IMPLICATIONS OF CLIMATE CHANGE FOR GENERAL INSURANCE
CELTIC MANOR RESORT, NEWPORT, WALES
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If CO2 Levels don't PETER out How will insurance companies COPE/MANage?

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IPCC and GN12

- Who commissioned report
- Terms of Reference
- Restrictions on work carried out
- Interpretation of Point estimates
- Analysis of emerging experience
- Quantification of uncertainty
Quantification of Uncertainty

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- Possibility of material adverse deterioration

IPCC and GN12

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A treble whammy: Assets/Liabilities/Capital

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Or a Quadruple Whammy – Reputation Risk

http://www.citizensfla.com
www.sbafla.com/fhcf
www.thamesweb.com/

If CO2 Levels don’t PETER out
How will insurance companies
COPE/MANage?

Risks
Property covers
- Wind
  - Stronger
  - Longer
  - More?
- Flood
  - Wetter ground
  - Larger thunderstorms/flash events
  - Changed storm tracks
  - Higher sea levels
  - Subsidence
  - Fire

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**Risks**

**Liability**
- D&O – negligent management causing:
  - 3rd party losses as a result of their company’s emissions
  - Exposure to impacts of climate change
  - Reasonable foreseeability
- Professional Indemnity - bad planning?
  - architects, consulting engineers, designers, surveyors, contractors, developers and financiers (etc)
- Environmental Liability
  - CO2 is a pollutant (supreme court ruling on Massachusetts vs EPA)
- Airlines?

[http://climatechange.pbwiki.com/GiRo07Liability](http://climatechange.pbwiki.com/GiRo07Liability)

**Risks**

**Political Risk/Terrorism**
- Covers: Seizure of property, contract frustration etc
- Tensions likely to increase globally
  - Backdrop of population growth
  - Water disputes
  - Energy shortages
  - Loss of land => migrations
  - Reduced agriculture
  - Economic impact => migrations

**Opportunities**

**Innovative insurance cover - CCRIF**
- Caribbean has a history of natural disasters
- Caribbean Community worked with World Bank to establish….
  - Caribbean Catastrophe Risk Insurance Facility (CCRIF).
Opportunities
Innovative insurance cover - CCRIF

Index calculation:
- Key locations selected
- Measure Windspeed
- Apply economic weights

\[ \text{Index} = \sum \text{weight}_i \times \max(0, (\text{windspeed} - 50)^\beta) \]


Opportunities
Innovative insurance cover - CCRIF

Calculate payout:
- Compare index to payout graph
- Attachment point and exhaustion in terms of index values
- Calibrated using advanced catastrophe modelling (Eqecat)


Opportunities
Innovative insurance cover - CCRIF

USD 20m - Catastrophe Swap (Derivative)
USD 50m – reinsurance
USD 25m – reinsurance
USD 15m – reinsurance
USD 10m – retained by CCRIF
Opportunities

Innovative insurance cover - CCRIF

- Benefits:
  - Liquidity - Immediate payment
  - No moral hazard – index can’t be gamed
  - Lower operating costs
  - Transparency
  - Access to financial markets

- Issues
  - Basis risk
  - Reputational Risk
  - Education challenge
  - Not all hazards are modelled well

Opportunities

Insurance for the developing world

- Reinsurers (Swiss Re, Axa) - weather derivative contracts protecting communities in Africa.
- Ground breaking climate modelling
- Payout based on a blend of satellite and weather data, a proxy for impact on crop production.
- Collaboration: Swiss Re, Columbia University and the Millennium Promise Alliance
- Insurance companies don’t have all the answers – we don’t want to overpromise.

Opportunities

Renewable Energy Insurance

- Ascot Underwriting established Renewco Underwriting (2007).
  - specifically dedicated to worldwide renewable energy industry
  - onshore and offshore coverage
  - solar, wave, tidal, wind, biomass, geothermal and small hydroelectric fields
  - comprehensive cover... including waste to energy, waste management and the production of biofuels
10 things to do

- Convince yourself (1) and others (2)
- Engage with scientists on working parties, LRN / wiki (3)
- Ensure its taken seriously internally:
  - Strategy (4)
  - Liabilities: Property (5) and Casualty (6)
  - Assets (7)
- Look at opportunities (8)
- Reduce Carbon foot print
  - your company’s (9) and your own (10)

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Who works for/with these companies?

<table>
<thead>
<tr>
<th>ABI</th>
<th>ACE</th>
<th>AIG</th>
<th>Allianz</th>
<th>Amlin</th>
<th>Aviva</th>
<th>AXA</th>
<th>Beazley</th>
<th>BGF</th>
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<td>Diagonal</td>
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<td>F&amp;C</td>
<td>Friends Provident</td>
<td>Hardy</td>
<td>HBOS</td>
<td>Hiscox</td>
<td>Kin</td>
<td>Legal and General</td>
<td>Lloyd's</td>
<td>Marketform</td>
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<tr>
<td>Navigators</td>
<td>NFU Mutual</td>
<td>Prudential</td>
<td>QBE European Operations</td>
<td>RBS</td>
<td>RBS</td>
<td>RSA</td>
<td>Standard Life</td>
<td>Swiss Re</td>
<td>UNUM</td>
<td>Zurich</td>
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</table>

Of actuaries at GIRO:

- **31%** Work for signatory companies
- **32%** Have signatories as clients, customers or regulate them (at least)
ClimateWise

- Lead in risk analysis
- Inform public policy making
- Support climate awareness amongst our customers
- Incorporate climate change into our investment strategies
- Reduce the environmental impact of our business
- Report and be transparent

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Lead in risk analysis
- Research to inform business strategy
- Improve data quality
- Reflect climate change in pricing, reserves and capital
- Share research through an appropriate forum

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Support climate awareness amongst our customers
- Provide tools so they can assess risk
- Assist developing world

Incorporate into investment strategies
- This is not just SRI… .... Responsible engagement!

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Reduce environmental impact of our business
• Measure environmental impact
• Calculate and disclose emissions

Report and be accountable
• Recognise climate change at board level
• Annual reporting...
...expect close scrutiny from NGOs

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CO₂ is enough