Are Credit Spreads Too Low or Too High? ：A Hybrid Barrier Option Approach

Applying a modified barrier option model of credit risk based on Brockman and Turtle (2003) and Giesecke (2004), we explain in this study why corporate bond indices exhibit asymmetric pricing behavior. When yield spreads are quoted higher than expected, it tends to persist. But when they are lower than expected, their reversion to long term equilibrium is significant and prompt. This price pattern cannot be explained by the classical structural model with a standard option. Our hybrid model mitigates that problem while correcting unrealistic features of the barrier option model. The model characterizes the valuation of debt under financial stress and the asymmetric price pattern better than both the classical structural and the standard barrier option approaches. Through the aid of asymmetric threshold cointegration methods introduced by Enders and Granger (1998) and Enders and Siklos (2001), we are able to confirm the asymmetric pricing behavior. We also show that it is the systematic credit risk that underlies the price pattern. Results in this study offer better explanations to the pricing of corporate debt, especially the medium and high yield issues. Specifically, classical structural approach may have prescribed, while omitting an option barrier, higher than needed spreads for firms subject to higher credit risks.