摘　要

　　本研究分為兩個部份，第一部份提出評價選擇權時，應考慮加價利益(Mark-Up Interest)的觀點，第二部份則提出信用違約交換選擇權的新評價模型。

　　在第一部份，所謂加價利益是指選擇權賣方為彌補採取避險組合後仍可能發生的損失而向選擇權買方收取的風險補償。本研究的方法是將選擇權市價拆解成理論公平賭局價格與加價利益，建立包含加價利益、買賣權平價理論、隱含標的價格與猜測波動度的選擇權評價模型，解決隱含波動度微笑(implied volatility smile)所帶來模型內部不一致的問題。在建立各種情境條件下之加價利益後，可用來評估選擇權市價的合理性，以提升買賣雙方對市價的合理判斷，有利於風險管理者進行選擇權之造市操作與避險。本研究經由對台指選擇權(TXO)的實證結果發現：加價利益受到距到期交易日、價況程度(moneyness)及猜測波動度的影響。

　　第二部份所提出之信用違約交換選擇權的新評價模型則是延伸 Schonbucher（2000, 2003, 2004）、Brigo（2004, 2005a, 2005b, 2006）、Brigo & Mercurio（2006）、Brigo & Morini（2005）、Jamshidian（2004）與 Wu（2006）的研究，以市場上交易之各年期信用違約交換之商品所導出之費率期間內之各單期（single tenor）遠期信用違約交換率之費率端價值做為計價資產，假設各單期遠期違約交換率為對數常態分配下，可以將信用違約交換選擇權拆解為由各單期加總之違約交換選擇權，應用在投資銀行發行許多相同標的但不同起始日、不同到期日之一系列信用違約交換選擇權（CDS options）時，可以具有評價簡易的優勢，吻合各期間之信用市場狀況，避免套利機會，並能運用信用違約交換（CDS），增進避險與管理信用風險之技術。

【關鍵字】　加價利益、選擇權、猜測波動度；信用違約交換選擇權、遠期信用違約交換率、信用風險

Abstract

This thesis is composed of two parts. The first part is the standpoint of the "Mark-Up Interest" on options. The second part is the new model about pricing and hedging on credit default swap options.

In the first part, the Mark-Up Interest is regarded as the reward on the hedging portfolio to compensate for possible losses. For presenting this, options market prices are decomposed into the fair-game options prices and the Mark-Up Interests. The options pricing model formed with the Mark-Up Interest, put-call parity, implied underlying price, and guessed volatility is used to solve the internal inconsistence caused by the implied volatility smiles. Therefore, the justness of the options market prices could be estimated with the Mark-Up Interests under different scenarios. The result will help the risk manager to do market making and hedging. The empirical results based on the Options on Taiwan Stock Exchange Weighted Stock Index (TXO) in this paper are as follows: The trading days to expiry, moneyness, and guessed volatility are the factors affecting the Mark-Up Interests.

The second part of this thesis extends the research on Schonbucher (2000, 2003, 2004), Brigo (2004, 2005a, 2005b, 2006), Brigo & Mercurio (2006)、Brigo & Morini (2005), Jamshidian (2004) and Wu (2006). We use the fee leg of the single tenor forward credit default swap rate (tenor CDS rate) as numeraire. Under the lognormal distribution assumption on the tenor CDS rate, we decompose a credit default swap option into the sum of tenor CDS options. The result can be used by investment banks to manage credit risk when their derivative book consists of different start-date and end-date CDS options. In addition, our result shows that CDS can be used to hedge against the risk of CDS options. The proposed method helps improve the techniques of hedging and managing credit risk.

【Key words】 Mark-Up Interests, options, guessed volatility, credit default swap option, forward credit default swap rate, credit risk.