016	2050	
China	1	1	China
US	2	2	India
India	3	3	US
Japan	4	4	Indonesia
Germany	5	5	Brazil
Russia	6	6	Russia
Brazil	7	7	Мехісо
Indonesia	8	8	Japan
UK	9	9	Germany
France	10	10	UK

E7 economies G7 ec

Sources: IMF for 2016 estimates, PwC analysis for projections to 2050

GEOEKONOMI

- SKÄRNINGSPUNKTEN MELLAN EKONOMI OCH GEOPOLITIK: TID, RUM, POLITISKA RAMAR OCH TILLGÅNG TILL RESURSER.
- OSÄKRA LEVERANSKEDJOR:
- KAMP OM TILLGÅNG TILL KNAPPA RESURSER
- MILJÖ OCH MÄNSKLIGA RÄTTIGHETER
- FLASKHALSAR SKAPAR OSÄKERHET
- NY DRIVKRAFT FÖR PRIMÄRINDUSTRIERNA
- "ÅTERFLYTTNING" OCH NYTT FOKUS PÅ "RÅVAROR AV AVGÖRANDE BETYDELSE"
- EU OCH USA: LEVERANSKEDJOR OCH TRANSPARENS



- TILLVÄXTEN SOM FÖRSVANN
- ÖST-VÄST-NORD-SYD
- EU EFTER STORBRITANNIEN
- KOMMER UKRAINA ATT STÄRKA EU?
- ENERGIKRISEN: SANKTIONER OCH "GRÖN" BRIST

TRANSATLANTISKA FÖRBINDELSER

- USA EFTER (OCH FÖRE?) TRUMP
- STRAFFA RYSSLAND, FÖRLÅT VENEZUELA & ISOLERA KINA.
- HANDELSUNDERSKOTT 2021: 859 MILJARDER US-DOLLAR
- SUND GRUND, OSUND POLITIK.
- "A HOUSE DIVIDED AGAINST ITSELF CANNOT STAND." A. LINCOLN

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KINA OCH INDIEN: FRÅN UTVECKLINGSLÄNDER TILL STORMAKTER

Kinas andel av världens BNP har ökat från 2% 1980 till 18% 2022

1,4 miljarder: 85% har låg levnadsstandard.

Genomsnittlig inkomst 1/10 i USA

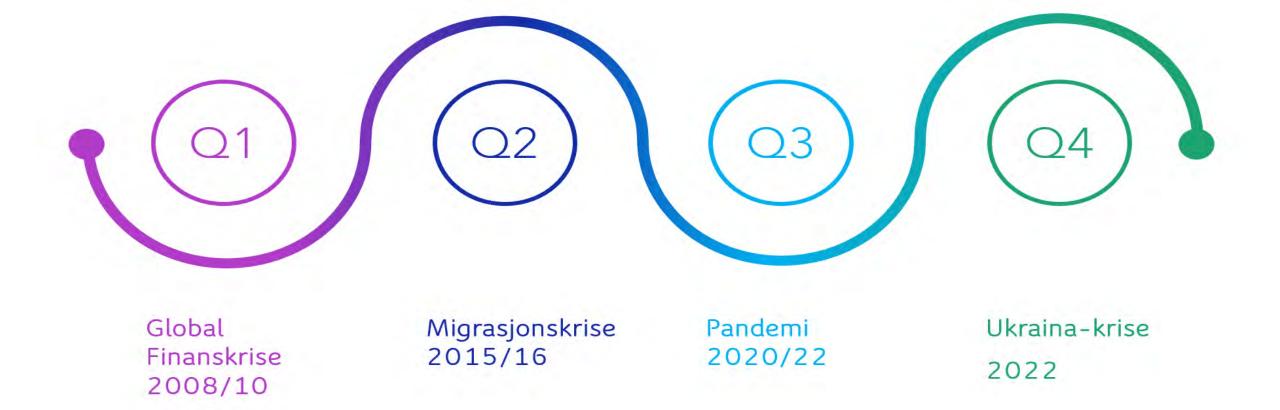
Invändig bromsning. Tillväxttakt 2022: 4,37%:

<u>Japansk sjukdom?</u>

Indiens tillväxttakt 7.74% 2022

Fokus Högteknologisk & Pharma

Himalaya, Taiwan och konfliktpotentialen



- Svart svan: en oförutsedd händelse, vanligtvis en med extrema konsekvenser.
- FLER OCH FLER SVANAR ÄR SVARTA: MER OCH MER RISK ÄR POLITISK.
- Vikten av att modellera den ekonomiska effekten av komplexa framtida händelser och att analysera risk.







Climate Change and its relevance for Life and Health Insurance

Dr. Irene MerkEmerging Risks Ambassador

SCOR Sweden Re Life Conference 14 October 2022



The wider context: we are living in the "Anthropocene"

Cause

Human behaviour is dramatically changing the atmosphere, biosphere and socioeconomic landscape

Consequences

Climate change, loss of ecosystems and biodiversity, plastic pollution, obesity, antimicrobial resistance, poverty and inequality etc.

Attributes

Many irreversible aspects, happening faster than the ecosystem can adapt, leading to disruption and higher volatility

Life liability insurance impact

Projections of future morbidity and mortality are becoming more challenging



The challenge is in the complexity and the interconnectedness.



Regulatory and Industry Context

In August 2022, EIOPA published the "Application guidance on climate change materiality assessments and climate change scenarios in ORSA". It requires European companies to consider the inclusion of long-term, quantitative climate stress tests in their ORSAs.





NGFS Glasgow Declaration:
 Committed to Action (also from November 3rd, 2021) on improving the resilience of the financial system and scaling up of financing flows needed to support the transition towards a sustainable economy.

Nordic members of the NGFS:

- Bank of Finland
- Danish Financial Supervisory Authority
- Danmarks Nationalbank
- Finansinspektionen
- Finanssivalvolta
- Finanstilsynet
- Norges Bank
- Sveriges Riksbank



Climate Change and its relevance for Life and Health Insurance Agenda

Outcomes of climate change and their relation to health

02 Expected impacts on life and health insurance

Quantification



Climate change impacts: extreme heat

- Higher average temperature night and day
- Higher probability of extreme heat, with also more days of unprecedented heat
- Heat waves have additional risks (no respite)
- Southern hemisphere: combination of temperature and humidity making parts of the region uninhabitable
- Northern hemisphere: milder winters disrupt natural defence cycles against certain insect pests
- Heat aggravates some existing conditions and can lead to more cardiovascular and pulmonary events

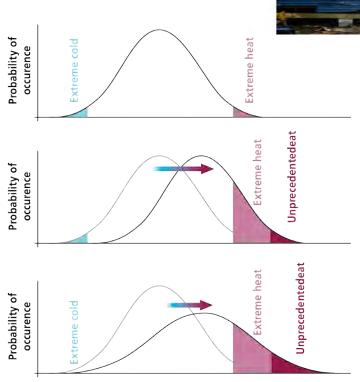
Mitigation

Workplace and constructions norms, green spaces, public health interventions, air conditioning, migration... But also fewer cold-related deaths.

How Extreme Heat Kills, Sickens, Strains and Ages Us

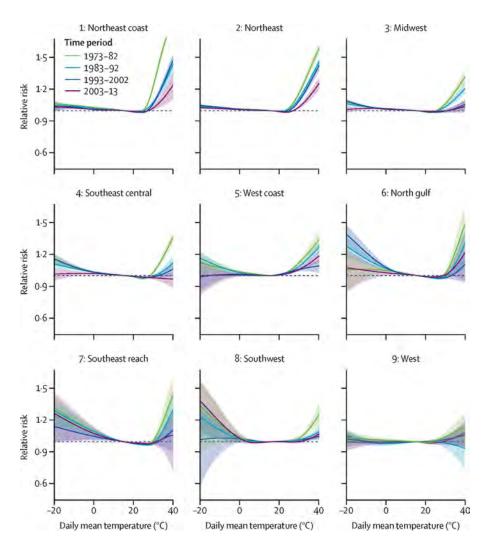
Researchers are drilling down into the ways life on a hotter planet will tax our bodies, and looking for protections that, unlike airconditioning, don't make the problem worse.

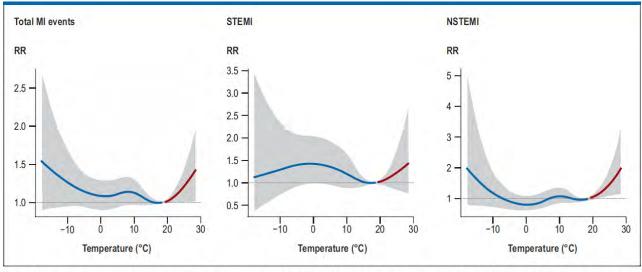






Climate change impacts: temperature exposure-response functions





Cumulative exposure–response functions between air temperature and myocardial infarction (with 95% confidence intervals) in Augsburg, Germany in the period 2001 to 2014. The exposure–response functions were obtained from Chen et al. (2019) (15). The red lines represent the effect of heat (temperature above 18.4 °C), while the blue lines show the effect of cold (temperature below 18.4 °C).

https://pubmed.ncbi.nlm.nih.gov > 31554538



Climate change impacts: air pollution

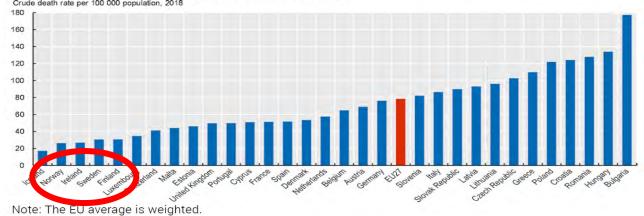
- Burning fossil fuels creates pollutants, which in turn exacerbate e.g. heat-related mortality and morbidity
- Particulate emissions can drop on polar regions, leading to less sun reflection
- Warmer sub-arctic regions encourage plant growth, which darkens the Earth's surface leading to more global warming
- Wildfires (more frequent with climate change) cause increases in airborne particles and gaseous air pollutants
- Extended length and scope of pollen season

Mitigation

Cleaner energy sources, political interventions...



Figure 2.5. Premature death rates attributable to outdoor air pollution ($PM_{2.5}$) are generally the highest in Central and Eastern Europe, and lowest in Northern Europe



Source: Based on European Environment Agency (2020[2]), Air quality in Europe – 2020 report.

StatLink https://stat.link/yqfurb



Climate change impacts: severe weather

- Several natural catastrophes such as windstorms, floods and droughts are known to be exacerbated by climate change
- Flooding and heavy rainfall can contaminate drinking water or food
- Combination of direct losses of life as well as long-term detrimental impacts on human well-being
- Famine, social unrest, displacement/forced migration, lower water quality...
- Less resources for education, health systems

Mitigation

Building and construction standards, water management, land, soil and forest stewardship, political stability...



Poorer segments of the population and developing countries are over-exposed to the downsides of severe weather.

https://www.ghibli.jp/works/totoro/#frame

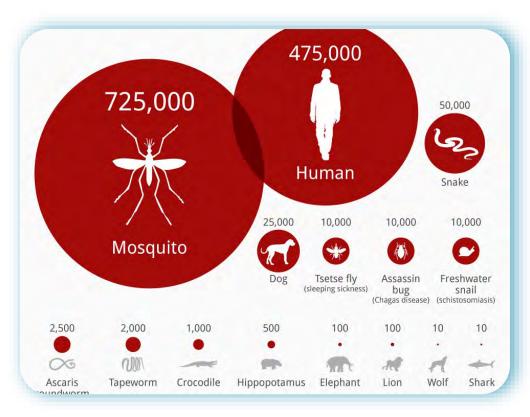


Climate change impacts: infectious diseases

- Distinguish between common source (e.g., contaminated water) and propagated outbreaks (spreading from person to person or via intermediate hosts)
- Changes in temperature, precipitation patterns and extreme weather events can promote the spread of pathogens, parasites, and (vector-borne) diseases
- Dependencies on socio-demographic influences, drug resistance and nutrition, deforestation, agricultural development, water projects, urbanisation, global development, land use...

Mitigation

Public health infrastructure and programs to monitor, manage, and prevent the spread of diseases. Research into emerging and "orphan" diseases.



Number of people killed by animals each year. Source: Gatesnotes

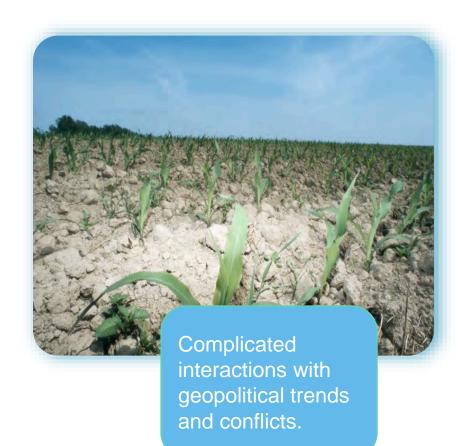


Climate change impacts: water and food

- Droughts, floods and severe weather together with changing CO₂ levels are harming crop yield
- Higher temperatures and elevated CO₂ levels have an impact on the development of some species of weeds, insects and other pests
- Increase in humidity and temperature favours bacterial and fungal contamination of food
- Flooding and heavy rainfall can contaminate drinking water or food
- Loss of pollinators impacts food availability and quality
- Poleward shift of highly productive agricultural areas with winners and losers
- Balance between the availability of freshwater from aquifers, glaciers, rain and rivers and growing human demand

Mitigation

Technological improvements, water management such as drip-feeding, investments in public infrastructure, education campaigns.

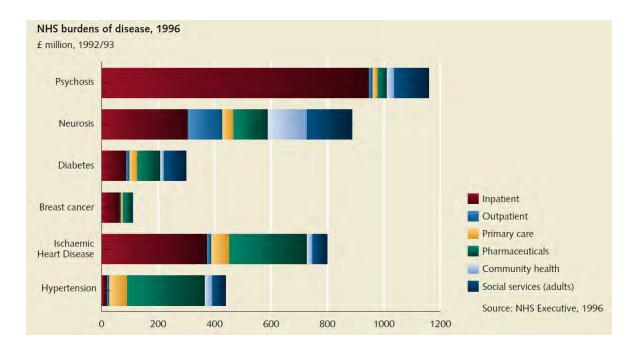




Climate change impacts: indirect impacts

- Mental health can suffer from events caused or aggravated by climate change, but also from a sense of helplessness in the face of such a large problem
- Disruption to belief systems and cultural practices weakens communities and individuals
- Transition risk: periods of uncertainty and changes in economies like shifts to new industrial sectors – can leave sub-populations in financial distress
- Risk of rising conflicts within and between countries ("water wars", yellow vests...)
- Migration and displacement undermine the provision of medical care and are detrimental to the health of the affected
- More people in low-elevation coastal zones will experience floods; storms and rising sea levels, all of which stunts economic growth especially in developing countries







Focus on Sweden / Nordic countries

- The greatest risks to health from climate change in Sweden are heat waves and tick-borne diseases.
- Changes in pollen allergies, an increase in floods, and a negative impact on drinking water quality, as well as water- and food-borne infections come second.
- Then follows mosquito-borne diseases and forest fires, even if they have lower probability.

Värmebölja Fästingburna infektioner	Pollenallergier Översvämning Dricksvatten- påverkan	Vattenburen smitta Gnagarburna infektioner	Livsmedelsburen smitta Nollgenomgångar	
Myggburna infektioner	Varmare vintrar	Luft- föroreningar	Torka	Inomhusmiljö- påverkan
Skogsbrand		Ras och skred		Köldknäppar





Climate Change and its relevance for Life and Health Insurance Agenda

Outcomes of climate change and their relation to health

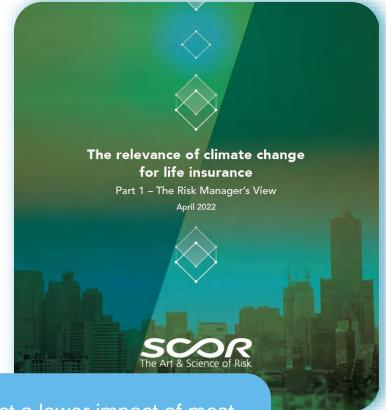
Expected impacts on life and health insurance

03 Quantification



What does climate change mean for life and health (re)insurance?

- The relevance depends on the type of product: for instance, vector-borne infectious diseases are generally not relevant for mortality covers
- The relevance depends on the region of the world: for instance, poor air quality is more likely to be a problem in some parts of Asia than in Western Europe
- People who can afford life insurance have a better socioeconomic status and health than average (impact of medical underwriting)
- Younger, older and poorer people are less likely to have insurance cover
- There are exceptions: wealth can protect against malnutrition, but not against poor air quality (as easily). Mental health is a very relevant concern for all parts of the population.



We expect a lower impact of most climate change aspects on the insured population compared to the general population

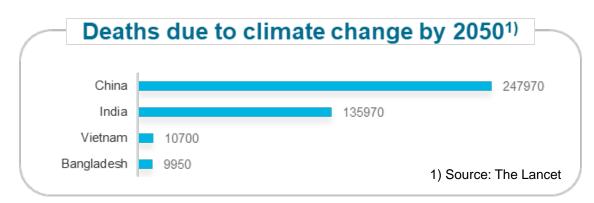


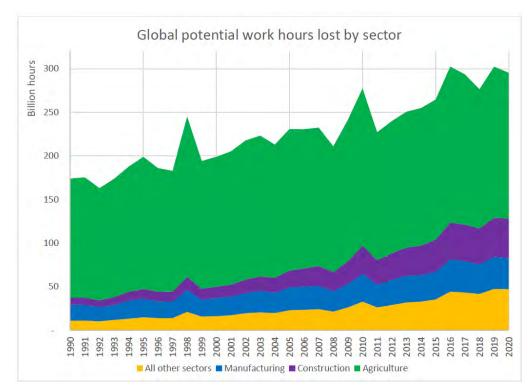
Life and health insurance exposure is different from general population



"Between 2030 and 2050, climate change is expected to cause approximately 250 000 **Organization** additional deaths per year, from malnutrition, malaria, diarrhoea and heat stress."

- Malnutrition, malaria: predominantly in Africa
- Diarrhoea: predominantly children/people without access to clean drinking water
- Heat stress: more severe for elderly and for outdoor workers

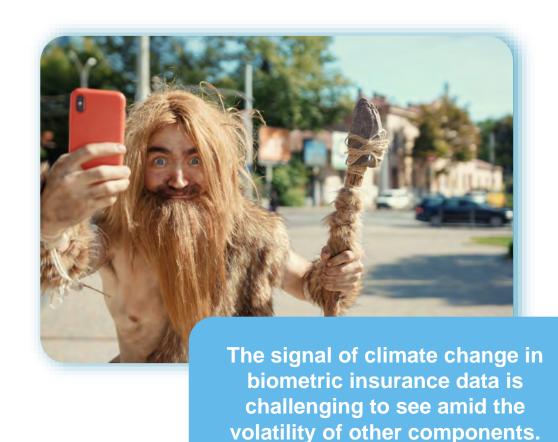






A complex topic with lots of unknowns influencing the long-term impacts

- Climate change is an extremely complex topic with lots of moving parts and interactions
- One of the biggest unknowns is the extent of adaptability in the human population:
 - Already seen in different reactions to heat waves in different parts of the US today
 - Lessons learnt from previous events lead to actions for reducing future impacts
 - 1st heatwave of a given year claims more victims than last heatwave, so adaptability works on very short time scales!
- The time horizon for the projections is very long and covers demographic changes and related health trends that are hard to predict
- Existing (medical, actuarial) literature not sufficient for insurance purposes, need to make strong assumptions





Transition risk for life and health insurance

- Transition linked to decarbonisation is a major topic for societies, markets and investments
- Reduction in GDP, unemployment and economic depression are related with increases in suicides and higher disability claims
- Stranded sectors of economic activity could reduce insurance business volumes, while new sectors emerge
- Public spending might be diverted from prevention and healthcare
- Improvements in individual behaviour such as more physical exercise and better diets could have positive outcomes



The International Actuarial Association wrote in August 2021 that because of "the sensitivity of mortality and morbidity rates to unemployment and mental health, transition risk may have more material impacts on a life insurer's risk profile than physical risks in the short term."



Climate Change and its relevance for Life and Health Insurance Agenda

Outcomes of climate change and their relation to health

02 Expected impacts on life and health insurance

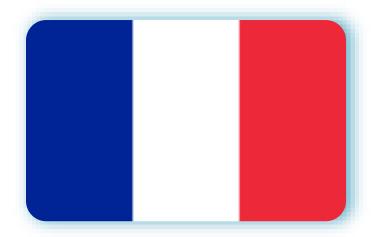
03 Quantification



SCOR conducts its own studies to assess and quantify impacts

- At SCOR, a dedicated working group on the life side assembled literature and overview over "state of the art" (peers, competitors, consultants, supervisors, actuarial bodies etc.)
- Experts including medical doctors and actuaries were polled about the most relevant market/product combinations in light of SCOR's portfolio, geographical activity and insured population
- A projection of adverse scenarios and a quantification for SCOR's portfolio was carried out, focussing in a first step on US heat and China air pollution.





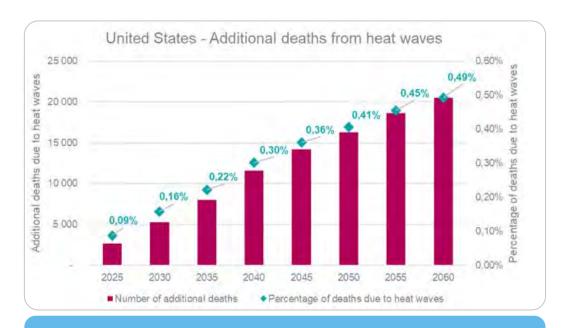
- In 2020, the French supervisor ACPR ran a voluntary market-wide climate change scenario exercise, in which SCOR participated
- On the life side, adverse scenarios for air pollution and infectious diseases were prescribed until 2060
- The insights learned during this exercise were very valuable to inform SCOR's own view on climate change and life liabilities.



Expected US heat impact on the general population +20'000 deaths in 2060 under the severe scenario (ceteris paribus)

Leveraging available literature, the SCOR team:

- Selected a scientific paper giving a factor for increased all-cause mortality on hot days
- Projected the number of additional hot days per US region under a severe scenario¹, applied a modifier to allow for adaptation of the population to climate change, and
- Calculated the expected number of additional heat deaths for the general US population (all other factors being equal), splitting the results by region, age and gender.
- Results strongly rely on the assumptions made (extra-mortality, adaptability etc.)



US general population excess heat mortality under a severe scenario (RCP 8.5)¹ is projected at around +20'000 in 2060.

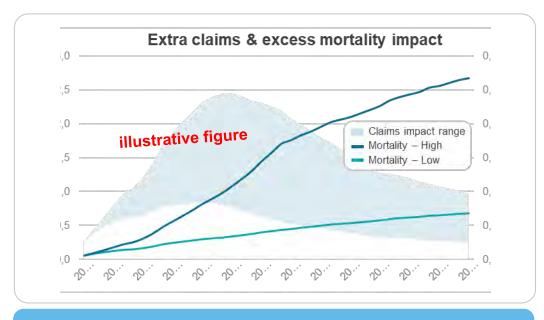
The "baseline" number of deaths for 2060 in the US population is around 4 million.



Expected US heat impact on SCOR's portfolio Very limited impact on PV of claims impact for SCOR under a severe scenario

Methodology

- Use extra deaths in general population under the scenario, projected by region, age band and gender
- Transform distribution to match SCOR's gender balance and age profile (extra heat deaths in the general population are predominantly in ages 80+ where SCOR has little exposure)
- Apply a population-to-insured-population adjustment (pipa) based on internal expert judgement split by age band and gender
- Results contain a significant amount of uncertainty with respect e.g. to additional mortality, number of future heat days, adaptation of the population, and pipa (population to insured population) factor, also given the very long projection horizon



The results only reflect the direct impact of additional hot days under this specific adverse scenario on mortality.

There are numerous indirect impacts that are very hard to assess, including mental health conditions, poorer diets, less exercise, public policies as well as the geopolitical environment and technological advances.



Conclusion

Climate change is complicated

We need to specify the driver and the region to have a meaningful discussion.

Climate change is unfair

Younger, older, poorer people and developing countries are over-exposed.

Climate change is linked to life insurers values

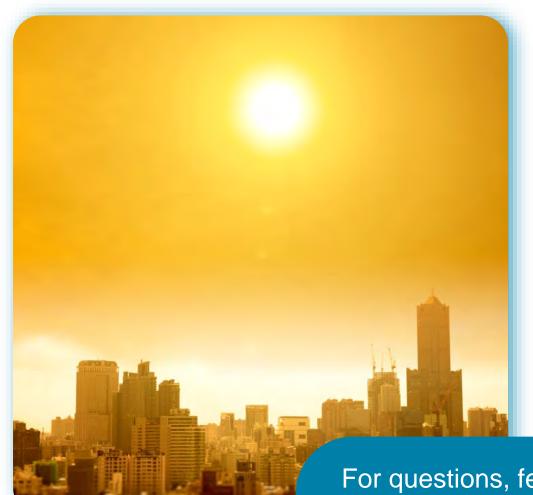
Protecting our insureds and contributing to the efforts to contain climate change is in alignment with insurance companies' purpose and SCOR's raison d'être.

The financial impact on life insurance is likely smaller

Due to the difference between general and insured population and the typical distribution of insurance products in the world, and based on SCOR's own and external studies, the direct impacts of climate change are likely of lesser concern compared to the potential impacts on P&C and investments.







Tack för er uppmärksamhet.

Dr. Irene Merk Emerging Risks Ambassador

For questions, feel free to reach out: imerk@scor.com



The "double materiality": outside-in vs inside-out

Outside-in view

- How do the various aspects of climate change influence our business?
- Medical literature on link between climate change impacts and mortality and morbidity exists, but not easy to quantify
- Challenge to identify baseline for stress because of quality and availability of death certificates
- Large number of variables (granularity, demographics, adaptation...)
- Actuarial literature and peer disclosures are largely qualitative so far

Inside-out view

- How do our activities contribute to climate change?
- By its nature, life and health insurance "does no harm" and its products do not directly generate green house gases etc.
- Life and health insurance covers contribute to the ability of families and communities to re-build after a negative event
- Because of the alignment of interest between (re)insurers and insured for life and health products, protecting clients from the impacts of climate change is an opportunity, and a driver for the industry to combat climate change.









Sömn och mortalitet

Torbjörn Åkerstedt Klinisk neurovetenskap Karolinska institutet

Vilka är lång och kortsovarna
Orsakerna?
Hur mycket ökar andra faktorer?

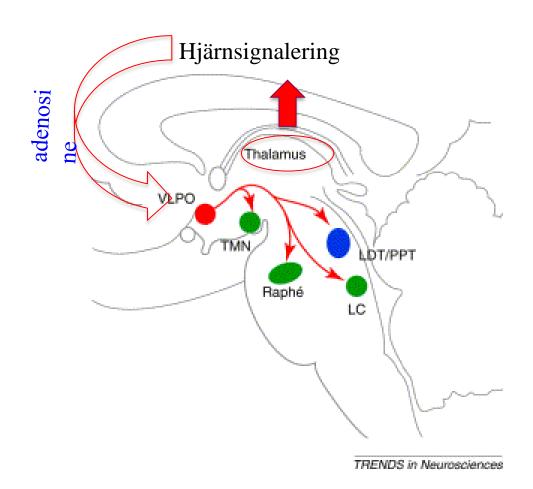


Sömn – reglering och funktion

Name Surname 14/10/2015 6

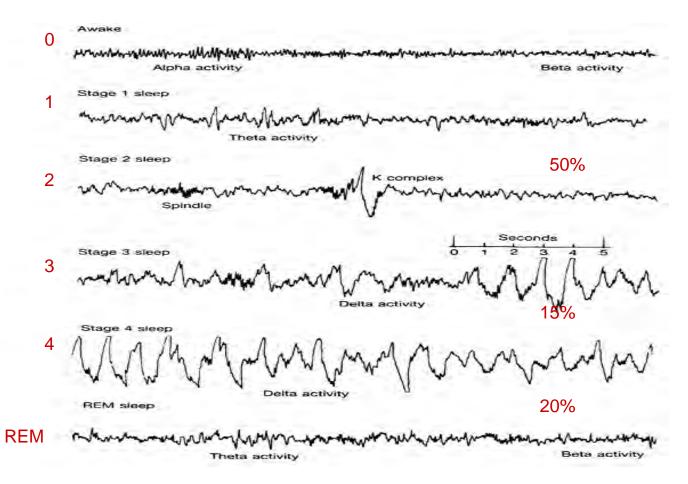






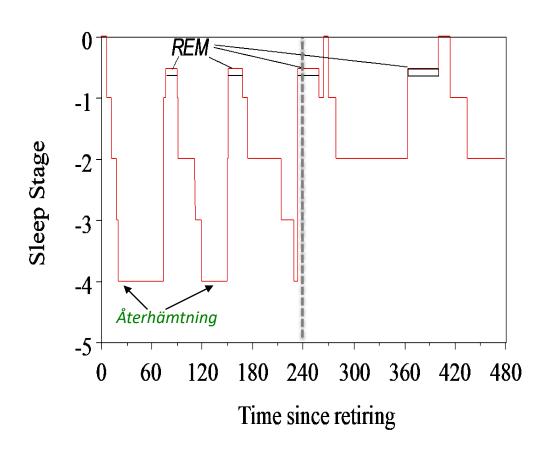


Sömn-EEG





Sömnens utveckling över tid





Vad gör sömnen för oss

- Påfyllning av energi (ATP) i hjärnan
- Utrensning av skräp från avfyrning av nervimpulser N3 (Djup sömn)
- Konsolidering av minne (N3 och REM)
- Reduktion av emotionell laddning av minneskretsar (REM)
- Återställning av immunsystemet
- Återställning av glukosregleringen (insulinets känslighet)
- Fettreduktion

Name Surname 14/10/2015



Dock – sömnstörningar och sjukdom

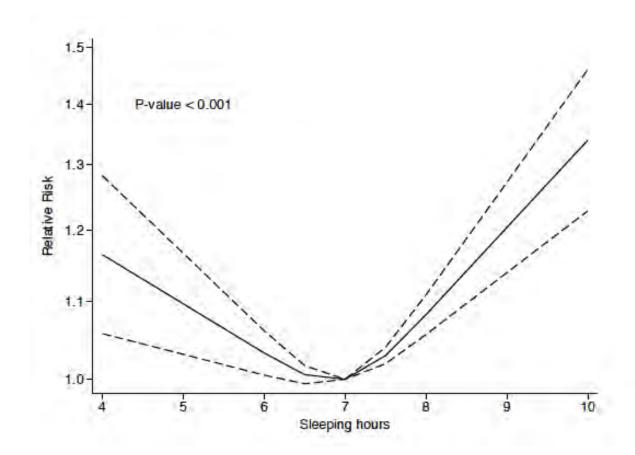
- Hjärt-kärlsjukdom
- Stroke
- Diabetes II
- Alzheimer



Sömnlängd och mortalitet



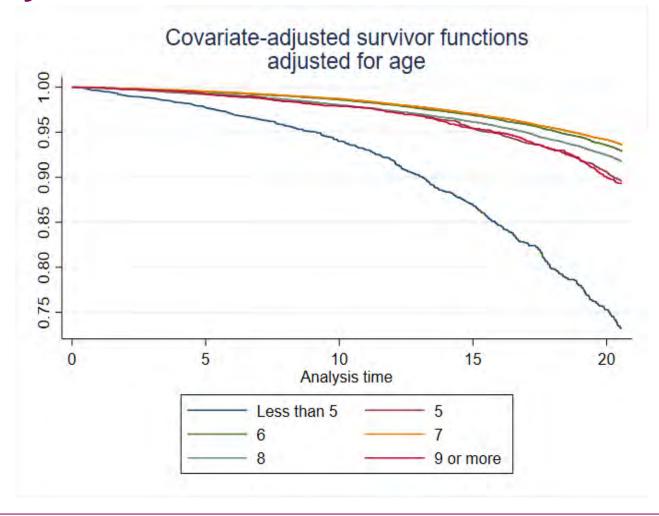
Sömn och mortalitet



N=53.0000, representative sample Adjustment for many variables

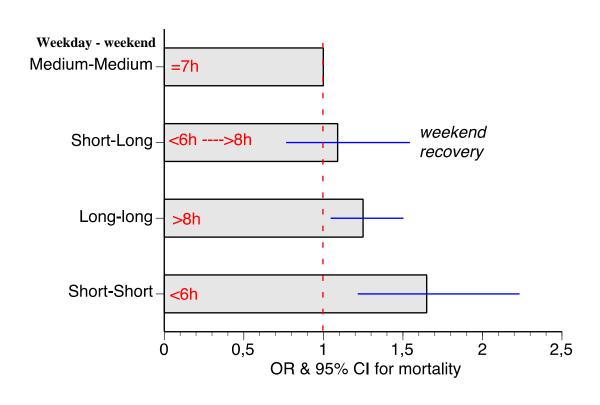


Survival analysis



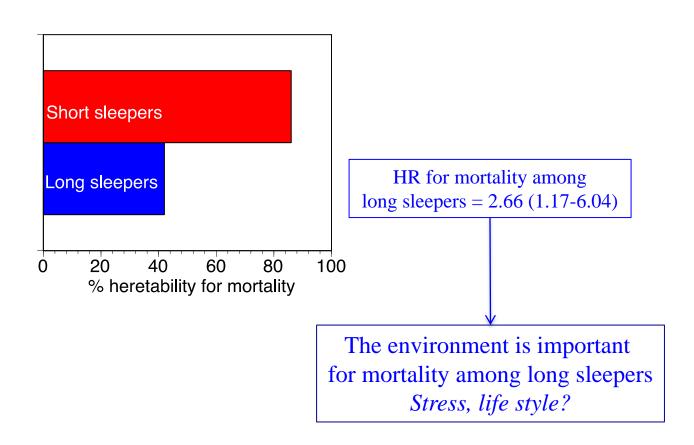


Helgsömnen kompenserar





Arv eller miljö





Andra riskfaktorer jämfört med sömnlängd

	Z-value
Age	73.0
Male	16.0
Smoking	13.0
ВМІ	5.0
<5h sleep	4.2
Unmarried/divorced	3.5
≥9h sleep	3.3



Möjliga orsaker

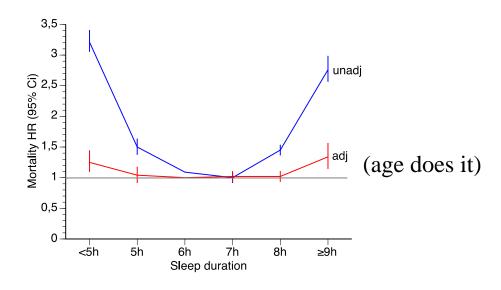
- Kort sömn
 - → Inflammation
 - → Sämre blodsockerreglering
 - → Ökning av tresshormoner
 - → Ökning av ghrelin (hungerdrivande) och minskning av leptin (hungerdämpande) fetma
- Lång sömn
 - → Resultat av inflammation
 - → Resultat av depression



Ålder?



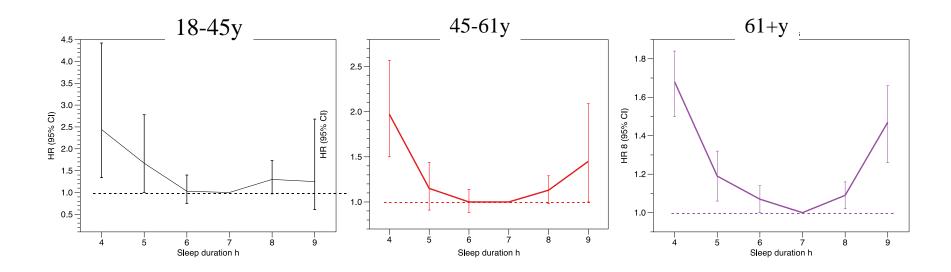
Mortalitet och sömnduration - ålder?



N= 25.509 19 years follow-up



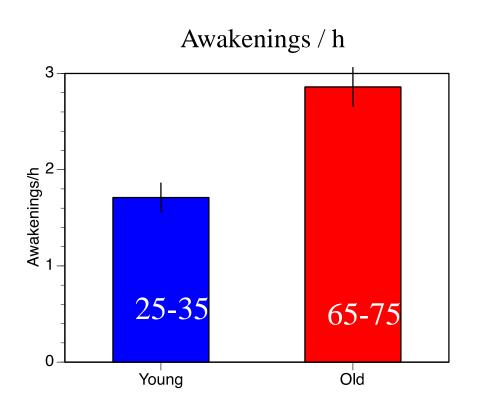
Detalj ålder

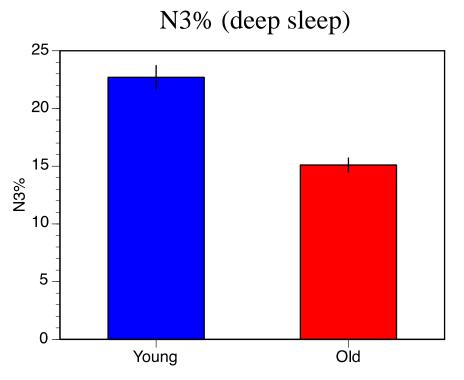


Men uppföljningstiden kan spela roll



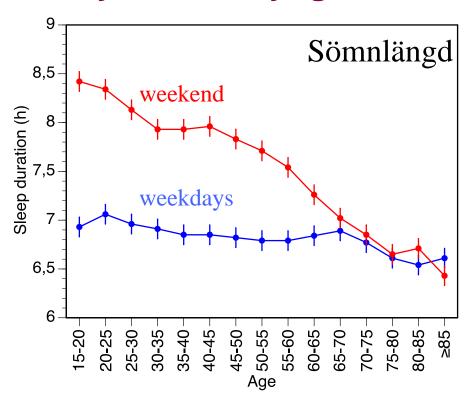
Äldre sover objektivt sämre än yngre

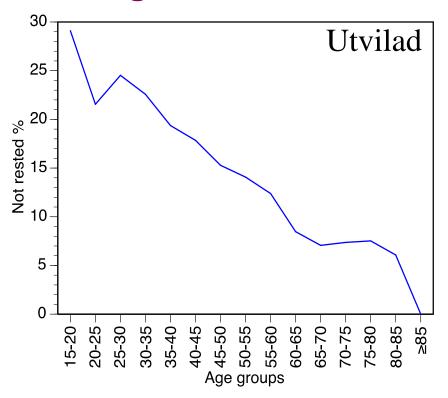






Men man är faktiskt utvilad och sover lika mycket som yngre under veckodagar





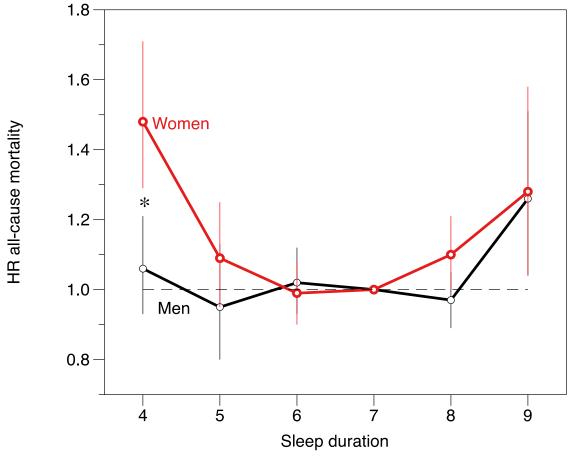
N=43.000



Kön?



Sömnduration, kön och mortalitet

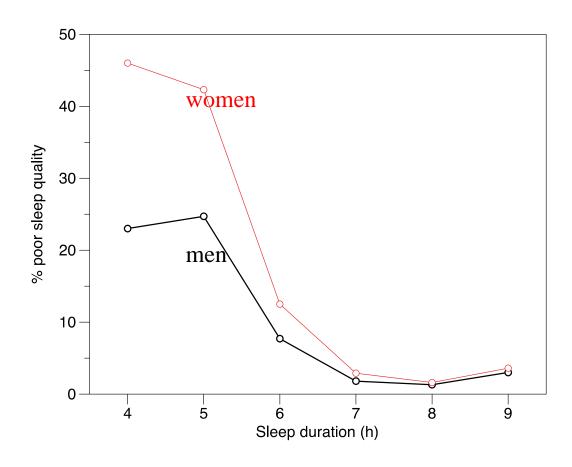


Varför? Stress?

N=34 000 19 years follow-up

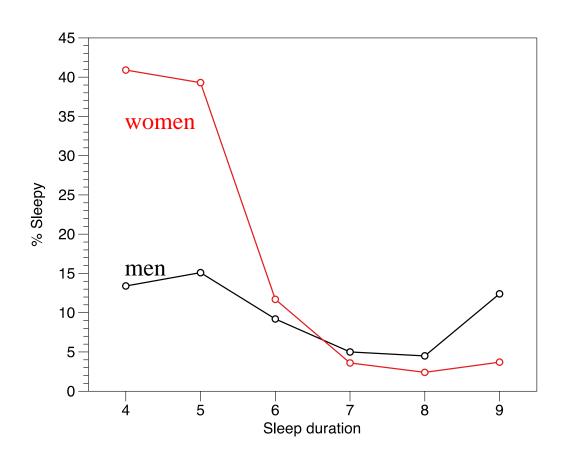


Dålig sömn, sömnlängd och kön



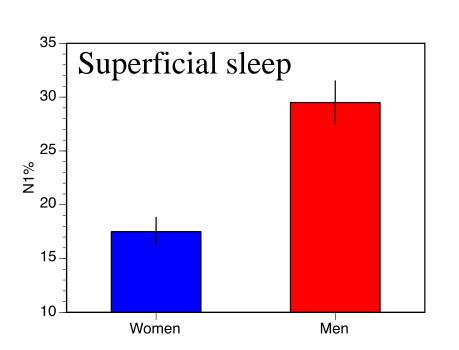


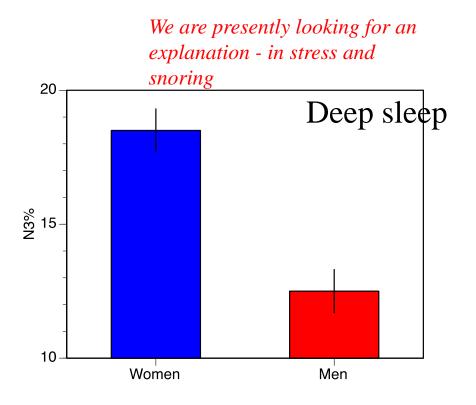
Sömnighet, sömnlängd och kön





Men kvinnor sover faktiskt bättre än men – objektivt sett

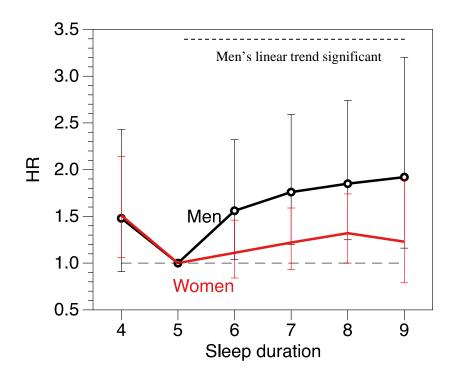






91

Sömnlängd, kön och cancermortalitet



Mechanism not known – Sex related steroid hormones? Sleep apnea



Störd sömn?



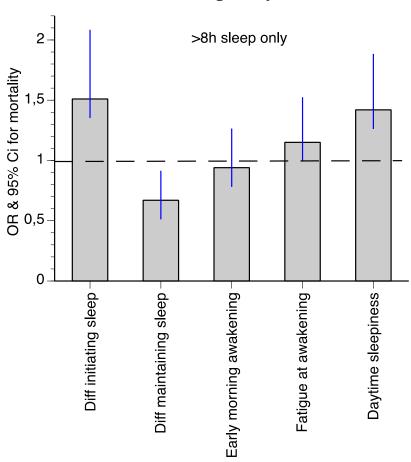
Störd sömn?

- Inget samband med
 - → Svårigheter att somna
 - → Upprepade uppvaknanden
 - → Tidigt uppvaknande
 - → Trött vid uppvaknandet
 - → Sömnig under dagen



Men, bland långsovarna (>8h)





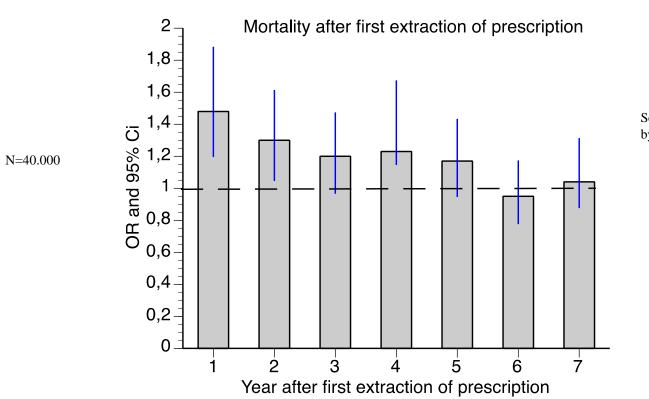
N=43.000 19 years' follow-up



Sömnmedel



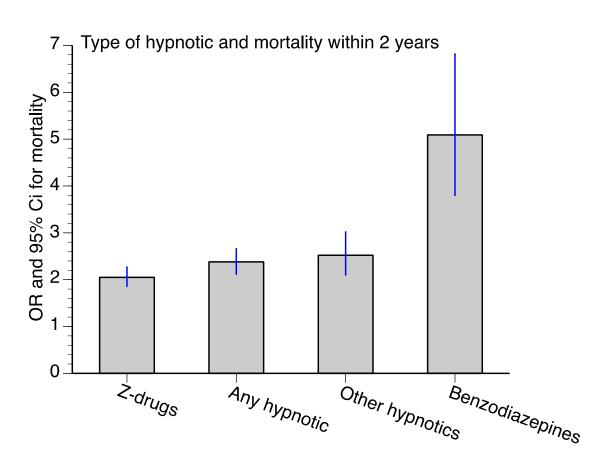
Mortalitet efter förskrivning av sömnmedel



See also review by Kripke, 2016

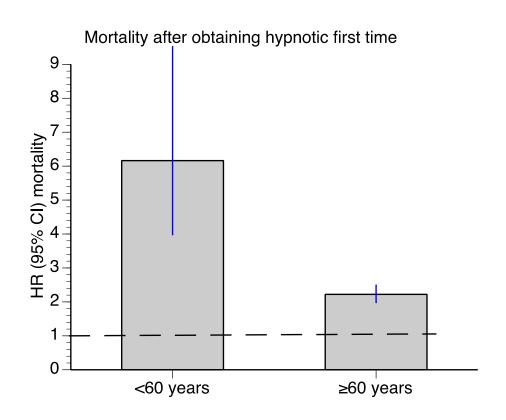


Typ av sömnmedel och mortalitet





Sömnmedel, mortalitet och ålder

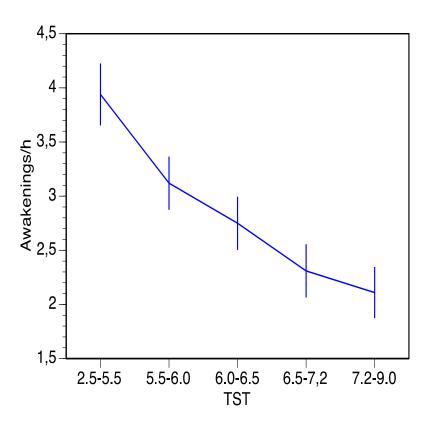


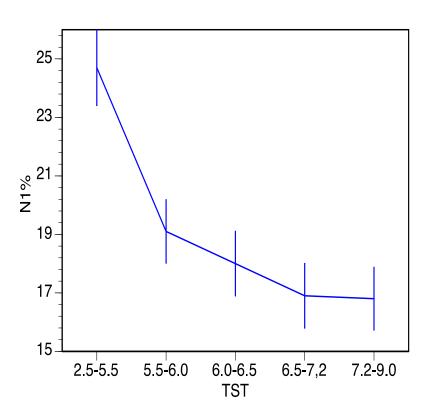


Sömnlängd och objektiv sömnkvalitet?

Short sleep – poor objective sleep



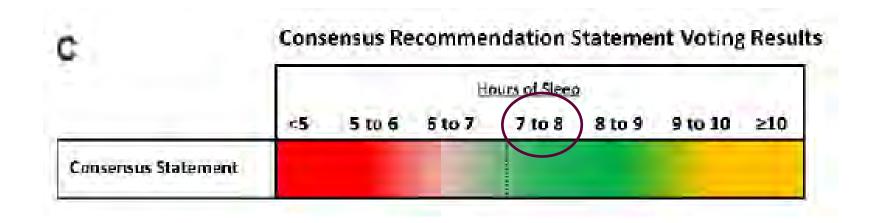




N=301 women



The consensus statement

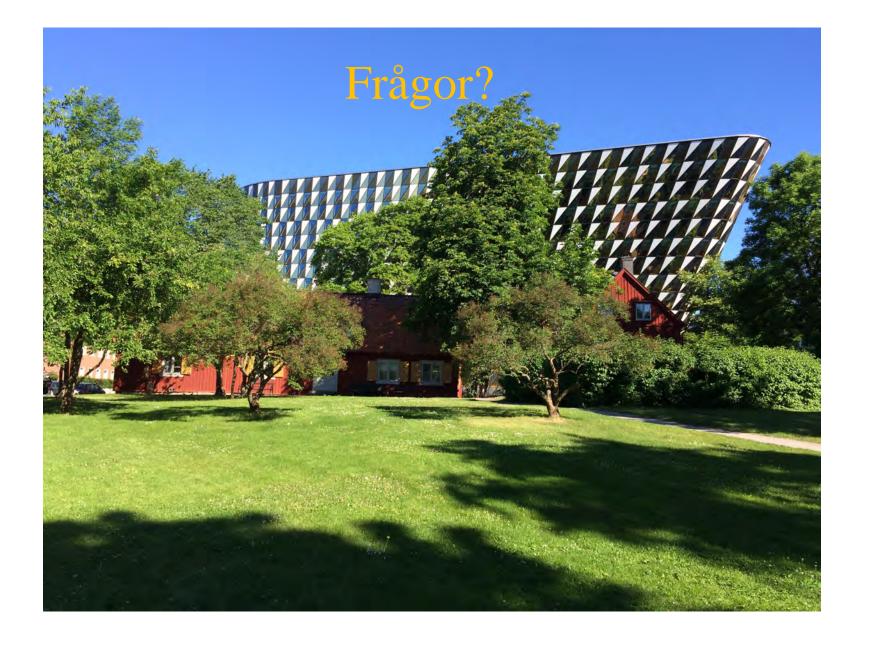


1 Consensus Conference P, Watson NF, Badr MS, et al. Recommended Amount of Sleep for a Healthy Adult: A Joint Consensus Statement of the American Academy of Sleep Medicine and Sleep Research Society. *Journal of Clinical Sleep Medicine* 2015; **11:** 591-2.



Slutsatser

- Mycket kort och mycket lång sömn är kopplat till mortalitet
- Men effekten är störst hos äldre
- Kvinnor är känsliga för kort sömn
- Oklart varför lång sömn är kopplad till ökad dödlighet låggradig inflammation?









SCOR Sweden Re:s Nordic Life Insurance Conference **Lina Palmborg** Doktorand, Stockholms Universitet www.beekast.live - 06 37 23 The Art & Science of Risk



Financial position and performance in IFRS 17

Lina Palmborg, Stockholm University

October 14, 2022

Background



IFRS 17

- Risk-based valuation of insurance contracts
- Contract groups based on product line, issuing year and level of profitability
- Profits earned over time, as services are provided
- Losses recognised immediately

Main contributions of "Financial position and performance in IFRS 17"

- Provide a mathematical interpretation of extensive regulation
- Suggest suitable methods for valuation and allocation
- Demonstrate the practicability of the algorithms and methods in a large scale numerical example

Financial performance of an insurance company



- General principles for determining financial performance
 - Revenue earned as goods are delivered or services provided
 - Expenses made up of costs associated with the earned revenue
- Complex to follow for insurance companies
 - Premium paid upfront
 - Claims payments uncertain in amount and/or timing
- How determine premium earned and costs associated with this earned premium?
 - "Model profit" = Premium Value of liability cash flows
 - Need systematic way of converting this "model profit" into an actual profit over time ⇒ IFRS 17 defines one way of doing this

Building blocks for measuring financial performance in IFRS 17



- Stochastic model for aggregate cash flows
- Valuation method
- Allocation method
- Algorithm for profit and loss

Contractual service margin and loss component



- Contractual service margin (CSM) measures unearned future profits
 - Ensures that there is no initial gain for a profitable group of contracts
 - Released into profit or loss as services are provided
 - Provides a buffer for some changes in the liability value
- Loss component (LC) is the loss taken immediately if a group of contracts is unprofitable
 - Needs to be tracked over time to determine if a CSM arises at a future date
 - All changes in the liability value will directly affect profit or loss, until the loss component is fully reversed

CSM and LC at initial recognition (t = 0)



- L_t : liability value at time t allocated to a specific group of contracts
- P_t : net premium income during period t for this group
- CSM_t: contractual service margin at time t for this group
- LC_t : loss component at time t for this group
- If $P_0 L_0 \ge 0$ then

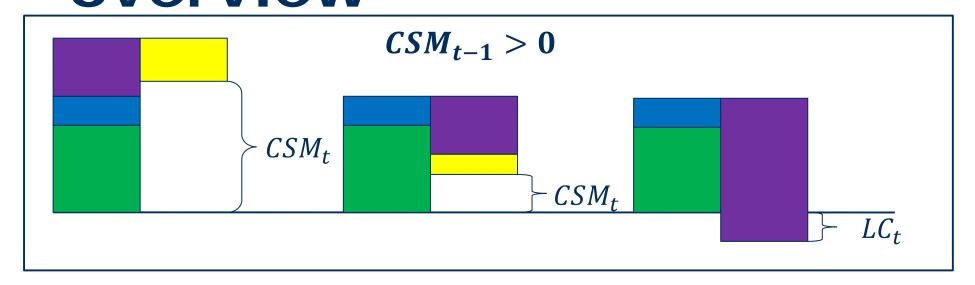
$$CSM_0 = P_0 - L_0 \text{ and } LC_0 = 0.$$

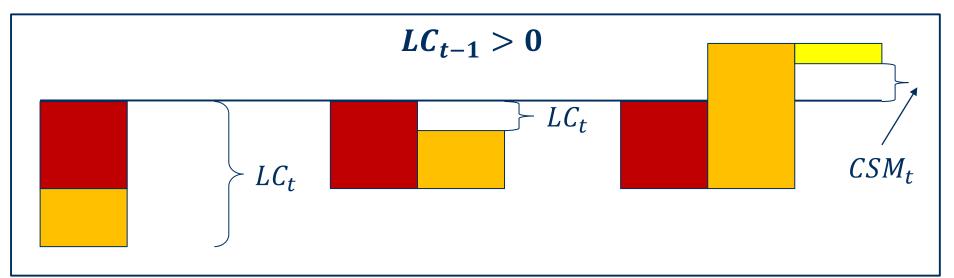
• If $P_0 - L_0 < 0$ then

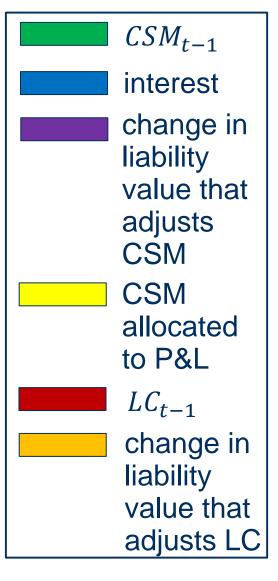
$$CSM_0 = 0$$
 and $LC_0 = L_0 - P_0$.

Development of CSM and LC - overview







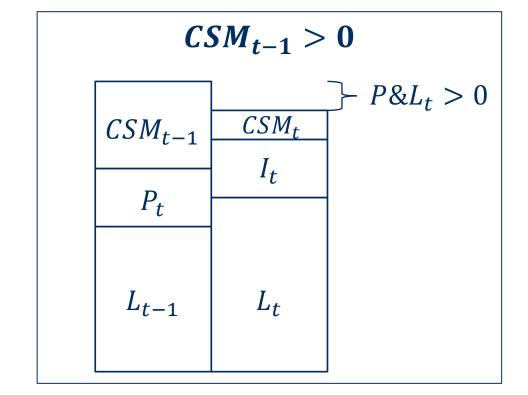


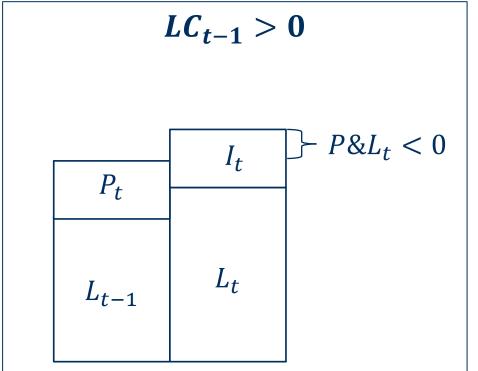
Profit and loss



- I_t : incremental net cash flow for the group during period t
- Profit and loss for reporting period t for the group of contracts

$$P\&L_t := L_{t-1} + CSM_{t-1} + P_t - (L_t + CSM_t) - I_t$$





Profit and loss



- For a group of contracts initially recognised at time t=0, where all claims are paid by time T, under the assumption that
 - $L_{-1} = L_T = 0$
 - $CSM_{-1} = CSM_T = 0$
- the total profit and loss for the group over its lifetime is given by

$$\sum_{t=0}^{T} P \& L_t = \sum_{t=0}^{T} P_t - \sum_{t=0}^{T} I_t$$

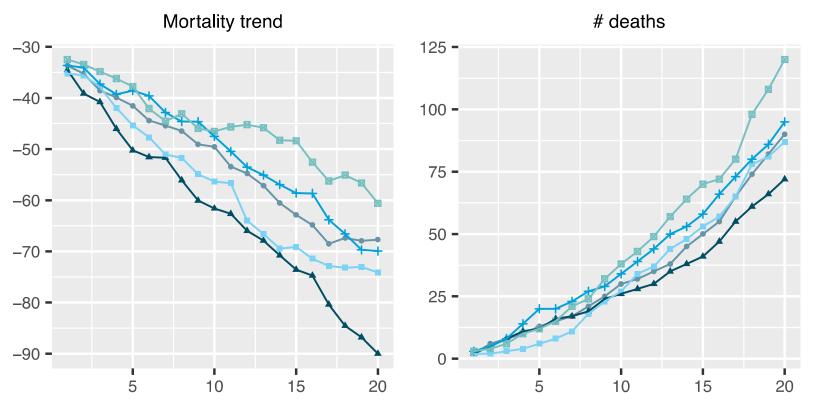
- Hence, the development of the CSM does not affect the total P&L for the group...
- but it does affect how this P&L will be earned over time.



- Homogeneous portfolio of survival benefits
- Single premium paid in advance, and single benefit payment
- Standard stochastic mortality model used for simulating the number of deaths and valuing liability cash flows
- Calculating liability value, CSM, LC, and P&L over time



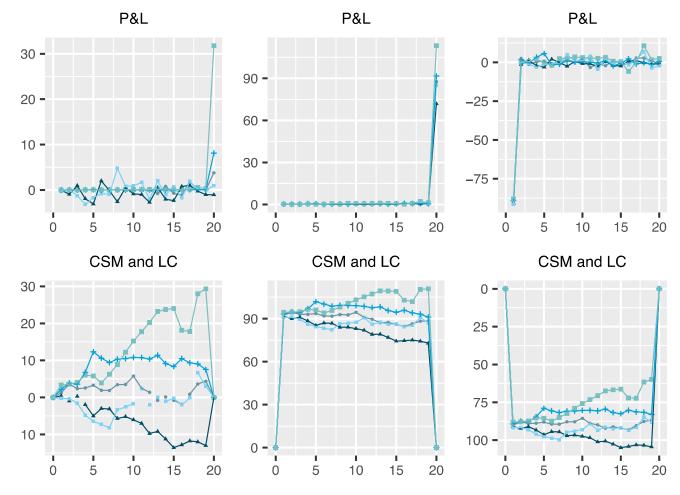
Simulated mortality trend and accumulated number of deaths



The left figure shows the trajectories for the mortality trend. The right figure shows the trajectories for the accumulated number of deaths in the portfolio consisting of 1000 contracts.



P&L (top), CSM and LC (bottom), with margin 0 (left), 10% (middle), and -10% (right)





Conclusions

- The size of the total premium compared to the initial liability value can have a large effect on the pattern for P&L
- If CSM > 0, it can absorb certain changes in the liability value
 ⇒ P&L more stable.
- If LC > 0, all changes in the liability value will directly affect P&L
 ⇒ P&L more unpredictable.
- Losses are recognised immediately, profits are earned over time¹

1. Note that P&L in the middle column on the previous slide is only valid for a homogeneous portfolio of survival benefits with no other costs than payments to policyholders.

Main references



L. Palmborg, M. Lindholm, F. Lindskog (2021), Financial position and performance in IFRS 17. Scandinavian Actuarial Journal, 3, 171-197.
 Available at: https://doi.org/10.1080/03461238.2020.1823464

 IASB (2017), IFRS 17 Insurance Contracts. International Accounting Standards Board







Münchenbryggeriet 8:e oktober 2021

- > Tackmail till deltagarna
- > Utvärderingen gick till alla deltagare
- > Enkät med ett antal frågor samt fritext



Vad tyckte du?

Stort tack för ditt deltagande i SCOR Sweden Res Nordiska Livförsäkringswebinarie 2021. Jag hoppas att du uppskattade årets program och innehåll.

Dina synpunkter är viktiga för mig!

Därför skulle jag vara tacksam om du kunde ta någon minut och ge oss feedback på webinariet och dess innehåll.

Vänligen klicka här för utvärderingen

En ny utgåva av vår tidning ReNews kommer skickas ut till dig om några veckor, så håll utkik i din mailkorg.

Bästa hälsningar Svein Børre Solvang, VD





1. Såg du denna del av webinariet?		
○ Ja		
○ Nej		
2. Hur skulle du betygsätta denna presentation?		
3. Övriga kommentarer:		
Ange ditt svar		



Feedback on the 2019 Conference / 2020 Webinar / 2021 Webinar

- Too many participants
- Amazing & Superb conference.
- Food was excellent but to few toilets
- Do you really need to have actuaries as speakers every year?
- The 2021 actuarial prize winner had the best presentation ever
- Breaks to long
- Loved the longer breaks
- Best hosts ever
- As host you totally failed on the menu. Serve vegan or vegetarian
- Outstanding coffee
- Serve wine the whole day not only at lunch
- The best ever conference and I have been here every year
- To many male speakers and no one where super fantastic
- The place to be to meet colleagues, update knowledge & get inspired
- Skip the goodie bag



Feedback on the 2019 Conference / 2020 Webinar / 2021 Webinar

- Wow Göran Persson, the former Prime minister at his best
- The translation service was far from optimal
- Webinars ok but cannot be compared to IRL
- The technical solution for the webinar was bad
- von Schreeb was superb
- After doing this for so many years I would expect the CEO to do better
- I missed most of the introduction from the CEO and from what I heard I did not miss much
- The CEO performance at the webinar was bad and boring. And where on earth was he located? Terrible background.
- The CEO is even worse digital versus IRL
- Luckily I had no sound during the CEO's introduction
- The CEO has a certain charm



Feedback on the 2019 Conference / 2020 Webinar / 2021 Webinar

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Please give us your valuable feedback also in 2022

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SPEAKERS 1996

Lars Bergelv, Managing Director and member of the Board of Sweden Reinsurance Company Ltd

Uwe Eymer, Chairman of the Board of Sweden Reinsurance Company Ltd, Member of the Executive Board of Gerling-Konzern Globale Rückversicherungs-Aktiengesellschaft

Kjell-Olof Feldt, Chairman of the Bank of Sweden, Visiting Professor, University of Uppsala, **Minister of Finance of Sweden 1982-1990**

Peter Turvey, Managing Director of Gerling Global Life Reassurance Company (UK) Ltd

Norbert Pyhel, Member of the Board of Sweden Reinsurance Company Ltd, Executive Director of Gerling-Konzern Globale Rückversicherungs-Aktiengesellschaft

Johannes Seuferle, Executive Director of Gerling-Konzern Globale Rückversicherungs-Aktiengesellschaft

Michael Ehlers, Head of the International Employee Benefits Division of the Gerling Institut GIBA

Fredrik Sundberg, Chief Actuary of Sweden Reinsurance Company Ltd



























Presentationer finns på vår hemsida från kl 17.00

Presentations available on our website from 17.00



