摘要

本文旨在探究當存在市場與信用風險之交互影響下風險性證券之易脆選擇權的評價與避險。本文模型假設違約強度函數服從二因子 Cox 過程，並同時考量交易對手與標的資產違約風險間的交互性。本研究呈現之結果如下：首先，交易對手違約風險導致了權證價格上的信用折耗；然而，標的資產違約風險對選擇權價值產生信用補貼。標的資產違約風險效果明顯占優於對手違約風險效果。其次，此兩不同種類違約風險對權證避險比率亦造成截然不同之影響。究其原因，標的資產違約風險對權證所造成之不對稱影響係因正向「槓桿效果」與負向「提前保值效果」之間的抵換均衡於買權與賣權此二情況下並非一致所導致。另外，給定不同水準下的總體經濟變數，本文模型證實標的物違約風險效果與對手違約風險效果之間存在正向的共移性。此發現可對應實證文獻所探討的「信用感染」及「成串違約」等現象之經濟意義。

關鍵詞：混合選擇權、標的資產違約風險、交易對手違約風險、自發性違約強度

Abstract

This paper derives the pricing formulas and put-call parity for "*hybrid options*"—vulnerable options on defaultable securities—with the presence of the intersection of market and twofold default risk. Default intensities are modeled as a two-factor Cox process, and the dependency of option writers' default on the underlying stock default is also captured. We find counterparty risk generates credit discount on option value, while reference risk generates credit premium. The latter significantly dominates the former. The impact of twofold default risk on option hedging ratios fails to replicate consistency in the price pattern. The asymmetric behavior of option deltas with respect to reference risk is attributed to the trade-off between negative early-fixed effect and positive leverage effect. Also, our model generates a positive co-movement between these two types of default risk impact with varied choices of economic variables. Such a model feature reflects the empirical implication of credit contagion as well as the clustering of default.

Keywords: Hybrid Options, Reference Risk, Counterparty Risk, spontaneous default intensity