# Challenges

The main challenge does not stem from the mathematical formula but from the cash flows to be considered for EIR calculations:

- Systems for retail business do not have cash flows.
- Systems lose historical cash flows (real cash flows).
- Systems cannot calculate future floating cash flows.
- Systems cannot distinguish between EIR relevant and irrelevant cash flows.
- Systems cannot consider prepayment behaviour (only contractual cash flows).
- Systems cannot handle complex fixing agreements.

The solution has to calculate the amortisation plan over the complete lifecycle of a deal and to provide separate amounts for all relevant cash flows, including

- premiums, discounts and upfront payments
- transaction costs
- forward adjustments
- costs of embedded separated from the host contract
- hedge adjustments at the termination of a hedge relationship
- initial basis adjustments for late hedges
- unwinding of the impairment adjustment

A further challenge is to know when the EIR has to be recalculated:

- No recalculation of EIR in the following cases:
    - Not because of unexpected capital changes such as partial notional redemptions!
    - Not because of an impairment!
- EIR has to be recalculated in the following cases:
    - For floating-rate products at the new fixing date.
    - For credit lines at each drawing.
    - For security long positions at each buying transaction.
    - After a contractual change or new estimation of the repayment plan.