

Credit scoring in the  
developing markets

The case study of Russia.

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**Edinburgh, 2007**



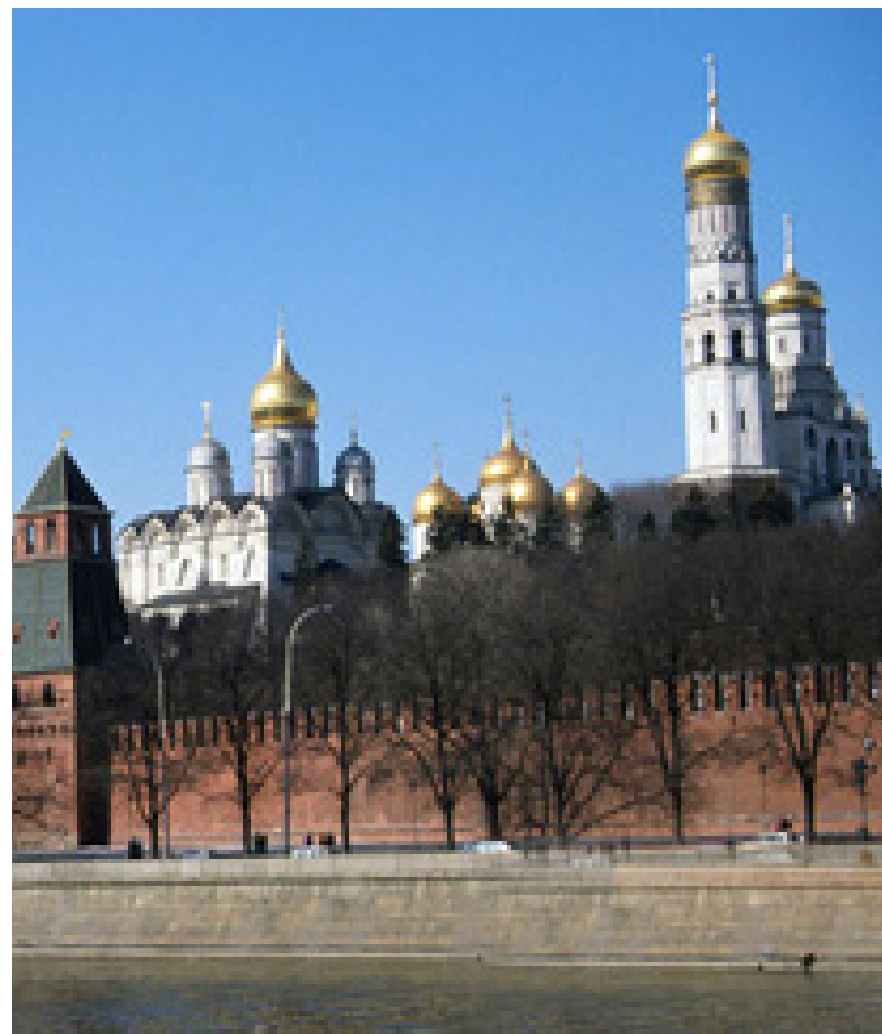
# Disclaimer and general notes

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This presentation contains no advice that the viewer can rely upon while making investment decisions.

The author accepts no responsibility for investment decisions one can take based on the presented material. Expressed views and opinions are the of presenter's own and do not necessarily represent the opinion of the Rosbank.

Average RUR : GBP = 51 : 1



The country



# MOSCOW



# Krasnoyarsk (Siberia)



# Sotchi (Winter Olympics – 2014)



# Vladivostok (Far east)



# Rosbank in retail markets

LOANS		
№	Bank	Loans to individuals as of 01.01.2007, RUR mln
1	Sberbank RF	694,686
2	Russian Standard	160,592
3	<b>ROSBANK</b>	76,966
4	VTB 24	41,478
5	Uralsib	35,808
6	Bank of Moscow	33,236
7	Home Credit	30,651
8	Raiffeisenbank	27,451
9	URSA-Bank	26,915
10	IMB	22,333

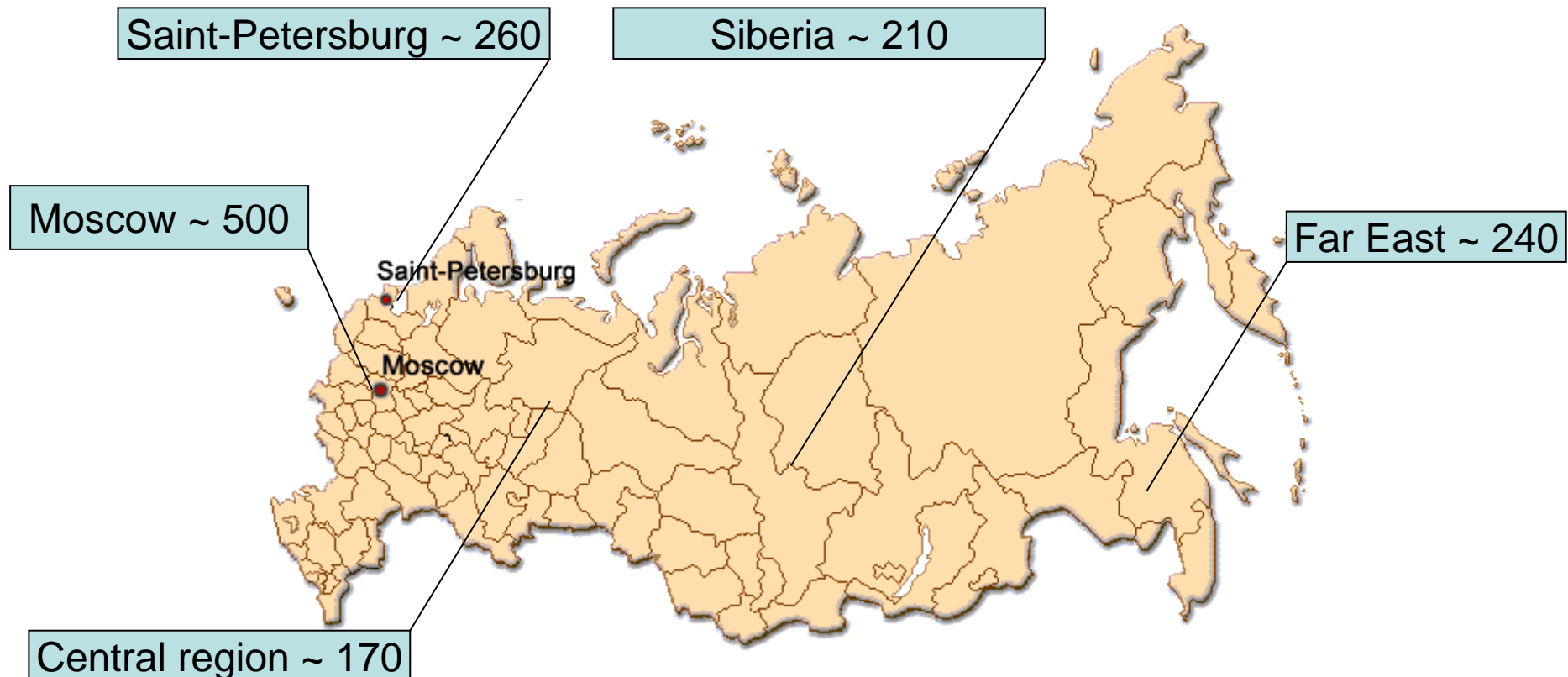
DEPOSITS		
№	Bank	Deposits of individuals as of 01.01.2007, RUR mln
1	Sberbank RF	2,020,276
2	VTB 24	141,896
3	Bank of Moscow	84,785
4	Gazprombank	66,669
5	<b>ROSBANK</b>	63,202
6	Uralsib	59,612
7	Raiffeisen	52,384
8	Alfa-Bank	47,204
9	Promstroybank	38,193
10	Vozrozhdenie	37,004

Total market size is approximately USD 60 billion

Source: CBR, April 2007; analytical reports



# Average consumer monthly income (USD)



- Current national monthly revenue from retail loans is estimated at approximately US\$ 3 billion
- Disposable income (30% of the total national personal income) is estimated at the US\$ 14 billion
- There is an opportunity for the banks to attract most cautious customers who yet did not resort to credit

# Credit bureaus

- National bureau for credit histories (founded by major banks and Russian banker's association)
- Global payments (Major shareholders are Global Payments International and Home Credit Bank)
- Experian-Interfax (Founded by Experian and Interfax – the leading Russian news service provider)
- ~ 20 other small local bureaus



13 mln



8 mln



4 mln



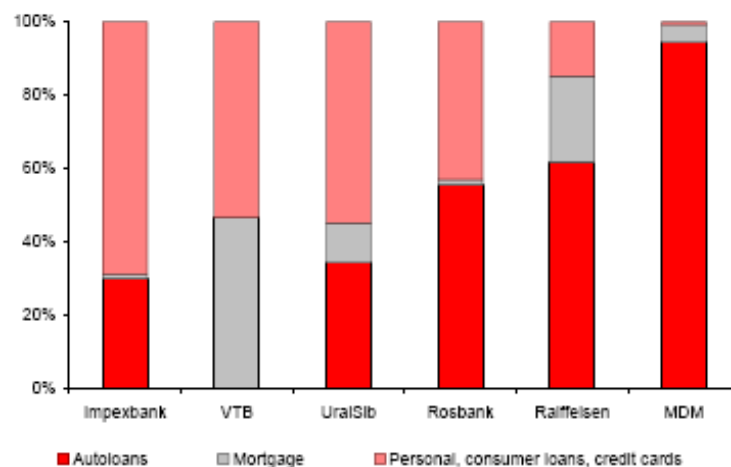
3 mil

**Total = 28mln**

Source: bureau reports published during 2007

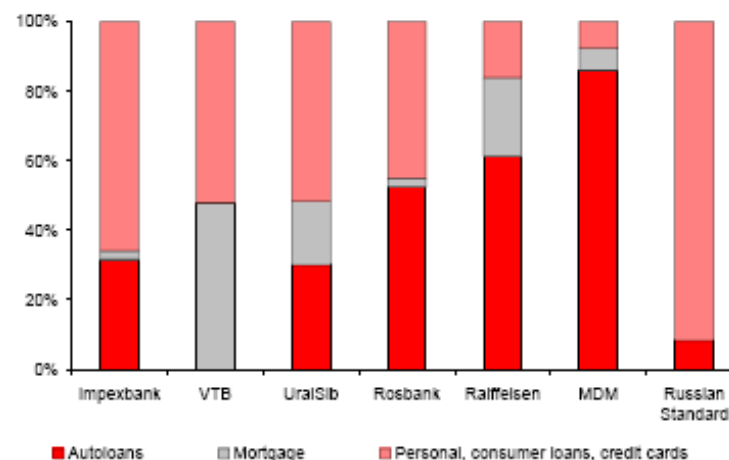
# Diversification among market leaders

Figure 6: Retail portfolios, December 2005



Sources: Company's reports, RBC-rating 2H 2006

Figure 7: Retail portfolios, June 2006

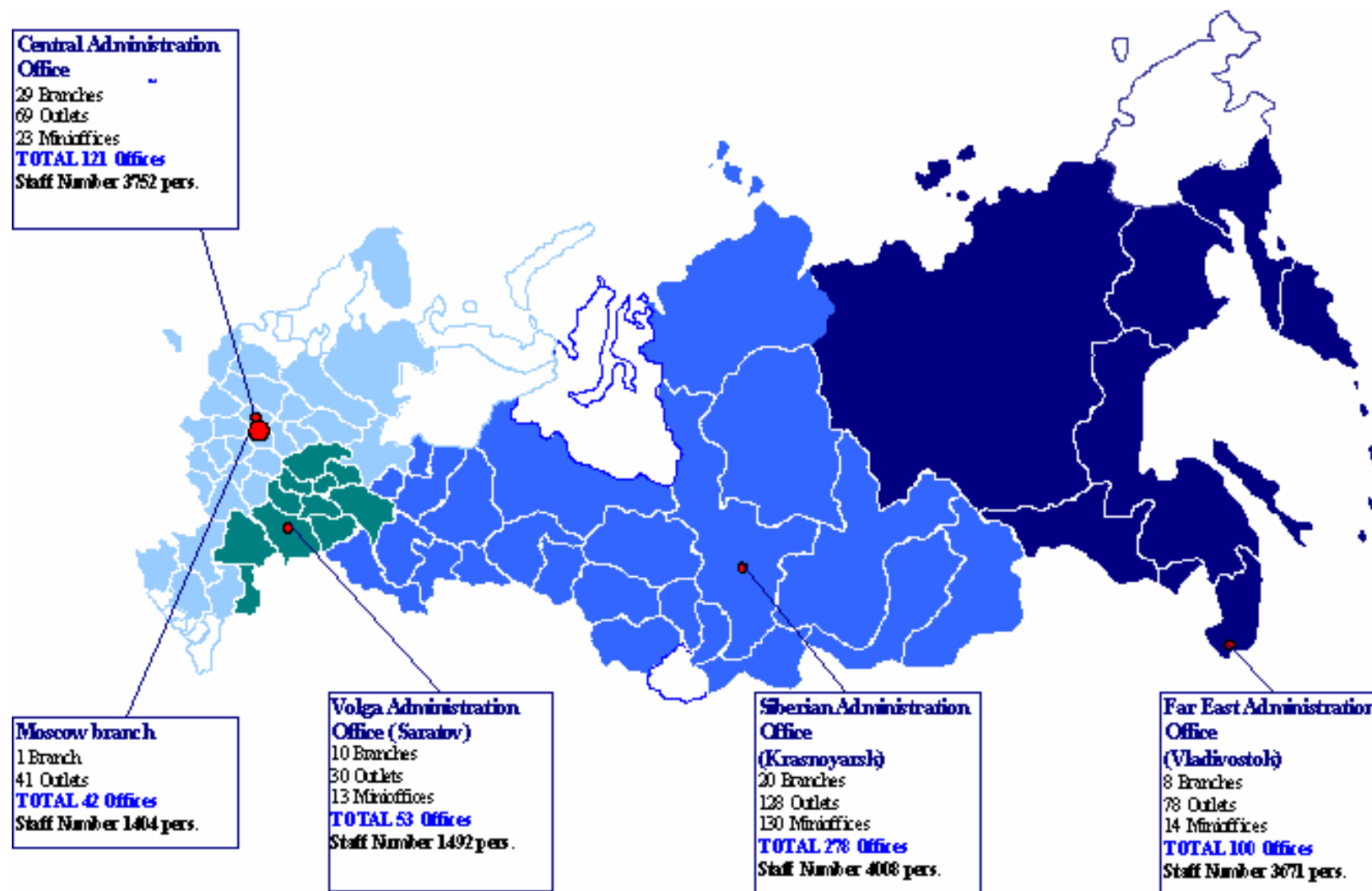


Sources: Company's reports, RBC-rating 2H 2006

	2004	2005	1H06	Current trend
Mortgage, \$ bln	0.9	3.0	6.2	Growth
Auto loans, \$ bln	2.5	4.5	6.0	Stable/stagnation
Consumer finance, \$ bln	1.8	3.0	4.5	Stable/stagnation
Credit cards, \$ bln	0.5	1.0	4.0	Growth
Personal loans, \$ bln	16.3	29.5	35.0	Growth
Total retail loans, \$ bln	22.0	41.0	56.0	Growth

Source: RBC rating, Company reports, Alfa bank estimates 2H 2006

# Rosbank and Russian retail market



- Number staff as of 01/01/2007
- Number of offices as of 01/04/2007
- Over 15000 employees
- Over 400 offices

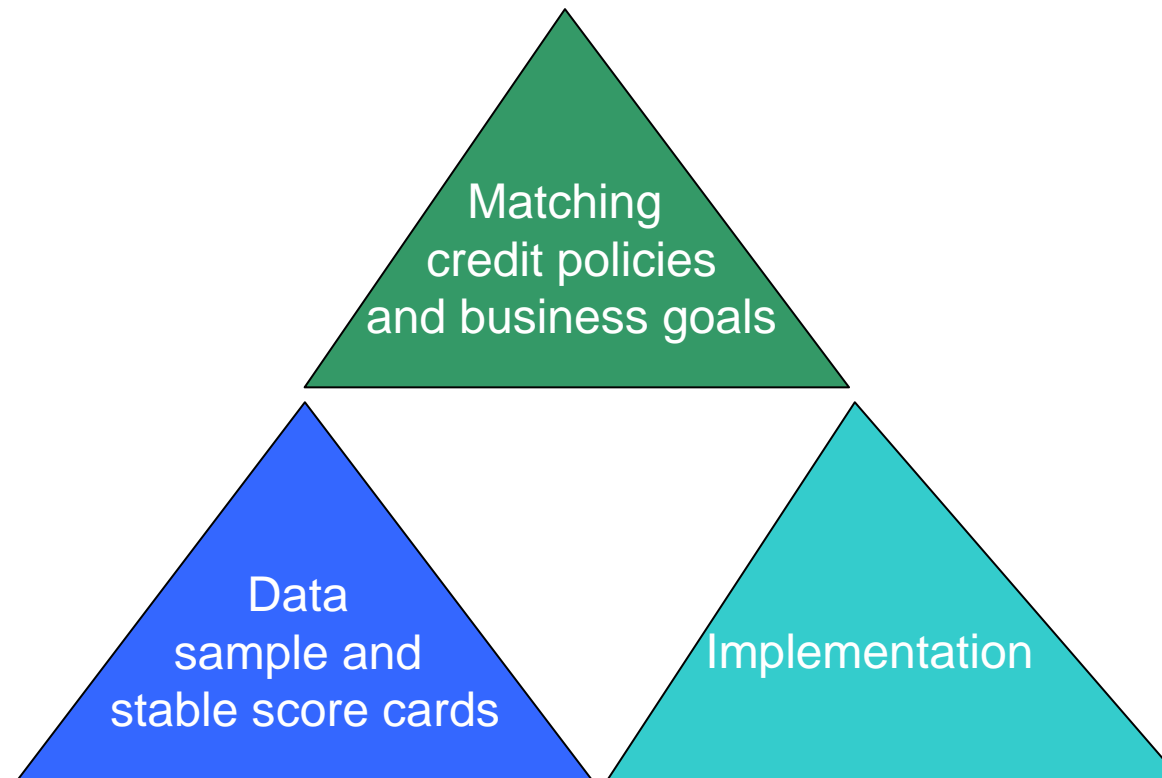


## How Russia differs from UK ?

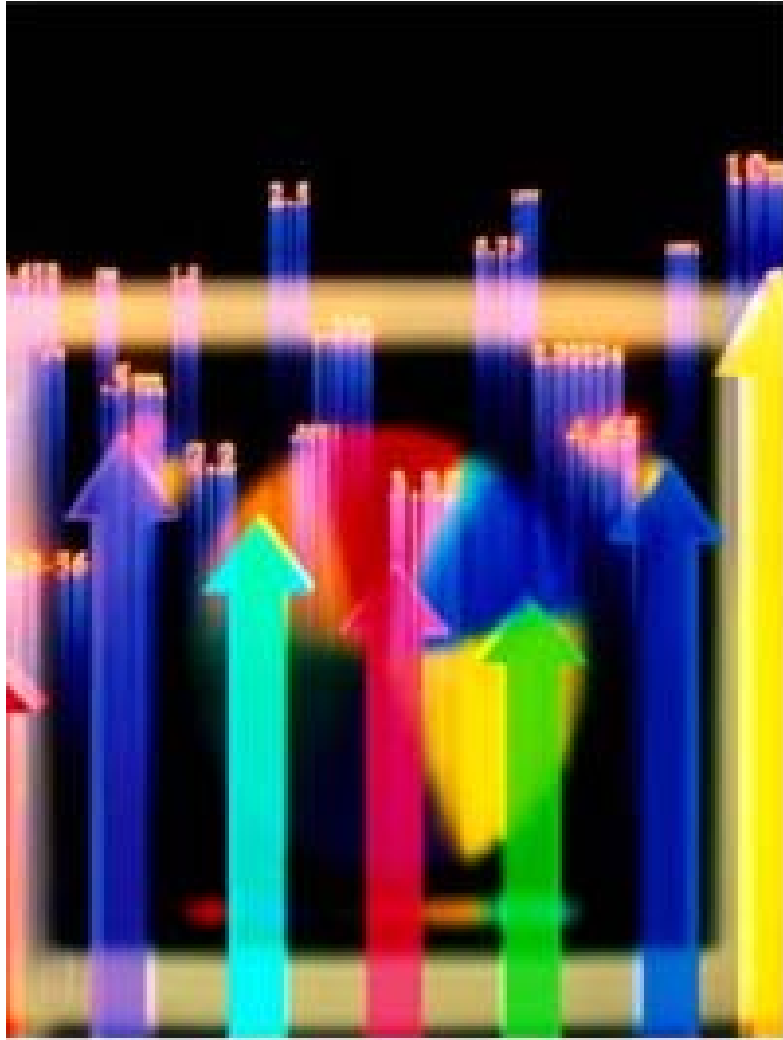
- 85% customers do not have long credit history
- Low level of income (as compared to the UK)
- People prefer installment loans
- Repayment behavior differs from region to region

# Scorecards and risk management practices

# Key success factors in managing retail risks



# The main challenges in building scorecards



## Challenge to analyse the data samples

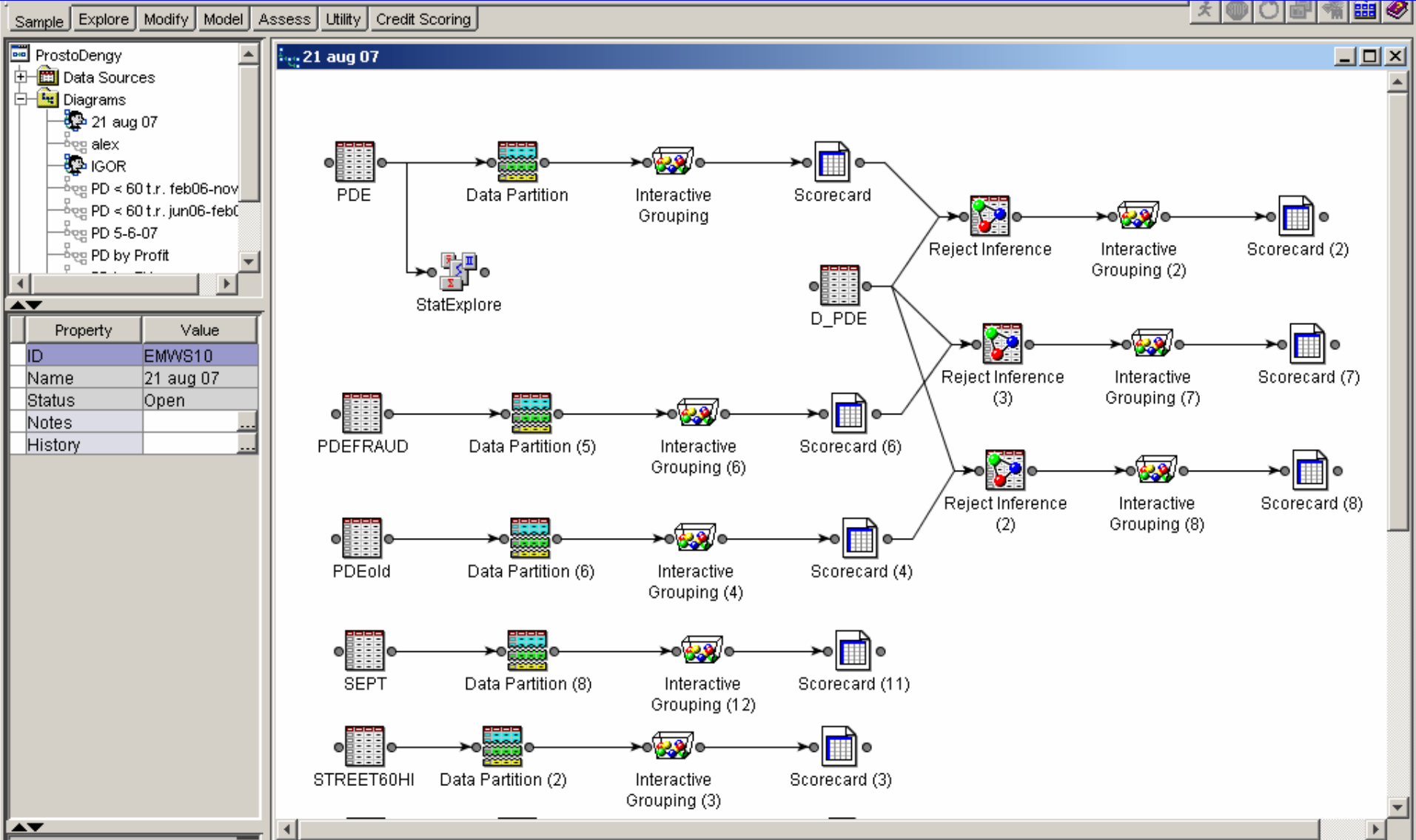
- Predominantly short maturity installment loans: small observation and performance history
- Originating decisions are often based on the personal judgments which makes it difficult to include reject interference
- Many banks do not have good quality data to build good scorecards: it is required to obtain the data from many different sources
- Outdated front office systems: some of the application or performance data may be hard to get or completely lost
- Credit and collections policies or products may change often: this may result in significant changes in performance

# Rules for preparing the data sample



- Same observation window for all vintages (usually somewhat around 9 – 12 month)
- Adjusting for actual level of fraud in the data sample (sometimes excluding fraud cases and building separate scorecards)
- Monitoring policy changes and excluding irrelevant or outdated variables
- Testing the model stability for several definitions of “bad loan” (excluding and including frauds; 90-ever; 90-to-date; etc)
- Bootstrapping to test the model when data samples are small

# Scorecard development process



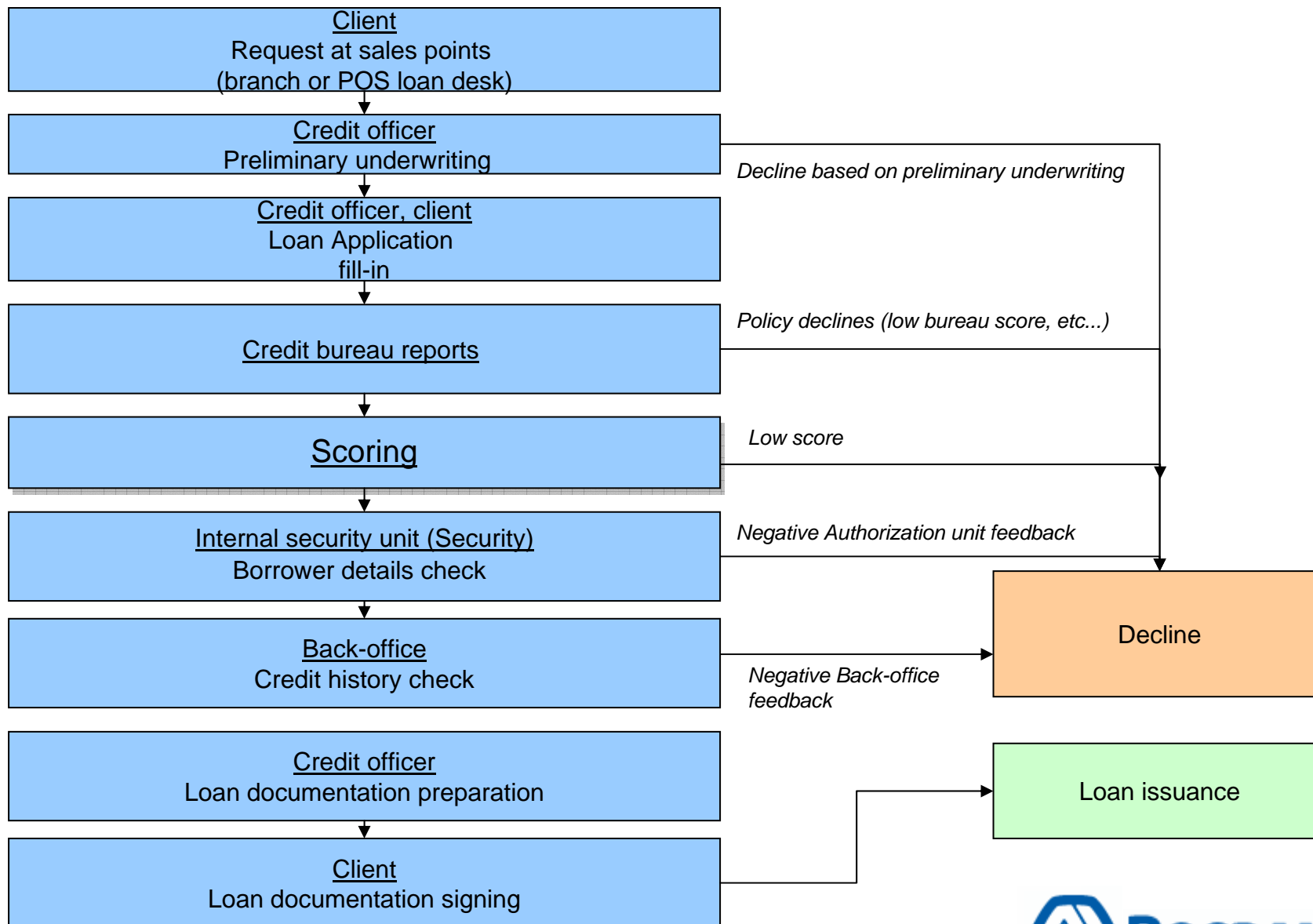
# The main challenges in implementing scorecards



## Technological challenge

- Outdated front office systems
- Slow communicational channels
- Lots of trust is put into the personal judgments
- Credit bureaus are yet to develop their databases

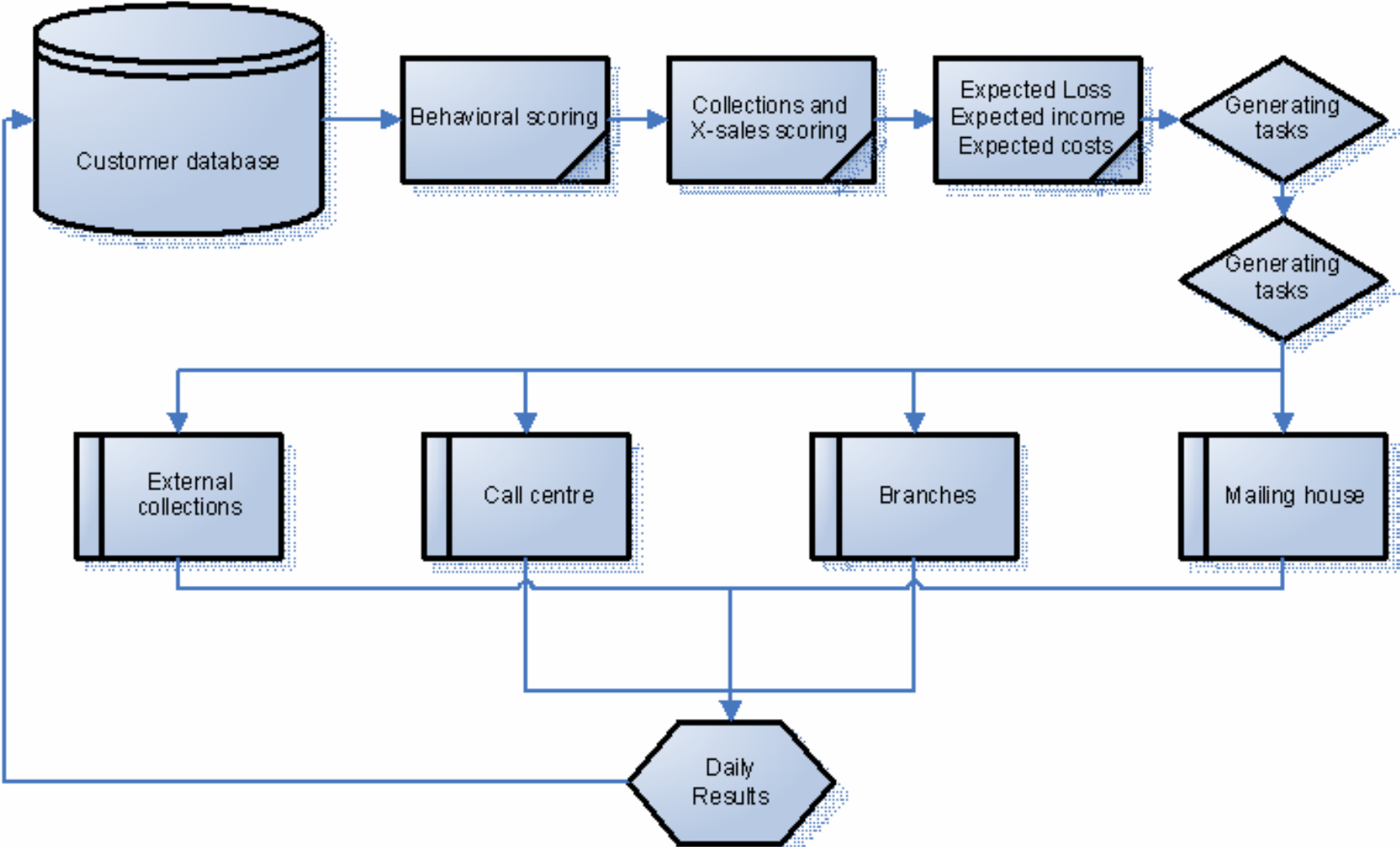
# Application process



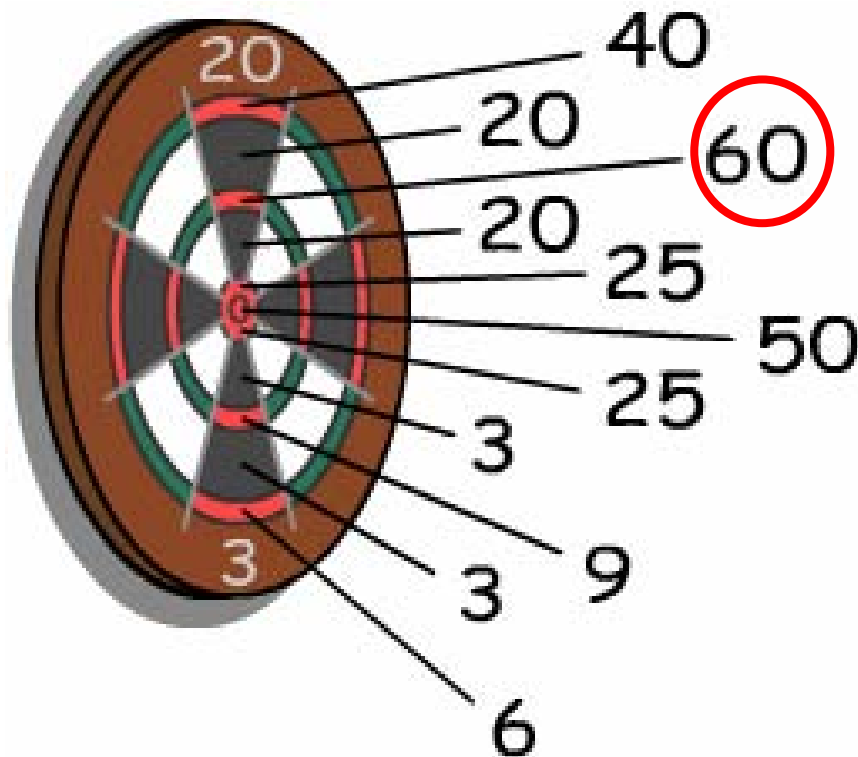
# Scoring in origination policy rules

	Bureau score 0 - 75	...	...	...	675 - 750
Bank scores 0 - 18	Red	Light Green	Light Green	Light Green	Bright Green
18 - 36					
36 - 54					
...					
...	Light Green	Light Green	Light Green	Light Green	Bright Green
...					
...					
168 - 180	Light Green	Light Green	Light Green	Light Green	Bright Green

# Collections and X-sales



# Challenges in setting out credit policies



## What is the target rate ?

- Multiple, sometimes controversial, management goals
- Simultaneous focus on market share, portfolio growth, earnings, quality of new loans and collections

# Common approach

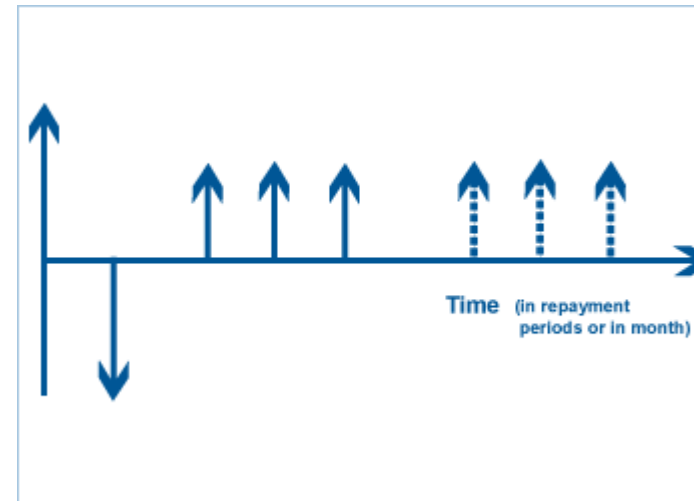
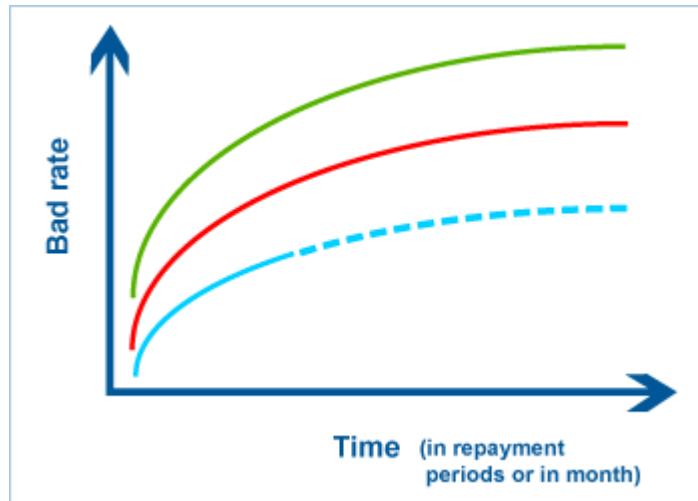
## Maximization of “expected profit”

$$\max(\textit{profit}(\textit{correct\_accepts}) - \textit{loss}(\textit{incorrect\_accepts}) \\ - \textit{Lost\_income}(\textit{incorrect\_rejects}) + \textit{saved\_provisions}(\textit{correct\_rejects}))$$

## Main problems with that

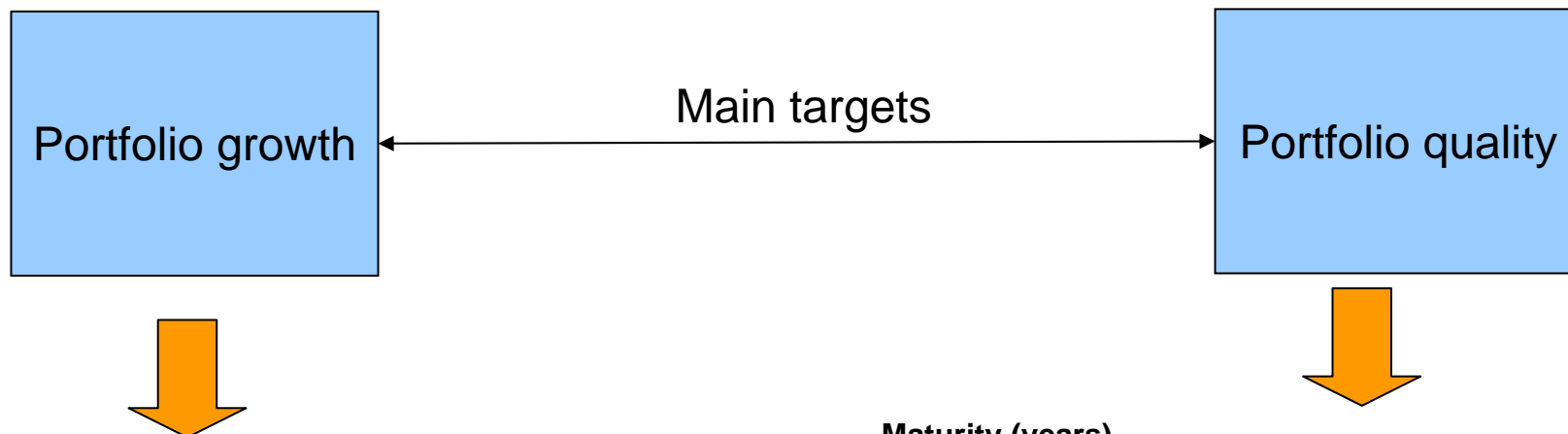
- Not accurate account for fixed costs
- Does not include tax effects
- Does not necessarily match with any strategic goal

# Modeling expected losses and income



1. For new loans – first few month are indicatives of how many bad customers and how many prepared accounts the bank can be expecting to get from the vintage.
2. Simulate expected cash flow of the vintage and estimate expected returns and deviation of returns for new vintages

# Setting the cut offs



**Cut offs are set to meet minimum risk requirements**

- First payments defaults
- Roll rates
- Prepayment rates
- CoR

Maturity (years)

	1 year	2 years	3 years
AAA	0,0%	0,0%	0,0%
AA	0,0%	0,0%	1,0%
A	0,0%	1,0%	2,5%
BBB	1,0%	2,5%	4,0%
BB	1,5%	3,0%	4,5%
B	2,0%	3,5%	5,0%
CCC	2,0%	4,0%	5,0%
CC	2,0%	4,5%	6,0%
C	3,0%	5,0%	7,0%
D			

In this example each portfolio receives its rating based on the expected loss at maturity. Figures do not represent actual figures used in any rating system.

# The minds behind the story



Thank you and welcome your questions

*SEE AS FAR AS YOU CAN IMAGINE...*

