

Swiss Re



# Innovation & partnership

Innovation & partnership in a changing risk landscape

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Global Actuarial Conference , Mumbai, 22<sup>nd</sup> February 2011

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OF THE WORLD

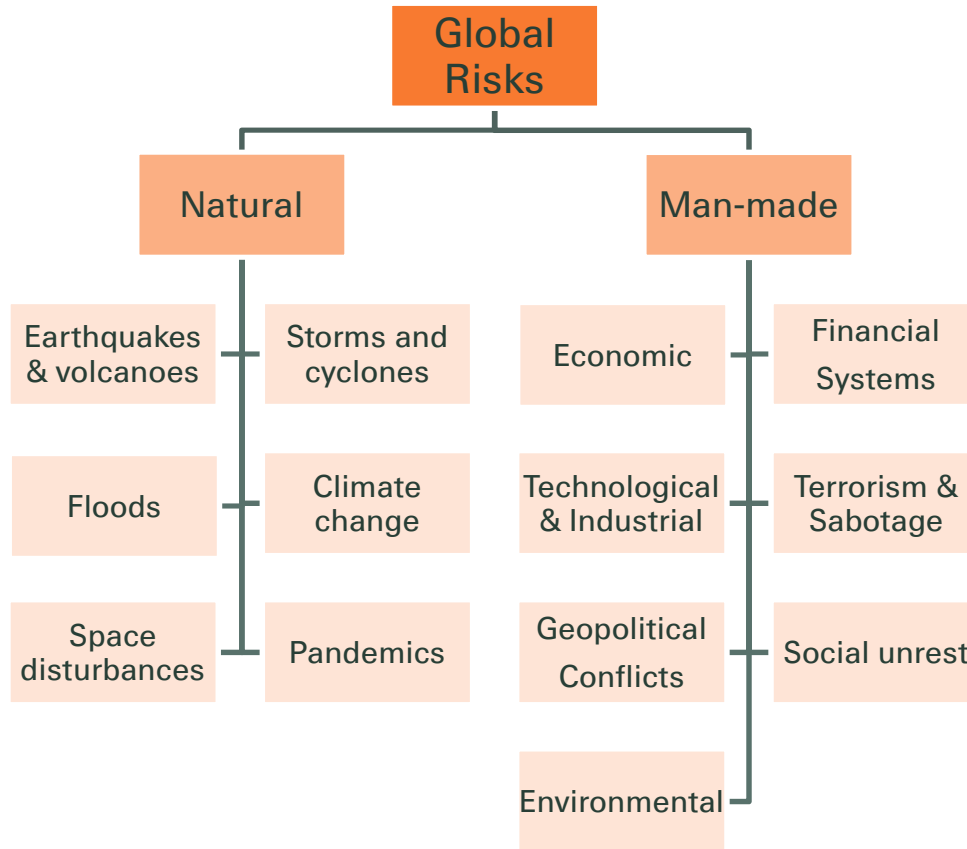
Global Risks  
2011  
Sixth Edition

An Initiative of the Risk Response Network

World Economic Forum  
in collaboration with:  
Marsh & McLennan Companies  
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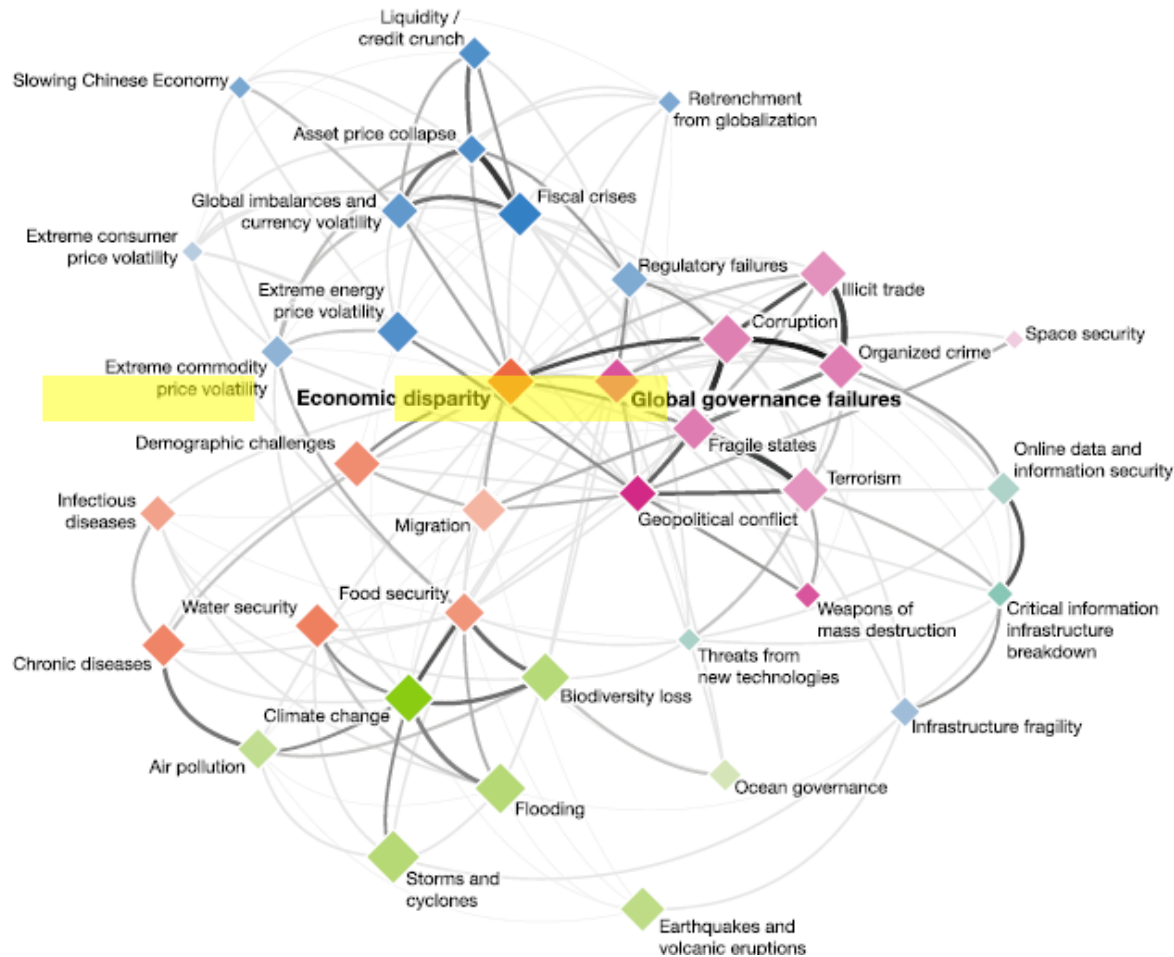
World Economic Forum  
January 2011

# Potential threats to wealth and well being of the world

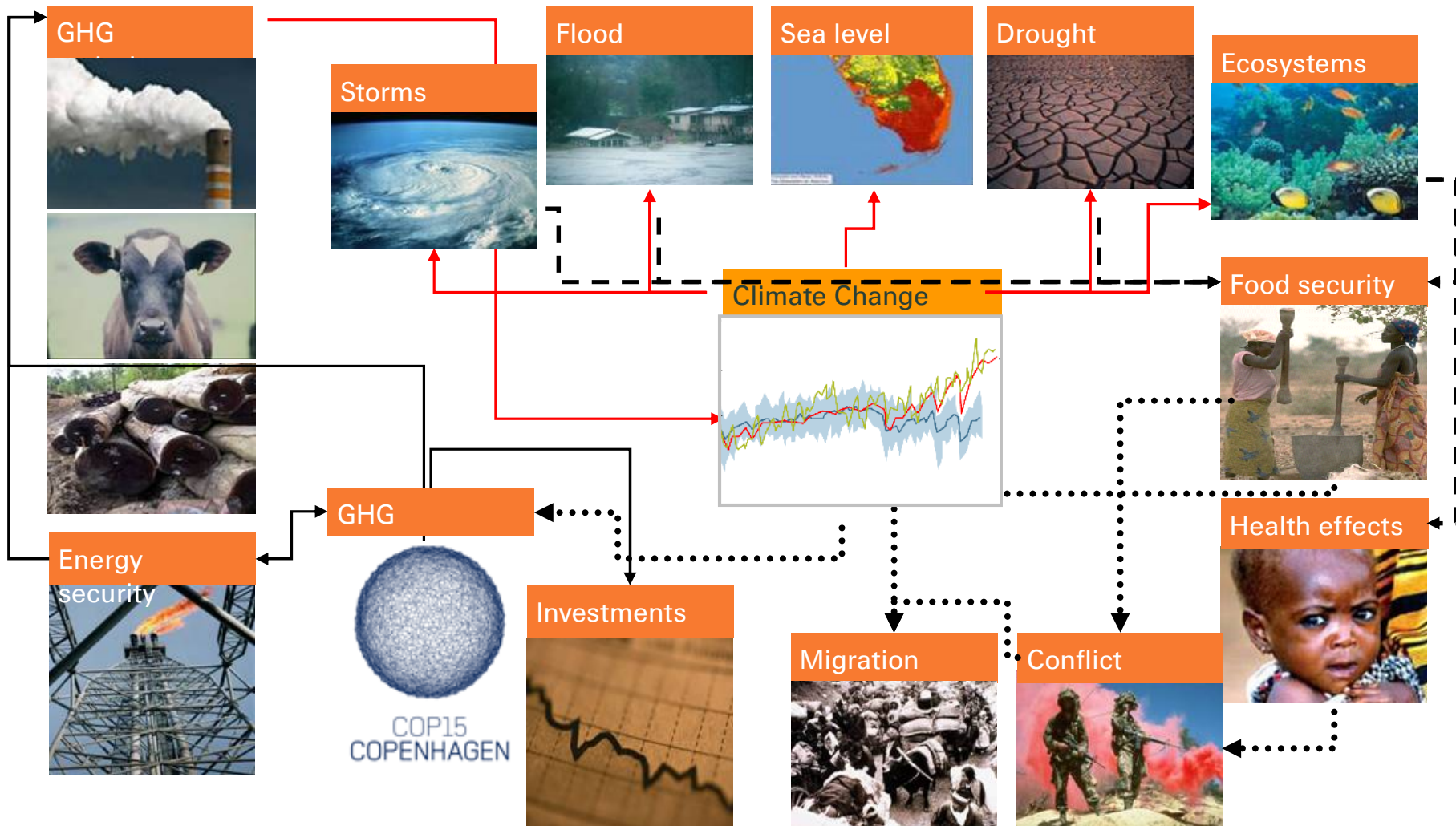




# Economic disparity and Global governance failures are structural risks



# Climate change as an example – highly inter-connected risks

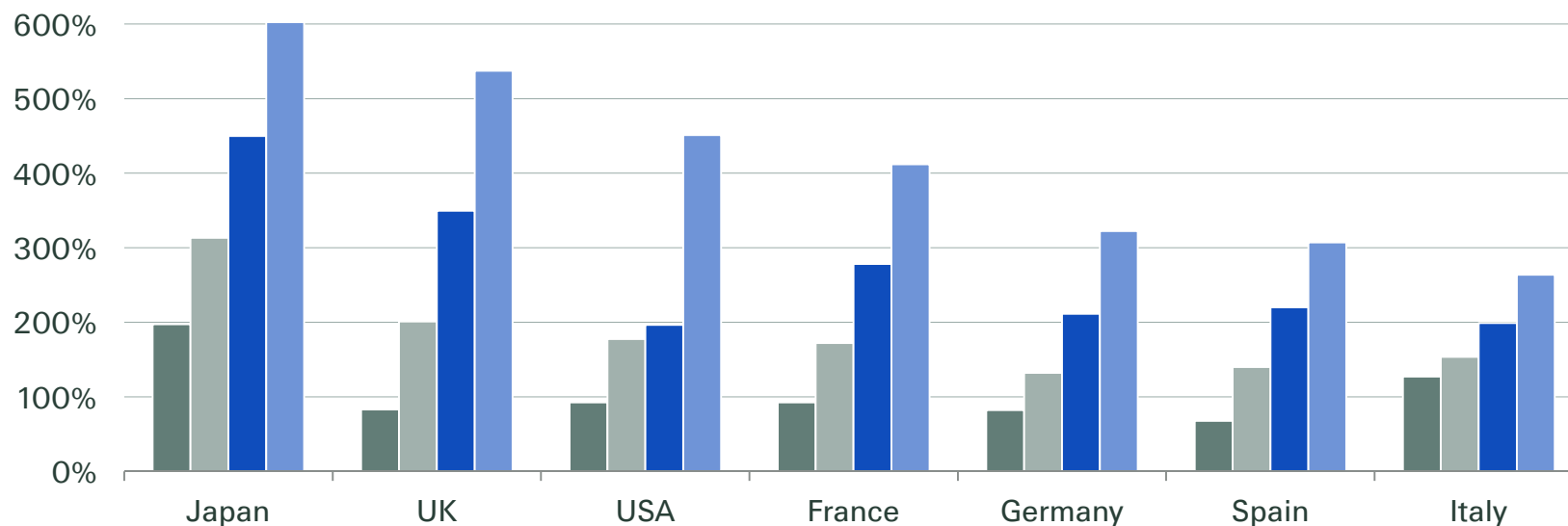


## Areas to focus on today

- Ageing populations
- Macro-economic imbalances
- Diminishing resources
- Risk trends and insurance penetration
- Innovation & partnership

## Ageing populations

### Public debt/GDP



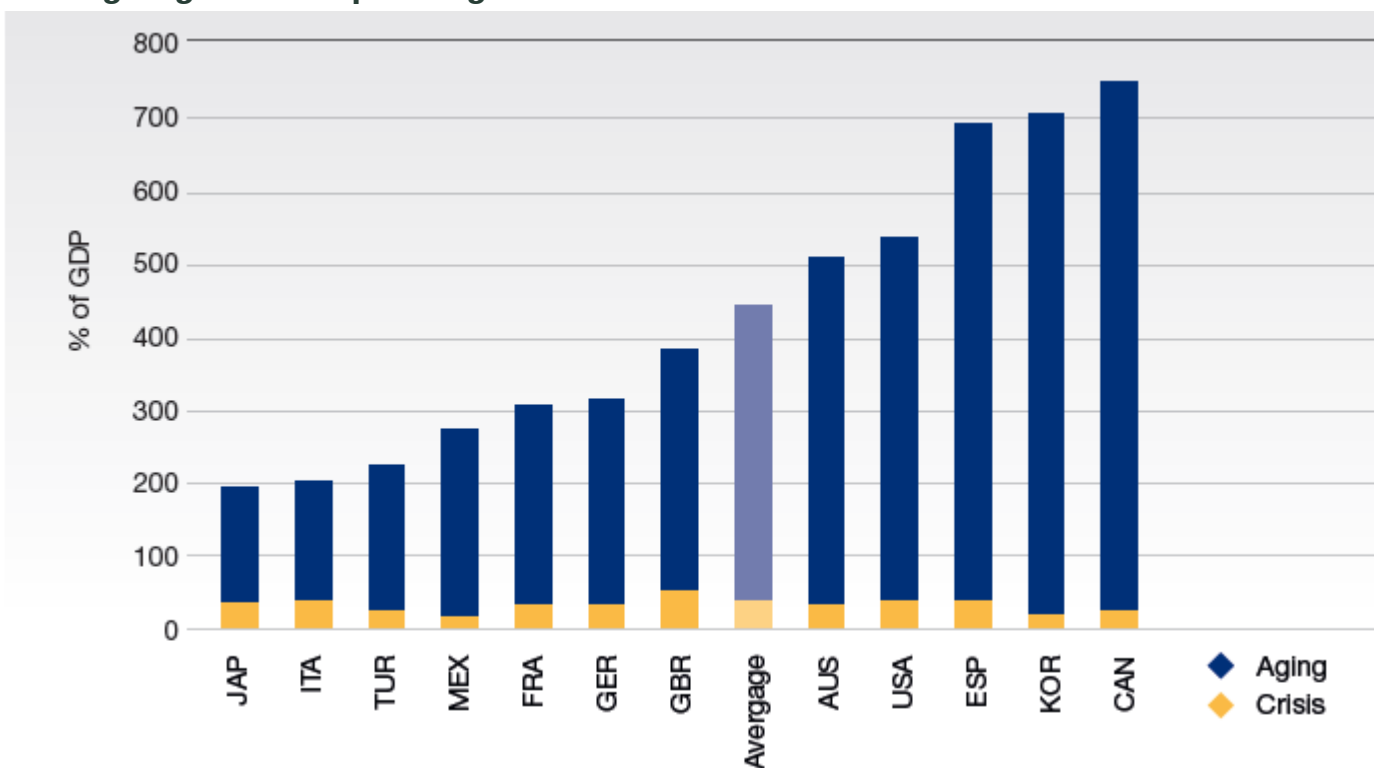
- Governments cannot bear risk alone
- Need to encourage saving
- Rises in retirement ages

■ 2010 ■ 2020  
 ■ 2030 ■ 2040

Source: BIS working paper No 300, March 2010, the age-related liabilities are calculated by the Congressional Budget Office for the US, the European Commission, and the IMF for Japan.

## Ageing populations

Net present value of the impact on fiscal imbalance deficits of the financial crisis and ageing-related spending for selected countries.

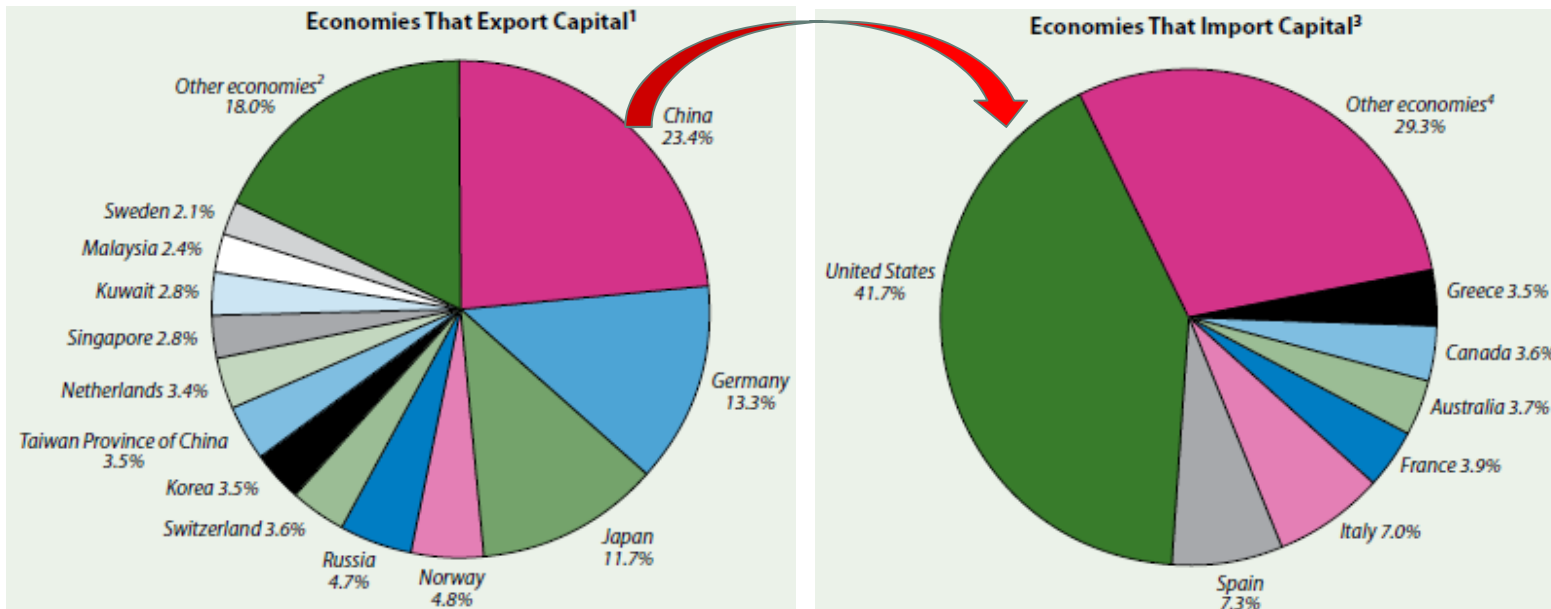


"Innovative financial solutions, such as longevity risk transfer instruments, combined with improved data, may also help those currently bearing these risks."

WEF Global Risks Report, 2011



## Macro-economic imbalances



### Contributory factors

- Over-consumption and social spending
- Capital costs
- Subsidies (/tariffs) to promote exports / imports
- FX rates control (currency devaluation)
- Interest rates

Source: IMF, World Economic Outlook database as of March 10, 2010.

1As measured by economies' current account surplus (assuming errors and omissions are part of the capital and financial accounts).

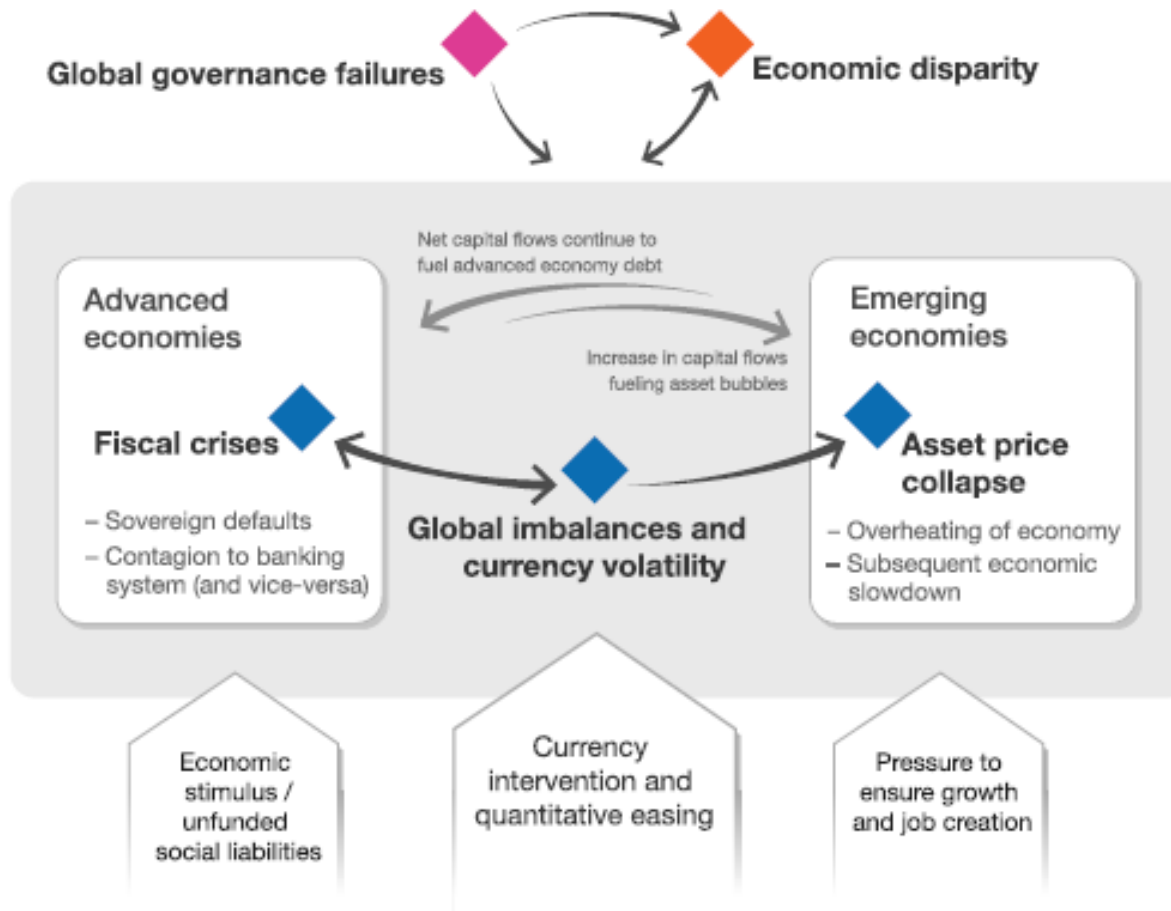
2Other economies include all economies with shares of total surplus less than 2.1 percent.

3As measured by economies' current account deficit (assuming errors and omissions are part of the capital and financial accounts).

4Other economies include all economies with shares of total deficit less than 3.5 percent.



## Macro-economic imbalances

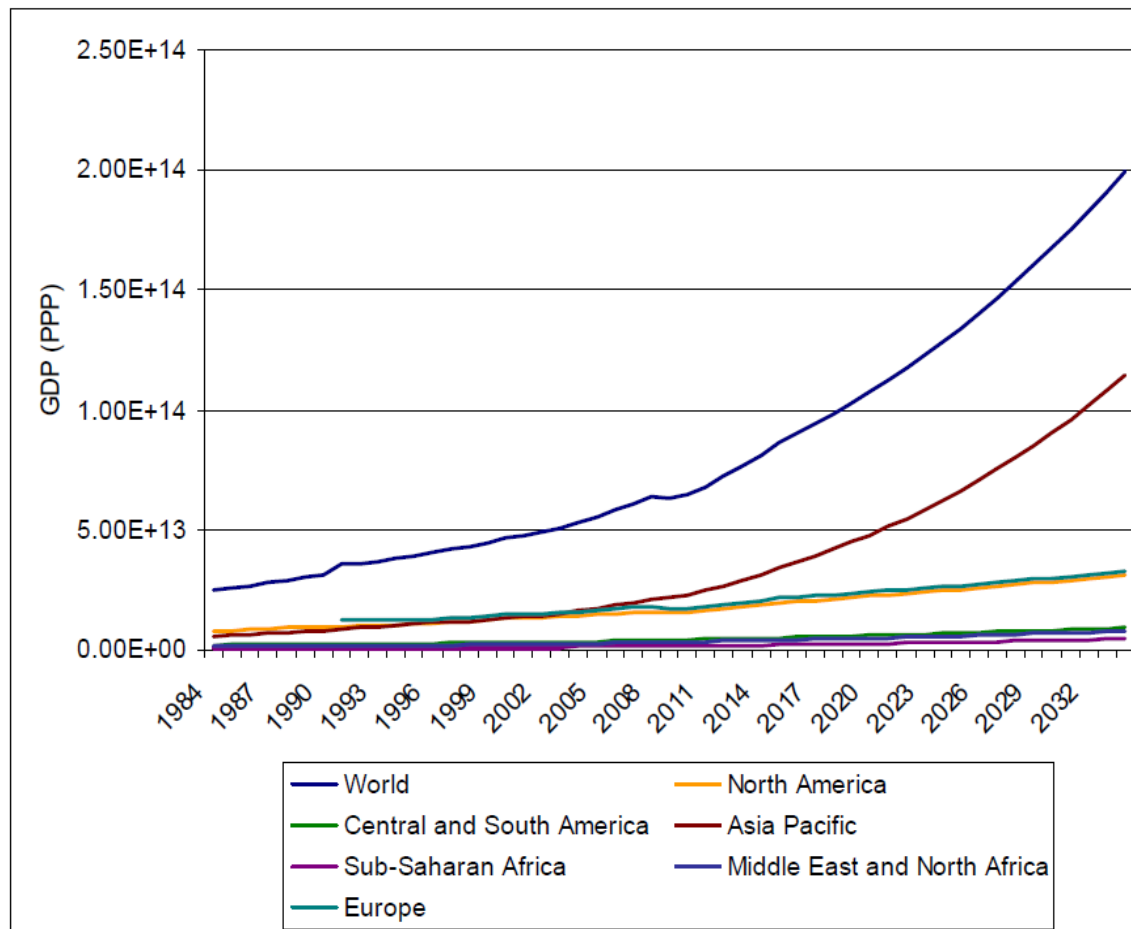


➤ High interconnectivity of economies and trades requires high degree of coordination amongst major players supported by governance structure and institutions



## Diminishing resources

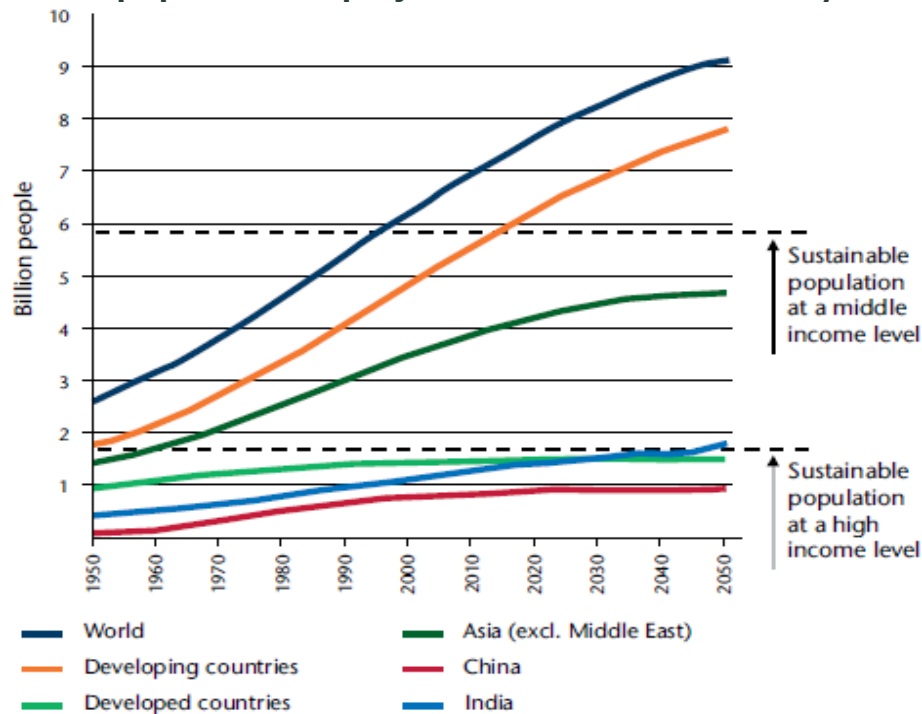
World Economic Output Over 50 Years, 1984-2034 (2005 PPP \$)



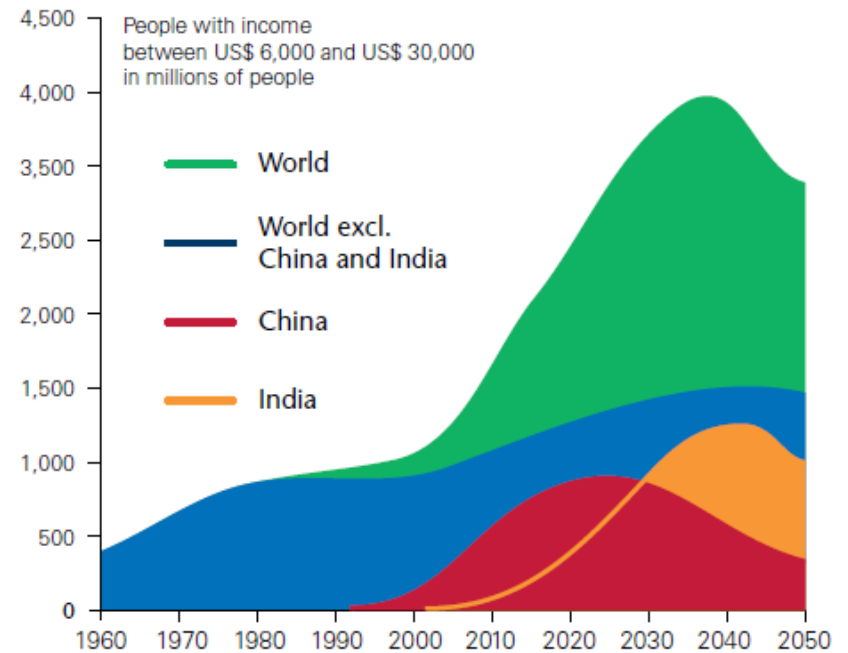
- Creation of G20 is seen as the most hopeful development in global governance but its efficiency in this regard has not been proven yet.
- Doha Development Round of the World Trade Organization (WTO) and the lack of international agreement at the Copenhagen Conference on climate change are examples of global governance failures

## Diminishing resources

World population is projected to reach 9 billion by 2050

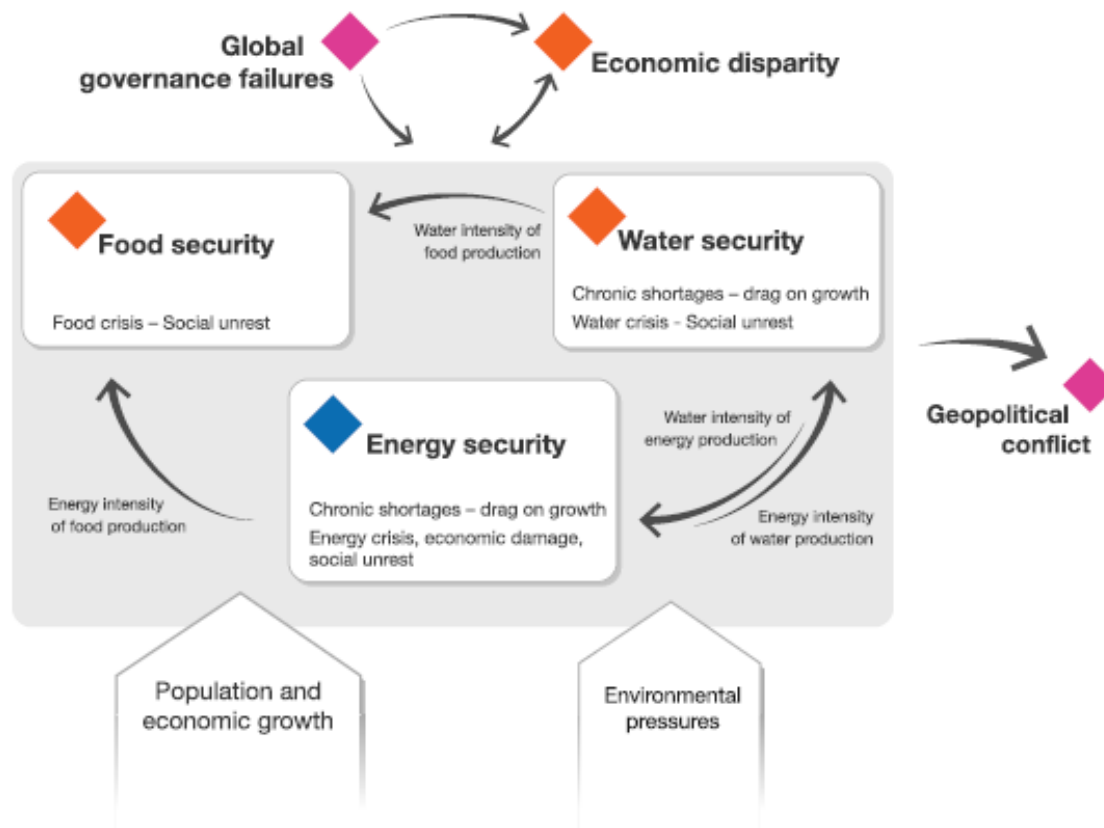


The expanding world middle class



....and will add to the environmental degradation and GHG emissions

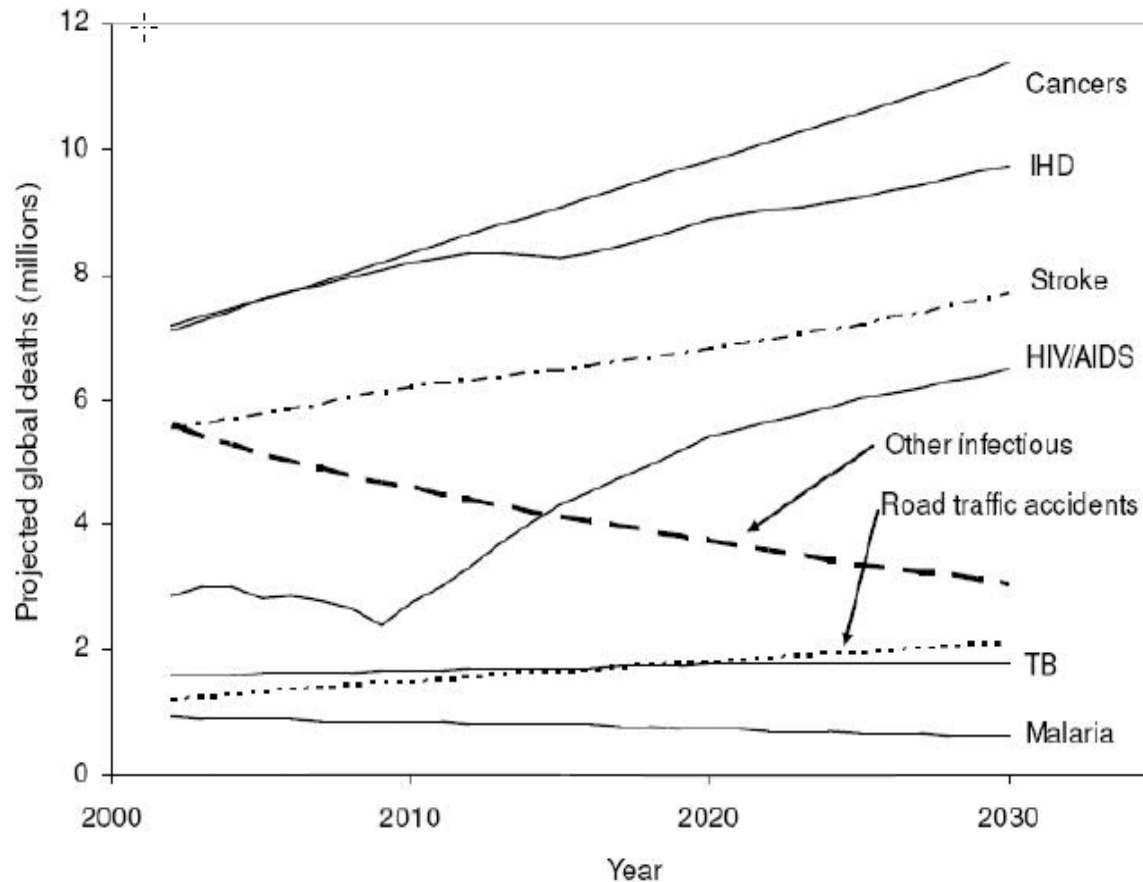
## Diminishing resources



- Food production requires water; water extraction and distribution requires energy; and energy production requires water
- Shortages could cause social and political instability, geopolitical conflict and irreparable environmental damage



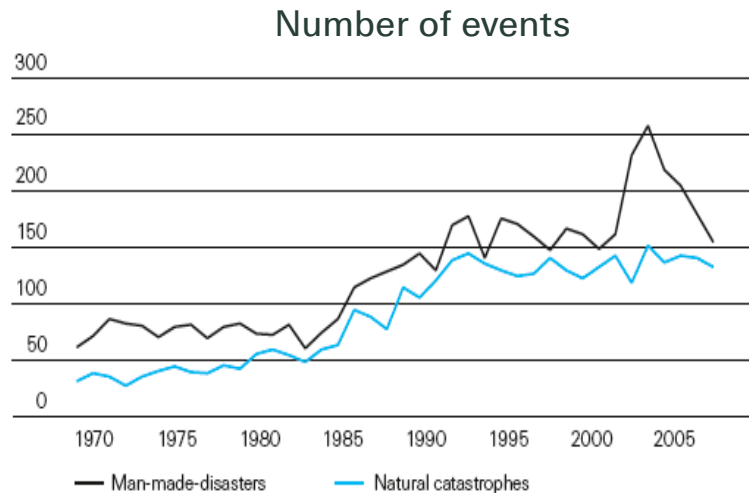
## Risk trends & insurance



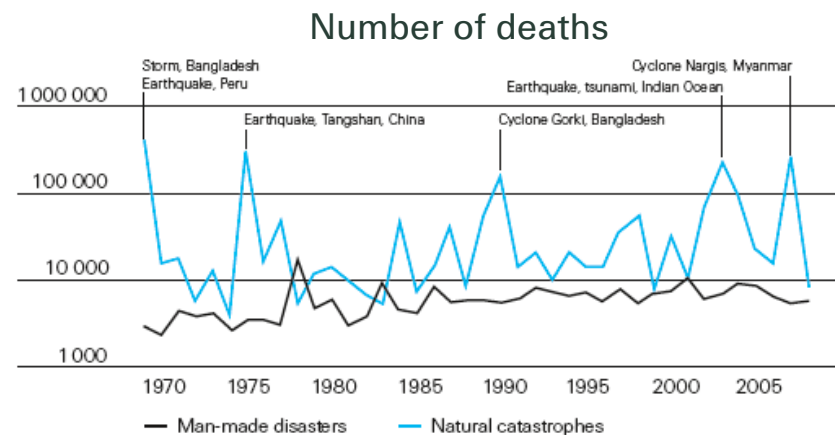
Source: Mathers and Loncar, Updated projections of global mortality and burden of disease, 2002-2030: data sources, methods and results, WHO Evidence and Information for Policy, 2005.

- The medical care costs of people with chronic diseases account for more than 75% of the USA's \$2 trillion medical care costs.
- Productivity losses associated with workers who have chronic disease are as much as 400 % more than the cost of treating chronic disease (PWC)

## Risk trends & insurance



Source: Swiss Re, sigma catastrophe database



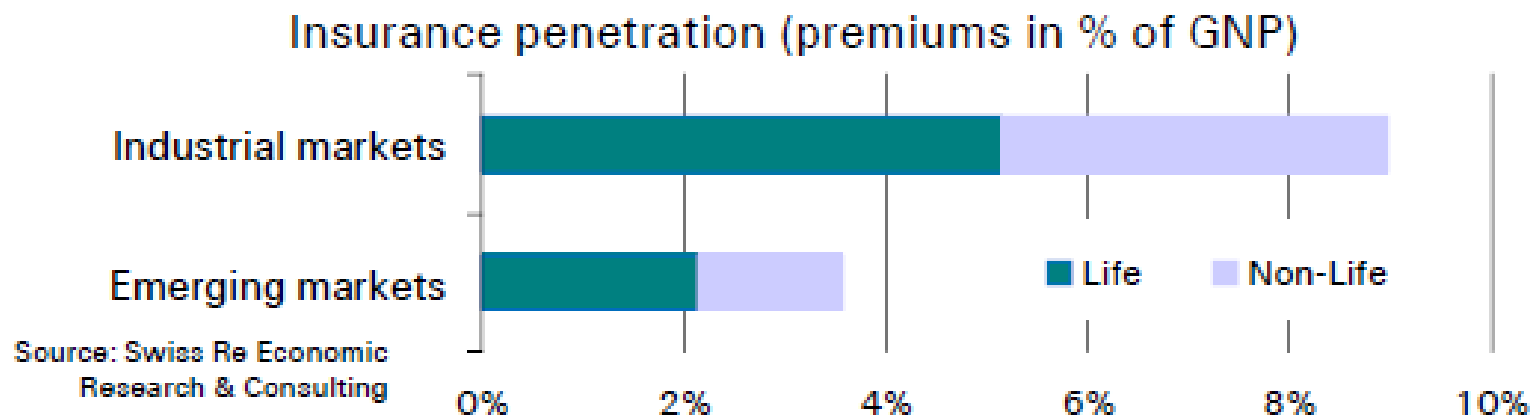
The scale is logarithmic – the number of victims increases tenfold per band.

Source: Swiss Re, sigma catastrophe database

- Number of disaster events are constantly rising year by year, 290 in 2009 alone
- Number of victims of man-made disasters tends to be constant while natural catastrophes vary from year to year
- Natural catastrophes and man-made disasters claimed approx. 15000 lives in 2009
- Man-made disasters claimed approximately 5900 lives in 2009
- Asia was the hardest hit region in 2009 with roughly 9400 victims

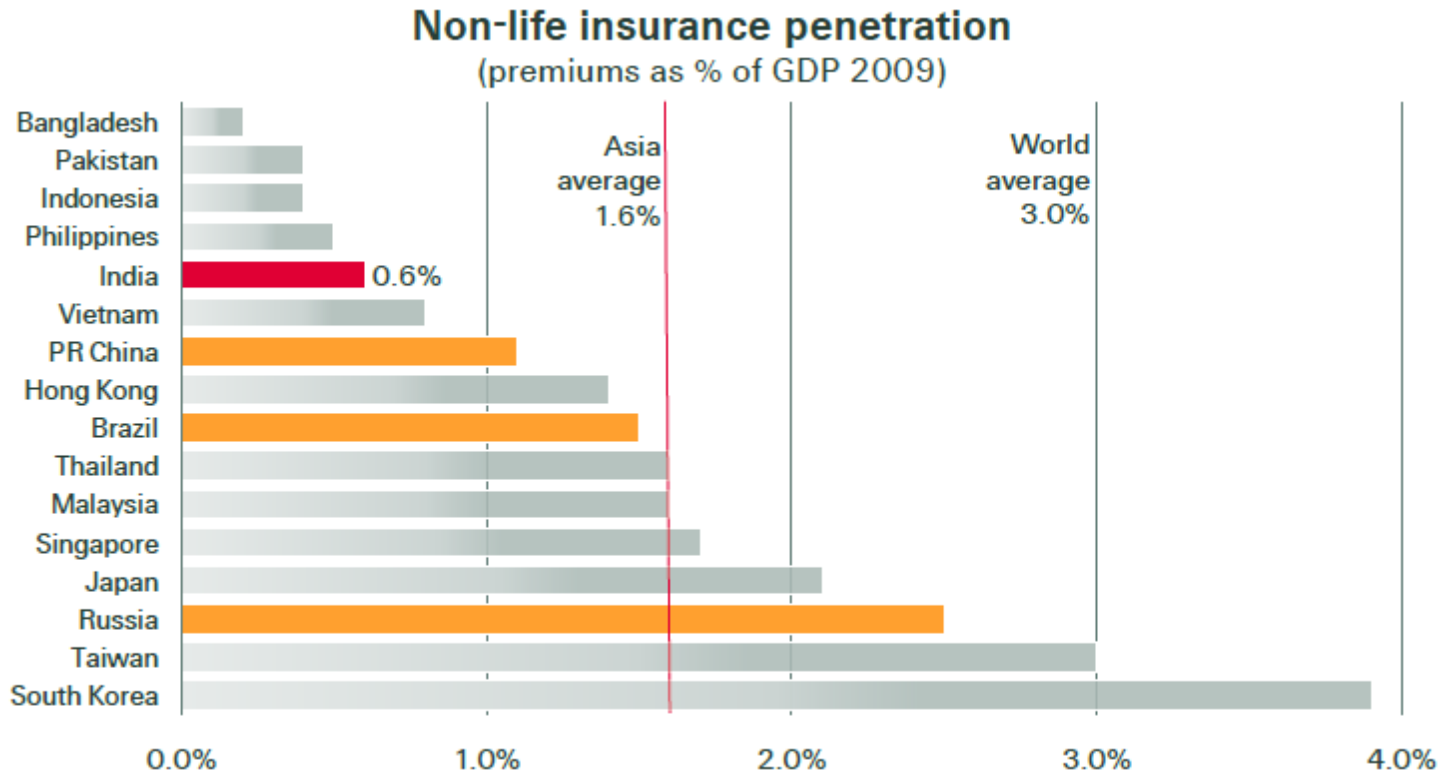
## Risk trends & insurance

- Individuals, companies, or the state institutions absorbed economic loss of USD 62bn due to catastrophes in 2009
- Insured economic losses were approximately USD 26bn (22bn natural), 40% of the total
- Insurance penetration in emerging markets, where catastrophes take a heavy toll, is still very low



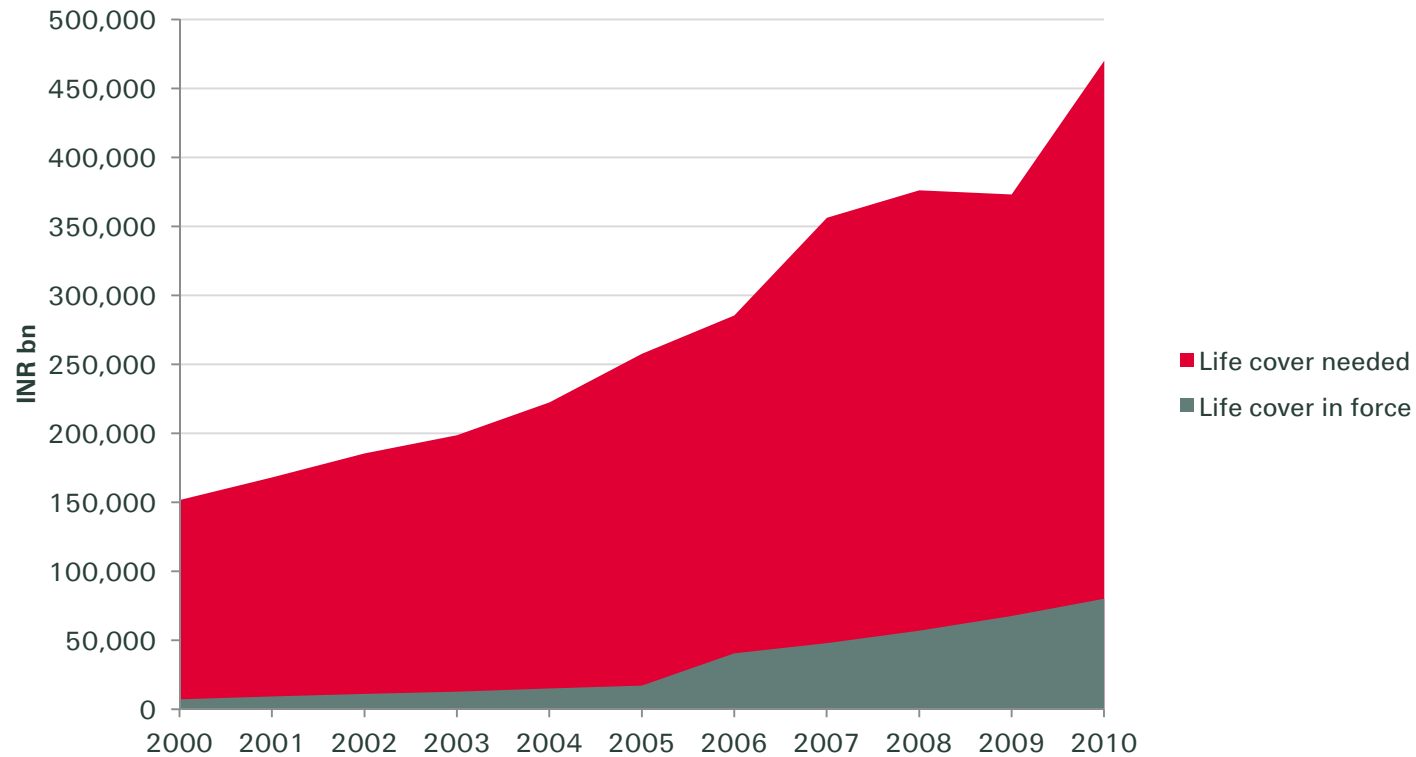


## Risk trends & insurance



Source: Swiss Re sigma No 2/2010

## Risk trends & insurance

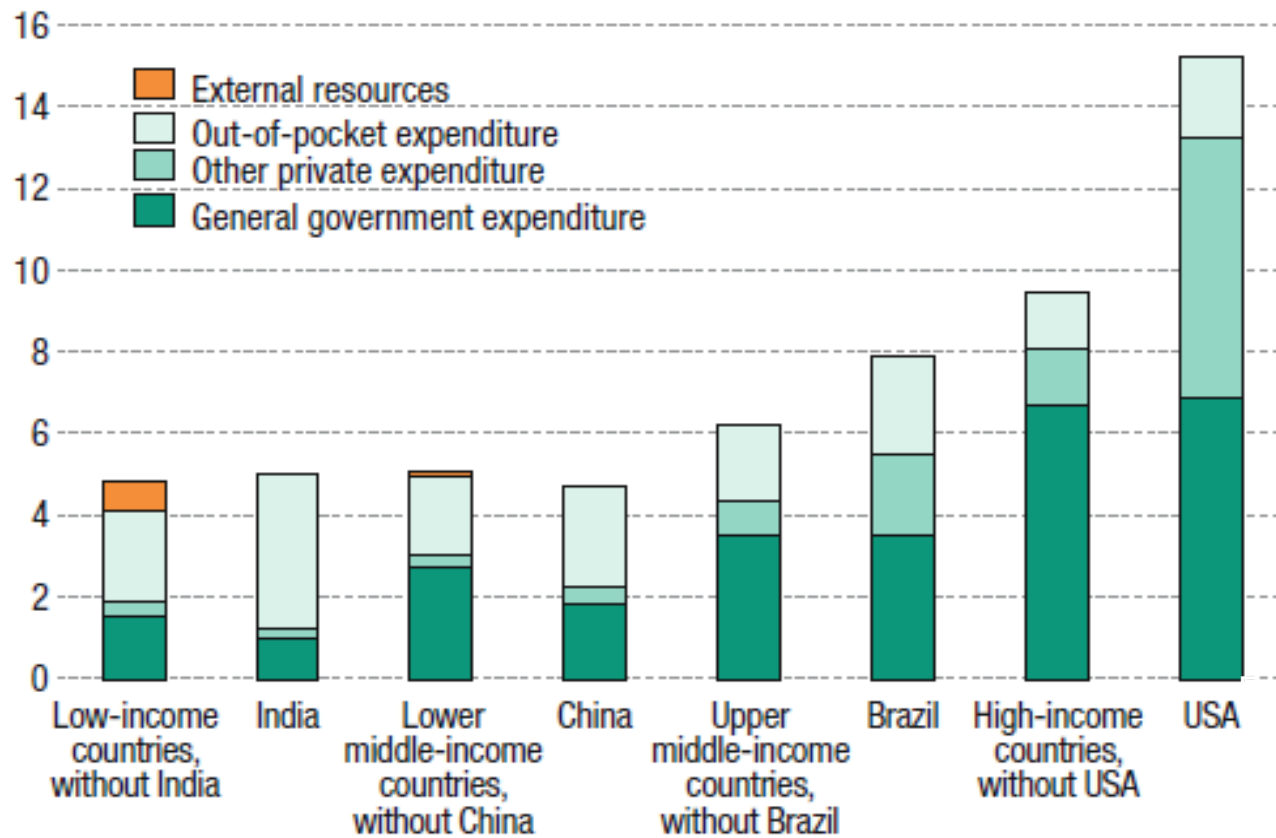


In India, the mortality protection gap has grown significantly from INR 144,000 bn in 2000 to INR 390,000 bn in 2010



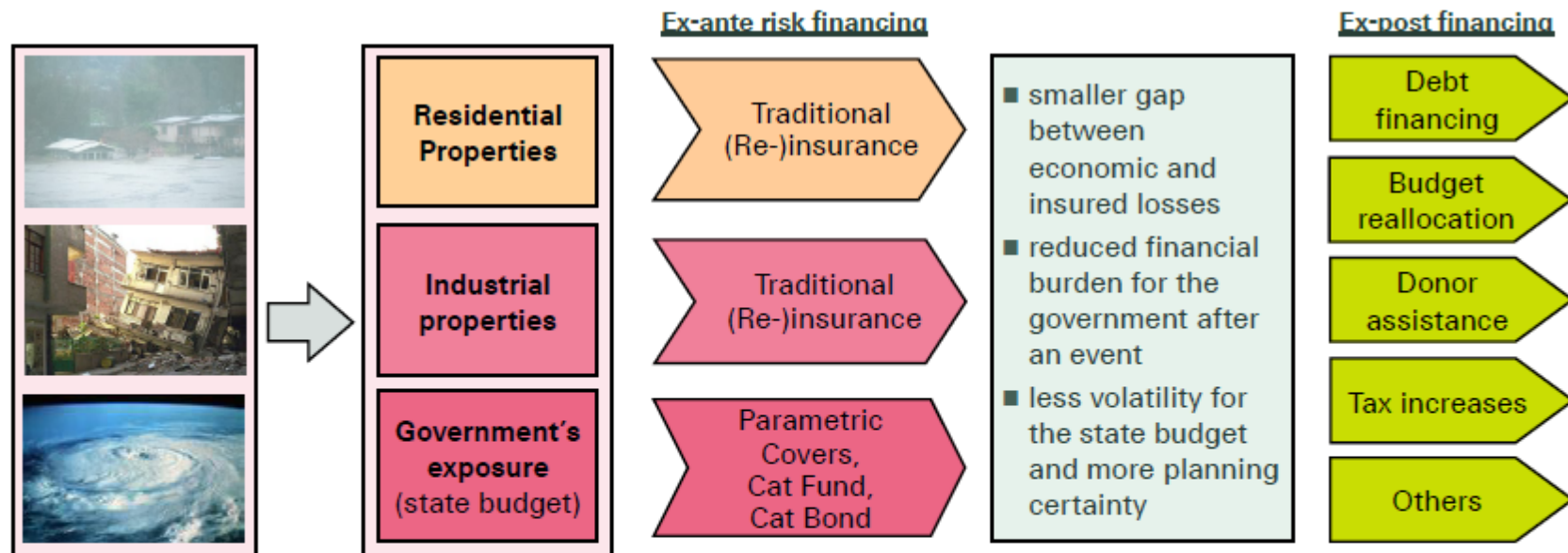
## Risk trends & insurance

Percentage GDP (2005)





## Innovation & partnership



Including ex-ante instruments in the overall disaster risk financing mix helps to lower its financial exposure to natural catastrophe risk and reduces the potential burden for the state budget in case of a major event. Using ex-ante risk transfer instruments reduces the volatility of the state budget, lowers the need for the government to raise funds after an event and provides more budget planning certainty.

## Innovation & partnership

- Death, sickness, accident or old age (longevity) may disrupt people's income and put them into financial distress
- Frequency of losses are greater on the poor, life expectancy is lower, and illness, disability rates are higher than the average
- Cheaply constructed houses in low income areas are more likely to be destroyed by fire and natural disasters
- In the event of financial loss, the poor have to resort to emergency measures such as chronic indebtedness, high collaterals and mortgage rates
- Un-insured losses from natural disasters must be borne by individuals, corporations and governments, both on national and sub-national level
- Due to low insurance penetration, disasters place a significant burden on the public sector

## Innovation & partnership

- Swiss Re's recent **longevity risk transfer with the UK's Royal County of Berkshire Pension Fund** demonstrates how a public and a private body can work together to create a mutually beneficial resolution.
- Swiss Re is working with Oxfam America and other partners to provide **weather insurance** through an innovative labour-for-premiums scheme to protect **Ethiopia's rural poor against rising drought risks**.
- Swiss Re, along with other reinsurers and World bank participates in **CCRIF**, which offers parametric hurricane and earthquake insurance policies to 16 CARICOM governments to provide immediate liquidity.
- Swiss Re as sole underwriter provides first parametric cover for **Alabama, USA** to offset economic costs of hurricanes.
- Swiss Re working with the **Beijing Municipal Government** provides reinsurance **coverage for catastrophe risks** under China's government-funded agricultural insurance scheme.
- Through its insurance arm ( ABIC), **Vietnam's agriculture bank (Agribank)** will **insure its rice farming clients against being unable to pay back loans due to low yields**. The risk will, in turn, be transferred via reinsurance to Swiss Re and the Vietnam National Reinsurance Corporation (Vina Re).
- Swiss Re and Inter-American Development Bank have developed, an integrated disaster risk management approach and a **Regional Insurance Facility** to mitigate the financial impact of natural disaster events in **Central America**.

## Further reading – WEF report

Swiss Re is a major contributor





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Thank you



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