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# Law of large numbers and large deviations for dependent risks

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## Abstract

We analyse the mathematical structure of models for large risk portfolios, especially for credit risk models. These risk portfolios are modelled using a multivariate mixture model for the dependence structure between the risks. The dependence structures are characterized by latent variables  $\Theta$ , which play the role of systematic risks. We show that, depending on the choice of the distribution of  $\Theta$ , there are different asymptotic behaviours for the aggregated risk portfolio, namely law of large numbers/central limit theorem behaviour and large deviation behaviour.

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