On a Statistical Analysis of Implied Data

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Abstract

We propose a method of evaluating the accuracy of the implied default probabilities. We modify the model proposed by Duffie-Singleton [1999] to allow the parametric statistical analysis. The pseudo maximum likelihood estimator is defined and to justify our method, we shall prove the asymptotic normality of the estimator. The key step is to define a pseudo score vector and apply usual delta method. We also introduce the bootstrap for estimationg the acurcies, which is similar to that for regression models. To implement our method to the real data, we shall recomend the bootstrap rather than asymptotic normality.

Key words and Phases. implied default probability, statistical model, parametric model, psuedo maximam likelihood estimator, asymptotic normality, bootstrap, delta method.