

South African ACTUARIAL SOCIETY OF SOUTH AFRICA

Actuary

Actuarial Society of South Africa's E-magazine

Volume 7 Number 3 | OCTOBER 2023

www.actuarialsociety.org.za

Navigating the Climate Storm • Level up your
Mind • **Smart Technology, Insurance and the End
of Loadshedding** • Generational Inequalities and
Gender Microaggressions in the Workplace • **COVID-19
Supplement** • The ASSA 2023 Convention Awards



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CHECK OUT THE WINNERS AT THE
PRESIDENTIAL PLENARY DURING THE
50TH ASSA CONVENTION ON PAGE 88

A PRESIDENTIAL PERSPECTIVE

As I near the end of my term as President, I wonder to what extent we were able to develop an environment that is conducive to respectful debate. It certainly was harder than I thought, though there have been quite a few initiatives brought about by ASSA that provided that opportunity. My worry remains that we may still be unable to engage on the most difficult of topics; Covid and its impact. This edition of the SA Actuary provides three perspectives from the ASSA task teams on Covid and its impact. These task teams did invaluable work, and I applaud them for their effort and commitment. It is a divisive topic, and I am writing this Presidential Perspective before we head into a Convention that has some sessions that have the potential to be controversial. I hope I can look back after the Convention and be satisfied that we handled these well, and in the spirit of respectful debate. That remains to be seen.

I have been reflecting on how difficult it tends to be to have respectful debates. It is much easier to make sweeping statements that have a measure of truth, than to refute inappropriate statements, because that requires a lot of scientific rigor. You cannot answer a sweeping statement with another. Hence respectful debate is hard to manage, especially for controversial topics that can have tempers flying. This is something for us to reflect on.

I do encourage you to go on a journey of self-discovery and seek to show your authentic self, it's worth it!

Another topic that I have been musing on is the extent to which the ability to display respect in an authentic way is innate or can be learned. This is because respect offered without authenticity just feels wrong. I remember as a child observing how my father dealt with everybody around him with authentic respect, from the farm worker on his farm to the US ambassador. And I mention this because he once drove from the farm to the US Embassy in the beat-up farm bakkie, for he is not someone who puts a lot of value in external appearances. So, I guess to some extent we can learn the importance of respect from others. I did ask Google the question whether authenticity can be learned, and the jury is still out for me. Brené Brown defines it as the choice to let our true selves be seen. Perhaps there are aspects of ourselves that we'd rather not show. I do encourage you to go on a journey of self-discovery and seek to show your authentic self, it's worth it!

Thank you to all the contributors to this SA Actuary, it is a great read and offers incredible insights. Thank you to the editorial team, you have produced a great SA Actuary! 🙏



EDITORIAL



THE PROFESSION, AS WE FIND IT TODAY, WAS BUILT BY THOSE WHO CAME BEFORE US, **SO WE ARE ALL INDEBTED TO THE PROFESSION TO BUILD IT FOR CURRENT AND FUTURE GENERATIONS.**

This third edition of the 2023 SA Actuary publication is different and special – we decided to publish after the ASSA 2023 Convention, giving us the opportunity to feature some great photos from the presidential awards – those are indeed great achievements. Congratulations to all those who received awards in various categories – and thanks to all those who supported those who won awards – it is never a one-man job as everyone needs pillars of support around them to achieve!

As ASSA celebrates its 75th anniversary, and celebrates the 50th Convention, we can be proud that we built our profession to become a profession with impact to industry and society both locally and across the globe. We thank you all ASSA members for your contribution to the profession in various ways. It would not be possible for the actuarial profession to reach those milestones without the participation of its members. The profession, as we find it today, was built by those who came before us, so we are all indebted to the profession to build it for current and future generations – let's soldier on. Before you serve the profession though, please remember to serve your family and society first, for it is the pillar that gives you great strength to serve your profession, and the profession will in turn serve your family and society in recognition of their support!

I take great interest in how people navigate their lives to reach greater heights, so I always pay attention to people's profiles. As **Lydia Mutepfa** was taking a break

from profiling our members, **Maseeha Rawat** took over to profile two great ladies who have been shining in their leadership roles in building the actuarial profession whilst navigating their professional and personal lives. They have both led transformation initiatives of the actuarial profession through their volunteer work at ASABA and the Women's Committee, something that is at their hearts. **Maseeha** interviewed **Memory Zimba** and **Nabeelah Kolia** who shared their great stories. I have no words – you can read the profiles for yourselves – and I hope that our colleagues can learn from how these two ladies have been navigating for their success and the success of others. These ladies have shown us that nothing is impossible if you put your mind to it – they are simply high achievers!

As usual, we trust that you enjoy this edition, as our motto at the SA Actuary is to never let you down! This time I will not bore you with what else is in this publication, so please read everything and enjoy the articles from our great contributors!

Please also remember to send us your comments and articles for future issues of the SA Actuary – the next one is in March/April 2024!

Aluta Continua!

Michael Tichareva

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NAVIGATING THE CLIMATE STORM

The Importance of Storytelling for Scenario Analysis

Storytelling and the development of narratives is a simple but powerful tool to help understand the risks, opportunities, and limitations of different scenarios, which in turn helps to make better business decisions – especially in the context of a complex risk such as climate change.

Why are climate scenarios important?

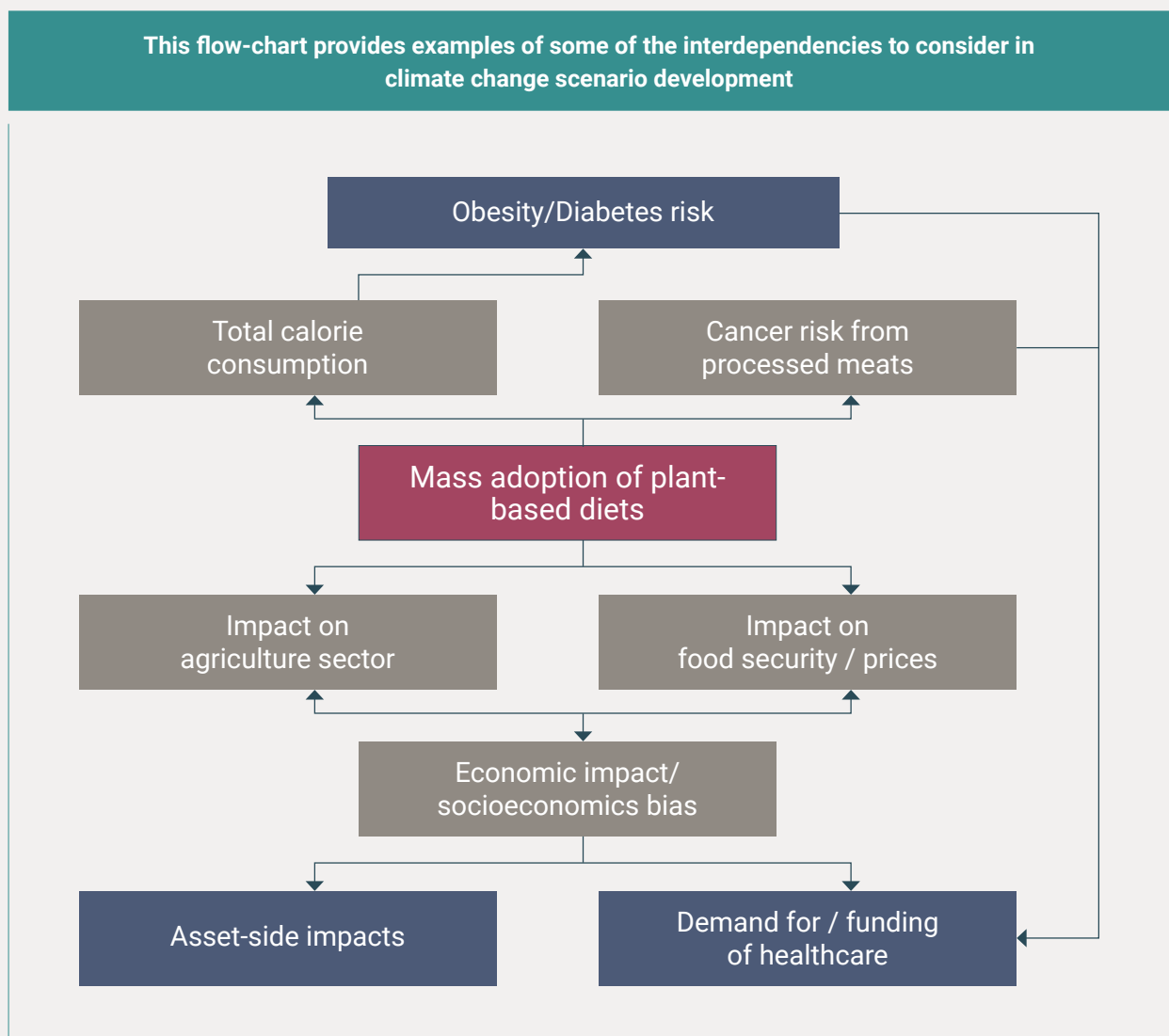
Climate change is about much more than a change in weather. It is a systemic issue affecting every sector of the economy and society, from international bodies down to individuals, and poses a significant source of risk to life insurers.

Scenario modelling has benefits in that it can capture the possible outcome of changes in multiple factors and their interactions on both assets and liabilities at the same time. While scenarios are not forecasts and results should not be seen as the only possible outcomes, scenario modelling provides useful insight into hugely complex issues, such as climate change, and is crucial to incorporate into Own Risk and Solvency Assessments (ORSA)

Storytelling as the basis for scenario development

Climate scenarios are often defined in terms of high-level climate outputs, such as degree of warming or projected carbon prices... but given how much complexity and uncertainty there is around climate risk, there is a danger of over-reliance on numbers. Crafting a convincing narrative allows insights that numbers alone cannot.

Storytelling allows for the exploration of complex pathways, interactions, and previously unanalysed aspects of the scenario. The process of building the story helps to create meaningful discussions, understand the broader context, and challenge chosen scenarios. This narrative approach complements the quantitative analysis in stress and scenario testing,



Developing a comprehensive climate risk scenario requires understanding both direct and indirect impacts of climate change.

establishing plausible scenarios, and informing the scenario's impacts on risk drivers.

An approach to stress and scenario testing

The first step is to define the business context, for example, the impacted lines of business, the time horizons you are considering, and any relevant strategic context.

The next step is to acquire a deep understanding of the fundamentals of the chosen scenario, including identifying the variables captured by the scenario and the assumptions underlying it (for example the speed of transition to a low carbon economy).

After this, begin to form the narrative by researching the impacts of climate change on the business and drivers of mortality, morbidity, lapse, and new business. Where quantitative analysis is possible, the narrative can be used to inform this.

We typically talk about climate scenarios in terms of physical risk (risks resulting from climatic events, such as wildfires, storms, and floods) and transition risks (risk arising from changing strategies, policies or investments to reduce reliance on carbon). Starting the story the step before that, with the drivers of these climate risks, helps to form a more compelling narrative of the knock-on effects on financial and business risks. For example, rather than starting the story with reduced air pollution (a physical risk), start it with the driver causing this change – such as new policies put in place to ban the use of high emitting transport and encourage the move to electric vehicles.

Possible drivers of climate risk include actions taken by governments, industries, and individuals, and the level, effectiveness, and economic impacts of these actions.

Narratives should also account for broader macro trends and risks that could drive risk concentrations or interactions, such as geopolitical risk.

Investigating climate impacts on mortality and longevity

Developing a comprehensive climate risk scenario requires understanding both direct and indirect impacts of climate change. The transition to a low-carbon economy, for instance, would affect asset values, and the accompanying economic impacts and behavioural changes which accompany (or even shape) that transition could affect mortality and lapse rates.

Consequently, it is crucial for scenarios to integrate the impacts of climate change on both assets and liabilities. Modelling assets and liabilities simultaneously avoids the need for spurious assumptions about the correlations between the asset-side and liability-side impacts of climate change as measured in unrelated scenarios.

While the direct impacts of climate change on mortality are likely to be minimal, here are some indirect impacts to consider when building climate scenarios:

- **Changes in weather patterns and increases in temperature** are increasing the risk of the spread of vector borne diseases, such as dengue fever and Zika virus, by extending the habitable zones for vectors of disease (for example increased rainfall increasing the amount of stagnant water) or encouraging closer interfacing between animal hosts of disease and humans. These indirect impacts of climate change are magnified by factors such as rising urbanisation, migration, and international travel.
- **Regular flooding** can lead to localised pollution and affect the viability of farmland, which, in turn, impacts food supplies. In extreme cases, repetitive and persistent flooding could also result in the regular isolation of communities from emergency services, resulting in worsening health outcomes for individuals living in those communities.
- **Extreme weather events** such as heatwaves, droughts, and heavy rainfall contribute to food insecurity worldwide. Food and water scarcity will push more people into poverty and could also give rise to conflict in affected areas.



Potential Scenarios

There is a wide range of possible futures to consider and radical uncertainty around the likelihood and impact of these events. Some potential scenarios that incorporate the direct and indirect impacts of climate change are mass behavioural change, climate-induced mass-migration, and the economic effects of a disorderly transition.

Mass behavioural change

Consumers adopting new habits to combat climate change, such as cutting meat consumption and altering modes of transport (for example cycling to work), could directly affect the incidence of cancer, cardiovascular diseases, and obesity, and indirectly affect emission levels and food security.

Climate-induced mass-migration

Crop yield reductions and extreme weather conditions could displace populations, stressing recipient countries' health services and potentially increasing the prevalence of diseases which are more common in the countries of origin than the recipient country.

The economic effects of a disorderly transition

A disorderly transition may impair GDP growth and the ability to fund healthcare, impacting different industry sectors and socio-economic groups. Mental health impacts could also be a factor for some product categories.

Scenarios can be modelled using a driver-based approach, overlain with judgments as to the potential effects of those factors which you cannot model directly, for example, due to lack of existing academic research to connect any given driver to mortality and morbidity rates.

Conclusion

A strong narrative can be more powerful than numerical precision and help to coordinate the effects of climate across multiple risks. A broad set of ORSA scenarios is needed to properly explore the many dimensions of the impact of climate change. ⚠️

Level-up your mind

A woman with long, dark, wavy hair is sitting in a meditative pose (lotus or similar) in front of a blurred waterfall. She is wearing a light blue dress over a white shirt. Her eyes are closed, and she has a serene expression. The background is a soft-focus natural setting with greenery and the sound of water.

The game-changing benefits of meditation

By Suveer Nundlall & Akshay Rampersad



SUVEER NUNDLALL



AKSHAY RAMPERSAD

With over 500 million practitioners worldwide, meditation has captured global fascination by its potential to profoundly enrich lives. Our exploration ventures into the transformative realm of meditation, where mindfulness, mental well-being, and insurance seamlessly intertwine. Delve into an array of techniques, notably Transcendental Meditation (TM),

endorsed by influential figures like Ray Dalio and Oprah Winfrey. Unveil TM’s scientifically proven impact, from mitigating mortality risk to enhancing mental health, while witnessing insurers adopting mindfulness as a cornerstone of well-being. This fusion forges a path to holistic life and insurance approaches, sparking a revolution in conventional paradigms.

DEFINING MINDFULNESS, MEDITATION, AND MENTAL HEALTH:

Before we dive into the wonders of meditation, let’s clarify some essential terms. Meditation encompasses a range of techniques aimed at training the mind to focus and redirect thoughts. On the other hand, mindfulness refers to intentional, non-judgmental awareness of the present moment, fostering a sense of presence and mental clarity. Mental health, in turn, encompasses overall psychological, emotional, and social well-being, crucial for leading a fulfilling life.

EXPLORING DIFFERENT TYPES OF MEDITATION:

Meditation practices come in various forms, each offering unique approaches and benefits. We can categorise most techniques into four groups:



CONCENTRATIVE MEDITATION

Focuses on a specific object, like the breath, a mantra, or visualisation. Transcendental Meditation, mindfulness meditation, and mantra meditation fall into this category.



INSIGHT MEDITATION

Aims to develop profound understanding of reality and one’s mind. Vipassana meditation is a notable example of insight meditation.



LOVING-KINDNESS MEDITATION

Cultivates feelings of love, compassion, and kindness toward oneself and others. Metta meditation is a common practice in this category.



MOVEMENT MEDITATION

Integrates mindful movement or physical activity, such as walking meditation, Tai Chi, or Qigong, to enhance awareness and presence.



TRANSCENDENTAL MEDITATION (TM):

Among the various meditation techniques, TM stands out as a transformative practice. TM involves using a mantra, a repeated sound or phrase, to guide the mind into a state of deep relaxation and heightened awareness. The simplicity of TM makes it accessible even to beginners, which has contributed to its widespread popularity, attracting business leaders, celebrities, and millions of people worldwide.

TM's Impact on Business Leaders and Celebrities: The effectiveness of Transcendental Meditation has caught the attention of numerous business leaders and celebrities. Renowned figures like Ray Dalio, Russell Simmons, and Rick Goings are avid practitioners of TM, using it to enhance focus, reduce stress, and promote creativity. Notable celebrities like Hugh Jackman, Cameron Diaz, Oprah Winfrey, and Katy Perry have publicly endorsed TM as a crucial tool in maintaining mental clarity and emotional well-being.

THE SCIENCE BEHIND TM:

The efficacy of TM is supported by an extensive body of scientific research. More than 600 studies conducted at over 250 independent universities and research institutions in 30 countries have explored TM's benefits. These studies have consistently demonstrated the positive impact of TM on mental health, cardiovascular health, and overall well-being.

TM's Profound Impact on Mortality and Health: One of the most remarkable findings in the research on TM is its impact on mortality. A study published in the American Journal of Cardiology examined how TM affects mortality in individuals aged 55 and over, specifically those with high blood pressure. The study design involved dividing the participants into four groups: a control group and three stress-decreasing intervention groups, which included TM. The aim was to investigate the long-term effects of these interventions on all-cause and cause-specific mortality in individuals

with high blood pressure. Participants in the study had no prior use of any stress interventions, and all had high blood pressure. The results were measured using relative risk ratios (RR) to assess the strength of association between TM and mortality. RR values less than 1 indicate a decreased risk of death compared to the control group. The findings were groundbreaking. After analysing the data, all the relative risk ratios for the TM group were less than 1, indicating a significant reduction in mortality risk for those who practised TM. Specifically, the TM group displayed a lower risk of mortality compared to the control group, suggesting that TM may contribute to increased longevity in individuals with high blood pressure. Additionally, a survival function created from the study displayed a higher probability of survival for the TM group compared to the control group over time. This effect was consistent with the overall findings, reinforcing the potential life-extending benefits of TM.

ADDITIONAL HEALTH BENEFITS OF TM:

Beyond its effect on mortality, TM has been associated with numerous other health benefits. Studies have shown that TM can improve cardiovascular health, work satisfaction, positive health habits, physical

function, mental health, and more. It has also been linked to lower blood pressure, increased blood flow to the brain, and improvements in various conditions like epilepsy, chronic pain, and rheumatoid arthritis.

TM and Health Costs: The potential of TM to improve health outcomes has drawn the interest of insurers and medical aid schemes. A study conducted in Quebec, Canada, looked at medical costs for two groups of individuals over a 5-year period. The study's participants included a TM group and a non-TM group. The non-TM subjects were randomly selected from Quebec health insurance members with the same demographic profile to match the TM participant profiles. The primary measure for medical costs was the fees paid by the Quebec health insurance agency to private physicians. During the five-year assessment period, the TM group's annual rate of change in payments declined significantly, while the comparison group's payments showed no significant changes. After the first year, the TM group's payments decreased by 11%, and after five years, their cumulative reduction was an impressive 35%. On the other hand, the non-TM group showed only a minimal 1% reduction in medical costs over the same period.

INCORPORATING MEDITATION INTO INSURANCE PRACTICES:

Given its potential to improve mortality and morbidity experience, several leading insurance companies have already embraced the concept of incorporating meditation practices into their health and wellness programs. Below are some examples of how meditation is being utilised by insurers:



One of the largest health insurance companies in the United States, United Healthcare, has partnered with the meditation app Calm to offer its policyholders free access to guided meditation sessions, sleep stories, and other mindfulness resources. The programme is part of United Healthcare's wellness initiative, which aims to promote healthy behaviours and prevent chronic disease.



A federation of health insurance companies in the United States, Blue Cross Blue Shield offers a mindfulness program called Wellvolution to its policyholders. The program includes access to guided meditation sessions, yoga classes, and other wellness resources, designed to help policyholders reduce stress and improve overall well-being.

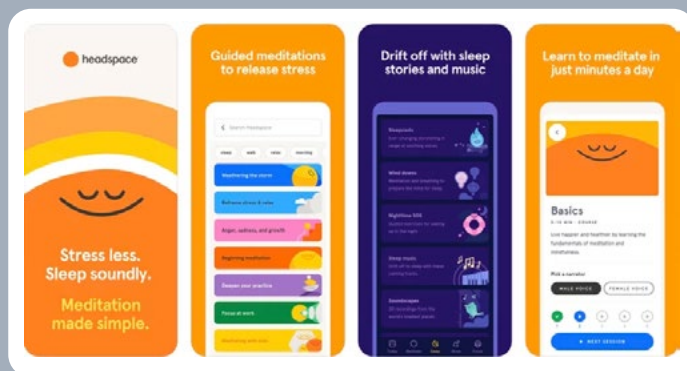


A global health insurance company, Cigna offers a mindfulness-based stress reduction program to its policyholders. The programme includes online resources, meditation sessions, and coaching from mindfulness experts, designed to help policyholders manage stress, anxiety, and depression, and improve their overall mental health.

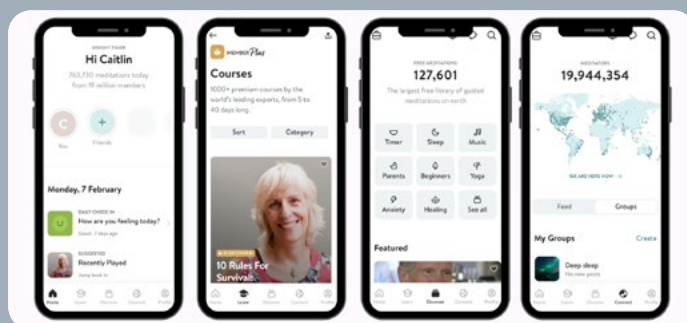
The aforementioned studies indicate that TM could have a profound impact on mortality, health, and stress reduction. This is not only good for individuals – there is proven potential for insurers and medical aid schemes to benefit from incorporating meditation practices, like TM, into their programmes to promote better health outcomes and reduce costs. Whether through TM or other mindfulness apps, individuals can embark on a journey of self-improvement and embrace a path of well-being, fulfilment, and better insurance experience.

PRACTICAL STEPS: EXPLORING OTHER MEDITATION AND MINDFULNESS APPS

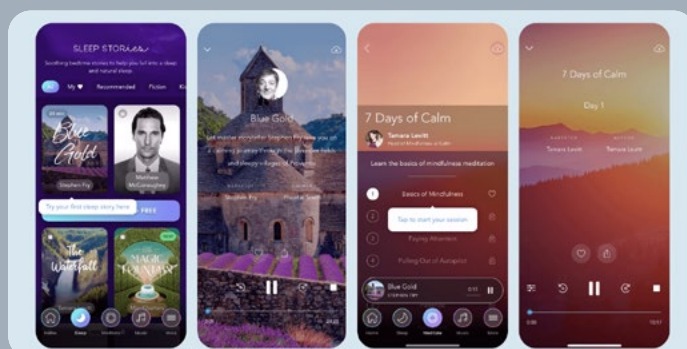
If you're interested in incorporating meditation into your daily life but prefer to explore other practices beyond TM, there are several excellent apps available that cater to a variety of meditation styles:



HEADSPACE: Offers a wide range of guided meditations and mindfulness exercises for beginners and seasoned practitioners alike. mindfulness resources to promote relaxation and reduce stress.

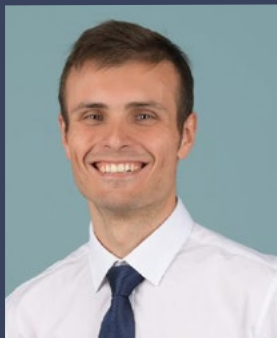


INSIGHT TIMER: Provides a vast library of meditation practices from various traditions and experienced teachers, allowing you to customize your meditation experience.



CALM: Offers guided meditation sessions, sleep stories, and other. 

SMART TECHNOLOGY, INSURANCE AND THE END OF LOADSHEDDING



ZANE HEYL

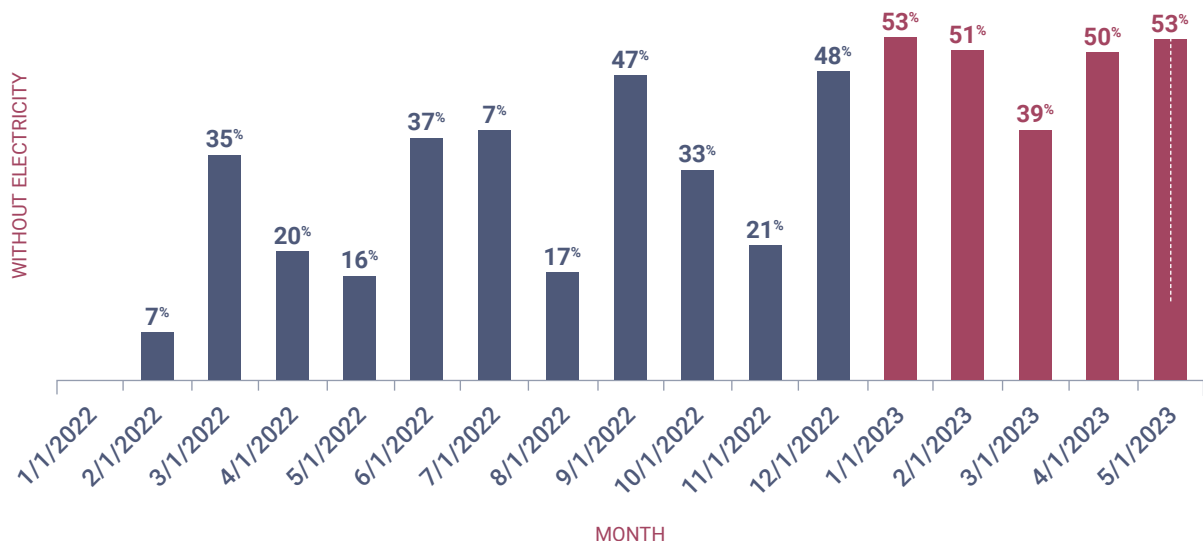


We must surely all be familiar with the informal road Marshalls. We see them everywhere we go now, since our traffic lights are off for such a significant proportion of every day. This is a self-elected road Marshall who dances and prances in the centre of intersections – sometimes erratically blowing whistles – attempting to guide traffic. Similar examples exist all around our country. In all likelihood, they cause more harm than good. This is the traffic-light equivalent of unqualified spinal surgery. Indeed, what is meant to be a skilled and carefully managed affair is not performed so carefully. However, and before I completely drag the man in the image under the bus, it must be said that while it might look as though he does that for a living, the truth is probably that he doesn't do much at all for a living. He performs this self-elected duty at his own risk for a long day, after which he returns to his place of residence – and I have my doubts whether the term “residence” is appropriate here.

IN THE DEPTH OF AN ENERGY CRISIS

To place the recent insolvency into perspective requires an understanding of the trading conditions facing domestic and global insurers and reinsurers over the three-year period spanning March 2019 until March 2022. Developments over this period introduced challenges to both insurers and their reinsurance partners as each sought to indemnify their respective customers for business interruption losses following the 2020/2021 COVID-19 pandemic; for property losses following:

Figure 1: Average Proportion Of Day Without Electricity - January 2022 - May 2023



Throughout the now nearly 30-year democracy of South Africa, the private sector has demonstrated its ability to remain resilient contributing to the solution of pressing issues facing South Africa. Ingrained in the very fabric of our actuarial profession is our promise to consider and/or act in the public interest. There could not be a more obvious topic that is within the interest of the public than having access to electricity – that hallmark of modern civilisation without which roads can, and have, become death traps, manufacturing and production grind to a halt and businesses close.

Perspective matters, and around the world there are many other countries that face or have faced the equivalent of loadshedding. Does this make it acceptable? Of course not! But does that mean that our tenacity of believing that we're the only victims is warranted?

PESSIMISM

What a pessimistic attitude pervades society- it is a deeply unfortunate reality that so many South Africans have resorted to a pessimistic outlook on the future of the country. I am reminded of an example of cognitive dissonance Adrian Gore pointed out in one of his leadership summits in which he juxtaposes the optimistic outlook we have of our own personal circumstances on the one hand, against the pessimistic outlook we have of

South Africa or the world on the other. We must certainly hold a very sincere – and likely undue - sense of self-regard to maintain that we’re doing well while everything around us is not. Perspective matters, and around the world there are many other countries that face or have faced the equivalent of loadshedding. Does this make it acceptable? Of course not! But does that mean that our tenacity of believing that we’re the only victims is warranted?



GETTING A SENSE FOR THE NUMBERS

A typical supply and demand curve for electricity has a recognizable pattern in South Africa. This is a bimodal structure with a peak in the mornings, and a peak in the evenings. Usually, the evening peak is higher than the morning peak.

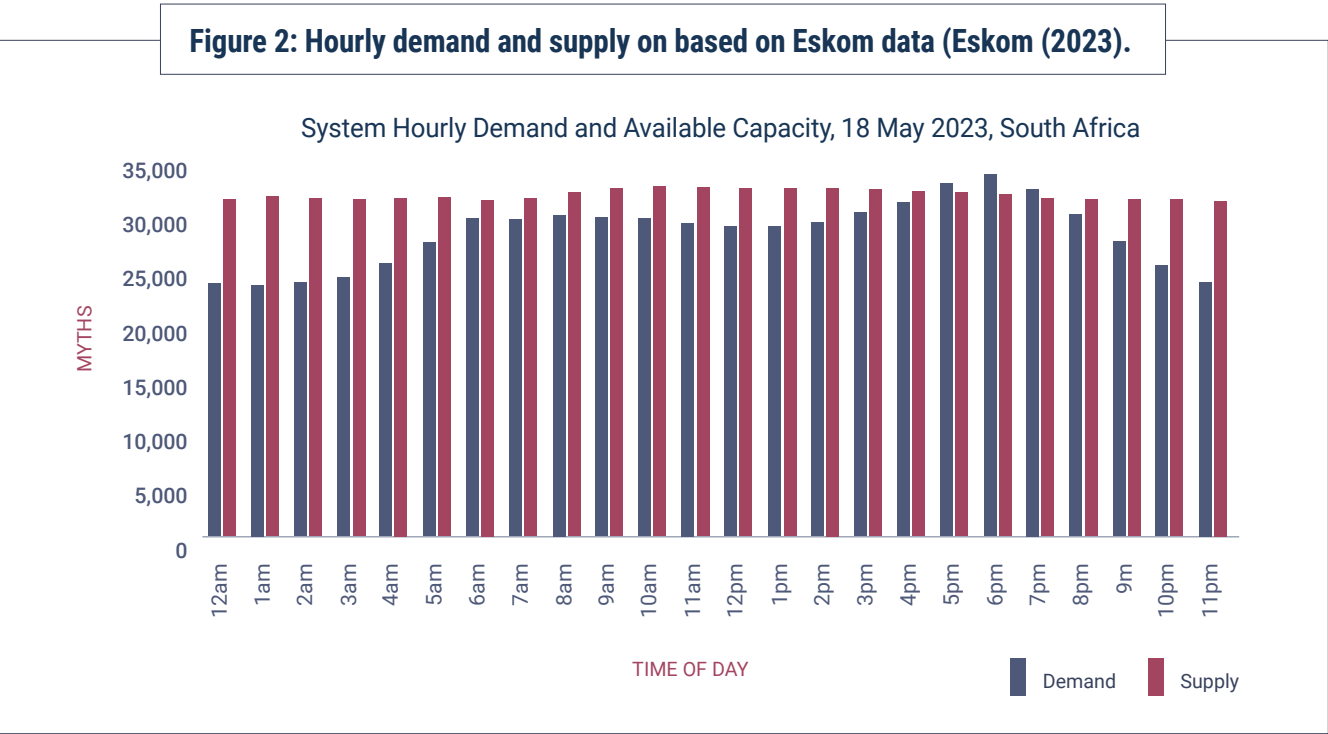
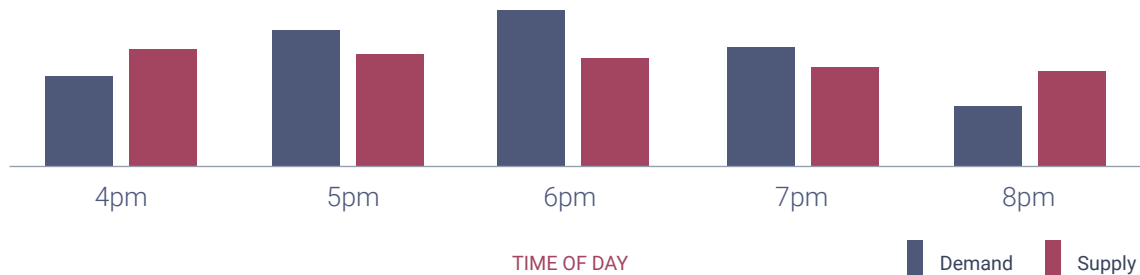


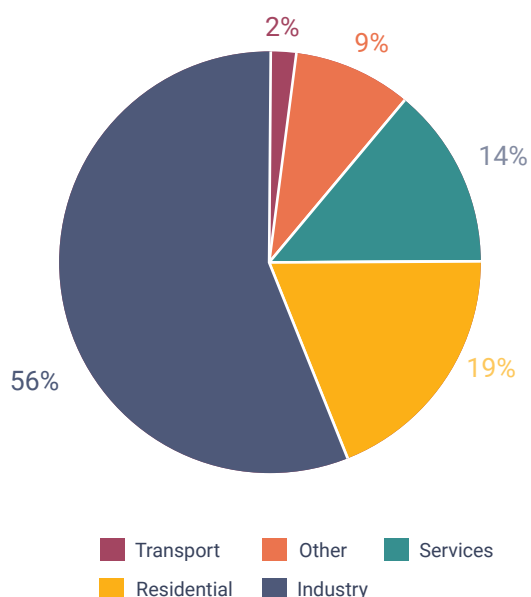
Figure 3: Hourly demand and supply on 18 May 2023 between 4pm and 8pm based on Eskom data (Eskom (2023)).

System Hourly Demand and Available Capacity, 4pm - 8pm, 18 May 2023 South Africa



The shortfall that can be observed between 5pm and 7pm is indicative of the need for loadshedding, and the shortfall at 6pm on the 18th of May 2023 was roughly 1,700 MWs. A loadshedding stage is intended to correspond with a manual load reduction (MLR) of 1,000 MWs. For example, during stage 5 loadshedding the intention is to alleviate 5,000 MWs worth of demand. For the critics among us, we look at the graph on the 18th of May 2023 and wonder what the loadshedding stage actually was. From the shortfall, we might expect it to be stage 1.7 (or, really closer to stage 2). In fact, it was stage 5, indicating that the power utility's intention was to alleviate 5,000 MWs worth of demand-side pressure from the grid. This is largely because of the 2,200 MW reserve which must be held over and above the supply at all times, and the fact that Eskom (despite what most of us tend to believe) does not actively switch the stages, but rather sets them in anticipation of supply shortfalls.

Figure 4: South Africa's electricity consumption by sector (percentage of total), 2020 (Source: own illustration based on Alant (2023, pp. 33 – 36)).



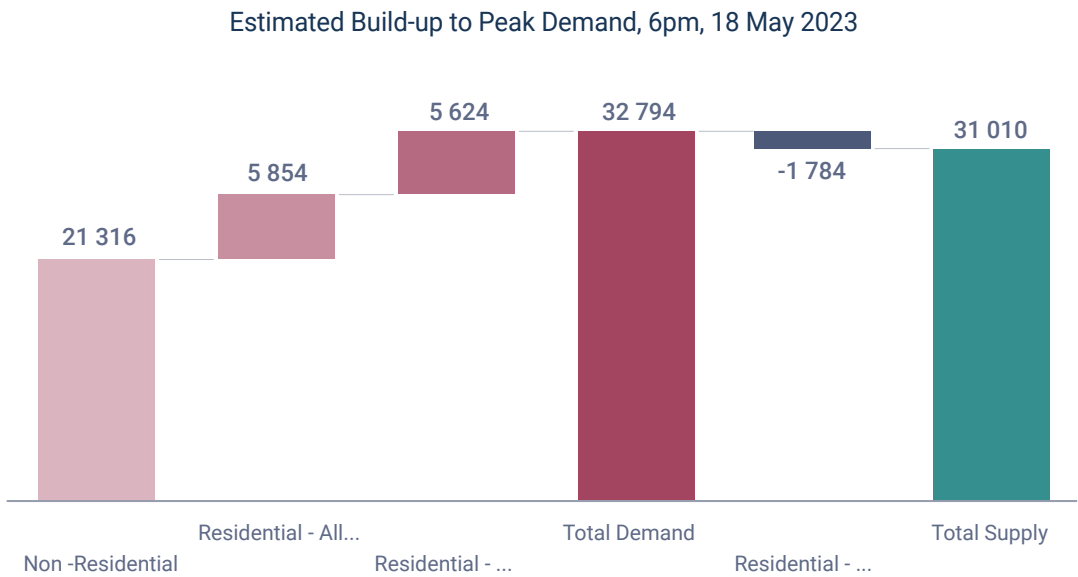
ELECTRIC GEYSERS

The residential sector only uses about 19% of the total electricity demand on average (Alant (2023, pp 33-36)), but this is seen to increase by up to 35% during peak hours (McNeil et al. (2015)). That is nearly a doubling of the residential electricity usage during peak hours and it begs the question of what the cause is.

In a series of pilot studies, the team at Plentify – a technology company providing smart geyser devices – has reinforced the widely-known fact that electric geysers are the primary driver for residential demand. Exhibiting the same bimodal pattern we see in the total electricity demand curve, electric geysers explain almost 50% of residential electricity demand in the evenings during peak hours.

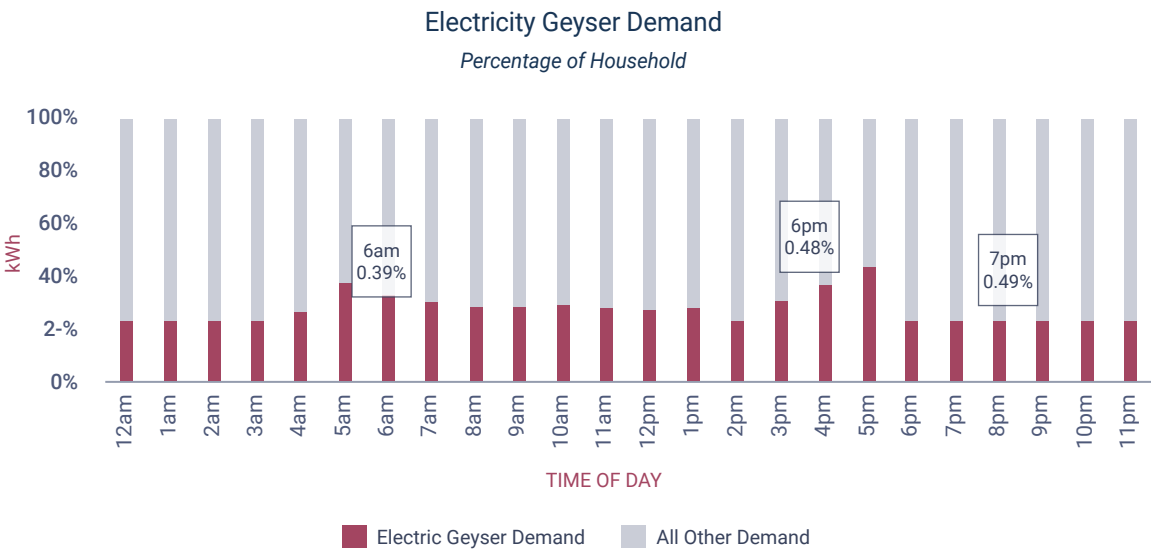
We can estimate the build-up to the total electricity demand in South Africa using the statistics we have at hand. This is simply taking total demand, multiplying it by 35% to get the residential demand and then splitting that down to geyser / non-geyser using the 48% split which can be seen in figure 6. All other demand is assumed to be non-residential.

Figure 5: A build-up of total demand and then back down to supply on 17 May 2023 at 6pm



Source: own table based on data from Eskom (2023), Plentify (2023c) and McNeil et al. (2015)).

Figure 6: 65-day average electricity demand of electric geysers in a South African estate with 750 properties



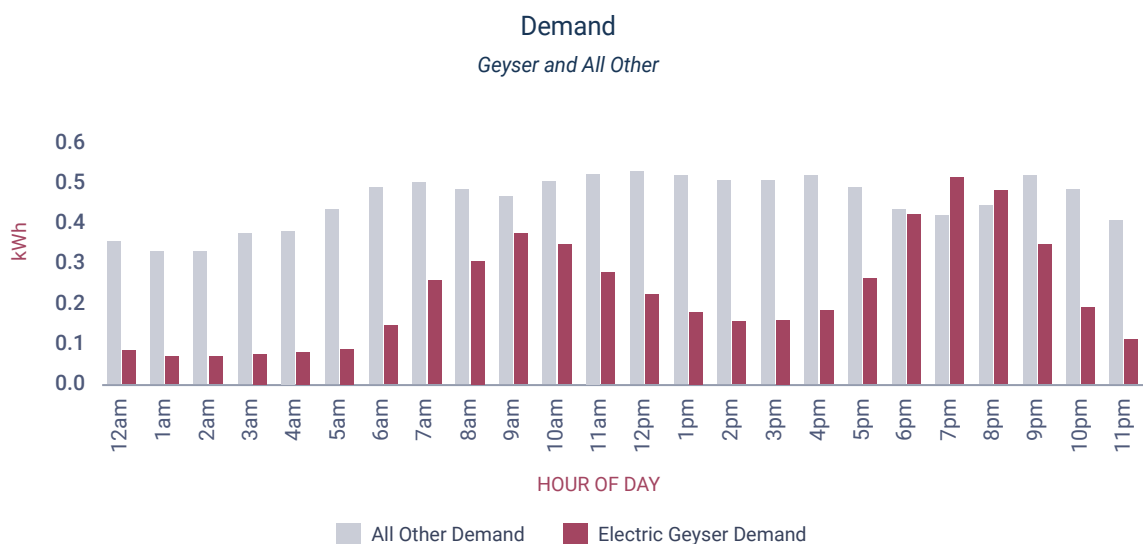
Source: own chart, based on data from Plentify (2023c)

COINCIDENCE? I THINK NOT!

There is a striking similarity between the shape of the household electricity demand curve and that of total electricity demand - the bimodality is distinct. I have undertaken to answer the question of whether it is a coincidence, and whether the bimodality can be ascribed to electric geysers. If the shape is fully attributable to electric geysers, then we are provided with the material for a fascinating thought experiment: what if we were able to re-distribute geyser electricity demand somehow from the peak hours in the day to other hours where

there is ordinarily less demand. In such a scenario, it is possible to envisage figure 1 looking slightly different with a flatter demand curve and possibly no deficit supply in the evening hours. Furthermore, the build-up in figure 4 shows that electric geyser demand is nearly three-times the surplus indicating that changes in geyser demand may have high impact. In figure 6, an overlay of geyser demand and all other residential demand is provided for the same pilot displayed in figure 5. The shape of all other demand is notably different: it does not exhibit the same seasonality and there is no obvious evidence of a bimodal structure.

Figure 7: Overlay geyser electricity demand and all other electricity demand for a South African estate



Source: own chart, based on data from Plentify (2023c)



There is no concrete proof of a causal relationship between electric geyser demand and the shape of the total electricity demand curve as yet, but there is the following set of arguments in favour of causality:

- We can see from the pilot cited that between 49% and 55% of the residential sector's demand is explained by electric geysers. With 35% of total South African demand explained by the residential sector during peak hours, between 17.2% and 19% of total demand is explained by electric geysers; and
- The shape of geyser demand fully explains the shape of the residential demand curve, and the timing of the peaks of the total demand curve and residential demand curve are closely aligned.

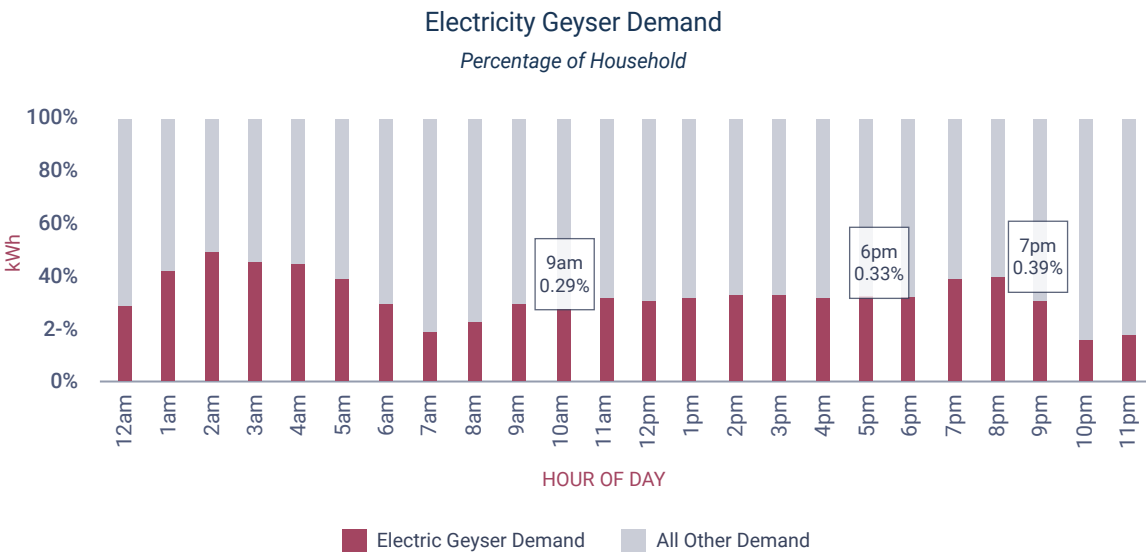
CAN DEMAND BE RE-DISTRIBUTED?

Not to be confused with timers, smart geyser devices are designed to perform smart work. While offering the typical benefits of a timer, smart geyser devices are different in a number of ways. In particular, they monitor geyser temperatures as opposed to switching the geysers on and off at fixed times. This enables them to co-ordinate the on/off switching of geysers so that a specified temperature is retained. This implies that consumers spend less money on their electricity bill because the geyser does not need to heat water at the time those consumers need to use hot water.

Additionally, the device ensures that geysers turn on and off systematically throughout the day to provide hot water when it is needed, but that not all geysers turn on at the same time. This is possible because of how long geysers can keep the water inside hot. This is a typical example of a network benefit: a situation where the value of a product depends on the number of buyers, sellers or users who leverage it (Stobierski (2020)).

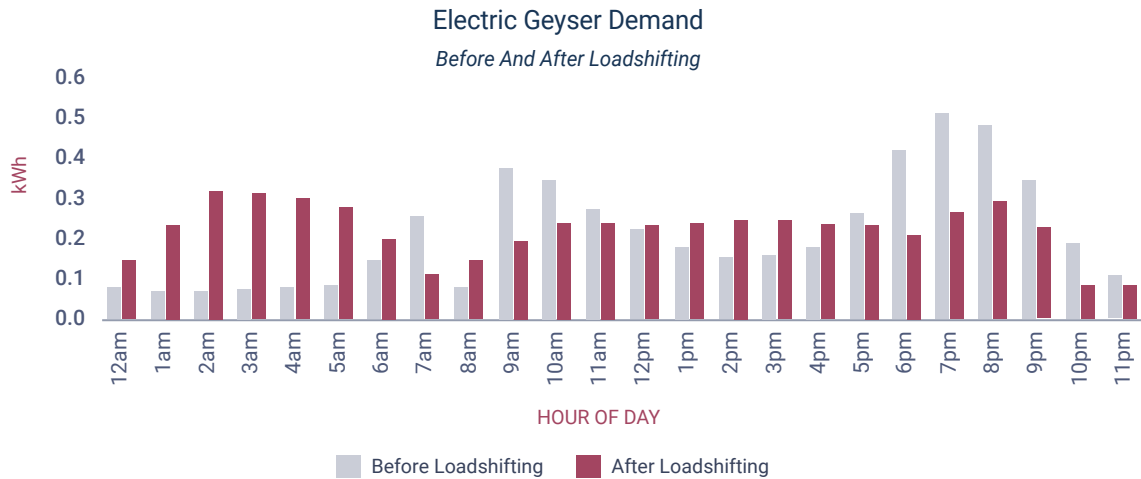
In the same estate cited above, the team at Plentify implemented their smart geyser device over a 365-day period and observed the equivalent – but this time load-shifted - electric geyser demand distribution that can be seen in figure 7.

Figure 8: The 365-day average load-shifted electricity demand of electric geysers in a South African estate with 750 properties.



It is visually easier to appreciate the impact through the overlay in figure 8. This is a profound change in the profile of residential electricity demand and can be estimated to have the effect of reversing the shortfall in supply had it been nationally adopted on the 18th of May 2023.

Figure 9: Overlay of figures 5 and 7, emphasizing the fundamental shift in load for residential houses after implementing Plentify's smart geyser device.

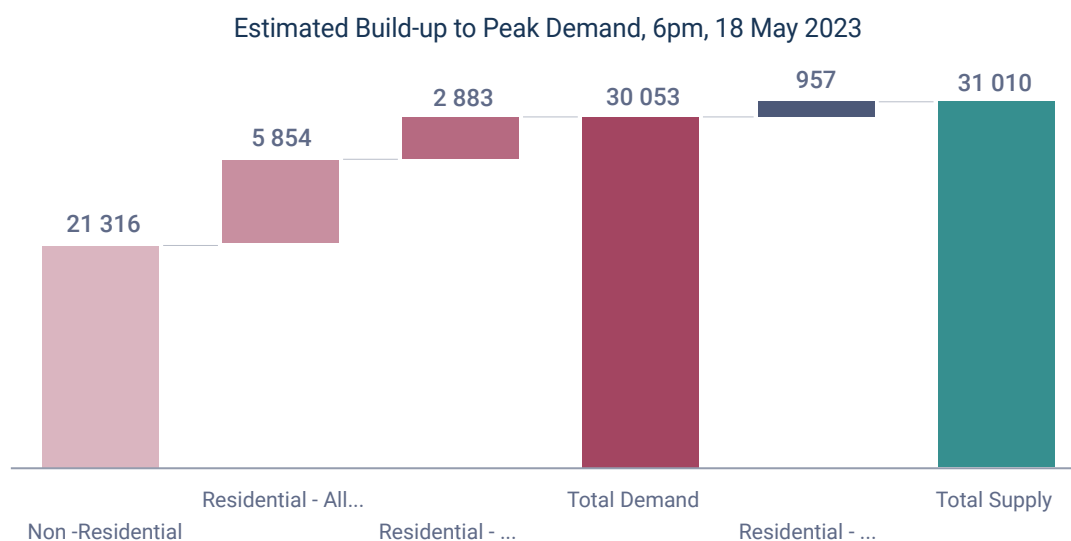


HOW CAN THIS IMPACT THE GRID?

We are able to re-create figure 4 based on a revised distribution of electric geyser demand and the results are impressive. Knowing that the 6pm peak demand is now 33% of total residential demand as opposed to the 48% before load-shifting, the revised demand can

be determined. All non-geyser demand as well as non-residential demand are assumed to not be impacted by load-shifting and the revised total demand can be calculated. The 1,700 MW shortfall has been entirely reversed and a position of surplus supply has been created. This is a pivotal finding and is very encouraging.

Figure 10: A build-up of total demand and then up to supply on 18 May 2023 at 6pm assuming that load-shifting has been implemented (Source: own table based on data from Eskom (2023), Plentify (2023c) and McNeil et al. (2015)).



It stands to reason that the above benefits to the electricity grid may only be realized if such devices obtain the required scale.



HOW CAN ACTUARIES PLAY A ROLE?

Smart geyser devices such as the one shown in this article boast a feature that detects when a geyser has begun leaking or has burst. At that point, the geyser – as well as water supply to the geyser – is shut off, and the customer is notified. In principle, this serves as a risk mitigation instrument for insurance companies writing homeowners' insurance if their policyholders had these devices installed. While the data for particular insurers is difficult to obtain, an insurer in South Africa has indicated that 25% of their homeowners' insurance claims spend relates to geysers and consequent damage implied by burst geysers. The equivalent figure for claims frequency is 40%.

If there is an economic benefit to insurers to include these devices as part-and-parcel of their homeowners' insurance policies, then this may be one meaningful way for actuaries to contribute to the scaling of smart geyser devices and ultimately make an impactful dent in the energy crisis in South Africa. The economics of such an inclusion can be assessed by any insurance company willing to put resources towards a cost-benefit

analysis that studies the overall impact on key metrics of an additional expense – by way of procuring part or all of a smart device per policy – on the one hand, and a claim size or frequency reduction on the other.

ARGUABLY

The true underlying reason for scaling up the usage of smart geyser devices in South Africa has, indeed, very little to do with saving insurance companies money. While that provides a useful short-to-medium term tangible benefit to insurers to incentivize them, the longer-term benefits of reduced loadshedding are profound. It might not be expected that a South African audience needs reminding of the benefits of reduced loadshedding, but the boiling frog apologue flows readily to mind. Some meaningful longer-term benefits – other than those mentioned already – in order of direct impact to insurers, may include:

- Reduced power surge claims frequency;
- Reduced claims frequency related to chaotic roads (and associated deaths) due to lack of working traffic lights or other lighting;

- Reduced opportunistic crime and associated deaths;
- Reduced diesel expenditure;
- More tax revenue due to more people working and fewer companies closing down;
- A fundamentally altered electricity demand curve, which is flatter and implies a grid that is less costly to maintain;
- Increased demand for smart geyser devices as a reward for companies doing meaningfully innovative work towards solving South Africa's woes; and
- Improved mental health of all members in society.

IN CONCLUSION

Private sector involvement in solving serious problems in South Africa has increasingly become the story of our lives. Involving the private sector in a potential loadshedding solution sends a message of corporate social responsibility and provides an exciting and new framework for smart technology within the landscape of insurance. It further bolsters our professional promise as actuaries to act within the public interest, and electricity certainly is within everybody's interest.

REFERENCES

- Alant, EJT (2023). 'An actuarial perspective of South Africa's electricity system', Cape Town:
- Actuarial Society of South Africa. Available at <https://www.actuarialsociety.org.za/download/Public%20Interest:%20South%20Africa%E2%80%99s%20Electricity%20System/?wpdmdl=20845> (Accessed 24 July 2023).
- McNeil, MA, Covary, T & Vermuelen, J (2015). 'Water heater technical study to improve MPS – South Africa', In 8th International Conference on Energy Efficiency in Domestic Appliances and Lighting. Available at <https://international.lbl.gov/publications/water-heater-technicalstudy-improve?page=21> (Accessed 24 July 2023).
- Eskom (2023). Eskom data request form. Available at: <https://www.eskom.co.za/dataportal/datarequest-form/> (Accessed 17 August 2023).
- BusinessTech (2023) 'From bad to worse: Load shedding vs blackout hours in South Africa',
- Plentify (2023c). Proprietary pilots.
- Stobierski, T (2020). 'What are network effects?' Harvard Business School Online: Business Insights, 12 November 2020. <<https://online.hbs.edu/blog/post/what-are-network-effects>>. (Accessed 24 July 2023.)

HEALTH WARNING:

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Contact Paper Video (**Chris Mills, 072 347 6154, chris@papervideo.co.za**) or the Actuarial Society Educational Trust (**Mike McDougall, 087 073 8952, mmcdougall@actuarialsociety.org.za**) and make education a powerful catalyst for change in more children's lives.





PAMELA HELLIG

SENIOR ACTUARIAL MANAGER
AT INSIGHT LIFE SOLUTIONS

The Authentic Actuary

by Pamela Hellig

Why letting go of unhealthy attachments may be the key to transformation of the profession

Dr Gabor Maté was an infant in Nazi-occupied Hungary when his mother, in an extreme act of love, gave him to a stranger to protect him from the dangers of the Budapest ghetto. The separation between mother and child lasted three weeks, leaving Maté with a visceral sense of abandonment that would affect him for life. Perhaps driven by the events of his early childhood, he has become one of the world's foremost thinkers in the realms of trauma, addiction, stress, and childhood development.

Some of Maté's most profound work has to do with the analysis of authenticity versus attachment – two basic survival needs, which are often in conflict with each other, and the understanding of which, I believe, is key to redefining the actuarial profession to be more inclusive, diverse, and psychologically safe.

The Actuarial Society of South Africa (ASSA) says of its goal of transformation:

Transformation of the Actuarial Society and the actuarial profession is about fairness and inclusion. It is about every member of the Society feeling welcomed, appreciated and inspired to succeed and contribute.

It is also about fulfilling our professional promise by ensuring that the work that actuaries do is relevant to the diverse South African public whose interest we serve.

To achieve the goal of transformation, we need actuaries and aspiring actuaries who feel comfortable being their authentic selves, free of unhealthy attachments that may be holding them back.

Attachment is our drive to connect with a caring other, to belong, to love and to be loved. It is obvious why this is a basic human need: as babies, we are completely dependent on our caregivers. We need attachment to survive physiologically, and we totally depend on our parents to meet our needs. Even as adults, attachment remains important because we need to form societies and social groups, without which we would not be able to survive

Authenticity, on the other hand, is our ability to acknowledge our emotions and interests and act in a way that aligns with our sense of meaning and purpose. It's the capacity to express who we are in our activities and relationships. If it is not obvious how authenticity becomes a basic survival need, think of a human being in the evolutionary period who was not in touch with their bodies and gut feelings...how long would they survive in the wild? We are all here today because our ancestors listened to their instincts and made decisions that ensured their survival and, hence, our existence.

So, which of these two fundamental human needs wins?

Imagine what happens to a child whose attachment need is incompatible with the need for authenticity. In other words, "If I'm authentic, my parents will reject me. If I express what I feel and insist on my own truth, my parents can't handle it". Despite their best conscious efforts, parents convey those messages all the time; that their children are not acceptable the way they are.

What does a child do with that? The child reasons that if they give up attachment for the sake of authenticity, they lose the relationships on which their life depends. Therefore, there is no question. What become suppressed are the child's authenticity and emotions. And this forms a pattern in our brains that persists into adulthood.

We pay the cost of this with mental and physical illnesses by ignoring our instincts and getting ourselves into trouble.

This pattern plays out in the actuarial profession as well. For any aspiring actuary who does not fit the traditional mould of what our lecturers, our managers, our peers and colleagues, and society tell us what an actuary should be, we suppress our authentic selves for the sake of acceptance into this community. Just like babies who crave attachment to their parents, we, as actuaries and as people, want to be ourselves but are afraid to be because we think that if we are ourselves, we may lose important attachment relationships and

potentially make career-limiting moves.

It's a justified fear: people in positions of power have their own trauma and insecurities and can take it out on those whose authenticity they perceive as a threat.

However, sacrificing ourselves and who we are to "fit in" is not the answer because it's not sustainable, doesn't make individuals successful, and renders the profession's transformation impossible.

So, what is the answer for those who do not look, think, speak, or feel like a "traditional" actuary?

The solution lies in creating supportive work environments that nurture, appreciate and celebrate each person's authentic self rather than punishing them for what they are not, that enable and encourage individuals to find the aspect(s) of being an actuary that they enjoy and are naturally good at (and I truly believe that everyone who makes it into the profession has at least one of these!), and where the leaders are so completely themselves that everyone else feels safe to be themselves, too.

This is how to change the face of the profession – one person at a time - and to build resilient individuals, productive teams, and a profession whose work is relevant to the diverse South African public whose interest we serve. 

MY ACTUARIAL SCIENCE JOURNEY

by Emmanuel Banda



I'm a second-year Actuarial science student at The University of Zambia. I recall back in junior secondary school when I was very poor in mathematics, and I used to hate anything related to mathematics. Shortly after writing my junior secondary examinations, my neighbour approached me to give me a word of caution because of the bad company I started associating with.

He concluded by saying, “tomorrow morning, you should come to my place so that you start preparations for your senior secondary journey.” As obedient as I was, the next morning I went to his place, and he started teaching me mathematics. The first week was rough, I was trying to grasp the mathematical concepts.

After a week, I started enjoying mathematics and I started solving some of the questions that gave me problems then. By the time we had clocked up a month, I started solving most of the senior secondary mathematical problems. That’s how I developed my love for mathematics. A day would never end without me solving mathematical problems. My junior secondary examinations results came out and I advanced to senior secondary level. Among the optional subjects I had, there was additional mathematics.

Some friends were encouraging me to drop additional mathematics, as they perceived it to be hard. For a year and a half, my grades in additional mathematics were bad because it was set in my mind that it was a tough subject. I sat down and asked myself, what is it that I am not doing right? Some students are doing exceptionally well in this subject, but there is me and other students always lagging.

I then dedicated enough time to study additional mathematics. With time, my grades improved, and I became one of the best mathematicians during my intake.

That was the time I was introduced to Actuarial Science by my career and guidance teacher Mr. C Mpundu. I was given an invitation letter to attend the workshop held by the Actuarial Society of

Zambia. It was from that workshop that I realised that my destiny was merged with Actuarial Science.

I was given admission to pursue a B.Sc. in Actuarial Science at The University of Zambia in 2022. My first year wasn’t good, I was challenged academically to the point I even thought I was in the wrong place. That cost me during the final examinations. Fortunately, it was a proceed and repeat.

In second year, I became too relaxed, hence things started getting out of hand, my grades were very bad. I nearly withdrew from my studies, I was emotional.

I had a chat with two lecturers, Dr M Lombe and Dr T Chowa, to seek advice. Dr Lombe told me that some theories are hard to grasp, but with time, you’ll succeed. Dr Chowa said, “Actuarial Science - you have to be good.”

I started running through their words and realised that I wasn’t putting in enough effort. At tertiary level, you have little time to learn numerous things. If you aren’t the student who is always evolving, you’ll find Actuarial Science hard.

In conclusion, if you’ve enrolled for an Actuarial Science degree, you have to cut some associations that drain your time. Surround yourself with people who are strong in your weaknesses. As they say, “iron sharpens iron”.

The inspiration behind this article is that Actuarial Science is doable if you’re willing to pay the price. It’s challenging, YES! But you can do it. I have been asked, “is Actuarial Science only for those who are good at mathematics?” My response is, I have seen people who claimed to be mathematicians, but ended up switching programs. If you’ve a learning spirit, you’ll succeed. 

Thank you!



EDWIN MULENGA

It Takes a Village:

My Path to Actuarial Fellowship

Edwin Mulenga is a Fellow of the Institute and Faculty of Actuaries. He currently serves as the Chief Examiner for the Pension and Insurance Supervision Department at the Reserve Bank of Malawi and is the interim leader of the emerging Actuarial Society in Malawi. 🇱🇼

My unconventional career path, which led me from IT Security to an actuarial fellowship, has been a challenging yet rewarding journey. It stands as testament to the transformative power of mentorship and community. Whether you're an aspiring actuary or considering a career pivot into this demanding field, remember that the right guidance and a supportive 'village' can help you surmount any obstacle.

During challenging periods of my actuarial exams, I questioned my ability to persevere. It was then that the saying "It takes a village to raise a child" resonated deeply with me. My 'village' consisted of seasoned actuaries whose mentorship lifted my spirits and refocused my study efforts.

The International Committee of the Actuarial Society of South Africa (ASSA) was instrumental in my development. Their support, ranging from complimentary invitations to ASSA's annual conventions to specialized exam-writing tutoring, was invaluable. **Michael Tichareva**, despite his busy schedule, regularly reviewed my mock exam papers and offered targeted advice. This was not just an act of kindness; it was a decisive intervention that helped me join the ranks of esteemed actuarial Fellows. Professionals like **Lusani Mulaudzi** generously provided further guidance on broader career matters, an essential component for truly understanding the field.

Switching careers initially seemed daunting, but my background in IT has proven invaluable in my actuarial work. I encourage students in this profession to diversify their skill set. Prior to embarking on my actuarial journey, I was part of the Reserve Bank of

Malawi's ICT Department, working as an IT Security Analyst. My seamless transition within the same organization highlights both the versatility of a strong analytical background and the growing demand for actuarial skills in various sectors.

The Road Ahead

As the only resident Malawian Fellow in actuarial science, I recognize the unique responsibilities and opportunities that come with this position. The actuarial field in Malawi is in its infancy but brimming with potential. The emergence of the first cohort of Actuarial Science graduates from a local university and a burgeoning Actuarial Society signal a promising future.

As the actuarial landscape in Malawi—and the region—evolves, coordination among various stakeholders will be critical. Regional associations can shape curricula, establish best practices, and set professional standards. This is particularly important as local universities begin to offer actuarial science programs. Collaboration between universities and professional bodies for curriculum alignment, research, and internships will help students better prepare for professional exams and adapt to industry demands.

Today, I stand not just as a product of personal ambition, but as a representation of collective effort. To everyone who has been a part of this journey, THANK YOU. And for those of you on this less-travelled path, remember: when the journey becomes challenging, your 'village' will be there to guide you—and sometimes, that guidance makes all the difference. Happy 75th Anniversary to ASSA! 🇱🇼

A portrait of Nabeeelah Kolia, a woman wearing a red hijab and a black blazer over a patterned blouse. She is smiling and looking directly at the camera. The background is a solid grey.

PROFILE OF: **NABEELAH KOLIA**

**is a household name across
actuarial circles in South Africa.**

– interviewed by Maseeha Rawat

NABEELAH KOLIA IS A HOUSEHOLD NAME ACROSS ACTUARIAL CIRCLES IN SOUTH AFRICA. THIS COMES ON THE BACK OF HER NOTABLE CONTRIBUTIONS TO THE ASSOCIATION OF SOUTH AFRICAN BLACK ACTUARIAL PROFESSIONALS (ASABA) AND THE ACTUARIAL WOMEN'S COMMITTEE (AWC), IN ADDITION TO A FULL TIME JOB IN CONSULTING. IT IS NO WONDER THAT SHE WAS NAMED ONE OF THE MAIL & GUARDIAN'S TOP 200 YOUNG SOUTH AFRICANS IN 2021.

Nabeelah and I first met virtually during the pandemic. I was thrilled to participate in the inaugural class of the AWC's Leadership Development Programme, which is Nabeelah's brainchild. Her positive energy (even over video call!), strong leadership of the programme, and passion for giving back left our group inspired. Over the last three years, I've started to get to know the actuary, professional, family woman and friend behind this well-known name. It was a pleasure to capture some of Nabeelah's story for this edition of The SA Actuary magazine.

Our discussion started with a casual chat about the latest hybrid work arrangements (replacing the weather as a topic for small talk!). Nabeelah also revealed that she is expecting her third child, and therefore wouldn't be travelling from Cape Town (where she lives) to Johannesburg for the 2023 ASSA Convention – it's too close to her due date. We then moved into the interview without Nabeelah having been given the opportunity to (over-)prepare her responses!

YOU'RE A BUSY WOMAN: WIFE, MUM OF TWO, THIRD BABY ON THE WAY, SENIOR MANAGER AT DELOITTE, AND ASABA PRESIDENT. DESCRIBE A DAY IN YOUR LIFE.

Having kids and working in a consulting environment, my days are never the same, but it's also never exactly the day that I plan it to be. Things come up and plans move around. I enjoy the change, the environment and the flexibility.

In general, I don't need an alarm clock in the mornings - that's why I have kids! My daughter has an internal alarm that wakes her up every day between 5:00 and 5:30 - even on the weekends. It doesn't matter if she sleeps later at night, she'll still be up at the same time – maybe just grumpier. My day starts around about that time. The kids like to play a bit, and then it's breakfast and getting them done and out the door for school. They leave home by 7:30 at the latest – my husband takes them to school, I make breakfast and then start my workday just before 8:00. Most workdays are filled with meetings, reports and reviews. If I go into the office, it's a lot of face-to-face catch ups and in-person meetings, which I really enjoy. When I do that, I can sometimes even leave my laptop at home because I'm trying to make the most of being there in-person.

I pause my workday between 16:00 and 16:30 on most days. Sometimes there's later meetings and I flex for that, but I usually fetch my kids between 16:00 and 16:30, and then spend some time with them. This allows time for me to play with them, do their homework and get them bathed before we have dinner. They go to sleep between 19:00 and 19:30. If I need to work again or pick up something from the day, it will be after 19:30. That's one of the typical or generic routines for the day. But like I said, it flexes all the time.

WE'VE SEEN YOU PRESENTING AT THE ASSA CONVENTION. BETWEEN YOUR CURRENT ASABA PRESIDENCY, AND PREVIOUSLY BEING THE HEAD OF THE AWC, YOU'RE CLEARLY VERY PASSIONATE ABOUT VOLUNTEERING IN THE PROFESSION. WHAT DO YOU ENJOY ABOUT VOLUNTEERING?

I have a desire to make a difference in people's lives. It goes back to when I was deciding on my career path in matric: I was choosing between Actuarial Science and Occupational Therapy - both very different. I think Actuarial Science speaks to my skills and the things that I'm potentially good at, and Occupational Therapy was more around wanting to make a tangible difference in people's lives, daily. It was my dad at that point who said that I can do Actuarial Science and still make a difference in people's lives. That's where it comes from: my trying to merge the actuarial technical side of things and tangibly seeing the difference I make in people's lives. That's why I volunteer - because it feeds my soul. And as much as I absolutely love the work that I do and the people that I work with, I just really want to do more.

There are so many opportunities to volunteer and I think the biggest problem I have is saying no to opportunities! There are so many things that I'm passionate about and that I want to get involved in. I'm on the Microinsurance Committee and I joined the AWC, both since my first year of work. My AWC involvement was a coincidence: I worked with the head of the AWC at the time at KPMG, and she needed extra hands to plan an event. So I got involved there and then never left! Now I'm also on the Life Insurance Committee, and as part of being ASABA President, I sit on the ASSA Council and the ASSA Transformation Committee.

I'm also really passionate about the education side. I sit on the F202 Mock Exam Committee ever since I passed Fellowship myself. I help set and mark the Mock exam. Also, I studied at UCT, and started marking Financial Mathematics there a few years ago. Last year, they asked me to be an external examiner for the subject.

THAT'S REALLY IMPRESSIVE AND YOU COME ACROSS AS A VERY WELL-ROUNDED AND BALANCED PERSON. IT'S COMMON TO SEE PEOPLE WHO SIGN UP FOR LOTS OF THINGS AND THEN STRUGGLE TO DELIVER ON ALL OF THEM, BUT I NEVER GET THAT IMPRESSION WITH YOU. SO HOW DO YOU BALANCE EVERYTHING?

I attended a talk at one of the AWC events that we had and the speaker said something that really changed my view of work-life balance. She said that there is no such thing as balance, so let go of the idea. The more we strive for this balance and fail, the more we feel disheartened, but in reality all the scales are not going to be in harmony all the time. There are times in your life where work will be a bigger portion of it, and you'll be the best worker that you can be, but you may not be the best mum at that time. And then there will be times where you are rocking the mum world or the wife world or you're the best version of yourself, but your work may not be at its best. We set such high expectations of ourselves, for ourselves.

That message really resonated with me and my outlook post that talk changed. On one day I may do a really good job at work and finish off a project, and that's great. But that meant that I put in extra hours to do that, and so I couldn't spend as much time with my kids as I would have liked to. And then the next day, one of my kids is sick and I have to spend the day looking after them because they need me, so I don't get to do the work that I planned to do that day. But that's okay because I play more than one role. It's a matter of embracing the concept that it's okay to not be the best at everything, all the time.

I'm really grateful that my employers have supported my volunteering - I don't think I'll be able to do all that I do without that support and encouragement.

WE'VE TALKED ABOUT THE VOLUNTEERING SIDE AND YOUR AMBITION TO MAKE A DIFFERENCE IN PEOPLE'S LIVES. IN TERMS OF YOUR DAY JOB, WHAT ATTRACTED YOU TO CONSULTING AND WHAT KEEPS YOU INTERESTED IN YOUR CURRENT ROLE AS SENIOR MANAGER AT DELOITTE?

I was attracted to consulting from the time I did vac work at PwC through ASABA during my 3rd year at university. That's why ASABA is close to my heart, especially the vac work program, because I got the opportunity to do vac work at PwC through the program. It was through that program that I met David Kirk, who ended up being my very first boss and was just so passionate: about being an actuary, about learning, and about, just everything! It was his energy that got me thinking that I want to do this, that I want to learn more and to be in this kind of in this environment. I also didn't know what I wanted to specialize in when I graduated. I thought that consulting would be a good place to start so that I could get varied experience and then decide what I want to specialize in. David ended up moving to lead the practice at KPMG, so when I applied, he interviewed me and they offered me the job. I thoroughly enjoyed the environment, the people and the opportunities, and I learned so much during my time at KPMG. There were lots of people that contributed to that, one of the main ones being Peter Withey. Peter was an incredible boss; he is patient and invested time in teaching us. He is also one of the kindest and most genuine people I know. It was during that time that I realized that the people that you work with are really, really important. We spend so much of our time at work and the people that you work with contribute to whether you enjoy your job or not. I really enjoyed the people that I worked with and giving that up was not something I was going to do easily.

I also realized that I really enjoyed life insurance and I wanted to get more experience in valuations or "head of actuarial function" work. At the time, KPMG in Cape Town didn't offer that opportunity or I wasn't getting as much exposure to those

projects as I would have liked.

I then decided to move to Deloitte. I had met Carike Nel through a "Date with a Leader", which is one of the initiatives of the AWC. One of the key questions I asked Carike was about the team environment. She gave me examples of how the team was there for each other and how much they care for their people. I've found that as well now that I'm working at Deloitte, so I'm very happy in my current environment. I wanted more head of actuarial function exposure, and I've gotten that, as well as statutory actuary exposure. In December, I got my Life insurance practicing certificate which a goal that I was working toward.

No two days are the same in consulting and things are constantly changing. I'm constantly dealing with different clients and different teams, and each day brings new challenges and new learnings. Constantly learning from the people around me is what keeps me motivated and what fulfils me in my current job.

IN THE ACTUARIAL PROFESSION, LOTS OF US HAVE FAILED EXAMS AND HAVE HAD EXPERIENCES WHERE THINGS WERE TOUGHER THAN WE EXPECTED, AND HAVE HAD SETBACKS. IS THERE ANY SPECIFIC EXPERIENCE THAT YOU LOOK BACK ON THAT WAS A BIG LEARNING FOR YOU, AND MAYBE EVEN A BLESSING IN DISGUISE?

I wrote fellowship four times, and that was challenging. The first time I wrote was a month after I gave birth to my daughter. But it was my very last exam and I thought it would be so cool if I could just get it out of the way. But I couldn't get proper studying done during that last month, and I wish somebody had told me "don't do this - you're being silly". I'm sure someone did try, or they definitely thought it! I didn't get through all the notes by time I wrote, so I knew I wasn't going to pass. The next time I wrote, I managed to get through more of the content, but I also didn't feel

like I was 100% ready. So it wasn't a surprise, a disappointment obviously, but it wasn't a surprise that I didn't pass. The third time I wrote I did feel like I was prepared and like I was 100% ready. So it was very, very difficult when I didn't pass it - that was the toughest one. To get motivated to write this for a fourth time was a challenge. The people who motivated me the most during that time were my mum, my husband and my boss, Peter Withey. They were so supportive and really helped to rebuild my confidence. After failing so many times you just lose that confidence in yourself and wonder if you can ever get over this hurdle. So it was very satisfying to see the "P" next to my name at the end of that session.

What I learned from that experience is that it's so important to surround yourself with people who believe in you, and then also to find it in yourself. You have to believe in yourself, because it takes self-motivation to go back and study something again and to be reminded of your failure every time you're studying. It's a lot of self-motivation and self-belief, but also surrounding yourself with the right people can really make a difference.

ON TO A MORE PHILOSOPHICAL TOPIC - DRIVING FORCES. THERE ARE SOME THEORETICAL FRAMEWORKS ABOUT DIFFERENT PEOPLE BEING DRIVEN BY SOCIAL GOOD, MONEY, INFLUENCE, ETC. I'M NOT SURE IF YOU'VE EVER LOOKED INTO IT, OR JUST INTUITIVELY, IF YOU FEEL LIKE THERE'S SOMETHING IN PARTICULAR THAT DRIVES YOU?

Religion is probably an underlying driving force - a lot of my general demeanour comes from religion. Being brought up in a particular way with a set of values and beliefs governs a lot of what I do and how I live my life. The strong desire to want to make a difference or to give back is rooted in religion - that it's not only about you and it's more about what you have done or how are you contributing to the world to make this a better place. It's about



what you are remembered for when you die. It's not going to be the money you had. I don't have to be remembered by the world, but I want to be remembered by the people that I touched.

HOW DO YOU DEFINE SUCCESS?

I think it's just knowing that I've done the best that I can. That's success for me. I don't need a title or the promotion or the recognition as such. But I want to know that I've done the absolute best that I possibly can. So even if the title or promotion comes, but I don't feel like I deserve it, it's not

IF PEOPLE CAN JUST FIND IT IN THEMSELVES TO OVERCOME THAT FEAR, THE POTENTIAL UPSIDE IS WAY GREATER.

going to mean as much. It's about being able to contribute in a meaningful way and knowing I've given the best of myself - that's what success is for me in anything.

WHAT ADVICE WOULD YOU GIVE TO ASPIRING ACTUARIES AND TO NEW FELLOWS?

Don't be afraid to ask questions. It was something my first boss told me. We had walked in the one day and he said "I'm so jealous of you." I was sitting there, a junior analyst in front of the partner, wondering "What do you mean, you're so jealous of me? I don't understand."

He said at this point in your career, you're not expected to know anything. You can ask any question you want and nobody can say that's a stupid question or expect you to know the answer, because you're not expected to know anything. So ask all the questions! And that's something I pass on to the people that I work with. Don't be afraid to ask questions because you're not expected to know anything, and if you ask then you learn.

It's something that I still actively try to remind myself. When you feel like you've moved up in your career or when people start asking you questions, you think that you can't ask questions anymore because you're expected to know certain things. But the only one who loses out in that is yourself. Because if you don't ask, you don't learn.



The other thing is that sometimes we're afraid to hear "No". We don't ask for an opportunity for fear of failure and rejection. I think we don't put enough emphasis or enough thought into what the upside could be if you are given the opportunity once you've asked. The upside is so much greater than the fear of rejection or the fear of hearing "no". If people can just find it in themselves to overcome that fear, the potential upside is way greater. Ask for the opportunities - it's worth it. Ask for the promotion, ask for the salary increase, and ask for someone to be your mentor. The upside could outweigh the fear in multiples, and the worst that could happen is that you are told "no", which is the default position anyway if you don't ask. 🗣️



MEMORY ZIMBA

... a trailblazer
of an actuary in South Africa

– interviewed by Maseeha Rawat

MEMORY ZIMBA IS TRAILBLAZER OF AN ACTUARY IN SOUTH AFRICA. AS PAST PRESIDENT OF BOTH THE ACTUARIAL WOMEN'S COMMITTEE (AWC) AND THE ASSOCIATION OF SOUTH AFRICAN BLACK ACTUARIAL PROFESSIONALS (ASABA), SHE HAS SPENT CONSIDERABLE TIME AND EFFORT GIVING BACK TO THE FRATERNITY. IT WAS NO SURPRISE WHEN SHE WAS HONOURED WITH THE RUNNER-UP POSITION IN A NAIL-BITING FINALE OF THE INSURANCE APPRENTICE IN 2020.

Memory and I first met at an in-person ASSA event in 2019 where she was a panelist sharing insights into her actuarial journey. Her relatable style of story-telling encouraged me to approach her for a personal chat at the end of the event. Since then, I've been following her professional path, now also including a move into entrepreneurship, with awe. I've been privileged to benefit from her mentorship and wisdom. It was a pleasure to capture some of Memory's story for this edition of *The SA Actuary magazine*.

Our discussion started with a casual chat about intermittent fasting routines and latest interests in the personal development space. This quickly turned into a dose of philosophy, pondering the intersection of self-belief, faith, motivation, and manifestation. Memory also revealed that she is participating as a business partner in the Actuaries In the Making (AIM) programme and commented on how well the programme has been running. We then moved into the interview without Memory having been given the opportunity to (over-) prepare her responses!

CAN YOU TELL ME MORE ABOUT YOUR CURRENT ROLE – BOTH YOUR ACTUARIAL ROLE AND THE BUSINESS THAT YOU'RE RUNNING.

The definition of an actuary that truly resonated with me is that an actuary is a business-person who knows mathematics. I've found that people want to silo actuaries to conventional actuarial work – where you sit in an office doing technical work. That is not where my passion lies. I can do the technical stuff and I did enjoy it when I was doing it, but making sense of things is what I really enjoy. When I was doing my exams, I really enjoyed CA1, which is very close to Risk Management. It tells you how a business works and connects the dots of all the exams that we were traumatized by. Then when I did the CERA qualification, I also really enjoyed it.

I got into reinsurance at Africa Re in a risk management role. I wanted to get into reinsurance because I've seen short-term and life insurance, and the next level is understanding reinsurance to get a good overall picture. I've enjoyed transitioning from leading actuarial departments to risk management, because I'm now not responsible for the technical stuff. My purpose is to empower people and risk management enables that –

you're not first line but rather the second line. Because I'm in the business, I'm able to see where support is required.

I've also started a business, Simply Memoire, designing mainly traditional African attire. When people talk about how load shedding is affecting the economy, I can understand why businesses are going down, because my business is also experiencing it practically. Things like scale, complexity and nature of business start coming in to play and suddenly, all these years of studying make sense. I enjoy that and I'm leveraging some of the things I'm learning in my business and applying it in my risk management role - it's really strengthened my actuarial mindset.

DESCRIBE A DAY IN YOUR LIFE.

I wake up, say good morning to Auntie and let her know that I'll be ready for breakfast soon. I meditate - particularly because I need to manifest a lot of money - while my breakfast is getting ready. I get ready for work, and then breakfast comes. I eat, grab my things, go to gym and then go to work, or I'll come back and get ready at home, and then go to the office.

I do my office work until lunch... The office is an 11-minute drive away from the CBD, so I go during my lunch break and do my orders, source fabrics, check on the tailors, and then come back to the office. I complete the rest of the office day and then later if I've got a client fitting, I do that and collect or drop off orders. I come home and spend time with my boyfriend. That's my day.

YOU'VE MENTIONED THAT WHILE YOU WERE STUDYING, YOU WERE REALLY DRIVEN TO QUALIFY. IN THIS PHASE OF YOUR CAREER AND YOUR JOURNEY, WHAT DRIVES YOU AND WHAT ARE THE DRIVING FORCES IN YOUR LIFE?

The volunteering that I was doing within ASABA made me realise that there's a lot of people out there who really want you to be the best version of yourself. For the next phase, what's motivating me is to show that I'm not an exception. I am not different from the next person in the things I've managed to do. In my qualifying journey, I

WHAT'S KEEPING ME MOTIVATED IS THAT THE ONLY WAY I CAN SHOW THAT I AM NOT AN ANOMALY IS BY ACHIEVING GREATER SUCCESS.

believe I got things wrong by not believing and having faith in myself. I consequently had to work harder by first overcoming my lack of self confidence. As I believed I would never qualify, motivation was low and I did everything from pole dancing to meditation, continually searching for the solution to get me qualified.

What's keeping me motivated is that the only way I can show that I am not something special is by demonstrating higher success than I've already reached. Within the actuarial space, I've gained credibility by qualifying. But now being successful at business and still maintaining my career in the actuarial space - I feel like it's going to empower so many people. Thinking about how I used to sit for exams and working through that process, I was extremely anxious and tense, always stressed as a state of being. I want to come up with a methodology of switching mindsets, and being able to pinpoint the paradigm shift that got me to be calmer.

What I want for my business is to make clothes that will make a person see their potential. Once you see it, you slowly start believing it and if you see it enough times you will believe that what you see is the truth. It's very difficult to feel great when you look in the mirror and feel that you're not at your best. I'm using that as a tool to have conversations about "what's your next?". Everything that I'm doing, seems to be working towards motivating, empowering, and getting people to talk about their experiences. I'm basically doing what I was doing in the AWC: looking at what I'm struggling with and thinking, how many other people are struggling with this? Let's see if we can find a solution together.

YOU'VE TALKED ABOUT ACHIEVING SUCCESS. HOW DO YOU DEFINE SUCCESS?

Happiness, health, and wealth. That's my definition of success. I've just learned it because I'm actively searching for it. Tomorrow, it might be different. I'm not chasing ideals that somebody else has decided for me without really checking if it is making me happy, healthier for it and if it is bringing me wealth. One of the biggest sources of stress for a lot of people is money. So, happiness, health and wealth in that order, is my definition of success.

I can't claim that I thought of it myself. I've been reading up a lot because I had been chasing. I thought that if I qualify, I'll feel like I'm successful. Then after qualifying, I thought that if I get into the C-suite, then I'll feel like I'm successful. But now I'm not sure that I want to be there. I want to enjoy where I am. It reminded me of how when I was young, adults would say don't be in such a rush to grow up. So, I am not rushing. I think it's helping me put less pressure on myself and the people around me. If you're always anxious, the people around you also become anxious. So, it's nice to be in a relaxed phase where nothing is a "do or die," because it really isn't.

HOW DO YOU THINK YOUR IMMIGRATION JOURNEY FROM ZAMBIA TO SOUTH AFRICA HAS INFLUENCED OR SHAPED YOUR CAREER AND PATH TO BECOMING AN ACTUARY?

I like to consider myself a Zambian South African, because a lot of what I am came from being in this country. I came to South Africa when I was eleven. My parents are teachers, and my dad was sleeping on the floor when he came here until he found a job. My parents worked really hard, and they always reminded us that we have a whole family in Zambia that depend on us - both my parents were the first people in their families to go past grade 9. I had to learn to be self-reliant and self-sufficient from a very young age. Being born in a little village in Zambia, then going to Lusaka for a few years and then coming to South Africa, there was a lot of change, so I've become very adaptable because of that. Whether I am downtown Johannesburg, whether I

am in Soweto, whether I'm in Dubai in a five-star hotel - I can go anywhere.

It's also what has driven me to search for the philosophy of success because when I was in Zambia, what was defined as success was very different from when I was here in South Africa. And even when you go to university, the measure of success there is very different. So having to keep adjusting to these different environments means that my brain is quite fluid. I'm able to hear an idea, listen to it, see if it's going to help me get to the next, and then if it does, I will adopt it and leave my old ideals behind and move forward with it.

I believed that I was ugly because when I came to South Africa. I was dark-skinned and I spoke with an accent. I accepted that I am not beautiful – that's not something you can change when you are a 12-year-old. You don't think there's anything you're ever going to be able to do about it. I decided I'm going to be smart and sporty because those are things I could control. So that's what I did. I want to empower people because of being empowered myself. I have been empowered by the friends who accepted me when everybody else was rejecting me, and by the teachers that helped me with a second language. They turned the disadvantage I had into an advantage, so I'm very grateful for that. I think it's that process that has made me really want to help people believe in themselves and see how amazing and magnificent they are. Once you find your tribe, you can thrive.

AS WE ALL KNOW, IT'S COMMON TO HAVE SETBACKS AND FAILURES ALONG THE WAY ON THE ACTUARIAL PATH. IF YOU LOOK BACK, WHAT WOULD BE ONE OF THE BIGGEST SETBACKS THAT YOU FACED, AND THE LEARNING FROM IT? DID YOU EVER EXPERIENCE ANYTHING THAT TURNED OUT TO BE A BLESSING IN DISGUISE?

I honestly cannot say that there was anything that happened that was not a blessing in retrospect. My biggest setbacks provided me with the biggest jumping point to go to the next level. Seeing a student who is crying because they're going to lose their bursary, they're going to lose everything, and the world is coming to an

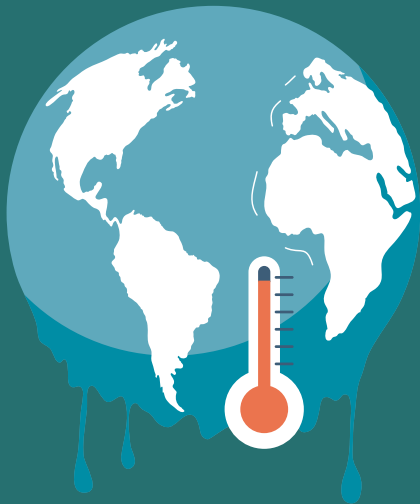
end for them. When I say, "the world is not going to end, and you will be fine," they believe it because they see my story. Here I am - I'm fine today, but I wasn't fine. That gives somebody the belief that they'll be fine. Had I not gone through depression and failing, I would have not been able to do that.

ON THE TOPIC OF YOUR PASSION FOR HELPING ASPIRING ACTUARIES, WHAT ADVICE DO YOU HAVE FOR YOUNG ASPIRING ACTUARIES OR NEWLY QUALIFIED FELLOWS?

Make sure that actuarial science is for you. I know it's difficult to know this when you're in university because you have to choose one option and then you just sort of run with it and hope that it's for the best. You don't even know if that's what you really like. Did you just choose it because your parents decided for you? Education is about teaching you how to acquire knowledge, and how to apply this knowledge. You can do anything you want with your education. Actually, understand who it's for, and understand what it will give you.

Make sure that actuarial science is for you. I know it's difficult to know this when you're in university because you have to choose one option and then you just sort of run with it and hope that it's for the best. You don't even know if that's what you really like. Did you just choose it because your parents decided for you? Education is about teaching you how to acquire knowledge and how to apply it. You can do anything you want with your education. Actually understand who it's for, and understand what it will give you.

For the newly qualified, the actuarial training is so robust and so dynamic and has so many elements that it's a tool. You can use it to do whatever you want, so you are not confined to just the technical actuarial space, although you can add a lot of value there. If you're newly qualified, it means your salary has also been increasing, so the money is getting you exposed to what life can be and what life is. You'll realise the reason you were born was not necessarily just to be an actuary. It's to be a well-rounded human being, so make sure that your career is serving your purpose and not the other way around. It's very easy to think your life is your career. No, your career is there to enable you to live a whole, fulfilled life. 



ACTUARIAL SKILLS

critical in assessing the risks
of global climate change

THE ROLE OF THE ACTUARY IS TO QUANTIFY AND MANAGE FUTURE RISK TO ENSURE THAT ORGANISATIONS ARE PREPARED TO MANAGE POTENTIAL CHALLENGES.

Environmental and social risks and their potential effect on a company's bottom line are no exception. For example, global climate change affects life insurers because it influences mortality rates through an accompanying increase in extreme weather events, with resulting effects on vector-driven diseases, water, air and food qualities, migration and civil conflict.

Actuarial skills are therefore increasingly recognised as critical in assessing the risks of global climate change, with actuaries becoming involved in a number of critical projects. In the United States and Canada, for example, the actuarial profession has recently launched the Actuarial Climate Index to measure variability in climate. Work on the extension of this index to cover Europe is already underway.

In the UK, the Institute and Faculty of Actuaries (IFoA) has addressed the issue of claims for damages caused by contributors to climate change. The IFoA has also signed a statement by the Overseas Development Institute (ODI) urging the G20 Governments to honour their long-standing commitment to phase out fossil-fuel subsidies.

A working group of the International Actuarial Association (IAA) is currently researching the effects of global climate change on mortality. A member of this working group has further been selected as part of an expert panel advising the European Commission on policies targeting sustainable finance, specifically within the context of the Capital Markets Union.

The IAA is also involved in the Warsaw International Mechanism, tasked by the United Nations Framework Convention on Climate Change (UNFCCC) with risk-management approaches to loss and damage associated with the adverse effects of climate change, including slow-onset impacts such as sea-level rises.

Both the IAA and the IFoA have submitted responses to the Task Force on Climate-Related Financial Disclosures established by the Financial Stability Board, an international body that monitors and makes recommendations about the global financial system.

Furthermore, the IAA is working on the regulation and pricing of carbon emissions, the effects of climate change on government budgets, and the usefulness and limitations of insurance as it relates to the effects of climate change on vulnerable populations. In light of the Paris Agreement, the IAA has already drafted a paper on the monitoring of progress towards the stabilisation of CO₂ concentration in the atmosphere.

The IAA is additionally collaborating with the United Nations Environment Programme's Principles for Sustainable Insurance and with the Organisation for Economic Co-operation and Development on disaster recovery.

It is clear that the actuarial profession sees the need to embrace all three domains of the triple bottom line - environmental (or ecological), social and economic. In recognising this, the IAA is also extending its knowledge on ecological economics and on formulating measures that can be used for environmental, social and economic accountability by entities in both the public and private sectors.



**ACTUARIAL SOCIETY
OF SOUTH AFRICA**

NURTURING TOMORROW'S ACTUARIES: Mentorship for University Students

by Nabeelah Kolia and Panashe Hakutangwi

The Association of South African Black Actuarial Professionals (ASABA) aims to support actuaries and future actuaries throughout their actuarial journey. This starts from creating awareness of the actuarial profession at high school level all the way through to supporting actuaries once they have obtained their AMASSA or FASSA designation. A key phase in the actuarial journey is the time spent obtaining an actuarial degree at university. From a transformation perspective, we have observed that African black students as well as female students have a higher probability of not completing their degree compared to other students. In order to address this, Liberty and ASABA have been in partnership for many years providing support to university students studying Actuarial Science.

Through the ASABA chapters at various universities, including the University of Pretoria, North-West University, University of Cape Town, University of Johannesburg and University of Free State, the program aims to support disadvantaged university students pursuing actuarial science, ultimately increasing the throughput of qualified actuarial professionals in the field. By providing invaluable guidance and exposure, we are nurturing the next generation of actuarial experts and securing a bright future for the industry.



NABEELAH KOLIA
PRESIDENT OF ASABA



PANASHE HAKUTANGWI
ASABA HEAD OF MENTORSHIP



Career day at ASABA UP with local grade 12 Township learners.

THE PROGRAM PROVIDES A RANGE OF BENEFITS, INCLUDING:



ACADEMIC SUPPORT

Tutors assist students in understanding complex actuarial concepts, providing a deeper understanding of coursework and aiding in exam preparations.



CAREER GUIDANCE

Mentors offer valuable career advice, sharing their personal experiences and helping students make informed decisions about their future endeavours.



PROFESSIONAL NETWORKING

Through their mentors and events hosted students gain access to a network of industry professional, opening doors to vac work, job shadowing, and potential employment opportunities.



PERSONAL GROWTH

Beyond the technical aspects, mentors and ASABA chapters provide emotional support, encouraging students to overcome challenges, foster resilience, and build self-confidence.



Actuarial science is a highly specialized field that requires a combination of mathematical, statistical, and analytical skills, making it essential for aspiring actuaries to have access to experienced professionals who can relate to them and help navigate this challenging career journey. On this note, we are always looking for mentors and speakers at university events. So, if you would like to volunteer your time, please email mentorship@asaba.co.za. If you are a corporate, make sure to look out for our yearly career fair, which gives your company an opportunity to send representative speakers to help guide the next generation.



North-West University (NWU) Society introduction



NWU Open day and Society introduction



Mentorship session with Liberty

By bridging the gap between theory and practice, students gain a comprehensive understanding of the profession, enabling them to excel academically and professionally.

The Liberty/ASABA mentorship program for university students pursuing actuarial science plays a pivotal role in developing the next generation of qualified actuaries. By providing essential support, guidance, and industry exposure, this program empowers students, increasing their throughput and ensuring their smooth transition into successful careers in the actuarial field. 

Embedding ORSA



NEELS MARITZ

FASSA FRM®

South African insurers (including reinsurers in this article) are required by law to perform their Own Risk and Solvency Assessments (ORSAs) at least annually. The ORSA reflects whether the insurer has sufficient capital to maintain its targeted solvency position based on its specific risk profile, approved risk appetite, and business strategy over the next three to five years.

The ORSA assesses the insurer's financial resilience across various plausible stressed scenarios. Management remedial actions are required to rectify capital coverage ratios.

It is a regulatory requirement that the ORSA must be embedded in the insurer's decision-making processes. It is noteworthy that ORSA is relevant in many jurisdictions worldwide, including Africa, Europe, America, and Asia.

An embedded ORSA adds value and helps the insurer to achieve its business goals...

The insurer is responsible for embedding the ORSA, and there is no holistic implementation framework locally or globally to inform this. Since the ORSA aims to protect policyholders' interests, the more embedded the ORSA process, the better the insurer performs in risk management practices. So, what does an embedded ORSA mean in practice?

What is an embedded ORSA?

Following research performed on local and global guidance, an embedded ORSA underpins the insurer's process of making important choices and decisions. ORSA is particularly relevant for capital planning and capital management.

An embedded ORSA adds value and helps the insurer to achieve its business goals while managing material risks effectively and efficiently. An ORSA performed for compliance reasons only is not embedded because it is not used when making strategic decisions.

How embedded are ORSAs in the SA industry?

The Insurance Act has been in force for five years, but the extent of embedding the ORSAs across SA insurers has yet to be discovered.

In the years before the commencement of the Insurance Act, there were activities in the insurance industry to prepare insurers for ORSA. In 2012, insurers were asked about their ORSA practices based on available guidance. A meaningful outcome of the self-assessment was that 94% of insurers rated their ORSAs as weak or needing improvement.

In 2014, a follow-up exercise was performed. At the time, 77% of insurers self-assessed their ORSAs as weak or needing improvement. The industry self-assessment was unsettling because it was likely

optimistic compared with an independent assessment.

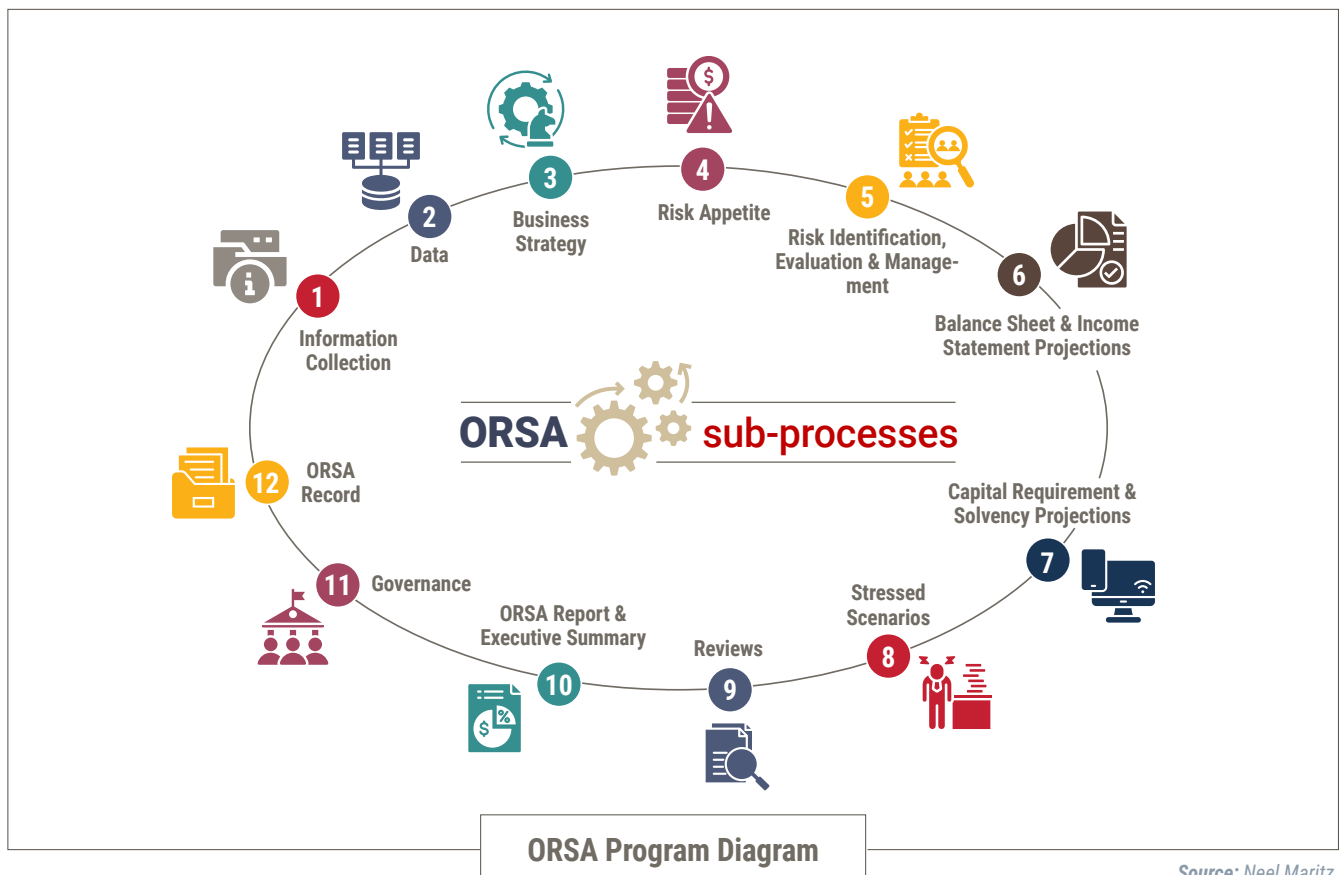
In 2015, insurers were required to submit Mock ORSA reports to the regulator. Regulatory feedback mentioned that, generally, there needed to be more focus on an own view of risks and solvency (the primary focus was on regulatory capital requirements).

There were no further updates to the public regarding the industry's readiness to embed the ORSAs. Without embedded ORSAs, how do the Board of Directors and Management know that policyholder obligations are appropriately protected and risks managed optimally?

What is the ORSA process?

The ORSA process is typically referred to as the totality of processes, but in practice, it is helpful to identify the key sub-processes and visualise the flow between them. The ORSA process diagram below (Figure 1) shows the key sub-processes.

An ORSA process commences with the information collection sub-process and concludes with completing an ORSA record.



Source: Neel Maritz

The arrows are a reminder that the ORSA process is iterative. After completing a sub-process, the ORSA process sometimes returns to an earlier sub-process because the ORSA outputs are used to revise and refine it.

What is the difference between the ORSA and the Solvency Capital Requirement (SCR)?

The ORSA is vital in the insurer's Enterprise Risk Management (ERM) system. It consists of multiple processes across the insurer's Finance, Risk, Actuarial, Reinsurance, Information Technology, Operations, and other key functions.

In the ORSA process, the SCR results are outputs from the Capital Requirement, Solvency Projections and Stressed Scenarios sub-processes. SCR focuses on risk assessments. ORSA also considers risk assessments but looks in detail at risk response and management practices.

In the ORSA, an insurer should ensure that risks from operational areas are managed and steps are in place to improve risk management practices.

Some risks are assessed qualitatively when a quantitative assessment is not possible. This is especially the case for new risks, and ORSA helps manage these risks.

Are risks covered the same in SCR and ORSA?

The SCR formula is consistent across the industry. SCR covers market, underwriting, and operational risks that are core for a typical insurer.

SCR is not explicitly designed to assess new risks that are not within the defined risk categories, so the implementation approach across the industry is inconsistent and subject to each actuary's judgment.

ORSA reflects the insurer's assessment of new risks and allows for the complexity of internal risks. Such risk examples include system downtime, climate change, electricity load-shedding, cybercrime, culture, or conduct risks.



How can an insurer embed their ORSA better?

My paper on "Embedding ORSA: Explore it and discover practical improvement ideas" at the Actuarial Society's 2023 Convention contains practical improvement proposals to embed each sub-process better. To better embed the ORSA, insurers should focus on incremental process improvements.

The ORSA process comprises sub-processes with inputs, assumptions, approaches, and outputs. Many touchpoints must come together coherently, accurately and concisely to provide an embedded ORSA process for the Board of Directors and Management.

The proposals require insurers to consciously understand risks by exhausting available information resources. Sometimes, they must change their mindset to understand broader perspectives better and be creative problem-solvers.



The design of operational processes, when to automate, and how to capture all material risks are essential.

The design of operational processes, when to automate, and how to capture all material risks are essential. The robustness of management actions during stressed scenarios is critical. The management team should understand the impact of their day-to-day decisions to increase the use of the ORSA across key business areas with material risks.

An embedded ORSA depends on effective operational processes, so sub-processes should be integrated and implemented well. Embedding the ORSA is a journey, and an insurer should celebrate small wins and incremental improvements in sub-processes.

What is next for embedding the ORSAs in the industry?

Recent years have been tumultuous in SA and globally. COVID-19, electricity load shedding, social unrest, severe floods, etc., create new and evolving risks for insurers. Insurers with embedded ORSAs are more prepared to respond to the unique tests of the current times.

Each policy sold to a policyholder brings about risks that the insurer should manage to remain within the appetite. While pursuing business growth, the management team should apply their minds and consider the potential risks and consequences. By implementing robust risk management perspectives, policyholder interests are managed.

Recent industry developments have focused on IFRS 17 implementation, effective on 1 January 2023. It is foreseen that the industry will refocus on risk management (e.g., embedding the ORSA) in the coming years. Since there is no well-known industry implementation framework or complete set of principles for embedding the ORSA, it is envisaged that this gap should be filled soon. 

WOMEN IN THE WORKPLACE



attended the panel discussions 'Resilient Women in Actuarial Science', led by **Nabeelah Kolia**, and 'Generational Inequalities and Gender Microaggressions in the Workplace', led by **Phumla Tsema** and **Nadine Shaikjee**. The panels comprised of speakers from Old Mutual, Ernst & Young, Momentum Metropolitan and Deloitte. Some of the topics covered include: How to navigate the actuarial workspace as a woman; how to have a work-life balance, and how to handle biases that arise from generational disparities and gender microaggressions.



TARYN PETERSEN



RESILIENT WOMEN IN ACTUARIAL SCIENCE

PROGRESSION OF WOMEN IN THE WORKFORCE OVER TIME

Kerrin Land presented an interesting notion of how the image of women in the workforce has changed over time. A few generations ago, women had to relentlessly push to be allowed to enter the workforce. Eventually, once they were given access, they had to continuously prove themselves by being a 'superwoman', which means working harder than everyone else, taking on more responsibility and seldom asking for help. This ideology filtered down to the newer generations and could lead to negative impacts such as burn out. It is paramount that women find a balance and have the courage to ask for help as most times people will be more than willing to help.

DONE IS BETTER THAN PERFECT

Actuaries naturally tend to have perfectionist tendencies, which is further reinforced by exams. **Prabashini Moodley** provided a great token of wisdom by saying, "Done is better than perfect". At times one may find themselves paralysed with the idea that everything needs to be perfect before it is finished.

This is often not the case. In reality, the process may take multiple iterations before it becomes smooth and seamless, but the important thing is to complete the first iteration, be okay with it not being perfect and trust that over time it will improve.

THE DOUBLE-EDGED SWORD

Lufuno Netshitenzhe emphasised the importance of embracing the qualities that make you unique and to recognise this as a strength in the workplace. It may be intimidating to be the only woman in the meeting room, but being a minority can be a double-edged sword if reframed differently. It is an opportunity to offer insight from a unique perspective which could evoke innovative conversations and solutions.

HAVE A 'HANDBAG DAY'

It is often difficult to find a work life balance, however **Prabashini Moodley** introduced the phrase 'have a handbag day'. To 'have a handbag day' simply means that you pick up your handbag and leave. The reason for leaving might be because you have had a hard day and you need some time and space so that you can reframe your state of mind or the reason for leaving might be that you have had a long day and need to set a boundary and say that your work day is over. To have a 'handbag day' is the act of implementing a work-life balance boundary.

BE IN THE RIGHT ROOM

Mpho Mtsi highlighted the paradoxical nature of how women are naturally good at building relationships but tend to shy away from networking. Many women tend to pick-up non-verbal clues and have great soft skills which are highly valuable skills in any working environment. It is imperative that women embrace these innate skills and participate in networking opportunities. The Actuarial Women's Committee (Instagram: @actuarialwomensa) is a great network to be a part of and offers a myriad of networking opportunities for women.

It is also important to be in the right room. Mpho Mtsi profoundly said,

"SUCCESSFUL PEOPLE AREN'T ONLY MADE SUCCESSFUL BY THE OPPORTUNITIES THEY SAID 'YES' TO, BUT BY THE OPPORTUNITIES THEY SAID 'NO' TO."

It is important to act with intention and steer your career in the direction that you want and to not let others decide the direction of your career if it is misaligned to your own vision of it.



GENERATIONAL INEQUALITIES AND GENDER MICROAGGRESSIONS IN THE WORKPLACE

Other challenges that people may experience in the workplace may arise from different generations working together. The panel provided some valuable insight on this topic.



BABY BOOMERS, GENERATION X, MILLENNIALS AND GENERATION Z

Elize Gouws spoke to the intersections and assumptions that exist between different generations in the workplace. It is often easy to make an assumption about someone's work ethic based on their age. For example, Baby Boomers are often characterised by their need to feel as though they have to work exceptionally hard. The next generation, Generation X, adapted the Baby Boomers' work ethic to embody a more holistic approach by introducing a work-life balance. The following generation, Millennials, started to incorporate environmental and mental health factors into the working environment. The following generation, Generation Z, is the first generation to never know a world without the internet and they are often characterised as being highly self-reliant and creative. It is valuable to be aware of these subconscious biases that may exist and to not hold people to them based on their age. For example, people may exhibit traits characterised by a generational category that they do not fall into.

DISPARITIES THAT EXIST BETWEEN DIFFERENT AGES IN WORKPLACE

Peter Tripe spoke to the challenges that may arise from different ages interacting in the workplace. Under a hierarchical structure, junior employees may feel that senior managers are inaccessible and as a result they are less likely to try and engage with senior managers. A flat structure is a practical way of bringing people closer together by connecting people from varying levels. It also has the added benefit of avoiding echo chambers through the diversification of ideas as a result of different generations working together.

The panel also provided guidance on how to detect and handle gender microaggressions.

EXAMPLES OF GENDER MICROAGGRESSIONS

Gender microaggressions may often go unnoticed due to their subtle nature. However, the onus is on each individual to become aware of how they look and sound. Some examples include:

- Only inviting men from work to participate in sports
- Insinuating that maternity leave is a 'nice little holiday'
- Reducing women to making slides 'look pretty' instead of contributing to the information
- Asking women to take notes in meetings
- Saying a woman looks better in person compared to her picture in the company brochure

DEATH BY A THOUSAND CUTS

Lufuno Netshitenzhe highlighted that although gender microaggressions are often not intended to cause harm, there is a cumulative effect that they may have on an individual. If an individual experiences multiple microaggressions over their career it may build up and cause resentment towards the perpetrator or company over time if it is not properly addressed.

One method to deal with microaggressions is to confront the person directly by stating that the microaggression is inappropriate. This provides an opportunity for the other person to become aware of their behaviour and it gives them a chance to correct it. Alternatively, one may confide in a trusted colleague and take it higher up if necessary. Pheladi Letsoalo emphasised how it is important to realise that you have agency to act accordingly, and to thereby try and be a part of the solution.

CONCLUSION

I thoroughly enjoyed these panel discussions and after listening to the impactful advice and experiences of the panel speakers, I feel more equipped to navigate the challenges that I may find myself faced with in the workplace. I look forward to engaging in more forums like this in the future and I encourage others to join too. 

GETTING BACK TO BASICS

- Redefining the role of the critical illness product



KADENE GIBBS

ACTUARY AND HEAD OF IN-FORCE MANAGEMENT, LIFE AND HEALTH, HANNOVER RE SOUTH AFRICA

In 2019, there were more than 1,000 new projects established to focus on cancer research, and this is expected to increase over the coming years. This has resulted in significant advances in screening, diagnoses and surgical procedures relating to cancer. With the increased focus on cancer research, technologies such as liquid biopsy and molecular analysis – which allow for

the practice of precision medicine – are gaining traction. The use of precision medicine creates effective treatment options for cancer patients and is known to reduce the side effects of traditional treatments like chemotherapy.

Targeted treatments, while effective, are often times unaffordable for eligible cancer patients. The majority of medical schemes options in South Africa do not cover targeted treatments. Cover is reserved for only the most comprehensive of medical scheme options, and even then, is offered at less than 100% of the treatment cost. Access to targeted treatments via the South African public health service is also limited. The main reason for this is thought to be the high cost of these treatments. For example, a single dose of Merck, Sharp & Dohme's (MSD) pembrolizumab (branded as Keytruda) for treating stage III melanoma costs around R100 000. The median duration treatment regime is one treatment every three weeks for two years, totalling to a cost of close to R3.5m. This contrasts with the fact that 60% of the South African market has CI cover ranging between R500K – R2m, suggesting that even persons with CI cover would not be adequately covered for targeted therapy treatment, based on current design.

Targeted treatments, while effective, are often times unaffordable for eligible cancer patients. The majority of medical schemes options in South Africa do not cover targeted treatments.

With targeted treatment increasingly being used to treat a number of medical conditions, does this present an opportunity for the life insurance industry to fill the gap and meet policyholders' needs through its Critical Illness offering? The role of the Critical Illness product has always been to meet the cost of changing lifestyles and shortfall in medical expenses that one would expect as a result of a critical illness event.

With the first Critical Illness (CI) product in the world being launched in South Africa (SA) in the 1980's, over the years, life insurers have expanded the number of conditions and features to their comprehensive CI offering in a bid for product differentiation, with some products now covering as many as 300+ conditions, seven different severity levels and features such as no survival period on standalone CI benefit. A number of these conditions act as mere window dressing to the 4 major condition groups – cancer, stroke, heart attack and CABG – that were covered by the original CI product. The CI product has, arguably, lost its way.

With cancer claims currently accounting for roughly 40% of the risk cost of the Critical Illness product, and with other conditions increasingly being treated with targeted treatment, simply increasing the current sums assureds to allow for targeted treatment in benefit definitions would render the product unaffordable.

I explored this topic, together with the Chief Medical Officer of Hannover Re South Africa, Dr. Matthew Procter, in more detail at the 2023 edition of the ASSA Convention. The session covered Hannover Re's innovative design and pricing approach to a reimagined CI product that meets the needs of policyholders in the face of advancing technologies, all while maintaining the affordability of cover. The session also provided our thoughts on how we can continue to innovate our CI offering so that the benefit remains true to its core purpose.

In the session, we looked at the design and pricing of the cancer Targeted Therapy benefit, which acts as a rider to the core CI offering. The session also highlighted the pace at which new targeted therapy drugs are being approved and their cost. This underscored the importance that CI will play in the future as it takes on a greater role to bridge the gap created by medical insurance. The benefit is one example of ways the industry can innovate and maintain affordability of cover, all while staying true to the CI's core purpose.

As we embrace a future where consumer needs are ever-changing and technological advances are happening at lightning speed, it will become more important to re-examine the conditions and features included in the CI to manage cost. These, arguably, peripheral features and conditions come at a cost, and this cost is at the expense of other benefits that could be better aligned with policyholder needs. 



THE ROLE OF LISTED COMPANIES

in creating jobs in South Africa



YAGESHREE MOODLEY
FASSA

Job creation is recognised as crucial in South Africa. Various iterations of National Development and Strategic Plans target employment growth to eliminate poverty, redress historical inequities and sustain socio-economic stability. The focus is on small business and entrepreneurship; there is relatively little research around the role of large or listed companies in creating jobs. Yet, in an economy as concentrated as ours, big business can make a big difference.

Larger companies have the capacity, capability, and resilience to take on challenges at scale. These are often multinational organisations, with global value chains that can support (or stifle) local production and employment. Listed companies have a further influence on employment through their ability to raise and move capital and invest in projects that stimulate the economy. With local companies traded on an internationally recognised stock exchange, the country can attract foreign investment. Listed equity also provides a safe and affordable way for South Africans to access global investment opportunities, which can have unintended consequences on local employment.

South Africans do own a significant portion of JSE-listed companies, although largely indirectly. Thomas (2017) estimated that about half of households' total assets net of debt is invested in listed equity, mostly through occupational retirement funds and long-term insurance companies. These funds represent the interests of millions of SA savers, who would reasonably expect equity returns to be generated in a way that is sustainable for the country over the long-term (or what will we retire to?). This places a greater responsibility on investment managers and advisors, including actuaries, to understand and represent not just customers' best interests, but the country's best interests – which surely includes decent work for all.

8 DECENT WORK AND ECONOMIC GROWTH



**PROMOTE SUSTAINED, INCLUSIVE AND SUSTAINABLE ECONOMIC GROWTH,
FULL AND PRODUCTIVE EMPLOYMENT AND DECENT WORK FOR ALL**

How is investing in listed equity linked to job creation?

Reviewing the limited literature specific to listed companies, four themes were identified:

- | | |
|---|---|
| <p>a SA's economic growth remains low and poorly correlated with employment growth. Small, young firms may have high job creation rates, but they also face low survival rates. The literature suggests that it is not so much the size or age of a company, but its growth and labour intensity that creates jobs and has an employment multiplier effect.</p> | <p>b Listing on a stock exchange does not necessarily create employment, but shareholder activism and codification is “building a business case” for job creation and improved labour standards. It contributes to higher ESG-ratings, which Giese et al. (2019) linked to lower costs of capital, higher profitability and lower exposures to tail risk.</p> |
| <p>c Job creation implies a focus on the number (quantity) of jobs, but listed companies may be competing on the quality of employment i.e. employing fewer people with higher average benefits and better working conditions.</p> | <p>d Listed companies may support jobs indirectly by broadening share ownership, investing in capital projects and unlisted subsidiary companies, and strengthening institutions in the public interest.</p> |

Indirect and induced jobs emerged as a potentially significant contribution. Listed companies spend billions of Rand procuring the goods and services necessary to run their core business – which supports jobs in supplier companies. They are significant contributors to fiscal revenue, both paying and collecting taxes from their stakeholders – which supports public sector spending and employment. Workers' additional personal spending, like buying a washing machine or eating out more often, can also “induce” jobs – including in the informal sector.

In 2021, Naspers reported that for every three people it employs directly, over ten other jobs are “enabled” in the rest of the economy. (This measure was not audited or repeated in the last Naspers Report. There are similar claims from other companies, but the calculation method and assumptions were not disclosed.) Considering their scale and level of operations, it is plausible that listed companies support a higher number of indirect and induced jobs than direct jobs. However, this research focuses on direct jobs, as it is more objectively verifiable. were not disclosed.) Considering their scale and level of operations, it is plausible that listed companies support a higher number of indirect and induced jobs than direct jobs. However, this research focuses on direct jobs, as it is more objectively verifiable.

Naspers's total employment contribution in FY21



Source: Naspers

CONSIDERING THEIR SCALE AND LEVEL OF OPERATIONS, IT IS PLAUSIBLE THAT LISTED COMPANIES SUPPORT A HIGHER NUMBER OF INDIRECT AND INDUCED JOBS THAN DIRECT JOBS

How have listed companies been creating jobs in South Africa?

How much and what sort of employment do listed companies support in SA, and how has this changed over time? How might this relate to shareholder expectations, executive remuneration policies, and other indirect influences on employment?

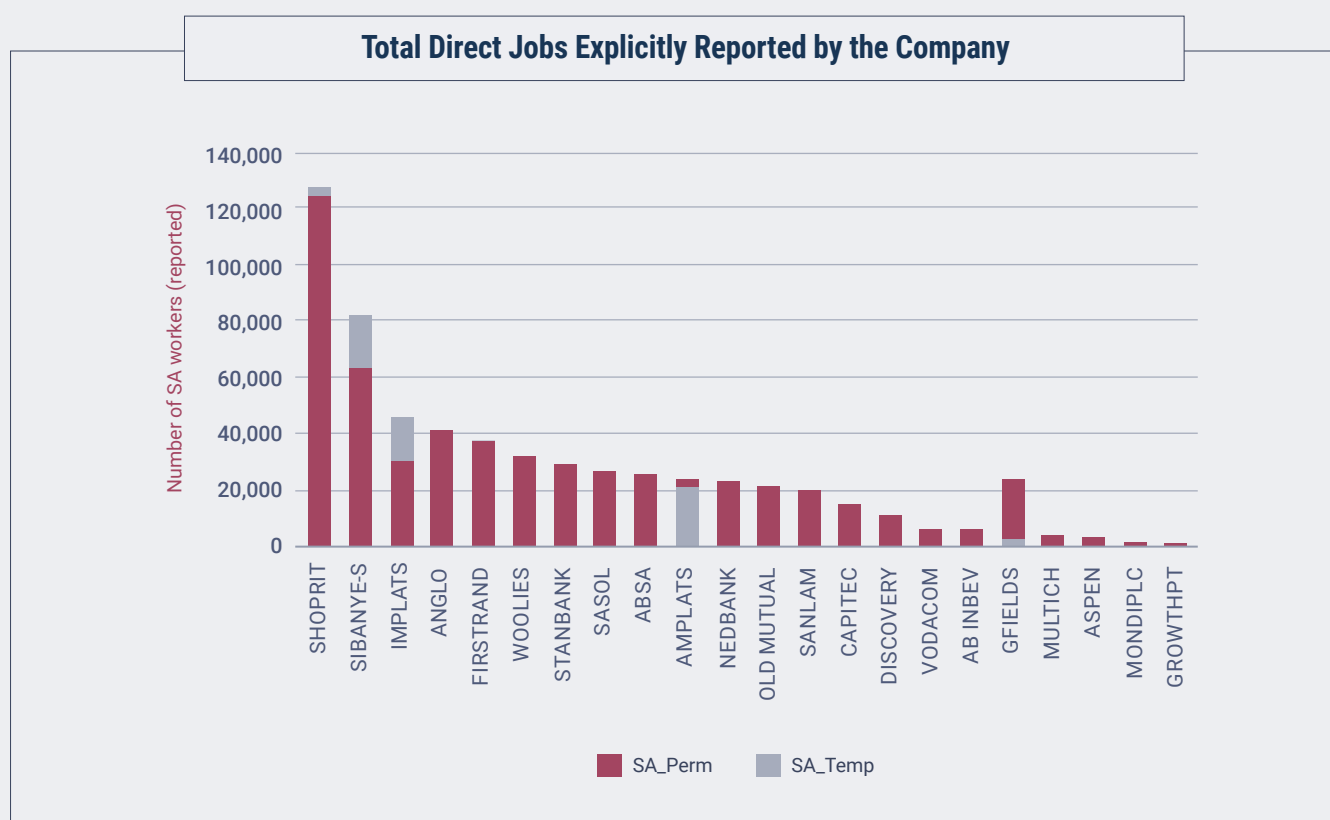
Employment data sources include administrative (tax) data and labour market reports. However, these were challenging to access and not granular enough to examine employment and ownership trends specific to listed companies. Fortunately, listed companies are required to provide detailed, timely and verified public disclosures. As shareholder activism increases, these reports have expanded beyond financial statements

to provide greater detail on companies' environmental and social impact, including employment and working conditions through the supply chain.

A gap was identified in terms of research specific to employment in the largest companies listed in South Africa. The FTSE/JSE Top40 index (Top40) is a well-recognised and widely used subset of SA listed equity. For each Top40 constituent, as at June 2022, the latest annual reporting suite was obtained from company websites. Reports from ten years' prior were also collected, to provide a historical comparison point. These documents were analysed and data extracted around the themes of employment, ownership, financial performance, executive remuneration, Corporate Social Investment and SA-specific risks. Adjustments were made to consolidate the figures across companies and compare trends over time.

TRENDS IN EMPLOYMENT VARIED BY SECTOR AND **MAY HAVE BEEN AFFECTED BY CHANGING REGULATION AND REPORTING PRACTICES.**

For the 22 companies that reported permanent employees in SA, 13 also reported temporary employees and/or contractors. This was added together to show the total direct jobs explicitly reported by the company, graphed below in descending order by total number of workers. This overview already indicates great variation - from zero to about 125,000 workers per company:





Other companies reported employment at an overall or regional level which, together with operational and financial information, allowed for a good estimate of their SA workforce. Trends in employment varied by sector and may have been affected by changing regulation and reporting practices. It suggests that a company's growth may not increase the total number of jobs, but could improve the conditions and stability of employment.

The sampled companies provide about 10% of the formal employment in SA. Changes in employment reflected sector growth and multinationals' strategy. There was little data around pay equality, and the average employment cost per person varies greatly – perhaps driven by skills required in that sector. Estimates of economic contribution, including local procurement and tax payments, suggest that the companies support a significant number of indirect and induced jobs.

The relationship between employment, ownership and market value was explored. Some of the most highly-valued companies have the smallest SA workforce. Even focusing on companies with a primary-listing on the JSE shows clear outliers: Naspers is valued as a technology-platform business, which requires few employees to run; Shoprite, on the other hand, is a fast-moving consumer goods business with physical stores that require "hands on deck". Between these, there is still high variability between companies. This highlights that capital markets are not labour markets. Companies list to raise capital and liquidity, and people invest to access market opportunities while diversifying risk. Yet these investment decisions also create or destroy jobs.

THIS SHOWS HOW RISK MANAGEMENT CAN BE APPLIED THROUGH A SUSTAINABLE DEVELOPMENT LENS TO CREATE NEW WAYS OF WORKING TOGETHER, EVEN IN THE MIDST OF CHALLENGING ECONOMIC CONDITIONS.

Executive remuneration policies are largely driven by financial performance. ESG metrics are included in variable incentives at weights of 5-25%, usually around climate and environmental considerations. Since there is no direct incentive for executives to create or maintain jobs, remuneration structures could be inadvertently rewarding a cost-cutting approach that reduces employment to increase financial performance. This could be offset if significant shareholders use listed companies' labour metrics in their investment decisions, or lobby for a change to remuneration structures. Given the extent of listed companies influence on employment in SA, this may be a policy gap and it highlights the need for initiatives like the Employment Tax Incentive and Youth Employment Service.

The sampled companies spent R6.8bn on CSI, almost two-thirds of the country's total CSI spend in 2022. A variety of projects were undertaken, including some related to education and skills development, but the estimated impact on job creation numbered in the few hundreds.

MANY ACTUARIES ARE WELL-PLACED TO INFORM STRATEGIES AND DECISION-MAKING THAT CAN STIMULATE EMPLOYMENT.

More promising efforts came from companies that located job creation within a broader sustainable development agenda. Procurement policies seem to be aligned with B-BBEE, favouring black and women-owned SMEs. Many companies are mitigating infrastructure and climate risks with major investments in renewable energy, reducing carbon emissions and increasing “green jobs” in tandem. Two mining companies have set multi-year targets around procurement from their “host communities”, taking a hyper-local approach to skills and supplier development to relieve growing community expectations of the mine. Facing increased demand for transparency and traceability through the value chain, Woolies engaged its suppliers to monitor and improve their employees’ working conditions. This shows how *risk management can be applied through a sustainable development lens to create new ways of working together, even in the midst of challenging economic conditions.*

What can I do?

Great question. You could reflect on your many roles: at work and in your profession, at home and in your community. Recognise where you already employ people or support local jobs. Consider the people you regularly engage with, and the extent of their influence. Many actuaries are well-placed to inform strategies and decision-making that can stimulate employment. Our circle of influence is probably larger than we are aware of; how might we consciously use and magnify our impact on job creation? Beyond the personal sphere:

Significant shareholders could consider the impact of (dis)investments on SA employment, and discuss this with listed companies. Investee companies could be encouraged to adopt the JSE Sustainability Disclosure Guidelines, which include employment and labour metrics.

Pension fund managers could allocate funds to alternative investments that are *designed in partnership with listed companies* in which the pension fund has the highest stake. Similarly, the “offshore” allowance could also be invested in selected listed companies’ regional/ African business development opportunities.

Investment professionals could explore alternative or *additional performance benchmarks* that enable active investment managers to investigate a broader universe of stocks, and perhaps take calculated risks on mid- and small-cap firms which show high growth and employment potential.

Corporate investments (including ESD and CSI) could be *coordinated at a sector-level*; a group of associated companies could collaborate to identify and support a portfolio of unlisted companies with high-growth potential and value for the sector. Industry associations may be well-placed to influence and coordinate its members’ job creation investments, as demonstrated by ASISA.

Conclusion

Labour and capital markets are not explicitly linked. However, there is a growing appreciation of how investments can support more sustainable and socially-responsible outcomes. Investment is a creative, generative process: what we invest in creates the world we live in. Shareholders have the potential to invest in ways that enhance social security. Since share ownership is often indirect, there is a greater responsibility placed on institutional investment managers and advisors, including actuaries, to understand and represent not just their direct customers’ best interests, but the country’s best interests.

Well-coordinated partnerships could support larger investments and sustain employment in a challenging trading environment. Further investigating and clarifying the links between listing, ownership and employment in the country may help us understand what we can reasonably expect of listed companies in terms of job creation in South Africa.

This article is based on research funded by ASSA. The full report is available on the **website** under the Public Interest Seminar 2023. Your feedback is welcome; contact the author at **ymoodley@gmail.com**. 

Let's talk: fund rationalisation



YAGESHREE MOODLEY
FASSA

In the *last issue*, Conrad Backeberg recalled how healthy professional debates taught him how to navigate complex and ambiguous issues. There is no shortage of such issues today. This column presents a real, local, recent case for your actuarial consideration. The intention is to use customer experiences as opportunities for professional learning and connection. It also serves as a feedback loop, bridging the gap between the work we do and how it is experienced in the marketplace.

CASE SUMMARY

In May 2023, a large insurer emailed a policyholder that the fund offering was being improved so one of their funds would be moved to a new portfolio. If policyholders wanted to explore a different option, they were asked to discuss it with a financial adviser and reply within two weeks.

In June 2023, the policyholder emails a financial adviser to find out more about the new portfolios. Three weeks later, the financial adviser replies with the fund fact sheets. The policyholder (not the financial adviser) notices that the new fund has a substantially different asset allocation and that the fee increased from 0.4% to 1.1% p.a. They ask the financial adviser about this, who suggests alternative portfolios, but all differ from the original investment strategy and have higher fees.

The fund is in a retirement annuity product. The policyholder points out the long-term implication of the higher fee and asks the insurer why the fund was changed without considering this. The insurer replies three weeks later, saying that the fund was poorly understood by most policyholders so is no longer being offered, and that the higher fee should be offset by a higher expected return.

REFLECT

Observe your initial reaction, the thoughts and feelings that come up. Perhaps there are some assumptions and beliefs behind that. What other information would you like to have?

Consider the stakeholders involved and their interests. Reflect on power structures, which interests are aligned, and which might conflict. How might power be balanced, and interests better aligned?

Imagine the market context, business need and operational processes that might have led to this change. Where and how might actuarial skills have been used?

Explore the aspects that contributed to the policyholder's dissatisfaction. How might these have been avoided, managed and/or rectified?

Now integrate these perspectives, by bringing to mind principles that might be relevant and helpful to balance the interests of key parties. How would you craft principles and standards of practice to guide the decision makers in this scenario?

EXPLORE

This presentation and audio recording is about managing the risks of legacy business.



presentation



audio recording

DISCUSS

Bring to mind someone in your circle that might approach this case differently from the way you did. Whether or not they're an actuary, you are interested in their professional view. Send this article to them and invite a 10-minute discussion at your next meeting.

There will also be virtual discussion to be arranged separately. It will be facilitated, but there is no registration or agenda, other than to connect and learn.

THE BANKING TURMOIL OF 2023

lessons learnt – implications for actuaries



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INTRODUCTION

The first and second issues of the 2023 South African Actuary publication featured articles on the 2023 banking turmoil, covering banks in North America and Europe. The Basel Committee on Banking Supervision (BCBS) subsequently published a more detailed report, titled Report on the 2023 banking turmoil, following its meetings of the 4th and 5th of October 2023. This article summarises the details of that report and quotes directly from the report as reference. The report describes the failures of Silicon Valley Bank (SVB), Signature Bank of New York (SB), First Republic Bank (FRB), the rescue of Credit Suisse (CS), and the actions taken by authorities. The full report can be accessed here <https://www.bis.org/bcbs/publ/d555.pdf> and should be read in full for completeness.

The banking turmoil of 2023 is widely considered the most significant system-wide banking stress since the Great Financial Crisis (GFC) in terms of scale and scope. Over the span of 11 days – from 8 to 19 March 2023 – four banks with total assets of about \$900 billion were shut down, put into receivership or rescued. Subsequently, a bank with roughly \$230 billion of assets was closed on 1 May 2023. These bank failures, while having largely distinct causes, triggered a broader crisis of confidence in the resilience of banks, banking systems and financial markets across multiple jurisdictions with wide-scale public support measures deployed by some jurisdictions to mitigate the impact of the stress.

The BCBS 2023 banking turmoil report groups recurring themes into three broad categories as follows:

1.	Faulty risk management practices and governance arrangements of banks	3.	Importance of prudent and robust regulatory standards
The following fault-lines were highlighted in this area:		The following initial lessons were highlighted:	
• fundamental shortcomings in basic risk management of traditional banking risks such as interest rate risk, liquidity risk, and various forms of concentration risk; • a failure to appreciate how the build-up of various individual risks were interrelated and could compound one another; • inadequate and unsustainable business models, including an excessive focus on growth and short-term profitability, fuelled by remuneration policies, at the expense of appropriate risk management; • a poor risk culture, as well as ineffective senior management and board oversight; and • a failure to adequately respond to supervisory feedback and recommendations.		• the importance of a full and consistent implementation of Basel standards; • the importance of a robust design and calibration of global standards for internationally active banks given that banks can be vulnerable to rapid changes in market sentiment - the combination of high leverage and long-term opaque assets that are funded with short-term runnable deposits makes banks especially vulnerable to a loss of trust in their long-term solvency. • the need for a balanced approach between Pillar 1 regulation and Pillar 2 supervision, with robust and rigorous Pillar 2 approaches pursued as complements, and not substitutes, to Pillar 1 requirements; • the potential for banks that are deemed to be not internationally active in a jurisdiction to pose cross-border financial stability risks, including through indirect contagion channels; • the need for proportionate regulatory frameworks to reflect the BCBS' expectations – as set out in the Basel Core Principles (BCPs) for effective banking supervision – that any proportionate approaches are commensurate with a bank's risk profile and systemic importance.	
2.	Importance of strong and effective supervision across various dimensions		
The following issues were highlighted in this area:			
• the ability and willingness of supervisors to not only actively identify weaknesses in banks, but to also take and enforce prompt actions; • the need to ensure supervisory teams have the appropriate quantity and quality of resources; • the need to continuously monitor exogenous and structural changes to the banking system and adapt supervisory approaches to overseeing risks, especially for banks that are rapidly growing in size or adopting novel business models; and • maintaining effective and timely cross-border supervisory cooperation across a wide network.			

CRISES OF CONFIDENCE AND IMPACT ON FINANCIAL MARKETS

The BCBS report noted that the distress of these banks triggered a crisis of confidence in some jurisdictions, with impact on some banks and financial markets. The contagion from the distressed banks to the banking system in several jurisdictions was reflected in asset prices, including sharp falls in some banks' equity prices and a surge in the cost of insuring against bank default.

There was also a general repricing of banks' Additional Tier 1 (AT1) instruments, which prompted authorities in some jurisdictions to issue public statements reiterating their approach to imposing losses on shareholders and creditors in a resolution or insolvency scenario.

The effects of the banking turmoil also spilled over to the financial system in several jurisdictions more generally, with volatility reaching an all-time historic high since the GFC, and investors reassessing their outlook for growth and interest rates. Access to capital markets for funding was impaired, with a redistribution of liquidity within the financial system.

KEY MACRO-FINANCIAL DEVELOPMENTS IN THE RUN UP TO THE BANKING TURMOIL

The BCBS report highlighted the key macro-financial developments leading to the banking turmoil. The period of relatively easy financial conditions for more than a decade led to the build-up of public and private sector debt, a compression in bank net interest margins (NIMs), and a general search for yield.

Following the outbreak of the Covid-19 pandemic, many jurisdictions implemented highly stimulative fiscal policies to mitigate the impact of the pandemic, and many central banks undertook large-scale asset purchase programs, in some cases for the first time, or in other cases resuming asset purchases that began following the GFC.

Following this period of highly accommodative monetary policy in many jurisdictions, 2022 saw the start of the most synchronised and intense monetary policy tightening on recent record in an effort to curb high inflation. The latter was driven by various factors, including supply-side disruptions following the Covid-19 pandemic, and energy and food price rises due to geopolitical developments such as the war in Ukraine.

Against this backdrop, the increase in interest rates and quantitative tightening by some central banks resulted in a worsening of financial conditions, particularly in high-risk segments of credit markets. While most banks' NIMs improved as a result of rising rates, and credit risk losses have not materialised to date, the rising rate environment also saw a sharp reduction in the value of long-duration fixed interest assets. This affected the balance sheets of many banks.



EVENTS LEADING TO FALL OF SILICON VALLEY BANK

On 10 March 2023, Silicon Valley Bank (SVB) was closed by the banking regulators in North America. It was a large banking group with approximately \$212 billion in total assets when it failed. Between 2019 and 2021, the banking group had tripled in size as it benefited from rapid deposit inflows during rapid venture capital (VC) and technology sector growth in a period of exceptionally low interest rates. These deposits were largely uninsured, and SVB invested them primarily in securities with longer-term maturities. In 2022, as interest rates began to rise, SVB saw deposit outflows and a rapid increase in unrealised losses on those securities.

As the risks to the bank's balance sheet mounted, SVB took steps to address the issues and announced a plan to restructure its balance sheet. SVB had sold \$21 billion in available-for-sale (AFS) securities, was booking a \$1.8 billion after-tax loss, was planning to increase term borrowings by \$15 billion to \$30 billion, and was seeking to raise \$2.25 billion in capital. The next day following the announcement, SVB experienced a bank run as withdrawals of uninsured deposits rapidly accelerated. These deposit outflows reflected fundamental concerns about the bank and appear to have been sparked by a number of interrelated factors that include:

- heightened uncertainty and changing sentiment around the technology sector;
- potential negative action from credit rating agencies; and
- highly correlated withdrawals from SVB's concentrated network of VC investors and technology firms who, fuelled by social media, withdrew uninsured deposits in a coordinated manner at an unprecedented rate.

SVB lost over \$40 billion in deposits in a single day, and management expected to lose over \$100 billion more the following day. This deposit outflow was remarkable in terms of scale and scope when compared with other episodes of banking stress. In response to these actual and expected deposit outflows, SVB failed on 10 March 2023.

During the final days before its failure, SVB's operational weaknesses became apparent as it struggled to execute on its contingency funding plans. For example, SVB did not test its capacity to borrow at the Federal Reserve Discount Window in 2022, and did not have appropriate collateral and operational arrangements in place to obtain liquidity. While stronger operational capacity to obtain contingency funding in March 2023 would likely not have prevented SVB's failure, it could have facilitated a more orderly resolution.

Two shortcomings at SVB set the stage for its failure:

- First, its core risk-management capacity failed to keep up with rapid asset growth, which led to steady deterioration of its financial condition in 2022 and into March 2023. This reflected a long build-up of weakness, as the banking group could not effectively manage through a changing economic and financial environment in 2022 and 2023.

- Second, SVB failed to develop sufficient contingent funding capacity. This contributed to a disorderly failure when SVB tried to manage the acute situation after its 8 March 2023 balance sheet restructuring announcement.

SVB's failure can be tied directly to the failure of the board of directors and senior management of the banking group, with the following issues observed:

- The board and management failed to effectively oversee the risks inherent in SVB's business model and balance sheet strategies.
- The full board of directors did not receive adequate information from management about risks at SVB, and did not hold management accountable. For example, information updates that management sent to the board did not appropriately highlight SVB's liquidity issues until November 2022 despite deteriorating conditions.
- Moreover, the board put short-run profits above effective risk management and often treated resolution of supervisory issues as a compliance exercise rather than a critical risk-management issue. For example, SVB removed interest rate hedges that would have protected against rising interest rates.
- Compensation packages of senior management through 2022 were tied to short-term earnings and equity returns and did not include risk metrics. As such, managers had a financial incentive to focus on short-term profit over sound risk management. An SVB director, for example, told supervisors in 2022 that controls always lag growth.

From a supervisory perspective, the following was observed:

- The supervisors found significant gaps for the well-documented and significant vulnerabilities and managerial weaknesses at SVB.
- The supervisors identified some of the material issues, but also underappreciated important ones, particularly during the period of SVB's rapid growth.
- SVB's foundational problems were widespread and well-known, yet core issues were not resolved, and stronger oversight was not put in place.



- There were delays in applying more stringent standards as SVB grew rapidly.
- The resources devoted to SVB supervision were found to be inadequate, and the supervisor applied an approach that emphasised consensus and the continued accumulation of evidence even as SVB deteriorated.
- SVB had 31 open supervisory findings when it failed in March 2023, about triple the number observed at peer firms.
- The supervisory findings included core areas, such as governance and risk management, liquidity, interest rate risk management, and technology.
- Despite widespread evidence of foundational governance and risk-management issues, supervisors were slow to downgrade supervisory ratings or to ensure that SVB's board and senior management took sufficient and immediate steps to compensate for those widespread weaknesses.
- During the second half of 2022 and into 2023, as SVB's liquidity steadily weakened, unrealised losses accumulated on its securities portfolios, and its performance outlook deteriorated, supervisors continued to accumulate evidence of widespread weaknesses and delayed escalating supervisory action.
- As an example, it took more than seven months to develop an informal enforcement action, known as a memorandum of understanding (MOU), for SVB to address the underlying risks related to oversight by the board of directors and senior management, the firm's risk-management program, information

technology program, liquidity risk management program, third-party risk-management program, and internal audit program, and SVB subsequently failed before the MOU was delivered.

The BCBS report noted that the failure of SVB in the US resulted in the resolution of its subsidiary in the UK, with the bank being sold to HSBC. The UK regulator was aware and understood that SVB UK was exposed to concentration risk, as it provided loans to and took deposits from the same relatively concentrated client base in the innovation sector. Over the last 18-24 months, concentration risk, and overlap of clients on the asset and liability side of the balance sheet, had been areas of focus for supervision. The UK PRA discussed these with both the firm and the Federal Reserve. The concentration in assets and the interest rate risk in the banking book (IRRBB) was recognised in SVB UK's Pillar 2 capital requirements.

Despite the UK subsidiary being able to meet all demands for outflows on Friday 10 March 2023, it was not clear that the firm would be able to continue meeting liquidity outflows if the run continued. It was unlikely that the subsidiary could withstand the failure of its parent without a sale, and the UK bank would not have been a viable standalone entity because of its reliance on its US parent for technology and systems, including payment infrastructure. The sale of SVB UK to HSBC ensured continuity of business, including continuity to all depositors.

EVENTS LEADING TO THE FALL OF THE OTHER US BANKS

Whilst the section above has dealt with events leading to the fall of SVB in more detail as an illustration of the failures in risk management at the bank, events leading to the fall of the other banks in the US are also well covered in the BCBS report, and point to some of the same issues as SVB.

For example, the primary cause of **Signature Bank of New York's** (SB) failure was illiquidity precipitated by contagion effects in the wake of the announced self-liquidation of Silvergate Bank, on 8 March 2023, and the failure of SVB on 10 March 2023, after both banks experienced deposit runs. However, the root cause of failure was poor management. SB's board of directors and management pursued rapid, unrestrained growth with total assets increasing by 175 percent from the end of 2017 (\$43.1 billion) to the end of 2021 (\$118.4 billion), before declining to \$110.4 billion at the end of 2022. It did so without developing and maintaining adequate risk management practices and controls appropriate for the size, complexity, and risk profile of the institution.

SB management did not prioritise good corporate governance practices, did not always heed bank examiner concerns, and was not always responsive or timely in addressing supervisory recommendations. SB funded its rapid growth through an overreliance on uninsured deposits without implementing fundamental liquidity risk management practices and controls.

Additionally, SB failed to understand the risk of its association with and reliance on crypto industry deposits, or its vulnerability to contagion from crypto industry turmoil that occurred in late 2022 and into 2023. SB's significant client concentration of digital asset companies put it in a precarious position when the "crypto winter" hit in 2022. News articles scrutinised SB's involvement in the industry. SB experienced depositor run-off from both crypto customers as well as traditional depositors. However, management did not acknowledge that its exposure to the crypto industry might entice other customers to pull or reduce their own deposits. Due to its reputation as a banker to many in the crypto industry, SB's stock price closely tracked events in the crypto industry.

SB's poor governance and inadequate risk management practices put the bank in a position where it could not effectively manage its liquidity in a time of stress, such as that resulting from the fallout of the liquidation of Silvergate and unprecedentedly rapid unfolding of SVB's failure, making it unable to meet very large withdrawal requests.

As in the case of SVB, SB had operational weaknesses with regards to its contingency funding plan. For example, during 2021 and 2022, SB increased lending in the form of capital call or subscription loans. SB intended to pledge these loans to the Federal Reserve Bank of New York (FRBNY) as collateral for Discount Window lending. However, the FRBNY would not accept the loans as collateral because they were not eligible. SB pursued efforts to pledge these loans for months, hiring law firms to make the case for the FRBNY to accept them. During the weekend that SB failed, management tried unsuccessfully, to pledge this portfolio to the FRBNY. Even though SB management knew they did not have a formally confirmed avenue to obtain liquidity from this portfolio, they continued to try to include these loans in collateral calculations just hours before the institution failed.

Turning to **First Republic Bank** (FRB), the bank focused on offering banking services to high net worth (HNW) individuals, including residential real estate lending, private banking, business banking, wealth management, trust, and brokerage services. Single-family residential loans were the primary loan product and included nonconforming jumbo mortgages with interest-only repayment terms. FRB used these products to acquire HNW customers and expanded the banking relationship by providing trust and wealth-management services, among other personalised banking products.

As of 31 March 2023, the bank had total assets of \$232.9 billion and total deposits of \$104.5 billion. FRB was the fourteenth largest bank in the US. Examination products reported that FRC had historically been a respected, well-run bank and was responsive to supervisory feedback and recommendations. Reports of examination noted that the bank grew consistently, but implemented and maintained infrastructure, controls, and risk management processes commensurate with its size and risk profile. Notwithstanding, there were attributes of FRC's business model and management strategies that made it more vulnerable to interest rate changes and the contagion that ensued following the failure of SVB and Signature Bank. Those attributes included:

- Rapid growth and loan and funding concentrations.
- Overreliance on uninsured deposits and depositor loyalty.
- Failure to sufficiently mitigate interest rate risk.

FRB experienced a lack of market and depositor confidence following the sudden failure of SVB and SB during the weekend of 10 March, which resulted in significant uninsured deposit outflows and loss of liquidity. The bank had balance sheet characteristics that were similar to SVB's, mainly high levels of uninsured deposits and substantial differences in the fair value of loans versus loan book values. As of 31 March 2023, approximately 49 percent of its deposits were uninsured. FRB also operated in the same geographic market as SVB and had venture capital clients. Following SVB and SB's failures, FRB experienced dramatic and severe contagion effects causing immediate liquidity stress due to significant uninsured deposit outflow, which depleted the bank's on-balance sheet liquidity.

The continuous withdrawal demands required the bank to borrow substantial amounts from the Federal Home Loan Bank and the Federal Reserve Discount Window. On 16 March 2023, a consortium of 11 major US banks placed \$30 billion in deposits at FRB that slowed the rate of deposit outflows. However, a 24 April 2023 earnings call, which disclosed that First Republic lost over \$100 billion in deposits during the first quarter of 2023, prompted a negative market response, a significant decline in the bank's stock price, and a resumption of significant deposit outflows.

Given the deterioration in the bank's condition, lack of progress in restoring confidence, and dim prospects for improving the bank's condition, FRB was downgraded by supervisors to problem status on 28 April 2023. The bank's rating downgrade effectively eliminated FRB's ability to continue borrowing money from the Federal Reserve Discount Window.

On 1 May 2023, FRB was closed with Federal Deposit Insurance Corporation (FDIC) assuming receivership. The FDIC entered into a purchase and assumption agreement with JPMorgan Chase Bank to assume all of the deposits and substantially all of the assets of FRB. As part of the transaction, FRB's 84 offices in eight states reopened that same morning as branches of JPMorgan Chase Bank, and all depositors of FRB became depositors of JPMorgan Chase Bank.



EVENTS LEADING TO THE RESCUE OF CREDIT SUISSE

The BCBS report noted that while Credit Suisse (CS) came out of the GFC in a better position than UBS and other peer banks, it was subsequently and repeatedly at the centre of various scandals. This included incurring a series of losses, and a high number of partially public supervisory enforcement actions. The continuous stream of scandals and negative results progressively led to a serious loss of confidence in the bank by its clients, market participants, rating agencies, and regulators.

The enforcement actions undertaken by the Swiss Supervisory Authority revealed serious and continued weaknesses in governance, risk control, and risk management across a broad range of areas. However, capital and liquidity ratios remained solid throughout this period, partly due to a CHF 1.65bn capital raise (via mandatory convertible notes) in 2021 following a major loss. High liquidity buffers were required by the Swiss Supervisory Authority since the March 2020 Covid-19 market turmoil.

After experiencing two consecutive quarterly net losses, the bank issued a profit warning in June 2022, pointing to another net loss for the second quarter of 2022. Market indicators worsened significantly, and rating agencies downgraded the bank.



In the second half of 2022, amid a difficult market environment driven by geopolitical events and worsening macroeconomic conditions, CS announced a thorough strategy review. However, CS' liquidity suddenly and significantly worsened in October 2022 with very material liquidity outflows. These developments were due to CS' clients, mainly in its Wealth Management Division, withdrawing significant amounts following negative market rumours about the financial health of the bank.

The announcement of the revised strategy, which included raising CHF 4 billion in capital to finance the transformation, did not restore confidence in the firm. The bank was again downgraded, and market indicators continued to worsen. At that stage, CS had become an outlier among global systemically important banks (G-SIBs) based on ratings, credit default swap (CDS) spreads, and market capitalisation.

CS was able to withstand the October 2022 outflows only due to the very high liquidity buffers required by the Swiss Supervisory Authority from March 2020. However, the significant deposit and asset outflows further weakened its Wealth Management franchise, a supposed cornerstone of the bank's revised strategy.

In March 2023, CS announced a technical delay in the publication of its 2022 annual report due to ongoing discussions related to weaknesses regarding its financial accounting controls.

Following the mid-March 2023 failure of SVB and SB in the US, markets turned to the weakest link - CS. Notwithstanding immaterial exposure to SVB and SB, in the week of 13 March, the CS stock price, which had lost more than 70% since 1 January 2023, came under pressure. Credit Default Swap spreads increased and peaked at 1082bps on 16 March. These market events triggered a renewed loss of confidence in CS' ability to execute its strategic restructuring and to return to profitability according to plan. Liquidity outflows accelerated again very materially.

Market participants started to take precautionary measures when dealing with CS, such as pre-funding to operate the settlement of payments and forex trades for CS, further increasing the pressure on its liquidity position and management. It became clear that CS would not have been able to regain market and client confidence. CS was fast approaching a point of non-viability due to massive cumulative liquidity outflows and its increasing difficulties to transact with other market participants.

On the backdrop of these events, Swiss regulatory authorities decided to take action. On 16 and 19 March 2023, the Swiss Supervisory Authorities adopted emergency measures aimed at ensuring the viability of CS and ultimately paving the way for a takeover by UBS. Such emergency measures were established to protect financial stability at national and international level, and the Swiss economy.

These emergency measures included:

- The Swiss Supervisory Authorities introduced rules allowing them to provide additional emergency liquidity up to CHF 100bn in total to CS and UBS by granting a privileged hierarchy in case of bankruptcy.
- A public liquidity backstop was enacted which made it possible for the Swiss Supervisory Authorities to provide an additional CHF 100bn in liquidity to CS secured by a public guarantee.
- The Swiss Supervisory Authorities provided a public guarantee to UBS for CHF 9bn on losses that might materialise in reference to specific assets on CS' balance sheet which UBS intends to exit in the course of the integration process, and for which UBS agreed to take a first CHF 5bn loss post takeover.

Other additional measures were also taken by the Swiss authorities. These extraordinary measures achieved the objective of ensuring financial stability in Switzerland and globally. The CS' stock price stabilised and its CDS spreads decreased significantly. CS has since then been able to actively tap the emergency liquidity funding granted by the Swiss Supervisory Authorities and liquidity has overall been stabilising while still observing some cash deposit outflows, though at much lower levels.

INITIAL LESSONS LEARNT AND TAKEAWAYS FOR BANKING SUPERVISION

While the main takeaway from the 2023 banking turmoil is the importance of banks' own risk management and governance practices, the BCBS report also highlighted supervisory-related issues stemming from the recent turmoil. In some instances, these issues have commonalities with other banking stresses and have been previously identified.

However, the BCBS report also highlighted novel elements, which set recent events apart from previous experience. These include:

- the unprecedented speed of deposit withdrawals that were experienced, particularly among uninsured (high value) depositors;
- outlier business models that aggressively take on risks; and
- the way in which concerns about banks in one jurisdiction, including ones that were not considered internationally active, affected confidence in banking sectors and markets in a much wider range of other jurisdictions.

Another element that, while not new, played an important role in events at SVB, SB and FRB in the US was the rapid growth of the businesses in the few years preceding the crisis, and the difficulty the banks experienced in keeping up with needed enhancements in governance, risk management and controls. This created challenges for supervisors.

The initial lessons learnt and takeaways for banking supervision that the BCBS noted can be summarised as follows:

- Analysis of banks' business models, including the

identification of outliers, remains a core component of banking supervision.

- The importance of supervisors assessing a bank's governance and risk management as the foundational step in ensuring its safety and soundness.
- Liquidity supervision may need to evolve in light of recent experience.
- Supervisory judgement is a critical element of supervisory approaches, to ensure that the intent as well as the letter of regulation is addressed
- Supervisors need to have effective tools available that will drive real change at banks
- Cross-border supervisory cooperation is a key element in responding to the turmoil and mitigating risks to global financial stability, with several positive elements from the cooperation of central banks and supervisory authorities across jurisdictions, with significant sharing of information.
- The importance of monitoring and managing risks at a consolidated group and individual legal entity level

INITIAL LESSONS LEARNT AND TAKEAWAYS FOR BANKING REGULATION

The BCBS report noted that the recent banking turmoil also raises important regulatory issues. A series of regulatory factors that are of relevance to the Basel Framework were outlined in the report. In addition to these specific areas, the turmoil also highlighted some issues related to the complexity of the regulatory framework, including the role and design of Additional Tier 1 (AT1) instruments, the usability of liquidity buffers, and the design of proportionality frameworks.

These issues are outlined below.

- Liquidity standards - the turmoil raises questions about the design and calibration of the Basel III liquidity standards on whether the Net Stable Funding Ratio and Liquidity Coverage Ratio performed their role satisfactorily as indicators of banks' long term and short term liquidity risks respectively.
- The current Pillar 2/3 approach may not adequately mitigate Interest Rate Risks in the Banking Book, with the standard not yielding sufficient information regarding contractual interest rate risk and methods banks use to identify, measure, and backtest interest

rate risk, which may call for the strengthening of the current IRRBB framework and allow supervisors to transparently evaluate IRRBB risk.

- The treatment of held-to-maturity assets may need to be reviewed, with unrealised interest rate losses on fixed income assets held at amortised cost observed as an important driver in the failure of several banks during the turmoil.
- The role of Additional Tier 1 capital instruments, the loss-absorbing hierarchy of such instruments on how they are treated in the capital framework may need to be clarified, with recent events having shown that investors and markets did not fully internalise the various trigger events that could lead to loss participation of AT1 instruments, even though the Basel Framework contains explicit language on those trigger events and Pillar 3 disclosure requirements, and despite contractual documentation clearly highlighting the corresponding risk factors of such instruments. There may, therefore, be merit in further assessing the complexity, transparency and understanding of AT1 instruments in a holistic manner.
- Determination of internationally active banks, with the Basel Framework currently applying on a consolidated basis, and not defining the concept of internationally active banks, which may call for the need to apply the definition consistently to all institutions that can potentially threaten global financial stability.
- There may be merit in further reflecting on whether additional guidance on the identification of domestic systemically important banks could be useful, by complementing existing “entity-based” approaches to assessing and mitigating systemic risk with an “activity-based” approaches that place greater weight on the resilience of a systemic activity (eg trends in concentrated uninsured deposits relative to HQLA buffers), regardless of the type of entity that performs it.
- Consistent application of proportionality to non-internationally active banks across jurisdictions, with the recent turmoil highlighting how the distress of banks subject to domestic proportionality regimes could have cross-border financial stability effects, which may call for jurisdictions to continue sharing experiences in applying proportionality, monitoring the scope of banks subject to proportionate approaches, and in ensuring that these objectives

are adequately met.

- Level of consolidation may need to be reviewed, with consideration of how best to factor solvency and liquidity developments at both a group and standalone legal entity level, as the Basel Framework clearly recognises the essential value of supplementing consolidated supervision with ensuring adequate capitalisation and liquidity distribution among legal entities within a banking group, whilst limiting itself to noting the need for supervisors to test such adequacy on a standalone basis. There may, therefore, be merit to continue to reflect on the potential regulatory implications stemming from the recent turmoil on approaches pursued to the allocation of capital and liquidity within banking groups.

IMPLICATIONS FOR ACTUARIES

As the banking industry considers areas that may require attention, actuaries can bring complementary skills to multi-disciplinary teams in banking. A key issue for such teams is understanding and judgement versus “tick box compliance”. Actuaries across jurisdictions can, therefore, be involved in designing enhanced solutions that help banks, supervisors, and regulators in understanding banking risks, and how banks can manage such risks in a more holistic manner.

Actuaries can add value, for example, in asset-liability management (including interest rate risk in the banking book), liquidity risk management, and in stress testing allowing for interactions between risks. This may extend to developing appropriate resolution and recovery plans that are practically implementable in the event of bank failures. These are areas that require understanding and judgement in setting assumptions, choosing appropriate methodologies, and designing appropriate banking risk management frameworks, which are key areas in which actuaries are well trained in applying judgement. 

This article is a summarised version of the report of the Basel Committee on Banking Supervision on the 2023 bank turmoil released on 6 October 2023. The full report can be accessed here <https://www.bis.org/bcbs/publ/d555.pdf> and should be read in full for completeness.

COVID-19 Supplement

by the ASSA Covid-19 Task Force chaired by Claiton Manikai

Impact of Covid-19 in South Africa – Mortality and Life Insurance

Introduction

The Actuarial Society of South Africa (ASSA) has formed the COVID-19 Task Team to consolidate the learnings from the pandemic and enhance preparedness for future pandemics. In this article, we review the large impact of COVID-19 on mortality and life insurance in South Africa.

We delve into the impacts on South African mortality, life insurance and other risks covered by life insurers. We then look at how the life insurance industry and actuaries responded, including risk mitigations. We then discuss the potential future impacts of COVID-19. We close the document by sharing some of the initiatives being undertaken by the Actuarial Society to ensure that actuaries contribute to future / long-term / public interest.

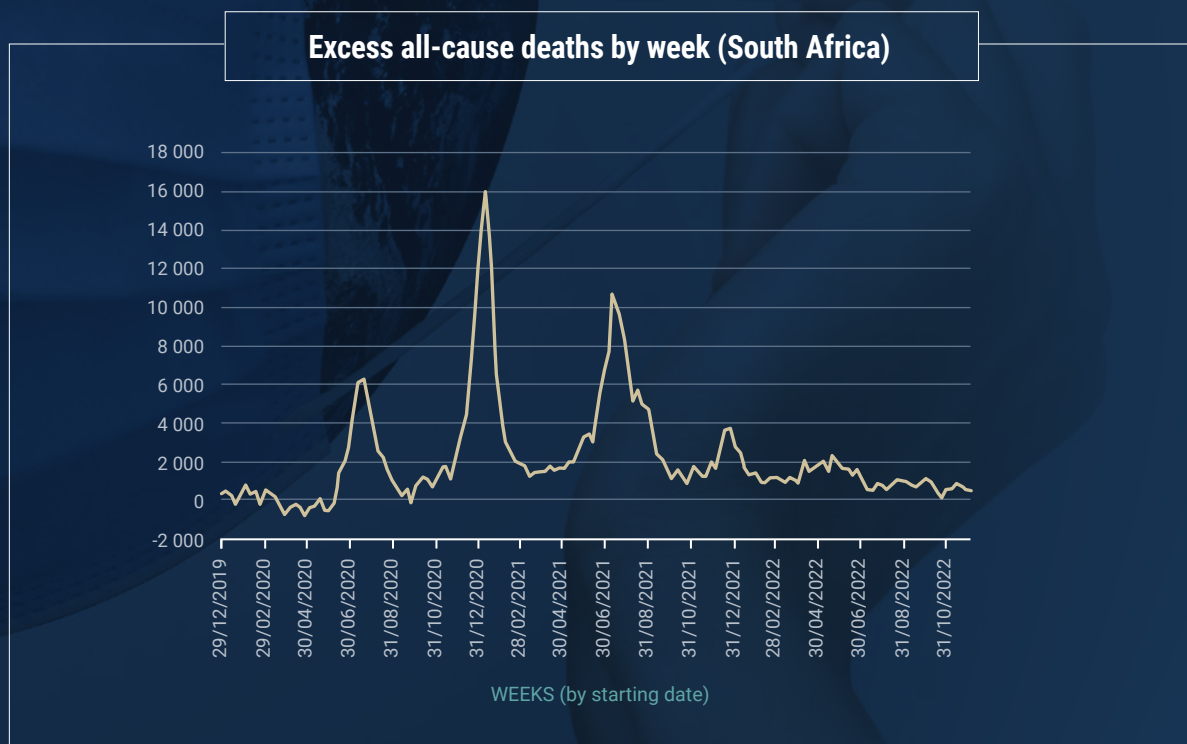
Impact of COVID-19 on mortality in South Africa

COVID-19 has significantly impacted South African mortality. The National Institute for Communicable Diseases (NICD) reports a [total of 104,154 COVID-19 deaths to 29 July 2022](#). This represents a large loss of life, [however mortality experts, including actuaries](#), identified that COVID-19 deaths were underreported, especially in developing countries like South Africa (See below).

Researchers under the South African Medical Research Council have developed a reporting framework around the South African death registration system. The

researchers developed a predicted number of deaths based on registration pre-COVID-19 and then compared actual death reporting during the pandemic.

In their [latest report at time of writing](#) (up to 2 January 2023), they estimate that there has been a total of 341,123 excess natural deaths. These excess deaths are the difference between actual deaths due to natural causes reported since the start of the pandemic and the deaths due to natural causes that would have been expected. This represents more than 0.5% of the South African population, or 573 per 100,000 people in South Africa. The expected number of deaths (from all causes) is usually approximately 500,000 per year in South Africa. Below we plot these deaths by week.



One can see the large numbers of excess deaths during the waves. The deaths were highly correlated with the waves of COVID-19 cases. In South Africa, detailed cause of death information is not published quickly as in many developed countries. Our latest cause of death data is for 2017, so it is not possible to definitively estimate the proportion of deaths due to COVID-19.



However, in a [separate analysis](#), the researchers conclude:

At both national and provincial levels, relative excess mortality (the p -score) rises and falls with a slight lag following the reported proportions testing positive. This and the close temporal correspondence between the confirmed COVID-19 deaths to the numbers of excess deaths for much of the epidemic, suggests strongly that the majority of the excess deaths from natural causes that have been identified in the country (probably 85%-95% of the excess deaths depending on extent to which the data used are missing deaths yet to be reported) are due to COVID-19.

There are also periods of negative excess deaths in the above chart. The researchers concluded that during restrictions of the sale of alcohol and curfews, unnatural deaths decreased to levels below expected. The stated goal of these restrictions is to increase hospital capacity by reducing the admissions related

to alcohol abuse. It seems likely that these resulted in reductions in admissions given that the number of deaths reduced.

As the severity of more recent waves have decreased in terms of cases, hospitalisation and reported deaths it might be that the weighting in more recent waves may be shifting to other conditions. For example, early in the pandemic [rates of initiation of antiretroviral therapy for HIV/AIDS decreased](#), potentially leading to higher mortality over the coming years for those who initiated later and hence may impact mortality in the longer term.

More research is needed to establish:

- How accurate the base line is given that it's based on data up to 2019.
- How much of the recent excess deaths is due to other causes.
- How much of the past excess deaths are directly attributable to COVID-19.

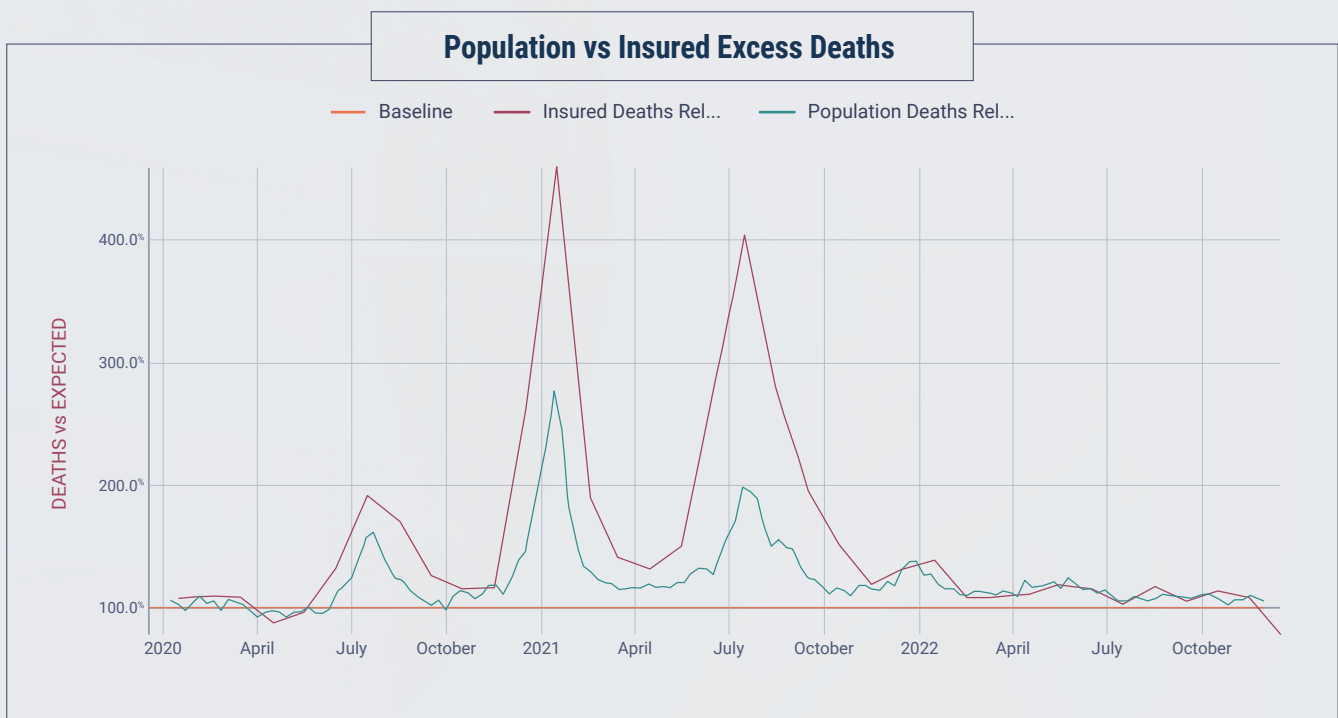
Research into (b) and (c) is hampered by the delayed release of cause of death data by Stats SA.

Impact on mortality of insured lives

The Society's Continuous Statistical Investigation Committee analyses mortality for underwritten risk products. When the pandemic started life insurers were asked to provide monthly data sets to enable the Committee to perform quick analyses [to provide the industry with up-to-date information](#) as the pandemic unfolded in South Africa. This work continues and [is available here](#) (after free registration). The life insurance industry observed significant excess mortality, leading to significant losses over 2020 and 2021.

The chart below illustrates these excess claims and shows that in the worst months (January and July 2021) the industry incurred over 4 times the number of claims that it would usually incur. Thus in two months of 2021 the industry incurred the equivalent of more than 8 months of claims. The other months of 2021 were also raised.

The chart shows that levels of claims are closer to normal levels during 2022 but it should be noted that this report does not allow for late reported claims, and hence, the more recent months can still deteriorate.



Analysis presented at the [ASSA 2022 convention](#) showed that the rate of excess mortality was lower for insured lives than the population. However, as the above graph shows, on a relative basis it is higher for insured lives because of the underlying mortality for insured lives being much lower than that of the population. The above only includes experience on fully underwritten new generation products. Data on other products (such as funeral, older generation products, group life) has not been centrally collected, though actuaries working in this field indicate similar high excess deaths for these products. Less data has been collected about other risks covered by life insurers, like disability (income and lump sum), critical illness and hospital cash type business.



Disability income

- There was a significant increase in claims in short waiting period products due to large numbers of people getting booked off for exposure to- and/or infection from COVID-19, particularly in the medical occupations.
- Increases in incidence of other products with longer waiting periods is to be expected.
- There may be increased cessation of disability claims where claimants have died.
- Some lower-than-expected incidence may have occurred on these products as fewer people may have sought medical diagnosis to qualify for a claim.

Disability lump sum

These products either have long waiting periods or require the disability to be significant or permanent. These products are unlikely to be affected significantly by COVID-19.

Critical Illness

There was possibly slightly better than expected experience during the pandemic as fewer people sought medical diagnoses that would qualify for claims. Increased claims may be observed going forward as these diseases get diagnosed (and may be more severe).

Societal Responses

During the COVID-19 pandemic before the arrival of vaccinations, societies attempted to reduce the spread of the pandemic. The initial responses in cities in China were to “lockdown” and require people to stay at home as much as possible. Social distancing, reduced size gatherings and mask wearing were other typical responses. In South Africa, restrictions on the sale of alcohol and curfews were also imposed.

These measures were linked to a reduction in the spread of the disease, [even in South Africa](#), but it’s also clear that these measures were less effective in South Africa compared to developed countries. South Africa experienced a significant 1st wave of deaths during the strictest lockdown periods. It is not clear which measures had more of an effect to curb the spread of the virus.



Studies on how further deaths could be avoided would be valuable as well as monitoring for any adverse effects the vaccines may have.

Actuaries have modelled the impacts in South Africa and have shown the benefits of reduced transmissions and reduced mortality correlated with reduced mobility. There was also the risk of the collapse of the healthcare system under a severe pandemic wave that had been largely avoided.

The question remains: What would have happened in South Africa with different (or without) these measures? Even taking the above into account, it’s difficult to predict what would have happened under different circumstances. The economic consequences are also hard to study, as it’s difficult to know what the economic consequences were due to the lockdowns but also what the economic consequences of uncontrolled rapid spread of COVID-19 may have been. These will continue to be interesting fields of study.



Many developed countries had earlier access to vaccines, in particular, before the wave associated with the Delta variant. South Africa had only initiated population level roll-out during this wave (third wave in South Africa). The levels of excess deaths were significant during this wave, as opposed to much lower levels of deaths in the well vaccinated countries (despite many having older populations). Studies on how further deaths could be avoided would be valuable as well as monitoring for any adverse effects the vaccines may have.

Response of Actuarial Professional Bodies

The Society created a team of actuaries (mainly from the health practice area) early on in the pandemic. This team looked at various aspects:

- The team developed a [series of models](#) that were shared together with other available models. The assumptions underlying these models turned out to be optimistic (in terms of deaths projected) compared to the ultimate outcomes observed. The models were still useful as they allowed for modelling the uncertainty in parameter assumptions

which facilitated scenario testing.

- The team also shared information bulletins and articles to help update the profession in a timely manner.

The Institute and Faculty of Actuaries (the UK actuarial body) established the [COVID-19 Action Taskforce \(ICAT\)](#) that also published lots of material on the potential impacts of COVID-19 on actuarial practice areas. The UK body also established the more informal [COVID-19 Actuaries Response Group](#). The thinking was to establish a smaller team of actuaries that could provide actuarial thought leadership in a rapidly evolving world by operating more independently, enabling quicker responses to a very dynamically unfolding situation.

Response of life insurers

Life insurers responded relatively well to the COVID-19 pandemic:

- Life insurers paid significant volumes of claims (shown above, [and per ASISA statistics](#)).
- Life insurers adapted their claims processes to manage the high volume. In addition to that, underwriting criteria and product designs for new products were adjusted. These underwriting and product design adjustments were made to ensure the products remained sustainable and affordable, but these can only be done for new policies.
- Pricing for some products were updated to reflect the increased risks associated with the pandemic. Group life cover required quick decision making and large price increases.
- Actuaries at life insurers had to monitor financial implications of the evolving pandemic under significant uncertainty and derive assumptions and projections with significant implications in short time periods.
- Various life insurers also offered [differentiated terms of cover for applicants who presented proof of vaccination](#). This shifted over the course of the pandemic with some insurers identifying the elderly or heavily impaired lives and/or policies with larger sums assured as representing bigger risk.
- The Society's COVID-19 Task Team have surveyed actuaries working at life insurers to gain a deeper understanding of the various responses and actions of life insurers.

Future mortality and morbidity impacts

Generally, the profession is predicting a changed mortality and morbidity landscape going forward. We list some of the research areas below:

- COVID-19 is expected to continue to impact mortality as it shifts to an endemic disease. The size of this impact remains uncertain but is hoped to reduce over time.
- Delayed diagnosis and treatment of other conditions such as cancer, HIV/AIDS, tuberculosis, and other chronic diseases, is expected to impact mortality.
- The economic impact of COVID-19 is expected to impact mortality and disability experience going forward.
- There may be some beneficial impacts such as medical technology advances due to COVID-19 that could have benefits in other areas of treatment. This is expected to take longer to emerge.
- Due to the impact of COVID-19 we expect some deaths that would have occurred in the coming years to have been accelerated and thus we may see some reduced mortality in the short-term. Early estimates indicate that these impacts are likely to be only observable in the very old and severely impaired lives.

Beyond COVID-19

COVID-19 has had a large impact on society at large and the life insurance industry. Considering this, society needs to rethink what the implications of this may be and what needs to be done.

The assumptions about the incidence and severity of future pandemics need to be rethought and recalibrated, particularly relating to capital and solvency regimes. Especially considering the significant burden of deaths observed in developing countries relative to developed countries.

At a societal level there does appear to be a need for better planning as well as independence from global supply chains of medical and pharmaceutical products. The delay in vaccination in many developing countries resulted in significant loss of life that may have been avoided.



The tracking of data and in particular death registration had been a great benefit to South Africans. Death registration and near real-time modelling of excess deaths proved beneficial for understanding of COVID-19 in South Africa. More rapid processing and/or release of cause of death statistics may also increase responsiveness in future.

The role of actuaries

Actuaries should have a significant role to play as these questions need to be addressed by life insurers, pension funds, medical aids, and in other practice areas where actuarial skills are traditionally used.

However, we also think the actuaries can have a role to play at a societal level to help society make better sense of a future that has become more uncertain than before. 

The full report was initially published in March 2023. The ASSA COVID-19 Task Team membership at the date of publication included: Adam Lowe (lead – healthcare workstream), Alex Brownlee, Barry Childs, Claiton Manikai (chair), Karsten Roux (lead – life workstream), Louis Rossouw (vice chair), Michael Davies, Pamela Hellig, Paresh Prema, Phumla Tsematse (secretariat), Roseanne Harris, Sarika Besesar, Siebert Benade (lead – market conduct workstream), Simon Henderson, Thandanani Mbhele, Zandile Gobe (secretariat) and Zane Heyl

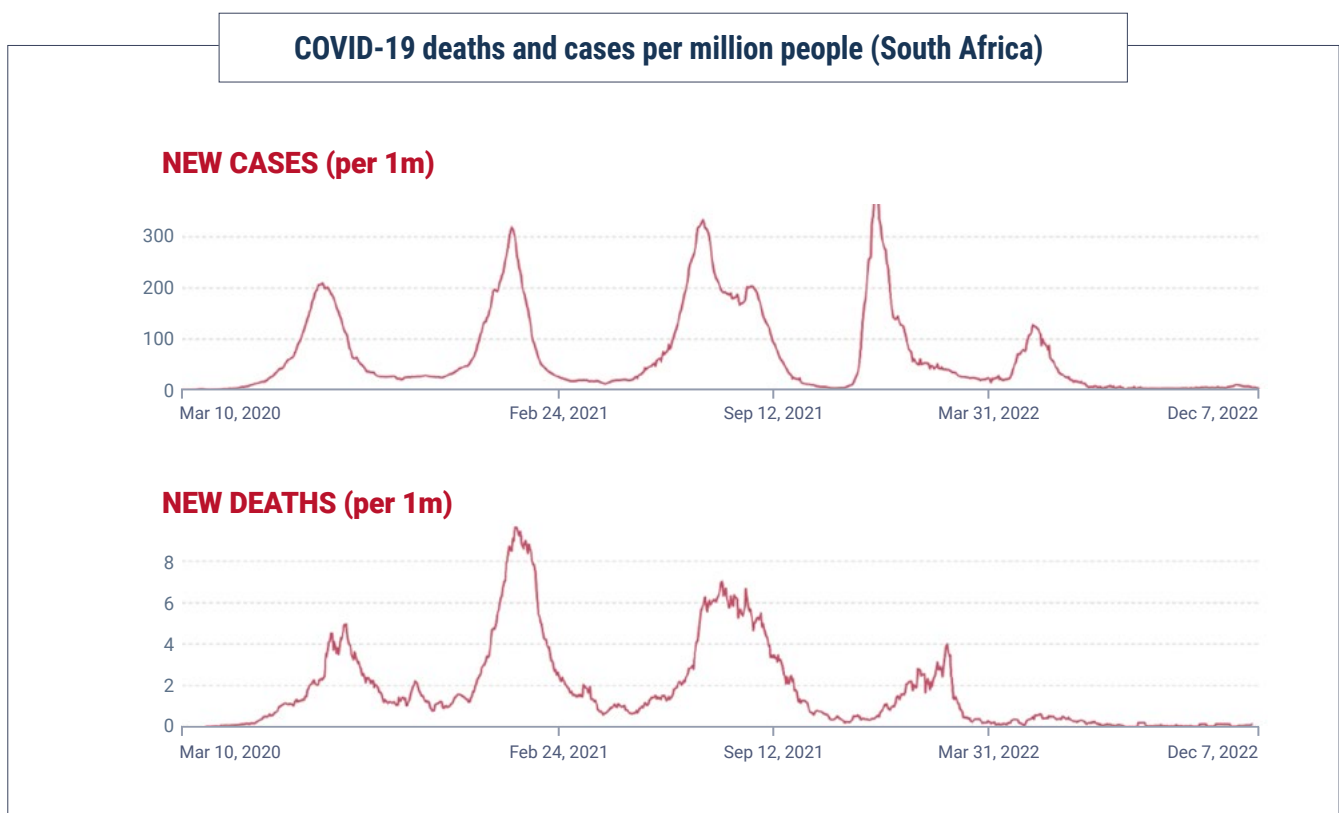
ASSA COVID-19 Task Team: Reflections on the Pandemic - Healthcare Stream

The Actuarial Society of South Africa (ASSA) has formed the COVID-19 Task Team to consolidate the learnings from the pandemic and enhance preparedness for future pandemics. Towards the end of 2021, the Healthcare stream of the Task Team produced a supplement to the SA Actuary magazine containing a [series of papers](#) on various aspects of the pandemic, and these are summarised and updated where necessary in this short paper.

PROGRESS OF THE PANDEMIC IN CASES AND DEATHS

The first COVID-19 infections in South Africa began to be reported in March 2020, and various publications have tracked numbers of cases and other metrics since then. The reported cases and deaths (mostly using NICD data) may not reflect the full death toll from COVID-19,

and the 'excess deaths' metric is often deemed the more accurate measure. Nonetheless although the magnitudes are different the trends broadly coincide, meaning the reported deaths are still useful for tracking infection waves. One such summary of the 7-day average number of new confirmed cases and confirmed deaths is shown in the graph below.



Source: Johns Hopkins University CSSE COVID-19 Data

Some of the wave patterns and features may be explained by the development of variants of the SARS-COV-2 virus. Notably the first wave was driven by the original virus form, the second by the Beta variant (known at the time as the South African variant), the third by the Delta variant and the fourth and subsequent waves by the Omicron variant. [Research into the three variants](#) suggests that the Beta variant was more severe (both in terms of death rates and overcoming immunity) but not significantly more transmissible than the original virus, the Delta variant was significantly more transmissible but not as severe as the Beta variant, while Omicron was more transmissible but significantly less severe than the prior two variants. These characteristics seemingly manifested in the wave patterns (high peak of deaths for the second Beta wave, large number of infections and deaths in the third Delta wave and lower numbers of deaths in the fourth and fifth Omicron waves).

IMPACT ON MEDICAL SCHEMES' CLAIMS EXPERIENCE

The anecdotal experience of the Task Team members who work with medical schemes suggests that the largest impact on medical scheme claims from the pandemic was reduced expenditure resulting from the impact of lockdowns, which more than offset the increase in expenditure due to COVID cases. While no consolidated research in the medical scheme population is currently available, actuaries and other experts from [Insight](#), [Discovery Health](#) and the [South African Reserve Bank](#) amongst others have published articles noting lower healthcare utilisation during the pandemic attributed to lockdowns primarily.

VACCINE ROLLOUT: PROGRESS AND CHALLENGES

A key route out of the pandemic was the rapid development of multiple vaccines against COVID-19. These began to be administered in South Africa in March/April 2021, with healthcare workers and older people prioritised initially. Boosters continue to be available and anyone over the age of 12 is eligible for vaccination. In his article in the SA Actuary Supplement, Barry Childs characterised the vaccination rollout into four phases (or Acts) as follows:

- Act 1 was labelled as 'Medical Emergency' and comprised of finding an initial supply of vaccines to provide to healthcare workers on the front line of



the pandemic and resulted in the Sisonke trial where 450 000+ healthcare workers received Johnson and Johnson (J&J) vaccines by May 2021;

- Act 2 (Groundwork) was where the procurement processes of government began to bring vaccines into the country (principally Pfizer vaccines initially) and these began to be administered through private and public sector sites starting with the highest risk elderly population;
- Act 3 (Building Pace) was when large quantities of vaccine stock (both Pfizer and J&J) began to enter the country, eligible age groups were rapidly expanded and rules relaxed to reach as many people as possible, with a peak of over 100 000 doses per day reached and sustained for much of August and September 2021; and
- Act 4 (A Race to the Finish) referred to the - at the time - ongoing efforts to reach the unvaccinated population and bring the country to a 'population immunity' scenario where restrictions could be released and life could begin to return to normal.

After the article being published, further vaccine doses were used to provide booster vaccines 2-6 months after the last dose and to provide a single dose of the Pfizer vaccine to children from 12-18 years old. While the vaccine programme continues and efforts are being made to encourage the unvaccinated to come forward, it appears that population immunity is beginning to impact the transmission of the virus and restrictions were mostly released in April 2022.

The issue of vaccine safety and efficacy was also a key consideration and research was undertaken into the body of evidence available in terms of the COVID-19



vaccines. While given the newness of the vaccine at the time, the evidence was mostly in respect of short-term effects and the long-term effects are unknown, the key features of the evidence compiled was that:

- Vaccination had a **significant positive impact** (lower rates) on the incidence of severe disease, hospitalisation and death relative to an unvaccinated population, with relative reductions of up to 90% in vaccinated populations;
- The evidence was more mixed or showed a lower impact when measuring rates of less severe infection as well as rates of transmission, with some studies showing up to a 60% effect and others reporting no effect or a negligible effect;
- While the duration of both vaccine and natural immunity remains **uncertain**, immunity was **shown** to wane over a period of several months, which led to many countries including South Africa allowing people to receive so-called 'booster' vaccines after a period of time;
- The evidence is again **unclear** on the efficacy of vaccine induced immunity relative to 'natural immunity' i.e. immunity from previously having been infected with the virus, but it is generally argued that vaccines provide a **predictable immunity** (both in terms of knowing who in the population has immunity and the **underlying immune system responses** to the **virus** and **vaccines** respectively) relative to natural immunity and as such most countries have used vaccination rollouts as a key part of their COVID-19 response;
- The role of hybrid immunity i.e. prior infection and vaccination together, with **some studies** starting to conclude that it provides **the strongest protection**,

while others report increased **side-effects of vaccination** in those who have prior infection; and

- While some side effects of vaccination have been reported the body of evidence (albeit collected over a short period) appears to support that the benefits of vaccination outweigh the risks, **even in populations where specific additional risks have been identified**, and further that risk arising from infection with the SARS-COV-2 virus outweighs that from vaccination. Monitoring of side effects remain to be monitored internationally.

OTHER CLINICAL AND IMMUNOLOGICAL RESEARCH/ EVIDENCE

Other research and evidence compiled by various members of the task team and the profession included:

- The **significant positive impact** on mortality experienced when pulse oximeters are provided to members at high risk of severe infection or death;
- Analysis of age- and disease-related mortality and morbidity levels for COVID patients, which confirmed the rationality of the government's age-based rollout plan for vaccines;
- A **cost-benefit analysis** of Discovery Health's data by Roseanne Harris in respect of the (at the time) proposed vaccine rollout to assess whether it was appropriate to target the entire adult population and the potential return on the 'investment' in the vaccine;
- **Impact analyses** which showed the role of physical activity in enhancing the protection offered by vaccines against severe COVID-19 infection; and
- Discussions around the nature of vaccine hesitancy as well as the likelihood of COVID-19 becoming 'endemic' in the global population post vaccination rollout. ⚠️

The full report was first published in July 2023. The ASSA COVID-19 Task Team membership at the date of publication included: Adam Lowe (lead – healthcare workstream), Alex Brownlee, Barry Childs, Claiton Manikai (chair), Karsten Roux (lead – life workstream), Louis Rossouw (deputy chair), Michael Davies, Pamela Hellig, Pareshe Prema, Roseanne Harris, Sarika Besesar, Siebert Benade (lead – market conduct workstream), Simon Henderson, Thandanani Mbhele (secretariat), Zandile Gobe (secretariat) and Zane Heyl

Market Conduct matters faced by the Actuarial Profession relating to COVID-19

1. Overview

The COVID-19 Task Team was established by the Actuarial Society of South Africa (ASSA) to investigate a range of actuarial matters relating to COVID-19 faced by its members. The role of the Market Conduct Workstream was to identify market conduct issues that may have negatively affected policyholders or bring the Profession into disrepute; and to develop recommendations to manage identified market conduct issues. A discussion document was developed by the Workstream covering a range of potential market conduct issues across the various fields in which actuaries operate during the COVID-19 pandemic. Indicative market conduct risk ratings were included to aid further discussion, whilst issues of medium and high risk were referred to the applicable ASSA structures for further discussion.

This article provides a summary of the key findings of the Workstream, including the role of actuaries in navigating the pandemic, and discusses areas of potential market conduct risk identified by the Workstream. The article considers lessons that can be learnt with the benefit of hindsight, but it does not express an opinion on the appropriateness of any actions already taken.

It is noted that the investigations were conducted internally and under the Task Team's terms of reference, even though some external sources were reviewed. The work is the basis of further discussions to ratify the conclusions and recommendations, or to identify further areas of interest to investigate.



2. Navigating the Pandemic

Actuaries have been responsible to investigate and recommend actions relating to a range of critical issues during the pandemic. Actuaries faced unprecedented challenges, but also witnessed remarkable resilience and innovation. Some of the key areas at the forefront of efforts included:

- Pandemic modelling played a crucial role in guiding decisions. It enabled actuaries to demonstrate the impact of various scenarios, helping to make informed choices and develop strategies to safeguard businesses, to protect clients and in the public interest.
- Capital and liquidity management have been pivotal in maintaining financial stability. By carefully managing available resources, actuaries could meet commitments to clients, even in the face of economic uncertainty.
- Recognising the economic hardships faced by many, actuaries were involved in taking proactive steps to manage premium affordability for clients. This included revisiting pricing structures and offering more flexible payment options to ease the financial burden on clients.
- During these challenging times, actuaries continued to innovate, creating products and services that cater to the evolving needs of clients. Actuaries explored new digital solutions and introduced products that were aligned with the changing landscape.
- Actuaries developed recommendations to assist clients by delaying medical aid contribution increases and finding innovative and sustainable ways of returning built up reserves.
- Actuaries were involved in enabling and optimising operational processes like claims and underwriting during lockdowns, such as by embracing digitalisation. This helped organisations improve the customer experience, but also empowered employees to work more effectively in remote settings.

Actuaries were faced with many difficult decisions with various degrees of market conduct risk, needing to balance their prudential accountabilities with individual client or public interest demands. The Workstream identified a number of key areas that are explored further below.

3. Underwriting Practices

Underwriting practices had to be adapted to allow for the impact of the virus on mortality and morbidity rates. Vaccination status and recent infection were introduced into underwriting questions, which attracted a fair bit of media attention and mixed reactions from the public.



Based on a review of the Insurance Act, TCF guidance, Policyholder Protection Rules, the Promotion of Equality and Prevention of Unfair Discrimination Act, the Workstream has not identified any regulatory or legal barriers to implementing vaccination status as a rating factor in life insurance underwriting.

Based on ethical frameworks proposed by ASSA members (e.g. [The Fair Discrimination Principle](#) developed by AF Marais), the Workstream has not identified ethical concerns regarding the implementation of this factor.

In the workstream's opinion, it is up to individual insurers to decide if vaccination status should be included in their underwriting processes. However, care needs to be taken to ensure that any distinctions between premiums and benefits are actuarially justified at underwriting stage and over time. For example, if there is a change in how vaccination status affects claims, loadings for unvaccinated lives should arguably be reconsidered.

It is not yet clear how past COVID-19 infections will impact future mortality and particularly disability experience. If severe past COVID-19 is indicative of a higher risk of death or disability, the benefit of underwriting for these risks needs to be weighed up against fairness principles.

The industry responded to underwriting for HIV/AIDS with [self-regulation through ASISA guidelines](#). This will be a useful reference to consider by ASSA if past COVID-19 infections become more prominent in underwriting.

Underwriting practices were allocated a medium market conduct risk rating.

4. Client Communication

Actuaries were not only involved in drafting or reviewing new client communication, but also interpreting past communication and policy exclusions that were written many years before.

If severe past COVID-19 is indicative of a higher risk of death or disability, the benefit of underwriting for these risks needs to be weighed up against fairness principles.

There were instances where certain products did not behave as a layperson might have expected during the pandemic. For example, Business Interruption Cover and Credit Life protection did not always provide clients with the protection that they may have expected.

As a result, actuaries need to consider not only the risks covered by a product, but also the potential consequences of excluding certain risks. This may be important in identifying gaps in cover to improve product design, or to clarify any excluded risks in communication so that clients know what they are covered for.

[Press coverage](#) of the South African Customer Satisfaction Index (SAcsi) for Life Insurance was considered. The latest SAcsi shows that insurers have made solid headway, and that customer loyalty and satisfaction are improving. Abigail Boikhutso, the CEO of Consulta, said the following:

"However, we still do see that the hangover of the reputational damage caused by highly publicised claims repudiations – whether in the life or short-term space is irrelevant – remain fairly front and centre for many consumers. Any hint of a blunder in respect of the trust and reliability of an insurer is likely to have a significant impact on customer loyalty, and in turn, the overall perception of satisfaction with the insurer. The coming months will demand that insurers become honed across every aspect of the customer journey – from product research, advice, purchase, admin and servicing to claims and renewals."

Given the highly publicised nature of claims repudiation, Client Communication was allocated a high market conduct risk rating. The following sections provide more detail on business interruption and credit life products.



4.1 Business Interruption Cover

Ordinarily, business interruption cover is only triggered by physical damage to the insured property. However, it can also be triggered by expressly defined events in the policy unrelated to physical damage. As such, unless expressly defined in the policy wording, a contagious and infectious disease event would not result in a valid business interruption claim.

Further, policy wording may be sufficiently tight such that a claim event is still not triggered. This extends to several contentions that include the intention of the protection, the cause of the business interruption being lockdown rather than the outbreak of the disease itself and the proximity of the breakout to the business.

A risk emerged where misalignment might have occurred between reinsurance wording and interpretation, relative to insurer wording and interpretation.

Within the market, these policy wording limitations raised several issues as policyholders incorrectly believed that they were indemnified against such an event. This might have been because of inappropriate sales of the policies at the time of inception, far prior to the pandemic, as well as an incomplete needs assessment at the point of inception of the policy.

These policy wordings were challenged at the High Court in the *Ma-Africa Hotels (Pty) Ltd and Another v Santam Limited* case, which determined that “it cannot be said that the nationwide or global events were not contemplated or insured” by the policies and found in favour of the insured party.

The ruling resulted in a larger number of claims being paid without significant challenge as well as a significant distrust in the Insurance sector.

In the aforementioned case, the Supreme Court of Appeal stated, “It is, in our view, hardly possible to imagine a more tortured, convoluted and intricate an approach to the reading of the policy”.

In order to avoid such cases in the future, it is expected that business interruption policy wordings will be reviewed to ensure further clarity is provided to the policyholder, including more refined definitions of what triggers cover (definition of loss, aggregation period definitions), as well as ensuring that policyholders are better informed of the cover and the risk events that would trigger it.

4.2 Credit Life Protection

The Annual Report from the Ombudsman for Long-Term Insurance (2020) noted approximately 36% of complaints which were directly related to COVID-19 or to the lockdown were in respect of credit life benefits, compared to overall complaints where credit life benefits make up 9% of cases. It was further noted that claims for retrenchment and inability to earn an income caused the highest number of complaints, likely due to the economic environment and that these are typically more disputable claims.

A key issue is whether an insurer is obliged to pay a claim for benefits related to an inability to earn an income when an insured receives Temporary Employee/Employer Relief Scheme/TERS payments. The 2021 Annual Report noted that TERS benefits are not considered regular income, but rather passive benefits created by the National Disaster Benefit Fund, and the insurer agreed to pay for these loss of income cases.

5. Market Perception

The perceptions of customers and the public of companies and the Profession (including individual actuaries in the public eye) were considered. This section provides an overview of general market conduct matters identified by the Workstream that apply to the Profession as a whole and across the different industries within which actuaries operate.

5.1 The Actuarial Profession

Actuaries do not only have a responsibility to employers and clients, but also to act in the public interest. ASSA provided significant input behind the scenes through involvement with Business for South Africa (B4SA) and issued a number of media releases.

The Profession needs to consider its role in phenomena such as COVID-19 (and other pandemics) in terms of its responsibility to the public (as codified in ASSA's Code of Conduct). In particular, the role that ASSA plays in public debates and analysis may be considered, where ASSA generally limits itself to factual commentary and leaves speculation to other forums. Given ASSA's prominent role and expertise, it may be beneficial to consider a more active role in public debate where appropriate.

The method via which the public is made aware of how the Profession is honouring its public interest responsibilities is, to a great extent, communication. Communication is a particularly important facet of market conduct as it provides a means to influence the reputation of the Profession, broadcast reliable and clear messaging, and share expertise in a way that is useful, educational and, perhaps, reassuring to policyholders and the public at large. The COVID-19 pandemic highlighted the importance of intentional and informed communication, both from individuals in their capacity as members of ASSA and from the Profession itself. To understand lessons learned, conversations were conducted with three actuaries (in South Africa and the UK) who played relatively public roles during the pandemic.

The output of these conversations was a series of questions which have bearing on market conduct. These questions may be used to prompt discussions on guidelines and ideas that may be implemented in future pandemics or states of disaster.

- **Where can actuaries add value?**
 - o Should we be advising policymakers or rather be a technical resource upon which they draw as necessary?
 - o What are the areas of core actuarial expertise that can be applied to these situations (and what should be left to experts in other fields)?
 - o How does our professional obligation to act in the public interest balance with the need for adequate and sustainable risk mitigation and protection?
- **What should the content and frequency of messaging to the public be?**
 - o Building on work already done as part of ASSA's PR strategy, how should we enlist the help of PR/marketing/communications/psychology experts to optimise potential marketing opportunities for the Profession?
 - o Is there value in presenting an analysis of experience with or without forecasts?
- **Can we be more organised in terms of capacity/resources/working groups?**
 - o It has been suggested that the Profession's level of public engagement and public prominence should be proportional to the resources allocated to this work – a lot of work is required to enable a meaningful contribution. This should be taken into consideration when allocating resources and setting objectives around communication.
 - o There are lessons to be learned from the UK's COVID-19 Actuaries Response Group regarding communication from actuaries to the public that could be valuable for future pandemics and similar scenarios. Their lessons included:
 - *Speed and relevance of response are important. It's better to be broadly right and in time than perfect but late.*

- Prepare as much as possible but don't underestimate the extent to which things will differ in unpredictable ways. For example, if the current pandemic had happened 5-10 years earlier, the rapid shift to working from home might not have been possible.

o Investigations might be conducted into their operations and which aspects might be relevant to South Africa.

• **How can we fortify the processes and guidance around work done by committees and the ratification of such work by Council?**

o Should work done by various ASSA committees and individuals be supported more formally by ASSA Council, especially when there are opposing voices in the public from other experts incl. actuaries?

o Is there a need for a formal mandate for vetting work done by committees and adopting it as the "official" ASSA stance?

The public perception of the Profession has been allocated a medium market conduct risk rating given the deliberately conservative approach taken by ASSA during the pandemic. There could be potential to have a bigger positive impact in the public domain, although this could introduce additional risk.

5.2 Information Sharing in the Industry

Actuaries need data to perform their duty to act in the public interest. The workstream considered collaboration during the pandemic through various ASSA structures. For example, the COVID-19 Task Team worked together by sharing analysis and developments to assist the Profession in thinking and responding to COVID-19. Similarly, the gathering of mortality and exposure data on a monthly basis was done as part of the Continuous Statistical Investigation (CSI) initiatives.

Information sharing in the industry has been allocated a medium market conduct risk rating given the uncertainty around the ongoing Competition Commission investigation into Life insurance companies. It is the understanding of the workstream that Council intends to engage with the Competition Commission after

The challenges posed by the pandemic have tested actuaries in many ways, but they've also highlighted our resilience and adaptability.

the investigation is completed, which may assist in formalising professional guidance to be followed by actuaries and the various ASSA structures when sharing information.

6. Conclusion

Overall, no major market conduct issues have been identified relating to COVID-19 given the need to balance solvency and consumer interests, although ongoing discussions and engagement remain necessary.

The challenges posed by the pandemic have tested actuaries in many ways, but they've also highlighted our resilience and adaptability. As we move forward, let us continue to learn from these experiences, ensuring that we emerge stronger and more prepared for whatever the future may bring.

The Workstream would like to thank relevant members of the Life Assurance Committee, Short Term Insurance Committee, Healthcare Committee, Retirement Matters Committee, Microinsurance Committee and Market Conduct Committee for their valuable input. 

The full report was initially published in March 2023. The ASSA COVID-19 Task Team membership at the date of publication included: Adam Lowe (lead – healthcare workstream), Alex Brownlee, Barry Childs, Claiton Manikai (chair), Karsten Roux (lead – life workstream), Louis Rossouw (vice chair), Michael Davies, Pamela Hellig, Paresh Prema, Phumla Tsematse (secretariat), Roseanne Harris, Sarika Besesar, Siebert Benade (lead – market conduct workstream), Simon Henderson, Thandanani Mbhele, Zandile Gobe (secretariat) and Zane Heyl

The ASSA 2023 Convention Awards

Congratulations to all the winners who were recognised at the Presidential Plenary during the 50th ASSA Convention.



The Murray Medal is the most prestigious award the Society can bestow. Since 1972 it has been awarded to only 20 individuals. This year the Murray Medal was awarded to Roseanne Harris acknowledging her service to the actuarial profession with distinction.



Vivian Cohen received recognition on the ASSA stage for having attended all 50 of ASSA's Conventions.



Costa Economou giving his first speech as the incoming ASSA President.



The top Academic Achievers are:

Banking Applications: Shailesh Pillay General
Insurance Applications: Paballo Makupu
Health & Care Applications: Jacob Teeger
Life Insurance Applications: Ariel Smith



The Swiss Re Prize for the Best Reinsurance or Risk Paper in 2023 was awarded to Ronald Richman and Mario Wüthrich for their paper "Smoothness and monotonicity constraints for neural networks using ICEnet".



The award for Best Debate went to Lusani Mulaudzi and Simon Louw for the debate "Should ASSA actively participate in broad public policy analysis and debate?"



This year's presidential award went out to Michael Tichareva for his instrumental role in building banking as an established practice area.



The Insight & ASSA Chess Tournament champion, Mohamed Bhawoodien, masterfully claimed the R10k prize.



Nokwanda Mkhize, who retires as CEO of The South African Actuaries Development Programme after 21 years of impactful service, was acknowledged for her incredible contribution to the transformation of the actuarial profession.



The RGA Reinsurance Company Prize for Best Convention Paper and Best Paper by First-time Authors presented was awarded to Takura Wekwete for "Application of deep reinforcement learning in asset liability management".

South African  ACTUARIAL SOCIETY
OF SOUTH AFRICA

Actuary

Actuarial Society of South Africa's E-magazine

Volume 7 Number 3 | OCTOBER 2023



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