

# CyberAntifraud Cost Model Note

Cost sensitive decision making for false positives and false negatives

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## Purpose

Translate false positives and false negatives into comparable economic terms to support threshold selection and governance decisions.

The objective is decision quality, not metric vanity.

## Definitions

False positive: legitimate transaction flagged or declined. Costs include customer friction, merchant friction, operational handling, and potential revenue loss.

False negative: fraudulent transaction approved. Costs include direct loss, chargeback fees, operational investigation, and secondary reputational effects where applicable.

## Expected net benefit

Define expected net benefit as avoided fraud loss minus friction and operational costs. Evaluate models across thresholds and select policies that maximize expected benefit subject to constraints.

Use scenario analysis with conservative and aggressive cost assumptions to assess sensitivity.

## Operational constraints

Constraints include maximum alert volume, maximum manual review capacity, and business acceptable decline rates.

A model is acceptable only if it improves benefit within these constraints across multiple time windows.

## Reporting

Report cost curves, recommended thresholds, and the stability of the chosen threshold under drift.

Always provide the assumptions table. Reviewers must be able to understand and challenge the cost choices.