
Abstract: Insurance & reinsurance against earthquakes

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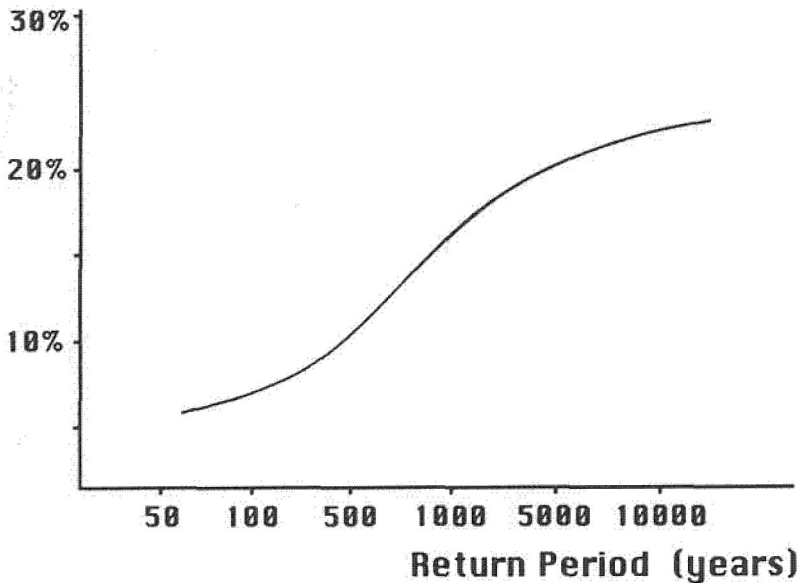
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Adequate catastrophe reinsurance protection can be arranged only if the insurer knows in dollar terms, the amount which he will have to pay out after an earthquake. This requires a knowledge of:

- return periods for various magnitude events in the area under consideration and
- the dollar damage caused by events of various magnitudes to the portfolio of risks that are insured.

Once these factors are known for the area under study, the insurers can develop a graph (below) relating the return period to the earthquake probable maximum loss, which in the graph is shown as a percentage of the accumulated sums insured in the region. Using this, the insurers can determine whether protection can be provided against the one in 500, one in 1000, or one in 10 000 year return period event.

Earthquake PML



The purchase of catastrophe reinsurance protection is costly and so the insurers are wasting money if they buy more protection than is required. Conversely, should the amount of protection purchased be inadequate after an earthquake, the insurers will have to find money from their own resources to meet the amount not covered by the reinsurance protection.

Although storms produce the greatest number of catastrophic events with which insurers become involved, individual earthquakes can produce the highest individual losses. In Australia since 1989 (Newcastle) there have been 30 catastrophic storm events with a total payout by insurers of \$900 million, approximately the same as that paid out for the Newcastle earthquake.