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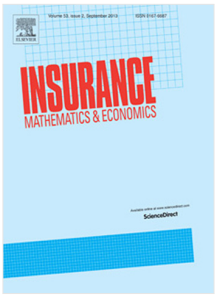

From Concentration Profiles to Concentration Maps. New tools for the study of loss distributions

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From Concentration Profiles to Concentration Maps. New tools for the study of loss distributions.

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Abstract

We introduce a novel approach to risk management, based on the study of concentration measures of the loss distribution. We show that indices like the Gini index, especially when restricted to the tails by conditioning and truncation, give us an accurate way of assessing the variability of the larger losses – the most relevant ones – and the reliability of common risk management measures like the Expected Shortfall. We first present the *Concentration Profile*, which is formed by a sequence of truncated Gini indices, to characterize the loss distribution, providing interesting information about tail risk. By combining Concentration Profiles and standard results from utility theory, we develop the *Concentration Map*, which can be used to assess the risk attached to potential losses on the basis of the risk profile of a user, her beliefs and historical data. Finally, with a sequence of truncated Gini indices as weights for the Expected Shortfall, we define the *Concentration Adjusted Expected Shortfall*, a measure able to capture additional features of tail risk. Empirical examples and codes for the computation of all the tools are provided.

JEL Codes: C43,C46,G32.
Keywords: Concentration measures; Value-at-Risk; Expected Shortfall; Concentration Profile; Gini index.

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