CREDIT SCORING AND CREDIT CONTROL IX EDINBURGH 2005

Credit Card Transaction Fraud Scoring

Abstract

The arrival in the UK of Chip and PIN technology will undoubtedly bring about significant reductions in the incidence of credit and debit card transaction fraud. However, experience has shown that fraudsters are extremely resourceful and surprisingly sophisticated. When security measures have been upgraded in the past, fraud has continued, simply in a different form. When Chip and PIN was introduced in France, domestic fraud fell appreciably but cross border fraud and non-domestic fraud increased. Furthermore, transactions where the card is not present when the purchase takes place are still vulnerable to attack.

Acknowledging that, for the foreseeable future, fraud cannot be completely prevented, there is clearly a need for detection systems. Transaction fraud detection is, principally, carried out using sets of rules that typify known or anticipated *modus operandi* of fraudsters. These are computationally inexpensive and can be updated quickly if a new MO is identified. If the detection system is sophisticated enough, rules can be designed to compare transactions with the cardholder's regular pattern of usage, or profile. However, the creation of profiles is more often associated with the construction of fraud scores. These enable 'out of character' transactions to be identified and, potentially, stopped before they are carried out. We present, here, the considerations behind our approach to building a fraud score together with preliminary results. These considerations include the choice of observation and outcome periods, the design of predictive variables, the modelling methodology and the assessment of the model's performance.

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