Geophysical Research Abstracts,
Vol. 11, EGU2009-2849, 2009
EGU General Assembly 2009

Creating Efficient Instrumentation Networks to Support Parametric Risk Transfer

P. Rockett
paul.rockett@rms.com

The development and institutionalisation of Catastrophe modelling during the 1990s opened the way for Catastrophe risk securitization transactions in which catastrophe risk held by insurers is transferred to the capital markets in the form of a bond. Cat Bonds have been one of the few areas of the capital markets in which the risk modelling has remained secure and the returns on the bonds have held up well through the 2008 Credit Crunch. There are three ways of structuring the loss triggers on bonds: 'indemnity triggers' – reflecting the actual losses to the issuers; 'index triggers' reflecting the losses to some index such as reported insurance industry loss and 'parametric triggers' reflecting the parameters of the underlying catastrophe event itself. Indemnity triggers require that the investors trust that the insurer is reporting all their underlying exposures, while both indemnity and index losses may take 1-2 years to settle before all the claims are reported and resolved. Therefore parametric structures have many advantages, in particular in that the bond can be settled rapidly after an event. The challenge is to create parametric indices that closely reflect the actual losses to the insurer – ie that minimise 'basis risk'. First generation parametric indices had high basis risk as they were crudely based on the magnitude of an earthquake occurring within some defined geographical box, or the intensity of a hurricane relative to the distance of the storm from some location. Second generation triggers involve taking measurements of ground motion or windspeed or flood depths at many locations and weighting each value so that the overall index closely mimics insurance loss. Cat bonds with second generation parametric triggers have been successfully issued for European Windstorm, UK Flood and California and Japan Earthquake. However the spread of second generation parametric structures is limited by the availability of suitable networks of instrumentation. For example, even along the US coast, National Weather Service windspeed recorders are not designed to withstand the most intense hurricane winds, and with only 30 minutes of battery life, fail to record through major storms with their ubiquitous power outages. New, privately financed, windspeed recording networks are now being installed that are hurricane resistant and have long-life batteries to ensure that windspeeds will always be recorded and can then be employed in Cat bond triggers. For the developing world, the installation and maintenance of resilient recording networks can kick-start risk transfer mechanisms even in the absence of insurance.