



Swiss Re

Global Risks, Trends and Closing the Protection Gap

Swiss Re Reinsurance

Agenda



**Global Macro
Risks/Trends**

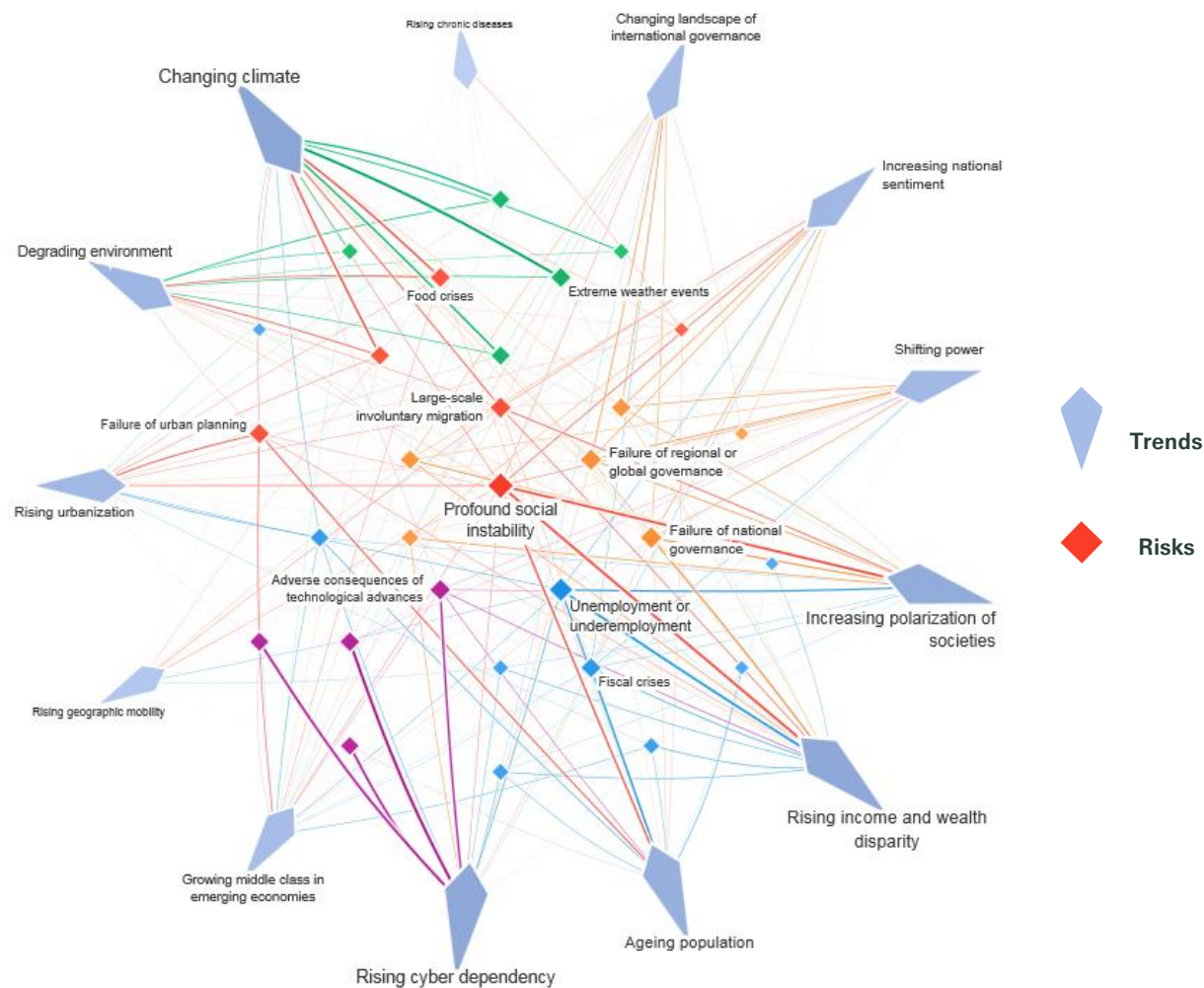


**Global
Protection
Gap**



**How
technology
can support**

Global macro risk map interdependencies

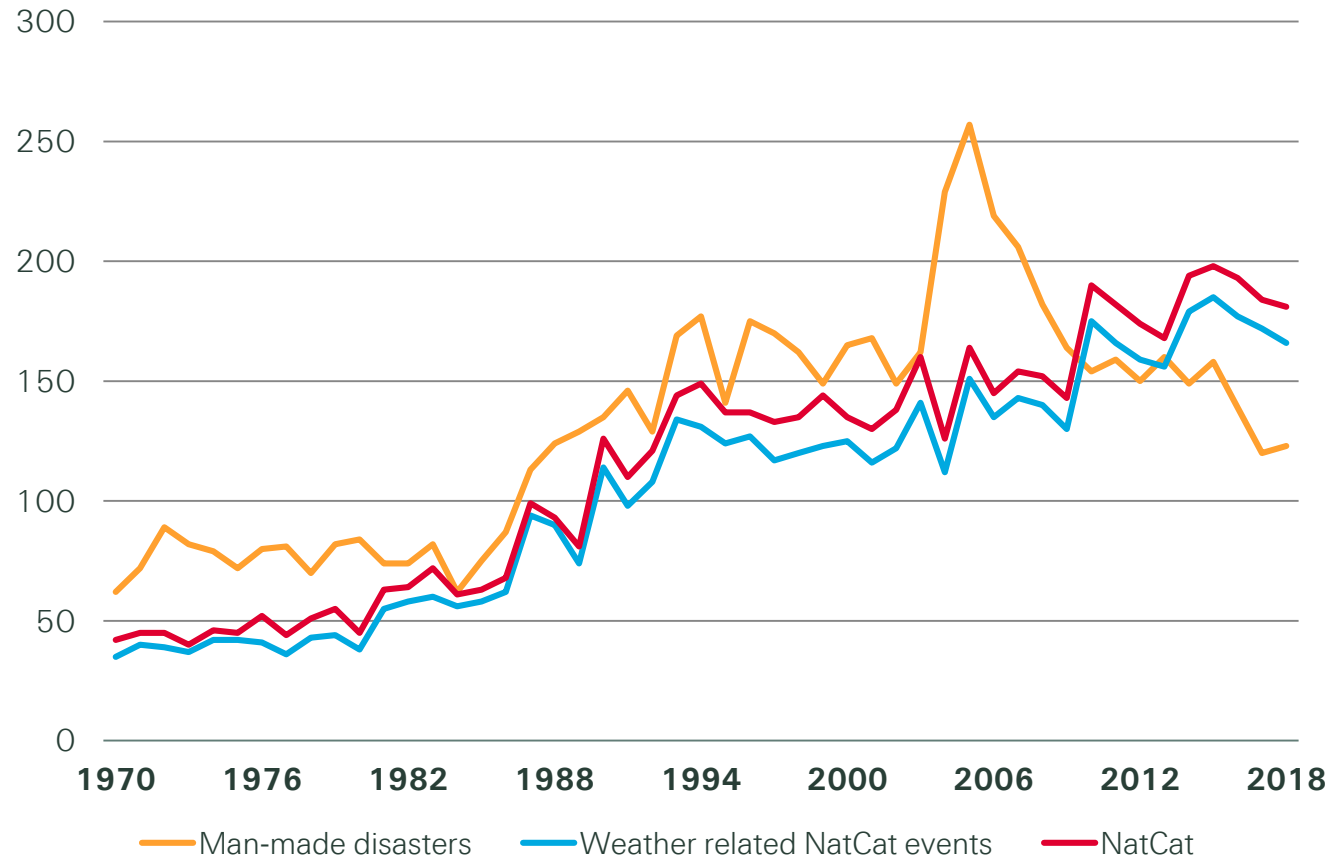


Background:

- **Environmental risks have grown in prominence in recent years.** 2018 saw a number of extreme weather events characterized by high-impact hurricanes, extreme temperatures and the first rise in CO2 emissions for four years
- **Cybersecurity risks are growing**
- The global **economy faces a mix of long-standing vulnerabilities** and newer threats that have emerged or evolved in the years since the financial crisis
- **Unsettling geopolitical phase** - multilateral rule-based approaches have been fraying. Re-establishing **the state as the primary focus of power and legitimacy** has become an increasingly attractive strategy for many countries
- **Population is shifting trust from government to Private Enterprise/Companies**

Focus Area

Increasing number of disasters



2018:

181 natural catastrophes (e.g. Earthquakes)

123 man-made disasters (e.g. Terrorism)

166 Weather related NatCat events (e.g. Storms)

> 11'000 people lost their lives

Total economic losses: **USD 337 billion**

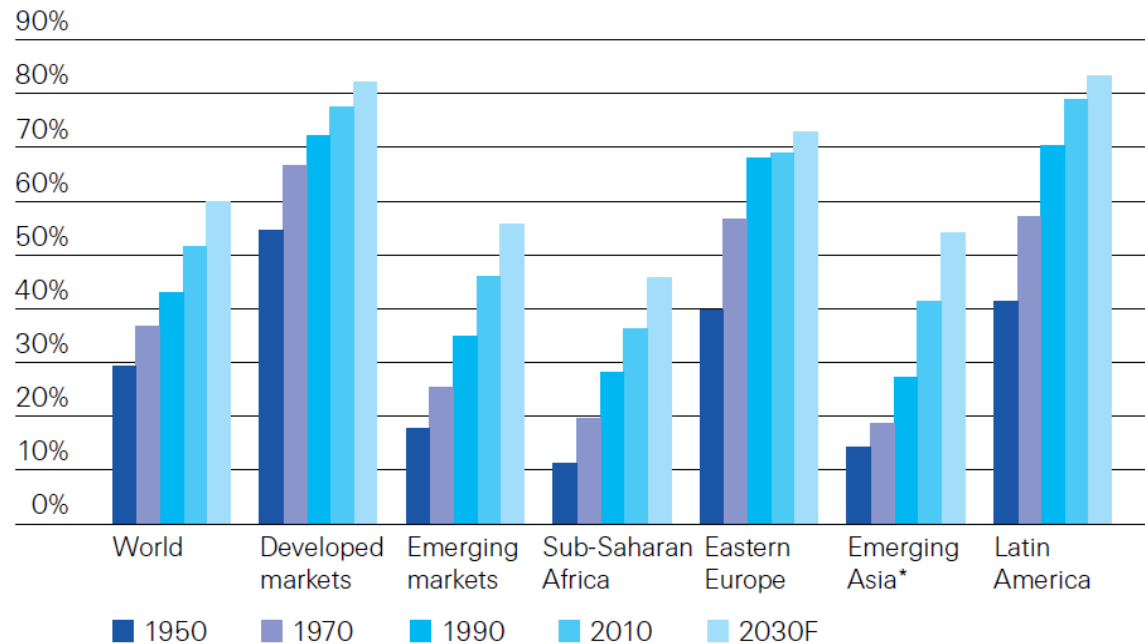
Possible impacts on our Industry:

- **Increasing need for protection**
- **Insurance industry** needs to rethink **access** to **affordable, relevant** and **effective risk management** tools and **insurance safety nets**
- **Proactive risk management can help protect whole economies**

Focus Area

Urbanisation

Urbanisation rate in %



* Emerging Asia includes China, India, Indonesia, Malaysia, the Philippines, Thailand and Vietnam

F = forecast

Source: Population Division, Department of Economic and Social Affairs, United Nations

Background:

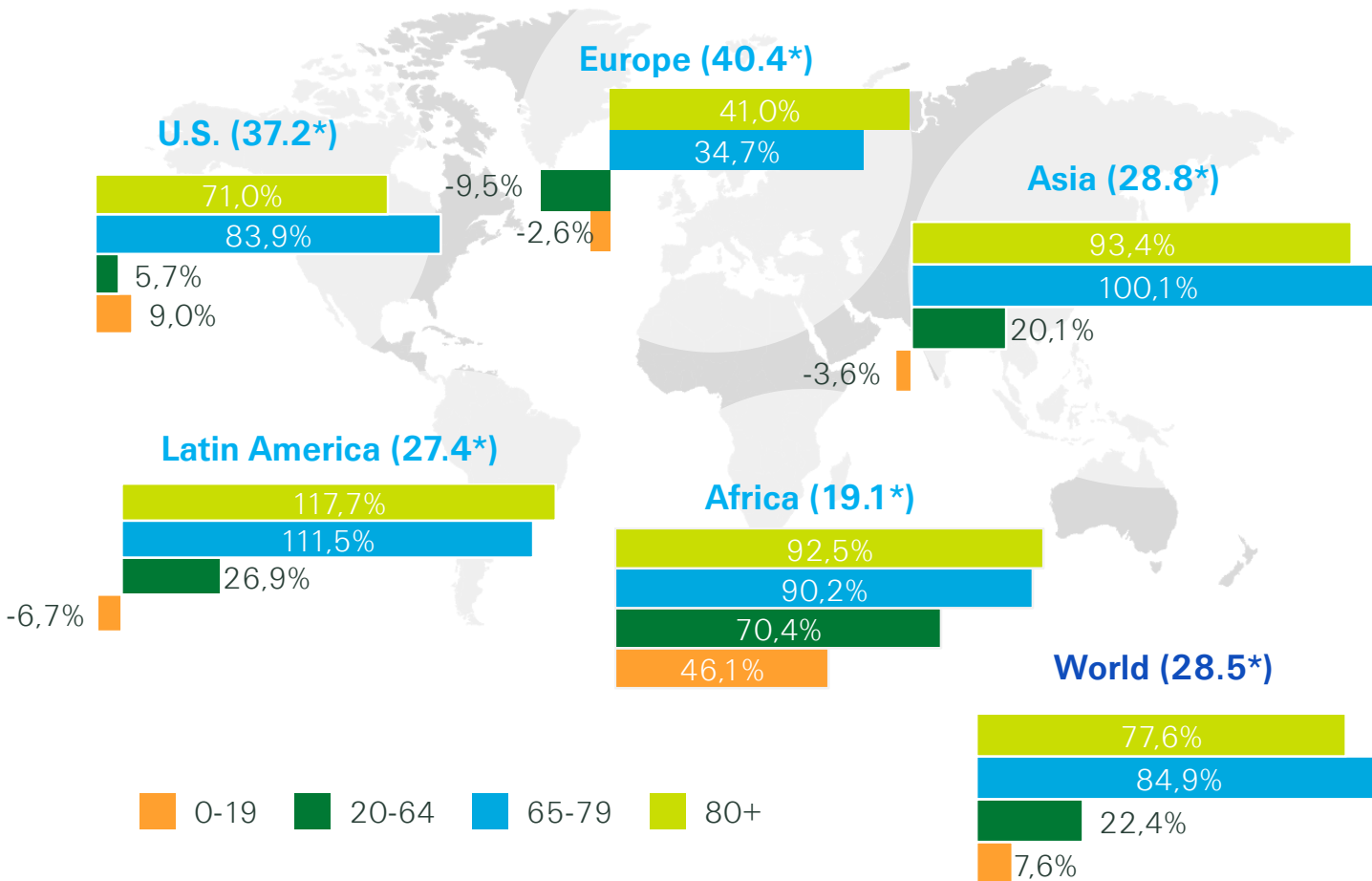
- Between 1950 and 2010, **the world's urban population grew nearly fivefold**, with on average 47 million more urban residents every year
- Today the **global urban population is expected to grow** by about **1.4 billion** between **2011** and **2030**, **more than 90% of the increase coming from emerging markets**

Possible impacts on our Industry:

- Urbanisation brings **fundamental socio-economic change**, this will create **new opportunities** for insurers
- Large cities require **huge infrastructure investments**, this will lead to a **significant rise in construction-related premiums**
- Larger cities have **high risk concentration** and are vulnerable to **natural disasters, health hazards** and **food security issues**

Focus Area

Ageing



Background:

- The **number of older persons**, aged 60 years or over, is **expected to more than double by 2050** and to **more than triple by 2100**, rising from 962 million globally in 2017 to **2.1 billion in 2050** and **3.1 billion in 2100**
- In **Latin America and Asia** the number of people **aged 65** or over **will nearly double**
- **Naturally populations will shrink over time and insurance becomes more expensive**

Possible impacts on our Industry:

- The **mortality protection gap is estimated at USD 114 trillion globally**
- In **emerging markets, insurance and savings still meet less than 10% of the population's protection needs**

Focus Area

Tort liability on the rise



Tort liability is an **ongoing** and **accelerating issue**



The **financial impact is significant** and is present in markets beyond the US



Product Liability, General Liability and Professional Liability including **D&O and Cyber Liability** have heightened focus



Legal activity is ramping up and judgements and settlements experience significant inflations



Underwriters must be vigilant in properly assessing, underwriting and mitigating potential exposures to their portfolios relative to opioids and opioid litigations

Example Opioid Crisis:



34 million

people used opioids in 2018

Suffered from opioid use disorders in 2016:

27 million people



As a result of drug use in 2015

450,000 people died



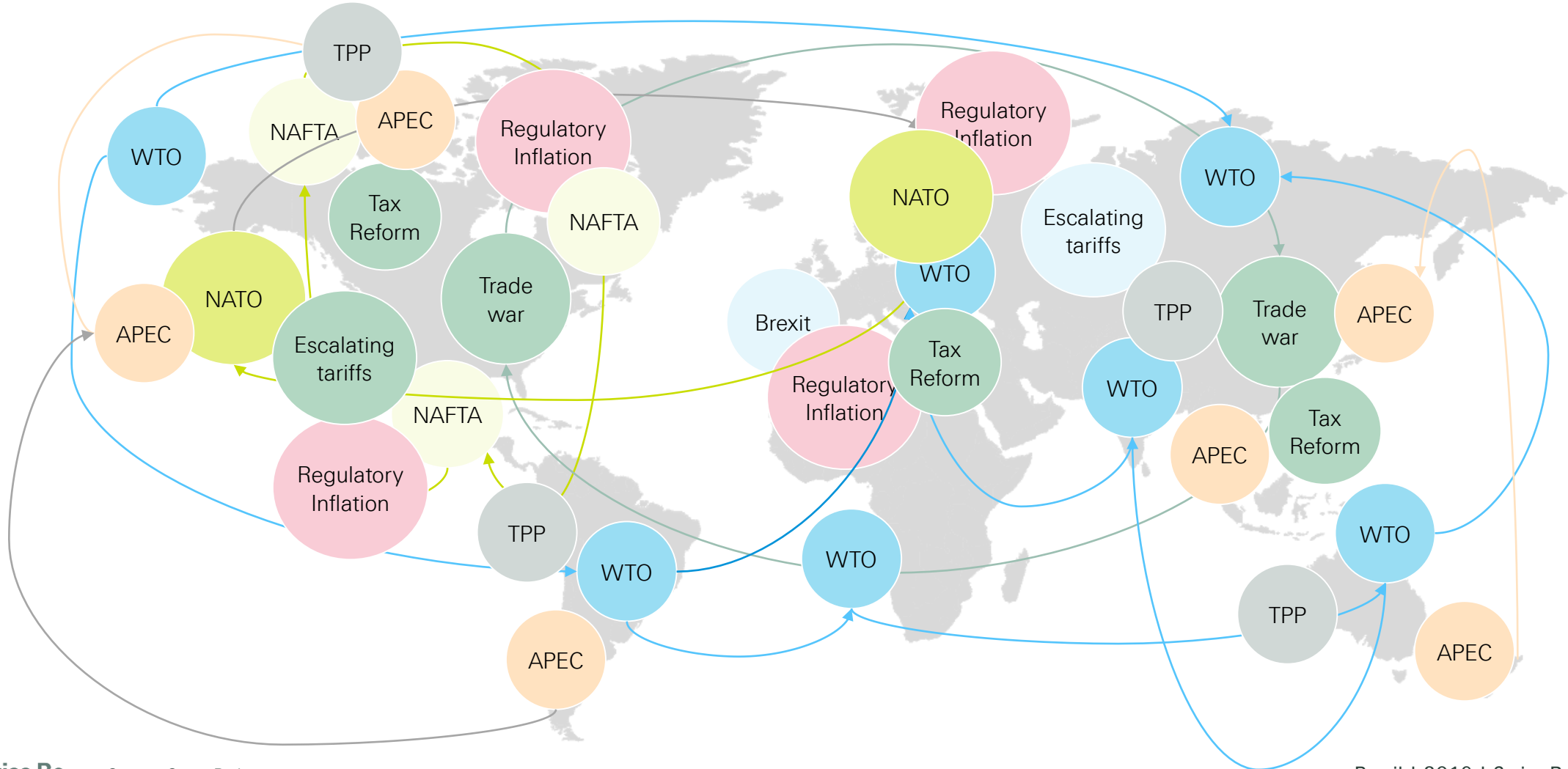
~ USD 78bn

spent annually for health care, addiction treatment, lost work/productivity and increased policing

In the US **2'000 suits have been filed** largely by local and state governments naming opioid manufacturers

Focus Area

Nationalism & Protectionism



Focus Area

Key large loss trends and themes



Increasing **casualty losses arising** out of large property events, **exacerbated by climate change and urbanisation**

- *Wildfires (US and Australia); Mudslides (California, US)*



Increase of suits in US by states Attorneys General, counties and cities that **aggregate casualty claims**

- *Suit against 3M over perfluorochemicals*



Ageing infrastructure in mature markets/large **new infrastructure projects** in **high growth markets**

- *Tunnel collapse at Ituango Hydroelectric Project (Colombia)*
- *Motorway bridge collapse in Genoa (Italy)*



Litigation funding/financing

- *Rise of litigation funding (US, UK, AUS, SG, HK)*
- *Recent emergence of hedge funds buying insurers' wildfire subrogation rights to pursue PG&E*



Acts of mass violence/terrorist actions and/or large scale **criminal activity**

- *Las Vegas shooting*
- *Cyber crime and cyber war attacks (Globally)*



New latent claims

- *Brain injury/chronic traumatic encephalopathy (CTE) against NFL/Schools/Helmet Manufacturers*

Agenda



**Global Macro
Risks/Trends**



**Global
Protection
Gap**



**How
technology
can support**

Global Protection Gap



The shortfall in the amount of cover necessary to maintain current living standards of dependents

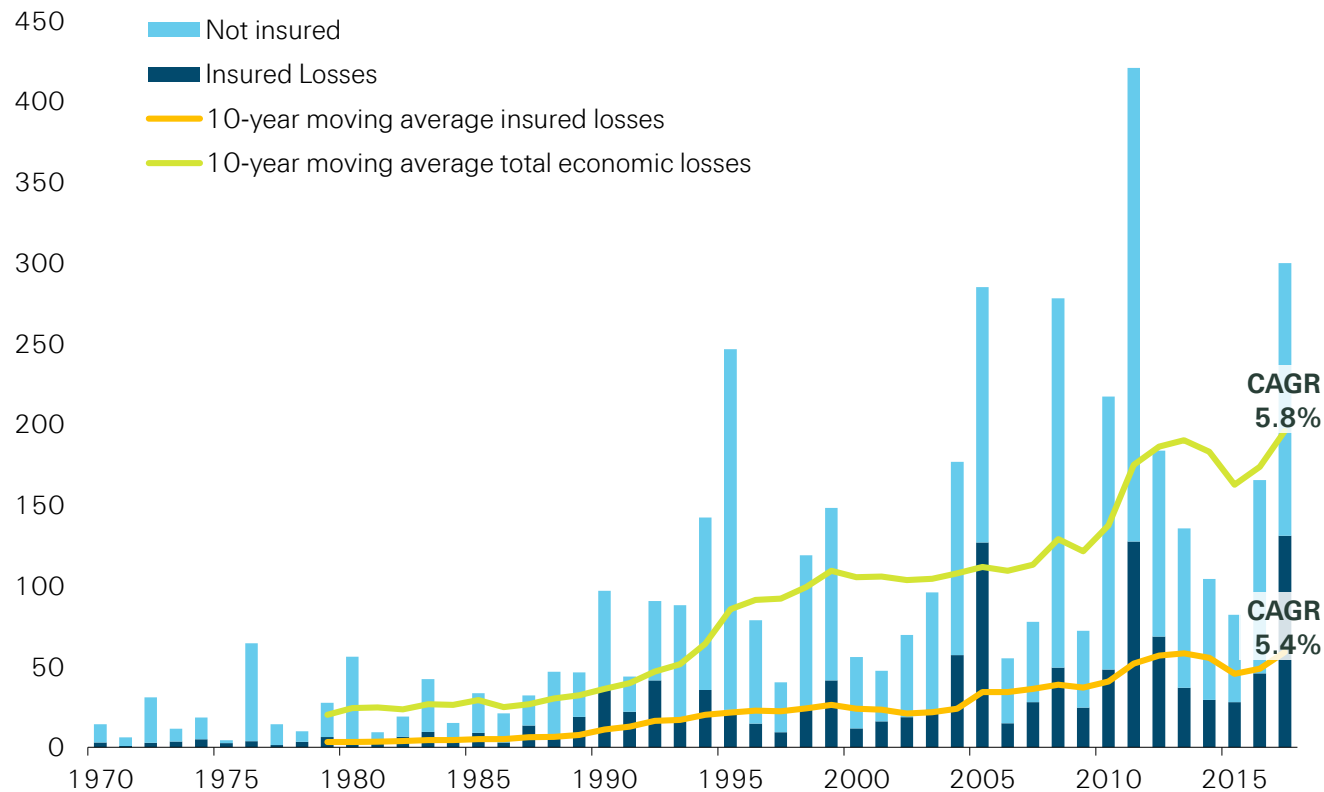
=

Total economic losses – Insured losses

Protection Gap in numbers

Natural catastrophe losses 1970 – 2017

(in USD billion)



Americas

- **5 in 6** US homeowners **do not have** flood insurance
- In Mexico **69%** of vehicles without motor insurance

EMEA

- **France: 50%** of agricultural crop production not insured
- **Europe:** Since 1970 **only 4%** of Earthquake losses of over USD 130 billion were insured

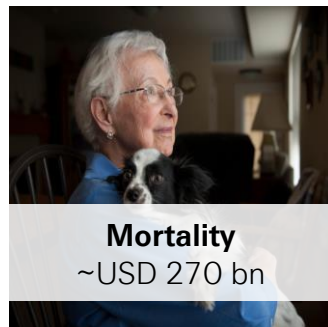
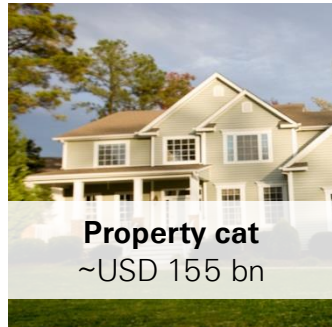
ASIA

- China: Out-of-pocket **expenditure** for **healthcare hit USD 193 billion**, 3 times insurance coverage
- Southeast Asia: **97%** of typhoon losses in the Philippines **not insured**

Opportunity?

Lines of business*

(premium equivalents)



Premium potential
> USD 800 billion and growing

Opportunity in Latin America?

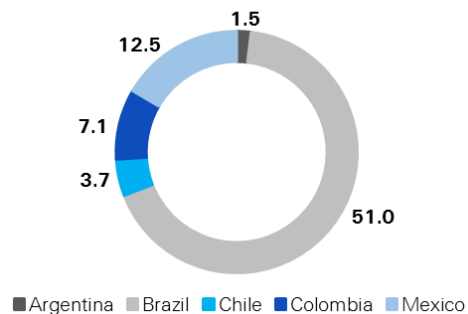


Premium Potential
> 100 bn

Motor in Latin America

Motor protection gap of USD 76 billion

Motor protection gap (USD billion)

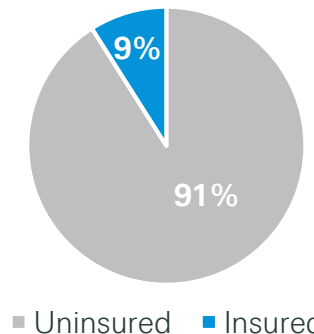


2.8x the current market in these countries

In Brazil **33%** of vehicles without any type of motor insurance

Agriculture Protection Gap in Brazil

Insured area vs. planted area (in 2016)



Estimated annual loss of around **BRL 11 billion** due to extreme events

Why does it matter..

..strengthening global economic resilience which can be directly influenced by re/-insurance

Kenya Livestock

The government of Kenya is **paying** about **USD 2 million to 12,000** pastoral **households across six counties**.

The programme uses satellites to monitor vegetation available to livestock, and triggers financial **assistance for feed, veterinary medicines** and **water trucks** when drought gets so bad that animal lives are at risk.

Hurricanes

In 2017, the Caribbean Catastrophe Risk Insurance Facility **provided the payout to the countries affected by Hurricanes Maria and Irma within 14 days**.

This innovative insurance product has been offered to all 16 CCRIF members.

Wildfires

Canadian insurance companies **sent emergency crews into evacuation sites to provide immediate relief**.

The industry deployed funds fast to cover the immediate additional living expenses.

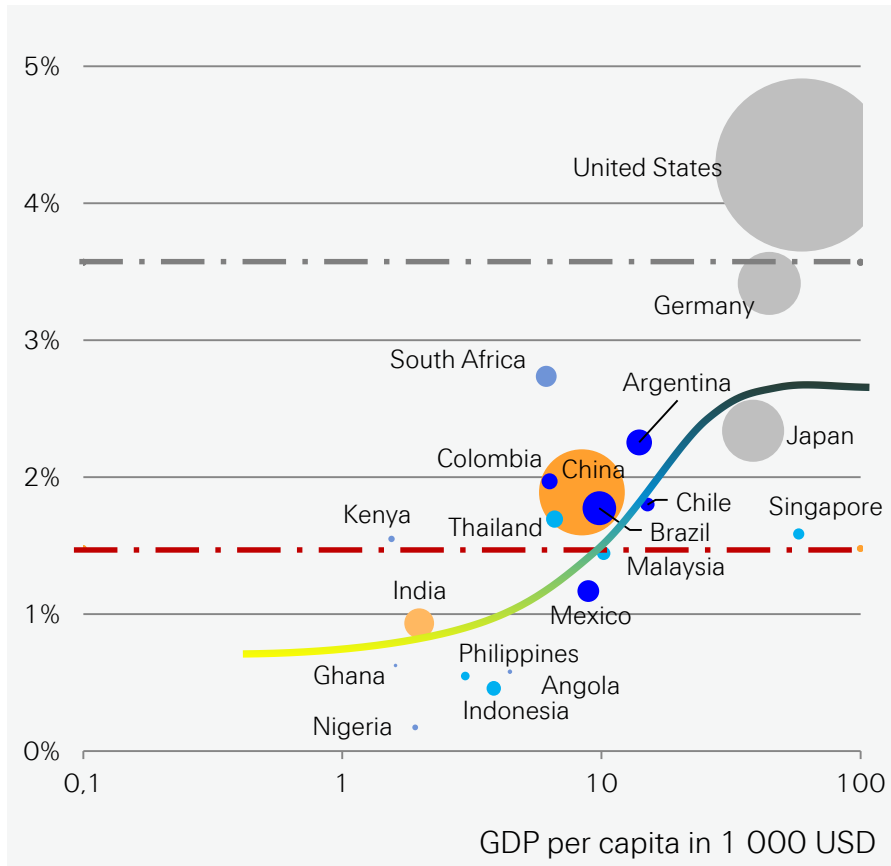
Mexico Earthquake

Improved seismic building codes introduced after the 1985 Michoacán earthquake showed their worth. The extent of damage in Mexico City following the 2017 earthquake was much less than in 1985.

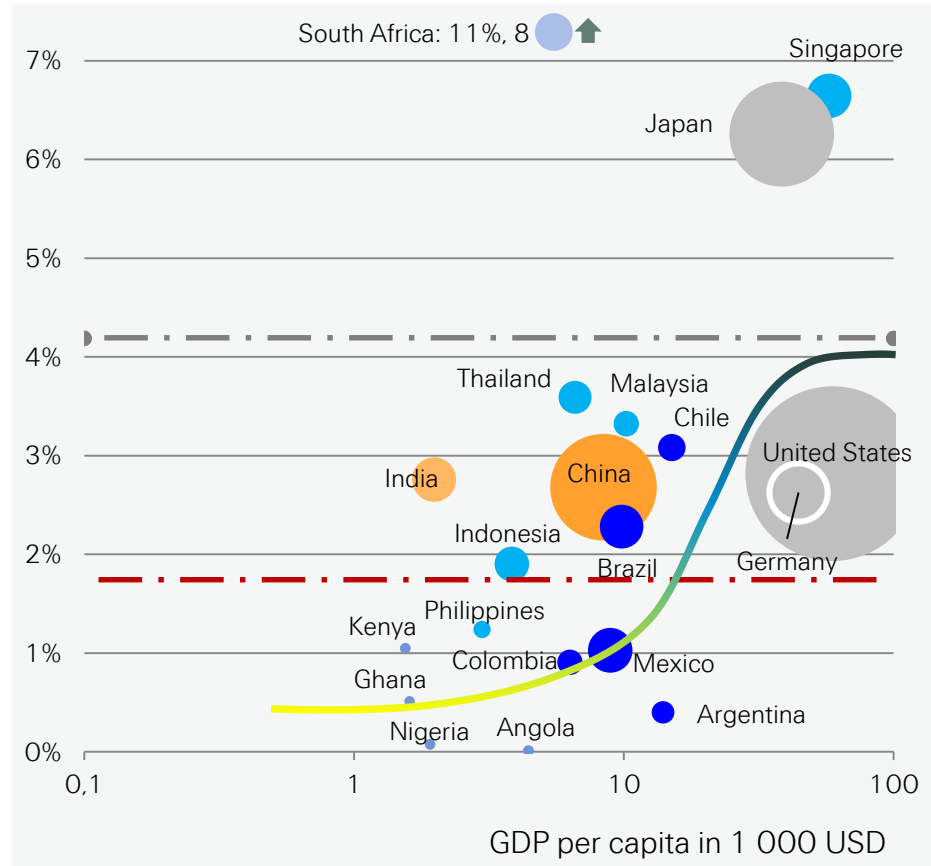
Around 2,000 buildings sustained moderate to severe damage, 80 buildings were completely destroyed.

Insurance Penetration/Development

Non-life insurance penetration
(premiums as a % of GDP)



Life insurance penetration
(premiums as a % of GDP)



— · — Advanced markets average
- · - Emerging markets average

● China / India
● South-East Asia

● Latin America
● Sub-Saharan Africa

● Developed country
○ Bubble size: direct insurance market size within Swiss Re's scope

Mind the Gap!

Innovative solutions, new skills, joint efforts and building awareness are key to address basic human needs



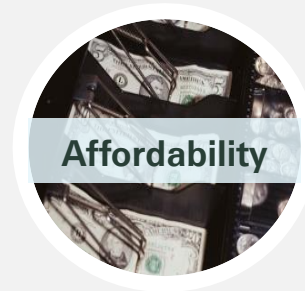
Access

- **Easier access** to Insurance Products
- Improved **Customer Journey**
- **Technology** enabled
- **Worldwide**



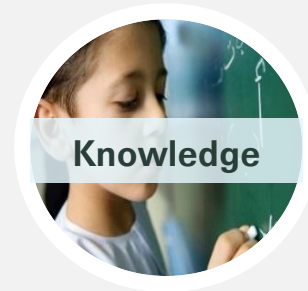
Product Design

- **Customisation**
- **Combined** with other services
- **Connected** (car sensors, wearables)



Affordability

- More **accurately** priced risks



Knowledge

- Better **transparency**
- Additional **insights**

Apathy

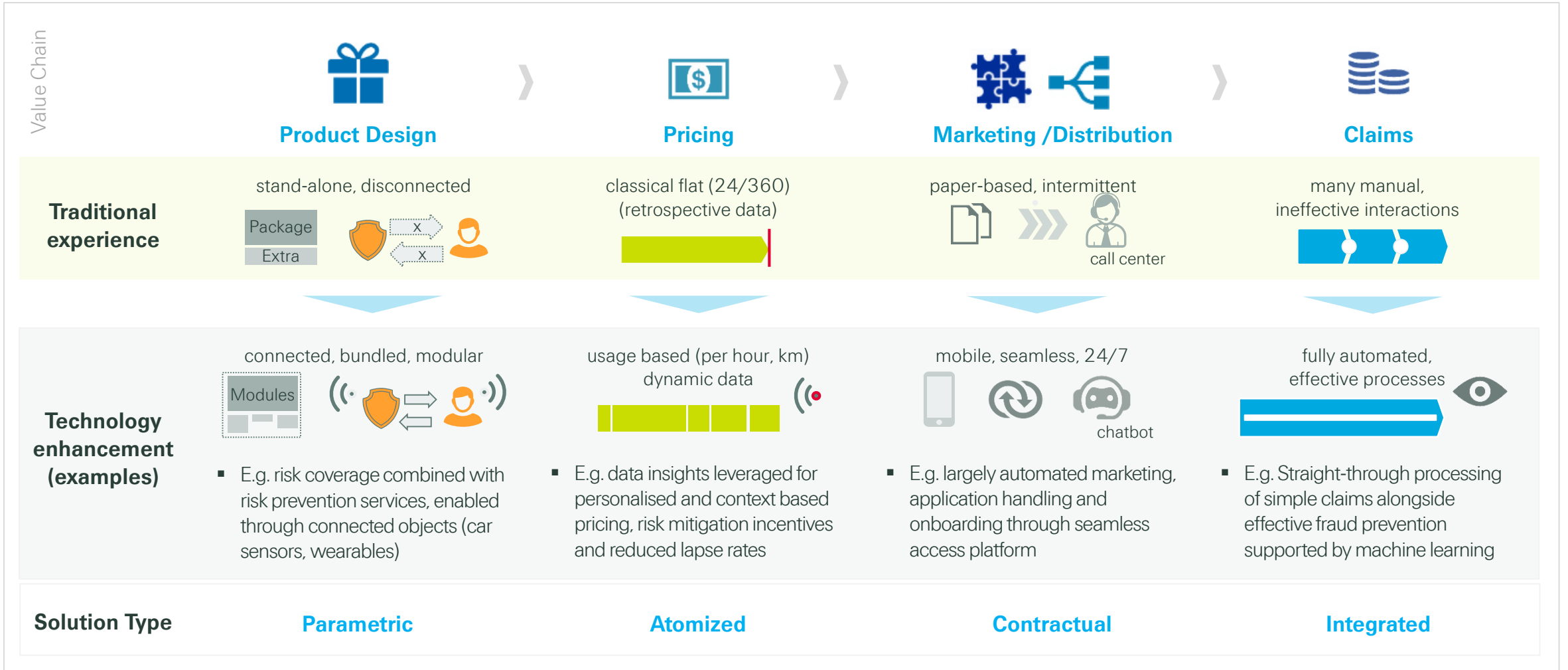
Agenda

**Global Macro
Risks/Trends**




**Global
Protection
Gap**

**How
technology
can support**

Closing the Gap – Technology enabled



Closing the Gap – Examples

What	Global Life	US Flood	Mexico Drought	China Earthquake
Impact	Magnum Mobile is used at point-of-sale on 150k+ tablets and mobile apps in China	Partnership with homeowners insurer expands flood insurance protection in US	Swift economic relief to farmers to purchase additional feed	Partnership with government, insurer and reinsurer
Example	Empowers our clients to own their customer journeys and provides them with meaningful data insights	Insurers have the opportunity to capitalize on a growing risk pool by using fully probabilistic flood model including both storm surge & inland	Pay out triggered as soon as data indicates biomass has dropped below threshold . Measured by Vegetation Index using infrared and red spectral measurements from satellite data	Near-immediate pay outs triggered in the event of a disaster , the government receives the funds and has the flexibility to choose how to best deploy
Who	Easier access and customer journey, better product design  Individual	Innovative product design , easier access and greater affordability  Individual/Business	Faster pay out , better access and affordability  Individual/Business	Access , faster pay out  Country resilience



Thank you



Legal notice

©2019 Swiss Re. All rights reserved. You are not permitted to create any modifications or derivative works of this presentation or to use it for commercial or other public purposes without the prior written permission of Swiss Re.

The information and opinions contained in the presentation are provided as at the date of the presentation and are subject to change without notice. Although the information used was taken from reliable sources, Swiss Re does not accept any responsibility for the accuracy or comprehensiveness of the details given. All liability for the accuracy and completeness thereof or for any damage or loss resulting from the use of the information contained in this presentation is expressly excluded. Under no circumstances shall Swiss Re or its Group companies be liable for any financial or consequential loss relating to this presentation.