Localized Factor Models in Credit Risk Analysis

Pak-Wing Fok, University of Delaware

Credit portfolios are portfolios of fixed-income investment products such as bonds, loans and credit derivatives. The main risk associated with such portfolios is when a debtor defaults on its obligation. Although such an event is rare, a single default often results in the entire portfolio going to loss.

At the Camp, our group will formulate and study a mathematical description for credit risk known as a localized factor model. Factor models are the basis of formulas such as the well-known Asymptotic Single Risk Factor (ASRF) formula discovered by Vasicek in 1987. Within financial institutions, it is desirable to have extensions to Vasicek’s formula to price portfolios consisting of products from different industrial sectors.

The main prerequisites for this camp problem are basic probability theory and some familiarity with asymptotic analysis.

References:


M. Pykhtin, Multi-factor Adjustment, RISK 17 (2004).