ABSTRACT

The theme: “Applying coupled Markov chain model to credit risk assessment”.

Master thesis: 90 p., 4 illustrations, 10 spreadsheets, 2 appendixes, 32 bibliographic references.

The object of inquiry – bond portfolios.

Subject of research – approach to risk assessment for credit portfolios using coupled Markov chains.

The aim – to explore coupled Markov chain approach of risk assessment for credit portfolios, solve the unknown parameter estimation problem for this model, apply the model to Ukrainian economic agents, find optimal credit portfolio and compare with obtained using other models.

Coupled Markov chain model is applied to risk assessment for credit portfolios, it’s a basic problem in liability management for Ukrainian economic agents too. Significant amount of unknown parameters defines this model, so statistical method for parameter estimation is needed.

The results – coupled Markov chain model was analyzed, method for parameter estimation was proposed, number of defaults for debtors was found for Ukrainian economic agents, optimal credit portfolio was computed and compared with generalized linear mixed model.

Forecast assumptions about the object of research – extend coupled Markov chain model in order to more comprehensive reflection of differences between various sectors, find more efficient solution for parameter estimation problem of the model.

CREDIT RISK, MARKOV MODELS, CREDIT RATINGS, CONDITIONAL VALUE-AT-RISK, BOND PORTFOLIOS.