



A tail of 5 cities



41st Annual Caribbean

INSURANCE  
CONFERENCE

2023

# A 'Tail' of 5 Cities

Hard and soft learnings  
from the COVID-19 Pandemic

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The  
WORST  
of times



The  
BEST  
of times



IT WAS THE BEST OF TIMES, IT  
WAS THE WORST OF TIMES, IT  
WAS THE AGE OF WISDOM, IT  
WAS THE AGE OF FOOLISHNESS, IT  
WAS THE EPOCH OF BELIEF, IT  
WAS THE EPOCH OF INCREDULITY, IT  
WAS THE SEASON OF LIGHT, IT  
WAS THE SEASON OF DARKNESS, IT  
WAS THE SPRING OF HOPE, IT  
WAS THE WINTER OF DISPAIR

# A unique vantage point of the pandemic



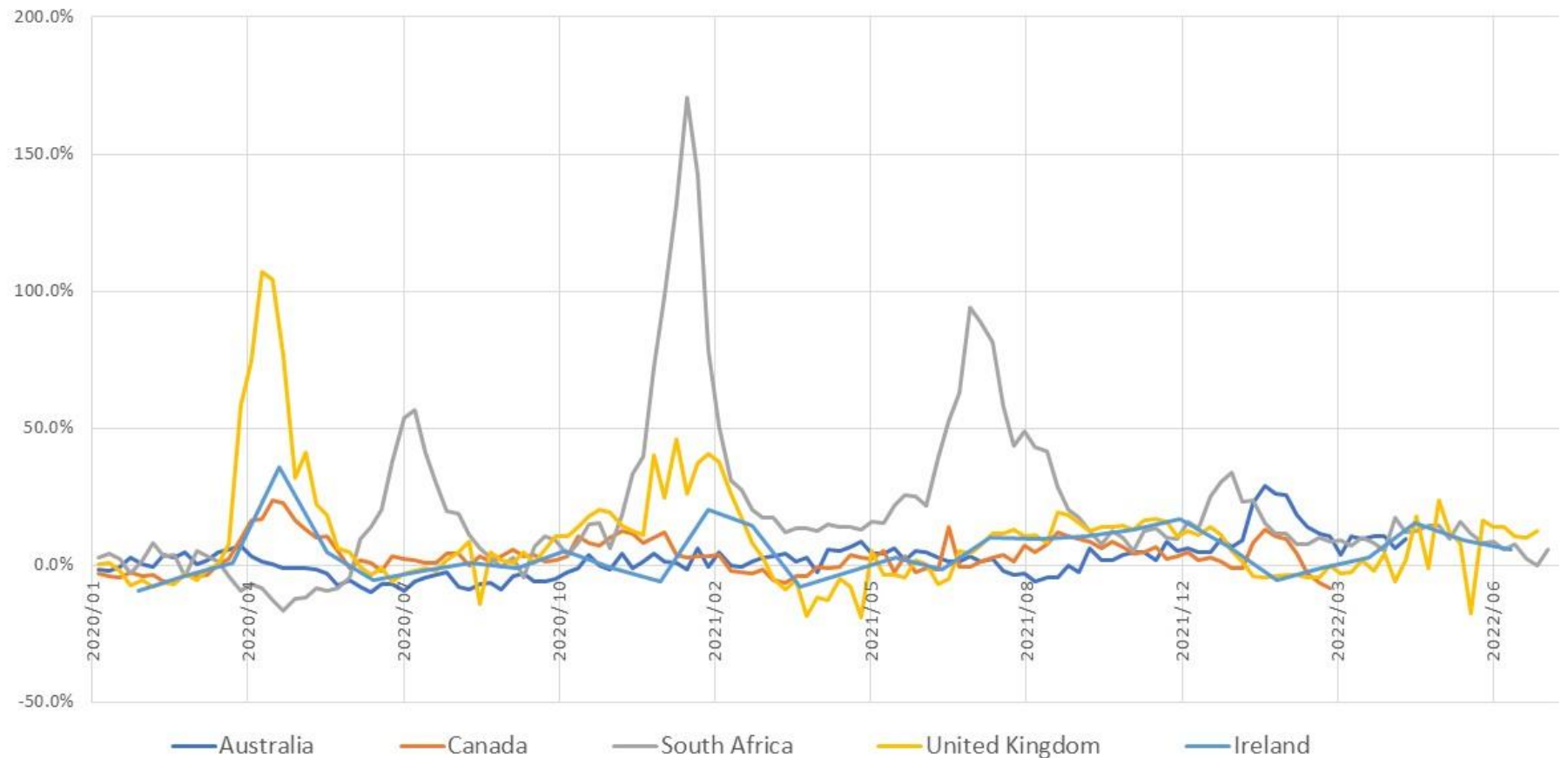


**Insights** across  
the CUSAC region



Varied impact around the world on population – in CUSAC they were at the extreme

## Excess Deaths as % of Expected





**1** Social disruption  
Exponential acceleration  
in automation

**2** Management and mitigation  
Significant population compliance  
**3** Real noise in underwriting space  
Significant broker push-back initially

**4** Social disruption, but society  
compliant  
Blip in the insured space

**5** Partied on !

**25 years' profitability wiped away**



# Two key insights



#1 Completely  
**impossible**  
to predict

#2 Completely  
**possible** to  
run out of marmite



# Insight #1 Impossible... to predict

Imperial College of London

South Africa's reality close to the unmitigated projection

Daily Mail

Professor who predicted 500,000 Britons could die from coronavirus accused of having 'patchy record'

Schools were closed and people told to stay at home. Professor Neil Ferguson, a director at Imperial College, London, said that even with.

28 Mar 2020



Washington Examiner

Imperial College scientist who predicted 500K coronavirus deaths in UK adjusts figure to 20K or fewer

Scientist and Imperial College author Neil Ferguson said Wednesday the coronavirus death toll is unlikely to exceed 20,000 and could be much...

26 Mar 2020



Daily Mail

Scientists did not have accurate Covid stats when they made prediction that 500,000 could be killed

Professor Neil Ferguson, nicknamed 'Professor Lockdown', was part of a team at Imperial College London which predicted 500,000 deaths if no...

27 Feb 2022



## Predictions for SA (26 March 2020)

	Unmitigated	Mitigation		Suppression		Reality
		High	Low	High	Low	
South Africa Attack Rate	89%	61%	61%	38%	7%	85%
Deaths	216 064	145 536	125 010	90 469	15 438	307 705
IFR	0.4%	0.4%	0.3%	0.4%	0.4%	0.6%
Hospitalised	1 398 489	973 006	914 191	613 931	106 575	520 292
Hospital Incidence (per 1,000 infections)	27	27	25	27	27	10

Walker, P. et al. (2020) Report 12: The global impact of COVID-19 and strategies for mitigation and suppression. Imperial College London. doi:[10.25561/77735](https://doi.org/10.25561/77735).

# Insight #2

## Completely possible... *to run out of marmite*

### Marmageddon! (a story of alcohol)

\*62 300 adults die annually from alcohol-attributable causes in South Africa

#### Middle East & Africa

Apr 16th 2022 edition >

Marmageddon

## Why South Africa is running out of Marmite

A ban on booze has led to parched throats and dry toast



Reuters

Apr 16th 2022  
JOHANNESBURG

“I AM DISTRAUGHT because I am about to finish my last jar,” says Irine Mboweni, a resident of Johannesburg and mother of two. “There is no Marmite on the shelves and I do not know what to do.” Amid the many tragedies befalling the world, a shortage of glossy dark goo to spread on bread is surely small beer. But not to the millions of South Africans who, quite inexplicably, like the salty sludge and are struggling to cope with the worst Marmite shortage since the end of apartheid.



# The Good



[https://www.researchgate.net/publication/343051325\\_Prohibiting\\_alcohol\\_sales\\_during\\_the\\_coronavirus\\_disease\\_2019\\_pandemic\\_has\\_positive\\_effects\\_on\\_health\\_services\\_in\\_South\\_Africa](https://www.researchgate.net/publication/343051325_Prohibiting_alcohol_sales_during_the_coronavirus_disease_2019_pandemic_has_positive_effects_on_health_services_in_South_Africa)\*

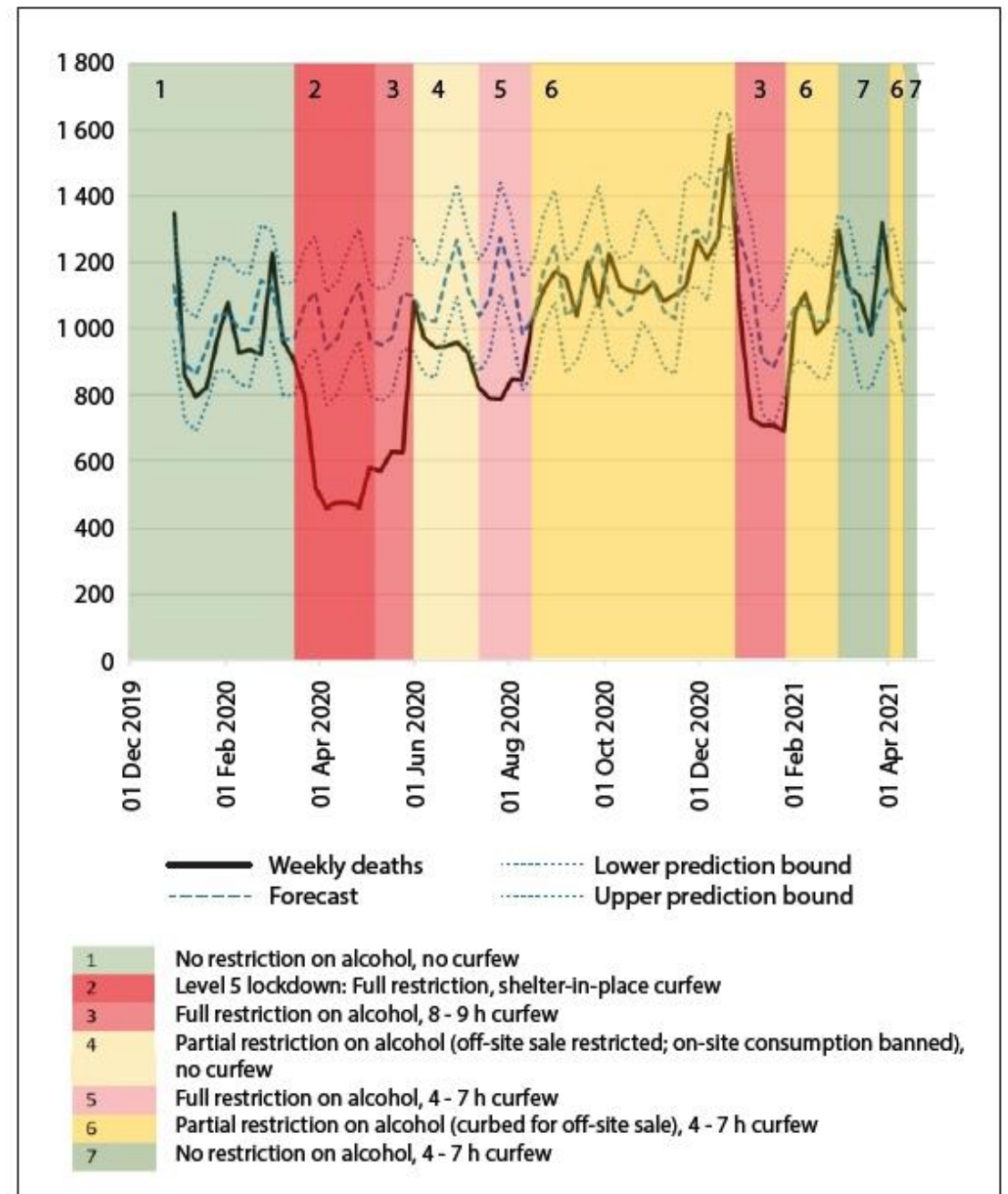
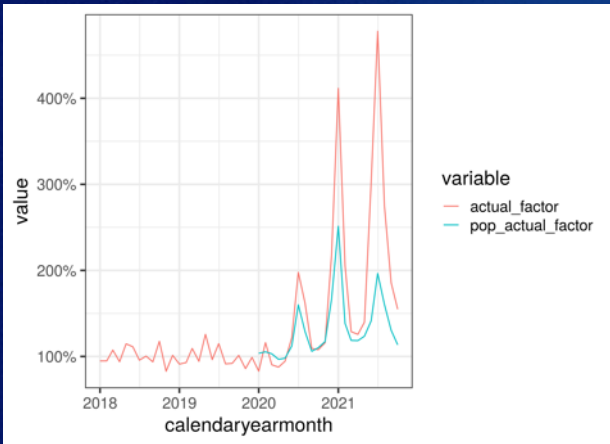
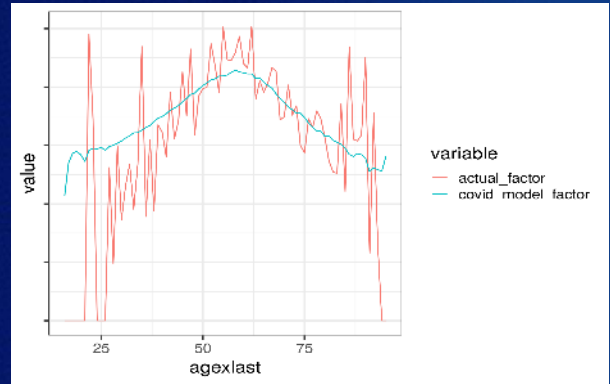


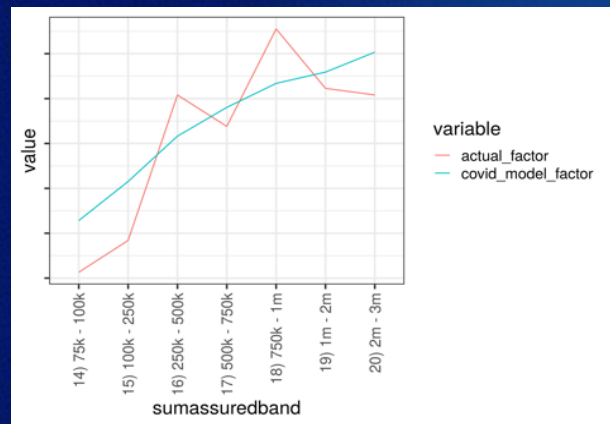
Fig. 1. Weekly deaths in South Africa from unnatural causes (29 December 2019 to 17 April 2021), showing periods of alcohol restriction (green-yellow-red) and curfew (shade).



Worse in Insured Population



Excess was highest in 50-60 age group



Higher sums assured had worse relative experience

# Insured vs Population Experience

## Actual vs Expected (relative)

MONEYweb DATA JSE ALSI 70,358 2022-05-04 17:06 USD/ZAR 15.72 2022-05-04 20:17

Companies and Deals 5 INSIDER GOLD

### Another Covid loss for corporate SA: Toyota's Dr Johan van Zyl passes away

A driving force in the local automotive sector.

By Moneyweb 1 Aug 2021 09:59

BARWORLD	R115.00	-0.23%	BIDCORP	R316.88	-1.87%	SASOL	R391.73	1.51%
5/4/2022, 5:02:30 PM			5/4/2022, 5:00:36 PM			5/4/2022, 5:02:48 PM		
BIDVEST	R215.30	-0.37%						
5/4/2022, 5:00:12 PM								



The Bad



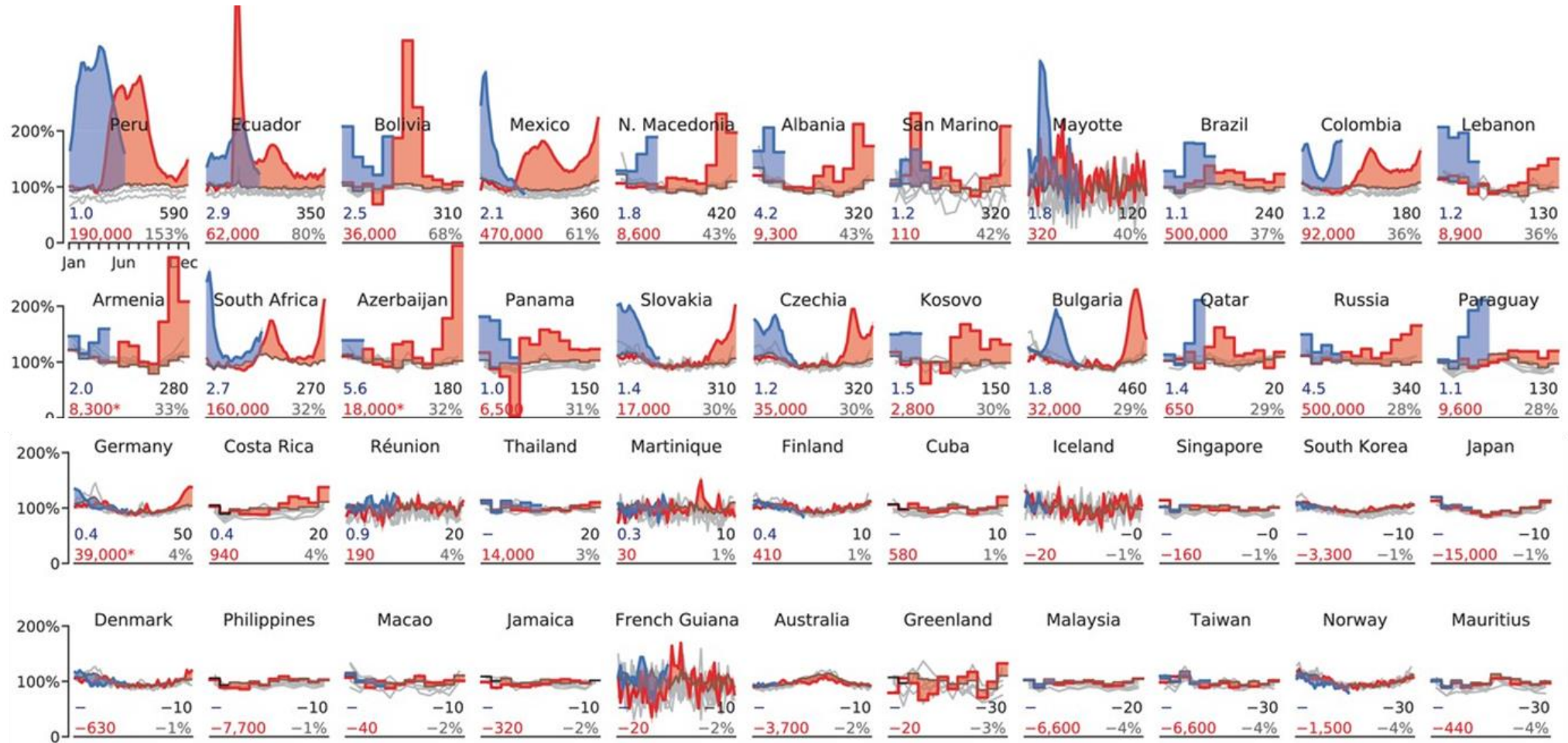
## Impact significantly differentiated by country

- Economic status
- State of health system
- Ability of people to separate/isolate
- Response to regulation
- Availability & timing of vaccines
- Seasonality in regions



One-size-fits-all global pandemic pricing approach

# World Excess Mortality – A tale of two worlds



Karlinsky, A. and Kobak, D. (2021) 'Tracking excess mortality across countries during the COVID-19 pandemic with the World Mortality Dataset', *eLife*. Edited by M. P. Davenport et al., 10, p. e69336. doi: [10.7554/eLife.69336](https://doi.org/10.7554/eLife.69336).



Bucket of  
uncertainties  
in insurance  
much larger

Greater need  
to prioritise  
what  
humans  
know & care  
about

6 **learnings** across  
the CUSAC region



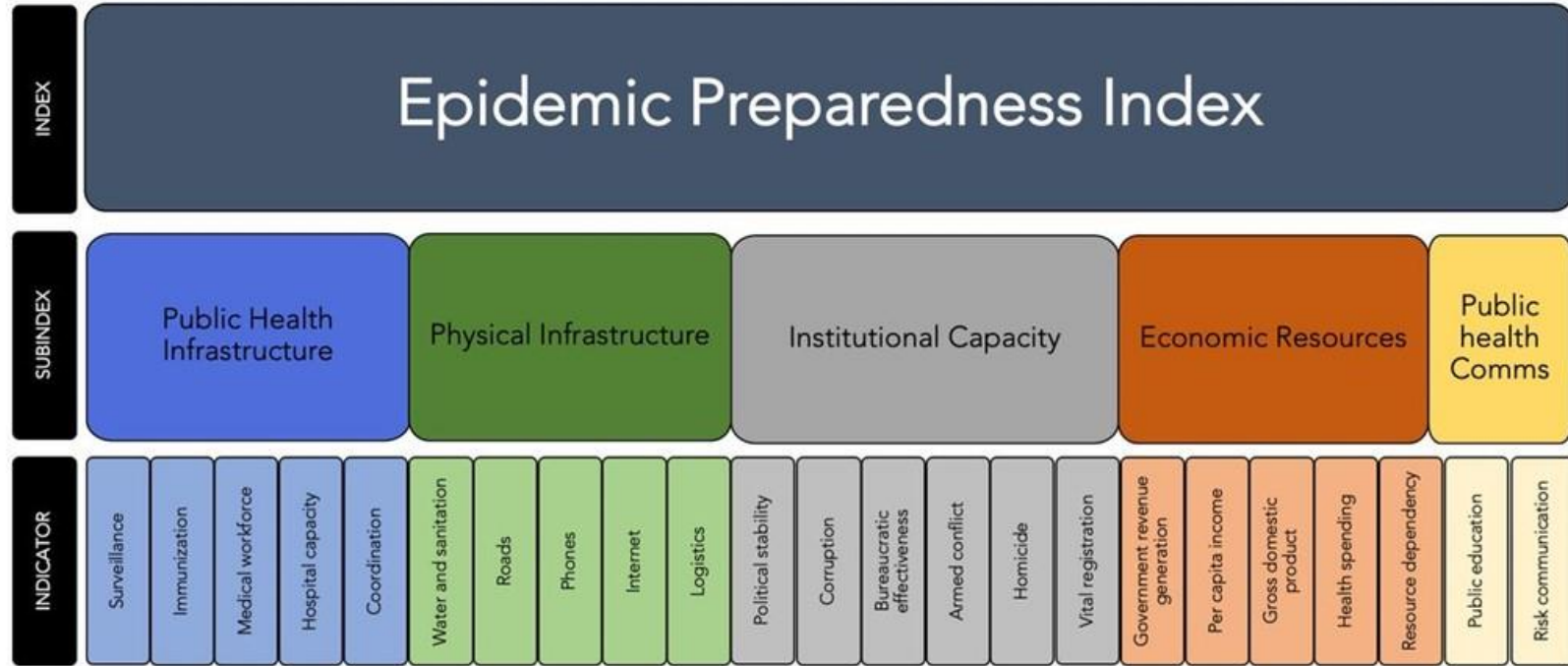


# 1 PRICING

Need for regionally differentiated pricing model



# Pandemic Preparedness



Oppenheim, B. *et al.* (2019) 'Assessing global preparedness for the next pandemic: development and application of an Epidemic Preparedness Index', *BMJ Global Health*, 4(1), p. e001157. doi: [10.1136/bmjgh-2018-001157](https://doi.org/10.1136/bmjgh-2018-001157).

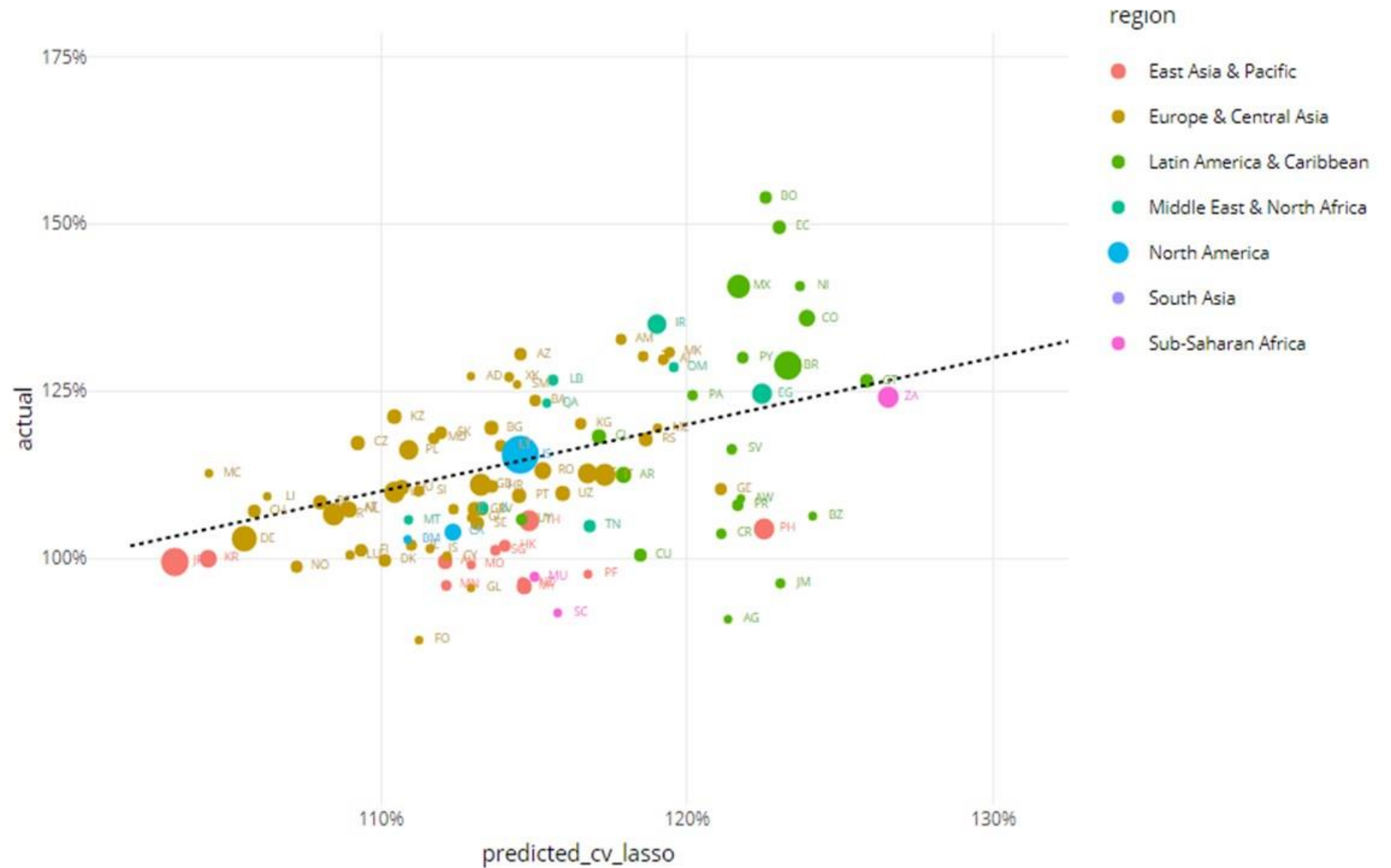
## 1 PRICING

Need for Regionally differentiated pricing model



## 1 PRICING

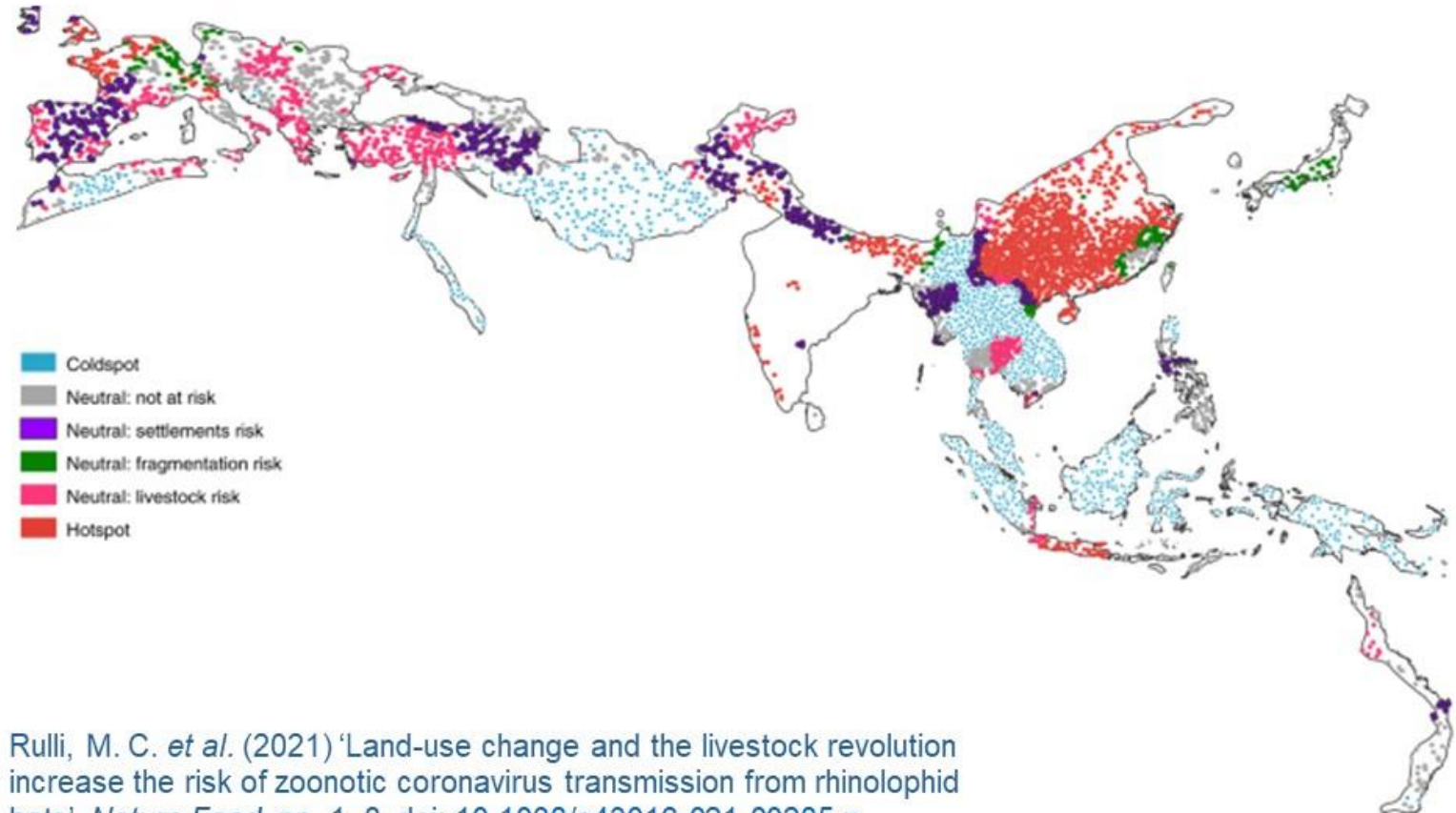
Begin to include excess deaths variance in the pricing models



# Longer-term thinking – Incidence of Pandemics

## 1 PRICING

Mindset shift  
needed around  
factors that  
drive incidence



Rulli, M. C. *et al.* (2021) 'Land-use change and the livestock revolution increase the risk of zoonotic coronavirus transmission from rhinolophid bats', *Nature Food*, pp. 1–8. doi: [10.1038/s43016-021-00285-x](https://doi.org/10.1038/s43016-021-00285-x).



# 2 TAIL RISK

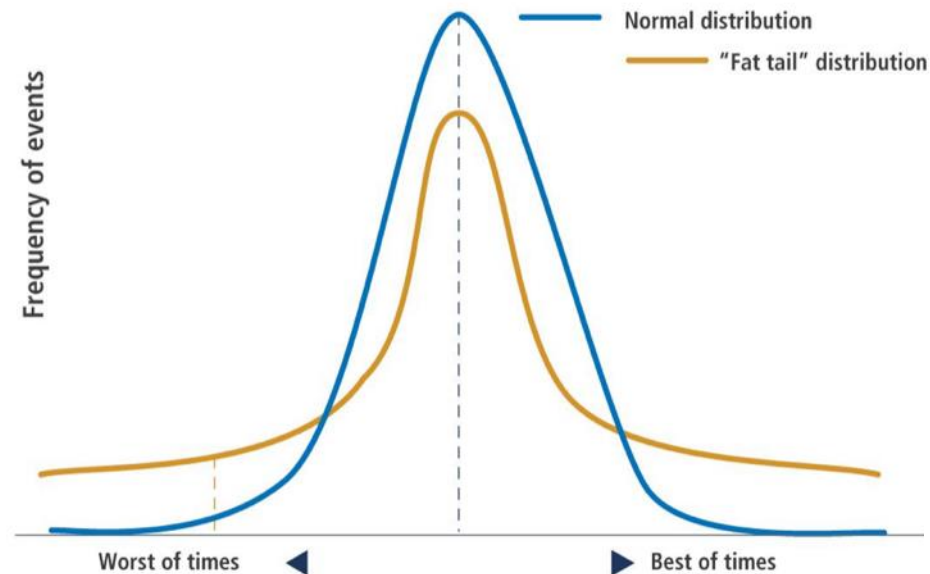
Now part of life...



# How to ensure the next 20 years of predicted profit is protected from tail events

Already changing conversations around risk appetite and requests for diverse risks to be covered

- Interest rate risk
- Default risks
- Sovereign risk
- War & Riot



## 2 TAIL RISK

A non-life construct will now require modelling and skill sets for prediction in the life space



# Most important global business risks for 2022

## 2 TAIL RISK

Changes how we see and deal with risk

1. Cyber incidents [2021: #3] [2020: #1]
2. Business interruption [2021: #2][2020: #2]
3. Natural catastrophes [2021: #6] [2020: # 4]
4. **Pandemic outbreak** [2021: #2][2020: n/a]
5. Changes in legislation and regulation [2021:#5] [2020: #3]
6. Climate change [2021: #9] [2020: #7]
7. Fire, explosion [2021:#7] [2020: #6]
8. Market developments [2021: #4] [2020: #5]
9. **Shortage of skilled workforce** [2021: #13] [2020: # n/a]
10. Macroeconomic developments [2021: #8] [2020: #10]

### Top 3 Risks - SA:

1. Cyber incidents
2. Business Interruption
3. Critical infrastructure blackouts

### Top 3 Risks - UK:

1. Cyber incidents
2. Business Interruption
3. Climate change

### Top 3 Risks - Aus:

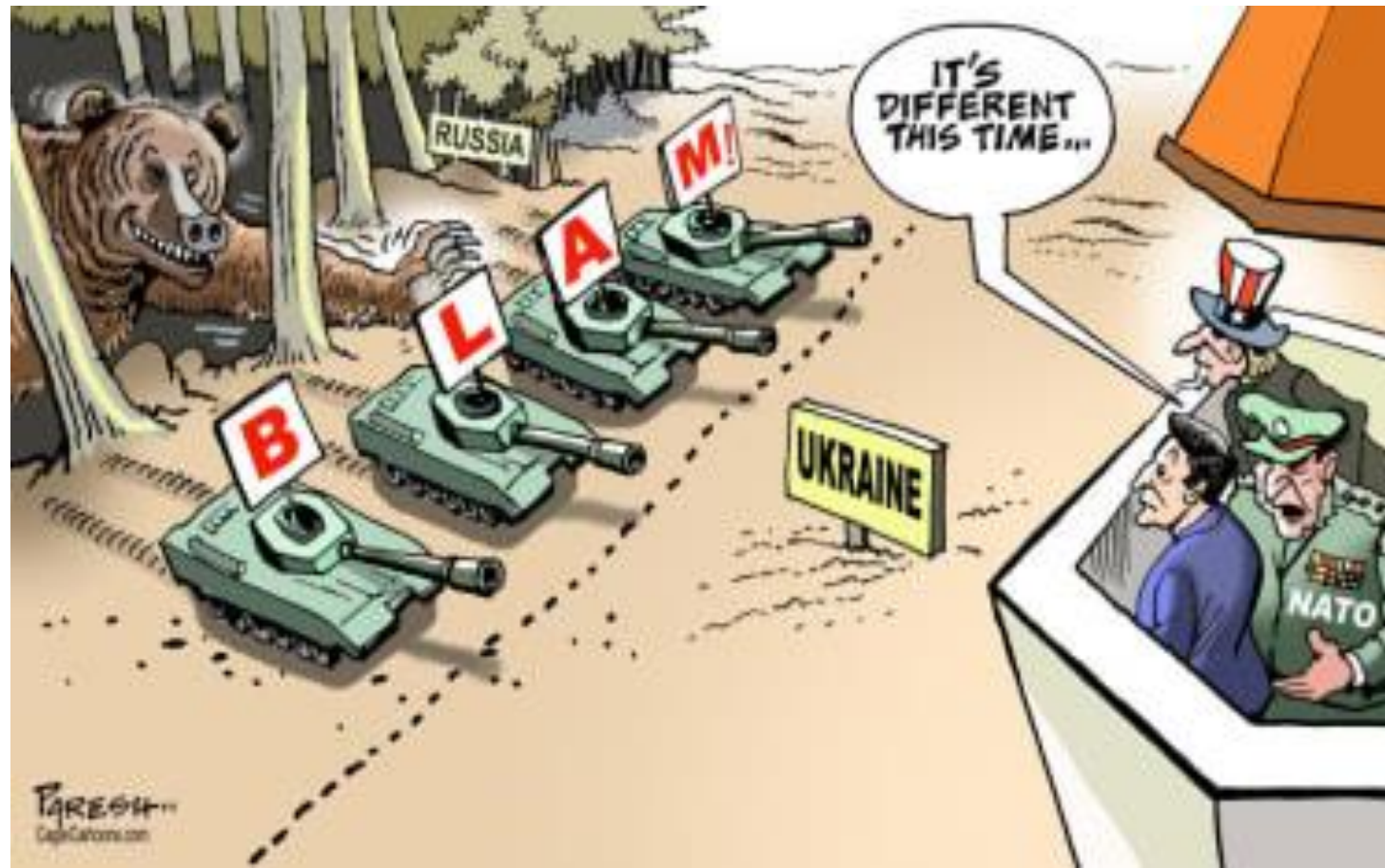
1. Business Interruption
2. Cyber incidents
3. Climate change

### Top 3 Risks - Canada:

1. Business Interruption
2. Cyber incidents
3. Climate change



11 December 2021



<https://theweek.com/political-satire/1007920/5-cartoons-about-russias-looming-invasion-of-ukraine>

2 TAIL RISK



# Most important global business risks for 2023

1. Cyber incidents [2022: #1] [2021: #3]
2. Business interruption [2022: #2][2021: #2]
3. **Macroeconomic developments** [2022: #10] [2021: #8]
4. Energy Crisis [new]
5. Changes in legislation and regulation [2022:#5] [2021: #5]
6. Natural catastrophes [2022: # 3][2021: #6]
7. Climate change [2022: #6] [2021: #9]
8. **Shortage of skilled workforce** [2022: #9] [2021: #13]
9. Fire, explosion [2022:#7] [2021: #7]
10. Political risks and violence [2022: #13; 2021: #10]
- .....
13. **Pandemic outbreak** [2022: #3][2021: #2]

## 2 TAIL RISK

Changes how  
we see and  
deal with risk

# 3 MEDICINE

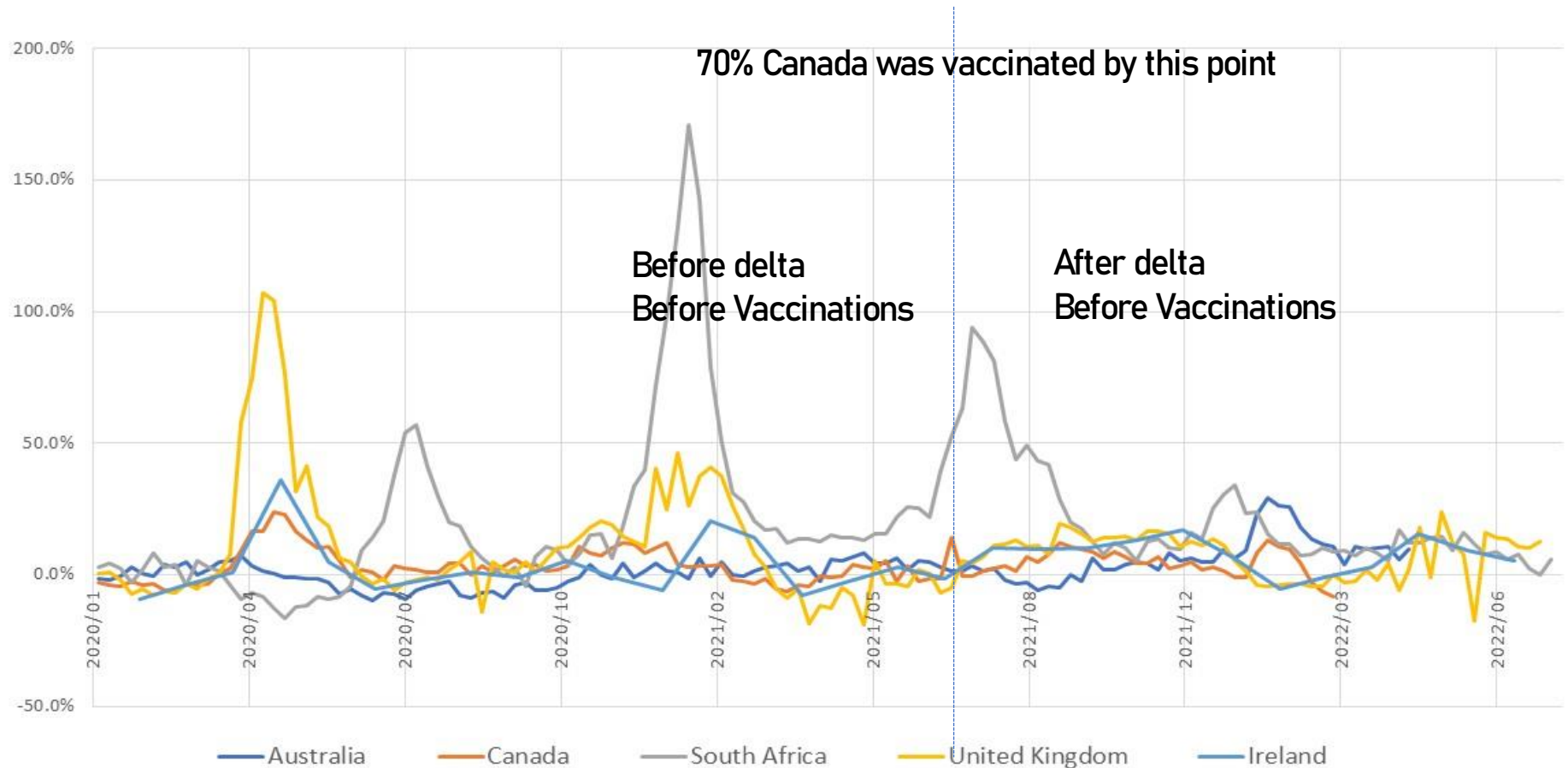
A game changer





Varied impact around the world on population – in CUSAC they were at the extreme

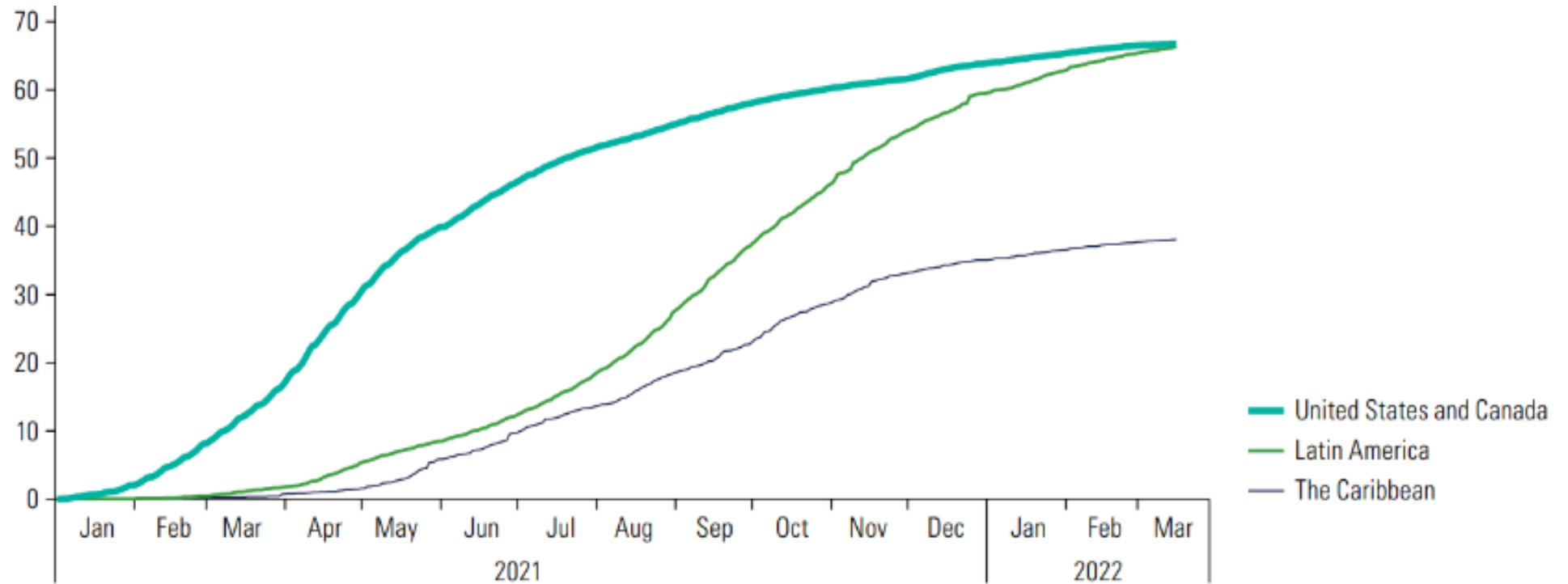
## Excess Deaths as % of Expected



3 MEDICINE

# Proportion of population fully vaccinated

3 MEDICINE

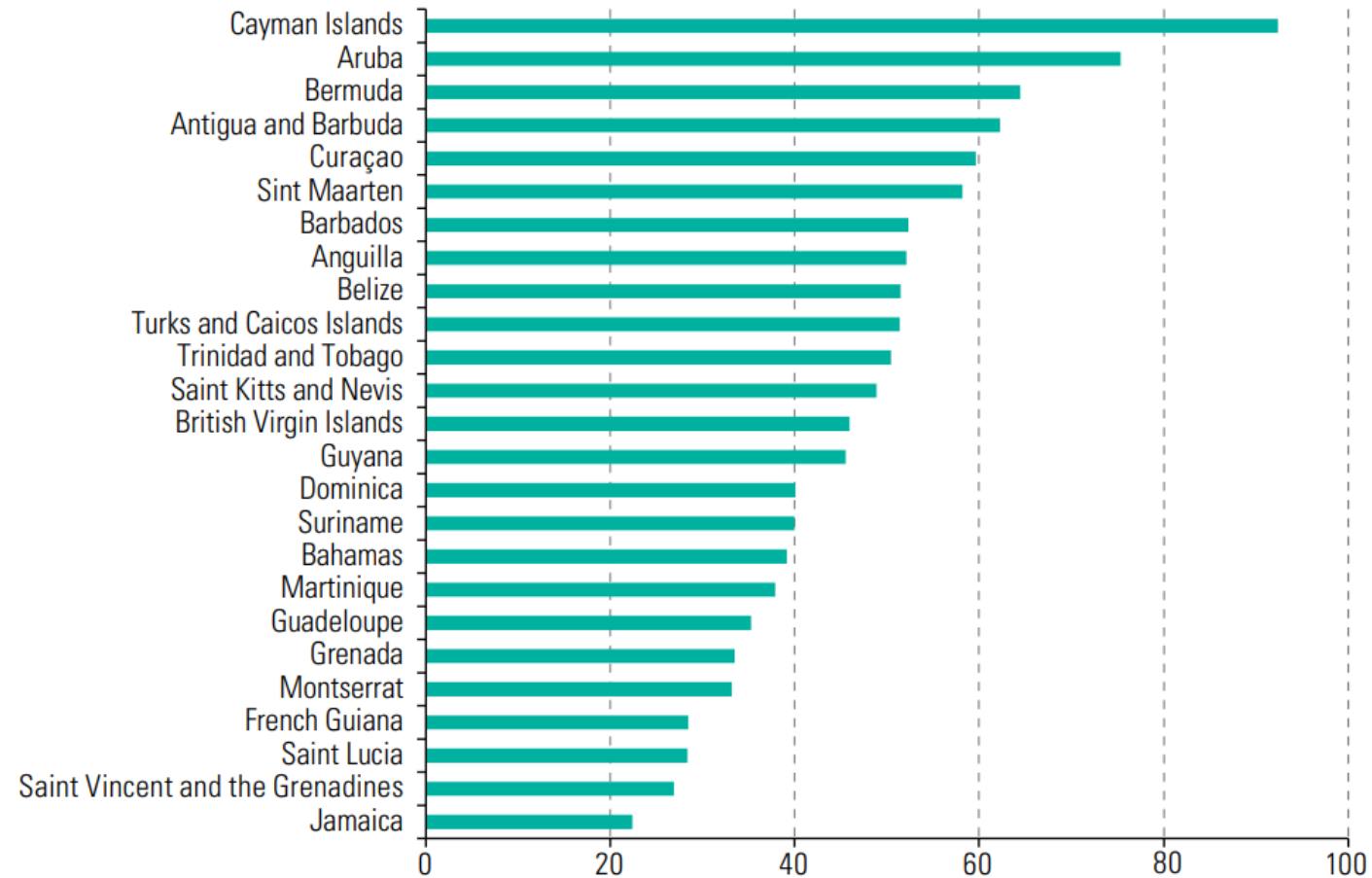


**Source:** Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of H. Ritchie and others, "Coronavirus Pandemic (COVID-19)", 2020 [online] <https://ourworldindata.org/coronavirus> and data from Johns Hopkins University.



# Proportion of population fully vaccinated

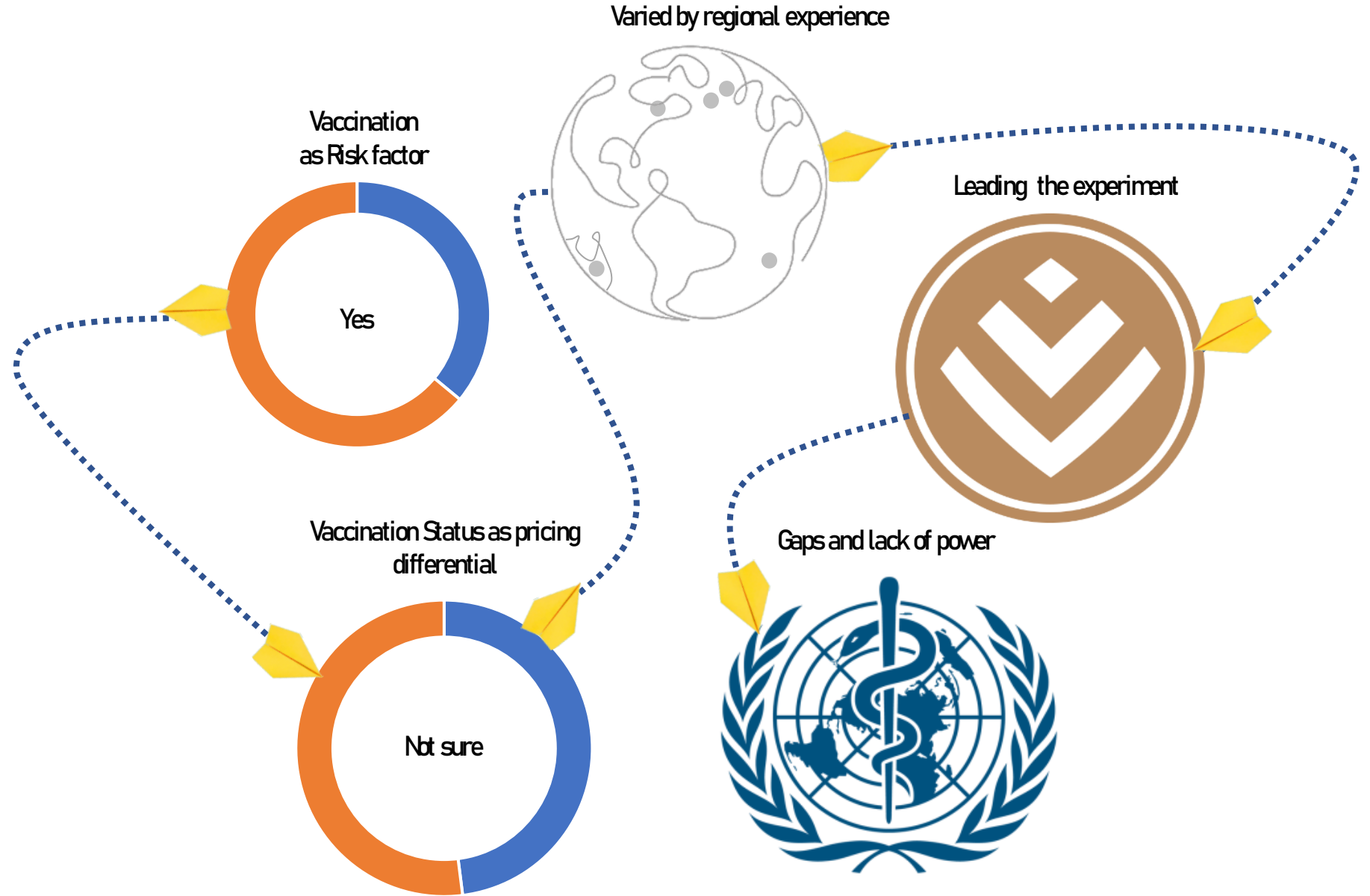
## 3 MEDICINE



**Source:** Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of World Health Organization (WHO), "WHO Coronavirus Disease (COVID-19) Dashboard" [online] <https://covid19.who.int/> and Pan American Health Organization (PAHO), "COVID-19 Vaccination in the Americas" [online] [https://ais.paho.org/imm/IM\\_DosisAdmin-Vacunacion.asp](https://ais.paho.org/imm/IM_DosisAdmin-Vacunacion.asp) [accessed on 22 March 2022].

### 3 MEDICINE

Varied responses to vaccination status in pricing





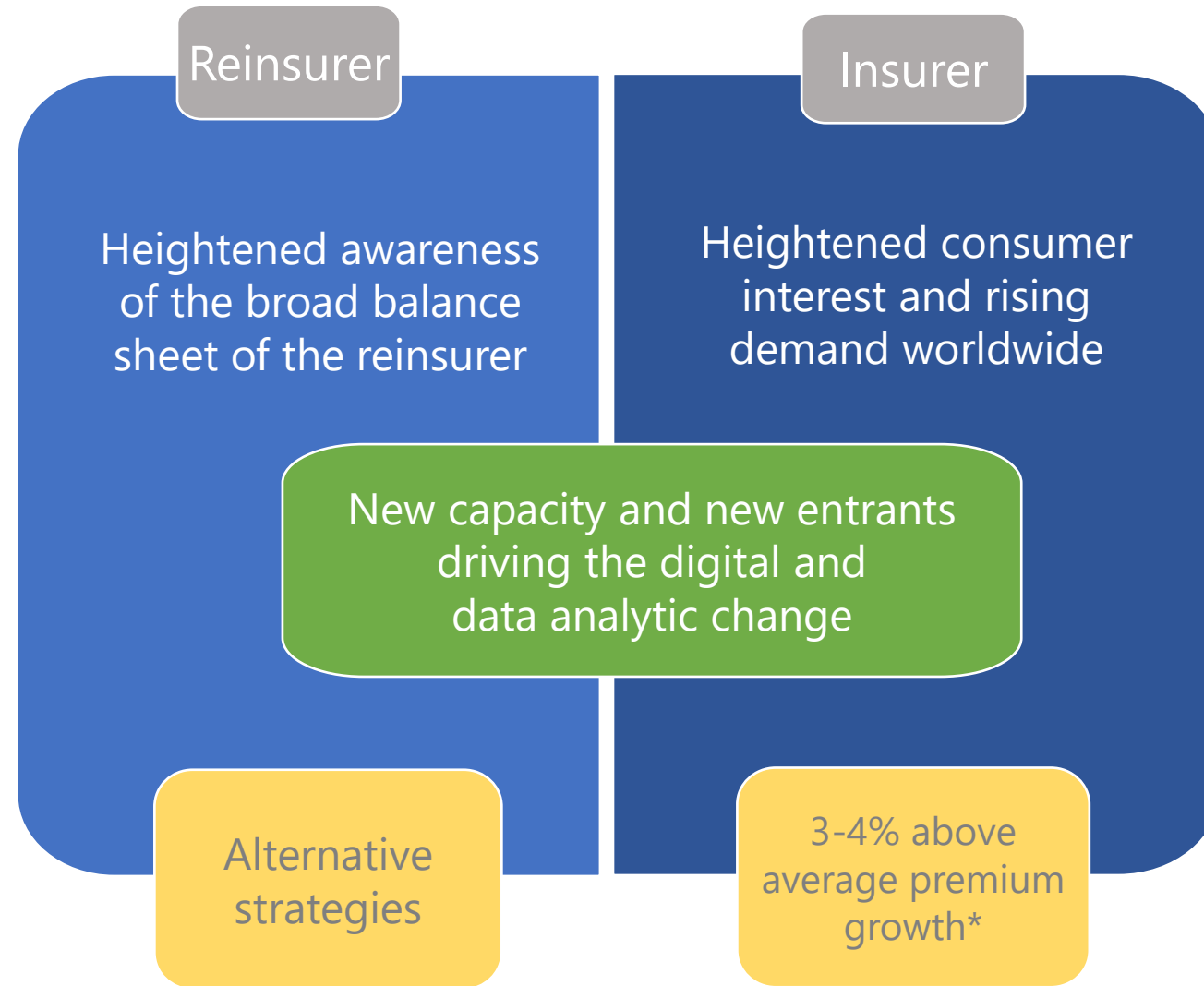
# 4 VALUE PROPOSITION

Innovative response  
required to rising  
market interest



## 4 VALUE PROPOSITION

Heightened awareness



\*[https://www2.deloitte.com/za/en/insights/industry/financial-services.html?icid=subnav\\_financial-services](https://www2.deloitte.com/za/en/insights/industry/financial-services.html?icid=subnav_financial-services)



Long-term  
profitability  
scare



SHORT-TERM SHAREHOLDER PRESSURE



Consumer  
impatience

# 5 ONLINE EDGE





## 5 ONLINE EDGE

Digital  
readiness  
led to early  
market  
leadership

### First mover advantage

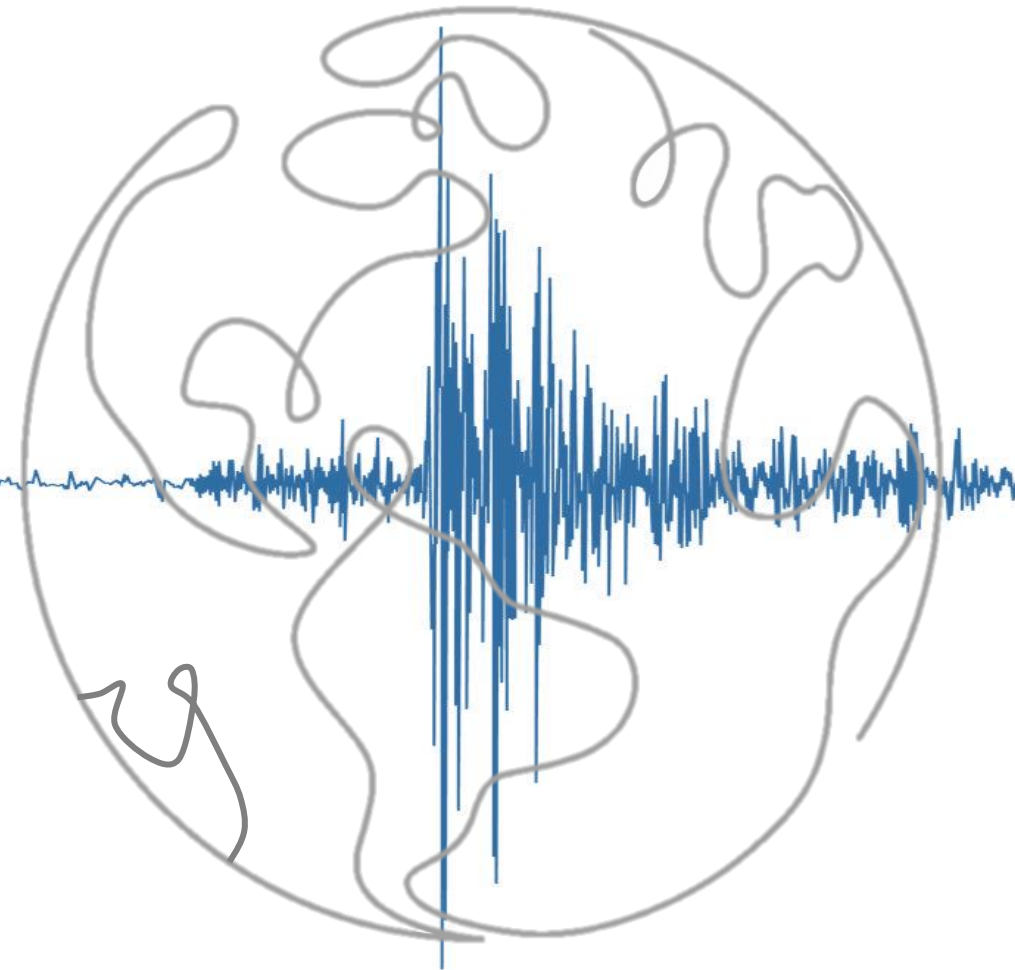
Transitioned quickest to “Work  
from Home”

0 to 3 months **online in CUSAC**

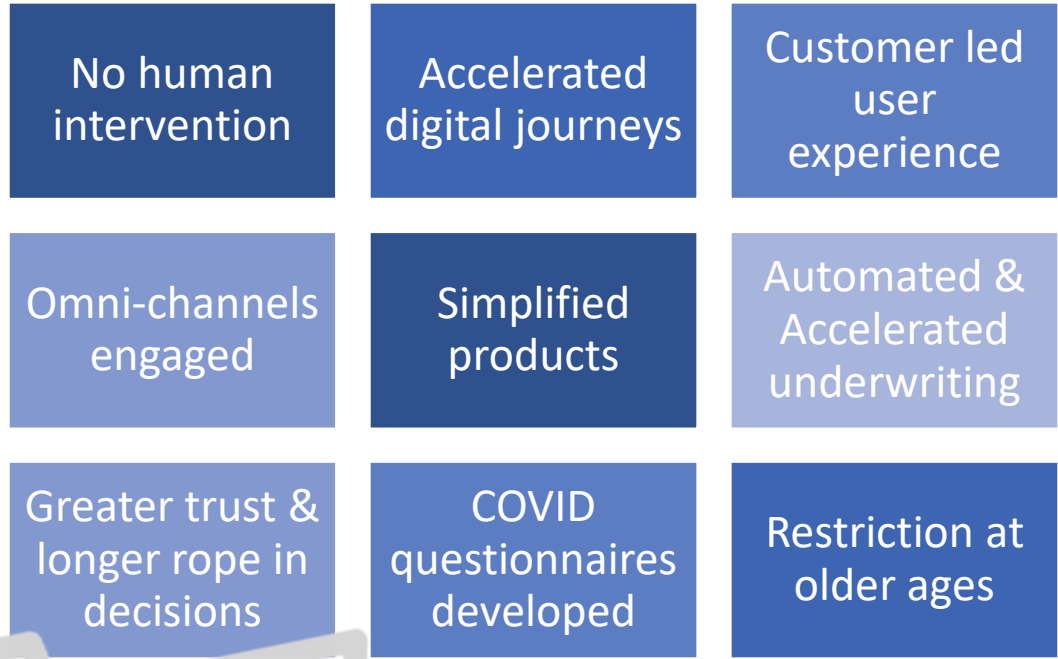
36% to 58% **the global increase in  
digital interactions 2019 to 2020**

### Market advantage

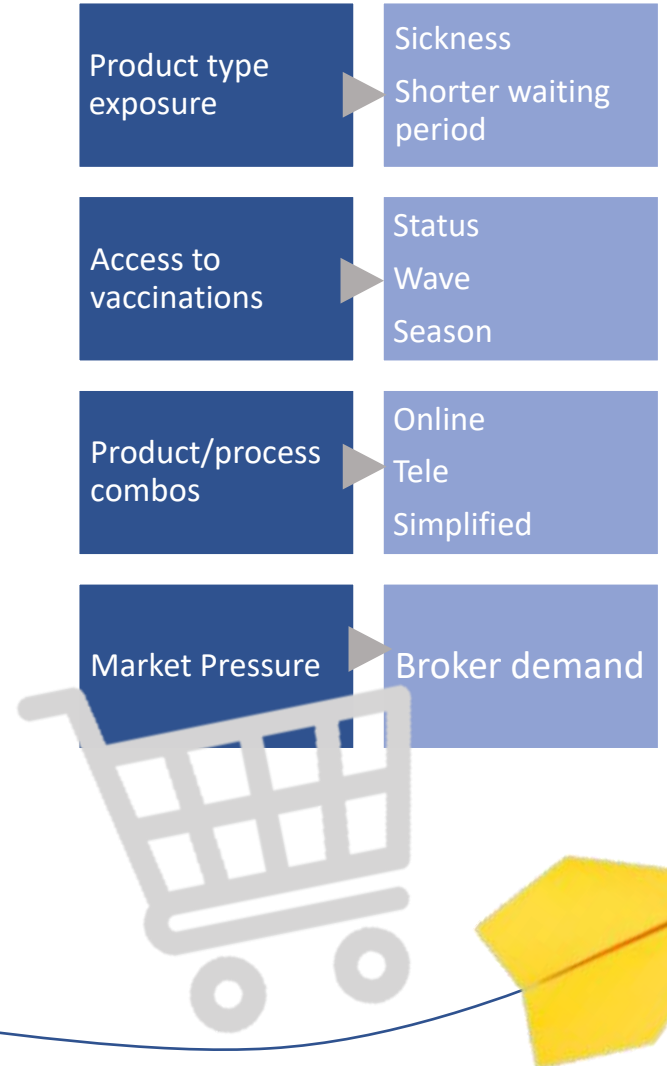
Digital, tele and simplified  
offerings were already in place



## Common adjustments



## Pressure points



## 5 ONLINE EDGE

Process and product adjustments rapid, automated and mostly here to stay



% change in customer expectations 2018 to 2021\*

**^45%** Expect 247/365 support

**^77%** Switch carriers for user friendly interface

**^80%** Submit claims via mobile

\*Source: PwC 2018 and 2021 surveys of 6,000 insurance customers



What does a modern company look like in terms of distribution?

What is the Impact of changing distribution on future risk pricing?

How do you work with a distributor to optimise & secure the best sales?

## 5 ONLINE EDGE

Seismic shift in distribution:  
Use of analytical techniques will drive the advantage

# 6 TALENT MAGNET



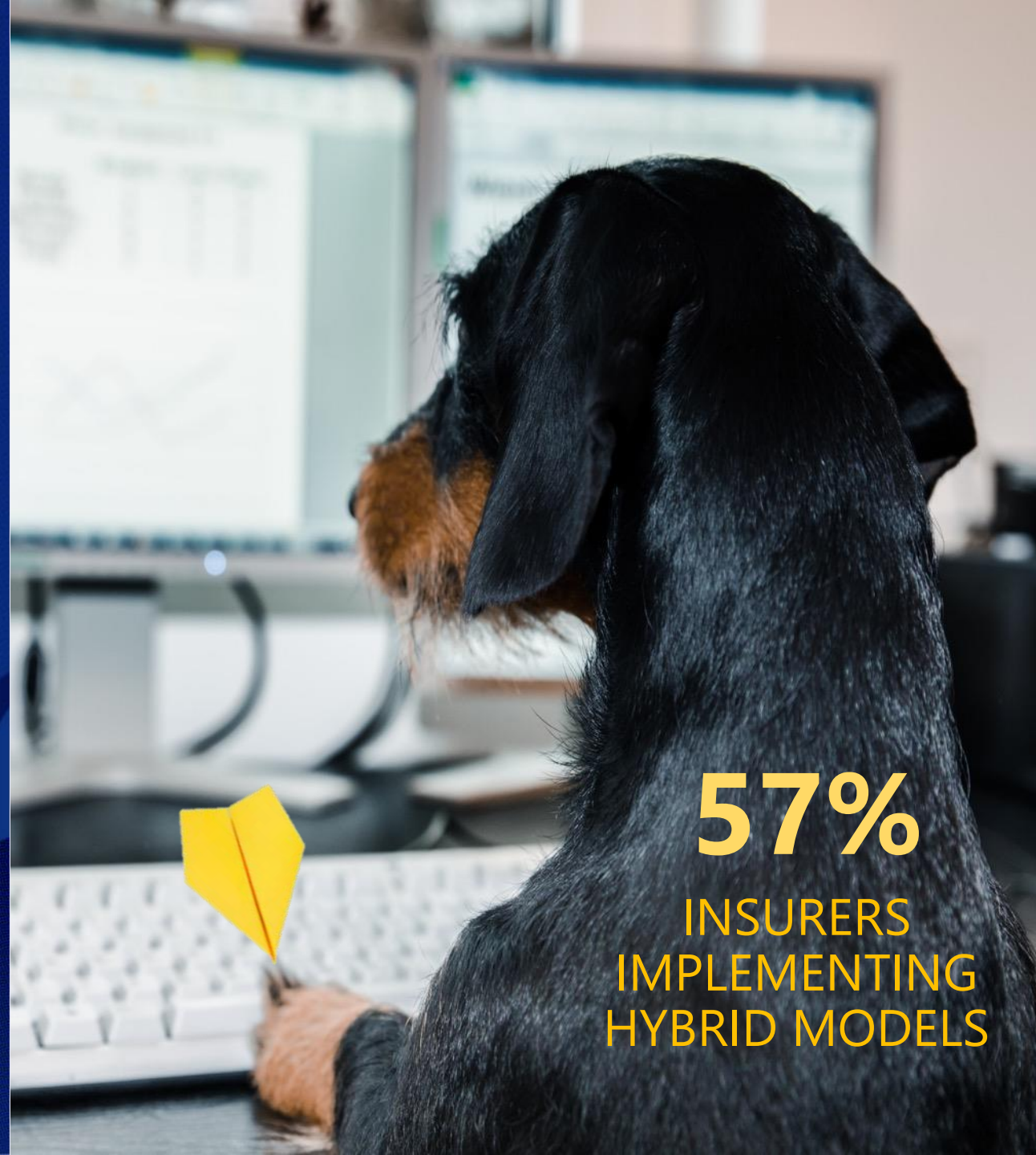




47.8 million  
RESIGNED

60% OPEN TO  
NEW JOBS

64% OPEN TO  
NEW JOBS



57%

INSURERS  
IMPLEMENTING  
HYBRID MODELS

Growth &  
development



ATTRACTION &  
RETENTION

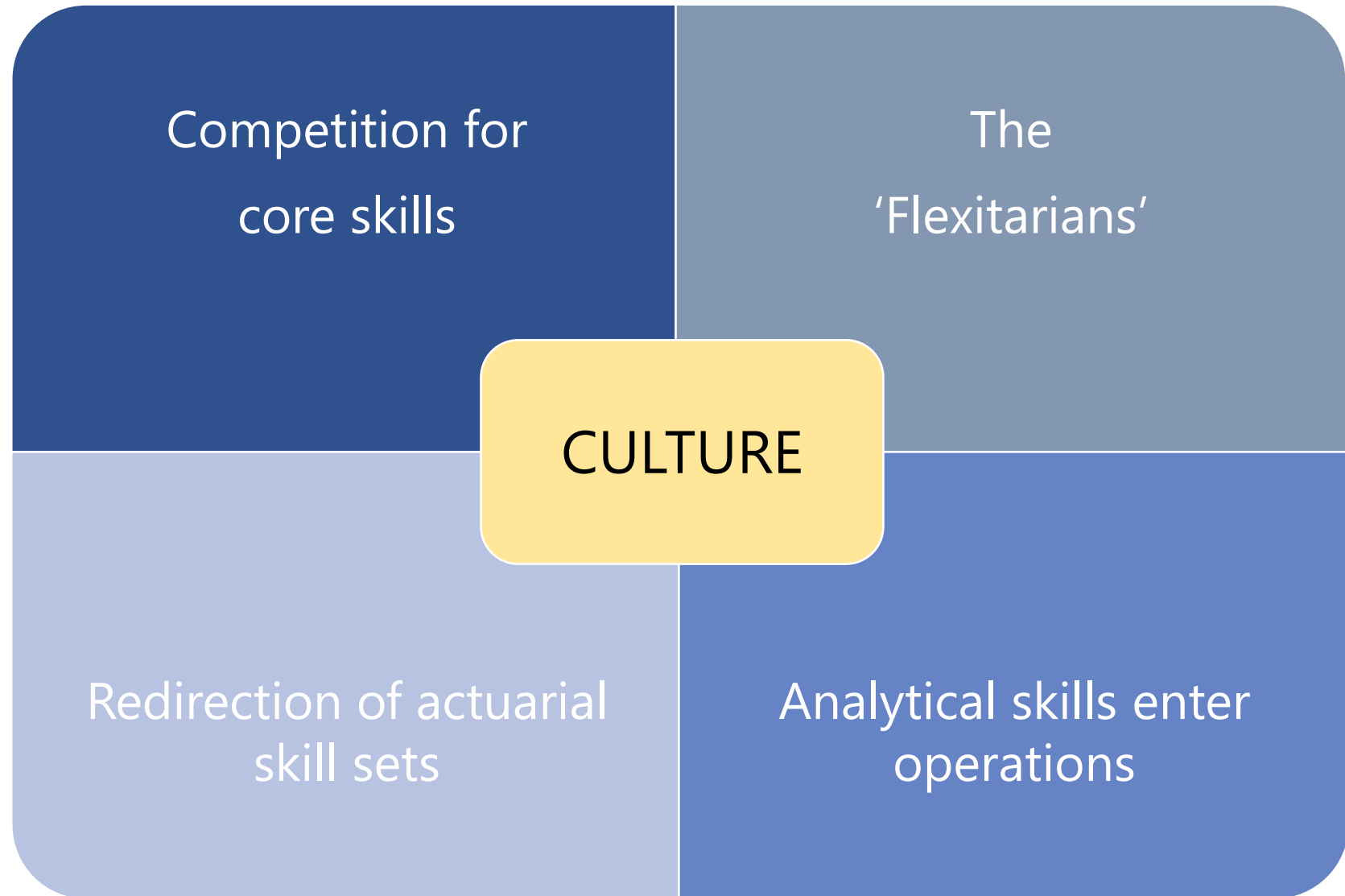
Flexibility  
& skill





## 6 TALENT MAGNET

The fluid,  
flexible and  
hybrid talent  
challenge



# Gen Re **ACTIONS**





- Pandemic pricing estimate modelling
- COVID experience modelling
- Distribution quality management
- Group pricing regional basis reviews
- Predictive machine learning techniques in Underwriting
- Accelerated and simplified underwriting modelling
- Post issue sampling prediction
- Mental health world first framework, tools and modelling
- Unemployment modelling, pandemic and impact on suicides
- Mortality improvement modelling
- Terms of trade reviews
- Global CMO network participation
- World Actuaries Response Group participation
- CUSAC Disability Income Study
- Sharing monthly monitoring techniques of our own portfolios

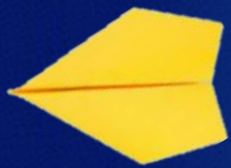


Bucket of  
uncertainties  
in insurance  
is much  
larger

The  
WORST  
of times

The  
BEST  
of times

Greater need  
to prioritise  
humans  
know and  
care about







International Actuarial Association  
Association Actuarielle Internationale

# IAA Pandemics Task Force

41st Annual Caribbean

INSURANCE  
CONFERENCE

**2023**

# Lessons Learned from Pandemics







## Lessons Learned from Pandemics: Overview

- Goal: short (20-30 pages) paper on lessons learned from pandemics
  - Naturally focused on COVID-19, but HIV/AIDS pandemic experience is also considered
  - Leveraging existing work and expertise from actuaries and actuarial organizations around the world
- Paper Objectives:
  - Take stock of where we are as the effects of the COVID-19 pandemic begin to wane
  - Provide advice and direction for the actuarial profession for responding to future pandemics
  - Showcase what FMAs and the actuarial profession have done in terms of data analysis, modelling or other commentary
  - Respond to the work of other supranational organizations such as the IAIS or OECD
  - Provide an overview of best and worst practices for collecting and working with reported data



# Lessons Learned from Pandemics: Outline

The paper has the following outline:

1. Modelling, data and reporting
2. Practice Area-specific issues:
  - Life insurance and mortality
  - Pensions and social security
  - Health care
  - General insurance and property/casualty
  - Enterprise risk management
3. Broader economic and societal impact
4. Financial sector resilience
5. Intersection with other societal and environmental issues





## Lesson 1: Data

- Actuaries are used to making sense of disparate data but this is necessary at a heightened level during a pandemic
- Data sources may be unreliable or inconsistent, with different methods and timeframes for reporting
- Metrics may be inconsistent, e.g. reported cases vs. estimated cases; deaths may be underreported or groupings of data may not match, e.g. different age bands or geographics
- It is, and will always be, very difficult to get accurate and consistent mortality data from a pandemic. Many actuaries and models have switched to observing excess mortality instead of COVID-19-specific mortality





## Lesson 2: Collaboration and Communication

- Actuaries must collaborate with other professionals, just as they must rely on us, for optimal results in responding to future pandemics



- Social media can be a great tool. The COVID-19 Actuaries Response Group made good use of social media, as did the rest of the world
- Actuaries can help weed through misinformation and disinformation by becoming experts in the data





## Lesson 3: Professional Practice

- Fast pace: During a global crisis, we will need to react faster than normal, and probably faster than is comfortable for many of us.
- Data quality (mentioned above) can be poor and inconsistent, but we must use what we have or risk irrelevance
- Past experience is not reliable for future models, and models need to be flexible
- Do our professional standards as currently written enable us to contribute to the response?





## Lesson 4: Health Care Systems

- Efforts to strengthen healthcare infrastructure, improve data systems, and invest in public health interventions will be crucial for the next pandemic.



- Risk management and actuarial expertise can assist health care systems including delivery systems and health insurance.





## Lesson 5: Broad Risk Management

- Interactions between a pandemic and other risk events can lead to feedback loops and tipping points. These need to be carefully watched and modelled



- Anyone who deals with risk should be prepared to deal with *threat multipliers* -- risks that interact with and make other risks worse.
  - Examples: Pandemics, climate change and energy risk

Thank you



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Senior Market Manager & Caribbean Business Development Manager



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