A Profit-Based Approach for Evaluating LGD Regressions

When estimating consumer risk regression problems (EAD and LGD in particular), it is common practice to evaluate them using statistical measures, such as the Mean Square Error (MSE) or the Mean Absolute Percentage Error (MAPE). In this presentation, we argue that this is not enough within a financial or business-oriented context, since the profits and costs of any given solution can have a greater impact on the application of the model, as tools such as the H-measure (Hand, 2009) and the EMP measure (Verbraken *et al.*, 2014) have shown for credit scoring. Our proposal develops a profit-based measure for evaluating regression problems that are subject to estimation errors and random shocks, and is calculated by separating the costs and benefits of applying any given model on the profits that arise from the impact of the output of the model itself, and the impact on profits of the error of the estimation. These two quantities (errors and outputs) define a parametric profit surface, which can be regularized and adjusted by random effects constructing a regular, well-behaved function. The surface then serves as input for an expected profit measure. We evaluate the measure, named EMP-R (by Expected Maximum Profit for Regression) on LGD datasets and conclude that the impact of profits cannot be neglected when evaluating these models, and that EMP-R is an effective tool to estimate these impacts.