Modeling of SME credit ratings using non-homogenous backward semi-Markovian approach

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Abstract

This study seeks to understand the transition dynamics of credit ratings for Small and Medium Enterprises in Kenya using a non-homogenous backward Semi-Markov approach. In modeling credit risk, this approach takes into account the time of default conditioned on the rating and its duration. The solution to the initial and final backward evolution equations enable the formulation of a reliability model. The empirical findings will be critical in developing a rating transition matrix that can be useful in risk management and portfolio evaluation for SME loan portfolios. The findings would further enable banks to align with IFRS 9 guidelines with regard to core capital requirements for the underlying loan portfolio.