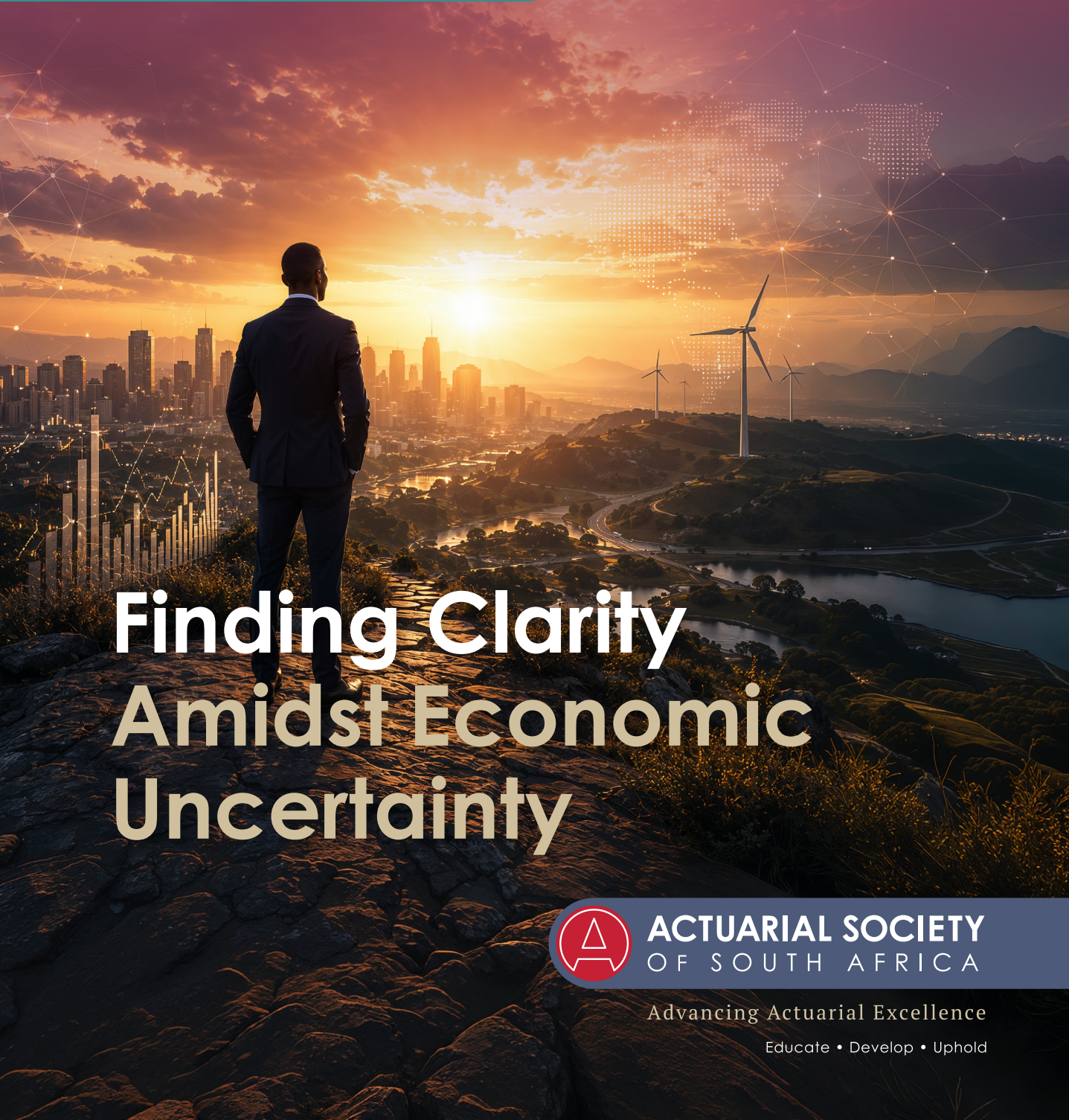
SOUTH AFRICAN Actuary

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Finding Clarity Amidst Economic Uncertainty

ACTUARIAL SOCIETY OF SOUTH AFRICA

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table of CONTENTS

PRESIDENTIAL PERSPECTIVE	04
EDITORIAL	08
UNLOCKING THE POTENTIAL OF PRIVATE MARKET ASSETS *by Andrew Davison and Coral van Zyl*	10
WHEN 99% ISN'T NEARLY ENOUGH - Agentic AI for the enterprise *by Lance Posthumus*	15
FROM MODELS TO MARKETS: Why African Banking Needs More Actuarial Thinking *by Michael Tichareva and Trevor Takabika*	21
FROM MODELS TO MARKETS - Reimagining Credit Risk, SME Financing and Insurance Integration in African Banking – Part 1 - *by Michael Tichareva and Trevor Takabika*	28
THE COST OF CHANGE: Quantifying Transition Risk in a Carbon-Constrained Economy *by Kivaan Naidu and Jerome Mahadeo*	43
CLIMATE AND CARE: How Extreme Weather is Shaping Healthcare Demand in South Africa *by Christiaan Smith, Callan Kotzen, Chanie Suttner, Praise Ndebele, and Michael Cohen*	50
BECOMING VISIBLE: Reflecting on The Insurance Apprentice *by Tyrell Moodley*	56
INNOVATING MENTAL WELLNESS INSURANCE *by Keelan Moodley*	60

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GAME CHANGERS OR OVERHYPED? How Advances in Metabolic Health and Cancer Care Are Reshaping Mortality, Morbidity and Insurance *by Desigan Pillay, Moritz Drefs, Florian Rechfeld, and Prachi Patkee* 66

THE LONG RUN *by Maseeha Rawat* 76

THE SCENIC ROUTE: Tlou's Journey to the IRONMAN Start Line *by Nomfundo Nkambule* 84

FINDING CLARITY AMIDST ECONOMIC UNCERTAINTY: Douglas Hoto *Interview by Lydia Mutepfa-Mgabhi* 88

DIVIDEND DECLARATION PRACTICES OF INSURERS IN SELECTED SUB-SAHARAN AFRICAN COUNTRIES *by Takalani Sikhavhakhavha and Tshepo Vilakazi* 94

LOOKING THROUGH THE RIGHT LENS. Why Some Climate Risks Become VISIBLE ONLY WHEN IT IS TOO LATE *by Rajeshwari Iyer* 100

page **15**

page **28**

page **60**







presidential PERSPECTIVE



Nalen Naidoo,
President of the Actuarial Society of South Africa

As we approach the middle of the year, many of us are probably caught in the usual choice between hunkering down for the winter, racing for warmer weather, or some combination of both. I was able to spend a week in Mpumalanga with family (with some last-minute ASSA travel thrown in for good measure!), and it was a spectacular reminder of how beautiful this country is. I hope that you have been able to enjoy some respite and that your energy levels are well-managed for the year ahead.

This Edition: Reimagining Relevance and Expanding Horizons

This edition of the *SA Actuary* perfectly captures the theme of relevance and showcases how actuaries are expanding far beyond traditional boundaries. The featured articles demonstrate a shift from technical precision to contextual judgment, innovative problem-solving, and embracing emerging risks. They also provide food for thought as we reimagine credit risk models, explore access to private market assets, consider mental wellness insurance and medical advancements, and contemplate the agentic AI future.

We also showcase the human spirit and look at four inspiring member profiles that highlight deep perseverance and the ability of ASSA members to excel across multiple disciplines. In my short time as President, I have been fortunate to meet many members with varied backgrounds, outside-work interests, and deep passions beyond the numbers – this has reinforced, to me, that true South African diversity comes from us sharing our origin stories, and the stories we all have are powerful ones of history, heroes, hardships and hopes. I look forward to seeing many more stories being shared as we become more inclusive as a Society – if you or a member has done something outside the ordinary that could inspire others to expand their horizons, please reach out to me on **president@actuarialsociety.org.za**.

Be(ing) the actuaries that the world needs

I have been repeating this calling in various forums since I began my Presidential tenure. This calling is for members to go beyond our technical prowess or the mastery of spreadsheets, and to embrace a mindset of service, global awareness, and bold leadership. As I continue my own journey on this path and learn what this means for me, I want to share two formative experiences that I had during the month of writing this piece.

The first set of experiences involved a pair of networking events I attended; one on professional sports leadership and the other on the future of South Africa's cities. Any attempt to summarise these interesting topics would result in over-simplifications, and I'm happy to share my detailed views with anyone when we meet 'in the corridor', but the content wasn't at the heart of the formative experiences. The key revelation was the negative sentiment regarding South Africa in one meeting, and the hopeful sentiment in the other. I won't tell you which was which, but you may be surprised! That got me thinking about how much we all really know about how our country operates, where we get our facts, and what role we play as leaders. In the more positive conversation, we learnt about the good work being done by dozens of civil servant leaders to undo years of state capture, including the pivotal role now being played by the Madlanga Commission and related

task forces. In the other, we had business leaders who gave very little credit to all the progress underway (including the aforementioned Commission), choosing rather to focus on negative headlines and rhetoric. What is our role as we become the actuaries that the world needs? I believe our role is to get the facts, see the world for what it is (both good and bad), actively support those people making sacrifices to improve our institutions, and provide the leadership that South Africa needs to keep us believing in a better tomorrow. The Springbok coach's words in Chasing the Sun II give us all something to reflect on here: "Guys, can we now go back to South Africa and not fall back into the trap of when someone talks negatively about South Africa, you just keep your mouth shut and say, 'everything's stuffed up'."

The second experience occurred amidst the wave of xenophobia that erupted earlier this year and is still working its way through our social, political and economic systems. At the time, I was challenged by a member to think hard about ASSA's approach, and my own views on these public tensions. It is easy to label this as someone else's problem, or to believe this is not relevant for ASSA, or alternatively, to dispassionately fan the flames based on social media inaccuracies. However, this is more closely related to us than we might imagine. At the core of this issue is our humanity and how we wield our analytical skills to shape an equitable and resilient society, keeping our professional flame burning bright for the generations to come. As professional leaders, our response to these narratives must be rooted in data and be swift, clear and uncompromising: our strength lies in our unity, not our division.

In both these experiences, I realised that what the world needs is leaders who can assess the facts around them with brutal honesty and see the multiple angles, whilst simultaneously holding onto a vision of a better future – and then do what they can to work towards that future. I challenge all members to confront their own approaches to these topics and others like them.

Progress Across Multiple Fronts

From reflecting on what it means to be relevant, I now want to cover how the operational engine of the Society has been running hard over the past few months. Council's goals have been moved forward through several milestone achievements:

- **May Council Decisions:** At our May Council meeting, we formalised robust governance enhancements, approving an updated Committee Terms of Reference template to streamline committee operations, and approved the AFS and Integrated Annual Report for our recent AGM. We also articulated a clear game plan for completing and socialising all the qualitative research conducted on transformation.
- **Education Accelerator & Public Interest Strategy**: Following the approval of our Public Interest strategy, a key pillar of which is maths education and literacy, we engaged with the recently launched SA Education Accelerator and considered how ASSA can contribute to this milestone project.
  The Accelerator is a joint collaboration amongst the World Economic Forum, the Department

of Basic Education, and the private sector, to focus on early childhood development of maths and literacy skills, as well as workplace learning for more senior students. By deepening our focus on the foundational drivers of talent, we are working to enhance maths education pathways and build a sustainable, highly skilled pipeline that serves the broader South African public.

- **International engagements:** Our global presence and regional partnerships have taken centre stage recently:
  - ***ASZ Annual Convention (Nyanga, Zimbabwe):*** *I had the distinct privilege of serving as the Guest of Honour at the 12th Actuarial Society of Zimbabwe (ASZ) Convention. Speaking on "Expanding Horizons," I reinforced the unbreakable cultural, economic, and educational ties that bind ASSA and the ASZ. ASSA remains completely "open for business" to Zimbabwean students and professionals, and we are actively exploring many areas of overlap between our respective strategic roadmaps.*
  - ***IAA Meetings (Ljubljana, Slovenia):*** *Various volunteers represented ASSA on the global stage, engaging in vital discussions regarding the future of the profession. Key engagements covered "Educating for the AI Era" (where our CEO contributed to a panel discussion alongside French, British and New Zealand actuaries) and a debate on whether existing international professional standards adequately address an actuary's reliance on AI tools. We also contributed to refining proposals for the AI Task Force (AITF) and to reviewing the effectiveness of the IAA's committee structures.*
  - ***IAI Global Conference (Mumbai, India):*** *I had the opportunity to represent ASSA on a global panel of Presidents from the UK, US and India at the 25th Institute of Actuaries of India (IAI) Global Conference, where we shared our views on how AI will impact the profession and what we are doing to prepare our members in the years to come. We have also identified areas of strong strategic alignment with the IAI, which we are pursuing.*

It's a Calling

We have the plans, we have the projects, and we have the resources (intellectual, financial and social) to achieve Council's wide-ranging and ambitious goals. What we will always need more of is the passion and drive of our members. I urge you to find something that matters to you, to step into volunteer roles across the Society and give freely and willingly of your time.

So, with that, I leave you with best wishes for an excellent second half of the year, and I look forward to seeing many of you at our Annual Convention in October. Go forth, expand your horizons, and be the actuaries that the world needs!



EDITORIAL

Michael Tichareva

The actuarial profession has always been built on rigorous analysis, disciplined thinking and a commitment to serving the public interest. Those qualities remain as important today as they have ever been. However, the environment in which we operate is changing rapidly, presenting both new opportunities and new responsibilities for actuaries across South Africa and beyond.

In an increasingly complex world, organisations are looking for professionals who can do more than build models or quantify risk. They need trusted advisers who can interpret uncertainty, communicate clearly, challenge assumptions and help leaders make informed decisions. This is where the actuarial profession is uniquely positioned. Our technical capability gives us credibility, but our ability to translate analysis into practical action is what ultimately creates value.

The articles featured in this edition reflect that reality. They showcase not only technical excellence, but also practical applications of actuarial thinking across a range of sectors. From traditional areas such as insurance, pensions and investments to banking, healthcare, sustainability and emerging technologies, the profession continues to demonstrate its relevance in solving real-world problems.

As our profession evolves, continuous learning becomes essential. New data sources, artificial intelligence, climate-related risks, changing regulation and shifting customer expectations are reshaping the landscape in which we work. Remaining relevant requires curiosity, adaptability and a willingness to collaborate across disciplines while upholding the highest standards of professionalism and ethics.

We encourage every reader to view this edition not simply as a collection of technical articles, but as an opportunity to reflect on how actuarial skills can create greater impact. Consider how the ideas presented might improve your own work, benefit your organisation or strengthen the advice you provide to clients and stakeholders. Even one practical insight, when applied consistently, can have a meaningful long-term effect.

We encourage every reader to view this edition not simply as a collection of technical articles, but as **an opportunity to reflect on how actuarial skills can create greater impact**.

Our sincere thanks go to our authors, reviewers, editorial team and volunteers whose commitment makes this publication possible. By sharing knowledge and experience, you contribute to the continued growth of our profession and help inspire the next generation of actuaries.

We hope you find this edition informative, thought-provoking and, above all, practical. May it encourage us all to continue building a profession that is not only technically excellent, but also increasingly relevant, influential and responsive to the needs of the societies we serve.

Until next time, please keep well and enjoy the *SA Actuary*!

Michael Tichareva
Lead Editor
On behalf of the Editorial Team

Unlocking the potential of *private market assets*

by Andrew Davison and Coral van Zyl



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***Andrew Davison** is an investment actuary with 30 years of experience ranging from investment product development for life companies and asset managers to consulting on all aspects of investment strategy to retirement funds and other institutions. He is a member and past Chairman of the Investments Committee of the Actuarial Society of South Africa. Andrew has served on various trustee boards and management committees of retirement funds. He is a regular speaker on retirement and investment matters at industry events and conferences.*



CORAL VAN ZYL
B.SC. FFA, FASSA, MBA

***Coral van Zyl** is a pensions actuary with 30 years' experience in employee benefits, holding various roles in the retirement and group risk space, including serving as a retirement fund valuator, consulting to large retirement funds and group risk pricing. She has been an examiner of F204 for many years, has served on the ASSA Research Committee and is a member of the Retirement Matters Committee. She works as an actuary in liability-driven investments at Colourfield Liability Solutions and is a senior lecturer in Actuarial Science at the University of the Witwatersrand.*

***Nokwazi Dube** works as an accountant in small-town KZN. Her round-trip commute to work takes around two hours a day. However, if the bridge connecting two key roads on her route was repaired, the daily journey would be just 40 minutes.*

Nokwazi, as a trustee of her employer's pension fund, has often thought that a good use of the substantial assets of the fund would be to invest in infrastructure projects in her community, allowing her contributions and those of her colleagues to work for them in more ways than one.

Nokwazi's thinking is not new. Many South African fund members and trustees have had similar thoughts of investing in private markets or directly in infrastructure projects.



Private market or unlisted assets often fall under the 'alternative assets' banner. They provide an additional arrow in the quiver of long-term investors and are, deservedly, garnering increased attention from retirement funds.

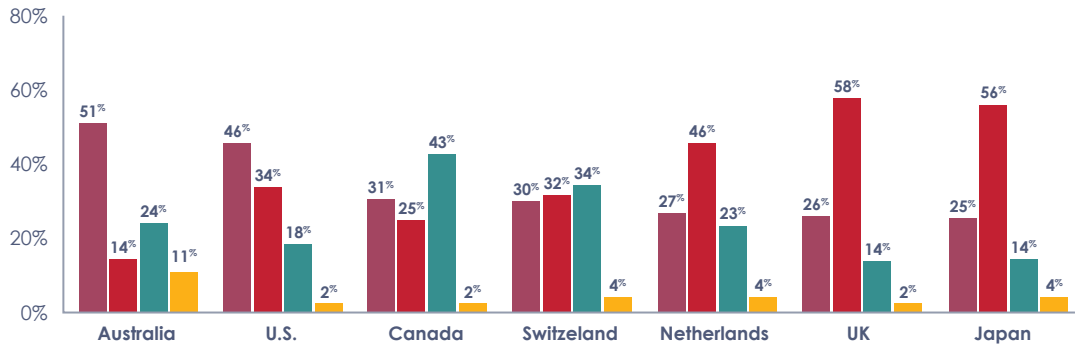
However, the barriers to making this a reality are well documented. Chief among these include income generation, liquidity – regular cashflows as well as the ability to sell the asset quickly, irregular and possibly subjective valuations, high fees, risk of default for private credit investments and exposure to operational failures.

Importantly, this is not a homogenous investment grouping or distinct, separate asset class. Rather, private market assets are alternative versions of assets that might be listed on an exchange i.e. unlisted or private equity, direct property and private debt. Infrastructure too, is just a particular flavour of private market asset, one that produces structures vital to the development and operation of society.

This interpretation provides insight into the expected behaviour of these investments. Private market assets typically exhibit very different volatility to their listed counterparts, yet their fundamental underlying characteristics are similar. The lower *observed* volatility is a function of less frequent valuations of the asset, using relatively static assumptions.

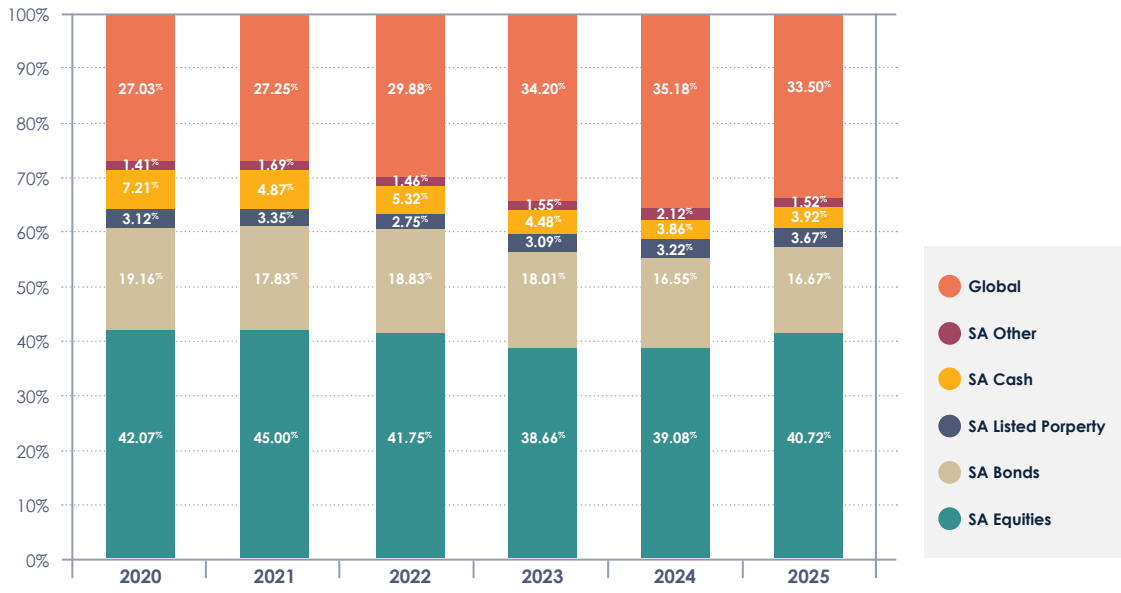
In South Africa, retirement funds allocate significantly less to private markets than their peers in most developed markets. The Thinking Ahead Institute's Global Pension Assets Study 2024 reveals that, among the world's 7 largest retirement markets, the allocation to 'Other' assets ranges from 14% in the UK and Japan to 43% in Canada (Graph 1). 'Other' includes private equity, hedge funds, infrastructure, insurance contracts, commodities etc. By contrast, Alexforbes' Manager Watch Annual survey for 2025 (Graph 2) indicates that portfolios in the Global Best Investment View category allocate on average only around 1.5% to 'SA Other'. Clearly there is room for more.

Graph 1: Equities Bonds Other Cash



Source: *Global Pension Assets Study, Thinking Ahead Institute*

Graph 2: **Average allocation of Global Best Investment View at 31 December 2025**



Source: *Manager Watch Annual Survey, Alexforbes*

A primary barrier to greater private market allocations is liquidity risk. The Two Pot system has partially alleviated this by restricting access to the retirement component before retirement, but liquidity provision remains necessary and requires careful ongoing management.

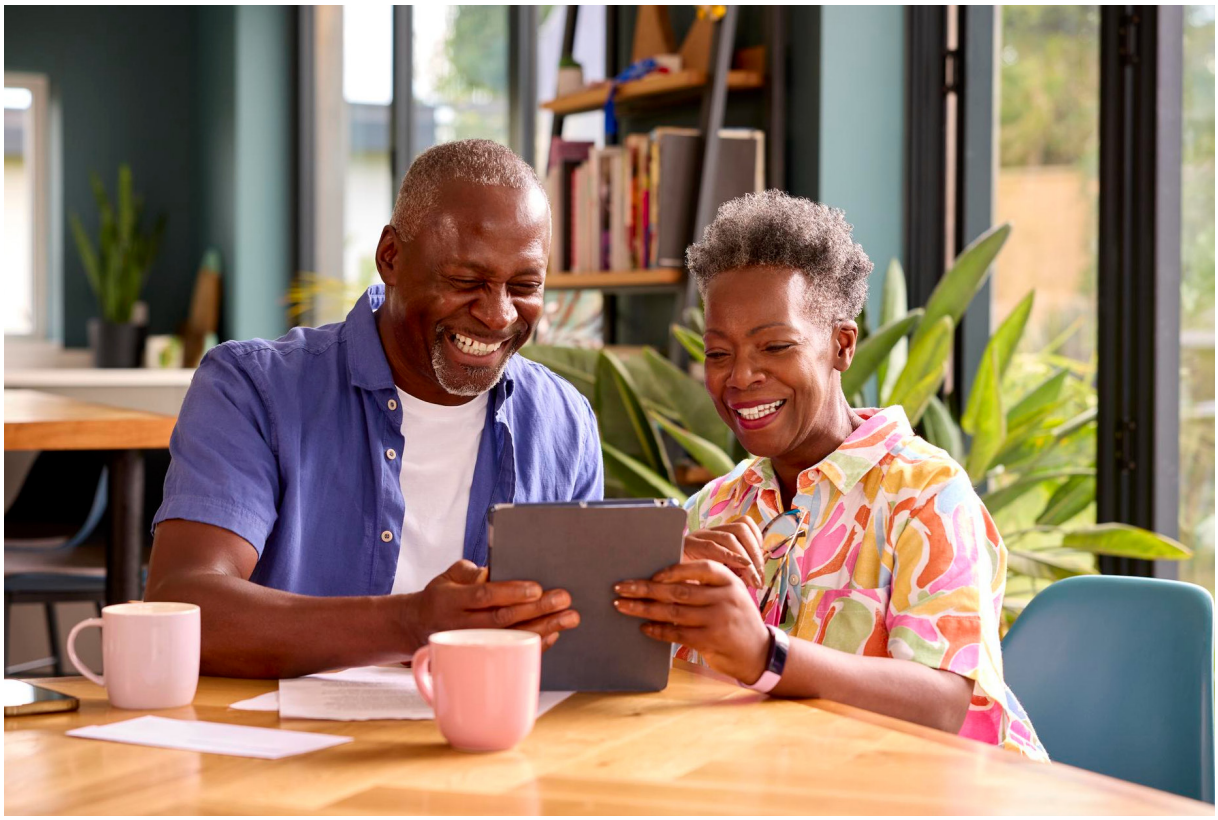
Addressing the liquidity challenge meaningfully requires industry-wide collaboration. A practical solution would be the establishment of a marketplace or clearing house — supported by both standalone and umbrella funds as well as retail solutions and platforms — providing a standardised secondary market where private market assets can be traded between retirement funds as their needs evolve. For instance, if a standalone fund transitioning to an umbrella fund held private market assets, the marketplace could facilitate their efficient transfer at an agreed, standardised valuation. Industry consolidation over the past decade, resulting in fewer but larger players, makes such an initiative ambitious, but achievable.

Additional solutions are available to ease liquidity issues. Pooled funds of funds can manage liquidity by maintaining a portion in liquid assets, diversifying across different vehicles and vintages to ensure assets are continuously approaching maturity, and managing cashflows to return capital to investors on an ongoing basis. Learn from some developed markets where listed infrastructure vehicles are available, combining the characteristics of private infrastructure with the liquidity and frequent valuations of a listed vehicle.

Artificial Intelligence offers a valuable tool *to accelerate this upskilling process and support early-stage decision-making.*

Another obstacle to higher private market allocations is the knowledge and experience required to evaluate, select, manage and monitor these complex assets. Unlike public markets, information is scarce, commitments are long-term and poor decisions can burden a fund for years. Fiduciary duty adds further pressure, making thorough due diligence essential. This upskilling need extends to trustees, asset consultants and even managers of investment strategies — a challenge compounded by the fact that limited exposure to private markets is itself the root cause of the knowledge gap.

The solution is somewhat self-reinforcing: doing the work to allocate more will build the very skills needed. This requires deliberate investment by all stakeholders in targeted education programmes and the willingness to make small initial allocations to gain hands-on experience, gradually scaling up as confidence grows. Artificial Intelligence offers a valuable tool to accelerate this upskilling process and support early-stage decision-making. Private market fund managers can also contribute through educational initiatives targeting



institutional investors and standardising due diligence packs, agreements and other relevant materials — reducing complexity and lowering the barrier to entry for less experienced allocators.

A third requirement to unlock greater investment is one where actuaries are perhaps best placed to assist – modelling. Determining the appropriate allocation to private markets is a critical component of investment strategy. Whether private market assets are treated as a distinct asset class or a subset within existing classes, modelling is an important enabler of sound decisions.

The challenge is twofold: data on private markets is limited and idiosyncratic in that it reflects the historical returns of specific private market funds or managers; and models are frequently distorted by the artificially low observed volatility of these assets. This often causes models to over-allocate to private markets, attracted by what appears to be equity-like returns with bond-like risk. Further research into appropriate modelling approaches and relevant datasets is therefore needed to support well-calibrated allocation decisions.

Retirement funds play a key role in the economic prosperity of a country by both empowering Nokwazi and her colleagues to save as well as channelling capital to where it is needed in the real economy. Unlocking the potential for retirement capital to be meaningfully allocated to infrastructure and other private market investments is an opportunity that requires commitment, diligence and a dose of courage from all players in the retirement industry.

WHEN 99% ISN'T NEARLY ENOUGH

- Agentic AI for the enterprise

by Lance Posthumus

LANCE POSTHUMUS

Lance Posthumus is a Fellow of the Actuarial Society of South Africa and a co-founder of ByteCat Digital, which builds software for actuarial teams. A version of these ideas was presented to the ASSA Life Assurance Committee sessional meeting.



Why agentic AI is harder to deploy than to demonstrate - and what actuarial software needs to get right.

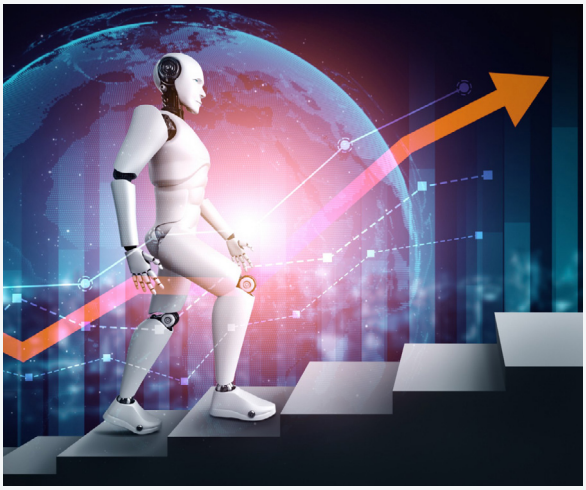
As the world sits on the precipice of agent-driven work, we are seeing a fundamental shift in sentiment. The doomer view - "AI is going to take our jobs" - is giving way to something more encouraging, for which we look to Jevons Paradox:

As a technology makes a resource more efficient to use, total consumption of that resource tends to **rise rather than fall.**



The resource here is human capital.

If that holds, the measure of success for agentic AI is not how many people are replaced by agents, but how much agents let us catalyse the benefits unique to human capital, at a far higher bandwidth. Those benefits are creativity, design, judgement and accountability. In a world where agents take on most of the execution load, people move up a level: they become the orchestrators of the work, the decision-makers, and the accountable owners of the result.



As more organisations begin their agentic AI journey, here are a few practical reflections to consider.

Generic harnesses in deep domains

Most early adopters of agentic tools are using generic agent harnesses - wrappers built for broad, loosely defined use cases on commonplace applications like Microsoft Office. These experiments can produce impressive results but turning them into an enterprise solution is a much harder problem.

Actuarial operating environments run on a far more domain-specific stack: tools for data extraction, transformation, loading (ETL), preparation and validation; detailed liability and cashflow modelling; results aggregation and IFRS 17 contractual service margin (CSM) and loss-component calculations; analysis of surplus; actuarial subledgers and results consolidation; statistical investigation and analytics; and dashboarding and reporting. Which raises the first question worth asking: are generic agent harnesses suitable for the actuarial operating environment?

The reliability problem

The first hurdle is whether an agentic system can produce reliable results. Start with a quick thought experiment. Suppose we want to automate a reserve valuation process with six user interaction points per product across eight product lines - 48 individual human contact points to automate. If we optimise each agent interaction to 99% reliability, the probability of a clean end-to-end result, the compound product, is just 61.7%. That is nowhere near good enough for enterprise use. The arithmetic is deliberately crude - in practice the interaction points are often not independent, and many failures can be caught by downstream review - but even on generous assumptions the compounding is unforgiving.

So, before anything else: if agents are going to carry the bulk of execution, we need to maximise reliability. In practice that means reducing silent failures, raising the success rate at each interaction point, and reducing the number of interaction points altogether.

Agents are not human replacements

Agentic systems feel organic - almost quasi-human - in how they work, combining Large Language Model (LLM) reasoning, tool calls and user-supplied context to plan, execute, evaluate and adapt. That resemblance leads to the first mistake: assuming an agent is a good drop-in replacement for a human in an existing workflow.

It isn't. Agents have a fundamentally different profile of strengths and weaknesses from people, and traditional software is, necessarily, human-centric - designed around the strengths and weaknesses of human operators. Let's consider a few of these differences.

The first is a jagged capability boundary. An LLM's competence is unevenly distributed in surprising ways: it can lay out the competing approaches to graduating mortality rates, yet trip over relatively simple arithmetic. These gaps are usually closed by giving the agent the right tools (scripts and functions) rather than trusting it to reason its way through. The second is memory. For humans, learning and knowledge retention are natural products of doing work; for agents, however, any knowledge retention has to be made explicit. The third, and most dangerous, is silent failure. LLMs are prone to a particular kind of false positive - the hallucination - where the agent fails silently and, worse, reports success with confidence. That is especially hazardous in the less programmatic tasks, where the output is hard to verify. In this case the mitigation is the expert human operator who is responsible for reviewing and approving the output.

Security comes first. As we give agents more tools and skills, they become more capable, and more capability opens up more potential value - but simultaneously, more risk.

Set against these shortcomings are some serious advantages. Agents read, write, reason, code and execute far faster than people; they keep no office hours; they scale up and down with demand - giving a far more elastic workforce; and their attention is typically much cheaper than the human equivalent. The point is not that agents are better or worse than people - it is that they are different, and software built for one will not serve the other well.

Improving outcomes with agents

Come back to the valuation example and the three levers: fewer silent failures, higher success per interaction point, and fewer interaction points. Let's consider how software design can approach these levers.

Interaction points should be fewer and denser. Agents work best with full, explicit context passed in and out; humans usually need far less exchanged at each step. Execution patterns should be fewer and more scalable - the more structured and consistent the patterns we hand an agent, the better - which often implies a higher level of abstraction than is ideal for humans, who tend to prefer many specialised processes that guard against misuse. Workflows should be built for first-pass success, because retries and downstream correction are exactly where silent failures multiply; an agent should either get it right the first time or fail loudly enough to be caught. They should also be built for agent-speed iteration, since applications written for human pace will surface new bottlenecks



once execution accelerates. And the terminology used between users, agent tools and application inputs and outputs is worth tightening, because closing that gap improves how faithfully an agent interprets what the user asked for.

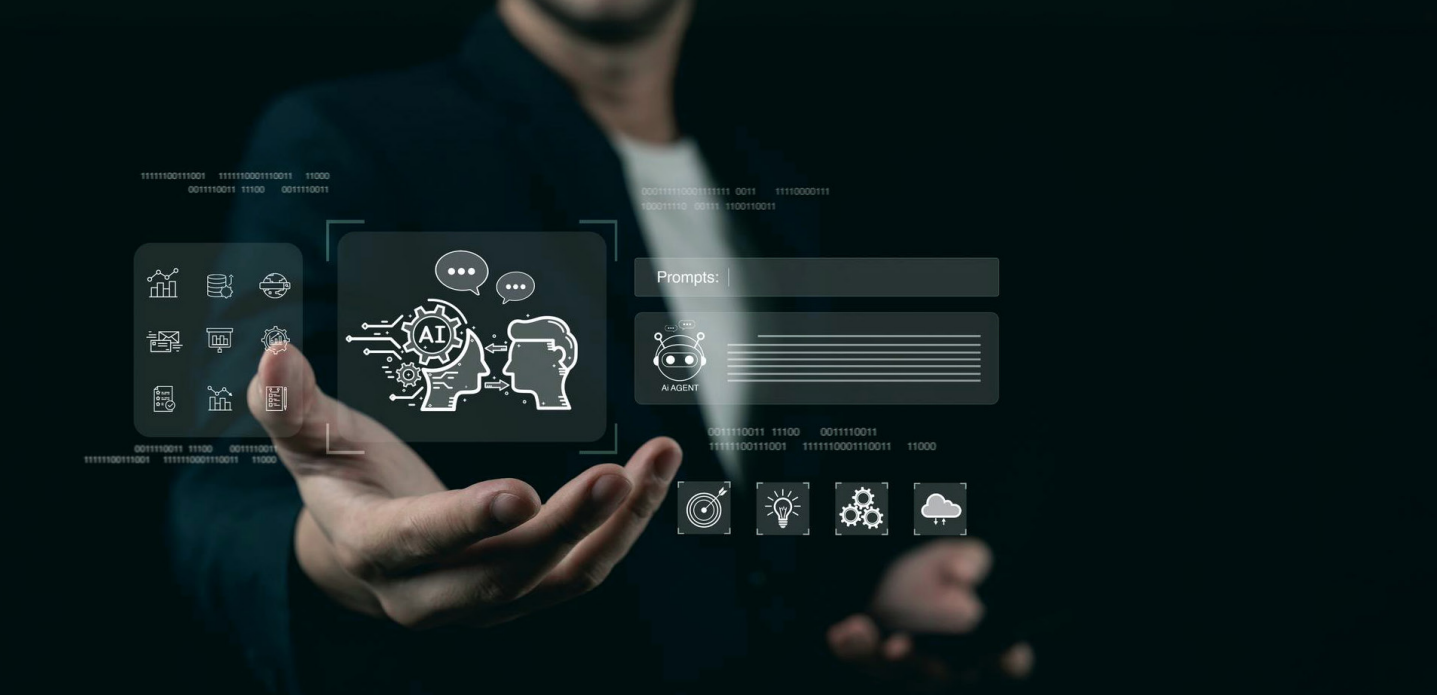
Agent-native software

Taken together, getting the best out of both people and agents points to a new class of software - agent-native software - designed around how agents work, rather than retrofitted onto tools built for humans. This is less a product category than a set of properties worth demanding of any system an actuarial team intends to operate with agents. Beyond the reliability bar already set, several other properties still stand out.

Security comes first. As we give agents more tools and skills, they become more capable, and more capability opens up more potential value - but simultaneously, more risk. It may be inappropriate for an agent to simply inherit its operator's level of access to IT systems and data. The tools available to the agent need careful thought: destructive permissions are, for the most part, unsuitable for enterprise agents; agents should execute code in contained sandboxes where the blast radius of any action is limited; and the packages and libraries they draw on should be pre-installed rather than approved by a user at runtime. It is also worth being wary of rubber-stamping. "Human-in-the-loop" approval is only a control while people still read what they are approving - ask for confirmation too often and user approvals become effectively worthless. In the South African context this is not only an operational question but a regulatory one: an agent acting under a user's credentials touches directly on POPIA obligations around who, or what, may access personal data.

Then there is provider-proofing. However AI is embedded into a process, it should avoid lock-in to any single LLM provider; it should be possible to swap any model, tool or context file in or out in a safe and stable way.

Maintainability follows. Testing non-deterministic systems calls for a scalable, repeatable and measurable way to assess reliability, and that testing should be automated and built into the development lifecycle so the reliability



impact of any change can be measured before it reaches production. System prompts and context files are best treated as a kind of pseudo-code and tested as such - a discipline that should sit comfortably with a profession already used to model governance and review.

The fourth is objective feedback rather than flattery, and it matters more than it first appears. LLMs and generic harnesses are widely guilty of sycophantic behaviour, which raises the probability of poor decisions. If an operator draws a wrong conclusion about a set of results and the agent responds, "Great insight…", the chance the mistake goes uncaught goes up. Agent-native systems should give objective feedback, free of opinion or reflexive confirmation, so the operator stays in control without being subtly nudged. For a profession in which individuals carry personal accountability for their judgement, this is a safeguard for upholding professional standards.

The last is knowledge scaling. Get knowledge retention right and we address one of the headline weaknesses of historical operating models: key-person risk and the silos that come with it. Knowledge can be commoditised across the organisation, unblocking the bottlenecks that hold up work.

If we get the balance between people and agents right - then the value delivered, and the everyday experience of work, could improve markedly.

Closing

The agentic future represents the most significant shift in how knowledge work is performed since the arrival of the personal computer.

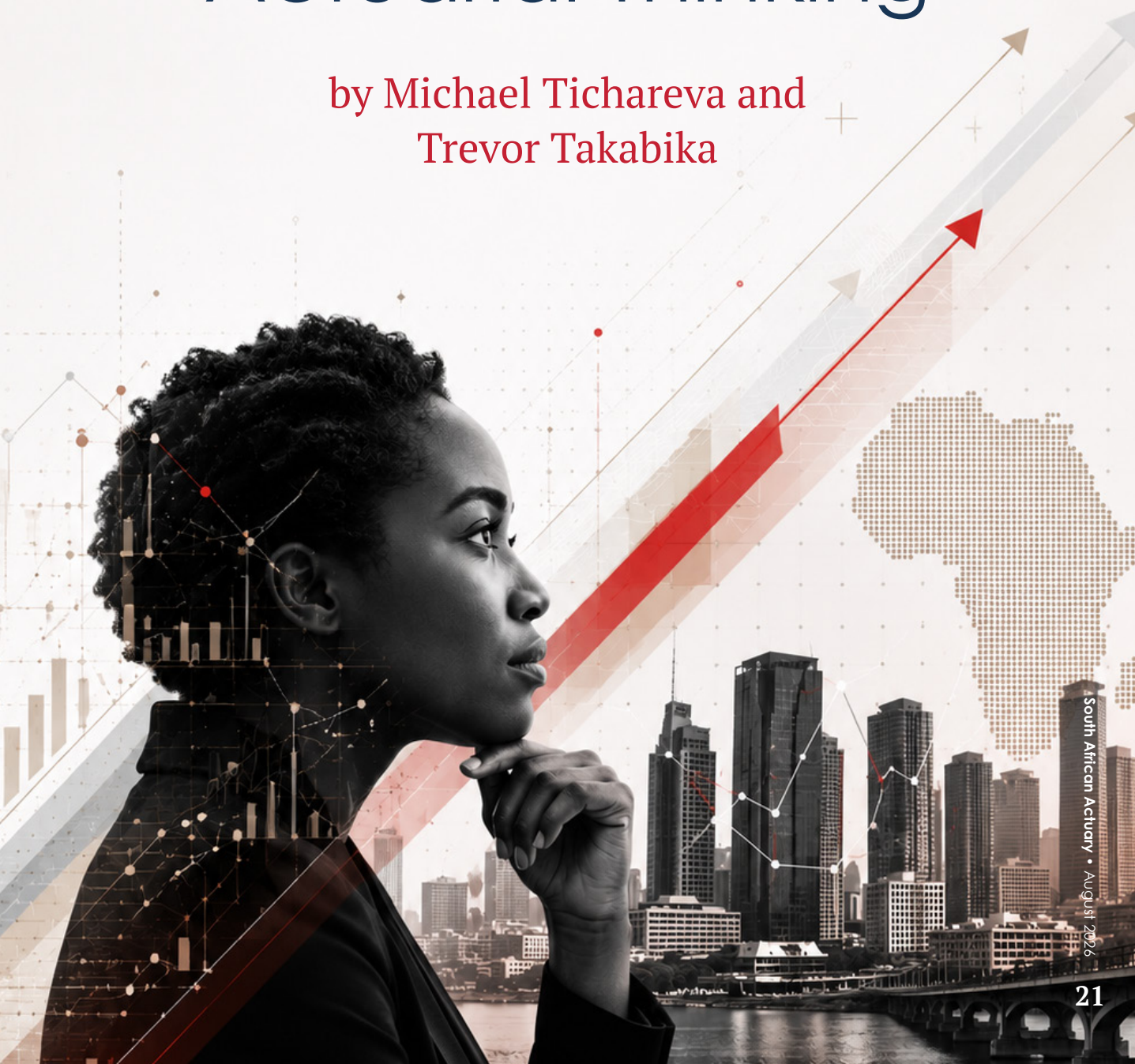
If we get the balance between people and agents right - then the value delivered, and the everyday experience of work, could improve markedly.

Solving for enterprise-grade agent reliability is a multi-layered problem which forces us to think about software differently.

From Models to Markets:

Why African Banking Needs More Actuarial Thinking

by Michael Tichareva and
Trevor Takabika





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The Banking Committee of the Actuarial Society of South Africa held its well-attended annual Banking Seminar, hosted at FirstRand, on 18 June 2026. We were privileged to be in the mix with other high-profile speakers at this event where we presented on our topic titled **From Models to Markets: How Actuaries Can Help African Banks Build for Informality, Climate Volatility, and Digital Rails.**

This article expands on that presentation. The presentation itself can be found **here** 2026 Archives - Actuarial Society of South Africa.

For many years, the relationship between actuarial science and banking has been viewed through a relatively narrow lens. When actuaries entered banking, they were often brought in to assist with capital modelling, impairment methodologies, stress testing, balance sheet management, treasury optimisation, or model validation. These remain important contributions and have become increasingly relevant as banking regulation has evolved.

However, the banking landscape is changing rapidly. The next frontier in banking may not be found primarily in regulatory capital models, impairment frameworks or balance sheet optimisation. It may instead be found in understanding customer behaviour, informal economic activity, digital transaction ecosystems, and climate-driven financial volatility. This

shift presents a significant opportunity for the actuarial profession.

The question facing actuaries is no longer whether we can contribute to banking. The evidence for that has existed for decades. The more important question is whether actuaries are positioning themselves early enough in the banking value chain to influence how future banking systems are designed.

THE ECONOMY WE MODEL VERSUS THE ECONOMY THAT EXISTS

Across Africa, from Cape to Cairo, banks continue to become more sophisticated. Credit scoring models are more advanced than ever. Prudential frameworks have strengthened significantly. Data infrastructure continues to improve. Digital banking penetration is accelerating. Financial inclusion initiatives have expanded access to financial services.

Yet an uncomfortable question remains. Are we modelling the economy that actually exists? Traditional banking models were largely built around assumptions that emerged from highly formalised economies exhibiting stable employment, regular salaries, audited financial statements, established credit histories and predictable income streams. These assumptions worked reasonably well because they reflected the environments within which many of these models were originally developed.

African economies often function differently. A substantial proportion of economic activity occurs outside traditional documentation frameworks. Income may be irregular but not unstable. Businesses may be profitable but lack audited financial statements. Households may demonstrate extraordinary financial resilience despite limited interaction with traditional financial institutions. In many cases, economic activity is visible, productive and sustainable. It is simply documented differently.

This distinction matters. When a model rejects a customer, the rejection is often interpreted as evidence that the customer is high risk. Yet another interpretation may be equally valid - the customer may not be high risk at all; the model may simply be unable to interpret the customer's economic reality. This is not merely a financial inclusion issue. It is fundamentally a risk measurement issue.

In South Africa for example, we have world-class banks, sophisticated credit infrastructure, strong prudential supervision and deep actuarial talent. Yet even here, large parts of economic life are irregular, cash-based, digitally mediated, climate-exposed and only partially visible to traditional banking models.

The same point is even more pronounced in Zimbabwe, Kenya, Ghana, Nigeria, Zambia and many other African markets. But South Africa is not outside this story. It is one of the most important places to have

this conversation because formal sophistication and informal reality exist side by side.



AFRICA IS NOT DATA POOR

One of the most persistent misconceptions about African financial markets is that they suffer from a lack of data. In reality, Africa often suffers from a mismatch between available information and accepted information.

Consider a township retailer operating from Soweto, Khayelitsha, Alexandra or Mamelodi in South Africa. The business may have consistent supplier relationships, stable customer demand, predictable inventory turnover, repeat transaction patterns and strong local market positioning. Yet the business may struggle to access credit because it lacks conventional financial statements.

Similarly, an e-hailing driver may generate stable monthly income through platform activity. A home-based entrepreneur may receive regular digital payments from customers. A freelancer may have diversified income streams that are arguably less risky than dependence on a single employer. Traditional models often struggle to interpret these realities.

The problem is not absence of evidence. The problem is that the evidence is presented differently. Actuaries should find this familiar. Insurance pricing, reserving, capital modelling and experience analysis are all built on imperfect information. The profession has developed sophisticated techniques for extracting insight from incomplete evidence. The same mindset is increasingly relevant in banking.

Thin-file does not necessarily mean thin-income. No payslip does not necessarily mean no affordability. No audited accounts do not necessarily mean no business. The challenge is developing disciplined frameworks that allow banks to interpret alternative evidence responsibly.



DIGITAL RAILS ARE BECOMING RISK OBSERVATORIES

One of the most important developments occurring across banking today is the rapid expansion of digital transaction ecosystems.

Historically, payment infrastructure was viewed as operational infrastructure. Increasingly, digital rails are becoming behavioural observatories.

Insurance provides a useful analogy. Motor insurers historically priced risk primarily through observable vehicle characteristics. The introduction of telematics transformed this approach by allowing insurers to observe behaviour directly. Driving patterns became visible. Risk became dynamic rather than static.

Banking is experiencing a similar transformation. Every transaction leaves behavioural evidence. Frequency, persistence, volatility, recovery, liquidity pressure, seasonality and financial resilience can all be observed through transaction behaviour. A customer's ability to recover after a financial shock may be more informative than their income level. The consistency of business activity may be more informative than annual financial statements for an SME.

Transaction data often reveals behavioural characteristics that traditional documentation cannot capture. This creates enormous opportunities, but also significant responsibilities. Alternative data must not become a substitute for sound governance. Bias testing, explainability, transparency, consent, privacy protection and fairness remain essential. The objective is not more data. The objective is better understanding.

CLIMATE RISK HAS ALREADY ENTERED BANKING



Climate risk is frequently discussed as a long-term sustainability issue. For banks, however, climate risk is increasingly becoming an immediate financial issue.

A drought reduces agricultural income. Reduced agricultural income affects household cashflows. Household cashflow stress affects affordability. Affordability stress affects loan performance. Loan performance affects impairments and capital requirements. The same transmission pathways can be observed following floods, heatwaves, infrastructure disruptions and other physical shocks.

South Africa has already experienced numerous examples. The Western Cape drought affected agricultural production, tourism and household behaviour. The KwaZulu-Natal floods disrupted businesses, logistics networks and communities. Infrastructure stress has repeatedly demonstrated how operational disruptions can rapidly become financial disruptions.

By the time a missed instalment appears within a banking system, the underlying shock may have travelled through multiple layers of the economy. Actuaries are uniquely equipped to understand these transmission mechanisms because the profession has long studied how uncertain events propagate through financial systems.

WHY THE ACTUARIAL TOOLKIT MATTERS

The encouraging reality is that actuaries do not require a new professional identity to remain relevant. Most of the necessary tools already exist within the profession.

Survival models help explain persistence and default behaviour. Transition models help explain movement between performing and non-performing states. Credibility theory supports decision-making where data is limited. Bayesian approaches allow models to learn as evidence evolves. Scenario testing helps evaluate future uncertainty. Catastrophe modelling provides insight into systemic shocks. Experience analysis provides mechanisms for continuous learning.

These capabilities have enormous relevance for banking. The opportunity is not to replace existing banking disciplines. Credit risk specialists, economists, data scientists and bankers each bring valuable expertise. The opportunity is collaboration. Actuaries bring a distinctive perspective centred on uncertainty, long-term behaviour, risk transmission and disciplined decision-making under imperfect information.

Banks will increasingly require informal-income underwriting frameworks, behavioural affordability models, climate-adjusted risk assessments, dynamic credit limits, embedded insurance solutions, resilience-linked products and fairness-tested alternative-data models.

FROM MODEL VALIDATORS TO MARKET DESIGNERS

Perhaps the greatest opportunity for actuaries lies in moving further upstream. Historically, actuaries have often entered banking discussions after major strategic decisions have already been made. The product has already been designed. The underwriting philosophy has already been chosen. The customer segmentation framework has already been established.

By the time the model arrives for validation, many of the most important assumptions have already been embedded. Who qualifies as a customer? What income counts? Which risks matter? What evidence is considered acceptable? Which customers are excluded? These decisions are often made before modelling begins.



Actuaries should increasingly participate in these discussions. Strategic relevance starts before validation. The future actuarial role in banking should include product design, affordability frameworks, behavioural segmentation, climate-adjusted lending approaches, embedded resilience products and early warning systems.

WHAT BANKS SHOULD BUILD NEXT

The next generation of banking systems is likely to be more behavioural, climate-aware, adaptive and inclusive. Banks will increasingly require informal-income underwriting frameworks, behavioural affordability models, climate-adjusted risk assessments, dynamic credit limits, embedded insurance solutions, resilience-linked products and fairness-tested alternative-data models.

Importantly, these innovations should not simply seek to expand lending. The objective should be better lending, better risk identification, better customer outcomes, better resilience, better capital allocation and better financial inclusion. The future should not be measured by the volume of credit extended but by the quality and sustainability of financial outcomes.

CONCLUSION

For many years, the actuarial profession has focused on helping institutions understand risk once it has already become visible. The future may require us to become equally skilled at recognising risk before traditional systems can see it.

Africa presents one of the most important opportunities for this evolution, not because the continent lacks data or sophistication, but because it continues to challenge traditional assumptions about what constitutes valid economic evidence.

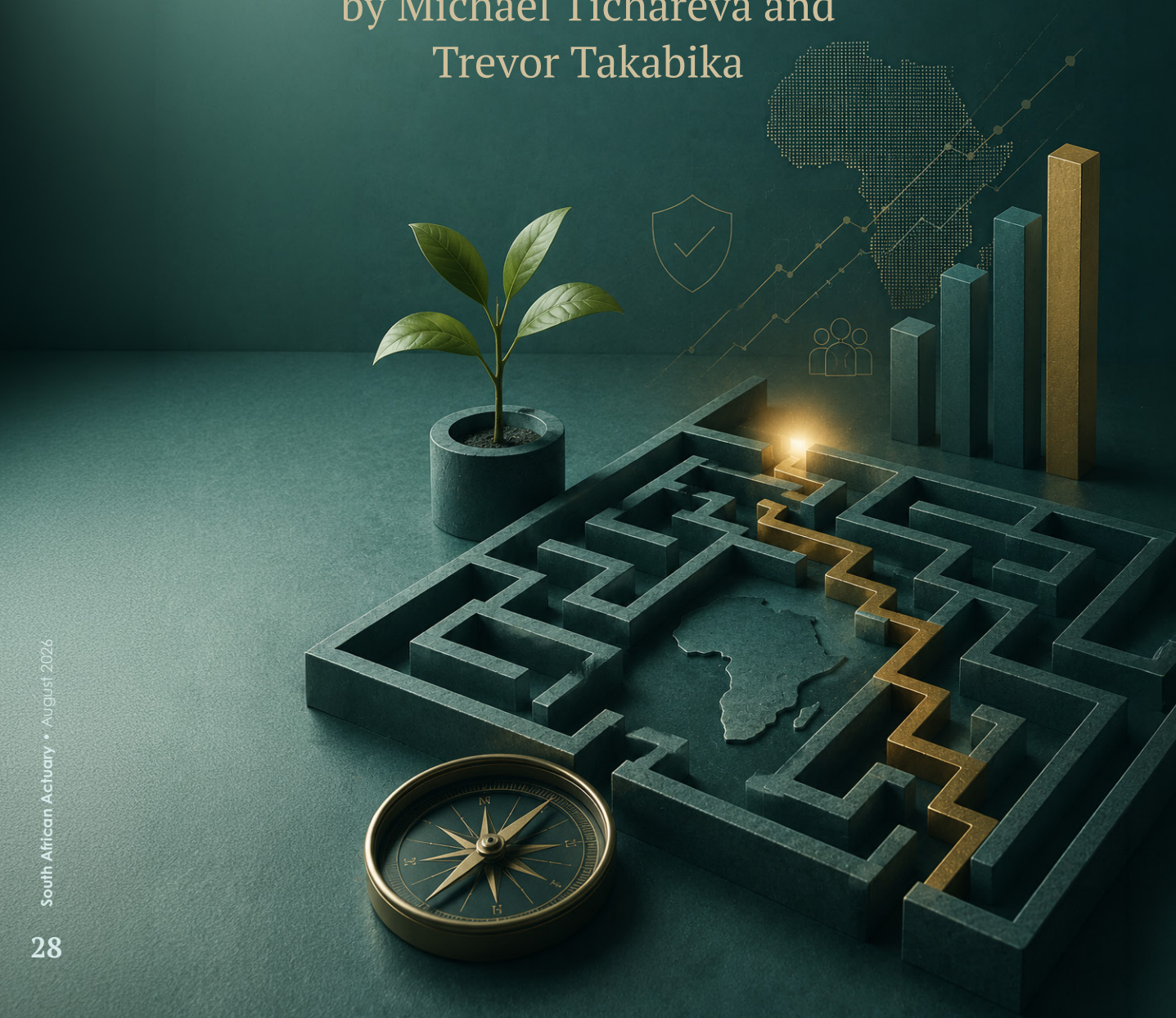
The next frontier in banking is not merely digital. It is behavioural. It is climate-aware. It is adaptive. It is increasingly shaped by uncertainty. Actuaries have spent their entire professional lives working in precisely those conditions.

The opportunity now is to ensure that our contribution extends beyond models. We must help shape the markets those models are intended to serve.

From Models to Markets:

Reimagining Credit Risk, SME Financing and Insurance Integration in African Banking – **Part 1**

by Michael Tichareva and
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Introduction - *the next boundary of African finance*

When actuaries speak about expanding horizons or broadening boundaries, the conversation often begins with new practice areas, new technologies or new regulatory demands. Those are all important. But there is a deeper boundary that also now requires our attention - the boundary between economic activity that is visible to formal financial institutions and economic activity that remains poorly understood, poorly underwritten and therefore poorly financed.

Across Africa, and particularly in Zimbabwe, the formal financial system has expanded its reach. More people can send money, receive money, pay school fees, buy airtime, settle utility bills, receive remittances and transact through formal or semi-formal channels. Mobile money, banking agents, remittance platforms, merchant collections and digital payment rails have changed the way households and small businesses interact with finance. In many respects, this is a remarkable achievement. It should be acknowledged before it is critiqued.

Whilst access has widened, depth has not. For example, a person who can make a payment is not necessarily able to save meaningfully. A trader who receives mobile money is not necessarily able to obtain working capital. A farmer who participates in a digital financial systems value chain is not necessarily protected against drought, disease or input failure. A small manufacturer who has steady customer orders is not necessarily regarded as bankable. A household that receives regular remittances may still be treated as thin-file because the income does not fit traditional documentation. This is the central paradox of financial inclusion in many African markets - the customer is now inside the doorway, but often remains standing at the entrance.

Our presentation at the Actuarial Society of Zimbabwe (ASZ) Convention in July 2026 was framed around this paradox.

Zimbabwe has not failed to include people financially. The more difficult question is whether that inclusion has become deep enough to support productive enterprise, resilience and long-term wealth creation. The same question can be extended to South Africa, Botswana, Zambia, Namibia, Mozambique, Kenya, Nigeria and many other African markets. Financial reach has improved, but financial depth remains uneven.

This article develops that argument further. It uses Zimbabwe as the opening case because Zimbabwe brings the issues into sharp focus - a large informal economy, frequent currency and inflation shocks, deep entrepreneurial activity, high reliance on family networks and remittances, significant mobile money usage, and a long history of trust challenges in formal financial products.

But the Zimbabwean case is not isolated. It reflects broader African realities, where financial inclusion has not gone deep enough. The future of African banking will not be built only by copying credit models designed for stable, formally employed, payslip-driven economies. It will be built by understanding African markets deeply enough to model them with discipline, design for them with a clear imagination of its realities, and govern them with integrity.

For actuaries, this is a direct professional challenge. We should not be content to arrive after products have already been designed, to validate models, review assumptions or comment on capital after the market architecture has already been set. Those roles matter, but they are downstream roles. The next frontier – arguably the one we have already entered



– requires actuaries to move upstream into market design, product architecture, data governance, risk transfer structures, affordability testing, portfolio resilience and fair use of alternative data. In short, we need to move from models to markets.

Financial inclusion has succeeded, but financial depth has not

The first mistake in discussing financial inclusion is to dismiss, or underestimate, the progress that has been made. In many African countries, the growth of transaction accounts, wallets, agent networks and remittance platforms has changed ordinary life. The ability to move value quickly and cheaply matters. It reduces friction. It creates convenience. It connects families. It allows small businesses to trade beyond cash. It creates records that did not previously exist.



For many people, the first meaningful relationship with a financial institution is no longer a branch account - it is a wallet, a merchant account, a remittance channel or a payment platform.

But, the success with transaction access should not create an illusion of completeness. A payment product is just part of a full financial relationship. It solves one problem - movement of value. There remains a challenge to solve the problems of preserving value, building assets, financing stock, protecting income, managing health shocks, insuring productive assets, funding seasonal production or creating long-term resilience. These require deeper products and more sophisticated risk interpretation.

Zimbabwe illustrates this distinction clearly. Many households and micro-enterprises interact with formal or semi-formal rails every day. School fees, church contributions, family support, airtime, transport fares, groceries, stock purchases and remittances often leave some form of transaction trail. Yet when those same households or businesses need credit, insurance or investment products, the system often behaves as if they are invisible. The data exists, but it is not always translated into underwriting evidence. The relationship exists, but it remains narrow. The customer is reachable, but not necessarily perceived as financeable.

This is what may be called the access-depth gap. The access layer tells us that a person can enter the system. The depth layer asks whether the system helps that person manage life, build resilience and participate productively in the economy. The distinction matters because public policy and institutional strategy can become too satisfied with access metrics. A rise in transaction accounts may be celebrated as inclusion, but if savings, insurance and productive credit do not grow with it, then the real economy remains thinly served.

The problem is not merely social or developmental. It is also commercial. Banks and insurers are leaving value untapped when they treat large parts of the economy as either too informal, too risky or too expensive to serve. There are traders with predictable stock cycles, farmers with disciplined production routines, small manufacturers with repeat orders, transport operators with regular cash flows, and households with reliable remittance patterns. Some are poor risks, but many are not. The challenge is to distinguish between them. That is a risk problem, a data



problem, a product-design problem, and a governance problem. It is therefore also an actuarial problem.

A woman selling vegetables and dry goods in Mbare Musika, Sakubva, Kudzanai bus terminus or a local growth point may turn working capital several times a week. She may buy stock from the same suppliers, receive payments from regular customers, and contribute to a savings group. A carpenter in Glen View or a welder in Siyaso may have orders, deposits, supplier payments and electricity purchases that reveal a real business pattern. A poultry farmer may have flock cycles, feed purchases, vaccination routines and sales relationships. A grinding mill operator may have stable local demand but exposure to equipment breakdown. These are not blank economic lives. They are differently documented economic lives.

Traditional financial systems have often treated formal documentation as the main evidence of economic reality. Payslips, audited accounts, fixed addresses, titled collateral and bureau histories are important. They should not be discarded. But in African markets they are incomplete. If the formal evidence base captures only a fraction of productive activity, then models built only around that evidence base will naturally underwrite only a fraction of the market. The result is a system that can process payments for the many but lend confidently to the few.

Zimbabwe as a practical case study

Zimbabwe is a useful starting point not because its realities are difficult to ignore. The informal economy is not peripheral. Micro-enterprise activity is

We understand that a customer does not lapse, withdraw, borrow, claim or default in a vacuum. There is an event path. There are triggers. There are dependencies. There are feedback loops. **The actuarial contribution is to bring this discipline into banking and SME finance at the design stage**

not a temporary deviation from a formal norm. Cross-border trade, small-scale agriculture, market trading, household production, informal manufacturing, remittances, transport, retail and small services form part of the everyday economy, and are well pronounced. Families survive and businesses grow through a mix of formal and informal mechanisms. Finance that does not understand this structure will remain shallow.

Zimbabwe also has a particular history of monetary and institutional stress. Inflation, currency changes, loss of value and policy shifts have shaped customer behaviour. People who use formal transaction platforms may still prefer to hold value in stock, livestock, building materials, foreign currency cash, family networks or rotating savings arrangements. That behaviour is often rational. It reflects lived experience. It should not be dismissed as lack of financial education.

A small retailer who keeps value in stock may be making a sensible liquidity and value-preservation decision. A family that saves through building materials may be protecting purchasing power. A trader who prefers fast stock turnover to a savings account may be managing inflation risk in practical terms. A funeral society may command more trust than a formal insurance policy because the benefit is tangible, the social obligation is clear and the claims process is understood. These behaviours are not always captured in conventional banking data, but they are central to financial decision-making.

This is where actuarial thinking becomes important. Actuaries are trained to interpret behaviour under uncertainty. We understand that observed behaviour may reflect incentives, constraints, risk perception and past experience. We understand that a customer does not lapse, withdraw, borrow, claim or default in a vacuum. There is an event path. There are triggers. There are dependencies. There are feedback loops. The actuarial contribution is to bring this discipline into banking and SME finance at the design stage.

Zimbabwean examples also help prevent the discussion from becoming too abstract. Consider a cross-border trader moving goods between Zimbabwe and South Africa, Botswana, Zambia or Mozambique. A conventional credit process may struggle with inconsistent income, foreign currency exposure, border delays and irregular documentation. But the trader may have a repeat route, regular suppliers, known transport arrangements, predictable stock cycles and stable customer demand. The risk is not absent. It is specific. It may include stock theft, border disruption, illness while travelling, exchange-rate movement, transport failure and delays in clearing goods. A useful finance model

would underwrite the trading cycle and its risk triggers, not merely ask for a payslip.

Consider a small poultry farmer. The farmer borrows for chicks, feed, vaccines and labour. Repayment depends on flock survival and market sale. The main default trigger may not be character weakness; it may be disease, feed price escalation, power disruption, market oversupply or delayed buyer payment. A conventional loan that ignores these triggers is fragile. A better structure would combine production-cycle finance, monitoring of feed purchases and flock stages, basic veterinary protocols, dynamic credit limits and appropriate mortality or business interruption cover. Credit and insurance should not be separate conversations.

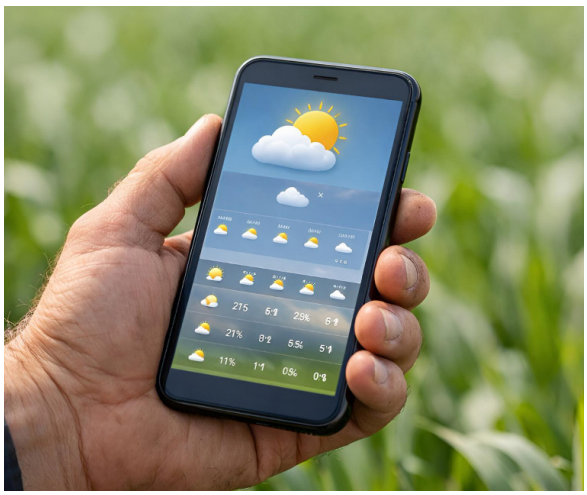
Consider a rural grinding mill. It may have steady local demand because households need mealie-meal. The operator may not have audited accounts or titled collateral, but the business can produce predictable cash flows. The main risk may be motor failure, power surges, spare-part delays or fuel cost volatility. In that case, a small equipment finance facility with maintenance support and breakdown cover may be more relevant than generic unsecured lending. The question is not simply whether the borrower is informal. The question is what makes the cash flow resilient or fragile.

These examples show why Zimbabwe is more than a context for financial inclusion statistics. It is a laboratory for rethinking underwriting. It forces us to ask whether African finance can move beyond the binary language of formal and informal, bankable and unbankable, documented and undocumented. The more useful distinction is between risk that is understood and risk that is not yet understood.

The African customer is differently documented

The language we use matters. To describe many African households and businesses as undocumented is often inaccurate. They are documented in forms that formal institutions have not historically treated as primary evidence. A trader may not have audited accounts but may have merchant payments, supplier transfers, mobile money receipts, stock purchase patterns, remittance inflows, utility payments and savings group





participation. A farmer may not have formal financial statements but may have input purchases, production cycles, satellite evidence, weather exposure, buyer relationships and extension-service records. A transport operator may not have a polished balance sheet but may have route activity, fuel purchases, maintenance records, fare collections and vehicle usage patterns.

This is not a call to abandon discipline. It is a call to widen the evidence base. Alternative data should not be romanticised. It can be noisy, incomplete, biased, manipulated or misunderstood. A person may use multiple wallets. A household may share devices. Cash transactions may remain significant. Network outages and agent liquidity constraints may distort behaviour. A high inflow may be a once-off remittance rather than business growth. A low balance may reflect efficient stock turnover rather than distress. The existence of more data does not automatically mean better underwriting.

The actuarial role is precisely to bring discipline to this wider evidence base. We should ask whether a signal is credible, stable, predictive, fair and explainable. We should test how much weight to give to a customer's own history compared with group experience. We should examine whether a variable performs consistently across time, geography, gender, age, business type and economic conditions. We should model not only expected losses but also uncertainty around the estimate. We should stress the model under drought, currency shock, policy change, liquidity stress and market disruption.

This is familiar territory for actuaries. In insurance, we often price new or emerging risks with incomplete experience. We borrow strength from related portfolios. We use credibility approaches. We monitor emerging experience. We update assumptions. We allow for anti-selection, moral hazard, claim delays, reporting patterns and tail events. The same mindset can be applied to SME finance and alternative-data underwriting. The absence of perfect data does not prevent modelling; it requires humility, validation and feedback loops.

A useful way to think about alternative data is as behavioural evidence. It does not replace judgement; it informs judgement. Mobile money inflows may reveal income rhythm. Merchant collections may proxy turnover. Supplier payments may reveal business continuity. Remittances may show household support networks. Airtime and data purchases may indicate communication intensity and affordability patterns. Utility payments may reveal operating activity. Agricultural input purchases may reveal production intent. Weather overlays may reveal climate exposure. None of these signals is decisive on its own. Together, they can form a more complete picture.

However, behavioural evidence must always be linked to outcomes. A model that predicts digital activity is not necessarily predicting repayment. A score that ranks wallet usage is not necessarily measuring affordability. A signal that works in Harare may fail in rural areas. A signal that works in a stable currency period may fail under inflation stress. A signal that appears predictive may simply be a proxy for

exclusion. This is why validation must be continuous. Alternative data is not a one-off innovation; it is a living risk system.

The most important shift is conceptual. We should stop treating the lack of conventional documentation as proof of economic emptiness. Thin-file is not the same as no file. Informal is not the same as invisible. Irregular is not the same as unviable. The question is whether we have the tools and discipline to interpret the evidence that exists.

From payments to financial ecosystems

The transaction platform should be viewed as an entry point, not the destination. Payments create reach, but depth requires a pathway. That pathway may move from transactions to stored value, from stored value to emergency savings, from savings to working-capital credit, from credit to embedded insurance, and from repeated performance to longer-term investment and asset-building products. Each step requires deliberate design.

The movement from payments to stored value is particularly sensitive in countries that have experienced inflation or currency instability. Customers will not hold value in a product merely because the institution wants balances. They need trust, liquidity, transparency and some confidence that value will not be eroded unfairly. In Zimbabwe, this issue cannot be treated as a minor product feature. It is central to adoption. Stored value must recognise customer memory.

The movement from payments to emergency savings requires behavioural flexibility. Many low-income households and micro-enterprises do not have neat monthly surpluses. They have irregular surpluses, event-driven inflows and competing obligations. Products that require fixed, rigid contributions may fail. More useful designs may include flexible contributions, school-fee buckets, funeral buffers, supplier-payment reserves, automatic sweeps from inflows, or goal-based wallets that allow customers to preserve value for specific obligations. Actuarial analysis of persistency, withdrawals, shocks and lapse behaviour can improve such designs.



The movement from payments to working-capital credit requires underwriting that follows business reality. A vegetable trader may need a short facility aligned to stock turnover. A poultry farmer may need a cycle aligned to flock maturity. A tobacco farmer may need seasonal finance. A cross-border trader may need funding aligned to travel, customs, stock purchase and resale timing. A carpenter may need

inputs after receiving a customer deposit. A commuter operator may need finance linked to repairs and route activity. A single monthly repayment model designed around salaried income will not fit all these businesses.

Dynamic limits are central to this approach. Instead of giving a large facility at the outset, an institution can start with a conservative limit, observe behaviour, update the risk assessment and gradually increase access. This is experience rating in another form. It is also fairer because it gives thin-file customers a path to prove themselves. The customer earns greater access through observed performance rather than being permanently excluded by the absence of traditional documents.



Collections should also be designed around cash-flow rhythm. Many SME defaults are created or accelerated by misaligned repayment structures. A viable borrower can become stressed if the loan repayment cycle does not match the operating cycle. This is especially true in agriculture, informal trade and small manufacturing. A product that ignores seasonality, market days, production cycles and input timing may manufacture arrears even where the underlying business is viable.

The transaction platform can also become a communication and monitoring channel. It can support reminders, early warning signals, customer education, consent management, claims notifications, repayment restructuring and limit adjustments. But this must be done responsibly. The customer should not feel surveilled without understanding. Consent, transparency and clear value exchange are essential. The institution must be able to explain why data is being used and how it benefits the customer.

The broader point is that financial depth emerges when products are connected. A payment history can support savings design. Savings behaviour can support affordability assessment. Credit performance can support higher limits. Insurance can protect the event path that threatens repayment. Monitoring can update the model. Claims and arrears experience can improve pricing. The financial relationship becomes an ecosystem rather than a single transaction product.

The financial relationship becomes an ecosystem rather than a single transaction product.

Insurance must become part of the credit architecture

One of the most important shifts in SME finance is to stop treating insurance as an afterthought. In many markets, insurance is attached to credit mechanically, often as a lender-protection product or a compulsory fee. That approach may protect the lender in narrow circumstances, but it does not necessarily improve the resilience of the borrower or the portfolio. If insurance is to deepen finance, it must be designed around the shock that turns viability into default.

A credit model asks: what is the probability of default? That question is necessary, but incomplete. We should also ask: what event causes default? If a borrower defaults because of illness, drought, livestock disease, equipment breakdown, stock theft, delayed customer payment, power disruption or market closure, then the underwriting conversation changes. Some causes can be reduced. Some can be insured. Some can be guaranteed. Some can be monitored early. Some can be absorbed through flexible repayment structures. The default event path matters.

For the poultry farmer, disease may be the event path. For the grinding mill operator, motor failure may be the event path. For the cross-border trader, stock theft or border delays may be the event path. For the market trader, illness or stock loss may be the event path. For the small transport operator, accident or vehicle breakdown may be the event path. For the farmer, drought, flood or input failure may be the event path. For the small manufacturer, a power surge, equipment breakdown or unpaid customer may be the event path.

When insurance targets the real event path, it can reduce loss-given-default, stabilise cash flows, improve recovery experience, and support more sustainable credit limits. But the cover must be meaningful. It should not be a hidden charge. It should not merely protect the lender while the customer pays the premium. It should not be so full of exclusions that claims are rarely paid. It should not require documentation that the target customer cannot practically produce. Claims processes must be simple, fair and fast enough to preserve trust.

If badly governed, alternative data can automate exclusion, invade privacy, reinforce inequality and damage trust. **If well governed, it can widen access, improve pricing, reduce information asymmetry and make viable informal activity financeable.**

Embedded insurance can work well when it is integrated with real economic activity. Input-linked crop cover, livestock mortality cover, equipment breakdown protection, stock-loss cover, health-event protection for micro-entrepreneurs, business interruption cover for small operators and guarantee structures for SME lending can all play a role. The actuarial task is to price them sustainably, control basis risk, define triggers clearly, manage moral hazard, monitor claims and ensure that the cover remains affordable.

Weather-index products illustrate both opportunity and danger. They can reduce claims administration costs and provide faster payouts, but basis risk can destroy trust. If the index says there was no drought while a farmer's field has failed, the farmer experiences the product as unfair. If the trigger is not explained, claims disappointment can damage the entire category. Actuaries therefore need to help design indices, stress-test basis risk, communicate limitations and ensure that customer expectations match product reality.

Insurance can also support lenders at portfolio level. SME portfolios may appear diversified because they contain many



borrowers, but they may be exposed to common shocks: drought, power supply, exchange-rate changes, policy shifts, fuel shortages, disease outbreaks, market closures or commodity price movements. Actuarial dependency modelling, scenario testing and capital analysis can help lenders understand these concentrations. The link between insurance and credit is therefore not only at the individual borrower level. It also affects portfolio construction and capital resilience.

The integrated model is simple in principle but demanding in execution - underwrite the cash flow, identify the shock, transfer or reduce the shock where possible, monitor the borrower, update limits dynamically and feed experience back into pricing. That is a natural actuarial contribution.

Responsible alternative data and AI governance

Alternative data and artificial intelligence will increasingly shape African finance. This is unavoidable. The question is not whether data-driven underwriting will expand, but whether it will expand responsibly. If badly governed, alternative data can automate exclusion, invade privacy, reinforce inequality and damage trust. If well governed, it can widen access, improve pricing, reduce information asymmetry and make viable informal activity financeable.

Consent must be foundational. Customers should know what data is being used, why it is being used and what benefit they receive in exchange. A person may be comfortable using a wallet for payments but uncomfortable with every behavioural signal being used for credit decisions. Consent should not be buried in language that only lawyers understand. In markets where trust has already been tested, hidden data use is not innovation; it is a future reputational crisis.

Explainability is equally important. A customer whose limit is reduced, application declined or premium increased should be able to understand the broad reasons. The institution may not disclose every model parameter, but it should not operate as a black box. Credit officers and agents also need explanations. A model that frontline staff do not understand may be misused, ignored or manipulated. Explainability supports both fairness and operational discipline.

Fairness testing must be explicit. Models can appear neutral while disadvantaging certain groups. Geography, gender, age, device access, connectivity, language, rural location, business type and cash intensity may all influence data availability. A model that rewards digital frequency may penalise people in areas with poor networks. A model that relies heavily on smartphone data may penalise older customers or poorer customers. A model that treats low balances as distress may misunderstand traders who keep value in fast-moving stock. Inclusion can become exclusion by algorithm if we do not test for these effects.

Validation must go beyond predictive accuracy. A model may predict default well in a development sample but fail under currency stress, drought or liquidity shock. It may perform well for urban traders but poorly for rural farmers. It may work when mobile money usage is stable but fail when transaction behaviour shifts. Out-of-time testing, stability testing, stress testing, sensitivity analysis, override monitoring and customer-outcome analysis are all necessary. This is core actuarial work.

The actuarial profession should not be passive in this space. **Our training in uncertainty, long-term sustainability, fairness, governance and professional accountability is directly relevant.**

Data minimisation should also be respected. More data is not always better. Institutions should avoid collecting intrusive information simply because it is available. The data used should be relevant to the decision, proportionate to the risk and governed with care. The customer should not have to surrender excessive personal information to access small working-capital finance. Trust is a market asset; it must be protected.

Regulatory dialogue should not be treated as a barrier. Sandboxes, supervisory engagement and industry guidance can help markets innovate while protecting customers. Regulators should not have to choose between inclusion and prudence. Actuaries can help bridge this gap by showing how models are validated, how risks are monitored, how customer outcomes are assessed and how capital implications are understood.

The future will also require professional judgement around AI. Machine-learning models can identify patterns that traditional scorecards miss, but they can also create opacity. They can adapt quickly, but they can also drift. They can improve segmentation, but they can also overfit. The actuarial profession should not be passive in this space. Our training in uncertainty, long-term sustainability, fairness, governance and professional accountability is directly relevant.



Reimagining SME finance

SME finance is often discussed as though the main problem is a shortage of money. Capital is important, but the deeper problem is often the absence of structures that make SME risk financeable. Funders may have liquidity. Banks may have mandates. Development finance institutions may have inclusion objectives. Insurers may want growth. Fintechs may have channels. Yet SMEs remain underfinanced because the risk is not translated into a structure that institutions can understand, price, monitor and absorb.

A more useful approach begins with the SME's operating model. What does the business sell? Who are the customers? How frequently does cash turn? What inputs are required? What shocks interrupt production or sales? What part of the cash flow is seasonal? What expenses are fixed? What assets generate income? What relationships create resilience? What informal arrangements support the business? What data already exists? These questions are more useful than asking only whether audited accounts are available.

For a market trader, the core underwriting issue may be stock turnover and supplier discipline. For a poultry farmer, it may be production-cycle management and disease risk. For a carpenter, it may be order flow and input purchases. For a grinding mill, it may be local demand and equipment continuity. For a transport operator, it may be route stability, maintenance and accident risk. For a cross-border trader, it may be trading-cycle discipline and border disruption. For a small horticulture producer, it may be water access, market prices and climate exposure. Each requires a different financing rhythm.

SME credit should therefore be designed as a portfolio of operating cycles, not as a simplified version of corporate lending. Loan tenor, repayment frequency, collateral substitutes, covenants, monitoring

indicators, insurance attachments and limit reviews should differ by business type. A one-size-fits-all SME product may be administratively convenient, but it is often economically misaligned.

The actuarial profession can help by bringing segmentation discipline. Not all SMEs are the same. Informal does not mean homogeneous. A disciplined segmentation approach may consider sector, cash-flow rhythm, seasonality, shock exposure, data availability, owner dependence, supplier concentration, customer concentration, currency exposure, climate exposure and previous repayment behaviour. Pricing and limits should reflect these differences. So should support services and insurance design.

Credit guarantees and blended finance can also be better designed when risk is properly segmented. Many guarantee schemes fail to transform lending because they are too blunt. If guarantees are applied without understanding the underlying event paths, they may simply transfer losses without improving underwriting. A better guarantee structure would absorb specific risks, encourage proper monitoring, share recoveries, create incentives for good origination and gradually reduce reliance on support as evidence improves.

Development Finance Institutions ("DFIs") have a particular role in this ecosystem. They can support first-loss layers, data infrastructure, technical assistance, guarantee funds, climate resilience and market-building platforms. But DFI capital should not be used merely to subsidise weak underwriting. It should be used to build a better underwriting architecture. That includes data standards, monitoring frameworks, insurance integration, portfolio analytics and evidence-based product design.

SME finance also requires a feedback culture. Every repayment, arrears event, restructuring, claim, dropout and customer complaint contains information. Institutions should not treat models as static. They should run experience analysis, compare expected and actual outcomes, investigate segment differences, update assumptions and refine products. This is actuarial practice applied to SME markets.

Conclusion

This article is the first part of a 2 series article covering this theme, using Zimbabwe as a case study, and making reference to real SMEs operating in that environment along the value chain. We will cover the second part of the article in the third edition of the 2026 *SA Actuary* where we will focus on lessons for South Africa and the rest of Africa, and then address in more detail the expanding role of the actuary within this framework.

Source note

This article was developed from the Actuarial Society of Zimbabwe 2026 Convention presentation by Michael Tichareva and Trevor Takabika titled "From Models to Markets: Reimagining Credit Risk, SME Financing and Insurance Integration in African Banking".

The Cost of Change: Quantifying Transition Risk in a Carbon-Constrained Economy

by Kivaan Naidu and Jerome Mahadeo





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Kivaan Naidu and Jerome Mahadeo are sustainability risk specialists at Absa Group, where they develop industry-leading quantitative models and solutions for assessing physical and transition climate risks across banking and insurance portfolios. Their work supports strategic risk management, climate risk stress testing and climate resilience across Absa. Both serve on the ASSA Banking Committee, contributing to the development and advancement of Actuaries in banking.

'As South Africa accelerates its journey towards a low-carbon future, transition risk is fast becoming a material financial reality. From carbon taxes and stranded assets to changing investor sentiment, the cost of transitioning is reshaping corporate balance sheets and bank portfolios alike. **Actuaries are uniquely positioned to turn this challenge into a science, by quantifying these future uncertainties.**'

Introduction

The Network for Greening the Financial System (NGFS) defines transition risk as the risk arising from the process of shifting towards a low-carbon or net-zero emissions economy. Transition risk comprises several sub-risks, which are also the primary drivers of transition risk:



- **Market-based risk:** Risks arising from shifts in supply and demand, investor preferences, and commodity prices as the economy transitions (e.g. declining demand for fossil fuels or emissions-intensive products).



- **Policy and legal risk:** Risks arising from current or future climate-related policies, laws, or regulations designed to limit greenhouse gas emissions or promote adaptation (e.g. the introduction or tightening of carbon pricing, taxes, or emission caps).



- **Technology risk:** Risks associated with technological improvements or innovations that support the transition to a low-carbon economy but disrupt existing sectors and business models (e.g. the emergence of low-carbon cement or steel rendering legacy plants obsolete).



- **Reputational risk:** Risks resulting from changing public perceptions of an institution's contribution to, or mismanagement of, climate-related issues (e.g. negative publicity or social backlash for financing coal projects).

Key Legislation in South Africa

Two key pieces of legislation currently have a direct and immediate impact on high-emitting companies in South Africa: the Carbon Tax Act and the Climate Change Act.

The Carbon Tax Act imposes a tax on operations that exceed the specified thresholds, which ultimately leads to high greenhouse gas emissions. The rate is expressed in rands per tonne of carbon dioxide equivalent (R/tCO_2e). Companies that exceed these thresholds are liable for carbon tax based on their gross scope 1 emissions (emissions from sources that are owned or controlled by an organisation), less any allowances. These allowances, if applicable, can reduce the total carbon tax liability provided companies meet the eligibility criteria.

The Climate Change Act aims to enable a national climate-change response and facilitate a just transition towards a low-carbon, climate-resilient economy and society. The Act introduces regulations related to carbon budgets and mitigation plans. High-emitting companies will be required to measure and report their greenhouse gas emissions, prepare detailed mitigation plans, and submit annual progress reports demonstrating compliance. The implementation of these carbon budgets will likely increase compliance costs for many companies.



Transition Risk Impacts Are Already Being Felt

Carbon tax is often seen as the most immediate driver of transition risk, as it imposes a direct and material cost on companies with high scope 1 emissions. For example, Sasol Ltd reported paying R1.7 billion in carbon taxes for the financial year ending 2025.

Under Phase 2 of the Carbon Tax Act which has become effective since the start of 2026, companies face more onerous tax obligations. The figure below is based on data presented in the National Treasury's '*Carbon Tax Discussion Paper: Phase Two of the Carbon Tax*':

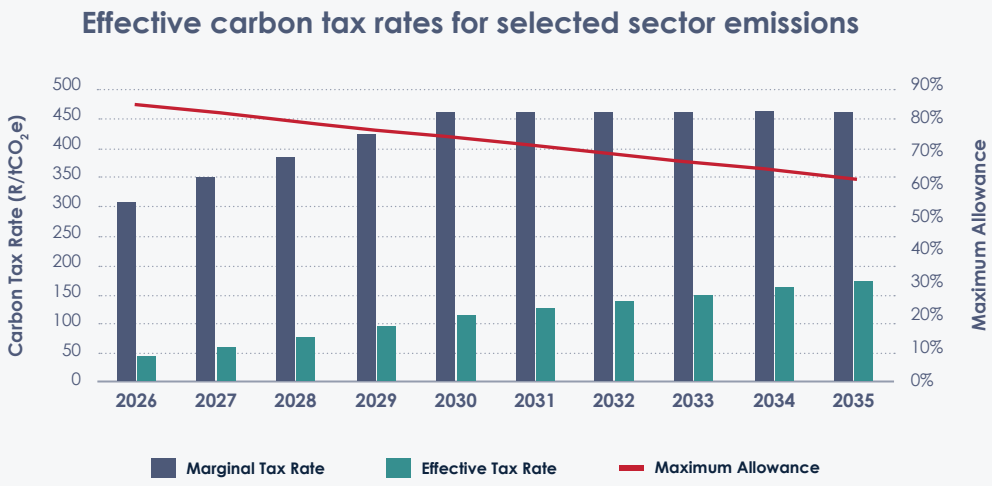


Figure 1: *Effective carbon tax rates for selected sector emissions*



From figure 1, both the marginal tax rate and effective tax rate are set to rise steadily as maximum allowances decline.

This means there will be a double impact on the effective tax rate - higher marginal rates combined with shrinking allowances - resulting in significantly higher effective tax burdens, even for companies that qualify for the maximum allowance.

The figures below illustrate the impact that a hypothetical company's (Company A) emissions, combined with the planned effective tax rates above, can have on their carbon tax liability. Results are shown for the actual historical years as well as two forecasted scenarios:

- A base case where it is assumed that the company achieves its transition plan ambitions by reaching its 2030 emissions reduction target
- A downside scenario where it is assumed that the company reaches 50% of its 2030 emissions reduction target

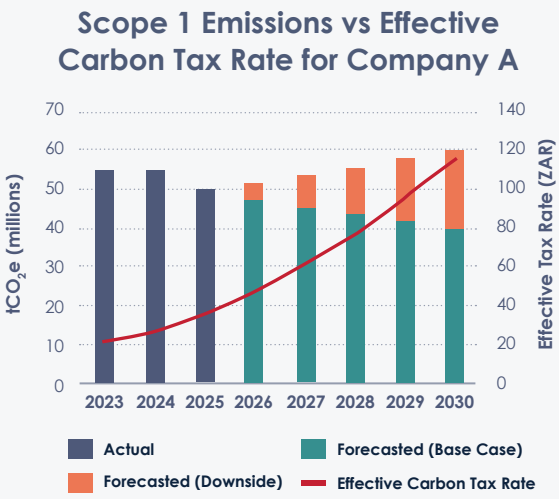


Figure 2: *Scope 1 Emissions vs Effective Carbon Tax Rate for Company A*

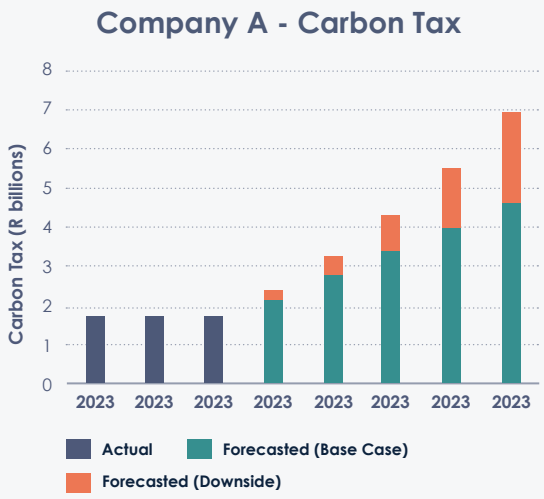


Figure 3: *Actual and Forecasted Carbon Tax for Company A*

From figures 2 and 3 above, Company A's carbon tax liability continues to increase each year despite reductions in its scope 1 emissions. The steep rise in the effective carbon tax rate outweighs its emissions reductions. The impact is exacerbated when the company's transition plan and emissions reduction target is not fully achieved. This emphasises the importance of accelerated decarbonisation as well as a clear and prioritised transition plan.

The implications to Company A, while hypothetical, reflect a real and current risk for many South African companies. The consensus among most analysts is that the majority of South Africa's high emitting companies will not achieve their 2030 emissions reduction targets, thereby making the downside scenario above a very probable future reality. Banks and financial institutions exposed to such companies should actively require, review, and monitor clients' transition plans.

The costs of transitioning can negatively affect **demand, profitability, cash flows, and debt levels, potentially heightening credit risk for banks with large corporate exposures.**

The Knock-On Effect

Beyond the direct financial burden, carbon tax amplifies other transition risk drivers, especially technology risk. Higher carbon taxes push companies to invest in cleaner technology and processes, since older, high-emitting assets become more costly to operate. This leads to quicker write-downs of legacy assets, accelerating asset stranding.



Financial Implications and Quantification

High-emitting industries such as mining, non-renewable energy generation, and manufacturing face the most significant transition pressures and costs. These industries often include some of South Africa's largest corporate emitters, many of which already face economic headwinds.

The costs of transitioning can negatively affect demand, profitability, cash flows, and debt levels, potentially heightening credit risk for banks with large corporate exposures. However, transition risk also presents upside opportunities, particularly in sectors such as renewable energy, where demand and investment are rising.

Financial institutions with large corporate exposures should seek to quantify, manage and monitor transition risks in vulnerable portfolios. Simultaneously, they should consider opportunities to encourage and support clients with early transition efforts through mechanisms such as sustainability-linked offerings and transition finance.

From a quantification perspective, actuaries will need to apply a blend of quantitative and qualitative techniques to assess how transition risk drivers translate into financial impacts. Expected changes in key financial line items and risk metrics can be modelled over different time periods to understand how transition risk can affect clients and industries in the short, medium and long term. Actuaries could utilise company, industry and country-specific transition plan strategies and timeframes to determine when material impacts are expected.

Scenario analysis and stress testing, which actuaries often perform in other areas, are particularly valuable here. Given the uncertainty surrounding whether countries will meet their

Actuaries will therefore need to apply **expert judgement, extensive research, and sound assumptions** to navigate current limitations.

emission reduction targets within the required timeframes, actuaries should model multiple transition pathways, rather than predicting a single most-likely outcome. Different transition scenarios result in different sets of assumptions, time horizons and impacts. Post-quantification, actuaries should incorporate results into strategy, product design, capital allocation, and pricing decisions, capturing both upside and downside transition risks.

Beyond their technical expertise, actuaries also carry a professional responsibility to contribute to social good. In the context of transition risk, this means helping to steer the financial system towards supporting a just and orderly transition. By quantifying transition risks and identifying opportunities, actuaries can help ensure that capital is allocated in a way that not only safeguards financial stability but also promotes long-term environmental and social resilience.

Challenges and Future Outlook

Given the relative newness of transition risk, data availability remains a major challenge. Many companies still do not measure or disclose scope 1 emissions, and reliable forecast data for key variables such as emissions, stranded assets, and capital investment are limited. Industry-level data can help, but it may not always represent individual company circumstances.

Reputational risk, in particular, is difficult to quantify, often being assessed indirectly through its impact on market risk.

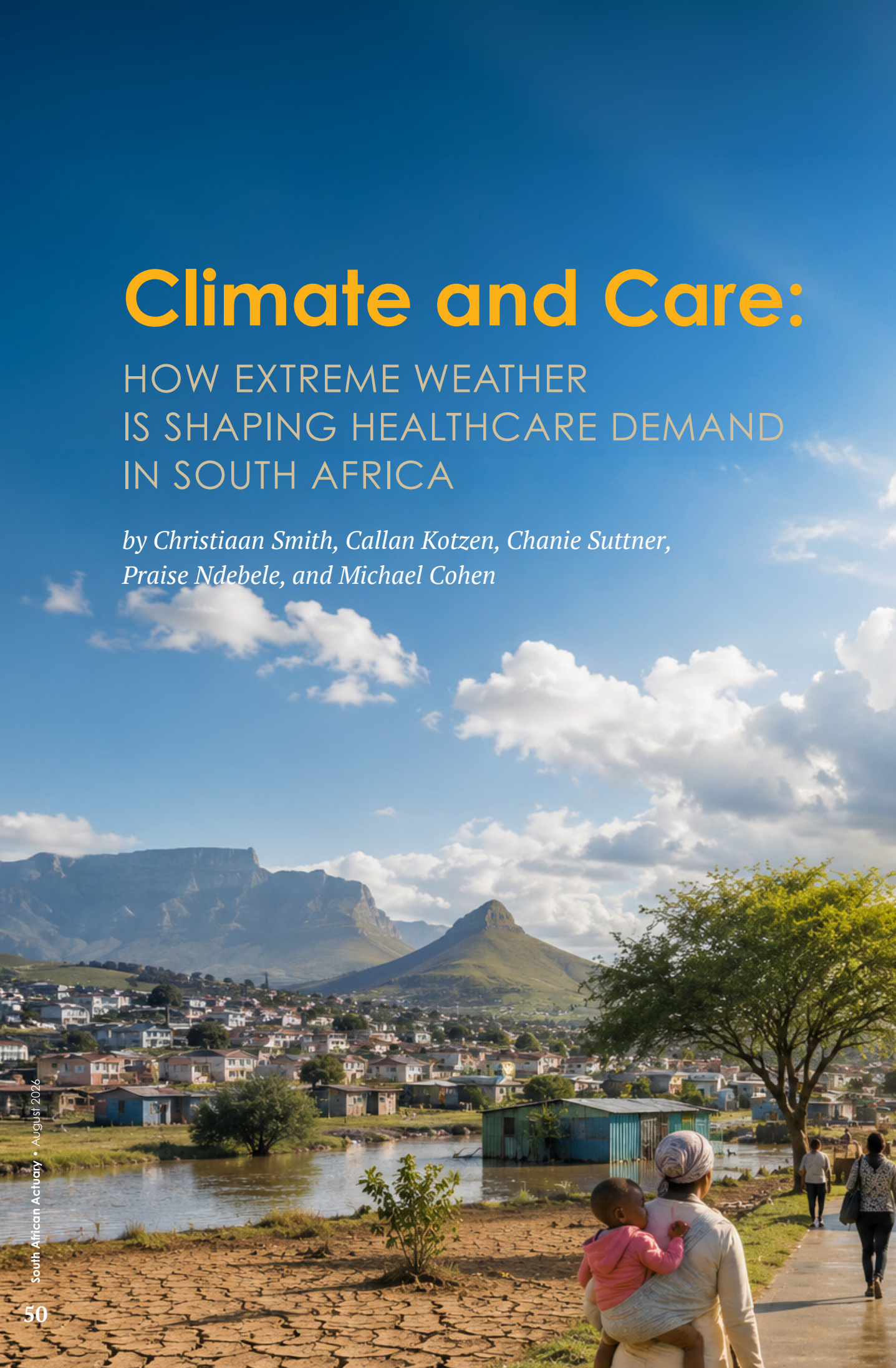
Many companies have still not produced or disclosed comprehensive transition plans. However, with evolving regulations such as the Climate Change Act, data quality and disclosures are expected to improve, enabling more robust company-level assessments. Additionally, many large financial institutions and companies operate in multiple jurisdictions. This creates further complexity as climate-related regulations, carbon pricing mechanisms, disclosure requirements, and transition timelines often differ between countries.

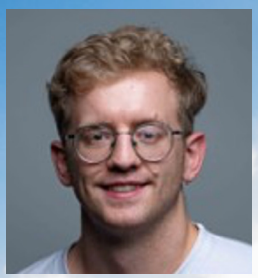
Actuaries will therefore need to apply expert judgement, extensive research, and sound assumptions to navigate current limitations. These new insights would drive developments such as emission estimations, transition planning, risk management, and product design. As data and methodologies evolve, transition risk quantification, products, and solutions will become more sophisticated and mainstream across banks and other financial institutions.

Climate and Care:

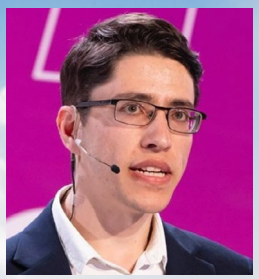
HOW EXTREME WEATHER IS SHAPING HEALTHCARE DEMAND IN SOUTH AFRICA

by Christiaan Smith, Callan Kotzen, Chanie Suttner, Praise Ndebele, and Michael Cohen





CHRISTIAAN SMITH



CALLAN KOTZEN



CHANIE SUTTNER



PRAISE NDEBELE



MICHAEL COHEN

Healthcare systems around the world are increasingly operating under pressure, not only from demographic change and rising costs, but from a less predictable and rapidly evolving force: climate variability. Extreme weather events, including days of high heat, severe cold and flooding, are becoming more frequent and more intense, with important implications for healthcare outcomes and access.

While the relationship between extreme weather and morbidity has been widely studied internationally, there is limited research from the South African context, largely due to constraints in accessing high-quality, longitudinal healthcare data. This is beginning to change.

Drawing on a comprehensive dataset from Discovery Health, the largest commercial administrator of medical schemes in South Africa, our research[1] (presented at the ASSA Convention 2025) analysed healthcare utilisation across 3.48 million insured lives over a ten-year period (2014–2024, excluding 2020 and 2021 as COVID-19 years). The dataset is robust, clinically coded and validated at scale, offering a uniquely granular, day-level view of healthcare interactions. This enables a more detailed understanding of how extreme weather influences morbidity when viewed alongside the available climate datasets.

Understanding the Link Between Extreme Weather and Healthcare Demand

The study investigates the impact of extreme temperatures on healthcare utilisation, considering both immediate and lagged effects. Immediate effects are examined through two-dimensional kernel density estimation plots. These plots are essentially identical to scatter plots, but highlight segments of the temperature-healthcare utilisation joint distribution where data points cluster, otherwise known as areas of high density.

In addition, lagged effects of extreme temperature on healthcare utilisation are explored using a Distributed Lag Non-Linear Model (DLNM). This model outputs the relative risk of healthcare utilisation over each day after an extreme temperature event. We fit a DLNM model for each province in South Africa to understand geographic specific trends, but also pooled the results of the 9 provincial models using Multivariate Meta Regression to obtain a nation-wide effect.

Rather than focusing only on overall trends, the analysis explores how these effects vary across multiple dimensions, including daily healthcare visits and hospital admissions, differences across clinical categories (such as respiratory, cardiovascular and trauma), variations across age groups, and the lagged effects of temperature on healthcare utilisation, capturing how impacts unfold in the days following exposure.

[1] https://www.actuarialsociety.org.za/wp-content/uploads/2025/11/2025-ASSA-KotzenSmithCo-FIN.pdf

The study also examines the April 2022 floods in KwaZulu-Natal province, one of the most severe natural disasters in South Africa's recent history, to understand how extreme rainfall events disrupt healthcare access and utilisation patterns.

Key Insights from the Data

The findings point to a clear and nuanced relationship between extreme weather and healthcare demand.

Extreme temperatures are associated with measurable changes in both healthcare visits and hospital admissions, although the effects are not uniform and vary across clinical categories, population groups, and time horizons. For example, the analysis reveals that overall hospital admission rates increase by 2.36% on days of extreme heat, yet decrease by 4.97% on days of extreme cold (after standardising for geographical, seasonal and day of week effects).

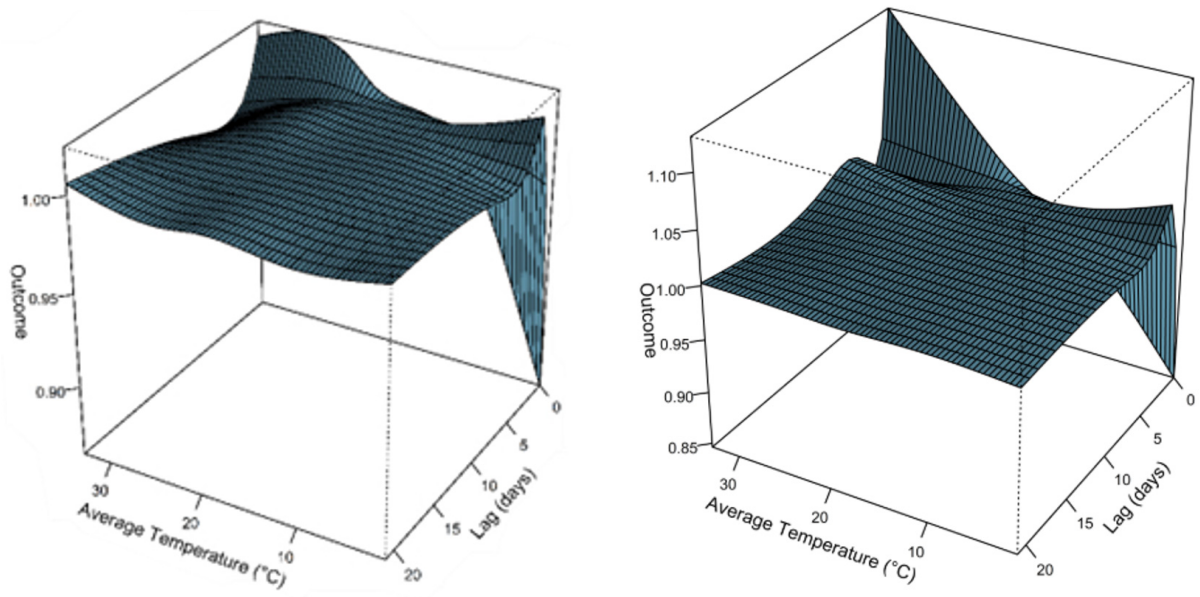


Figure 1: Three-dimensional effect for (a) hospital admissions and (b) casualty visits across temperature, lag and relative risk (outcome)

Each healthcare condition is impacted diversely by extreme temperature events, with the analysis revealing that cardiovascular, nephrology and casualty (i.e. emergency room) related healthcare utilisation increases immediately on days exhibiting extreme heat, while respiratory related healthcare utilisation experiences a lagged surge 2-3 days after an extreme cold day. These patterns highlight the complexity of the relationship between environmental exposure and healthcare utilisation, and the importance of considering both immediate and lagged effects.

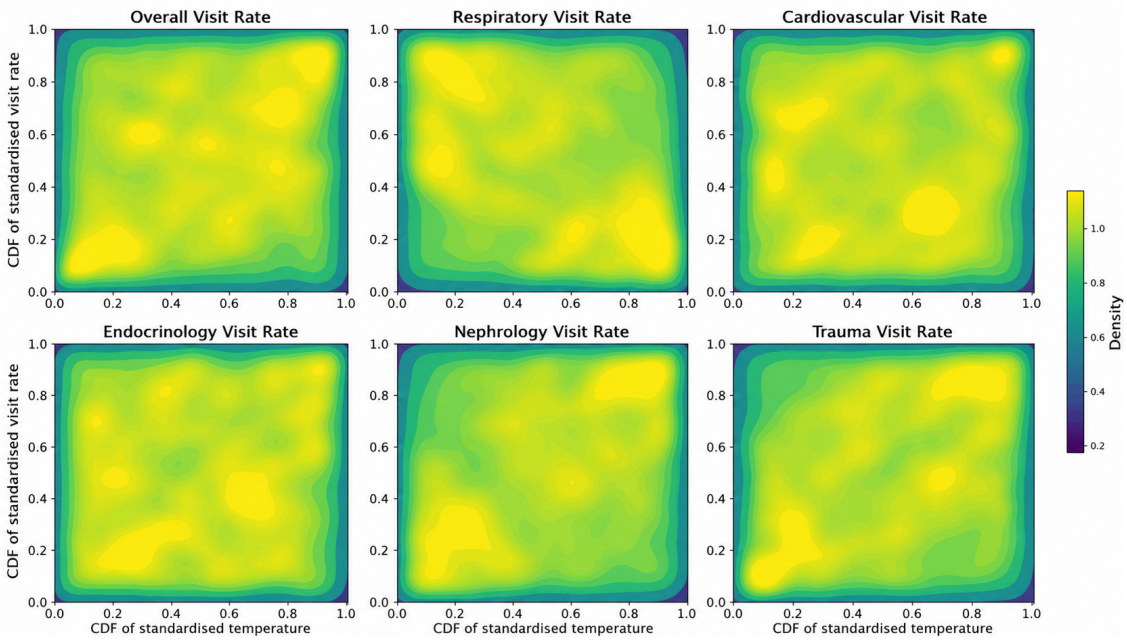


Figure 2: Two-dimensional kernel density estimation plot of standardised temperature with different standardised healthcare visit rate metrics

Analysis of the April 2022 KwaZulu-Natal floods highlights how extreme rainfall events can significantly disrupt healthcare utilisation, reflecting both changes in access to care and the subsequent normalisation of demand once conditions stabilise.

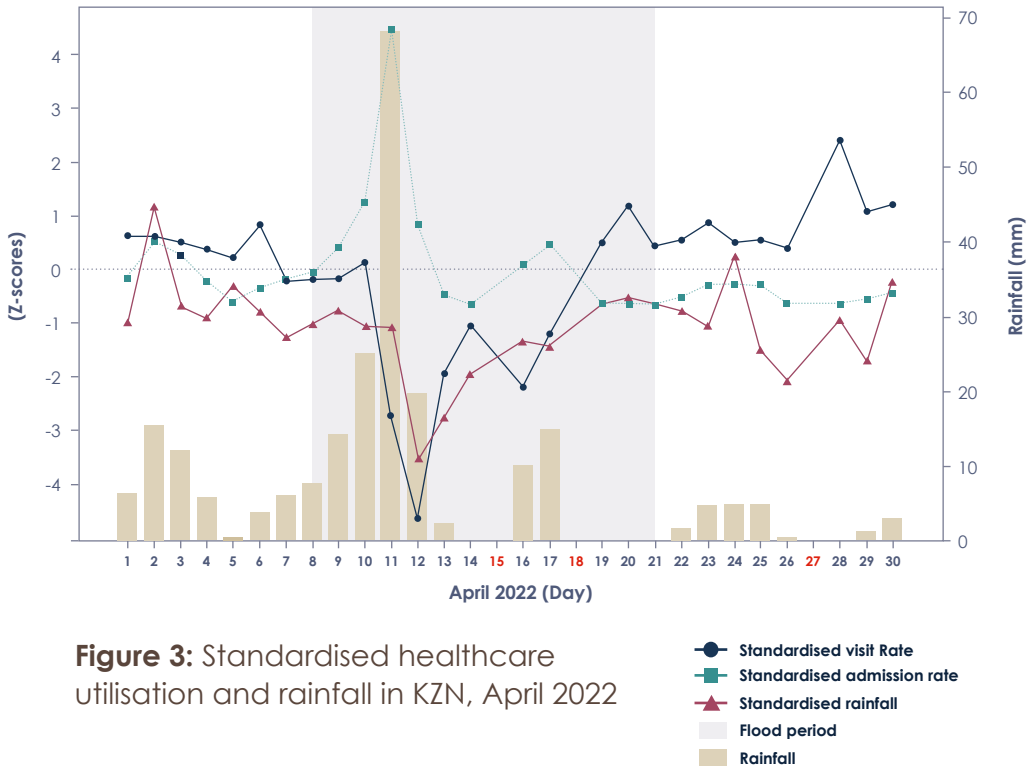


Figure 3: Standardised healthcare utilisation and rainfall in KZN, April 2022



Together, these findings highlight that extreme weather impacts both the demand for care, through changes in morbidity, and access to care, through disruptions to healthcare delivery.

Implications for Healthcare Systems

These insights imply that the manner in which healthcare systems plan, manage, and deliver care in an increasingly volatile environment needs to change. Digital platforms and data-driven tools support moving from reactive to pro-active care by identifying at-risk populations, triggering early warnings during extreme weather events, and guiding patients towards appropriate care pathways.

At Discovery Health, for example, digital health pathways offer a mechanism to translate environmental signals into personalised interventions, helping members navigate care during periods of elevated risk. Increasingly, these capabilities can be enhanced through the application of artificial intelligence, enabling more precise risk stratification and personalised interventions in anticipating and responding to climate-related health risks, closer to real time.

These findings raise important considerations for how healthcare systems understand and respond to changing health needs, as well as the funding and resource implications, particularly as extreme weather events become more frequent.

Becoming visible: Reflecting on the Insurance Apprentice

by Tyrell Moodley



The first time I heard the word "actuary", it came from a school teacher in Grade 11. I nodded along as though I understood. I did not. Even after choosing the degree, I only truly grasped what actuaries do once I completed my Honours year. If that was true for me, someone inside the profession, I often wonder what chance other South Africans have.

TYRELL MOODLEY

Tyrell Moodley is a qualified actuary and Head of Business Development at insureAI, an actuarial consulting and software firm. He finished as runner-up in The Insurance Apprentice 2026.



THAT QUESTION IS, IN A ROUNDABOUT WAY, HOW I ENDED UP ON NATIONAL TELEVISION.

In 2026 I competed in The Insurance Apprentice, a reality-style competition themed around short-term insurance, and finished as runner-up. I was the first qualified actuary to compete on the show since 2020. Over an intense week of full-day filming, I spoke in front of non-technical crowds, worked and clashed and collaborated with underwriters, brokers and lawyers, and tackled the kinds of problems that Executive Committees often think about. All under time pressure, with camera crews capturing every stumble. Almost none of it required a spreadsheet. All of it, I would argue, required an actuary.

FROM THE COUCH TO BEING ON TV

The Insurance Apprentice is not new. Its first season ran twelve years ago as a YouTube series, in which individuals under the age of thirty-five compete for the winning spot. In 2025, the show moved onto national television and with that move came a bigger purpose: showcasing and educating a wider population about insurance in an entertaining way. It has genuine buy-in from the industry (Old Mutual Insure, Santam, Hollard, Bryte, Discovery Insure, Aon, Sasria and Inseta all sponsor the show), which means contestants find themselves pitching to, and learning from, senior stakeholders at these organisations.

I started watching in 2020 after seeing two actuaries, Amogelang Kgaladi and Memory Zimba, compete and secure a remarkable one-two finish. I kept watching in the seasons that followed, and somewhere along the way I noticed something that bothered me: after that season, no actuaries competed. Season after season, a show built around solving short-term insurance problems, and not one of us visible on the platform.

WHY I ENTERED

The honest answer has two parts. The first is that I was terrified of putting myself out there and that felt like precisely the reason to do it, to push myself and grow from the uncertainty. The second goes back to the response I had when I first heard the word "actuary". Here was a platform reaching millions of people, many of whom have never knowingly encountered an actuary. Many people (and their professions) are visible on that stage, and I realised it could be one of us.

What made the show compelling to me is that it is not about being the best technical specialist. It is about working with other professions to solve high-stakes, time-pressured problems. That was the chance to show that actuaries can be collaborative, and that our training makes us problem-solvers who can hold their own in commercial and strategic discussions, not only technical ones.

Frank Redington put it best: **"an actuary who is only an actuary is not an actuary"**. The technical accumulation of skills will always be our foundation, but it is the skills of communication and considering challenges from different perspectives that expand the areas in which actuaries can operate.

MORE THAN A HUMAN CALCULATOR

Around two hundred people applied for the 2026 season, with the show only televised from the Top 20. As I progressed through the elimination rounds, I kept encountering the same view of the profession among people my age. Actuaries are intelligent and make a lot of money but beyond that there was little knowledge in what we did and how we contributed to insurance companies. Many saw us as intensely technical people, essentially as human calculators.

I understand where it comes from. But what struck me was how quickly it shifted once people actually worked alongside me. As the competition progressed, I could see the opinion of the other contestants changing. A growing recognition that we can be so much more than the box we are placed in and, sometimes, place ourselves in.

The show was an intense learning curve, filled with many firsts. My first time speaking to a large non-technical audience. My first time in front of camera crews for days on end. My first time building solutions in a time pressured environment with lawyers, brokers and underwriters (each convinced that their lens on the problem mattered most). Along the way I learnt that my opinion can carry weight and holding back my contributions is not always the best option. When you step into a room where your skillset is scarce, staying quiet does not serve the team, it deprives it.

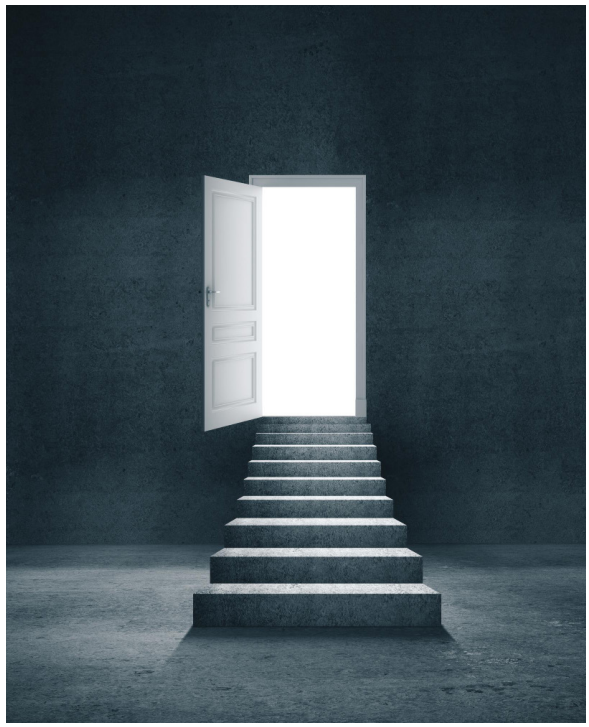
And the actuarial training showed up in ways I did not expect. Time and again, the first-principles thinking that our qualification drills into us helped break open unfamiliar problems and plug the holes in my teammates' solutions. We were never asked to build a model but were rewarded by thinking like people who could.

WHAT I TOOK AWAY

Beyond the competition itself, the experience gives back more than I anticipated. It is an amazing opportunity to develop your own personal brand, to become known for something beyond your job title. It is a crash course in just how wide the short-term insurance industry really is; no single role exposes you to underwriting, claims, broking,

reinsurance and regulation the way a season of varied challenges does. And it comes with feedback, often direct and sometimes uncomfortable, delivered by judges and senior industry stakeholders which is invaluable for anyone serious about continuous growth.

Frank Redington put it best: "an actuary who is only an actuary is not an actuary". The technical accumulation of skills will always be our foundation, but it is the skills of communication and considering challenges from different perspectives that expand the areas in which actuaries can operate. The show provides the opportunities to practice these skills.



THE BIGGER OPPORTUNITY

I came away from the experience convinced that actuaries have an incredible role to play in short-term insurance and that much of it sits outside the traditional approach to actuarial roles. There is room to collaborate more with other professions or design new products for needs that are changing faster than legacy offerings can keep up with. There is strategy work to be done as data becomes more central to how insurers compete and there are problems that need to balance technical excellence with human understanding such as the risk of over-optimising on past data and, in doing so, penalising previously uninsured markets that the industry should be bringing in, not pricing out.

But none of that potential matters if nobody knows we are capable of it. Visibility of the profession is not vanity, it is how a profession earns a seat in the rooms where these decisions are made. That can mean joining industry bodies, taking on roles outside the traditional actuarial functions, or (if you are slightly mad) spending a week filming a reality show.

AN OPEN DOOR

I recommend the experience without reservation. The Insurance Apprentice has undoubtedly been a life-changing chapter for me, and I am excited to see what it does for the actuaries who come after. Applications for the next season are open now and close on 30 September 2026. To anyone in the profession weighing it up or interested in learning more, I am happy to share what I learnt, what I got wrong, and why pushing past the fear is worth it.

Somewhere out there is a promising young learner hearing the word "actuary" for the first time, nodding along without really understanding, the way I once did. The difference is that now, they might just switch on the television and see one in action. That, more than any placement or prize, is why I entered.

Innovating Mental Wellness Insurance

by Keelan Moodley





KEELAN MOODLEY
SENIOR MARKETING ACTUARY
AT SWISS RE AFRICA

From awareness to access

Mental health has moved from the margins of public conversation to the centre of insurance debate. The opportunity for us as an insurance industry is not simply to exclude risk, but to understand it better, design around it intelligently, and ultimately improve our value proposition to society

The shift insurers can no longer ignore

Global evidence suggests that nearly one in three people will experience a mental disorder during their lifetime, while around one in five may be affected in any given year. Among college students, a population that closely mirrors many future insurance applicants, these rates are even higher. Prevalence estimates are shaped not only by the underlying burden of disease, but also by factors such as access to care, visibility of mental health conditions underscore their increasing relevance to insurers, highlighting the need for products and services that balance accessibility, sustainability and meaningful support for policyholders.

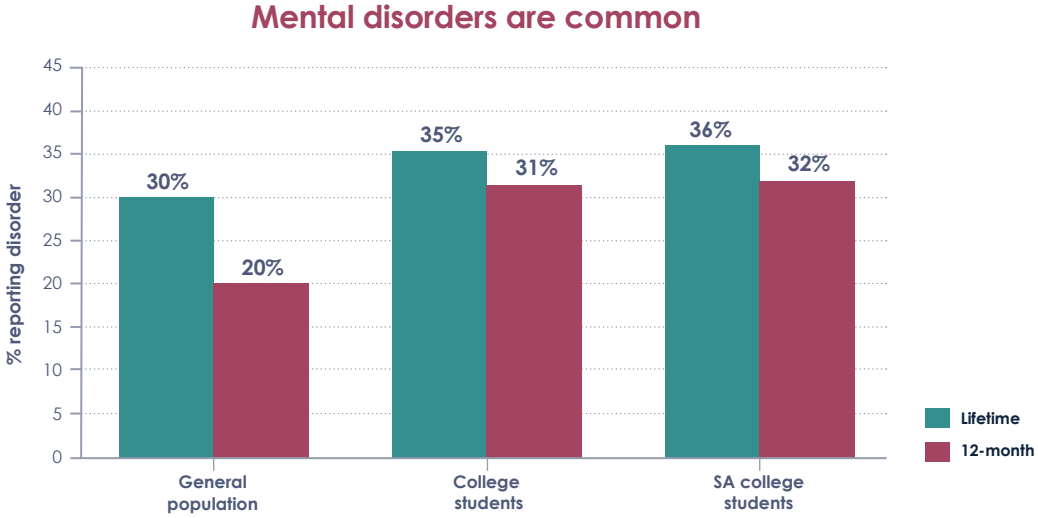


Figure 1: *Prevalence estimates for mental disorders.*
Source: *Steel et al. (2014); Auerbach et al. (2018).*

From stigma to disclosure

The social context around mental health has changed materially. Destigmatisation and increasing access to psychosocial services is positive.

Ipsos data shows how quickly mental health has moved up the public agenda. Globally, the share of respondents citing mental health as one of the biggest health problems rose from 27% in 2018 to 45% in 2024. In South Africa, the movement was from 16% to 39% over the same period. These shifts are leading to downstream impacts for the insurance industry. More people are seeking professional help, increasingly counselling or treatment appears in medical records, and more applicants disclose stress, anxiety, depression or related support when applying for cover.

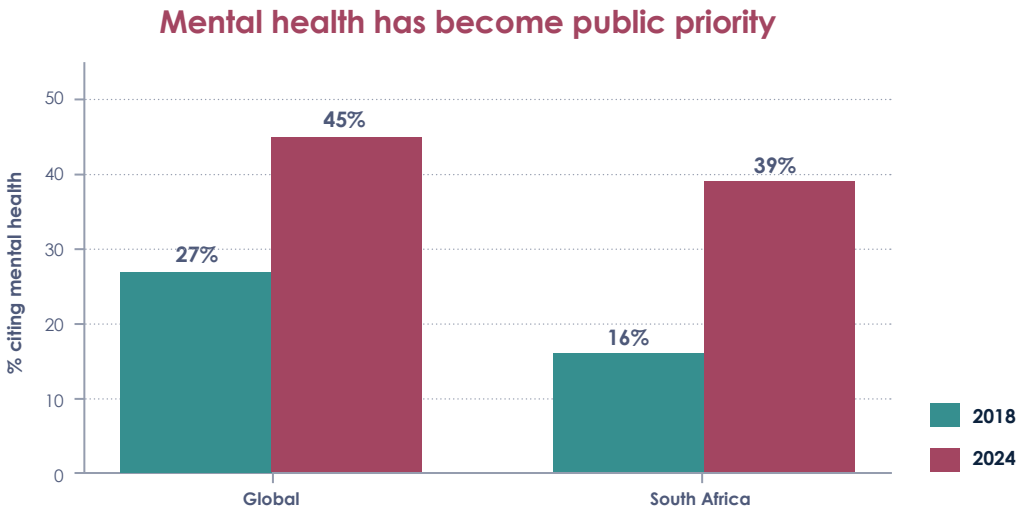


Figure 2: *Mental health is increasingly seen as a leading health* concern.

Source: *Ipsos Health Service Report 2024.*



Why mental health risk is difficult to insure

The insurance industry response to mental health has often been conservative given the challenges:

- Mental health data can be limited, inconsistently coded and insufficiently granular, resulting in a lack of credibility in the data sets that we analyse.
- Diagnoses often rely on symptoms and clinical judgement rather than objective biological markers, leading to inconsistent diagnoses and an

increased risk of misdiagnosis due to the subjectivity in both the disclosure and interpretation.

- Conditions often overlap, meaning the determination of granular incidence rates at a condition level are difficult to achieve.
- Mental health claims tend to have a longer duration than other causes of claim due to a longer diagnosis period where there are often several medical consultations performed before a diagnosis is made. This is further exacerbated by the fact that many mental health conditions are unrecognized for long periods of time resulting in conditions being untreated, eliminating the changes of early intervention and resulting in inefficient recovery outcomes.
- Higher misrepresentation due to intentional and unintentional non-disclosure: From an intentional perspective, there is an inability to prove non-disclosure – medical records are often not present for us to perform appropriate non-disclosure investigations at claims stage which makes managing anti-selection risk challenging. From an unintentional perspective, this can either be due to a lack of awareness where the condition may be prevalent but undiagnosed or unrecognised or prospective policyholders do not fully understand the underwriting questions.

The claims experience that we have seen on the Swiss Re portfolio across the UK, Ireland and Middle East & Africa supports these points. At the end of 2024, mental health claims represented 25% of open income protection claims due to lower termination rates compared to other claim causes. This is not a reason to retreat from cover; it is a reason to price, underwrite, manage and rehabilitate with greater precision.

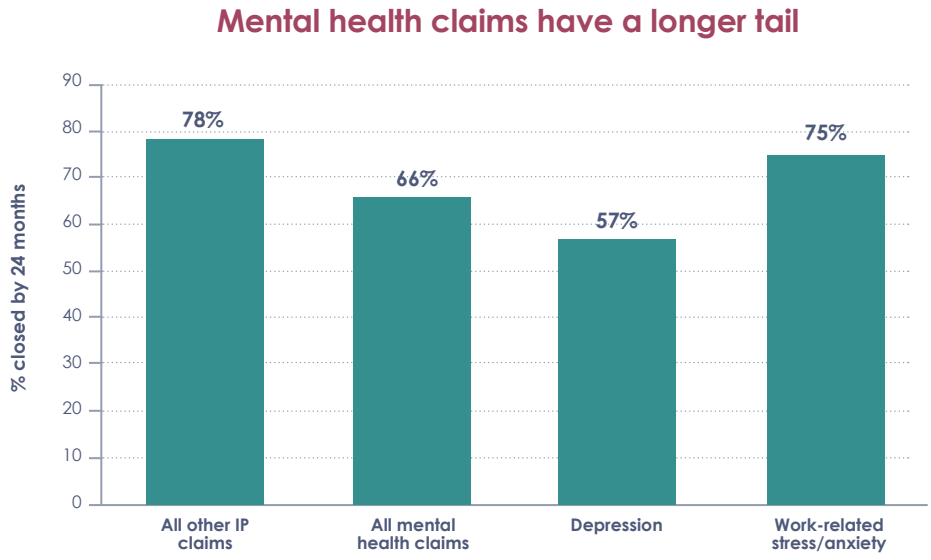


Figure 3: *Claims closed by 24 months, by broad cause and selected mental health causes.*

Source: Swiss Re Portfolio Analysis

Designing for access and sustainability

One of the encouraging insights from the Swiss Re Head First Research Publication, which explored how insurance can support mental wellbeing, is that consumer and insurer interests overlap. Consumers value prevention, access to support and the ability to proactively manage their mental health. Insurers value the same things because preventing a claim is better than managing one, and sustainable return to work is better than relapse and linked claims.



FIVE DESIGN SHIFTS CAN HELP.

1. **Better data:** richer claims coding, improved capturing of severity, treatment history and relapse patterns as well as greater discipline in linking underwriting, pricing and claims feedback loops. If we can improve how information flows within our organisations, we will be able to make decisions with more precision and more accuracy.

2. **Underwriting exclusions:** this has been a great defense mechanism in controlling anti-selection risk, but the current industry approach has been broad brush where mental health disclosures are met with blanket exclusions. Condition-specific, time-bound or reviewable exclusions may be more appropriate where the nuance of each individual case is considered.

3. **Prevention and early intervention:** if we can prevent claims from happening, we can reduce incidence rates, and if we can intervene early and get people back to work, we can reduce annuity factors. Ultimately, leading to more sustainable premium rates.

4. **Ongoing support:** Our roles as insurers do not stop when someone returns to work, we need to ensure that policyholders are equipped with the necessary mental health toolkits to help them cope with another episode or challenges that they may face. This can have a material impact on reducing linked claims from occurring.

5. **Flexible product design:** there are levers that we can pull to improve accessibility in a sustainable manner: lower initial benefit ratios, shorter benefit terms, deferred buy-ups and clear claim-free pathways can allow us to extend access whilst still protecting the balance sheet.

Prevention and return to work

Insurers need to move further upstream and be proactive in driving change. There is a lot that insurers can do to prevent claims from occurring, including policyholder education, mental wellbeing tools, screening, guided support and digital solutions (which can help at scale - provided there are clear pathways to offline support where human care is needed).

At the claims stage, the biopsychosocial model reminds us that we insure people, not diagnoses. Two policyholders with the same diagnosis can have different recovery outcomes depending on physical health, workplace conditions, family responsibilities, beliefs and support systems. Stepped care is therefore an essential solution that can help us triage cases and ensure that we use our resources where they add value: lower-intensity support escalating to case management, occupational therapy, psychological support, psychiatric input and vocational rehabilitation when ineffective recovery outcomes are exhibited.

A call to actuaries

Mental wellbeing coverage is not only an underwriting issue or a pricing problem. It is a holistic product development opportunity. The right response requires actuaries, underwriters, claims specialists, medical experts, employers and technology partners to work together.

If the balance is right, insurers can offer more inclusive cover, consumers can access support earlier, and claims outcomes can improve. Mental health is no longer an invisible risk. The challenge is to ensure that insurance products are no longer invisible to the people who need them most.

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Game Changers or Overhyped?

How Advances in Metabolic Health and Cancer Care are Reshaping Mortality, Morbidity and Insurance

By Desigan Pillay, Moritz Drefs, Florian Rechfeld, and Prachi Patkee





Executive Summary

- Metabolic ill-health, driven by obesity, insulin resistance and lifestyle factors, has emerged as a major threat to future longevity gains and is increasingly linked to cardiovascular disease, diabetes and several cancers.
- GLP-1 drugs represent a major advance in obesity management, delivering substantial weight loss results and improvements in cardiometabolic health, with potential benefits extending to cardiovascular disease, kidney disease and obesity-related cancer outcome improvements.
- However, uncertainties remain around long-term effectiveness, treatment adherence, weight regain, affordability and access, highlighting the continued importance of sustainable lifestyle change.
- Obesity and insulin resistance are increasingly recognised as important drivers of future cancer burden, reinforcing the connection between metabolic health and cancer prevention.
- Cancer epidemiology is evolving rapidly through population ageing, increasing survivorship, changing risk exposures and rising early-onset cancers.
- Advances in screening, AI-supported diagnostics, precision oncology and immunotherapy are improving cancer outcomes, while also creating new challenges around cost, access and insurance risk assessment.
- Together, developments in metabolic health management and oncology are accelerating a shift toward prevention, earlier intervention and personalised medicine, with significant implications for mortality, morbidity and Life & Health insurance.

The Growing Burden of Metabolic Ill Health

Since 2010, life expectancy improvements have plateaued across many developed countries, coinciding with rising obesity and metabolic ill-health. These trends are becoming major threats to future longevity gains.

Metabolic ill-health is closely linked to insulin resistance, driven largely by modern lifestyle factors including poor diet, sedentary behaviour, chronic stress, poor sleep, and socioeconomic disparities[1], [2]. Diets high in refined carbohydrates and ultra-processed foods contribute to chronically elevated insulin levels, inflammation, and fat accumulation, eventually leading to obesity, prediabetes, and type 2 diabetes. Globally obesity prevalence has nearly tripled since 1975, with projections suggesting that by 2035 more than half of the world's population may be overweight or obese[3], [4].

Obesity and insulin resistance are associated with cardiovascular disease, chronic kidney disease, neurodegeneration, liver disease, respiratory illness, musculoskeletal disorders, and certain cancer types[5], [6]. Swiss Re identifies poor metabolic health as a major future driver of mortality and morbidity risk across Life & Health insurance portfolios[7].

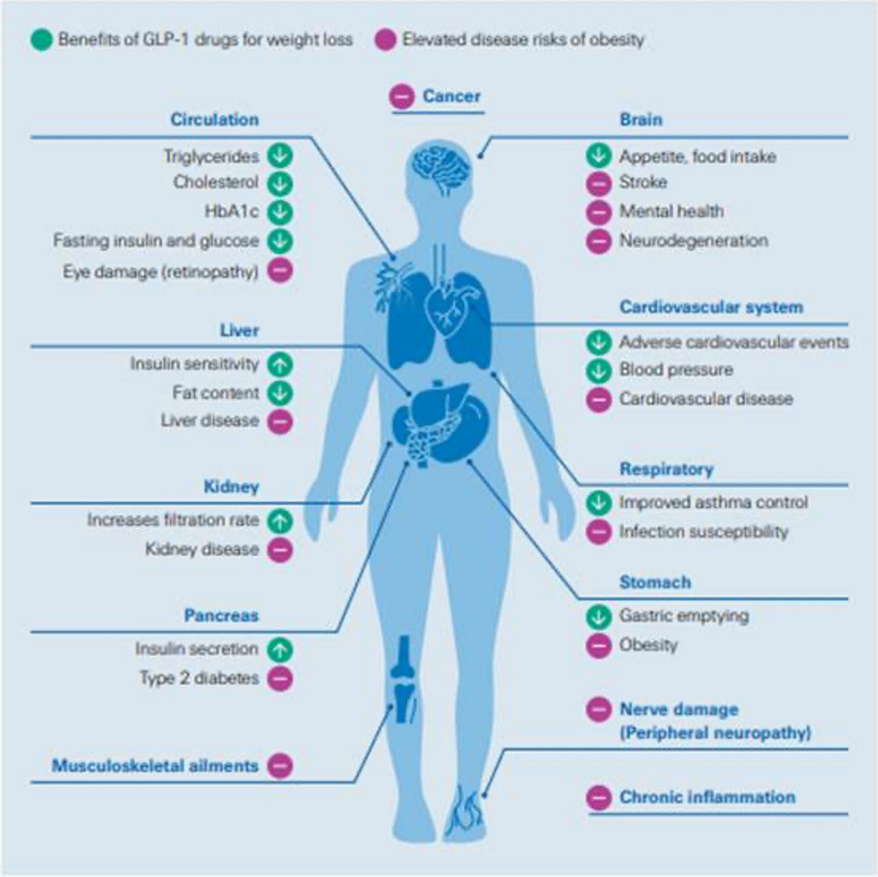


Figure 1: *Benefits of GLP-1 drugs for weight loss on key clinical markers, alongside the risks of elevated blood glucose, insulin resistance and obesity*

Source: *Swiss Re*



The Evolution of Weight-Loss Therapies

Lifestyle modification remains the foundation of obesity treatment but sustained long-term weight loss has proven difficult for many individuals. New pharmacological therapies, particularly GLP-1 receptor agonists, have therefore emerged as potentially transformative tools.

Initially developed for type 2 diabetes management, GLP-1 drugs such as semaglutide (Ozempic®/Wegovy®) and tirzepatide (Mounjaro®/Zepbound®) demonstrated substantial weight-loss effects, leading to expanded approval for obesity treatment[8]. These drugs work by mimicking incretin hormones that regulate appetite, insulin secretion, gastric emptying, and reward signalling in the brain.

Lifestyle modification remains the foundation of obesity treatment but sustained long-term weight loss has proven difficult for many individuals.

Clinical trial data demonstrates substantial weight-loss and cardiometabolic benefits. In head-to-head studies, semaglutide and tirzepatide produced average weight losses of approximately 15–23 kg over 72 weeks. Improvements were also observed in HbA1c, blood pressure, cholesterol, triglycerides, fasting insulin, and waist circumference[9].

GLP-1 drugs also show promise across multiple disease areas including improvements in cardiovascular outcomes, chronic kidney disease, fatty liver disease, neurodegeneration, sleep apnoea, and inflammatory conditions[10],[11].

Swiss Re's modelling projects that widespread GLP-1 uptake could reduce cumulative all-cause mortality by up to 6.4% in the US and 5.1% in the UK by 2045 if clinical trial outcomes translate successfully into real-world practice[12]. It should be noted that the degree of mortality improvement would, of course, be dependent on the baseline risk profile of the country in question; the potential for substantial improvement, however, is apparent.

Real-World Challenges and Uncertainties

Despite impressive clinical outcomes and major commercial impact, long-term effectiveness due to patient non-compliance with treatment remains uncertain. Real-world studies suggest that over 60% of users discontinue GLP-1 treatment within one year, often due to side effects, costs, or unmet expectations[13]. Weight regain after discontinuation is common, with up to two-thirds of lost weight returning within a year[14]. However, there's substantial heterogeneity of outcome data between various studies and trials. Additional concerns include loss of lean muscle and bone mass alongside fat reduction[15], and long-term "yo-yo" usage patterns and metabolic instability[16].

GLP-1 drugs are unlikely to be a standalone solution. Their greatest long-term value will likely come when integrated into broader prevention strategies centered on nutrition, exercise, behavioural change, and sustainable metabolic health improvement.

To the extent that insurers can nudge or incentivise policyholders towards greater medication compliance, as well as incorporating sustained lifestyle changes, the potential for meaningful improvement in mortality outcomes on their books is very much present.

In a local setting, South Africa has seen a sharp acceleration in GLP 1 uptake since 2023, driven by new launches and off label demand, but penetration remains low and highly constrained by cost and access, as well as low awareness levels, leaving significant headroom for future growth. With costs expected to reduce over time due to increased access and future supply of generics, the growth path of GLP-1 medication can be expected to accelerate.



Broader impacts - Cancer epidemiology and global trends

Beyond cardiovascular risk factors, GLP-1 medications are drawing growing attention for their potential role in reducing cancer risk. Modifiable factors in particular (such as obesity, sedentary lifestyles, and poor diet including ultra-processed foods) are linked to 38% of cancer cases and are increasingly associated with colorectal, endometrial, pancreatic, and post-menopausal breast cancers[17]. The WHO currently recognises 13 obesity-related cancers, while newer evidence suggests associations with more than 30 cancer types[18], [19].

For insurers, cancer remains one of the largest drivers of mortality and morbidity. Future improvements in cancer outcomes are expected to be a major contributor to life expectancy gains.

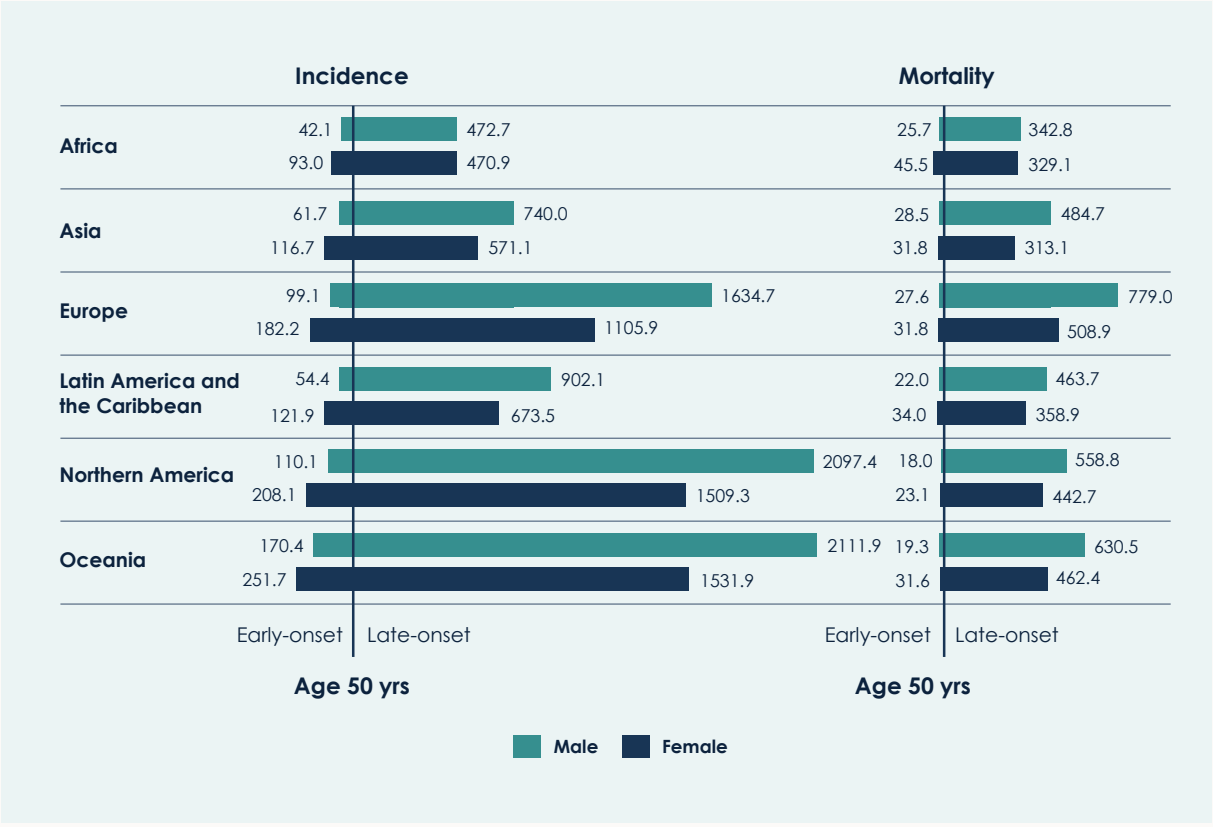
Cancer Epidemiology and Global Trends

Cancer epidemiology is entering a more dynamic phase, driven by demographic ageing, lifestyle change, metabolic ill-health, environmental exposures, and advances in diagnostics and treatment. While mortality has declined in many high-income countries due to earlier detection and improved therapies, global incidence continues to rise, increasing survivorship and long-term morbidity[20].

Cancer remains strongly associated with ageing. By 2040, cancer cases among people aged 60 and older are projected to rise from 12.4 million to 20.7 million globally, driven by population growth and ageing[21]. Improved survival is also expanding the population living with and beyond cancer, increasing demand for monitoring, rehabilitation, and chronic disease management.

Geographic disparities remain pronounced. High-income countries generally experience higher incidence but lower mortality due to widespread screening and advanced healthcare systems. In contrast, many low- and middle-income regions continue to face later-stage diagnosis, limited screening access, and higher mortality-to-incidence ratios[22].

Figure 2: *Crude incidence and crude mortality rate (per 100 000) by world region (2022)*



Source: *Global Cancer Observatory: Cancer Today (version 1.1). International Agency for Research on Cancer. Available from: Cancer Today, accessed January 2026*

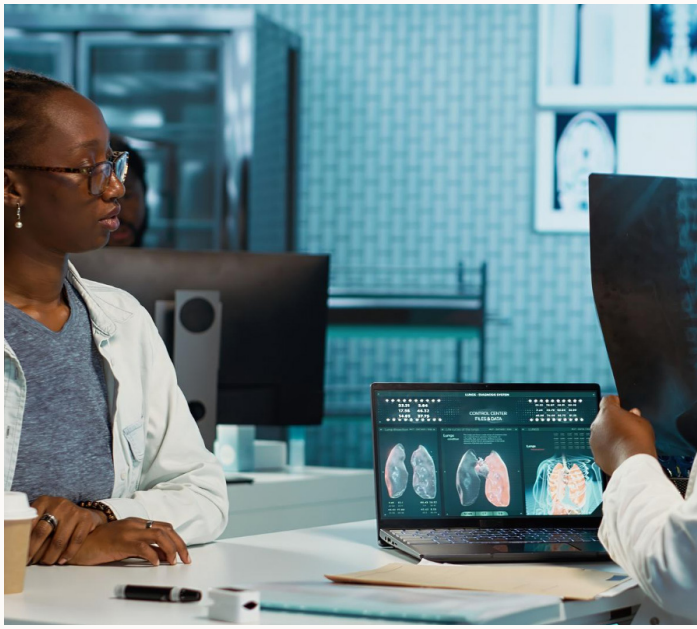
Early-onset cancer (EOC), typically defined as cancer diagnosed before the age of 50 and in working-age populations, is an important emerging trend[23]. Incidence is increasing in developed Western countries, and accounted for approximately 11% of male and 21% of female cancers globally in 2022[24].

Although incidence has risen significantly, mortality has generally remained stable or declined due to earlier diagnosis, improved treatment, and enhanced survivorship care[25], [26]. The drivers of EOC remain poorly understood, but long-term exposure to metabolic ill-health, obesity, insulin resistance, ultra-processed foods, antibiotic exposure, and potentially microplastics are increasingly implicated[27], [28], [29], [30]. Importantly, rising aggressive cancers such as colorectal and pancreatic cancer suggest that improved detection alone cannot explain current trends.

Why screening matters

Early detection remains one of the most effective levers for improving cancer outcomes. Screening programmes aim to identify cancers before symptoms develop, shifting diagnosis toward earlier and more treatable stages. Cancers diagnosed at stages I and II are generally associated with higher survival rates, lower treatment-related morbidity, and broader therapeutic options[31]. Breast, lung, and colorectal cancer have shown particularly strong survival gains linked to increased screening uptake and earlier intervention[32].

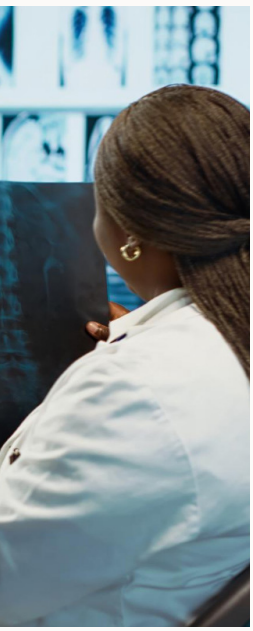
However, screening progress remains uneven globally. Around 70% of cancer deaths in the US are linked to



cancers without established screening programmes, such as pancreatic, ovarian, and oesophageal cancer, which are often diagnosed at advanced stages with poor prognosis[33], [34], [35], [36]. Screening participation also varies substantially across countries due to differences in healthcare infrastructure, funding, public awareness, and access[37].

New technologies aim to address limitations of conventional screening. Multi-cancer early detection (MCED) tests use liquid biopsy approaches to detect tumour markers through blood samples. These tests may eventually complement existing screening programmes by enabling detection of multiple cancers earlier and through minimally invasive methods[38]. However, their long-term mortality impact, cost-effectiveness, false positive rates, and risks of overdiagnosis remain uncertain.

Artificial intelligence is also being integrated into imaging, diagnostics, biomarker interpretation, and risk stratification. AI-supported mammography, colonoscopy, and predictive analytics



have demonstrated improved detection accuracy and operational efficiency in early studies[39], [40]. While earlier detection may improve outcomes, AI-enabled diagnostics could also increase the identification of low-risk cancers, potentially contributing to over-diagnosis driving higher healthcare utilisation and raising new underwriting and anti-selection considerations where applicants gain access to health information before insurers.

Emerging Cancer Treatments

Cancer treatments are undergoing a major transformation from traditional cytotoxic therapies (e.g. chemotherapy), which non-selectively target rapidly dividing cancer cells, toward increasingly targeted and personalised immune-based approaches. Advancements include precision oncology, immune checkpoint inhibitors, CAR-T cell therapy, antibody-drug conjugates, bispecific antibodies, and therapeutic cancer vaccines, including mRNA-based technologies. all of which are reshaping survival outcomes and long-term cancer management.

Precision oncology increasingly tailors treatment to the molecular characteristics of each tumour, enabling "tumour-agnostic" therapies, where treatment is selected based on biomarkers rather than cancer origin alone[41]. Early studies show promise, but applicability is often limited to specific cancer types, and challenges remain around toxicity, manufacturing complexity, tumour heterogeneity, and treatment resistance.[42].

Oncology treatment is becoming more individualized, yet also more expensive and operationally complex. Advanced therapies are increasingly delivered over prolonged treatment periods rather than as one-time interventions[43]. While these innovations are improving survival and turning some cancers into chronic manageable diseases, access disparities, treatment resistance, immune-related adverse effects and reimbursement pressures remain major constraints.

GLP-1, Cancer and L&H Insurance Implications

For Life & Health insurers, GLP-1 adoption, earlier cancer detection and advanced oncology treatments are reshaping mortality, morbidity and survivorship assumptions.

- Cancer is increasingly shifting from an acute fatal disease towards a longer-term or recurrent condition. This may reduce mortality and critical illness (CI) severity, but increase survivorship, recurrence, long-term morbidity and disability claims.
- Mortality and critical illness portfolios may benefit from lower cardiovascular and cancer mortality, while longevity portfolios may face higher exposure from extended survival and longer pension payout periods.
- Critical Illness, Disability Income, and Income Protection claims may change as expanded cancer screening increases earlier-stage diagnoses and claim frequency, while improved therapies may reduce severity and support return to work. At the

same time, a growing population of cancer survivors may live longer with treatment-related morbidity, increasing the relevance of long-term disability and recurrence-related claims. Cancer relapse, early-onset cancer, and treatment-related complications may further increase claim duration and recurrence risk. GLP-1 therapies may also reduce musculoskeletal and metabolic-related disability claims by improving insulin resistance and obesity-related morbidity.

- Medical insurance faces rising cost pressure from GLP-1 drugs, biomarker testing, AI diagnostics and advanced oncology therapies. Claims may shift from high-severity inpatient events to longer outpatient treatment, monitoring and survivorship care.
- Underwriting, claims and pricing frameworks will need to evolve beyond the traditional measures of BMI, age and static medical history. Future underwriting is expected to place greater emphasis on other factors including metabolic health, lifestyle behaviours, and longitudinal weight history given population-level GLP-1 usage. In terms of ongoing cancer risk, wider access to genomic testing, AI supported diagnostics and other technologies may improve survivorship risk, but also increase anti-selection risk. Pricing assumptions may need to reflect higher incidence, earlier diagnosis, improving survival, recurrence risk and prolonged treatment pathways.

Overall, cardiovascular disease and cancer are on a transition path – one leading to better quality of life outcomes, and greater survivorship. This has important implications for healthcare systems and insurers, particularly regarding morbidity, long-term care needs, pricing assumptions, and product design.

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The Long Run

by Maseeha Rawat

How George Kusche applied the power of process, patience and persistence to become a Comrades marathon champion.



GEORGE KUSCHE

George Kusche *is a 27-year old TASSA, a statistician, aspiring actuary and self-coached runner who rewrote the Comrades record books. We met at Virgin Active, Alice Lane, for a coffee and interview shortly after George's remarkable Comrades victory. A few of the personal trainers at the gym recognised the star athlete and asked to take selfies with him. George says that it's something which has been happening often since his win - he's still getting used to it!*

1. Early life, education & actuarial path

Maseeha: *Let's start at the beginning. Tell us a bit about your family, where you grew up and your early years—what kind of environment shaped you?*

George: I was born in Pretoria, but when I was four, we moved to Malalane (a farming and tourism town in Mpumalanga) and I went to the primary school there. My dad is an engineer and I've got three sisters. They're 9, 10, and 12 years older, so I grew up kind of alone because they were out of the house.

Maseeha: *You went on to study in the United States, completing a Bachelor's in Actuarial Science and a Master's in Statistics. How did that opportunity come about, and what drew you to that path?*

George: I actually started studying at TUKS (University of Pretoria), Actuarial Science. But about a semester in, I got a scholarship in the US for running, and it was quite comprehensive. I've always wanted to see the world, so I thought it was a good opportunity to do so. I studied actuarial science at Nebraska Lincoln, and then I did a Masters in Statistics at Northern Arizona. I liked the US experience a lot! It's a country with lots of opportunity. If you're willing to work hard, you can really succeed.

Maseeha: *You're now a Technical member of ASSA, having passed eight exams—all on your first attempt. What was it like transitioning back to South Africa and becoming part of the actuarial community here?*

George: The universities in America aren't accredited by ASSA. So, I needed to start with the exams, from scratch. Obviously, we forget some of what we learned, so I needed to start over. I managed to pass the first seven exams, and then also the Communications to make it eight exams.

Maseeha: *How long did it take you to get through the first eight exams?*

George: It took me two and a half years (5 exam sittings). At least I passed them all on the first exam - it helped that I didn't fail. I enjoyed the material in the first seven exams a lot because it's technical, and I'm strong on the technical side, so it wasn't too bad coming back, was more of an adjustment in the sense that I got a job and started growing up in life.

Maseeha: *Alongside this, you're working as a Data Scientist at Pepkor—what excites you most about your career at the moment, and where would you like it to go?*

George: Yes, I'm a data scientist at Pepkor which is a public company, a retail company, which owns various stores: Ackermans, Pep etc. I enjoy my role now and I'd like to grow and qualify as an actuary. I could maybe go into a more traditional actuarial role one day.

2. Family & life beyond work and running

Maseeha: *Had you considered staying on in the US after completing your studies, and what made you decide to return to South Africa?*

George: Yes, I thought about it, but Lizzy, my wife was in South Africa and it would have been difficult for her to move over there. We weren't married at the time, but we were thinking about it. And my



Credit: *George Kusche / Just Capture Media*

parents are also both getting old, so I thought coming back is a good choice. And I like South Africa as a country a lot, as well, so I'm happy with my decision.

Maseeha: *Were you and your now-wife in a long-distance relationship while you were studying in the US? How did you meet?*

George: When I went over initially, we weren't in a relationship, but we were best friends for a couple of years. During COVID, I came back for that year, studied online, and that's when our relationship bloomed. We did long-distance thereafter and then got married in 2022. We had first met when I was in Grade 11 and Lizzy was a first-year university student who gave me a lift to athletics practice. So, in a way, we met through running.

Maseeha: *You now have a young family—how has becoming a husband and father influenced your priorities and mindset?*

George: I'm now much more inclined to stability. With having a family, especially a young one, you want stability to be a major part of your life. The decisions we make are focused on the long-term and I'd say that is a big change. It's things like investing in your child's future that become very important.

3. The running journey (origin story + long-term mindset)

Maseeha: *You've spoken about this being an 11-year journey. Take us*

back to the start—how did running first become part of your life?

George: I ran in primary school, but I did all the sports at that point, so I didn't focus on running. And then I went to high school and I tried out for the rugby team. I made it into the F-team. Big shock. Because I thought I would be a Springbok! So, I kind of tried it for a month and then decided I didn't want to do this. So, I started running more seriously and I made it my main sport. It went well, so throughout high school I started running better. And then that's also how I got the running scholarship.

Maseeha: *Rugby's loss was running's gain! At what point did you realise this might become something more serious than just a hobby that you do in your free time?*

George: I'm not sure it was a big loss for rugby! But it was a big loss for me at the time - in high school, everything seems like the end of the world. Fast forward to when I got back to South Africa after studying in the States, I first took a 10-month break from running, and then I joined Nedbank Running Club. And they were very much focused on ultra-marathon races like the Comrades and the Two Oceans. And so I started doing 10kms and 21kms and I gradually picked up the distance and did a full marathon. I did the Cape Town Marathon in 2024 and I ran fast enough to qualify for the elite field of the Comrades. I thought let's give Comrades a shot last year - maybe it doesn't work out, maybe it does.

Maseeha: *In a recent interview, you encouraged runners to think in terms of years rather than weeks or months. Where does that long-term philosophy come from?*

George: It boils down to separating the task from the outcome. If I do a workout this afternoon, I can't expect that workout to make me fit right now or even in the next week or month. The philosophy is to do things without expecting a reward in the moment. Over the long term, there will be a reward. If you work hard for years, there will be some kind of reward. But if you continuously seek validation or rewards in the short-term for putting in the work, it will never be fulfilling. Do the work for the work's sake, focus on the process.

4. Comrades debut (2025)

Maseeha: *Once you registered for your Comrades debut, many would have sought out a coach. You chose to remain self-coached—what's the thinking behind that decision?*

George: I trust myself and I know my body better than another person would. I've been very curious about training from around high school days. I've always thought, you know, what makes someone run fast? It's very simple, yet it's so odd. So, I've been reading up on this, as much running literature as I could. I developed quite a lot of knowledge, but I quickly realised that it's not just knowledge, it's kind of an art as well. I need to actually be able to apply those principles. In real life, it's messier than it is in theory. So, I experimented with a lot of things and I felt like I could do it on my own. I did have a coach in university, but after that, I felt like I had enough experience in training, which I developed into my own philosophy. I guess it is a risk, because it differs quite a lot from the traditional Comrades training. In fact, I got a lot of criticism on the way I prepared, because my Strava was open. People didn't see it, but I knew it was working for me, and luckily now the results prove that as well.

Maseeha: *You finished 12th on your debut last year—an incredible result, especially as a self-coached runner. Looking back now, what are your reflections on that performance?*

George: I had trained quite hard for my Comrades debut, but not professionally, so I was still an amateur, making lots of mistakes. I was training and devoting a lot of time to it, but not at a good professional level. So, when I finished 12th, I thought that I did well. After that, I decided that I was going to take a small break from the actuarial exams and throw all my eggs into the Comrades basket.



5. The journey to victory (2026 Comrades win)

Maseeha: *Leading into this year's race, you seemed quite measured when asked about your chances of winning. There's been talk of a deliberate detachment from the outcome—was that a conscious mindset strategy, perhaps to take the pressure off yourself?*

George: Yes, detachment is a good word to use. I'm very much process focused, so I do everything in my power, work as hard and effectively as I can on the process, and the outcome should be a natural product of the work I do. It's a philosophy to maximize performance. The reason we train is to maximize our performance on race day. But if we start speaking in outcome language, e.g. I say I want to earn this position, that's taking away from the process of preparing. If I had started with the idea that I'm going to win, then I'm more likely to make mistakes - tactical mistakes - because I'm scared of not winning. Whereas if I come from the approach of being loose, free and curious as to how well I can do, that tends to maximize performance much more than saying I was going to win.

6. Training philosophy: numbers vs instinct

Maseeha: *As someone with a background in statistics and actuarial science, you're naturally inclined to analyse data. How much of your training is driven by numbers versus intuition? Where do you draw the line between trusting the data and listening to your body?*

George: The two definitely work together. I use numbers to kind of give myself a rough idea of what I should get in terms of volume for a week or a month. I mean, things like elevation gain is very important to track. And then I have a pace distribution that I roughly follow, but not exactly. And then I tracked various metrics like my heart rate at the time, both during the run and during resting periods. I use that to adapt as I go. So very much about 50-50, working together.



Maseeha: *We've seen other champions like Gerda Steyn follow highly structured, time-based race strategies. Your approach seems slightly different—how do you manage that tension on race day?*

George: In terms of following a structured time plan during the Comrades, I just don't believe in that. I believe the race is too complex to really put into such specific numbers. So, I run on feel, and this feel is something that I've developed over the years. I don't think I'll ever use detailed numbers during a race. Obviously, I use it in preparation for the race extensively.

7. Balance & sacrifice

Maseeha: *Your Strava data shows training weeks of over 260km—alongside a full-time job and a young family. How do you practically balance those demands?*

George: You need to prioritize. I woke up very early for most of my long runs, so I'd get it done before work, and then work like a normal person. After work, I'd spend time with my family.

Maseeha: *Do you manage to get enough sleep, for an athlete?*

George: Between 6 and 7 hours typically. I think that's enough? Maybe I could have done better if I slept 8 hours a night, but it's better to sleep 7 hours and train than it is to get 8 hours sleep in and not train. So, it's worked for me.

Maseeha: *Are there any big sacrifices behind this kind of this training program that the average person wouldn't see or realise?*

George: There are. Your life needs to be very predictable and boring - the same routine every day. In the four months leading up to Comrades, we didn't go anywhere on vacation. We stayed at home and ate the same food. My whole life was extremely predictable - every day was of a loop. That's the way I like preparing for a big event.

8. Parallels: actuarial science & ultramarathon running

Maseeha: *The actuarial journey is known for requiring resilience and multiple attempts, long-term commitment and resilience. You've been very impressive to pass all exams on your first attempt so far but, nevertheless, the actuarial path is a long journey. Do you see any parallels between your exam journey and your running journey?*

George: I'd say the philosophy that I use to maximise performance in running can be used for studying for the actuarial exams as well. In terms of the outcome, for the exams, it's a pass or fail. But you don't need to focus on pass or fail, you need to prepare as well as you can. And then if you fail, you need to ask yourself

why you failed and then focus on the process again. I'd say that consistency over time always beats heroic efforts.

9. Passion, accessibility & the South African context

Maseeha: *You're clearly very passionate about running—where does your passion for running come from?*

George: That's a good question. I would probably be a less happy person if I didn't run. I know that because I didn't run for ten months, from January 2023 to October 2023 when I returned from the US to SA. I didn't run a step and it felt like something was missing, a purpose or a calling. I hadn't run as well in university as I would have liked. I got sick and landed a fever. I tried training through it but it didn't go well, and then the enjoyment of running went away. By the time I finished university, I didn't see a point in continuing. And then not doing it turned out to be even worse. I think it was the best thing that I experienced not running. It gave me a sense of clarity that I would like to run. When I started running, I found that purpose again, which is very powerful. Because it gives you the potential to transform your life! All of a sudden, you eat cleaner, you sleep better, you can be more conscious about what you want to achieve - more purposeful.

Maseeha: *Your LinkedIn profile mentions you wanting to see running become the most accessible sport in South Africa. What do you think makes running uniquely accessible—or potentially inaccessible—in the South African context?*

George: I think running is very accessible because there's a low barrier to entry. You just need to have a pair of running shoes and you can go for a run. You don't need a GPS watch - just run a certain length of time. And you don't need a training group if you don't have access to one. If you compare that to team sports where you need a structured group, games, a referee and gear, running is much more accessible. It's something that you can do by yourself, and you can challenge yourself.

Maseeha: *What role do you think individuals like yourself or communities can play in growing the sport?*

George: If there's more competition between running clubs, that would be great because that gives athletes more choice as to which club they want to run for. That also means that clubs will invest in races more, so races will continue to grow, including how many participants there are as well as prize money. And there's a snowball effect thereafter. I also think that if more companies join the running fraternity as sponsors, more elite athletes will have the opportunity for support in terms of gear and travel, medical expenses etc. That can uplift a lot of athletes who did not previously have the means to support themselves and their families.

10. Advice for aspiring runners

Maseeha: *For someone who's never run before, getting into the sport can feel overwhelming. You started running quite early, but for others out there, what would be your advice on how to get started?*

George: Create a schedule and stick to that so that you can be more consistent

over time. Don't care about how fast you're running, just care about how much you're running - so you should try and run more. Most people don't run enough. So instead of running two times a week, you should rather run six times a week, even if it's slower. In fact, it's better to run slow in most cases.

Maseeha: *What mindset should beginners adopt if they want to stay consistent?*

George: To make it sustainable over the long-term, you could join a running club so that people can keep you accountable. Maybe on Saturdays, join a group, socialize, make it fun so you keep doing it over the long-term. Because what it comes down to is that, if you want to be the best runner you can be, you need to be doing this for years. It's as simple as that.

11. Looking ahead

Maseeha: *You've achieved this while being self-coached and working full time—do you see that changing in the future? Is there any pull toward becoming a full-time athlete or working with a coach, or are you committed to your current approach?*

George: I'll largely stick to my current approach, but I would like to evolve. I would like to build a brand in terms of not just performing at a high level but also contributing to inspiring youngsters or contributing to the local running scene and helping people with accessibility to running. Maybe that means coaching people or helping the program that helps kids get running shoes. I still need to figure it out. But if I can do something more than just perform, that would mean a lot more to me in the long term.

Maseeha: *This interview is surely one way to inspire more running in the actuarial community! What's next for you from a running perspective?*

George: I would like to see if I can qualify for the Olympic Games. Maybe I can, maybe I can't - but three years ago I wouldn't have thought it's possible to run the Comrades. For the Olympics, the distance would be the standard marathon.

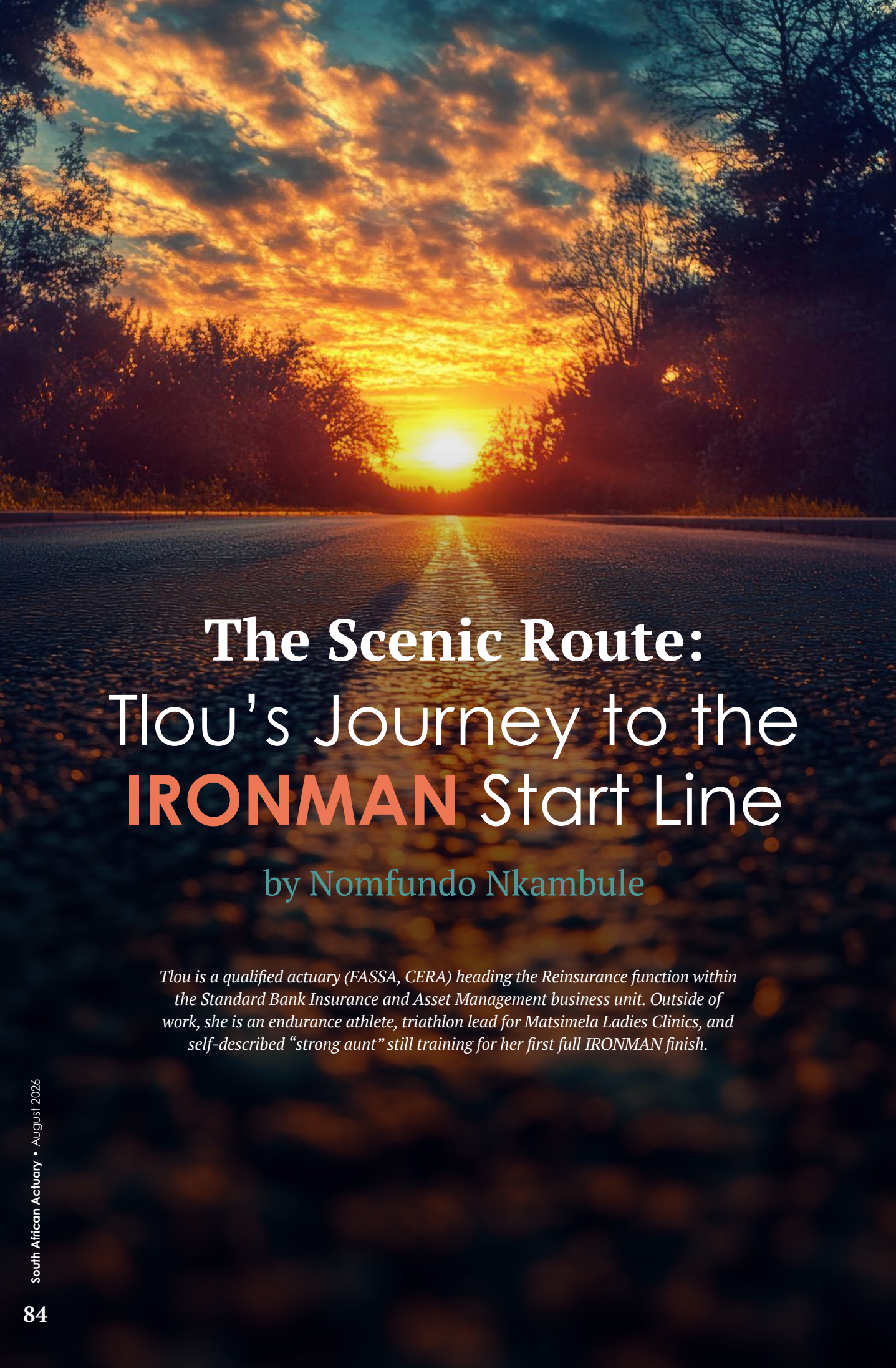
12. Reflection & closing

Maseeha: *We'll be crossing our fingers and rooting for you to qualify for the Olympics! Looking back on your journey to winning Comrades, what have you learned about yourself that you might not have discovered otherwise?*

George: Preparing for something as large as the Comrades requires tenacity. You need to put in the work regardless of how you feel or what external circumstances there might be. Proving to yourself that you can be so consistent over a long period of time is powerful. It gives you actual self-confidence. So I'd say it's given me the confidence that I can be consistent over a long period of time, which is very powerful.

Maseeha: *When people look at your story, what do you hope they take away from it?*

George: I hope that they realize they can achieve pretty much anything they want to, but it might take much longer than they expect. And it might also be a lot harder than they expect.



The Scenic Route: Tlou's Journey to the IRONMAN Start Line

by Nomfundo Nkambule

Tlou is a qualified actuary (FASSA, CERA) heading the Reinsurance function within the Standard Bank Insurance and Asset Management business unit. Outside of work, she is an endurance athlete, triathlon lead for Matsimela Ladies Clinics, and self-described "strong aunt" still training for her first full IRONMAN finish.









Finding Her Discipline

Tlou's relationship with endurance sport was not something she chose so much as something she fell into on a school athletics field. She was not fast enough to make most of the teams, except for one event nobody else wanted: the 1500m. "People were not interested in it, so I knew if I could finish the distance in trials, I would make the team," she says. She did, and an endurance athlete was quietly born.

It took years for that instinct to become a serious pursuit. In 2015, determined to lose weight, Tlou started small, with runs around her neighbourhood. Those runs grew into half marathons, progressed to full marathons, then ultimately resulted in back-to-back finishes at Comrades. The COVID period interrupted that progress, the weight returned, and running stopped being something she enjoyed. Rather than forcing her way back to where she had been, she changed direction entirely. In 2022 she taught herself to swim, added cycling the following year, and closed out 2023 with her first triathlon, with a sprint distance of 600m swim, 20km cycle and 5km run. Every race since then has seen an increase in distance.

The IRONMAN triathlon was never part of that plan. The format, raced under the IRONMAN brand, is one of the most demanding in endurance sport. It is made up of a 3.8km open-water swim, a 180km cycle and a 42.2km marathon, completed back-to-back in a single day and governed by strict cut-off times for each leg. Tlou arrived at the idea of taking one on gradually, through the athletes she met along the way. "It seemed like a great challenge," she says. "Doing an IRONMAN was not part of my initial triathlon goals. It's one of those events I aspired to as I've come to meet other triathletes and been inspired by their achievements, through hearing their stories and witnessing them do it."

Building Towards the Full Distance

"After her first sprint triathlon left her, in her own words, 'so amped,' she set her sights on the half distance next. Finishing it raised an obvious question: could her body handle double that? To find out, she paired a marathon with a 202km road cycling event, scheduling the two within a month of each other. Confident in what that block of training had shown her, she took the plan to her coach, and preparation for the full IRONMAN distance began in earnest. 'My coach asked only one thing from me: commitment. She would get me ready for the start line if I committed to doing the work.'"

The Swim Cut-off

Swimming had always been Tlou's biggest concern heading into the race, so she prepared accordingly, adding extra sessions and travelling to the coast for ocean swim training. On the day, that preparation gave her confidence, but unfortunately, not enough time. After the first 1900m lap she realised the pace was tight. By the final turn buoy of the second lap, she knew a missed cut-off was a real possibility and missed it by only a minute and fifty-five seconds. "It was very disappointing," she says. "I felt good coming out of the water and I was looking forward to the bike leg and eventually running through the red carpet. My mind was prepared for a full day of work."

Since the race, Tlou has adjusted her training to build speed and efficiency so that cut-offs stop being a source of anxiety on future attempts.

Tlou is careful about how she frames the outcome. "Personally, I don't see it as a setback, rather a delayed success," she says. "I have no doubt that I will complete the full distance, and it will hopefully be soon. The training experience on its own has reminded me of my ability to endure, and that I can redefine my limits."

"My coach asked only one thing from me: commitment. She would get me ready for the start line **if I committed to doing the work.***"*

Echoes of the Actuarial Path

For an actuary, a story about repeated attempts and delayed success carries a particular resonance. Tlou is quick to draw the comparison herself from her Fellowship, which she says, took "the scenic route".

"It reminded me of instances of feeling well prepared for an exam and coming out with an FB, failing the same exam multiple times, and giving up a whole semester of family and social life only to fail again."

"I am doing this because I enjoy it and want to see how far I can take it. **If I wake up tomorrow with a new interest, I will be happy to pivot."**

The difference, she has found, lies in how the setbacks feel. Where the qualification journey could be frustrating, an unfavourable result in triathlon feels more like a steppingstone. "I feel less pressure to get it right all the time, perhaps because I set my own pace and limits, succeeding within myself," she explains. "I am doing this because I enjoy it and want to see how far I can take it. If I wake up tomorrow with a new interest, I will be happy to pivot."

That balance came at a cost during the training block. Tlou limited her social life, put travel plans on hold unless they served training, and, as she puts it, essentially replaced actuarial studies with hard training. Courses and other non-urgent commitments were shelved until race day had come and gone.

Leading by Example

What started as a personal goal grew into something bigger. As triathlon lead for Matsimela Ladies Clinics, a cycling development club that has expanded into triathlon for its alumnae, Tlou is conscious of being watched, and of what that visibility can do for others.

"I don't look like a typical athlete, let alone someone who can do a full IRONMAN," she says. "I have encountered many surprised faces when I speak of my achievements and current plans. I am keen to show people who see a version of themselves in me, be it race, gender, body type or size, or learning new skills at an older age, that it is possible to participate in the event and finish it."

That same sense of purpose extends to her family. As an aunt to nieces who cycle, swim and run, Tlou sees her role as showing them what is possible. "It's important that they see me try, and when I fail, they see me getting right back up and trying again."

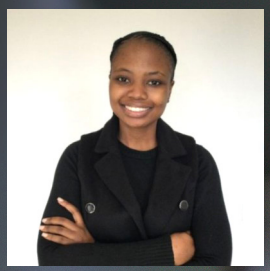
Asked what the experience has taught her about herself; her answer is unadorned: "That I am capable of so much more than the current view of my limitations."

Unfinished Business

Tlou has not put the full IRONMAN distance behind her. She is training differently this time, drawing on support and guidance she did not use before, on the basis that repeating the same approach would only produce the same result.

Her advice to actuaries facing a goal that takes several attempts is the advice of someone who has lived it twice over, once in the exam hall and once in open water: "Allow yourself to mourn the outcome, then chin up and strategise for the next attempt. Be very honest with yourself about what didn't work, so you can better prepare for the next one, and seek as much help as you can. And if that attempt doesn't work out, keep refining and trying. It's only a matter of time."

Finding Clarity Amidst Economic Uncertainty



Douglas Hoto Interview
by Lydia Mutepfa-Mgabhi

When an economy descends into hyperinflation, the actuarial profession demands the kind of actuary who can navigate profound uncertainty with courage, ingenuity and unwavering purpose. **Few understand this better than Douglas Hoto.**



While conventional insurance products collapsed alongside public confidence in the financial system, Douglas was helping to reinvent the very idea of insurance. He developed products linked to land and livestock, thus rebuilding trust through innovative product design.

Douglas Hoto is the Group CEO of First Mutual Holdings and has pioneered the establishment of multiple insurance businesses. He is one of only a handful of qualified actuaries in Zimbabwe, being a fellow of both the Actuarial Society of South Africa and the Institute and Faculty of Actuaries (UK). His career is a powerful reminder that actuarial science is at its best not when conditions are predictable, but when courage, innovation and first-principles thinking are needed most.

1. Most actuaries discover the profession almost by accident, and your story is no exception. You originally set out to become a mathematics professor. How did that journey eventually lead you to actuarial science?

I grew up in Zimbabwe with a passion for mathematics and, for a long time, I imagined myself becoming a mathematics professor. Actuarial science wasn't part of the plan until Old Mutual spotted my potential and approached me about pursuing the profession. At the time, they were looking to develop talented future actuaries, and that conversation changed the course of my career. I then began pursuing the actuarial board examinations after I had completed my Bachelor's Degree in Mathematics at the University of Zimbabwe.

I completed my actuarial board examinations through the Institute and Faculty of Actuaries before being seconded to South Africa in 1997. While many of my peers chose to build careers abroad, I felt compelled to return home.

2. After more than 35 years in the profession, you've witnessed actuarial science evolve from financial calculators and spreadsheets to artificial intelligence and strategic leadership. What changes have impressed you most?

There have been tremendous changes in the way actuaries are trained. Today's qualification process is more balanced than when I studied. Technical mathematics and statistics remain fundamental, but there is now much greater emphasis on strategic thinking, communication, and professionalism. The result is a far more rounded actuary.

The profession itself has also broadened considerably. Today, actuaries contribute across banking, healthcare, investments, data science, enterprise risk management and many other fields. This reflects the versatility of the profession.

I've also been encouraged by the progress made in transformation across Zimbabwe and South Africa. Compared with when I started my career, and during my secondment to Cape Town, the profession has become more diverse, and the products we develop today better reflect the needs of a broader range of people from different backgrounds.

3. Most actuaries work with inflation as a key actuarial assumption. You had to practise through one of history's worst episodes of hyperinflation. What was that experience like?

I found it incredibly challenging but also intellectually exhilarating.

We were designing insurance products in an economy where yesterday's solution often became obsolete by tomorrow. Public confidence in the financial system and the insurance industry had collapsed, so our greatest challenge wasn't simply pricing products, it was rebuilding trust.

I often found myself having to return to first principles. Rather than asking how insurance had always been done, I had to ask what people genuinely needed and design products around those realities.

In response to hyper-inflation, my team and I developed products linked to tangible assets such as land and livestock. Policyholders accumulated

The key priority was ensuring premiums kept pace with inflation, **so premium rates were automatically linked to inflation.**

units through their premiums, giving them rights to a share of physical assets. Collectively, groups of policyholders could own farmland, while individuals who accumulated sufficient units could eventually own an entire plot or a specified number of livestock. When a claim occurred, benefits would be settled through those assets instead of a cash payment.

Even premium collection became an operational challenge. With the banking system under severe strain, premiums were often collected entirely in cash.

Looking back, that period shaped my thinking and developed my character as an actuary. It forced me to innovate constantly and reminded me that actuarial science is ultimately about solving people's problems.

4. It's so fascinating to hear how actuarial concepts played out in practice. What product features would you say were essential in the products designed during that time?

The key priority was ensuring premiums kept pace with inflation, so premium rates were automatically linked to inflation. As I mentioned, we also shifted investments away from purely monetary assets towards physical assets that could better preserve value. Short-term contracts became increasingly common because they could be repriced more frequently, allowing insurers to respond to rapidly changing conditions. Even the distribution model had to evolve. Since electronic payments were unreliable, policyholders visited branches to pay cash, while insurers established mobile collection points to make premium payments as accessible as possible.

5. Drawing from your extensive experience, where do you see the greatest opportunities for insurers across the African continent?

I believe Africa's greatest opportunity lies in reaching the millions of people who remain underserved by traditional insurance. While our profession has made remarkable progress in becoming more inclusive, there is still enormous potential to develop more products that meet the needs of communities that trade informally.

Across much of the continent, the informal economy or cash economy as we call it is not the exception - it is the norm. If we want insurance to become truly accessible, we must package our products in ways that resonate with people who trade, earn and live outside the formal economy.

That requires actuaries to do more than understand numbers. We must understand people, their cultures, values, daily realities and aspirations. Only then can we design products that solve real problems while remaining affordable, relevant and accessible.

Ultimately, actuaries have an important role to play in addressing many of Africa's challenges. By maintaining the highest

ethical standards, acting with integrity, and always serving the public interest, our profession can make a lasting impact across the continent.

6. You've spoken passionately about the importance of culture in product design. Why do you believe understanding culture is just as important as understanding the numbers?

When designing insurance products, we cannot assume that every customer thinks or behaves the same way. Across much of the continent, an individual's responsibilities extend far beyond the immediate household. Your community often becomes your extended family, and with that come shared obligations and expectations towards your neighbour, particularly in rural communities.

That's one of the reasons funeral insurance has been so successful. Products that cover members of the extended family preserve not only financial security, but also the dignity of the wider community. Understanding those cultural values enables insurers to design products that people appreciate because they reflect the way people live.

7. What makes insurance inaccessible to underserved communities?

Traditionally, insurance is rarely bought, it is sold. Too often, insurers begin by asking how to sell their products instead of asking what problems the products need to solve.

If we genuinely want to reach underserved communities, we must first understand what matters most to them and then embed our solutions into their everyday lives.

... **we converted shipping containers into fully equipped mobile medical centres** and positioned them in busy markets



One example is First Mutual's health insurance offering in Zimbabwe. Rather than expecting communities to travel long distances to access private healthcare, we converted shipping containers into fully equipped mobile medical centres and positioned them in busy markets. In doing so, we brought affordable, quality healthcare directly to where people lived and worked, making insurance more than just a financial product. It became a practical solution to an everyday need.

8. As the Group CEO of First Mutual Holdings, I understand that to establish all this, you need high performing teams. How do you go about building high performing teams?

I do this by ensuring that there is a solid decision-making structure wherein each

member of the executive committee has a clear role to play. I also maintain my authenticity and build trust as a leader by allowing and encouraging honest, critical feedback. Furthermore, to ensure that everyone on the team commits to their role, we build commitment to our duties and tie this back to each person's individual career aspirations. This adds an emotional connection to the various duties we need to fulfil by creating more intrinsic value than a contract.

9. Throughout your career you've helped establish First Mutual Reinsurance Company, Tristar Insurance Company and African Actuarial Consultants. That's an impressive entrepreneurial track record. What inspired these ventures?

When I joined First Mutual in 1999, my responsibility was business development, so my focus was always on expanding the Group's revenue base and identifying new opportunities for growth.

Each business served a different purpose within the insurance value chain. Because they occupied different positions in the insurance cycle, they would rarely all perform strongly or poorly at the same time. Together, however, they created a more diversified and resilient business portfolio.

African Actuarial Consultants was particularly close to my heart. Our vision was to develop actuaries who understood African markets, cultures and customer needs, rather than simply applying imported solutions. Although the business was eventually sold because we simply didn't have enough qualified actuaries to sustain it, that original vision remains just as relevant today.

10. Of all the businesses you've helped build, which one kept you awake at night?

Without question, First Mutual Reinsurance.

Reinsurance requires substantial capital, highly specialised technical expertise and exceptional talent. We had to work closely with Swiss Re while simultaneously building our own technical capability and recruiting people with skills that were scarce in the market.

It was demanding—but also one of the most rewarding ventures I've been involved in.

11. You're leading an entire financial services group rather than pricing products. What does a typical day look like, and how much of the actuary still shows up in the Group CEO?

My days now revolve around people far more than spreadsheets. A significant portion of my time is spent engaging with colleagues, customers and stakeholders, planning priorities and making decisions that shape the organisation's future.

I also read extensively, particularly leadership literature, because the challenges of leading people are very different from solving technical problems.

That said, I don't think I've stopped thinking like an actuary. Actuaries naturally analyse cause and effect, and that way of thinking remains invaluable as a Group CEO. The difference is that, while actuaries often focus on technical detail, a Group CEO must keep sight of the bigger picture and the overall outcome.

Dividend Declaration Practices of Insurers

in Selected Sub-Saharan African Countries

By Takalani Sikhavhakhavha and Tshepo Vilakazi



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ABSTRACT

This paper analyses dividend declaration practices among insurers in selected Sub-Saharan African countries, namely South Africa, Namibia, Zambia, Kenya, Rwanda, Ghana, and Nigeria. It examines how regulatory requirements and internal governance processes shape dividend declaration decisions, with particular focus on solvency, liquidity, and internal capital requirements considerations.

The paper highlights key similarities and differences in practices across these countries and proposes improvements where appropriate. It also emphasises the importance of forward-looking capital management and actuarial input in assessing sustainable dividend capacity. The paper is based on a combination of discussions with regulators and our knowledge of dividend practices across the various countries.

INTRODUCTION

Dividend declaration is one of the most consequential financial decisions undertaken by an insurance company. While dividends serve as a primary mechanism through which insurers pay profits to shareholders, they simultaneously represent an irreversible extraction of capital from the insurer. For insurers, whose business models are characterised by long dated and uncertain liability cashflows, dividend payments can have direct and material implications for financial resilience, prudential solvency, and policyholder protection.

Unlike non financial corporates, insurers operate within more onerous regulatory frameworks that explicitly restrict the distribution of profits where such distributions could weaken the insurer's capacity to meet future policyholders' obligations. Insurance supervisors globally, guided by standards issued by the International Association of Insurance Supervisors (IAIS), require that dividend payments must not undermine the financial viability of the insurer.[1]

As a result, many insurers maintain a dividend policy as part of their enterprise risk management framework, that governs how and when dividends can be declared and paid. In practice, dividend decisions should not be based only on whether the insurer meets minimum statutory solvency requirements at the date of declaration. Boards should also consider the insurer's forward-looking financial soundness, including projected solvency, liquidity, stress and scenario testing, business plans, own risk and solvency assessment (ORSA) outcomes where applicable, and internal risk appetite targets.

In Sub Saharan Africa, the importance of dividend regulation has intensified over the past decade as many jurisdictions have undertaken reforms to strengthen prudential supervision by introducing risk based capital frameworks, recognising the need of actuarial advice, and align domestic regimes with international best practice.

[1] *International Association of Insurance Supervisors (IAIS)*

The table below summarises the dividend declaration practices for each country under consideration.



SOUTH AFRICA

How dividends are typically declared	Key conditions that must be met	Comments
• Dividends are declared by a formal board resolution after reviewing updated financial information. • The board must explicitly assess the impact of the dividend on the insurer's ongoing financial position and dividend decisions are typically aligned with audited or recently reviewed results. • The Head of Actuarial Function (a company's regulatory approved actuary) provides an opinion on the final dividend.	• Dividends may only be paid from distributable profits or retained earnings. • Assets must exceed liabilities and solvency capital (and risk appetite targets) after the dividend (Section 46 of Companies Act). • Insurer must have sufficient liquidity to meet claims and expenses for the foreseeable future (Section 46 of Companies Act). • Dividend must not weaken the insurer's ability to remain financially sound (Companies Act; Insurance Act). Typically, insurers target a multiple of solvency capital requirements cover to provide additional protection so that they remain solvent under adverse scenarios.	• South African practice broadly aligns with that of most of the other countries considered. • No requirement for approval by the Prudential Authority (PA) before declaration. • However, the Head of Actuarial Function plays an important role in assessing financial soundness, including the impact of dividends on solvency and policyholder protection.



NAMIBIA

How dividends are typically declared	Key conditions that must be met	Comments
• Dividends are approved by the board following internal assessment of profitability and financial strength. • In practice, insurers adopt a conservative approach, often linking dividend decisions to annual financial statements. • The FIMA Act places significant reliance on the valuator's assessment of financial soundness and capital adequacy, but does not explicitly require actuarial approval of dividend declarations.	• Dividends limited to distributable profits or retained earnings. • Insurer must remain solvent after dividend payment. • Adequate liquidity to meet insurance obligations. • Continued compliance with capital requirements (Insurance Act; FIM Act).	• Nambian practice aligns with that of most of the other countries considered. • No requirement for approval by the regulator (NAMFISA) before declaration. • Under evolving FIMA framework, the valuator is expected to play an important role in confirming that the dividend will not compromise the insurer's capital adequacy or financial soundness.



ZAMBIA

How dividends are typically declared	Key conditions that must be met	Comments
• Dividend declarations follow board approval and are typically considered once capital adequacy metrics are confirmed, often after audited results.	• Minimum capital adequacy ratio must be met post distribution. • Solvency margin must remain above prescribed levels. • Dividends restricted to distributable profits or retained earnings (Insurance Act, 2021)	• The Zambian practice aligns with that of most of the other countries considered, although statutory actuarial sign-off is not mandated in the regulations. • There is no requirement of notifying the regulator of the proposed dividend declaration.



KENYA

How dividends are typically declared	Key conditions that must be met	Comments
• Dividends are declared by the board once statutory solvency positions have been reviewed.	• Assets must exceed liabilities after dividend payment. • Mandatory solvency margins must continue to be met. • Dividends paid only from distributable profits or retained earnings. • Dividend payment must not impair insurer's future claims paying capacity (Insurance Act, Cap. 487)	• The Kenyan practice aligns with that of most of the other countries considered, although statutory actuarial sign-off is not mandated in the regulations. The annual financial statements are signed off with a report from the statutory actuary and therefore the requirement is implied. • No requirement for approval by the regulator before declaration.



RWANDA

How dividends are typically declared	Key conditions that must be met	Comments
• Dividend declarations are conservative and Board led, usually approved after confirming that capital and solvency positions remain robust following the proposed payment.	• Capital adequacy requirements must continue to be met. • Dividends limited to profits generated in that particular year. • Payment must not compromise liquidity or policyholder protection (Law No. 30/2021) • Approval is need by the regulator before payment.	• Rwanda's practice differs from that of other countries, as dividends are restricted only to profits generated during the year. In contrast, other countries limit dividends to distributable profits or retained earnings. • Rwanda's approach may encourage insurers to declare all annual profits as dividends before they become restricted (in retained earnings), which could limit the ability of insurers to grow or pursue other strategic initiatives.



GHANA

How dividends are typically declared	Key conditions that must be met	Comments
• Boards approve dividends based on audited financial statements. • Dividend payouts are typically cautious and closely linked to retained earnings movements.	• Dividends payable only from distributable profits or retained earnings. • Minimum capital and solvency requirements must remain met • Insurer must remain capable of meeting future liabilities (Insurance Act; solvency framework) • Approval is need by the regulator before payment.	• The Ghanaian practice aligns with that of most of the other countries considered, although statutory actuarial sign off is not mandated in the regulations.



NIGERIA

How dividends are typically declared	Key conditions that must be met	Comments
• Dividend declarations follow a formal process supported by financial analysis and Board approval. • In practice, dividend decisions are tightly controlled and aligned with finalized audited financial statements (AFS).	• Dividends restricted to distributable profits or retained earnings. • Capital and solvency requirements must be met after payment. • Audited Financial Statements must justify the dividend. • Dividend payments require prior approval (Insurance Act; NIIRA 2025) by the regulator (NAICOM). • Approval is need by the regulator before payment.	• The Nigerian practice aligns with that of most of the other countries considered, although explicit statutory actuarial sign-off on dividends is not currently mandated. However, audited financial statements are submitted to NAICOM together with actuarial valuation reports, which means actuarial input forms an important part of the broader financial soundness assessment.



Key Similarities: In all jurisdictions, insurer dividend declarations are tightly constrained by solvency and capital adequacy rules, and policyholder protection requirements. Boards in each country carry formal responsibility to authorise dividend declarations only where genuine distributable profits exist (e.g. retained earnings) and only if regulatory capital/surplus remains sufficient post-payment. All countries forbid paying dividends that would render the insurer under-capitalized or insolvent, aligning with IAIS core principles. Each country's insurance regulator can intervene or require notification if dividends might threaten policyholder interests, ensuring policyholder protection.

Key Differences: Actuarial involvement varies. South Africa explicitly ties the appointed actuary into the dividend decision process. South Africa's HAF must opine on financial soundness including dividends. In Nambia, the FIMA Act places significant reliance on the valuator's assessment of financial soundness and capital adequacy, but does not explicitly require actuarial approval of dividend declarations. In Zambia, Kenya, Rwanda, Ghana, and (currently) Nigeria, there is no specific/explicitly legal requirement for actuary sign-off on dividends, although actuaries in those jurisdictions still play an advisory role on capital sufficiency. Rwanda is the only country that limits the dividend to profits generated during that financial year.

However, this distinction between explicit actuarial involvement should not be overstated. In practice, dividend decisions in most jurisdictions rely heavily on actuarial assessments of liability adequacy, solvency, capital sustainability, and future policyholder obligations.

Some countries (Ghana, Nigeria, Rwanda), require regulatory approval before dividends are paid, while others rely on the company's internal governance process to ensure that dividend declarations are appropriately assessed and approved (although regulators retain intervention powers where a dividend could threaten policyholder interests).

FUTURE CONSIDERATIONS AND RECOMMENDATIONS

The move toward risk-based capital regimes will likely enhance consistency in dividend declaration practices. Regulators should provide clearer guidance on dividends declaration processes and stress-based capital buffers. Insurers should embed dividend policy within their risk management frameworks to ensure sustainability.

In addition, best practice increasingly requires a broader and more forward-looking assessment. A dividend may be technically permissible under minimum regulatory requirements but still inappropriate if it weakens the insurer's ability to remain within its internal risk appetite, withstand adverse scenarios, or support future business plans.

Looking Through the Right Lens

Why Some Climate Risks Become Visible Only When It Is Too Late



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Why screening matters

Imagine observing a glacier through a single photograph taken each year. The first image appears much like the second, and the second much like the third. Even over several years, the differences may appear modest. An observer reviewing only annual snapshots could reasonably conclude that little has changed.

Now place twenty years of photographs into a time-lapse sequence and the retreat becomes unmistakable.

The glacier did not suddenly begin to melt. The process was continuous throughout. What shifted was the observer's vantage point, rather than the underlying process.

Certain climate-related risks may present such a challenge.

Actuarial practice is naturally organised around annual cycles. Claims experience, profitability, solvency positions, capital requirements, and stress-testing results are typically reviewed over defined reporting periods. For many risks, this approach is entirely appropriate, where deterioration in underlying conditions is eventually reflected in observable financial outcomes, allowing corrective action to be taken.

Consider a farm dependent on groundwater irrigation. The water table declines over many years. Farmers respond by drilling deeper wells, investing in additional pumping capacity, or changing cropping patterns. Production continues and annual insurance experience remains unremarkable. Viewed through the lens of annual outcomes, the risk appears manageable, the farm remains productive and the insurance policy is renewed.





Nothing appears materially wrong.

Yet as groundwater reserves continue to decline and soil quality deteriorates, resilience is slowly eroded. Eventually, a threshold is reached. Water extraction becomes uneconomic, crop productivity deteriorates materially, the value of the land as an agricultural asset declines, and crop insurance may become increasingly difficult to price or provide. To those observing only the eventual outcome, the change appears abrupt.

In reality, the deterioration has been developing for years.

The farm did not become vulnerable when it ceased to be viable. It became vulnerable much earlier.

The challenge is that the process remained invisible within the horizons through which it was being observed.

This distinction represents an important blind spot in climate-risk assessment.

Climate deterioration rarely appears all at once. It accumulates over time, often in ways that remain small enough to fall within acceptable ranges of annual variability. Flood plains expand slightly further each year, but not enough to materially affect annual loss assumptions. Soil degradation spreads across neighbouring farmland while agricultural output remains broadly stable in the near term. Groundwater reserves deplete over decades. Saltwater intrusion slowly affects coastal aquifers. Rising temperatures and heatwaves last a few days longer than before, increasing strain on health systems, energy grids, and infrastructure, yet still remaining within what is treated as normal annual variability.

Individually, these changes appear too small, too dispersed, or too gradual to trigger meaningful shifts in disclosures, capital requirements, underwriting decisions, or strategic planning. But the underlying exposure continues to accumulate. By the time an entire region becomes difficult to insure, infrastructure resilience sharply deteriorates, or operational viability is suddenly questioned, the risk itself has often been building for years beneath otherwise stable reporting and governance frameworks.

Importantly, the annual observations were not incorrect. Each year's assessment may have accurately described prevailing conditions. Annual observations are well suited to measuring outcomes, but not necessarily to identifying slow-moving changes in the underlying systems that ultimately generate those outcomes.

Climate vulnerability often accumulates before becoming visible in claims experience, asset values, or measures of insurability. The absence of material deterioration in annual results should not automatically be interpreted as evidence that underlying vulnerability is unchanged. In some cases, it may simply indicate that the relevant process operates over a much longer horizon than the period being observed.

This raises a different question. If climate-related deterioration can remain invisible within annual observation cycles, why does this blind spot persist despite increasingly sophisticated climate models?

Climate models are more powerful than ever before, supported by significant advances in data, computational capability, and scenario design. They can describe long-term pathways, estimate future physical and transition risks, and explore a range of alternative futures. Yet climate risks continue to be assessed, managed, and governed primarily through relatively short-term decision cycles.

The issue may not be a lack of information.

Climate models increasingly describe long-term pathways, while institutions continue to make decisions through annual reporting cycles, underwriting reviews, capital assessments, and business planning horizons.

We are often looking at a slow-moving process through a short-term lens.

When capital requirements remain broadly stable each year, decision-

making frameworks naturally interpret this as evidence that little has changed. If worsening climate risk does not show up in yearly balance sheets, where does it accumulate?

The answer may be that it accumulates in places that are not routinely measured: groundwater reserves, ecosystem resilience, infrastructure durability, agricultural productivity, insurance affordability, and the capacity of communities and businesses to absorb future shocks.

Consequently, we may be locking in decisions today that increase future exposure. We continue operating and underwriting in marginal zones. We continue financing assets with declining climate viability. We continue assuming recoverability in systems where resilience may already be under pressure. Not because institutions are ignoring climate risk, but because the deterioration remains difficult to see.

Current governance frameworks are largely designed to manage marginal changes within fundamentally stable systems. Climate risk challenges this assumption. Many climate-related processes are cumulative rather than cyclical, path-dependent rather than self-correcting, and only partially reversible once critical thresholds have been crossed.

As a result, asking for better models, more data, additional disclosures, or expanding scenario sets may improve understanding without necessarily changing decisions. The challenge is one of governance rather than computation.

Of course, not every gradual change represents a hidden climate crisis. Natural variability remains a defining feature of environmental and economic systems, and many apparent trends reverse over time. However, when those reversals fail to materialise and conditions continue to drift in one direction, what was once considered unusual may gradually become the new normal. It is these persistent shifts that can move systems closer to critical thresholds over time. The challenge is not to treat every small deviation as evidence of impending collapse, but to recognise that some forms of deterioration become visible only when viewed over longer horizons. The risk lies at both extremes: overreacting to short-term fluctuations and overlooking slow-moving structural change.

Whether climate models can describe long-term climate deterioration is no longer the central issue. Increasingly, they can. The question is whether institutions are prepared to observe, evaluate, and act on risks operating over horizons that extend beyond the periods used for most reporting and decision-making.

Climate models, disclosures, and annual reporting all remain important. But some climate risks become visible only when viewed over much longer horizons. Climate risks are not invisible; they may simply be visible only through a lens we do not routinely use.

Looking through the wrong lens does not make the risk disappear. It merely delays our ability to see it.

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