

Environmental, Social and Governance Scores and Credit Risk: An Exploratory Analysis

Abstract

This study investigates the relationship between Environmental, Social, and Governance (ESG) scores and credit risk using data from the peer-to-peer lending platform LendingClub. The research aims to analyse the impact of ESG scores on loan default risk and provide practical insights for lenders, policymakers, and researchers. By employing statistical and machine learning techniques, including logistic regression, random forest, and XGBoost, the study evaluates the predictive performance of ESG scores in credit risk models. Key findings reveal weak negative correlations between environmental and governance scores and credit risk, suggesting that higher scores in these areas may slightly reduce the likelihood of default. In contrast, social inclusion scores show no significant association with credit risk. While the inclusion of ESG scores marginally improves the predictive accuracy of credit risk models, advanced machine learning models like XGBoost do not outperform simpler models such as logistic regression. This indicates that simpler models may be sufficient for ESG-based credit risk prediction, offering a balance between performance and computational efficiency. The study concludes that ESG scores, although not strong standalone predictors provide valuable supplementary information for credit risk assessment. Recommendations include integrating ESG scores into credit risk models, combining them with additional loan attributes and behavioural data to enhance predictive power, and prioritizing simpler models for practical implementation. Furthermore, the study highlights the need for future research to explore the impact of more granular ESG data, such as industry-specific metrics, and to investigate advanced techniques like anomaly detection for identifying high-risk loans. This research contributes to the growing literature on ESG and credit risk, offering actionable insights for stakeholders in the financial sector.

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