Credit Research Centre

CRC Working Paper Series, No 2026/02

How High Does Your Gini Need to Be? Deriving Minimum Scorecard Discrimination from Business KPIs

By Minh Tran and Mai Nguyen

August 2026

Abstract

Credit scorecards are almost universally evaluated with the Gini coefficient, yet a Gini number in isolation cannot tell a lender whether a model is good enough to meet the business objectives it will be deployed against. We invert the usual evaluation logic and ask a design-time question: given a stated business KPI, what is the minimum Gini a scorecard must achieve for that KPI to be attainable? Under a one-parameter score-separation model we link the Gini to the full accept/reject decision economics and solve the inversion for two KPI families: operating point targets (approval rate and booked bad-rate ceiling) and profit targets; under the bi-normal model the operating-point requirement admits an exact closed form. Two layers absent from prior work are added: a robustness analysis that recomputes every requirement under bi-normal (equal and unequal variance), bi-gamma and skew-normal score distributions, and a probabilistic layer that converts the sampling variance of the AUC into the probability that a scorecard clears its required floor. On the UCI German Credit data, a weight-of-evidence logistic score card achieves a Gini of 0.602. Against a representative operating KPI at a 10% through-the door bad rate the required floor is 0.666 and the scorecard falls short (clearance probability 0.15); against a profit KPI the floor is 0.536 and it passes (0.86). A score-degradation experiment and a replication on the Taiwan credit-card dataset corroborate the machinery. The framework gives risk managers a defensible go/no-go bar before a single model is built.

Keywords: credit scoring; Gini coefficient; discriminatory power; profit scoring; model vali dation; scorecard design

Correspondence:

Minh Tran: Modeling Center, Mcredit, Hanoi, Vietnam. minhtc.ho@mcredit.com.vn

Mai Nguyen: Risk Management Division, Mcredit, Hanoi, Vietnam. maintn3.ho@mcredit.com.vn

THE UNIVERSITY of EDINBURGH

Contact
Credit Research Centre
University of Edinburgh Business School
29 Buccleuch Place
Edinburgh, EH8 9JS
credit.research.centre@ed.ac.uk