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

Source: Swiss Re Institute
Focus Area
Urbanisation

Urbanisation rate in %

- 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.

Source: Swiss Re Institute

*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
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

Source: Swiss Re Institute
*Median Age in 2010
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

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**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 filled** largely by local and state governments naming opioid manufacturers

Source: WHO
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)

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)

Acts of mass violence/terrorist actions and/or large scale criminal activity
• Las Vegas shooting
• Cyber crime and cyber war attacks (Globally)

Increase of suits in US by states Attorneys General, counties and cities that aggregate casualty claims
• Suit against 3M over perfluorochemicals

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

New latent claims
• Brain injury/chronic traumatic encephalopathy (CTE) against NFL/Schools/Helmet Manufacturers
Agenda

1. Global Macro Risks/Trends
2. Global Protection Gap
3. 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)

- **Property cat** ~USD 155 bn
- **Other P&C** ~USD ?? bn
- **Property non-cat** ~USD 80 bn
- **Agriculture** ~USD 30 bn
- **Morbidity** ~USD ?? bn
- **Mortality** ~USD 270 bn

Emerging Risks ~USD ?? bn

Premium potential
> USD 800 billion and growing

*Source: Swiss Re Institute
*Protection Gap for Property Cat, Property Non-Cat, Agro and Mortality only estimated at ~500bn vs Premium insured of ~900bn
Opportunity in Latin America?

Motor in Latin America
Motor protection gap of USD 76 billion

Agriculture Protection Gap in Brazil
Insured area vs. planted area (in 2016)

2.8x the current market in these countries
In Brazil 33% of vehicles without any type of motor insurance

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)

GDP per capita in 1,000 USD

Source: Swiss Re Institute
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

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Apathy
Agenda

Global Macro Risks/Trends

Global Protection Gap

How technology can support
Closing the Gap – Technology enabled

Value Chain

<table>
<thead>
<tr>
<th>Traditional experience</th>
<th>Technology enhancement (examples)</th>
<th>Solution Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Design</td>
<td>▪ E.g. risk coverage combined with risk prevention services, enabled through connected objects (car sensors, wearables)</td>
<td>Parametric</td>
</tr>
<tr>
<td>Pricing</td>
<td>▪ E.g. data insights leveraged for personalised and context based pricing, risk mitigation incentives and reduced lapse rates</td>
<td>Atomized</td>
</tr>
<tr>
<td>Marketing /Distribution</td>
<td>▪ E.g. largely automated marketing, application handling and onboarding through seamless access platform</td>
<td>Contractual</td>
</tr>
<tr>
<td>Claims</td>
<td>▪ E.g. Straight-through processing of simple claims alongside effective fraud prevention supported by machine learning</td>
<td>Integrated</td>
</tr>
</tbody>
</table>

- stand-alone, disconnected
- classical flat (24/360) (retrospective data)
- paper-based, intermittent
- many manual, ineffective interactions
- connected, bundled, modular
- usage based (per hour, km) dynamic data
- mobile, seamless, 24/7
- fully automated, effective processes

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## Closing the Gap – Examples

<table>
<thead>
<tr>
<th>Example</th>
<th>Impact</th>
<th>Global Life</th>
<th>US Flood</th>
<th>Mexico Drought</th>
<th>China Earthquake</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Magnum Mobile is used at point-of-sale on 150k+ tablets and mobile apps in China</td>
<td>Partnership with homeowners insurer expands flood insurance protection in US</td>
<td>Swift economic relief to farmers to purchase additional feed</td>
<td>Partnership with government, insurer and reinsurer</td>
</tr>
<tr>
<td>Who</td>
<td></td>
<td>Individual</td>
<td>Individual/Business</td>
<td>Individual/Business</td>
<td>Access, faster pay out</td>
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<td></td>
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<td>Country resilience</td>
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<td></td>
<td>Easier access and customer journey, better product design</td>
<td>Innovative product design, easier access and greater affordability</td>
<td>Faster pay out, better access and affordability</td>
<td></td>
</tr>
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