

INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

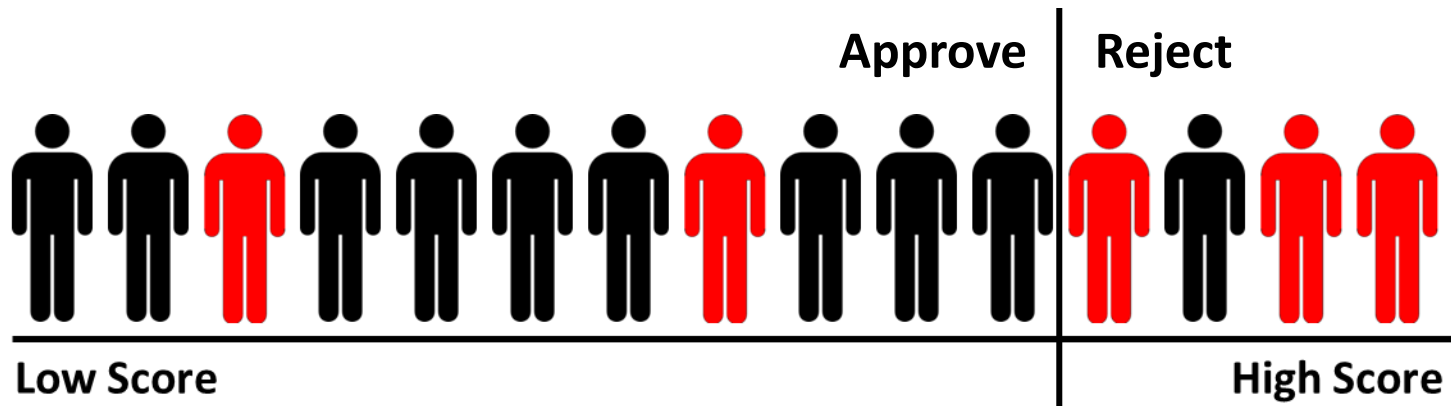
Scoring in Financial Practice

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Finanční matematika v praxi II

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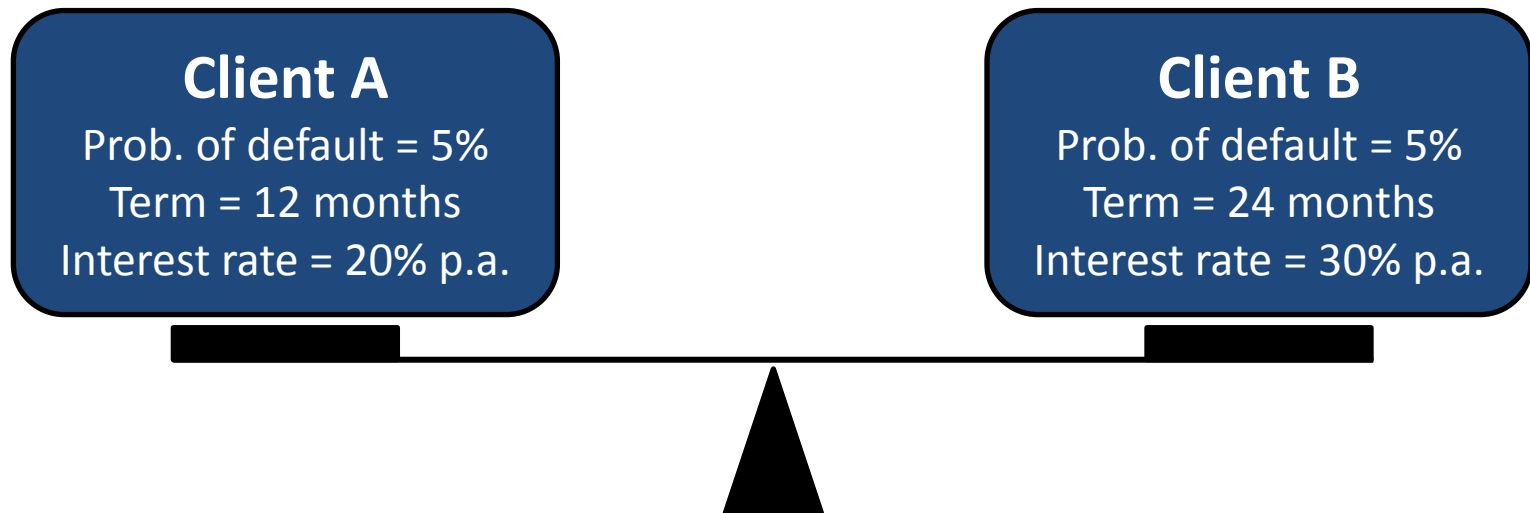
What is scoring?



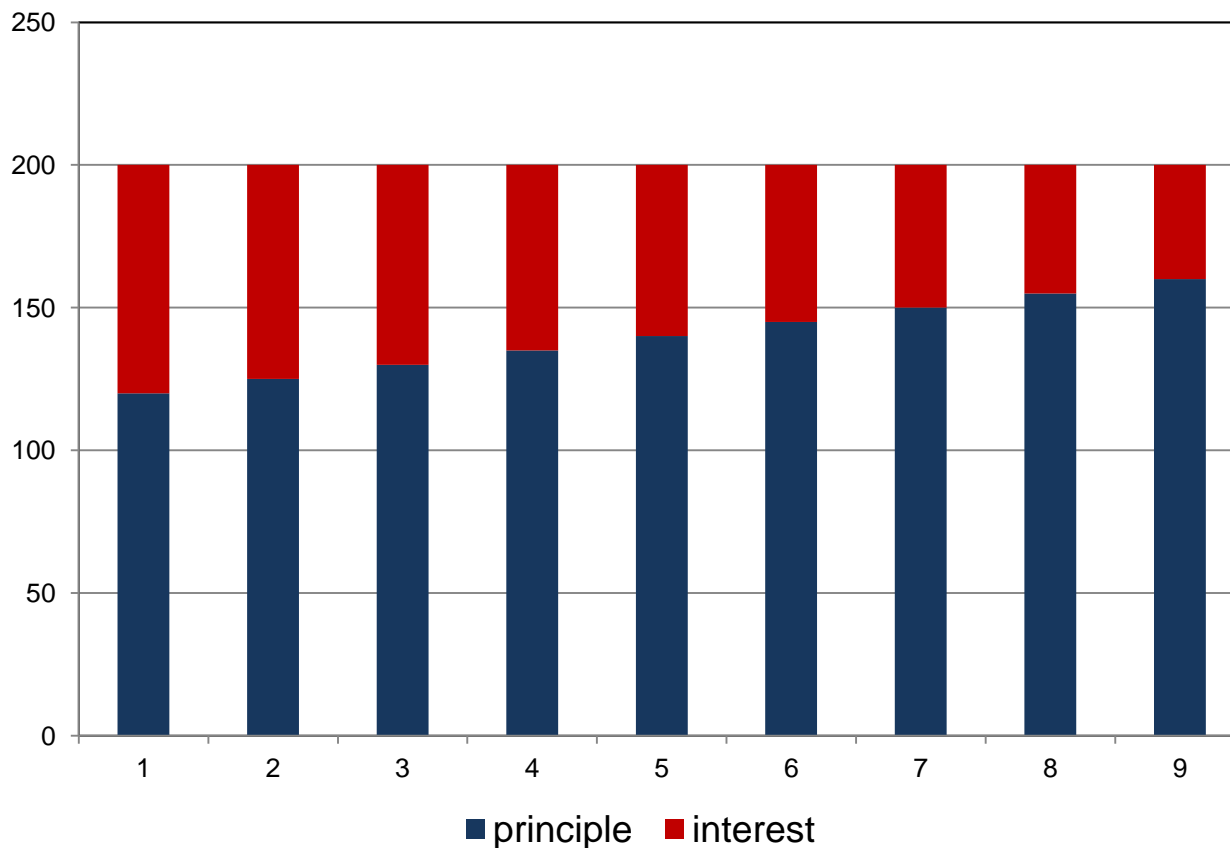
What kinds of “scoring” models can we use?

- Random approach
- Simple and expert models
- Scoring models
 - WOE models, logit, probit, regression trees...
- Combination of scoring models (targets)
- Profitability based models

Concept of profitability



Loan cycle



- $p(t)$ – probability of default at t^{th} installment
- $u(t)$ – interest amount of t^{th} installment
- $x(t)$ – unpaid principal after t^{th} installment
- $r(t)$ – recovery rate for t^{th} installment

Expected profit

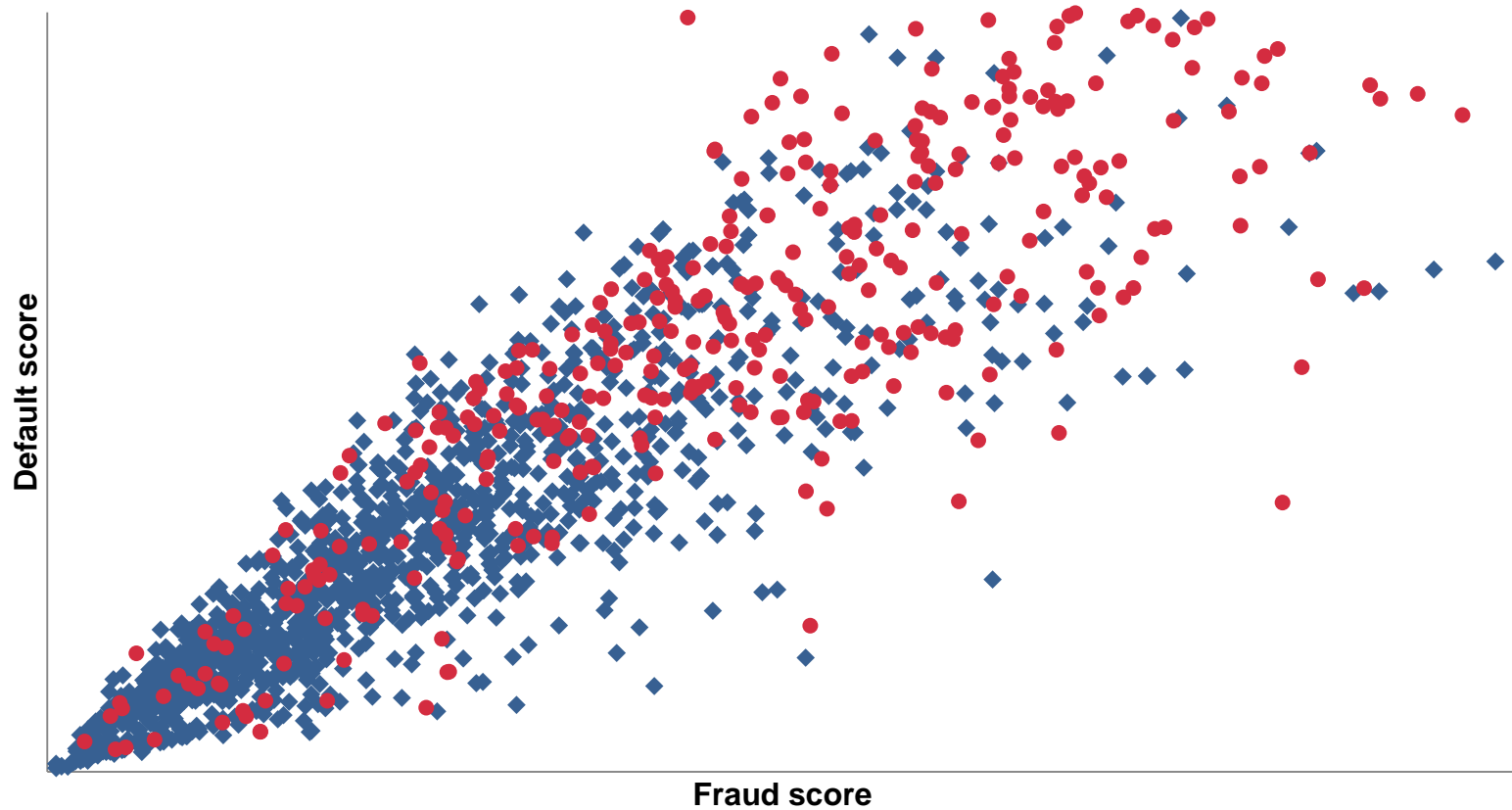
$$EP = EI - EL - EC$$

$$EI = \sum_{t=1}^T \left(1 - \sum_{s=1}^t p(s) \right) u(t) \quad EL = \sum_{t=1}^T p(t) x(t-1) [1 - r(t)]$$

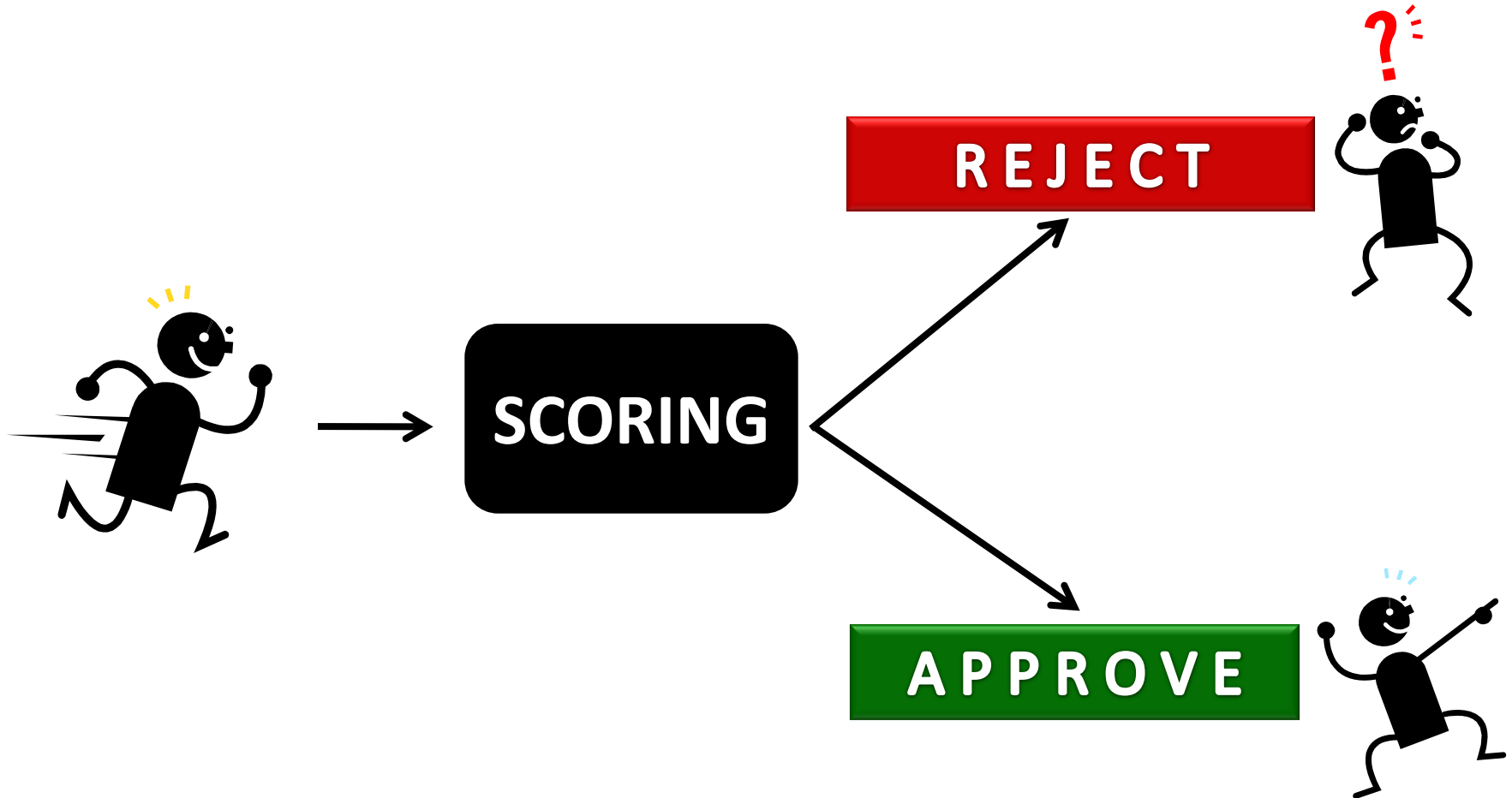
$$EC = FC + VC$$

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Profitability vs. probability of default



What does the management know about all of this?



Conclusions

- Credit underwriting is an interesting area 😊
- There are various mathematical models involved
- There is a lot of space for rational thinking on the top of mathematical modeling

Thank you for attention