COMPUTATIONAL METHODS FOR CALCULATION OF CREDIT DERIVATIVES FOR INDUSTRIAL COMPANIES

Stikhova O.V.

MSTU "STANKIN", Vadkovskiy lane, 3a, Moscow, 127055, Russia

Mathematical functions of default calibration models for industrial companies continue to be relevant due to their multiparametric properties. As a rule, the real dependence structure of the financial assets is different from the Gaussian one and especially under situations of market stress.

The approaches required for the industrial production manufacturers derivative credit tools market are shown in this paper [1].

The estimation functional characteristics required for solving the problems of forecasting the behavior of some collateralized debt obligations (CDO) and credit default swaps (CDS) problem are given in this paper.

The multiparametrical model based on generalized hyperbolic copula with generalized hyperbolic borders (CGH) takes into account the various mixed distribution and various boundary areas distributions, keepы desirable one-dimensional distribution GH properties [2].

The single-name non-repayment credit risk estimation models help us to estimate the default opportunity and avoid it [3].

In this work the computing experiments and results verification on market products industrial sector companies credit default derivatives value are carried out both with the generated samples and with the real data.

References.

- Stikhova O.V. Mathematical modeling of the industrial companies credit derivatives default process // Vestnik MSTU «STANKIN». Scientific referenced journal. №4(23). 2012. pp.81-84
- Stikhova O.V. Mathematical modeling double normal inverse gaussian copula and large portfolio approximation // «The Fundamentalphysics and mathematicals problems and techno-technological systems modeling ». Annual collected scientific papers. 16. 2014. pp. 97-102
- 3. Stikhova O.V. Mathematical Estimation Methods and Models for Industrial Companies // EPJ Web of Conferences. 248, 03001 (2021) MNPS-2020 https://doi.org/10.1051/epjconf/202124803001