DIRECTED RISK RESEARCH PROBLEM STATEMENT

Risk Theme	Credit Risk		Problem Nr.	PS16007

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PROJECT TITLE: Measures of loan delinquency and loan portfolio optimisation

PROJECT GOAL:

Investigate the optimisation of loan portfolios over different loan delinquency measures and a corresponding range of default definitions.

HIGH LEVEL DESCRIPTION OF PROBLEM:

The project is intended to shed new light on the concept of loan delinquency by attempting to formulate delinquency measures other than the standard Contractual Delinquency (CD) – which is effectively the balance of the number of missed payments.

Classical credit scoring models, in the widest sense, aim to predict (classify) the intrinsic risk level of loans (either new or existing) – as manifested in their future repayment (or non-payment) [1, p. 5], [2]. In training these classifiers, most of the research effort seem to assume that historical loan repayment records are already pre-classified as either good or bad risks, ensuring that the research focus remains on optimizing statistical model performance – see [3], [4], [5], [6]. In turn, these pre-classified records from the good/bad subpopulations exist as a result of applying a default definition (or threshold) on the scale of a chosen delinquency measure – in this case, the standard CD-measure, e.g., CD≥4 denoting a defaulted ("bad") loan.

The current practice (called the Pre-classification exercise) of finding such a threshold using the CD-measure, depends largely on the subjective (and qualitative) discretion of the lender (or regulator), as well as on the specific portfolio (e.g., mortgages vs. credit cards) and general loan features (e.g., term vs. product tiers) – see [7, pp. 32-40], [8, pp. 123-124].

A delinquency measure in general should accurately quantify the degree of non-payment (if any).

PROJECT OBJECTIVES:

Develop and assess different measures of delinquency with different default definitions (or thresholds).

OUTPUTS REQUIRED:

- A paper in the academic financial literature
- Practical Guidance to the industry on local / international best practice

STRATEGIC VALUE TO DIRECTED RISK RESEARCH:

This research will broaden the scope of credit risk modelling by introducing and testing alternative delinquency measures, hypothesized to be more risk-attuned and to yield reduced net losses. It provides an objective methodology whereby industry practitioners can decide on the optimal loan delinquency measure and default definition to apply to a loan portfolio. The outcome of this research on delinquency measures will be relevant to both banks and the regulator as it has the potential to contribute to both the balance sheet and risk management

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