Flavour only

Reinsurance
Cat models
4 Box principle
Climate change
Swiss Re, ECA, Sigma
What's on your mind?
Reinsurance

How risks are transferred in insurance and reinsurance

**Insured risks**
- Individuals and corporates are looking to insure against specific risks relating to:
  - Each party transfers a portion of the risk by paying a premium
  - In return, the primary insurer safeguards individuals and corporates

**Primary insurance**
- Insurance companies

- The primary insurer passes on portfolios of similar risks or large single risks
- Primary insurer benefits, as reinsurance:
  - Reduces claims volatility
  - Guards against extreme events, thereby reducing the severity of claims

**Reinsurance**
- Reinsurance companies diversify their portfolio of risks by geography and type of risk

**Retrocession/capital markets**
- As part of their risk management processes, a reinsurer may pass on some of these risks to:
  - Another reinsurer
  - Capital markets through securitisation
Reinsurance

• Helps insurers to manage their risks
  – Absorbing some of the their losses

• Stabilises insurance company's results
  – Enables growth and innovation to continue

• Invest large sum of money in financial markets
  – Contributes significantly to the real economy
Natural catastrophes (events) 1970–2012

Source: Swiss Re, Sigma
Insured catastrophe losses 1970–2012

USD bn, at 2012 prices

Source: Swiss Re, Sigma

Earthquakes/tsunamis

Weather-related natural catastrophes

1992: Hurricane Andrew
1994: Northridge EQ
1999: Winter storm Lothar
2004: Hurricanes Ivan, Charley, Frances
2005: Hurricanes Katrina, Rita, Wilma
2008: Hurricanes Ike, Gustav
2011: Japan, NZ EQs, Thailand flood

Cat Modelling: 4 Box Principle

Natural Hazard

What can happen?

Vulnerability

How do the exposed values react?

Distribution of property values

What is affected?

Insurance conditions

How is the exposure covered?

Limit

Deductible
Cat Modelling : 4 Box Principle

Natural Hazard
EQ, wind engineering, hydrologist

Vulnerability
Civil, structural engineering

Distribution of property values
Geoinformatics, cartography

Insurance conditions
Mathematics, statistics, actuarial science
Catastrophe models

• Catastrophe covers are large and complex
• Data is the key
• Multidisciplinary approach is required
• All models are wrong, some of them are useful
Economics of Climate Adaptation

Objectives:
- Provide decision makers with methodology to develop an adaptation strategy
- Unlock global risk transfer markets

Key features:
- Total climate risk approach:
  - today’s climate risk,
  - economic development paths
  - climate change trend

Swiss Re’s role:
- Lead contributor to the research

Please find the full study at www.swissre.com/climatechange
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