

# Identification process of unsecured interbank loans

Ronald Heijmans

making of  
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# How to identify money market payments ?

- Methodology introduced by Craig Furfine, 1999, BIS

Matching of..



- Payment on day  $t$
- from participant **A** to **B**
- amount **X**  
(rounded to 10 mln euro)

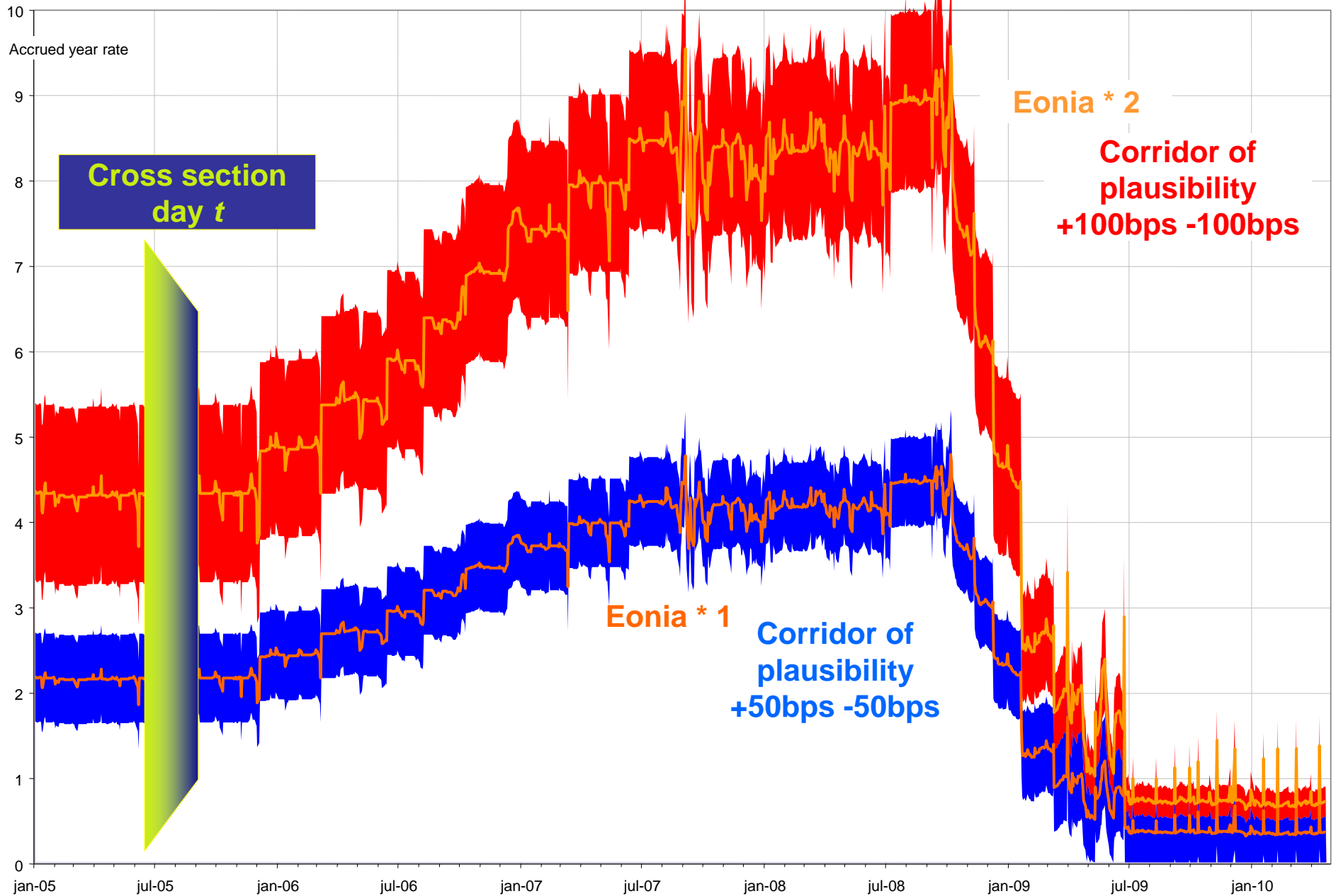
- Payment on day  $t+1$
- from participant **B** to **A**
- amount **X**  
*plus*  
**plausible**  
**interest rate**

## Some calculation examples of accrued interest

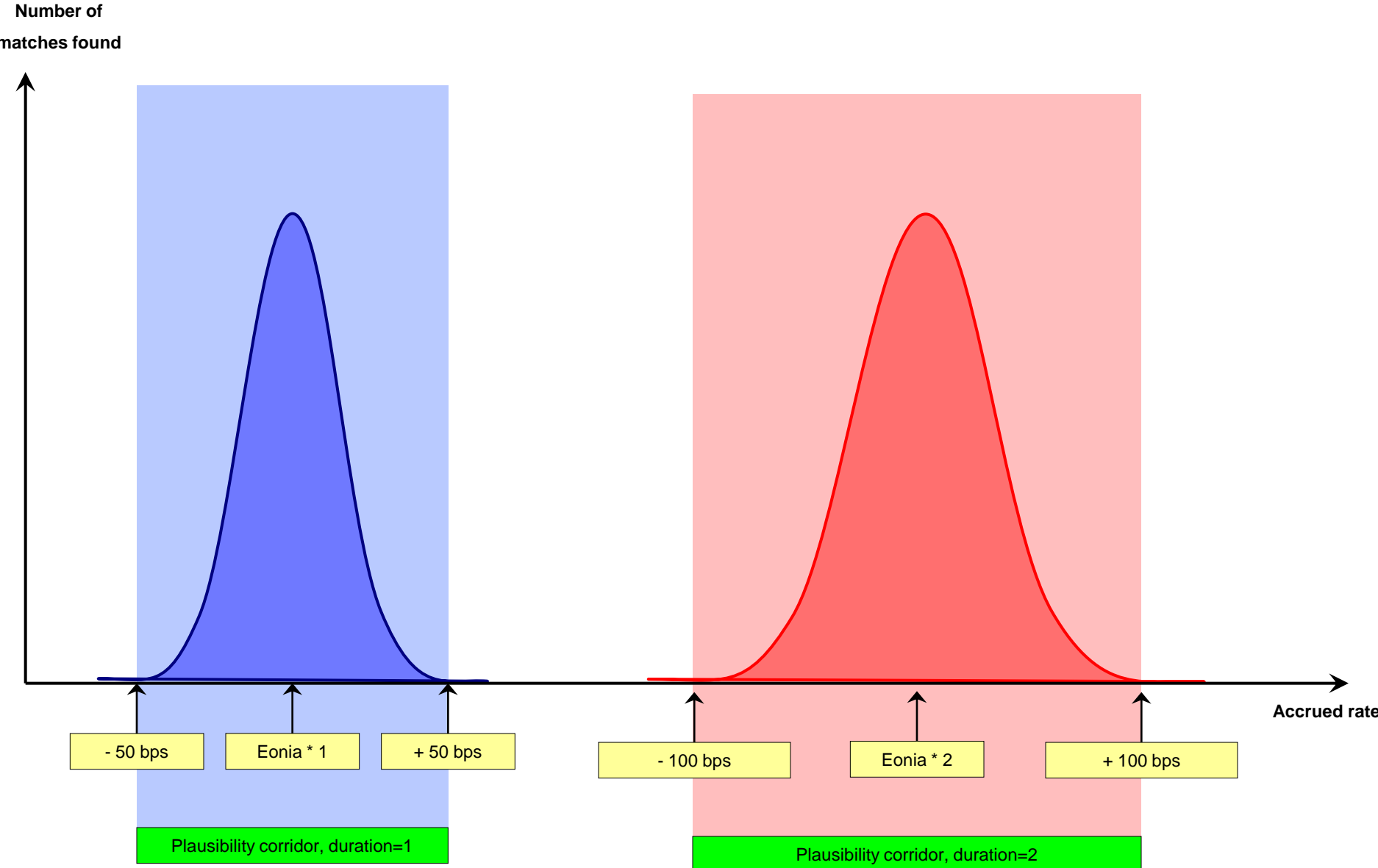
<b>Loan amount</b>	200,000.00	20,000,000.00	1,000,000,000.00
Rate	3.97%	3.00%	0.15%
Interest amount (year)	7,940.00	600,000.00	1,500,000.00
Duration (nr days of loan)	30	30	3
Number of days per year	360	360	360
Accrued interest amount	22.06	1,666.67	12,500.00
<b>Refund (loan + interest)</b>	<b>200,022.06</b>	<b>20,001,666.67</b>	<b>1,000,012,500.00</b>

**Not visible in Payment transactions**

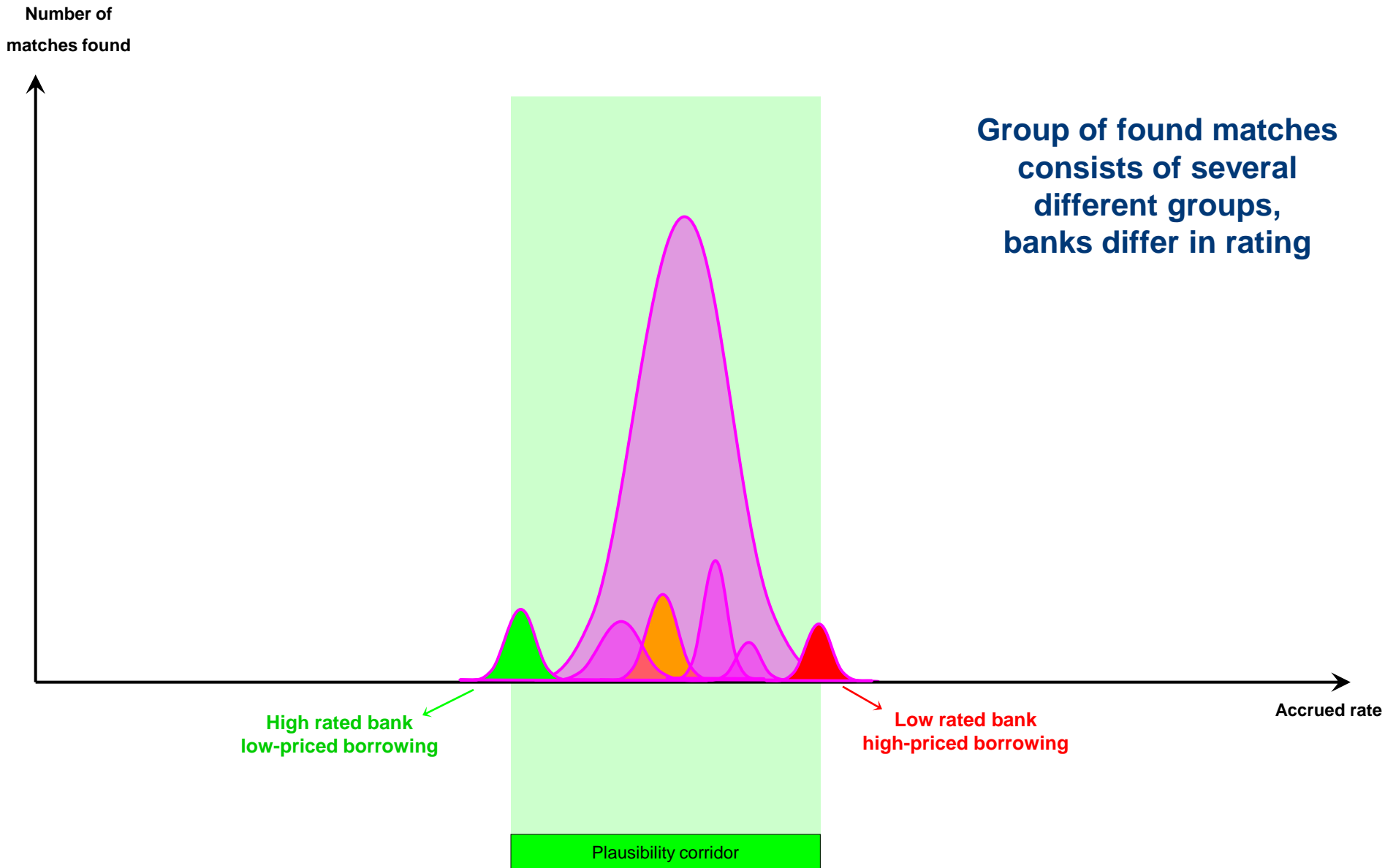
# Areas of plausibility of rate . . .



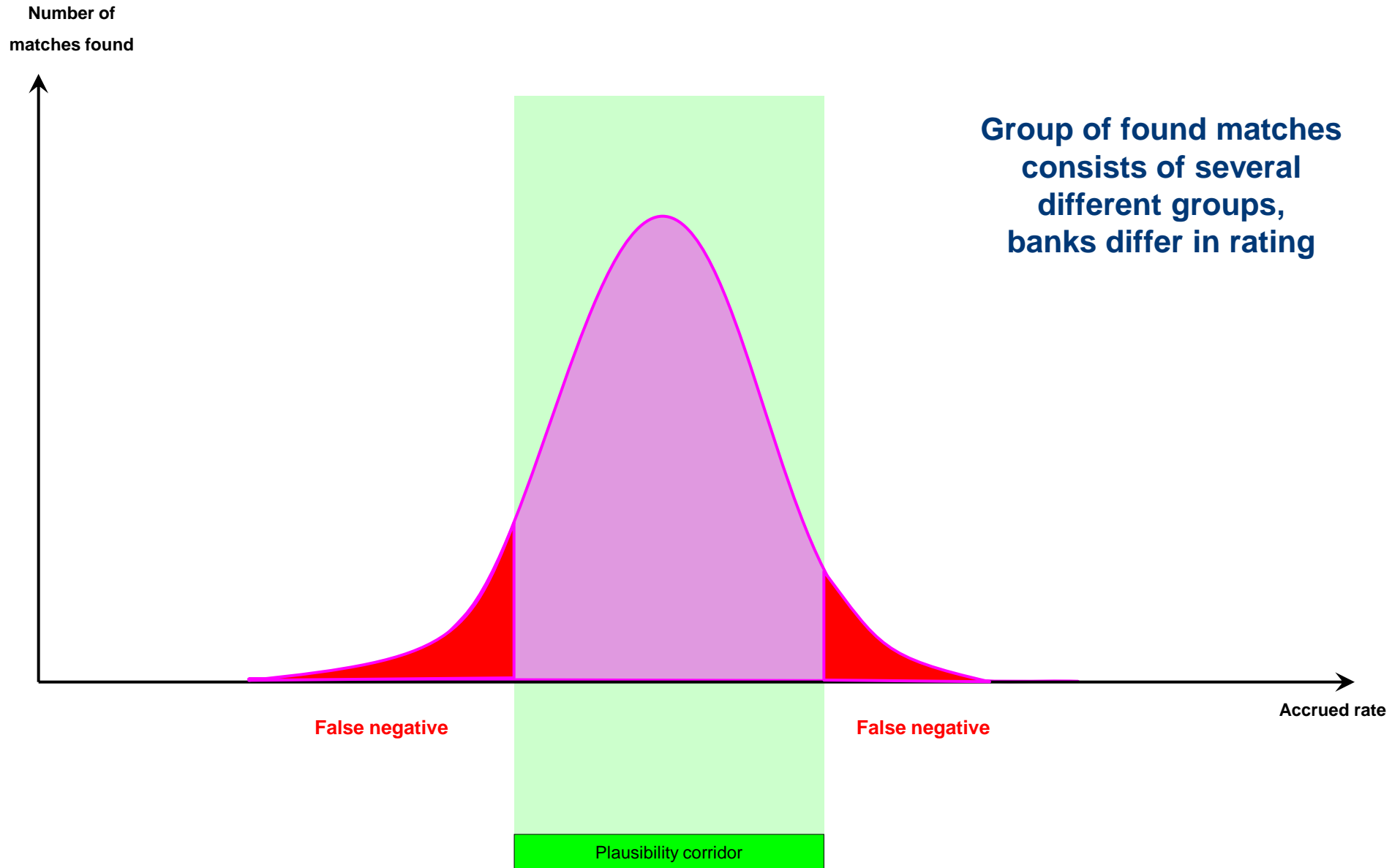
# Cross-section day $t$ - Plausibility of rate . . . in an ideal world



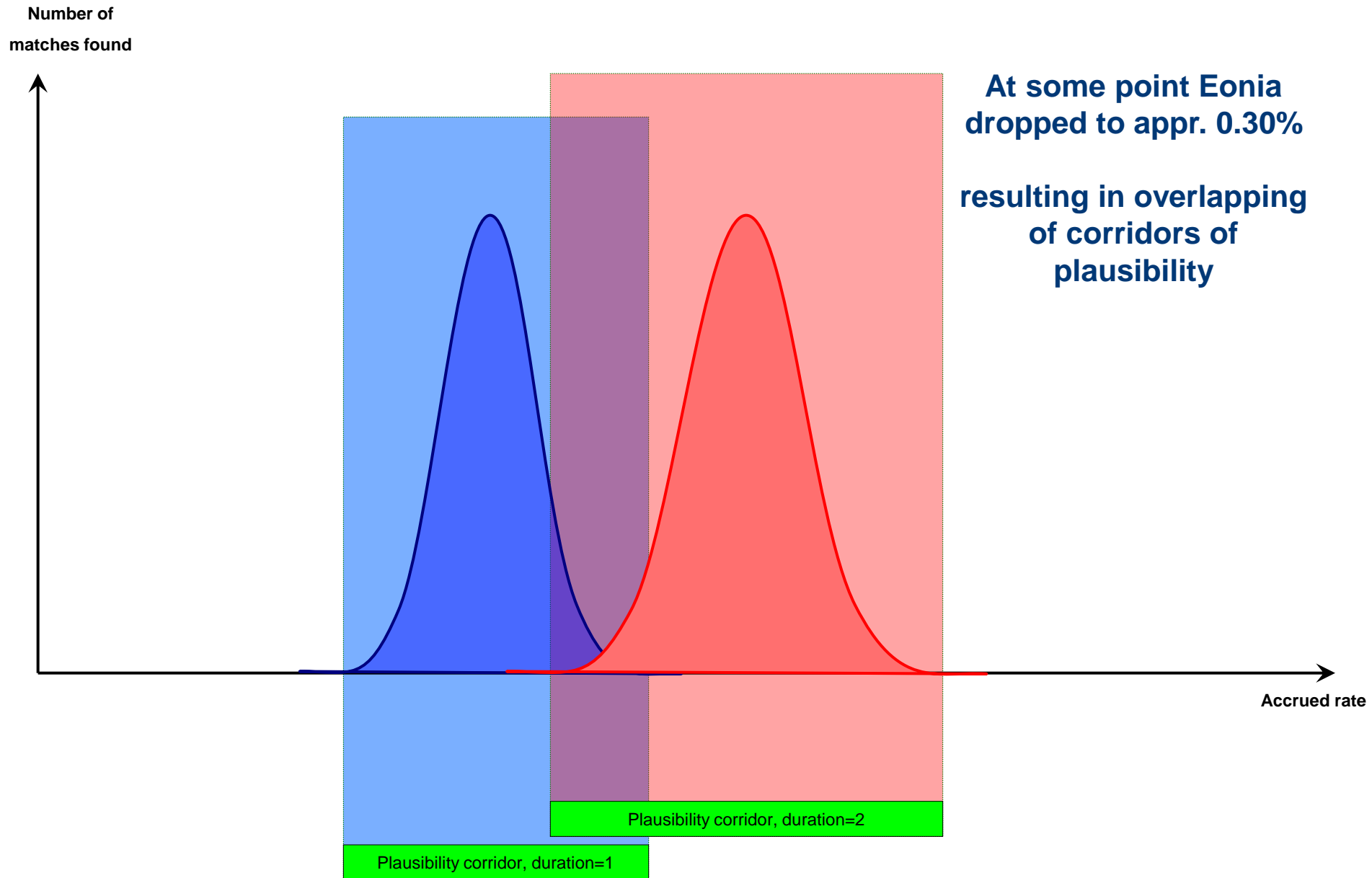
# Plausibility of rate . . . in a less ideal world (1/4)



# Plausibility of rate . . . in a less ideal world (2/4)

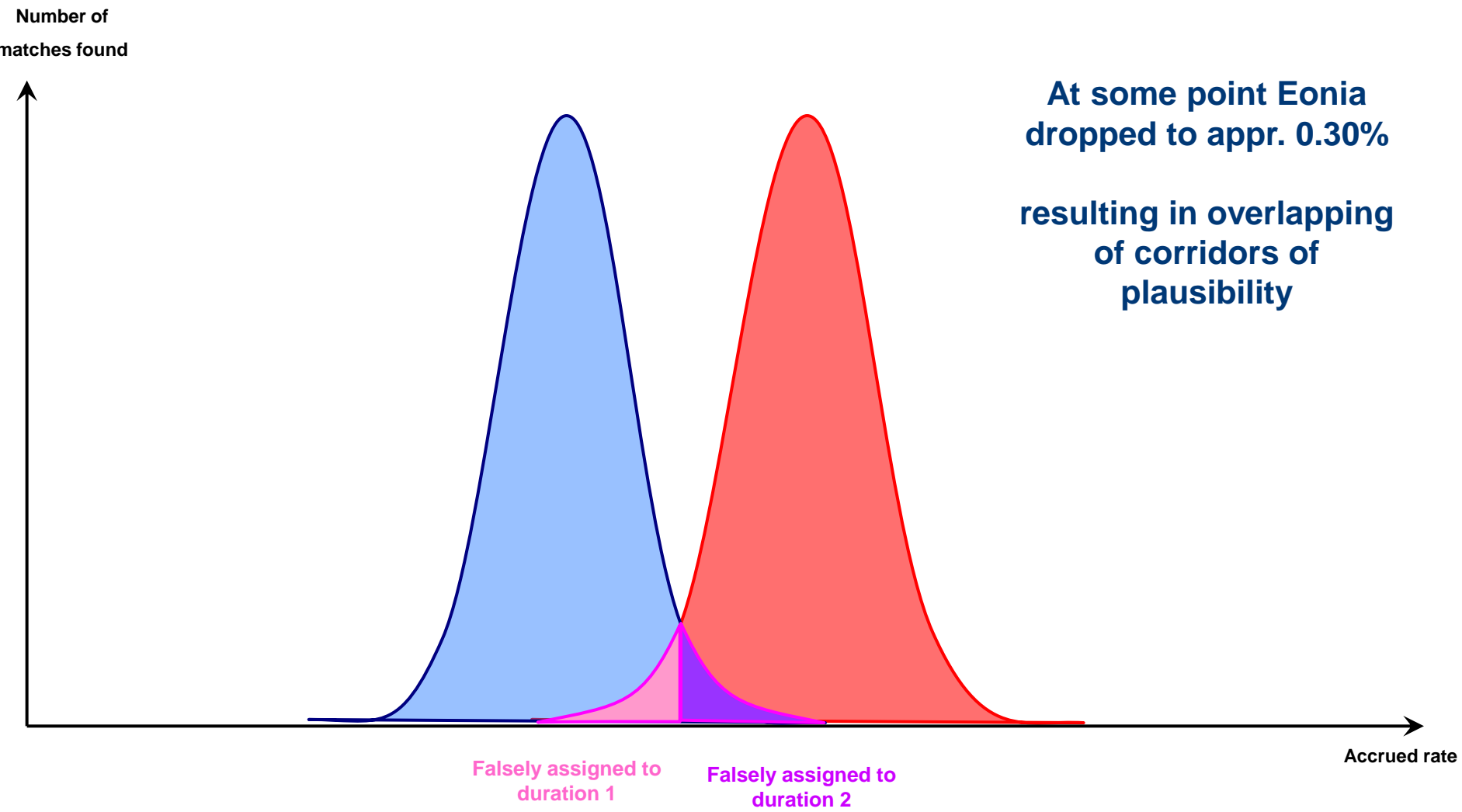


# Plausibility of rate . . . in a less ideal world (3/4)





# Plausibility of rate . . . in a less ideal world (4/4)

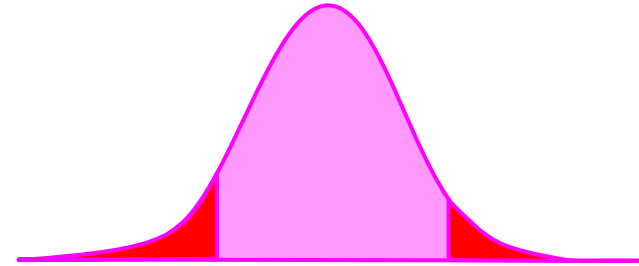


# Matching is never 100% perfect

- Type 1 error (false positive)  
→ Payment transaction wrongly classified as interbank loan
- Type 2 error (false negative)  
→ True interbank loan wrongly rejected
- Type A error  
→ Wrongly assigned to a duration

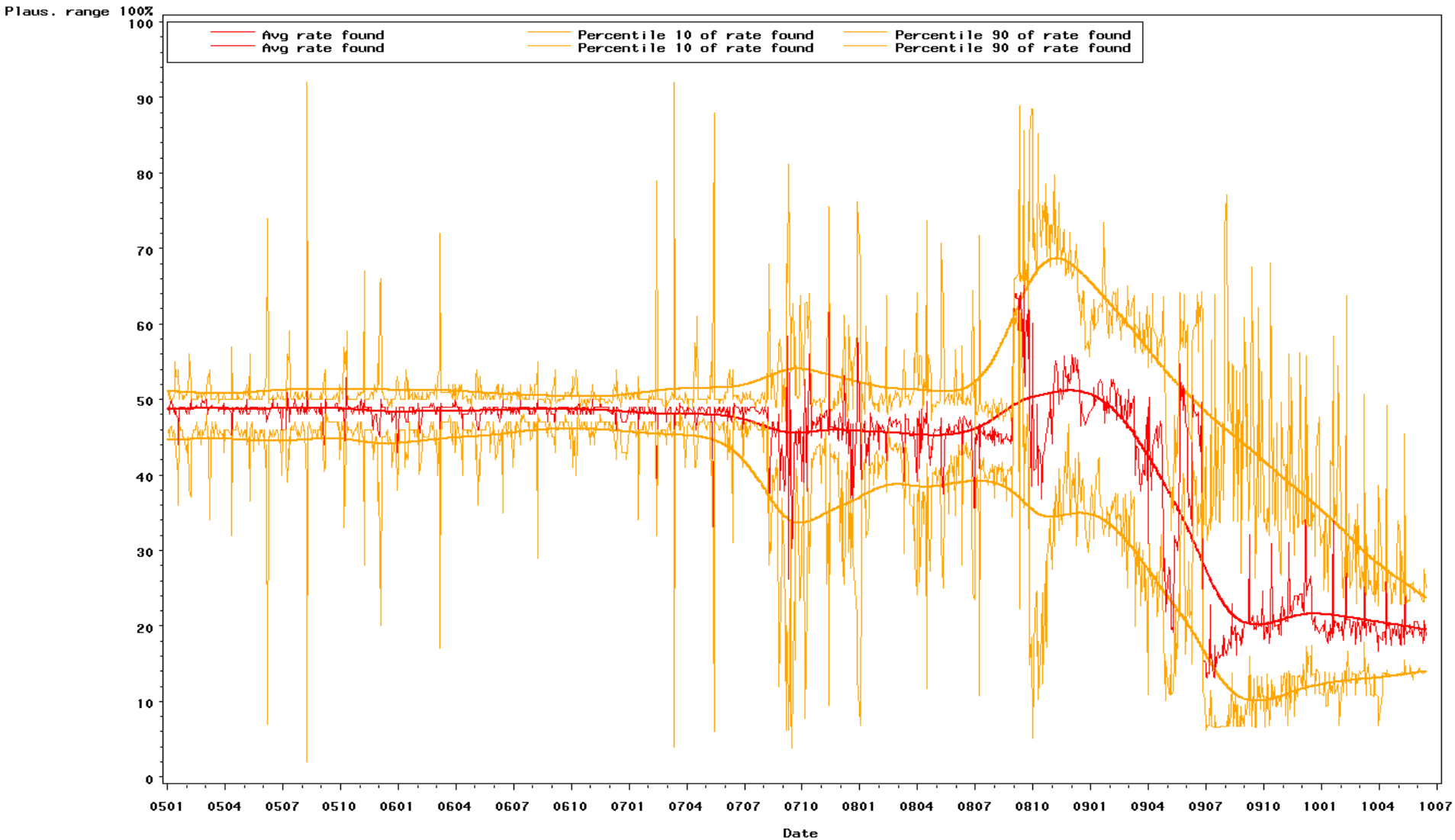
# Assumptions/challenges

- Type 2 error (false negative)  
→ Constant monitoring necessary



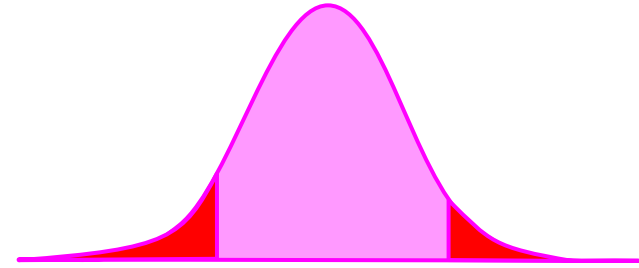
# Monitoring type 2 error

Distribution of overnight matches within plausibility borders — Total of all participants — Plausibility ranges stretched to 100%



# Assumptions/challenges

- Type 2 error (false negative)  
→ Constant monitoring necessary



Type A error (wrong duration assignment)

- to the nearest plausible duration?
- Week: 1d, 7d, 14d, 21d, etc  
Month: 30d, 61d, 91d, etc

