

# Catastrophe Bonds, ESG and Climate Change

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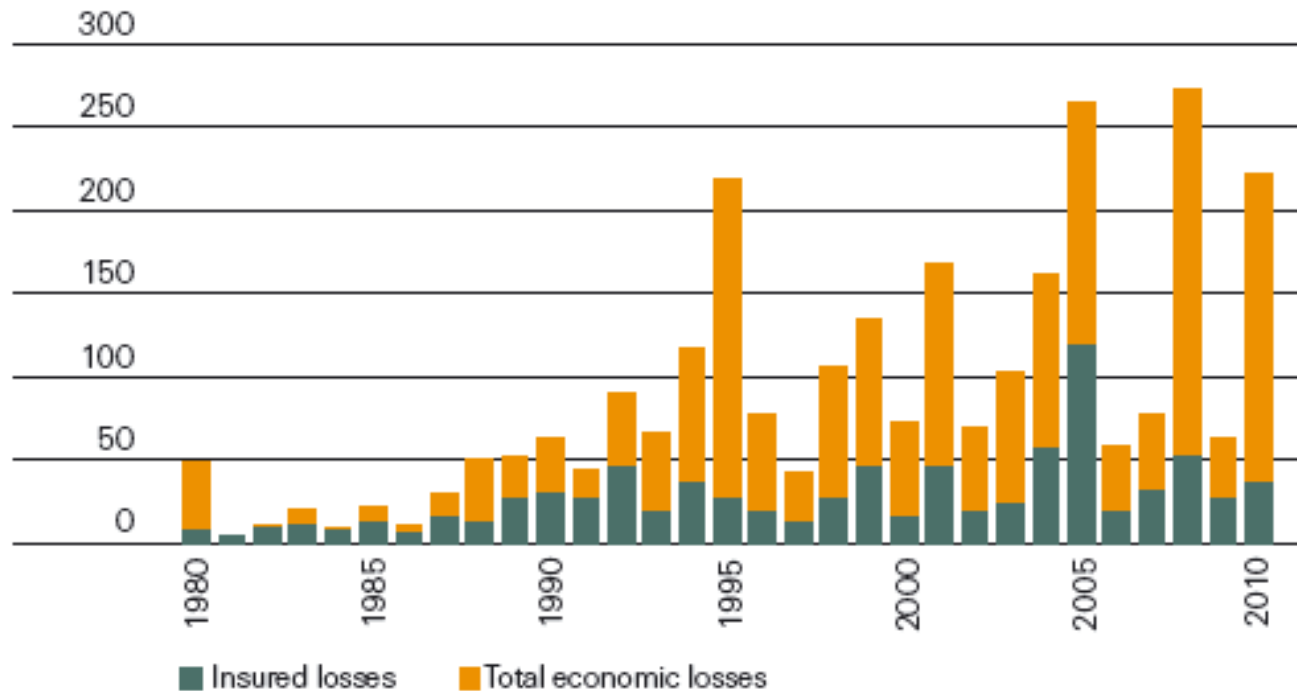
- Who is Brookvine?
  
- Fermat Capital Management
  - Specialist catastrophe risk manager \$2.2Bn FUM
  - Advisor to World Bank, United Nations, Florida Hurricane Protection Board
  - US Congressional Hearing Expert Witness
  
- Brookvine and Fermat
  - Understanding the asset class
  - Local expertise
  - Local execution

- Concept of Alternative Beta
  - Brookvine research
  
- The next “new” thing or a permanent structural change
  - Why now?
  - Drivers of growth
  
- ESG and Climate Change
  - Are cat bonds on the wrong side?

# Economic Loss vs Insured Loss

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The gap between insured losses and total economic losses of catastrophic events globally in USD billions (indexed to 2010)



Source: Swiss Re Economic Research & Consulting

The “gap” is even more pronounced in developing economies

Year	Event	Country	Economic Loss USD Millions	% GDP	Insured Loss USD Millions
2005	Hurricane Katrina	US	140,000	1.1%	64,754
2008	Earthquake	China	124, 578	2.8%	366
2010	Earthquake	Chile	30,000	15.1%	8,000
2010	Earthquake	Haiti	8,000	114%	n.a.

Source: World Bank and Swiss Re Economic Research & Consulting

# Catastrophes – What's Increasing?

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- Is climate change a factor?
  - Are the frequency and intensity of events increasing?
  - Is this the main risk?
  
- Moore's Law and the world's economic growth engine
  - Concentration of productive capacity
  - Population movement to cities
  - Emerging economies increasing wealth
  
- Think about what this means for equity investments

- Are cat bonds on the wrong side?
  - The science
  - The exposure
  - The risk premium
  
- Inflation Linked vs Climate Linked
  - Insurance premium inflation
  - Cat bond trigger resets
  
- Perhaps it's your climate change strategy on the wrong side
  - Technology risk
  - A comparison of time horizons



- How does a nation deal with the aftermath?
  - International aid
  - Budget reallocation
  - Debt
  - Taxation
  
- Pre-event planning
  - Catastrophe insurance
  - Reserving
  - Contingent financing
  
- World Bank assistance
  - Multi-Cat Program
  - Caribbean Catastrophe Risk Facility

- How is an Australian investor aiding sustainability?
  - Reinsurance capacity
  - Risk sharing
  - Disaster recovery
  - A “tax” on coastal development
  
- Insurance and world stability
  - The role of capital markets
  - Ability to rebuild
  
- The asset class is here to stay
  - Growth trajectory
  - Other growth factors

- True alternative beta
  - Diversification must pay its way
  - A structural premium
  - Non market risk
  
- Asset allocation
  - More than just ESG and climate change
  - Alternative growth
  - Alternative fixed income
  
- Insurance as a discrete asset class

- Here to stay?
  - The role of insurance
  - The need for a capital markets solution
  - Growth trajectory
  
- A role in the portfolio
  - Structural premium
  - Diversification
  
- Extra credentials
  - ESG impact
  - Climate change linkage

- Closing the Gap – New partnerships between the public and private sectors to finance disaster risks
  - *Swiss Re*
  - [http://media.swissre.com/documents/pub\\_closing\\_the\\_financial\\_gap\\_W1.pdf](http://media.swissre.com/documents/pub_closing_the_financial_gap_W1.pdf)
  
- The Role of Risk Transfer and Insurance in Disaster Risk Reduction and Climate Change Adaption
  - *Commission on Climate Change and Development*
  - [http://www.ccdcommission.org/Filer/pdf/pb\\_risk\\_transfer.pdf](http://www.ccdcommission.org/Filer/pdf/pb_risk_transfer.pdf)
  
- The Impact of Climate Change on Catastrophe Risk Models
  - *John Seo & Olivier Mahul, World Bank Policy Research Paper 4949*
  - <http://gfdrr.org/docs/WPS4959.pdf>