摘要

2008 年金融危機中，銀行衍生品交易部位損失重大，這引起了巴塞爾委員會的高度關注，因此在隨後推出的 Basel III（2011），交易對手信用風險(Counterparty Credit Risk, CCR)的最低資本需求成為其重點之一。在交易對手信用風險損失中占很大比重的是由於交易對手信用變差導致的損失(即信用估值調整 Credit Value Adjustment, CVA 的變大）而非實際違約導致的損失，這使得關於 CVA 的衡量成為銀行較大的課題和挑戰。

本文在 Basel III 的架構下，介紹銀行在店頭市場上交易的衍生性金融商品部位所面臨的 CVA，同時我們嘗試更深入的研究 CVA，首先通過考慮曝險對於風險率（hazard rate）的影響建立一個簡單的模型把錯向風險加入 CVA 的計算，其次探討幾種抵減交易對手信用風險的方式，特別是對比不同擔保品條例下的 CVA 的變化，觀察擔保品多寡對於 CVA 的衝擊。本文使用的數量工具皆為蒙地卡羅模擬。

關鍵字：Basel III、交易對手信用風險、信用估值調整、錯向風險、信用支持附約

Abstract

Instances of massive losses in derivative markets in the 2008 financial crisis urged Basel Committee to introduce the policy of Basel III in 2011, which is also called CCR (Counterparty Credit Risk). As we know, the loss caused by the downgraded counterparty credit rating accounts more than that of default of contracts in CCR, which means the result gets higher in the calculation of the CVA (Credit Value Adjustment). For the banks, it's a big issue to find an open and high-powered CVA solution.

Under the framework of the Basel III, this paper will introduce the CVA on the OTC (over the counter) derivative for the banks. Except for the basic requirements of the Basel, this paper tries to put more attention on the calculation of the CVA and the mitigation. As a whole, there are two key points in this paper. Firstly, with the consideration of the effects of exposure on hazard rate, this paper will establish a model which has commingled the WWR(Wrong Way Risk) to calculate CVA; Secondly, this paper will introduce some risk mitigation methods. The Monte Carlo method (or Monte Carlo experiments) is the main numerical method to solve the mathematical problems in this paper.

Keywords: Basel III, Counterparty Credit Risk, Credit Value Adjustment, Wrong Way Risk