

A PREDICTIVE EARTHQUAKE MODEL AND ALTERNATIVE RISK TRANSFER TECHNIQUES

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Abstract

Although, traditional reinsurance has successfully covered the economic consequences of the large natural disasters, there is still a great discussion for alternative risk transfer techniques. In this article, we investigate the data of the earthquakes in Greece. Actually, we explore all the basic characteristics of an earthquake as normally reported by seismologists and the potential relationship with the volume of the respective damages. Then, we design a stochastic model using the tools of extreme value theory and after some necessary calibration we use it as the basic framework for pricing special derivative products. Numerical results are provided for the potential Greek market.

Keywords

Extreme Value Theory, Catastrophe Bonds, Monte Carlo Simulation, Incomplete Market.