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**CHANTAL LABBÉ**, HEC Montréal

*Aumann-Shapley allocation of incremental CVA*

The importance of accounting for counterparty risk in the evaluation of a portfolio is widely recognized, especially since the 2007 financial crisis. The credit value adjustment (CVA) is thus computed, and at the counterparty level to capture the effect of netting all of the portfolio components. Internal management issues then raise a question: how to allocate the global CVA to the individual components of the portfolio? A common approach is to allocate a trade the incremental CVA at the time it is initiated, i.e. the difference between the CVA of the portfolio when including and excluding this trade. However, this approach is only applicable in institutions where CVA is computed in real time, leaving out most. For discrete time, the incremental CVA remains a natural tool to isolate the contribution of the trades initiated since last CVA evaluation date. This work examines the problem of fairly allocating this joint contribution to each of the new trades. This problem shares much similarities with the well known risk capital allocation problem, where the goal is to allocate the risk capital among divisions of the firm, and for which the Aumann-Shapley allocation principle is suitable. The literature on risk capital allocation typically considers risk measures satisfying nice properties. Even if such nice properties appear desirable, industry finds value in risk measures not satisfying them, such as CVA. We show how the Aumann-Shapley principle is nevertheless amenable to the incremental CVA allocation problem.