

1137-60-204

Sooie-Hoe Loke* (lokes@cwu.edu), Department of Mathematics, 400 East University Way, Ellensburg, WA 98926, and **Florin Avram**. *On central branch/reinsurance risk networks: exact results and heuristics.*

Modeling the interactions between a reinsurer and several insurers, or between a central management branch (CB) and several subsidiary business branches, or between a coalition and its members, are fascinating problems, which suggest many interesting questions. Beyond two dimensions, one cannot expect exact answers. However, reductions to one dimension or heuristic simplifications allow occasionally getting explicit approximations, which may be useful for getting qualitative insights. Here, we consider a ruin problem for a two-dimensional CB network, under a new mathematical model which combines a bail-out model with an older model involving proportional reinsurance. The motivation is to investigate how a CB should combine distress bail-outs with continuous risk-sharing of the type used in reinsurance, and in particular with the simplest proportional reinsurance, which leads sometimes to exact solutions. (Received February 04, 2018)