

Virtual Media Roundtable

sigma 02/2020:

**Natural catastrophes in times of
economic accumulation and
climate change**

Swiss Re, 7 April 2020



Climate change continues to be an essential element in Swiss Re's enhanced Group Sustainability Strategy and so we developed a Climate Action Plan

3 key objectives



Leading solutions on physical climate risk



Leading solutions for low-carbon transition opportunities



Partnering to develop scalable solutions to mitigate and adapt to climate change

Examples

- Insurance for peak perils (eg tropical cyclones)
- Insurance coverage for secondary perils (eg extreme precipitation, flood, droughts)

- Sustainable energy and infrastructure solutions (eg renewables such as wind and solar power)
- Sustainable transportation

- Partnering with cedents/insurers, corporate clients and public sector clients
- Solutions supporting the transition to a low-carbon energy systems

Key 2019 achievements

USD 10 bn

Total amount of climate protection offered to (sub-)sovereigns

>4 000

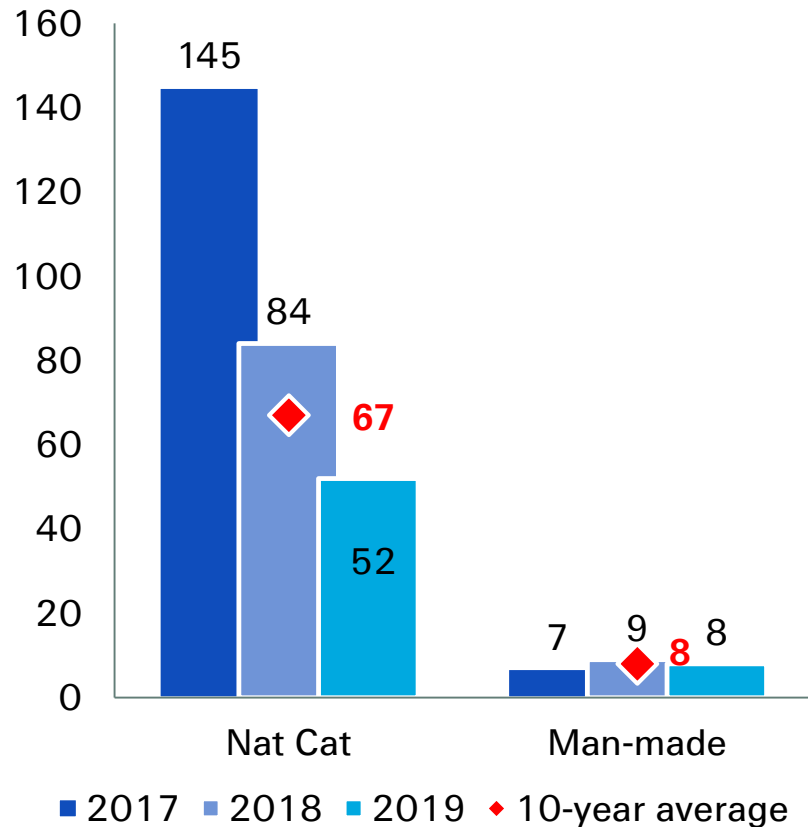
Wind and solar farms insured

>300

Dialogue engagements with clients on thermal coal

In a nutshell: catastrophe insured losses in 2019

Cat Insured losses in USD billion (2019 prices)



Source: Swiss Re Institute

- **Lower cat losses** than 2017/18 due to the absence of severe hurricanes in the US
- **Key events:**
 - Severe **typhoons in Japan**: Hagibis and Faxai were the biggest losses of the year
 - Long-lived **wildfires** in eastern **Australia** (secondary peril*): the largest in area burnt on records due to record high temperatures and precipitation deficit
- **Key drivers:**
 - **Economic development/urbanisation**: While human activities (GDP, urbanisation) are the key drivers for rising insured losses
 - **Climate change (as amplifier)**: Earth's warming trend continued. **2019 was the 2nd warmest year on record**

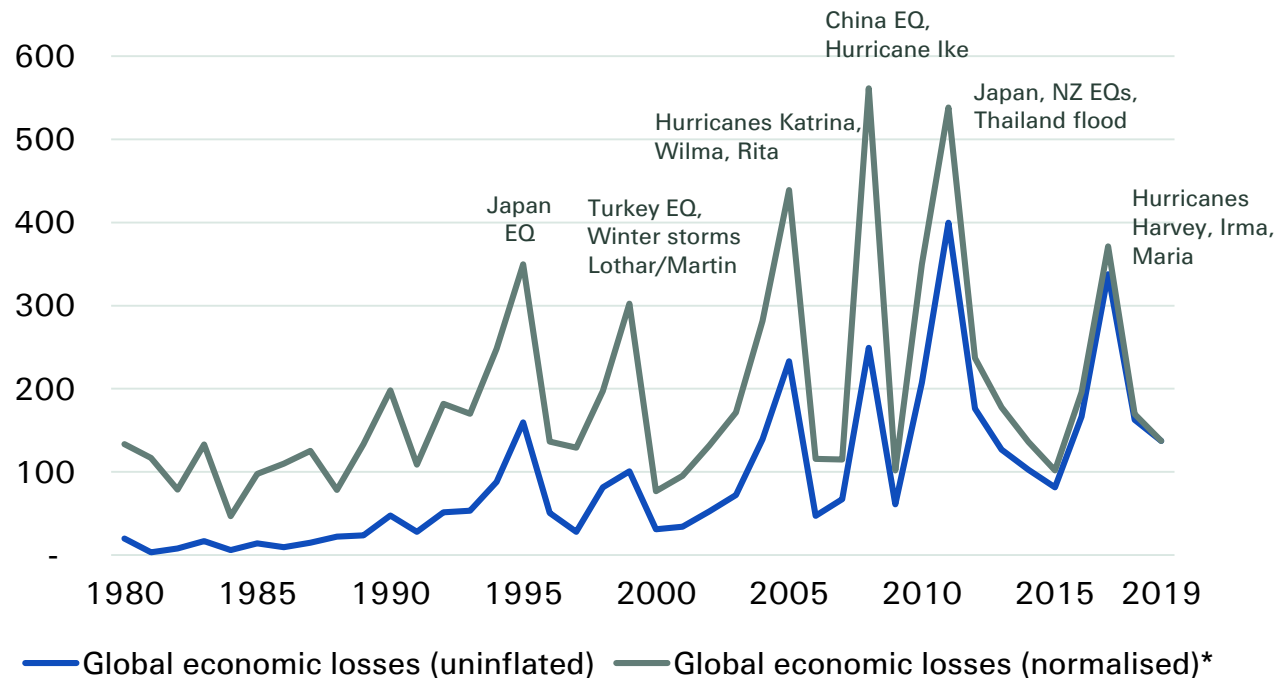
*Secondary perils refer to high-frequency, low-impact NatCat events (e.g. thunderstorms, floods, droughts, wildfires) as opposed to low-frequency, high-impact ones (hurricanes, earthquakes, winter storms in Europe)

**Research from Prof. Adam Sobel, Columbia University

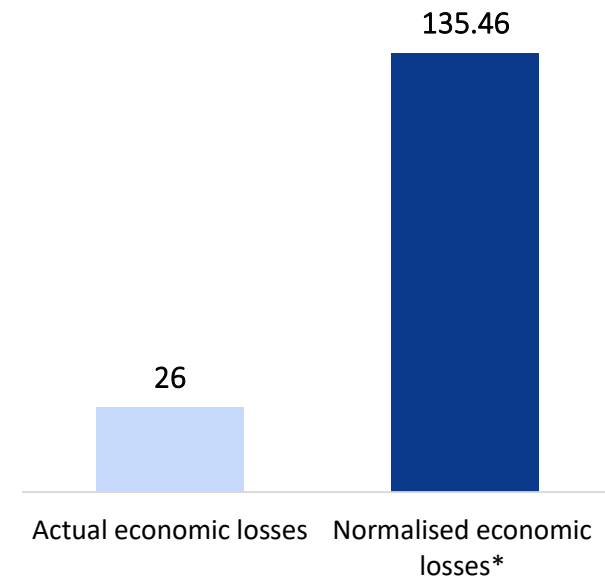
GDP normalisation at today's level: economic development matters a lot

- Normalizing the global NatCat losses with 2019 GDP level shows that economic developments is a key driver of losses
- Climate change acts as an amplifier. But it will play an increasing role in the next decades
- More research is needed to understand the contribution of all socio-economic factors to the losses' rising trends

Global economic losses from disaster events (USD bn)



What if 1992 Hurricane Andrew occurred today?



Note: *normalised by 2019 GDP (country/state's real GDP + US inflation); poor data quality prior to 1990
Source: Swiss Re Institute

The key drivers of rising weather-related losses

- A Urbanisation/economic development: the most important drivers** for rising NatCat economic/insured losses due to increased asset values and concentration of risk
- B Insurance penetration: rising coverage contributes to more insurance payouts**, which also indicates **more important role of the re/insurance industry** to help improve the resilience for society, household and society
- C Climate change is an amplifier, as evident from secondary perils* loss experience.** There are also **more signs of direct links with primary perils****

	A Urbanisation & economic growth	B Insurance penetration	C Climate change as an amplifier
Primary perils* (e.g. earthquakes, hurricanes, winter storms in Europe)	●	●	●
Secondary perils* (e.g. floods, droughts, wildfires, thunderstorms etc)	●	●	●

● Strong evidence ● Mixed evidence

Note: * Primary perils refer to low-frequency, high-impact ones (e.g. hurricanes, earthquakes, winter storms in Europe). Secondary perils refer to high-frequency, low-impact NatCat events (e.g. thunderstorms, floods, droughts, wildfires). **Research from Prof. Adam Sobel, Columbia University

Source: Swiss Re Institute

Taking stock on 2019 weather disasters: Urban development, mixed mitigation and climate change create a quickly changing risk landscape

Wildfires in Australia

Insured losses USD
1.5bn

-> Climate Change accelerating and amplifying secondary perils

Typhoons in Japan

Insured losses
USD 15bn

-> Torrential rain in an urban environment is hitting hard

Cyclone Idai in Mozambique

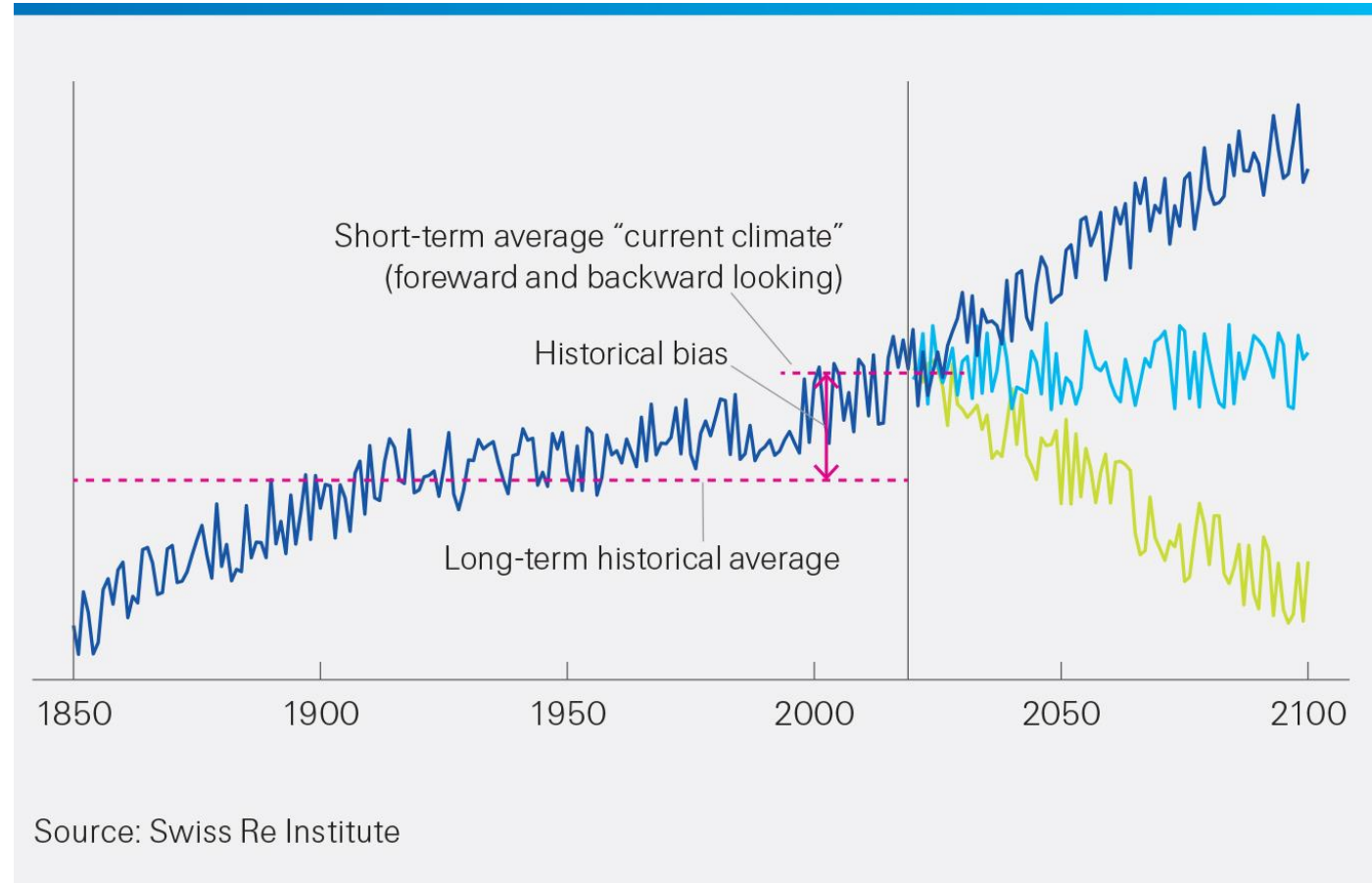
Insured losses
USD 0.15bn >USD
3bn economic losses

-> Human mitigation or its lack a key driver for disaster risk

Weather risk remains insurable, but the past is not a good measure for the future.

Years 2017, 2018 and 2019 challenged the industry paradigm

Historical modelling bias

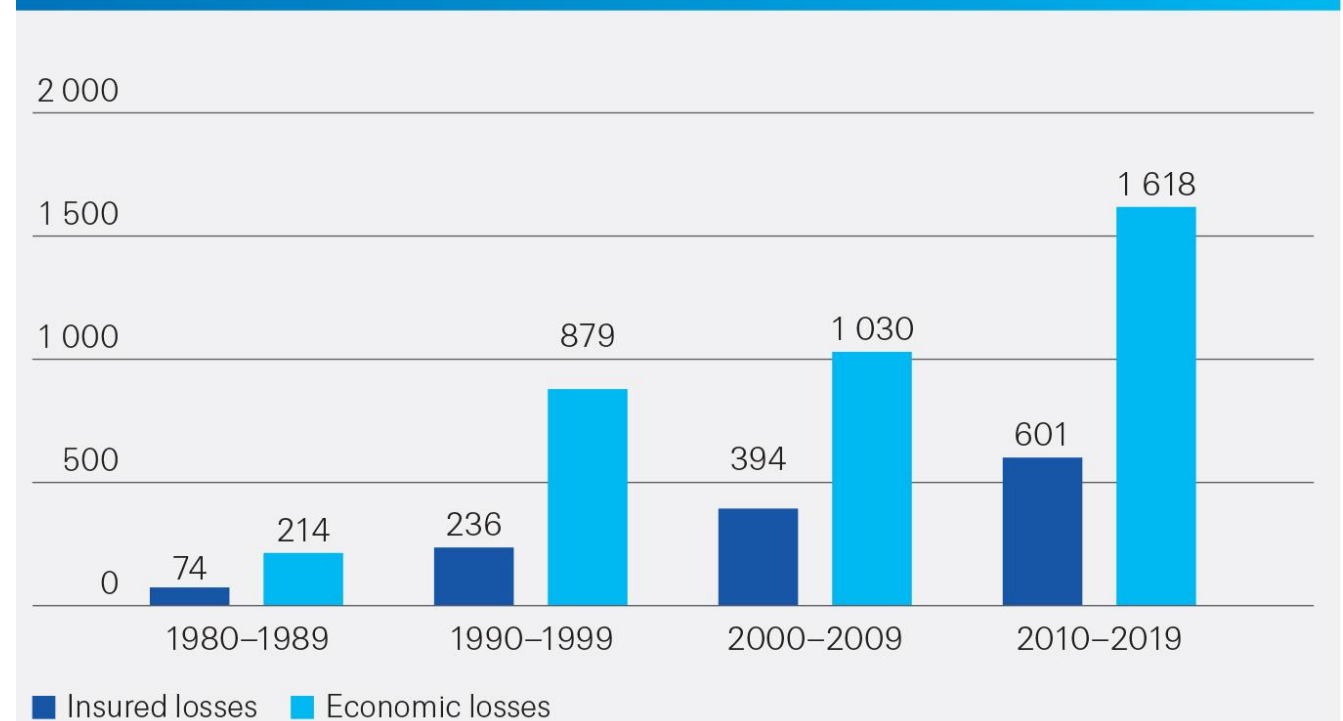


Why does it matter?

Upholding insurability in times of change is demanding

but needed to maintain current levels of financial resilience AND further narrow the protection gap

Losses from weather-related catastrophes, 1980-2019, in USD bn, 2019 prices



Source: Swiss Re Institute

Any questions?

Thank you!

Contact us

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Backup: Modelling climate change comes with many uncertainties



Driver for change



Effects/perils



Time horizon



Insurance impact,
focus on property cat

Global Warming Response

DIRECT

INDIRECT

High confidence			
Increasing mean temperature	sea-level rise/storm surge Reduced permafrost, landslides	Next decades	Low-medium property insurance impact: no sudden/unprecedented events
Increasing temperature variability	heat waves, droughts, water scarcity, wildfires	Next decades	Frequency perils: Impact on insurance earnings , rather than capital.
Increased moisture capacity in atmosphere	More frequent extreme rainfall and river floods	Medium-severe impact likely by mid/end of century	
Confidence barrier			
Impact on climate cycles	More frequent severe tropical cyclones , change of frequency/severity of winter storms	Severe impact likely by mid/end of century	Limited change of insurance impact as of today . Mid/Long-term: possible significant impact on re/insurance covers.
Increased convection	Increased hail & tornado risk		
Reduced confidence			



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