

Towards Resilience to Nuclear Accidents: Financing Nuclear Liabilities via Catastrophe Risk Bonds

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Abstract

In light of the 2011 Fukushima disaster, recent discussion has focused on finding the best nuclear storage options, maximizing the oversight power of global institutions and strengthening safety measures. In addition to these, the development of dependable liability coverage that can be tapped in an emergency is also needed to be considered thoughtfully. To succeed, financing is essential using special purpose instruments from the global bond market which is as big as \$175 trillion. Thus, in this paper, for the very first time, a two coverage type trigger nuclear catastrophe (N-CAT) risk bond for potentially supplementing the covering of US commercial nuclear power plants beyond the coverage per the Price Anderson Act as amended, and potentially other plants worldwide is proposed and designed. The N-CAT peril is categorized by three risk layers: incident, accident and major accident. The pricing formula are derived by using a semi-Markovian dependency structure in continuous time.

Keywords Nuclear power risk, catastrophe risk bonds, global market, liability, special purpose vehicle, multi coverage type trigger, semi-Markov environment.