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On the limit of a conditional Spearman's rho coefficient under the common factor model

In this talk, I will discuss the limit of a conditional Spearman's rho coefficient under the common factor structural model of credit risk. The considered conditioning event is that the common systemic factor stays below a threshold and the limit is taken as the threshold tends to negative infinity. The main result, established through a relation with the classical theory of regular variation, is that the limiting Spearman's rho is determined by the tail thickness of the distribution function of the systemic factor. Specifically, conditions for the limiting Spearman's rho to be strictly less than one or equal one, are obtained. As an illustration, the calculation of Stress Value-at-Risk for the loss ratio of a homogeneous loan portfolio will be presented.