



THE FUNDAMENTAL ROLE OF INSURANCE: Enabling Economic Growth and Social Development

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The fundamental role of insurance: Enabling Economic Growth and Social Development

- 1 The role of insurance within the global economy
- 2 Expertise in large, complex and unexpected risk -
e.g. nat cat risk modeling
- 3 Climate change and the changing risk landscape –
evidence from research and loss statistic

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1 The role of insurance within the global economy

➤ Fundamental mechanism of insurance

- Financial compensation of fortuitous misfortune
- Managed transnational solidarity group (safety net)
- Pooling risk and spreading risk over time

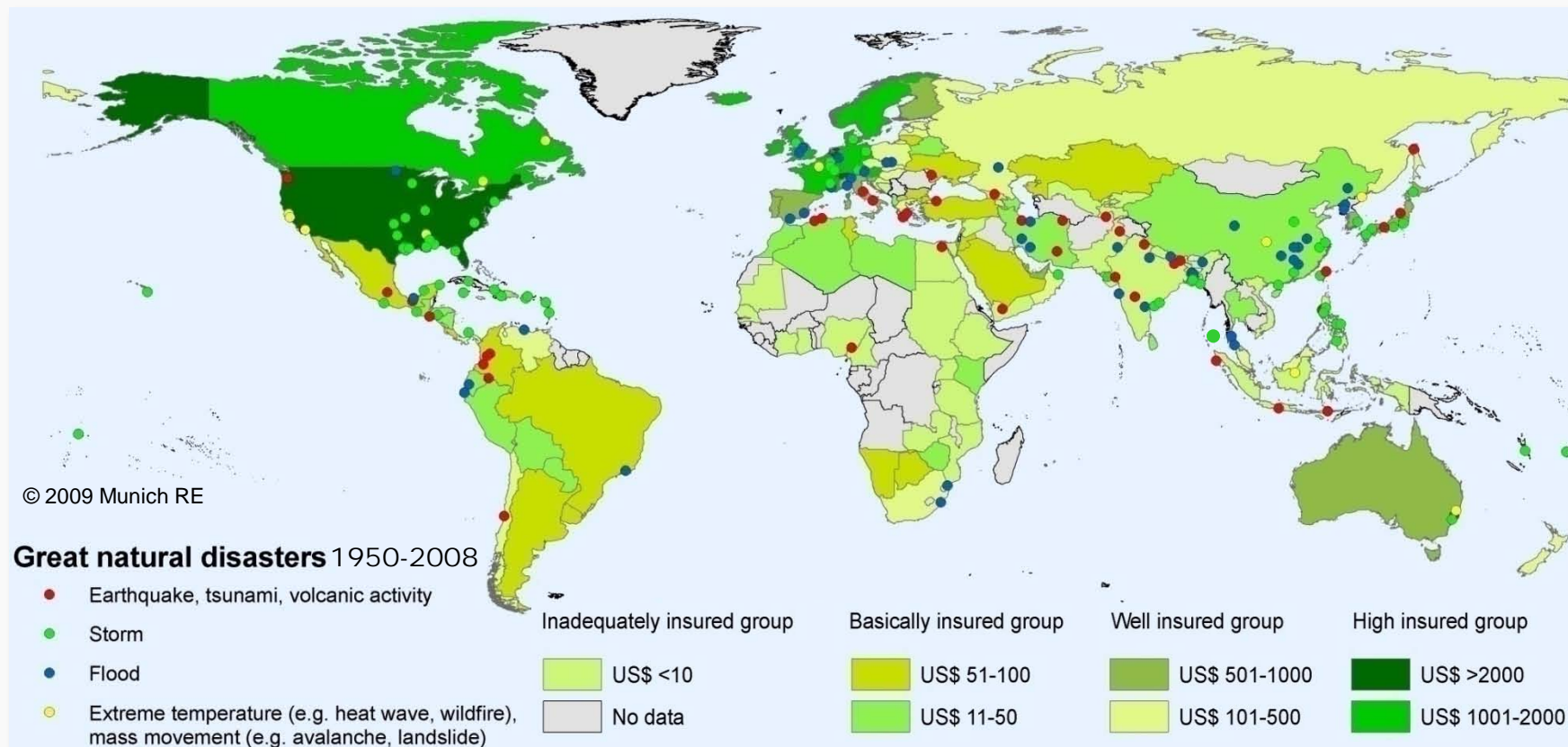
➤ Key data

- US\$ 4.3trillion premiums in 2008 (~7% of global GDP)

	Industrialized markets (88% of global premiums)	Emerging markets
Insurance penetration (premiums a share of GDP)	9% on average	2.7% on average
Insurance density (premiums per capita)	US\$ 3,650 per capita	US\$ 90 per capita

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Non-life insurance density and great natural disasters



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➤ A foothold of the global economy

- Increased resilience against financial surges after disasters (Annually US\$ 1 trillion paid out for non-life claims)
- Without insurance:
 - business activities too fraught with the risk of (uninsured) losses and evolving financial hardships
 - entrepreneurial spirits dampened / business activities inhibited
 - less forward planning because of higher uncertainty
 - less economic resilience → higher unemployment
- Through insurance:
 - speeding up the transfer of new technologies to the market place, e.g. renewable energies (e.g. cover of exploration risks for geothermal drilling projects, lack / excess of wind, ...)
 - sound internalisation of risk costs by businesses and governments
 - many existing products and services preconditioned (liability insurance)
 - creditworthiness & access to loans / equity capital enhanced.

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➤ **Promoting an efficient and sound use of capital (markets)**

- Insurers hold 11% of worldwide assets (as of 2007).
- Insurers adopt long-term view (particularly life insurers)
 - opposite to fickle investment capital looking for quick gains
 - ideal partners for private businesses & governments in terms of medium to long-term finance.
- Allowing for more efficient capital markets through accumulating small premiums for use in lending and investment.
- Turning unnecessary precautionary savings (“dormant” capital) into the circles of investment and consumption (free capital).

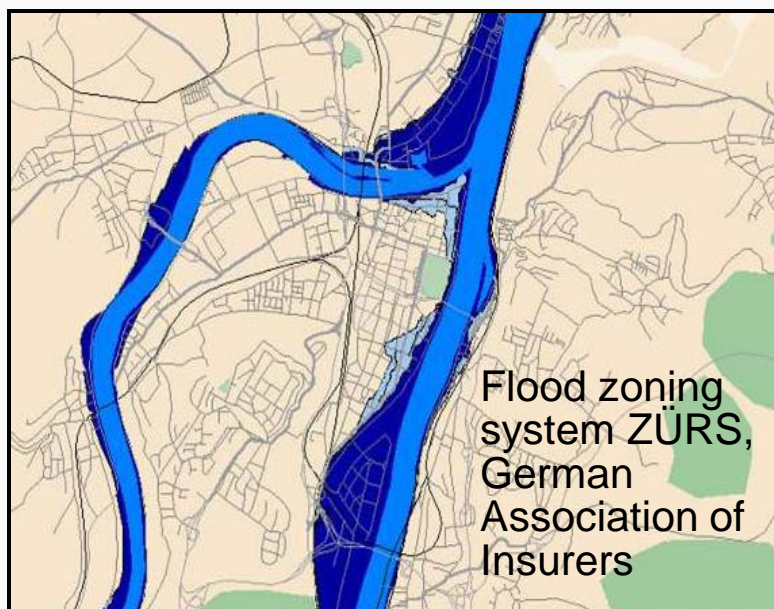
➤ **Providing risk transparency throughout the society**

- Transparency of risks via risk measurement and risk adequate premiums
 - incentive for sound actions, use of the best available technology & prevention measures
 - reduced loss loads for the society.
- Consultancy improving safety standards, product quality and control of losses (e.g. fire prevention).

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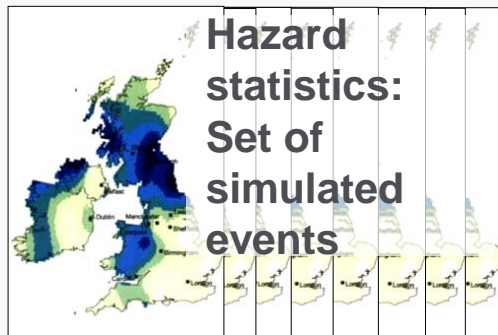
2 Expertise in large, complex and unexpected risk - e.g. nat cat risk modeling



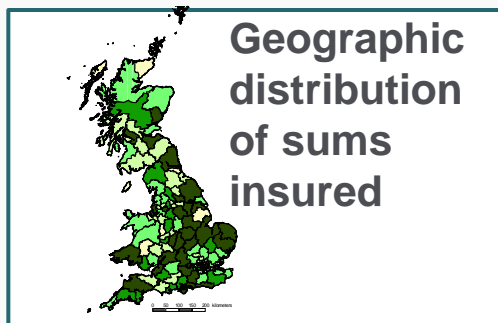
- Premiums reflecting the individual flood risk adequately are increasingly based on flood zoning models, presupposing much of flood-related expertise.
- State of Bavaria, Germany, 2009: Flood insurers' expertise and coverage has to be used instead of compensation by authorities after flood events.
- United Kingdom: After heavy flood events (2000, 2007) the Association of British Insurers negotiated much higher government expenditure on flood defences & improved urban drainage and a recognition as stakeholder in such decisions.

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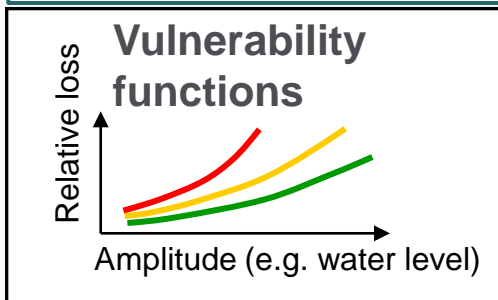
2 Expertise in large, complex and unexpected risk - e.g. nat cat risk modeling (cont.)



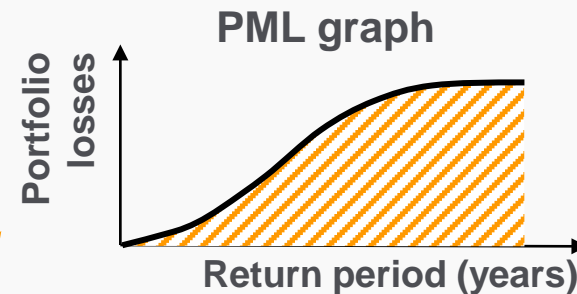
Hazard distribution (science)



Individual exposure



Industry's loss experience including effects such as:
large loss amplification,
claims inflation,
demand surge.



Entails:

- Annual loss expectancy
- loss volatility
- higher return periods, e.g. one-in-250 year loss
→ risk adequate pricing
→ risk based capital

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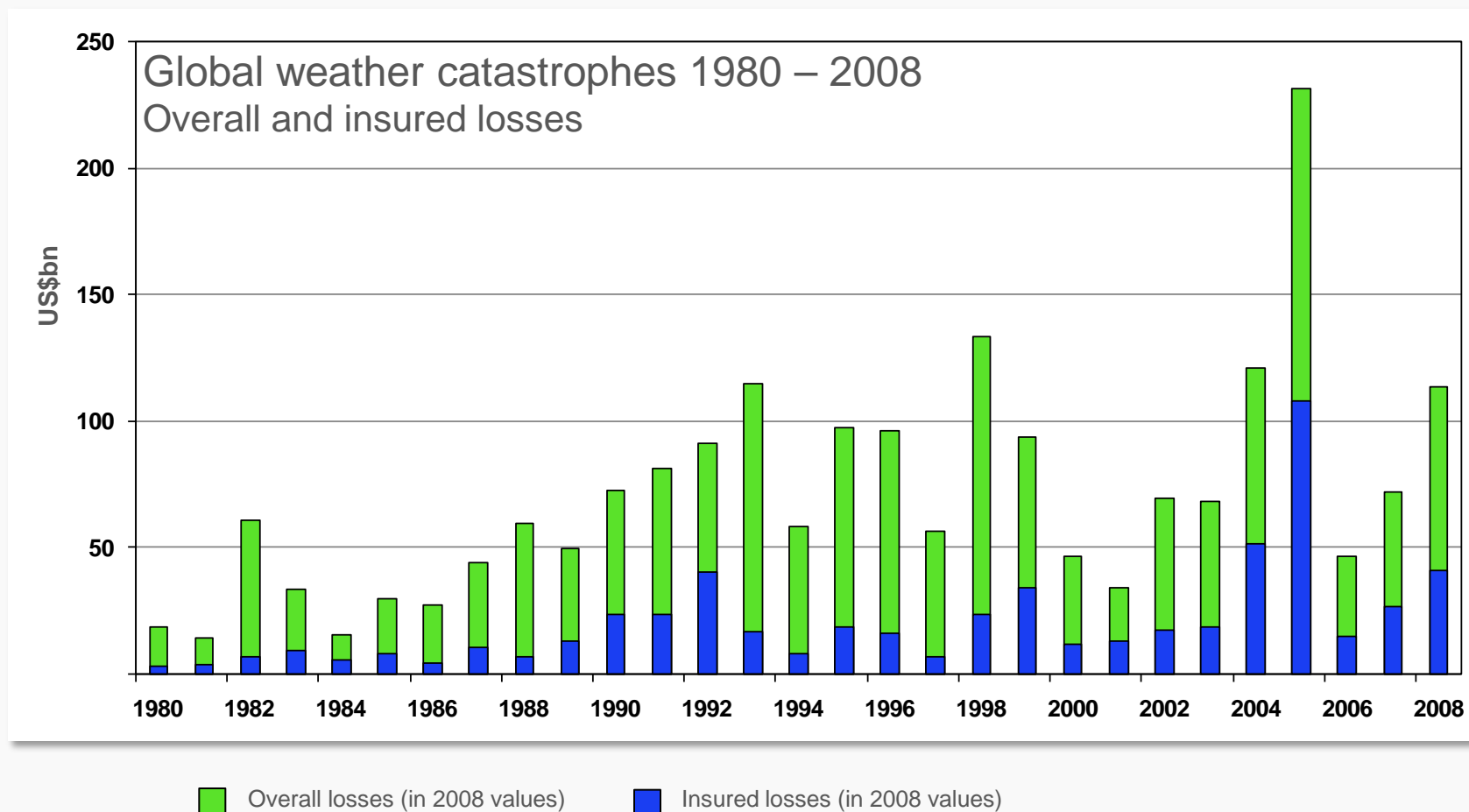
3 Climate change and the changing risk landscape – evidence from research and loss statistic

➤ Regionalized risk perspectives under current climate change

- Longer heat spells, droughts, conditions supportive to wild fires, water & food shortages in subtropical regions (e.g. Mediterranean, southwestern USA & Central America, Australia, southern Africa, East Asia).
- More heavy precipitation events, greater contribution from very wet days to annual precipitation amount in monsoonal and moderate climates .
- Increase in strongest tropical cyclones in various basins.
- Accelerated shrinking of summer minimum Arctic Sea ice (~7% per decade currently), accelerated ice flow of Greenland and West Antarctic outlet glaciers, thawing of permafrost, melting of inland glaciers.
- Regional changes in thunderstorm activity, e.g. increases in Switzerland and southwestern Germany.

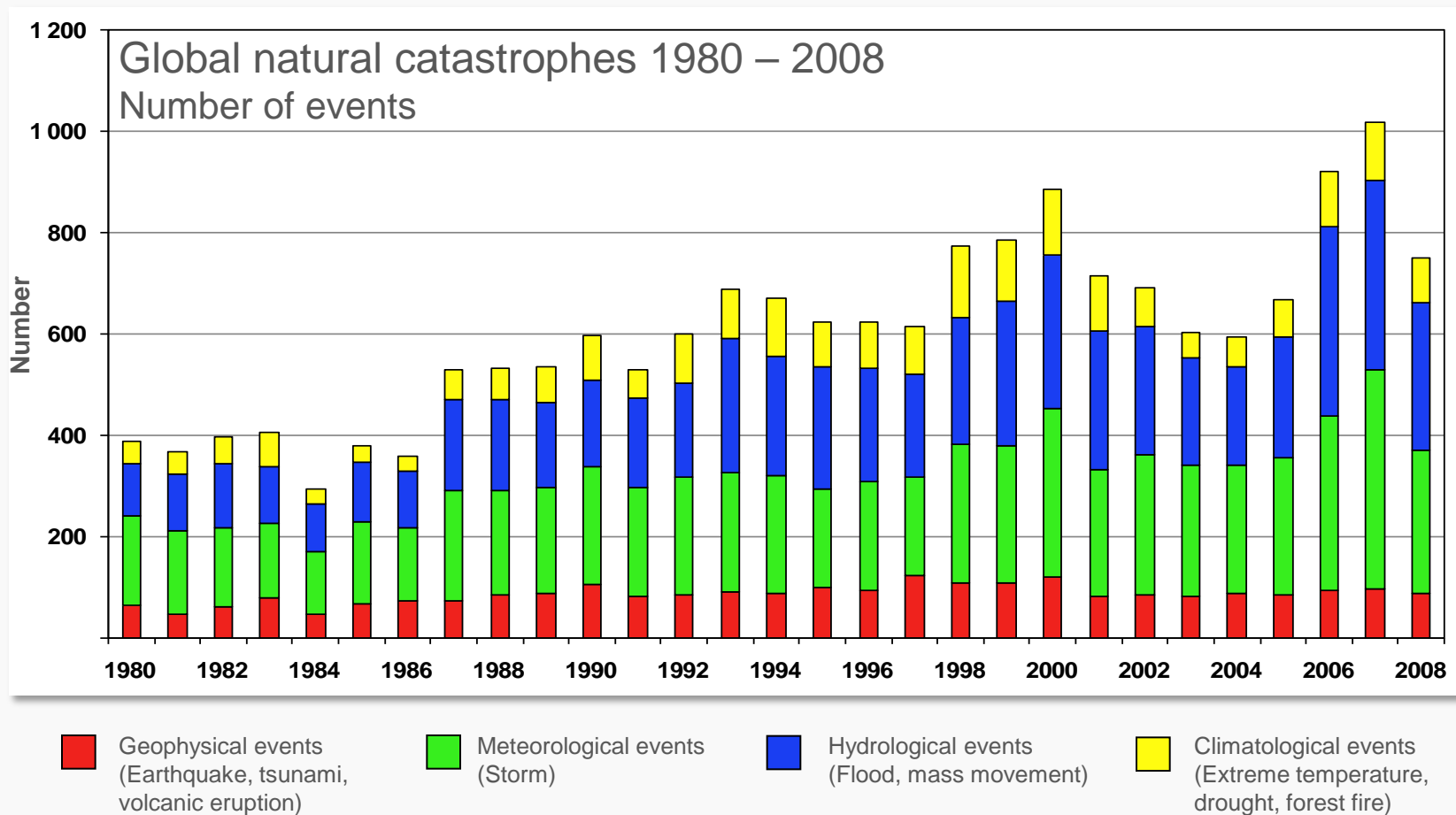
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➤ What do loss statistics tell us?



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➤ Trends visible at regional levels

- Looking at specific regions and specific hazards allow for more control of loss drivers than in worldwide analysis.
- Example: **Hail** in southwest Germany / Switzerland.
- Observed increase in
 - hail day frequency (quadrupled in southwest Germany since 1986)
 - annual loss amount from hail strikes hitting buildings (more than quadrupled in Switzerland since 1980).
- Concurrent changes in physical hail parameters:
 - Thunderstorm cells (track lengths ≥ 100 km) over Switzerland almost doubled since 1983 (Radar observation).
 - Strong increase in annual count of days with values of potential convective energy associated with thunderstorm activity since the 1980s in southwest Germany.



THANK YOU VERY MUCH
FOR YOUR ATTENTION

Eberhard Faust, Munich Re