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Munich Re's View on Climate Change

Barclays Investor Call

1 July 2025

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Munich RE

Munich Re (Group)

More than 50 years of natural disaster and climate change expertise

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1880
Foundation

€5.7bn
Consolidated Result 2024*

44,000
Staff
as at 12/2024

€60.8bn
Insurance Revenue 2024*

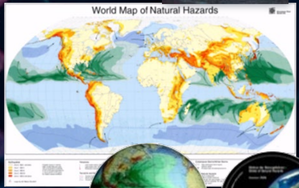
Reinsurance: Munich RE, mednet, new/re, Munich RE Munich Re Specialty, American Modern, HSB

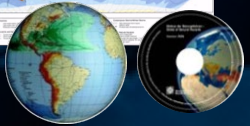
Primary Insurance: ERGO, DKV, nexible, ERGO Reiseversicherung

Asset Management: MEAG

Munich Re Climate Journey

- **1973** Munich Re's first "global warming alert"
- **1974** Foundation Geo Risks Research Department
- **1978** First physical map released "World map of natural hazards"
- **2000** First CD-ROM "World map of natural hazards"
- **2007** Climate Change defined as strategic topic for Munich Re
- **2011** NATHAN: first web-based client analysis tool
- **2020** Climate Risk Score (SaaS) Munich Re Ambition 2025
- **2022** Climate Expected Loss (CEL)





* Based on 02/2025 financial results / investors call (https://www.munichre.com/en/company/media-relations/media-information-and-corporate-news/media-information/2025/media-release-2025-02-26.html)

Globally: 2024 counts as 3rd costliest year for the insurance industry

US$ 100 bn insured loss years on the rise

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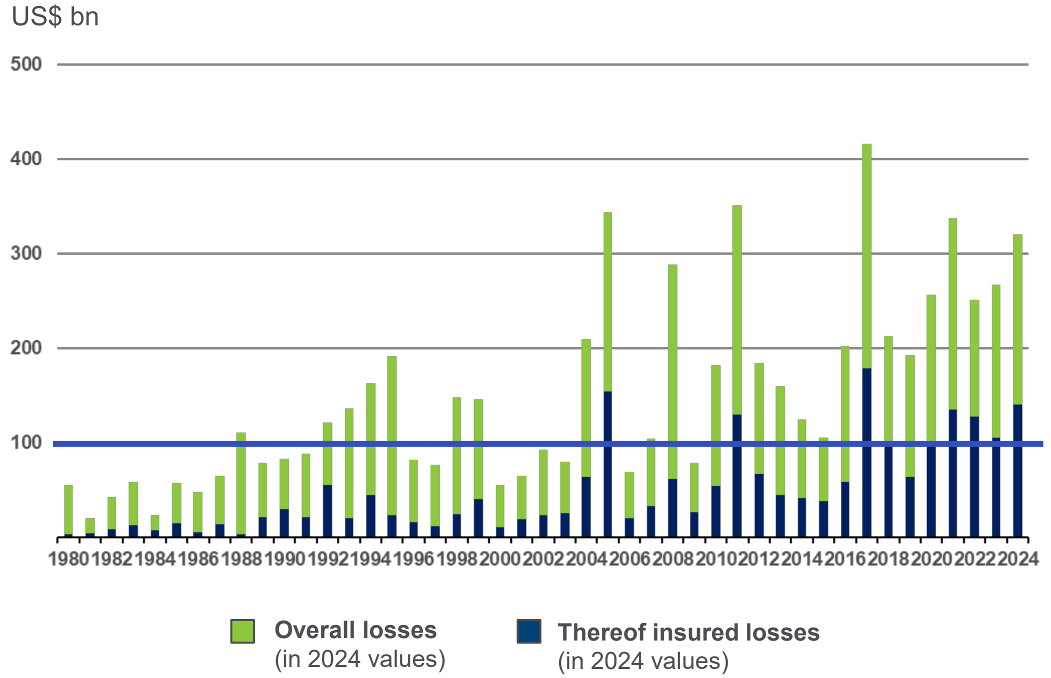
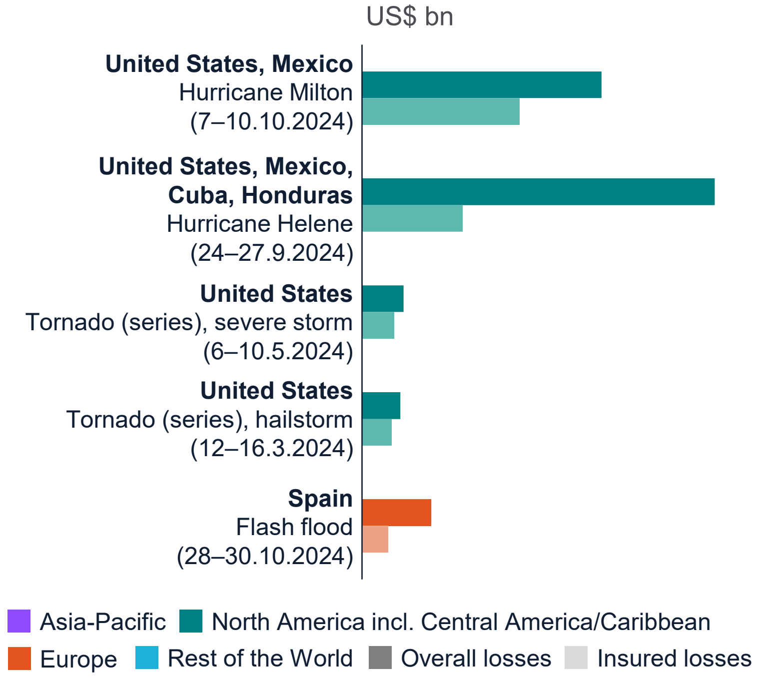
Development of natural disaster losses since 1980 and significant events 2024 by insured losses and region





Source: Münchener Rückversicherungs-Gesellschaft, NatCatSERVICE, January 2025

Globally: losses from peak and non-peak perils reaching similar levels

Comparison of peak and non-peak losses **worldwide** 1980-2024

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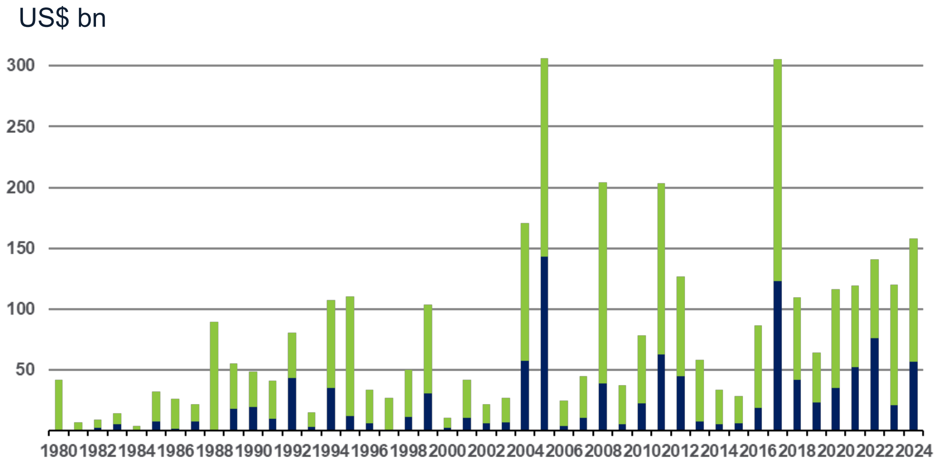
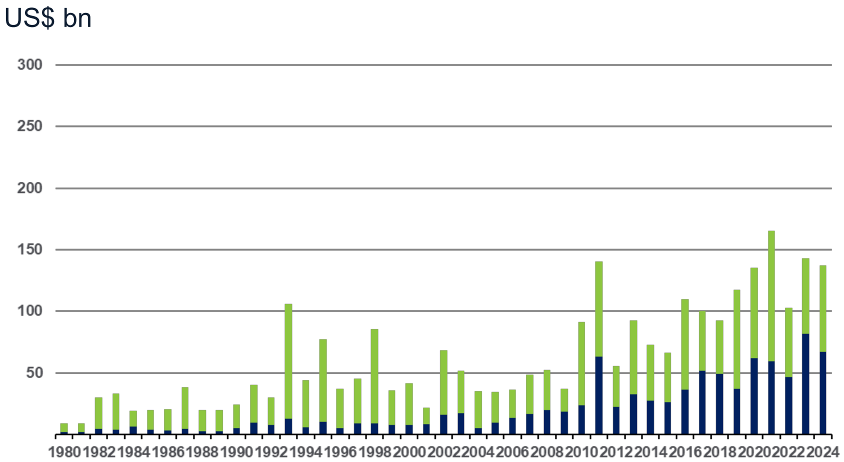
Peak perils

tropical cyclones, earthquakes, European winter storms



Non-peak perils

severe convective storms, floods, wildfires



Overall losses
(in 2024 values)

Thereof insured losses
(in 2024 values)

Inflation adjusted via country-specific consumer price index and consideration of exchange rate fluctuations between local currency and US$.

Climate change = Risk of change

Small increase in average temperature – large increase in probability of extremes

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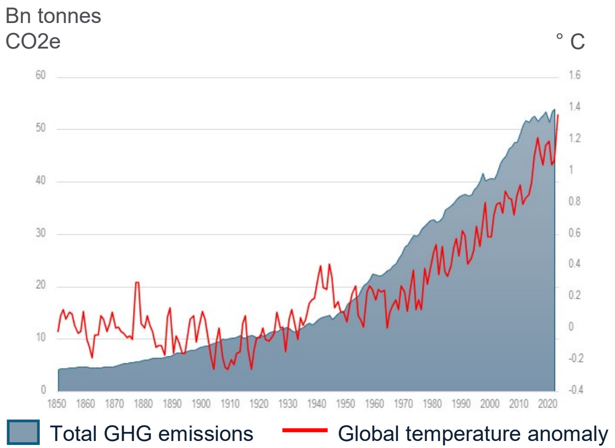
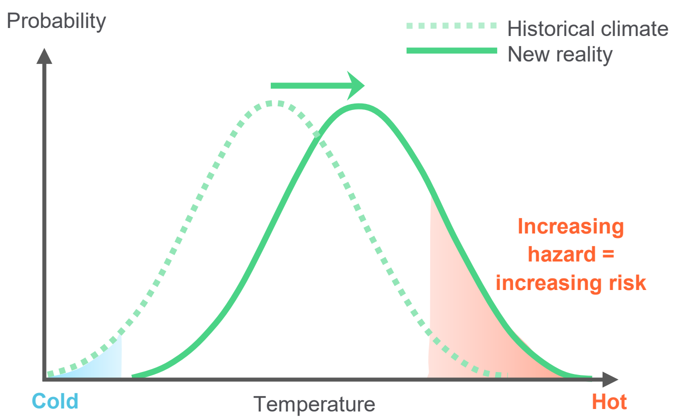
Rising global emissions and global temperature increase



Changing probability distributions

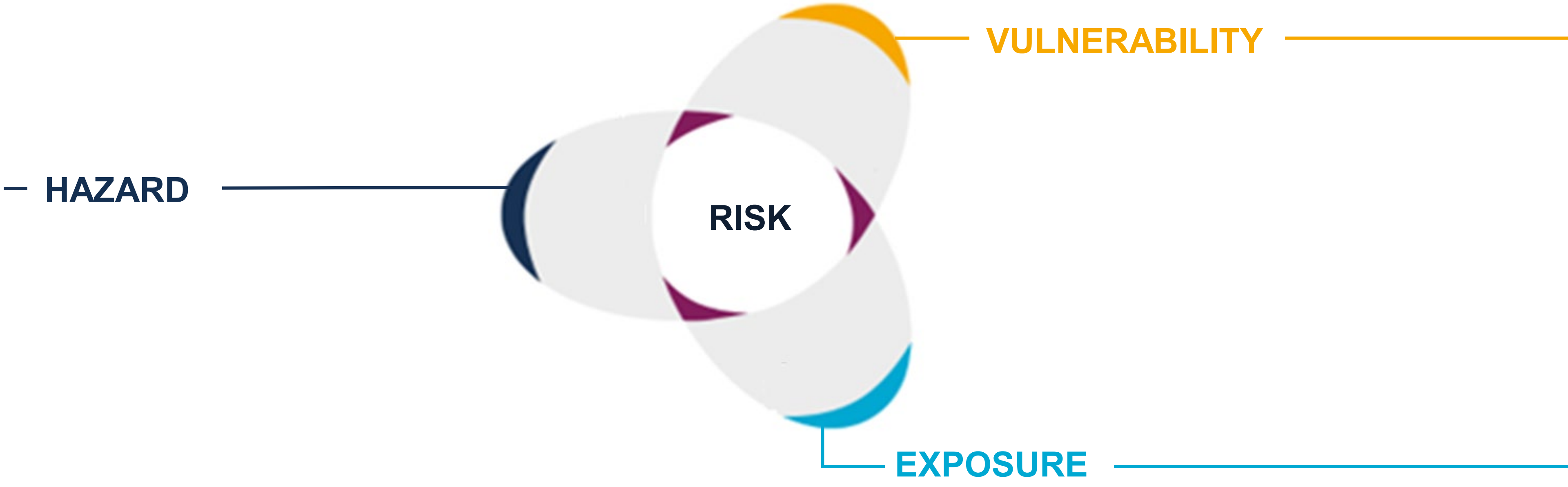


Reasons why even a small increase in mean temperatures has major consequences:

- Warmer air can absorb more moisture (~7% per 1°C warming) leading to higher precipitation amounts
- More energy in the climate system atmosphere + oceans
- Changed dynamics in the atmosphere (large weather systems, high/low pressure areas)

Source(s): Munich Re, based on National Centers for Environmental Information NOAA, Our World in Data (as at October 2024), IPCC

Increase in natural disaster losses globally
The components of the risk function



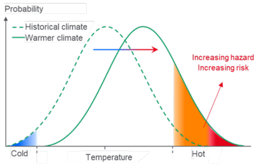
Increase in natural disaster losses globally

Driven by the severity of extreme weather and socio-economic factors

HAZARD

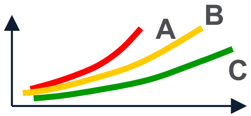
Characteristics of extreme weather, e.g. precipitation amount, hail size, flood height, wind speed, heat, drought, water shortage ...

→ Climate Change

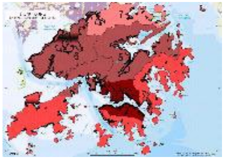


VULNERABILITY

- Building regulations & building standards
- Land use & compensation areas
- Protective infrastructure as forests, wetlands, dams
- Warning systems and emergency services



EXPOSURE



- Value of real estate, equipment inventory & vehicle fleet
- Disruption to supply chains and business operations

More intense, more frequent, more likely…

Attribution studies show impact of climate change becoming more evident in Europe

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Autumn and winter storm rainfall in the UK and Ireland (2023/24): **20% heavier** by human-caused climate change

Europe floods (2021): for such events, Climate Change **increased likelihood by a factor between 1.2 and 9**

Heavy rain Italy (2023): occurrence in this region **not more likely at this time of the year due to** climate change

Record heat in UK in 2022: **10 times more likely to happen**

Heavy one day rainfall as happened in Valencia (2024) are **12% more intense and twice as likely in** today's climate

Source: World Weather Attribution (WWA)

Optimism Bias: people are concerned about NatCat/climate risks, in particular if they have already been affected

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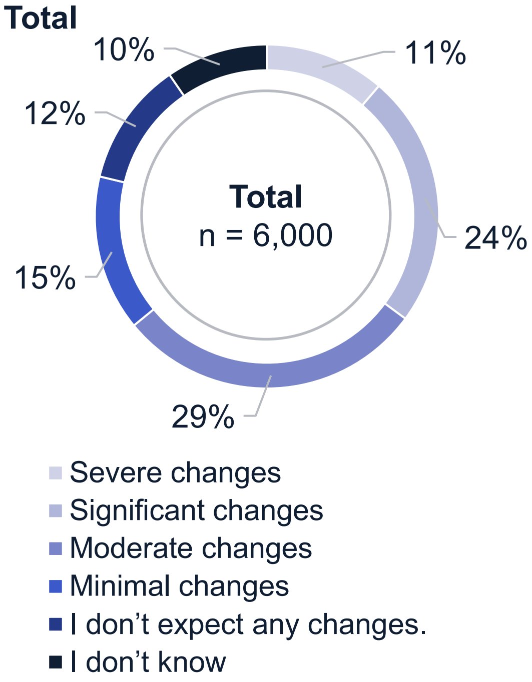
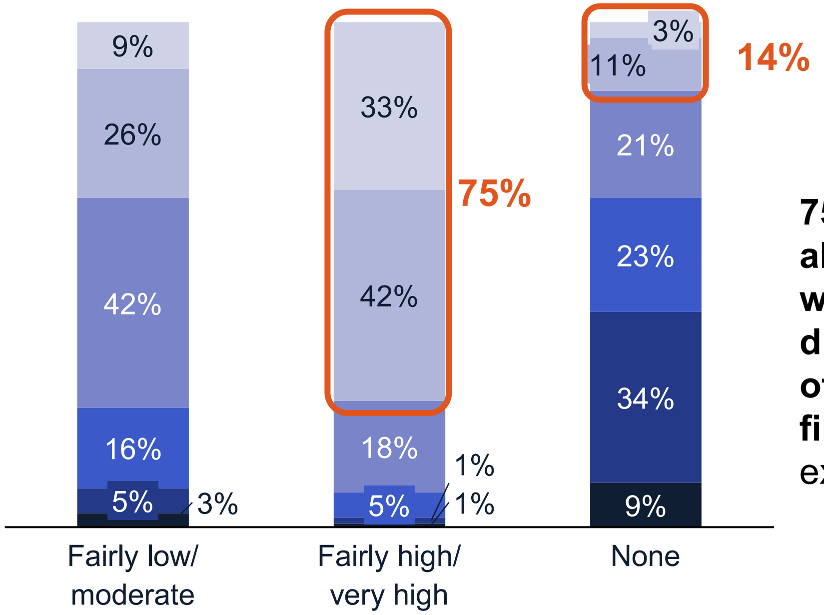
Financial impact on business: to what extent do you foresee changes to weather disasters which could negatively impact your company/organisation?





75% of the companies already affected by weather-related disasters and only **14% of the** companies **not yet financially affected** expect significant impacts.

Source(s): Munich Re Climate Risk Preparedness Survey 2023/24

What is needed from the insurance industry?

Strong role to play as risk taker and partner to enable the low-carbon transition

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Manage
Strengthening resilience with risk transfer solutions and supporting prevention measures

Measure
Expanding state-of-the-art modelling

Support
Improving bankability of climate technologies with innovative de-risking solutions

Understand
Identifying risks, sharing data and knowledge

Invest
Allocating capital to renewable projects and ESG-related investments, issuing green bonds

Role of Insurance Industry

Today
Fossil

Transition

Transformation

Future
Renewables
Fossil
CCS

A collective effort is needed to reduce pressure on insurance rates

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The challenge:

Availability

Affordability

Risks remain insurable at a price adequate to the risk

Hazard

- **Loss Trends:** The rising frequency of high-loss events is driving pressure on the insurance market, with sustained hard market environment.
- **Invest in climate change mitigation:** Reducing greenhouse gas emissions to slow down climate change

Exposure

- **Promote Risk Awareness:** Educate property owners about the risks associated with their location
- **Implement better zoning regulations:** Land use regulations can prevent new construction in areas highly susceptible to natural disasters
- **Collaboration is key:** Public private partnerships can help manage exposure by sharing responsibilities between insurers, governments and insured

Vulnerability

- **Enhance preparedness:** governments and communities to invest in better emergency responses
- **Improve Building Codes:** Enforce stricter building regulations to ensure structures and infrastructure are more resilient to natural disasters
- **Incentivize loss prevention measures:** Encourage policyholders to implement protective measures

Thank you!
Your NatCat & Climate expert within Munich Re

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Disclaimer

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Conclusion

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$100bn insured losses p.a.

Economic and insured losses from natural catastrophes are increasing globally, so are losses from non-peak perils

Protection gap in Europe still high

Between 1980-2024 Europe had to cope with ~$968 bn natural catastrophe losses from which only 33% or ~$321 bn were insured.

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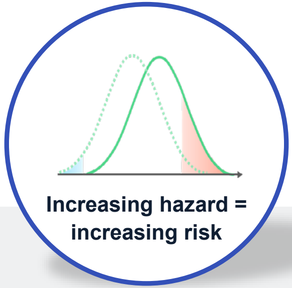
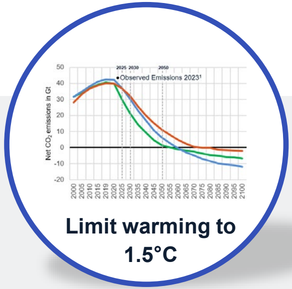
Climate Change = Risk of Change

With ongoing global warming, the probability of extreme events increases, making natural perils more frequent and/or more intense



Significant uncertainties with climate scenarios

The pathway to limit global warming to well below 1.5°C is difficult to predict due to various uncertainties (scientific, economical, political, etc.)



Availability and Insurability

A collective effort is needed to reduce pressure on insurance rates