

Abstract

Counterparty credit risk is an important type of financial risk. The importance of proper counterparty risk management became most apparent in the wake of the 2008 series of failures of several large banks. Correlation of market factors is an important issue in the calculation of CVA. A notable case of correlation is wrong-way risk which occurs whenever the probability of default of the counterparty is positively correlated with exposure. The basic formulas for CVA and basic counterparty credit risk models do not account for wrong-way risk because its modeling is nontrivial. This thesis aims to answer how well can the impact of wrong-way risk on CVA be approximated with an add-on which only depends on correlation between the price of the underlying asset and the credit spread of the counterparty. The thesis is supplemented by a fully documented implementation of the model in the *Mathematica* software.