



Pandemic Impact:

**Actuarial insights
into a post-
pandemic world**

Actuarial Congress 2025

Date of Congress:

4th of March 2025



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PREFACE

Dear esteemed reader,

We are proud to welcome you to the magazine of Actuarial Congress 2025, which takes place in the Royal Tropical Institute (KIT) in Amsterdam on March 4th. The topic of this year's congress relates to "Covid-19 Pandemic: The Impact on the World of Actuaries".

The COVID-19 pandemic has significantly reshaped global health and economies, with profound implications for the pension and insurance industries. Actuaries, pivotal in managing financial risks, now face new challenges and opportunities. These include shifts in mortality and demographic structures and regulating their effect on mortality projection tables. It is also crucial to reevaluate risk assessment strategies and address policy changes, which includes preparedness for future pandemics and the influence in outbreak response.

At the conference we will dive into various aspects of this relevant topic with discussions such as "how do you manage the massive trend disruptions in your data?" and "How can I help reducing uncertainty in the next pandemic?".

Our program features a wide range of sessions, a mixture of plenary presentations and interactive sessions. For us to have meaningful, in-depth discussions, we have invited distinguished experts as the keynote speakers. They represent the corporate, governmental, and academic world to create a wide and thorough view of the impact from Covid-19 pandemic and the tasks and targets associated with it.

As the organizing committee, we are deeply grateful for the opportunity to host this grand event and eagerly await the culmination of our shared efforts. In this magazine, you will find a preview of our esteemed speakers and the topics they will delve into during their sessions. We are certain that you will find the shared insights to be engaging, valuable, and supportive of the ongoing learning and growth in the field of actuarial science and beyond.

We look forward to welcoming you on the 4th of March to make this congress an unforgettable event together!

On behalf of the Actuarial Congress Committee 2025,

Anna Markeviča,

Chairwoman Actuarial Congress Committee 2025

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DAY PROGRAM

09:15 - 09:30	Opening	Angela van Heerwaarden
09:30 - 10:20	Plenary session I	Frank van Berkum & Torsten Kleinow (UvA)
10:20 - 11:10	Plenary session II	Thomas de Boer & Bertus Veurink (NN)
11:10 - 11:35	Coffee break	
11:35 - 12:20	Interactive session I	Youssef Achnine & Marc Uiterdijk (DNB) Bart Kling (InShared) Puck Veeling & Patrick Ruitenbergh (KPMG)
11:35 - 12:20	Student session	Suzanne Dechesne & Karel Hagen (a.s.r.)
12:20 - 13:05	Lunch	
13:05 - 13:55	Plenary session III	Anja Schreijer (PDPC)
13:55 - 14:40	Interactive session II	Kees Thiers (Achmea) Frans Kuys (Finalyse) Daniel Linders (UvA) Jens Robben (UvA)
14:40 - 15:05	Coffee break	
15:05 - 15:55	Plenary Session IV	Yannick Hiensch (Deloitte)
16:00 - 16:45	Looking Forward	Bas Kolen (UvA)
16:45 - 17:00	Closing	Angela van Heerwaarden
17:00 - 18:00	Borrel	

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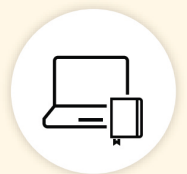
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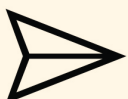
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Angela van Heerwaarden

INTERVIEW WITH THE CHAIRWOMAN

This year's Actuarial Congress will be supervised by Angela van Heerwaarden. Angela is an actuary and the program director of the executive actuarial program AEMAS/APC at the UvA. This interview provides an introduction to this year's theme; Pandemic Impact: Actuarial Insights in a Post-Pandemic World.

Angela finished her actuarial science studies in 1986, and after that she specialized in non-life insurance doing her PhD. She graduated in 1991 under the supervision of the late professor Goovaerts and of professor Kaas. Since then, she gathered over 30 years of combined experience: many years in actuarial practice (NRG, Verzekeringkamer, Tillinghast, EY, Arcturus), 7 years as an associate professor at the UvA, and many years combining both worlds.

As a non-life actuarial specialist, Angela navigated the Covid pandemic with relatively few issues. During the lockdowns, insurance claims for traffic accidents and fire incidents reduced significantly. Additionally, she and her colleagues adapted well to using tools for online meetings and collaboration.

On the other hand, as a program director, the APC post-master's program faced challenges transitioning to online teaching. While it was manageable, the disadvantages outweighed the benefits of reduced travel time. Fortunately, her family experienced only minimal Covid-related issues, and there were no vaccination refusals.

WHY IS PANDEMIC IMPACT SO IMPORTANT FOR ACTUARIES?

The Covid pandemic significantly impacted everyone, introducing severe disruptions to how we live and work. For professionals, the changes were particularly relevant across every sector of the insurance industry. These ranged from medical insurers needing to support the surge in public healthcare demand to pension funds seeing a gradual positive effect from excess mortality. However, this is not entirely accurate, as pension funds also faced challenges from rising disability rates, which implied an increase in premium waivers. Similarly, across every sector, processes experienced anomalies - some with permanent impacts and

others without. As a result, many established models and parameters for risk processes had to be revised or reevaluated.

During the pandemic, actuaries were on high alert due to the significant uncertainty surrounding the potential impacts on illness and mortality. As specialists in projecting future trends based on data, actuaries are well-equipped to assist in situations like these. Many rose to the occasion, motivated by a sense of responsibility to support society in times of need. However, there was no established infrastructure to enable efficient assistance, and the sheer number of unknown factors made the task challenging even for experts.

WHAT HAS BEEN THE MOST SIGNIFICANT IMPACT OF RECENT PANDEMICS ON ACTUARIAL SCIENCE IN PRACTICE?

The UvA research institute RCLR (Research Centre for Longevity Risk), founded in 2020 as a collaborative initiative between the UvA and NN, has been an incredibly valuable contribution to actuarial science. This initiative has significantly advanced mortality modeling, enabling major progress in understanding and addressing longevity risk.

My enthusiasm for the RCLR might admittedly cloud my perspective on other developments... but, of course, the impact of recent pandemics extends beyond this.

ARE THERE ANY SPECIFIC EXAMPLES WHERE PANDEMIC INSIGHTS HAVE SHIFTED ACTUARIAL ASSUMPTIONS OR APPROACHES?

I would strongly recommend reading the worldwide actuarial paper "Lessons Learned from Pandemics" by the International Association of Actuaries (July 2024). This comprehensive report provides a global overview, with many insights that are also highly relevant to the Netherlands.



One of the most complex areas of impact has been on illness and disability. Disability incidence increased, creating challenges for the working population. At the same time, the effects of Covid recovery and the delayed diagnosis of severe diseases due to medical backlogs interact in complex ways. These opposing forces - improved recovery for some patients and worsened outcomes due to delayed diagnoses - make it difficult to disentangle their separate effects. As a result, adjusting actuarial assumptions in this area remains particularly challenging.

WHAT ARE SOME KEY TOPICS OR SESSIONS THAT ATTENDEES SHOULD LOOK OUT FOR AT THE CONGRESS?

We will begin with highly engaging lessons learned about mortality, followed by insights from other sectors. I would encourage actuaries to attend a breakout session outside their usual area of expertise- it's an excellent opportunity to gain new perspectives.

The next step in the program focuses on looking ahead: we aim to develop Actuarial Action Plans for future pandemics. How can we be better prepared next time?

We are also proud that there will be a very interesting plenary session by Anja Schreijer from the Pandemic Impact Centre. And apart from that, there are several great UvA scientists that will help us to reduce our knowledge deficits: practitioners may have missed recent scientific developments. That's also a good reason to visit our congress!

WHAT DO YOU HOPE ATTENDEES WILL TAKE AWAY FROM THIS EVENT THAT THEY MAY NOT HAVE CONSIDERED BEFORE?

Your initial thought might be, "I already know what happened over the past five years." However, you may be surprised by how much more there is to learn from a period in which you were an active participant. With the benefit of hindsight and distance, we can study the events more objectively and uncover many additional, relevant insights.

Moreover, I am confident that most attendees will leave with a broader perspective. This is thanks to the diverse range of specialists from different disciplines who will contribute to the discussions.

HOW DO YOU SEE THE ROLE OF ACTUARIES EXPANDING IN FIELDS LIKE PUBLIC HEALTH, DATA SCIENCE, OR CRISIS MANAGEMENT?

Our education program is comprehensive, allowing actuaries to compete in a wide range of fields. While the role of actuaries in public health and crisis management may not always be immediately obvious, they can contribute significantly to the estimations needed during pandemics. Actuaries could be involved in this work through advisory firms or by participating in committees such as those organized by the Actuarieel Genootschap. This is similar to the role of the Committee on Mortality Research, which serves society by providing reliable population mortality projection tables.

While the future remains uncertain, actuaries are well-positioned to assist with effective analysis, predictions, and risk management in many domains.

THE SPEAKERS

All the speakers of the Actuarial Congress 2025 are highlighted below to give a clear overview of the plenary, interactive and student sessions you can attend.

dr. Torsten Kleinow



Plenary Session I UvA

Torsten Kleinow is professor at the UvA and also the director of the Research Center for Longevity Risk (RCLR). After his study and PhD in Berlin he worked in Edinburgh for many years before moving to Amsterdam in 2022. His research interests focus on statistical models for mortality, socio-economic differences in life expectancy, and the impact of increasing life expectancy on society.

We cannot underestimate the huge impact of the Covid pandemic on society. But a positive side-effect it had was that it boosted the attention for mortality modeling. All actuaries know that predictive modelling based on past trends becomes challenging when the present gets unstable, and the instability will remain an 'obstacle' in your future models. Not only for the short term, but also for long-term models predicting life expectancy. On the Actuarial Congress we will demonstrate how exciting our research is and shine a light on recent results.

dr. Frank van Berkum

Plenary Session I UvA

Frank van Berkum is a postdoctoral researcher at the University of Amsterdam and the Research Center for Longevity Risk. His research interest is forecasting population-wide mortality and modelling portfolio mortality. Currently, he investigates what are the main contributors to differences in cause-specific (excess) mortality before and during the COVID-19 pandemic. Frank also works in industry as senior manager in the PwC Risk Modelling Services team. In this role he advises life insurance companies on integral longevity risk management. This includes modelling of the longevity (risk) assumptions, defining a longevity risk appetite, and analysing various options for longevity risk management. In addition, Frank is member of the Committee Mortality Research of the Dutch Actuarial Association that is responsible for publishing a new forecast of mortality for the Dutch population in September 2026. He also contributed to the research that led to the forecast published in September 2024.



Bertus Veurink, AAG

Plenary Session II NN Group

I am Bertus Veurink. I studied Mathematics and Physics, with a master's in Meteorology, Physical Oceanography, and Climate (2010). After developing an interest in actuarial science at ASR, I pursued an actuarial degree at the University of Amsterdam and then completed the APC, while applying what I learned in practice in reserving for disability insurance at ASR and as an expert supervisor at De Nederlandsche Bank (DNB). I have now been working for the actuarial function holder at NN Schade for 5 years. My focus is on reviewing the pricing and reserving of income products, both for Solvency II and IFRS17, with additional involvement in broader projects such as P&LA, ORSA, and organizing actuarial PE sessions within NN. For income insurance, we are seeing national developments that we need to address in pricing and reserving: an increase in mental health claims, changing insured populations, COVID-19 runoff, inflation modeling, errors at the UWV, and also mandatory AOV. Effectively recognizing disease trends and anticipating government developments is no easy task, but it is a daily practice within the modeling of income insurance, where NN is partially dependent on government agencies for implementation and product design.



Thomas de Boer, AAG



Plenary Session II NN Group (Movir)

My name is Thomas de Boer. I graduated as an Econometrician from the University of Groningen (2011) and as a Chartered Actuary (AG) from the University of Amsterdam (2015). Currently, I work as a Pricing Actuary/Business Actuary at Movir, a subsidiary of Nationale Nederlanden (NN) that offers disability insurance (AOV) for self-employed individuals without employees (ZZP'ers). At Movir, I am primarily responsible for developing the pricing as well as addressing broader risk issues related to the offering of the AOV product. In addition, in my role as an actuary at Movir, I am a member of the Actuarial Affairs Platform within the Dutch Association of Insurers. I am also a part-time lecturer in Product Development at the Actuarial Practice Cycle (APC) at the University of Amsterdam. The landscape of disability insurance (AOV) is highly dynamic. Currently, there are developments regarding mandatory AOV, and since 2020, we have been dealing with the first cases of COVID-19. The challenge lies in integrating this risk into the business operations, without complete certainty about the future. It is essential to strike a healthy balance between the disability risk to be assumed and the price. One thing is certain: COVID-19 (and possibly future pandemics) has, to some extent, become a part of the disability risk to be insured.

Puck Veeling, AAG



Interactive Session I-3 KPMG

My name is Puck. A strong interest in medicine and mathematics at a young age turned into a background in actuarial science and health economics. I completed the Actuarial Practice Cycle at the University of Amsterdam in 2022, following a Master's degree in Health Economics, Policy & Law from Erasmus University Rotterdam in 2020 and a Master's and Bachelor's degree in Actuarial Science & Mathematical Finance from the University of Amsterdam in 2019 and 2018. After graduating and joining KPMG in the very beginning of the COVID-19 crisis in 2020, my focus as a manager in the Financial Risk Management team lies in the insurance domain as well as quantitative and strategic research in the healthcare domain. I get most excited when my interests come together in engagements where the goal is to improve the future of the Dutch healthcare system(s), ranging from the design of the system to the financing and funding and how to keep healthcare accessible and affordable given the social and geographic developments in the Dutch population. Together with Patrick and colleagues, I have been involved in the evaluation of the catastrophe scheme in the Dutch Healthcare Act that we have evaluated in 2024 and we will tell more about during the Congress.

Interactive Session I-3 KPMG

My name is Patrick. I graduated with a BSc in Technical Medicine from the University of Twente in 2016, followed by an MSc in Financial Engineering and Management from the same university in 2019. To deepen my technical skills further, I also completed a post-master program in Data Science for Professionals at the Jheronimus Academy of Data Science in 2022. Since 2019, I have been working in the Financial Risk Management team at KPMG Netherlands, where as a manager I apply my financial and technical background to deliver swift and well-supported solutions within various assignments, mainly within the insurance domain. My preferred field of expertise is where my interest in the Dutch healthcare system and analytical or strategic problems come together. Consequently, I have been involved in diverse modeling projects related to insurance risks and the Dutch healthcare system, which as we all know has been heavily impacted by the COVID-19 virus. Although I believe that we have a solid healthcare system in the Netherlands, my ambition is to further improve it and ensure the system is future proof with all the future risks that are arising. This came together in the evaluation of the catastrophe scheme in the Dutch Healthcare Act that we have evaluated in 2024 and we will tell more about during the Congress.

ir. Patrick Ruitenber



dr. Anja Schreijer



Plenary Session III PDPC

Anja Schreijer is a medical specialist in infectious disease control who has worked for various national and international governments, WHO and ECDC. During the Covid-19 pandemic, she chaired the National Consultation on Infectious Disease Control, which was responsible for making scientifically sound agreements about the medical content for nationally uniform control of infectious diseases. In addition, she was a permanent member of the national outbreak management team that advises the Netherlands' government on pandemic control. She has a PhD in Clinical Epidemiology and she is a Member of the Advisory Committee on Public Health Emergencies (ACPHE) that is recently established by the European Commission. Doctor Schreijer is currently working as Medical Director of the Pandemic & Disaster Preparedness Center in Rotterdam, affiliated with the Erasmus Medical Center.

dr. Bart Kling, AAG



Interactive Session I-1 Achmea

Bart Kling studied Actuarial Science at the UvA and after that he did his PhD. Later we have seen him as a teacher in the Postmaster APC (2011-2015).

At this moment, Bart Kling is member of the board of directors of InShared and responsible for the pricing and data analytics of the insurance operations. While working for InShared, the company has grown from a small Dutch player into a mid-size insurance company in the Netherlands with operations in Germany and Spain. Bart is an experienced leader with in-depth knowledge of the non-life insurance market, pricing strategy, (digital) underwriting, distribution, data science and data analyses.

Interactive Session II-4 UvA

My name is Jens and I am a postdoctoral researcher at the Research Centre for Longevity Risk of the University of Amsterdam. Previously, I did my PhD in the Insurance department at the Faculty of Economics and Business, KU Leuven. My current research explores diverse aspects of mortality and longevity modelling, with a focus on the impact of environmental and epidemiological variables on excess mortality, the use of machine learning techniques in mortality modelling, and old-age mortality patterns.

dr. Jens Robben



Suzanne Dechesne, AAG



Student Session **a.s.r.**

Suzanne Dechesne is an actuary working within the Non-Life Actuarial Reporting team at a.s.r. Over the past few years, she has primarily focused on property and casualty insurance, with a particular emphasis on long-term insurance. She is responsible for the quarterly reporting and is highly motivated to optimise the reporting process. Last year, Suzanne successfully completed the Actuarial Practice Cycle at the University of Amsterdam and is now a member of the Actuarieel Genootschap.

Student Session **a.s.r.**

Karel is an Actuarial Trainee within the Group Finance department at a.s.r. Currently, he is part of the Asset Risk Modeling team, focusing on the Economic Scenario Generator (ESG) and interest rate curves. As part of the Actuarial Traineeship, Karel rotates every six months, gaining experience across different teams. With a background in Actuarial Studies from the University of Groningen, he aims to develop a broad understanding of the actuarial field throughout his traineeship.

Karel Hagen, MSc



dr. ir. Marc Uiterdijk, AAG

Interactive Session I-2 DNB

Marc Uiterdijk is an insurance supervisor at De Nederlandsche Bank (Dutch Central Bank) since 2012 and has 25+ years of experience in the insurance and pension sector. As a longstanding member of the International Insurance Group-department, Marc is actively involved in the day-to-day supervision of the biggest Dutch Insurance Groups. Marc holds a PhD in mathematics and is a qualified actuary and risk manager. Together with Youssef Achnine, Marc will give an introduction to Preparatory Crisis Plans following the Dutch law on Recovery and Resolution (“Wet Herstel en Afwikkeling Verzekeraars”).



Youssef Achnine, AAG



Interactive Session I-2 DNB

Youssef Achnine MSc AAG has built up relevant experience as an actuary in insurance during his time at EY and Delta Lloyd. Currently, Youssef is working at the International Insurance Group Supervision Department of DNB, consisting of supervisors with different work and educational backgrounds. This team is the insurer's the first point of contact with DNB. Within the wider Insurance Supervision Division of DNB, Youssef works extensively with departments consisting of specialists focusing on, among others, governance, behavior and culture, business model and strategies, data quality/statistics, financial risks and internal models.

The Preparatory Crisis Plan (VCP) is about analyzing possibilities in the case that an insurer is (on the edge of) becoming a gone concern. The VCP brings together distinct disciplines, including actuarial analyses. This makes the VCP an interesting and challenging task, but also gives relevant insights to DNB from both Supervision as Resolution Authority roles.

Kees Thiers, AAG

Interactive Session II-2 Achmea

Kees Thiers studied Econometrics at the Erasmus University in Rotterdam and started working in 1996 at Nationale-Nederlanden in several actuarial functions, mainly in Non-Life insurance. In 2017 he joined Achmea where he is the Solvency II Actuarial Function Holder of two non-life entities and the reinsurance entity. Kees is currently chair of the Commission Insurance of the Royal Actuarial Society and is member of the Pandemic Task Force of the Internal Actuarial Association. At this Task Force, Kees participated in writing the paper "Lessons learned from Pandemics".



dr. ir. Bas Kolen



LOOKING FORWARD UvA

As a professor by special appointment, Kolen will focus on the quantitative modeling of climate risks and the impact of related transitions on the insurance sector. In this role, he will also contribute to the development and dissemination of knowledge for insurers, water and environmental managers, and policymakers.

Kolen studied Civil Engineering and Management at the University of Twente and earned his PhD in 2013 from Radboud University, where he focused on the effectiveness of crisis management in reducing flood risks. Since 1999, he has been working at the consultancy firm HKV lijn in water, where he serves as both Scientific Director and Senior Advisor specializing in risk and disaster management.

In addition to his expertise in climate-related issues, Kolen applied a risk-based approach to the COVID-19 pandemic. He developed one of the first quantitative cost-benefit analyses published in ESB and created a risk taxation model for Fieldlab Events to define individual and group risk related to COVID-19. Furthermore, he contributed to research on test passes for the Dutch Parliament.

IAA Paper - Lessons Learned from Pandemics

Executive Summary

In the paper of the International Actuarial Association's Pandemics Task Force, we take stock of where we are as the effects of the COVID-19 pandemic have begun to wane. We present a high-level view of the lessons we have learned to date, primarily from the COVID-19 pandemic, but also build on lessons learned from other pandemics such as HIV/AIDS and the 1918 influenza pandemic. The paper reflects various actions and analyses in which members of the actuarial profession have been involved and considers several actuarial practice areas in order to provide education for the profession to respond to future pandemics. It is intended as a reflection of experience, and not as professional guidance.

Key themes have emerged from a review of the impact of pandemics on the actuarial profession, and these are generally true across all practice areas:

1. Data. Actuaries are skilled at making sense of data from disparate sources, and this skill takes on a heightened importance and pace during a pandemic. Data sources and metrics may be unreliable or inconsistent, with different methods and time frames for reporting, even within countries.

It is, and will always be, very difficult to get accurate and consistent mortality data from a pandemic. Actuaries need to be able to adapt to the data that are readily available and use these data on a timely basis. For example, many actuaries and models have switched to observing excess mortality instead of COVID-19-specific mortality because of the perceived better reliability of this metric.

2. Communication and collaboration. Actuaries can leverage their expertise in financial risk to be translators between other professions and can help to clarify where there is uncertainty (or misinformation) and identify the information needed to improve reliability of modelling exercises.

3. Health care system. Efforts to strengthen public and private health care infrastructure, improve data systems and invest in public health interventions will be crucial for the next pandemic. Actuaries can assist with modelling efficient roll-out of vaccines as well as risk management for health care delivery systems and health insurance systems. Actuaries can continue to model out longer-term effects of the pandemic, both direct and indirect, on health care utilization and costs.

4. Broad risk management. A pandemic adds to and sometimes amplifies normal and crisis events; some risks are correlated, while others are independent. The interactions between a pandemic and other risk events can lead to feedback loops and tipping points. These need to be carefully monitored and modelled.

Actuaries need to also be aware of the possibility of the existence of threat multipliers (i.e., risks that interact with and make other risks worse). Pandemics, climate change and energy risk are examples.

While risk management plans need to be made in advance, and periodically reviewed, these plans can include development of multiple scenarios based on demographic groups impacted, levels of transmissibility and lethality. A plan that worked for COVID-19 may not work very well for a different type of disease like Ebola or a repeat of the 1918 influenza pandemic, which primarily impacted young adults. Governments will need to adjust their response as the science, and the public's acceptance of it, develops.

5. Professional practice. During a global crisis, a sense of urgency often places additional pressure upon normal actuarial practice. Data quality generally suffers, and past experience is not always reliable for use in predictive analysis. Models need to be flexible and should reflect and communicate the generally heightened level of uncertainty.

Actuarial professional standards need to consider the long-term effects and lessons of COVID-19 and other pandemics.

The paper is intended for an audience of actuaries, especially those who may not have been closely involved with pandemics research or analysis, as well as non-actuarial stakeholders who wish to consider the actuarial response to future pandemics.

Lessons Learned from Pandemics Task Force of the International Actuarial Association (2024)

Interactive Session II-3 Finalyse

Frans Kuys is a Principal Consultant at Finalyse and heads up the Insurance Consulting department in Amsterdam. Frans has significant international experience across a wide range of fields in the actuarial industry. He has acquired extensive knowledge in the pensions and insurance sectors and has over 15 years of experience in actuarial valuations, financial and regulatory reporting, asset-liability modelling (ALM) and risk management. Frans also leads Finalyse's Climate Change Risk Management service for pension funds and insurers.

Frans qualified as an actuary at the Institute and Faculty of Actuaries in the UK (FIA) and the Actuarieel Genootschap (AAG) in the Netherlands. Frans qualified as a Financial Risk Manager (FRM) at the Global Association of Risk Professionals (GARP) in 2008.

Frans Kuys, AAG



Jayadevan Vijayan, AAG



Interactive Session II-3 Finalyse

Jayadevan Vijayan is a Senior Consultant at Finalyse Netherlands. Jayadevan has significant experience in both the Life insurance and reinsurance industry across different markets. He has taken a variety of roles in the insurance industry ranging from actuarial modelling, risk management and financial reporting roles in Solvency II and IFRS 4. Jayadevan is also proficient in using modelling tools such as Moody's AXIS, Python and Prophet. He has a keen interest in Enterprise Risk Management and Climate change risk management.

Jayadevan qualified as an actuary at the Institute and Faculty of Actuaries in the UK (FIA) and a member of the Actuarieel Genootschap (AAG) in the Netherlands.

Yannick Hiensch



Plenary Session IV Deloitte

Yannick works in the Technology & Transformation team at Deloitte, focusing on risk management in the financial sector, particularly regarding the adoption and application of new technologies.

Various significant emerging developments and risks, such as COVID-19 and (Gen)AI, present both new opportunities and challenges, and their impact is often widespread. The COVID-19 pandemic, for example, has not only had unforeseen effects on (the management of) financial risks, but also on the internal operations of insurers and related non-financial risks. Can we draw parallels with the rise and adoption of (Gen)AI that we are currently experiencing? How can an insurer ensure that the potential impact of emerging risks is timely identified and managed while simultaneously utilizing the potential upside for customers, employees, and the employer itself? From this perspective, Yannick discusses emerging risks, reflecting on the COVID-19 pandemic, and looking forward at the rise of (Gen)AI as the guiding theme.

Interactive Session II-4 UvA

Daniel Linders is an Associate Professor at the University of Amsterdam. In 2013, he obtained his PhD from KU Leuven with research on systemic risks in financial markets. Since then, he has held various academic positions to continue his work, which has always focused on dependencies and their associated risks. He has worked at institutions such as the University of Illinois (USA) and the Technical University of Munich (Germany) and has delivered guest lectures at universities in Canada, Belgium, and Benin, among others. Additionally, he has undertaken research stays in Amsterdam, Hong Kong, and Waterloo (Canada).

Systemic risks have demonstrated their impact on broader society in numerous ways. After the Covid pandemic, inflation surged significantly, and we are now painfully realizing the consequences of an aging population. Daniel's research on systemic risks and how to value them earned him the prestigious Ragnar Norberg Memorial Prize in 2024.

One of his most recent projects, a peer-to-peer pandemic bond, explores ways to share pandemic-related risks between financial markets and a group of countries. Currently, such products are no longer available, even though they could serve as a critical tool in a global pandemic risk management strategy.

dr. Daniel Linders



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The Impact of Persistent Excess Mortality on Life Expectancy in the Netherlands

Mortality Rates Remain Higher Than Expected in Recent Years Based on Pre-COVID-19 Models

More than four years after the start of the COVID-19 pandemic in the Netherlands the direct impacts of COVID-19 on daily life are hardly visible anymore. However, mortality rates have remained higher than expected based on pre-COVID-19 models in recent years. What does this excess mortality mean for life expectancy according to the latest Prognosetafel (Projection Table) of the Actuarial Society?

On September 12, 2024, the Actuarial Society (AG) published its biennial life expectancy projection table (AG2024). This update evaluates whether adjustments to data or models are necessary. The key changes in AG2024 compared to AG2022 include:

- *Updated European Long-Term Trend:* Incorporating data up to 2019 from the Human Mortality Database, previously supplemented with figures from National Statistical Bureaus.
- *Updated Dutch Data for Excess Mortality Term:* Using weekly mortality data from the Netherlands for 2022 and 2023 instead of 2020 and 2021.
- *Adjusting the Projection of the Excess Mortality Term:* The excess mortality term tapers off more gradually, decreasing by 25% per year instead of 50%.

In summary, the model remains unchanged, with updates focused on data and a specific parameter. The impact of these changes on life expectancy is limited, as shown in the table below. It highlights that the effect in table 1

at age 65 is slightly more pronounced for mainly women due to the application of the excess mortality term to ages above 55. The impact on cohort life expectancy is nearly negligible as the term phases out. Nevertheless, the updates significantly influence short-term mortality rates.

Cohortlevensverwachting	Bij geboorte		Op leeftijd 65	
	Mannen	Vrouwen	Mannen	Vrouwen
AG 2022	90,26	92,96	20,59	23,49
Update Europese data	-0,05	-0,02	-0,02	-0,01
Update Nederlandse data	0,00	0,00	0,00	-0,01
Aanpassen projectie oversterfeterm	0,00	0,00	-0,02	-0,04
AG2024	90,21	92,94	20,55	23,43

Table 1: Effect on Cohort Life Expectancy from Transitioning from AG2022 to AG2024 in 2025

Analysis of 2022 and 2023 Mortality Data

The analysis of mortality rates in the Netherlands during 2022 and 2023 is crucial because it impacts both the data and the determination of how the excess mortality term phases out. Figure 2 shows that excess mortality among men has significantly declined compared to 2020/2021, while it remains at similar levels for women. This results in a higher excess mortality term for women and, therefore, higher short-term mortality rates.

Realisatie versus verwachting - overlijdens tussen 55 en 90 aangegeven per jaar

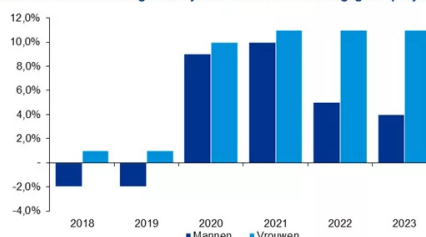


Figure 2: Relative Deviation Between Actual and Expected Mortality (Expressed as Deaths per Year) for Men and Women Aged 55 to 90 Between 2018 and 2023 Source: Table 2.1, Prognosetafel AG2024, Actuarial Society

Adjusting the Projection of the Excess Mortality Term

Figure 2 also provides important input for projecting future excess mortality. The AG decided to adjust the parameter η from 0.5 to 0.75 while maintaining a tapering-off scenario. This means excess mortality phases out more slowly but eventually disappears entirely. This assumption differs from the most recent CBS (Statistics Netherlands) projection table, which assumes a permanent mortality impact.

Due to these adjustments, the update has a slightly larger impact on women than on men, as excess mortality phases out more slowly for women and starts at a higher level. However, the overall impact remains limited because the term only applies to ages above 55 and eventually phases out entirely.

For the provision of an average pension fund, the impact is limited to approximately -0.1% , according to the AG.

Effect	Mannen	Vrouwen
VPV Totaal	-0,1%	-0,2%
Premie	0,0%	-0,1%

Figure 3: Impact on Pension Liability Provisions (VPV) and Premiums for an Average Example Fund From AG2022 to AG2024 Transition Source: Table 1.4, Prognosetafel AG2024, Actuarial Society

Practical Considerations

For much of the pension and life insurance market, this update represents an important adjustment that will influence their assumptions. The impact may vary for entities with predominantly short-life risks. For some pension funds, this could be the final update before transitioning to the new pension framework. Therefore, it is essential not only to mechanically process this update but also to consider:

- *Analysis of Experience Data:* How does your experience data for 2022 and 2023 compare to nationwide figures? Does it align with your expectations?
- *Short- and Long-Term Mortality Trends:* What have been the results in recent years, and do they align with the trends outlined above?
- *Applicability of the Excess Mortality Phase-Out Scenario:* Is the current phase-out speed suitable for your population, or would it be more appropriate to use a different approach based on the provided parameters?

De in dit artikel vervatte informatie is van algemene aard en is niet toegespitst op de specifieke omstandigheden van een bepaalde persoon of entiteit. Wij streven ernaar juiste en tijdige informatie te verstrekken. Wij kunnen echter geen garantie geven dat dergelijke informatie op de datum waarop zij wordt ontvangen nog juist is of in de toekomst blijft. Daarom adviseren wij u op grond van deze informatie geen beslissingen te nemen behoudens op grond van advies van deskundigen na een grondig onderzoek van de desbetreffende situatie.

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(Treasurer, Secretary & Vice-Chairman) and Saif Aknouch (External Affairs).*

The VSAE is the study association for students in Econometrics & Data Science, Actuarial Science and Business Analytics at the University of Amsterdam. Founded 62 years ago in 1963, the VSAE is the oldest study association of its kind. Over the years, the VSAE has blossomed into a professional study association with a wide range of different study related activities.

Our mission is to provide our members with the best possible student experience and to adequately prepare them for a career in the econometric field. We therefore organize a broad range of activities which fall into five different categories: Study, which includes tutoring; Career, for which we organize events like the International Study Project, Business Orientation Days, and - of course - the Actuarial Congress; Social, including many informal events like skiing trips and monthly drinks; the Analytics Academy which lets students apply their theoretical knowledge on real-world data by giving free consultation to non-profit organizations; and lastly Mental Health with was constituted last year to help improve the overall mental wellbeing of our members.

On behalf of the board of the VSAE and the rest of the association, we wish you an inspiring day!

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THE COMMITTEE



The Actuarial Congress Committee 2025 from left to right: **Daan Van Dijk** (Coordinator), **Sean Park** (Acquisition & Promotion), **Anna Bolkvadze** (Magazine & Website), **Donghun Lee** (Acquisition & Promotion), **Anna Markeviča** (Chairwoman), **Jonas Wagner** (Magazine & Treasurer), **Thomas Van Vechgel** (Speakers).

Anna Markeviča CHAIRWOMAN

My name is Anna, I am the chairwoman of the upcoming edition of the Actuarial Congress in Amsterdam. I am currently in my final year of Bachelor's in Econometrics and Data Science at the University of Amsterdam with excellent prospects in Cum Laude honours. The Covid-19 pandemic has brought unprecedented challenges, reshaping the insurance landscapes. Together we will explore the insights that will guide the actuarial field forward in these transformative times. And I am confident that with our enthusiasm and dedication this year's congress will be a great success!



Daan van Dijk

COORDINATOR

My name is Daan, and I am the coordinator of the Actuarial Congress. Currently, I am doing a board year at the study association VSAE, where my functions are Chairman and External Affairs. Together with my fellow board members, we organise many educational and fun events, including the Actuarial Congress. The committee has worked very hard this year to set up a great congress, with a very interesting and gripping theme.

If this website has sparked your interest, I look forward to welcoming you there on the 4th of March!



Donghun Lee

ACQUISITION & PROMOTION

Hello! I am Donghun Lee, a third-year Business Analytics student at the University of Amsterdam, currently interning at ServiceNow where I contribute to post-sales strategy and analysis. I am excited to be part of the VSAE Actuarial Congress committee, specifically in the Acquisition and Promotion team. Along with Sean, we are working on securing financial support for our event. I am happy to connect with more people and overcome any challenges we may encounter. Looking forward to seeing everyone in March!

Sean Park

ACQUISITION & PROMOTION

My name is Sean, and I am in charge of Acquisition & Promotion for this year's Actuarial Congress. I am a third-year Econometrics student at the University of Amsterdam, minoring in Programming. I am particularly excited about this year's theme on how the COVID-19 pandemic has affected life insurance and pensions, and how data can help us make better decisions. I am eager to see how the collective expertise will spark fresh ideas and drive meaningful conversations throughout this year's event.





Jonas Wagner

MAGAZINE & TREASURER

My name is Jonas, currently I am in the third year of my Actuarial Science degree. I am this year's treasurer and with Anna, I will create this year's magazine.

The Covid-19 pandemic had a large effect on everyone. I think having this topic 5 years after the first lockdowns started happening gave companies some time to adjust where necessary. It will be really interesting to hear about the changes made and if long-Covid had any impact on them.

Anna Bolkvadze

MAGAZINE & WEBSITE

My name is Anna, and I'm thrilled to be collaborating with Jonas Wagner on the magazine and website for the 2025 Actuarial Congress. Currently I am on my third year of Business Analytics and completing an internship in Finance. This year's congress plays a crucial role in exploring the impact of significant global events and equipping us to face an unpredictable future. I am confident it will offer many valuable insights and engaging discussions. I look forward to seeing everyone there!



Thomas van Vechgel

SPEAKERS

Hi! My name is Thomas, and I am nearing the completion of my bachelor's in Econometrics at the University of Amsterdam. This year, I chose to participate in the Actuarial Congress committee, where I am responsible for coordinating all the speakers. Fortunately, I have the wonderful Angela Van Heerwaarden as the day chair, and I work closely with her to ensure everything runs smoothly. Together with the rest of the committee, I'm confident that this year's Actuarial Congress will be better than ever.



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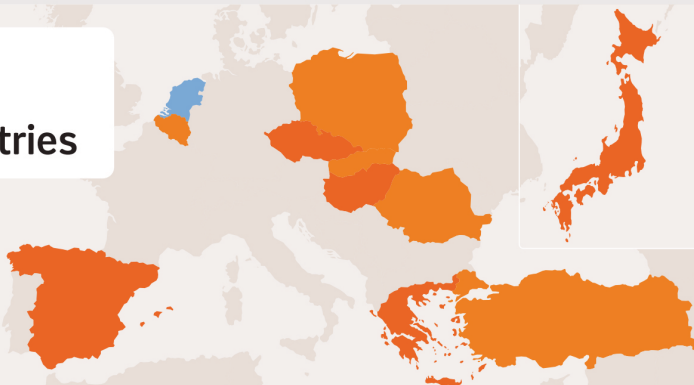
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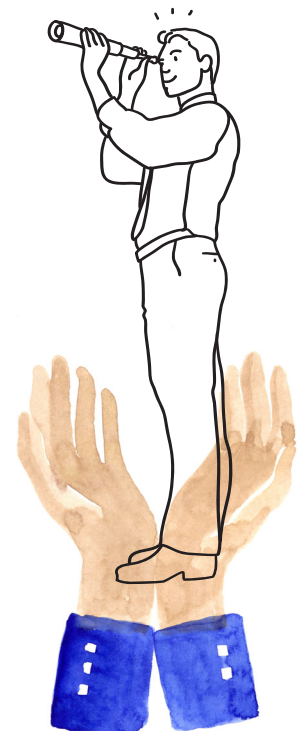
An open, safe, and stimulating working environment in which everyone is equal. That's what we offer our colleagues. As a supporter of change, we are committed to more equality in the workplace, through various D&I networks. But also equality in society, for example as partner of Rotterdam Pride. Our workforce must be a reflection of society. Our colleagues differ in terms of ethnicity, gender, age, sexual orientation, physical abilities. The work environment we create is one in which everyone can be themselves and in which everyone has equal opportunities.

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Art and culture enrich your life. That is why we are a partner of several Dutch museums and the NN North Sea Jazz Festival. Moreover, we support talent and offer artists and musicians an opportunity and a stage to inspire others. This is not only reflected in our sponsorships, but also at our offices with the NN Art Collection. Read more about art at the NN offices and the favourite works of a number of colleagues.



COLOPHON

This special edition of the Aenorm is distributed to all Actuarial, Econometrics, Business Analytics and Data Science students of the University of Amsterdam. The magazine is also distributed among alumni of the VSAE and members of the Actuarial Association (AG).

Editors

Anna Bolkvadze & Jonas Wagner

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