

The aim of the thesis is to bring new insights into banks' internal credit risk estimates and their application in estimation of credit transition matrices, which are an important part of credit risk modelling with limited publicly available sources. The doctoral thesis consists of three essays that jointly analyse features of bank-sourced credit risk data and practicalities of transition matrices estimation. In the first essay, I empirically test two assumptions widely used for estimation of transition matrices: Markovian property and time homogeneity. The results indicate that internal credit risk estimates do not satisfy the two assumptions, showing evidence of both path-dependency and time heterogeneity even within a period of economic expansion. Contradicting previous findings based on data from credit rating agencies, banks tend to revert their past rating actions. The second essay analyses the extent to which transition matrices depend on the characteristics of the underlying overlapping bank-sourced credit risk datasets and the aggregation method. It outlines that the choice of aggregation approach has a substantial effect on credit risk model results. I also show that bank-sourced transition matrices are more dynamic than those produced by credit rating agencies and introduce industry-specific transition matrices, signalling the existence of industry-specific business cycles. The third essay focuses on dispersion in banks' internal credit risk estimates, concluding that there is a substantial variance in the estimates and that the variance decreases with the amount of information available about the assessed entity. Further, I show that the level of variance is highly dependent on the entity type, its industry and locations of both the entity and the contributing banks. What is more, a considerable part of the variance is systematic, which may be problematic for regulator as banks may over- or underestimate the consensus level of credit risk across their entire portfolios. Finally, I show the massive impact that the COVID-19 pandemic had on dispersion of credit estimates.