

Evaluating the Impact of the Increase in Hurricane Frequency Using an Internal Model. A Simulation Analysis

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Abstract

There is an ongoing debate about the change in frequency and intensity of hurricanes due to climate change. In addition to the variety of opposing arguments that have arisen in this discussion, available data shows that while hurricane frequency in the Atlantic basin seems to increase, hurricane frequency in the Pacific basin seems to decrease. This phenomenon is very important to the insurance sector, especially in a country like Mexico which is very exposed to this kind of catastrophes and that, in recent years, has reported its highest losses due to hurricanes. In this paper we analyze the impact of the increase in hurricane frequency and intensity on the portfolio an insurance firm with a complex reinsurance scheme. We use an internal simulation model based on a model commissioned by the insurance regulatory body in Mexico, whose use is compulsory for computing catastrophic reserves.

KEY WORDS: Quantile, Reinsurance, Catastrophe, Hurricane Insurance, Simulation.