



Lessons learnt from tropical cyclone losses

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Swiss Re has a long history in developing natural catastrophe loss models. The tropical cyclone USA and China model are examples for event-based models in their second generation. Both are based on basin-wide probabilistic track sets and calculate explicitly the losses from the sub-perils wind and storm surge in an insurance portfolio. Based on these models, we present two cases studies.

China: a view on recent typhoon loss history

Over the last 20 years only very few major tropical cyclones have caused severe insurance losses in the Pearl River Delta region and Shanghai, the two main exposure clusters along China's southeast coast. Several storms have made landfall in China every year but most struck areas with relatively low insured values.

With this study, we make the point that typhoon landfalls in China have a strong hit-or-miss character and available insured loss experience is too short to form a representative view of risk. Historical storm tracks and a simple loss model applied to a market portfolio – all from publicly available data – are sufficient to illustrate this. An event-based probabilistic model is necessary for a reliable judgement of the typhoon risk in China.

New York: current and future tropical cyclone risk

In the aftermath of hurricane Sandy 2012, Swiss Re supported the City of New York in identifying ways to significantly improve the resilience to severe weather and climate change. Swiss Re provided a quantitative assessment of potential climate related risks facing the city as well as measures that could reduce those impacts.