Abstract

This thesis investigates the relationship between climate transition risk and credit risk using a unique dataset provided by an anonymous Czech bank consisting of financial and carbon footprint information on corporate clients belonging to the SME category. Firstly, employing logistic regression, a standard credit scoring model was estimated using client-level financial predictors from 2022. Four significant financial drivers of credit default were identified based on the provided data. Second, a set of 11 variables on a client's carbon footprint was separately added to the standard credit scoring model. Results of the climate-stressed models imply that while direct emitters tend to default less, indirect emitters pose a higher threat to the bank in terms of credit risk. Finally, the predictive power of the climate-stressed models was compared to the standard model. Integrating Scope 2 carbon footprint into the credit scoring model enhances its discriminatory power both in terms of sensitivity and specificity.

Keywords climate risk, credit risk, credit default, ESG, carbon footprint, carbon intensity, probability of default, logistic regression

Title Climate risk in financial markets