



# Solvency II Technical Provisions

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Casualty Loss Reserve Seminar

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INTNL-2: Solvency II Update

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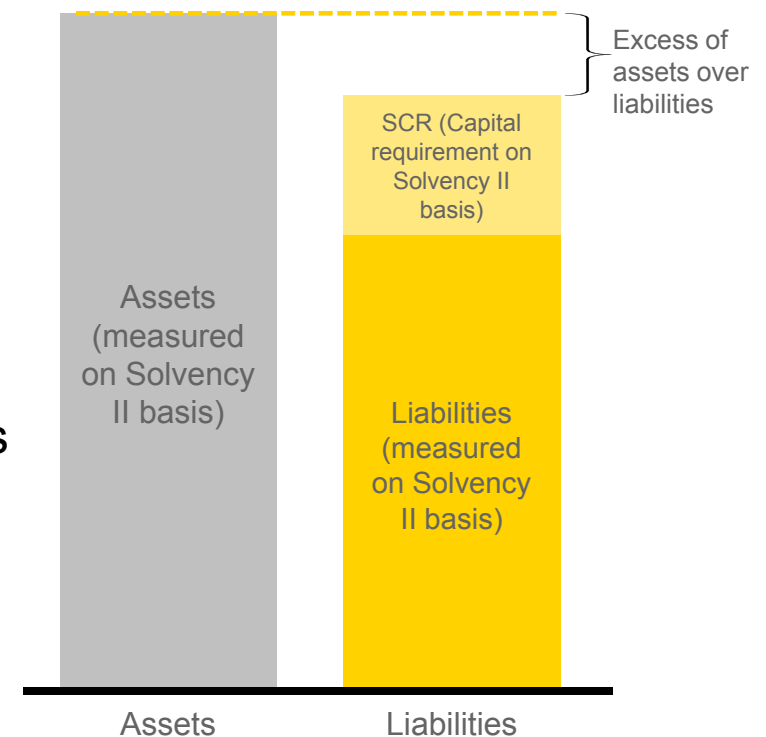
# Agenda

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- ▶ What are technical provisions?
- ▶ What are the main changes from old style claims reserving?
- ▶ What are the main challenges for actuaries?

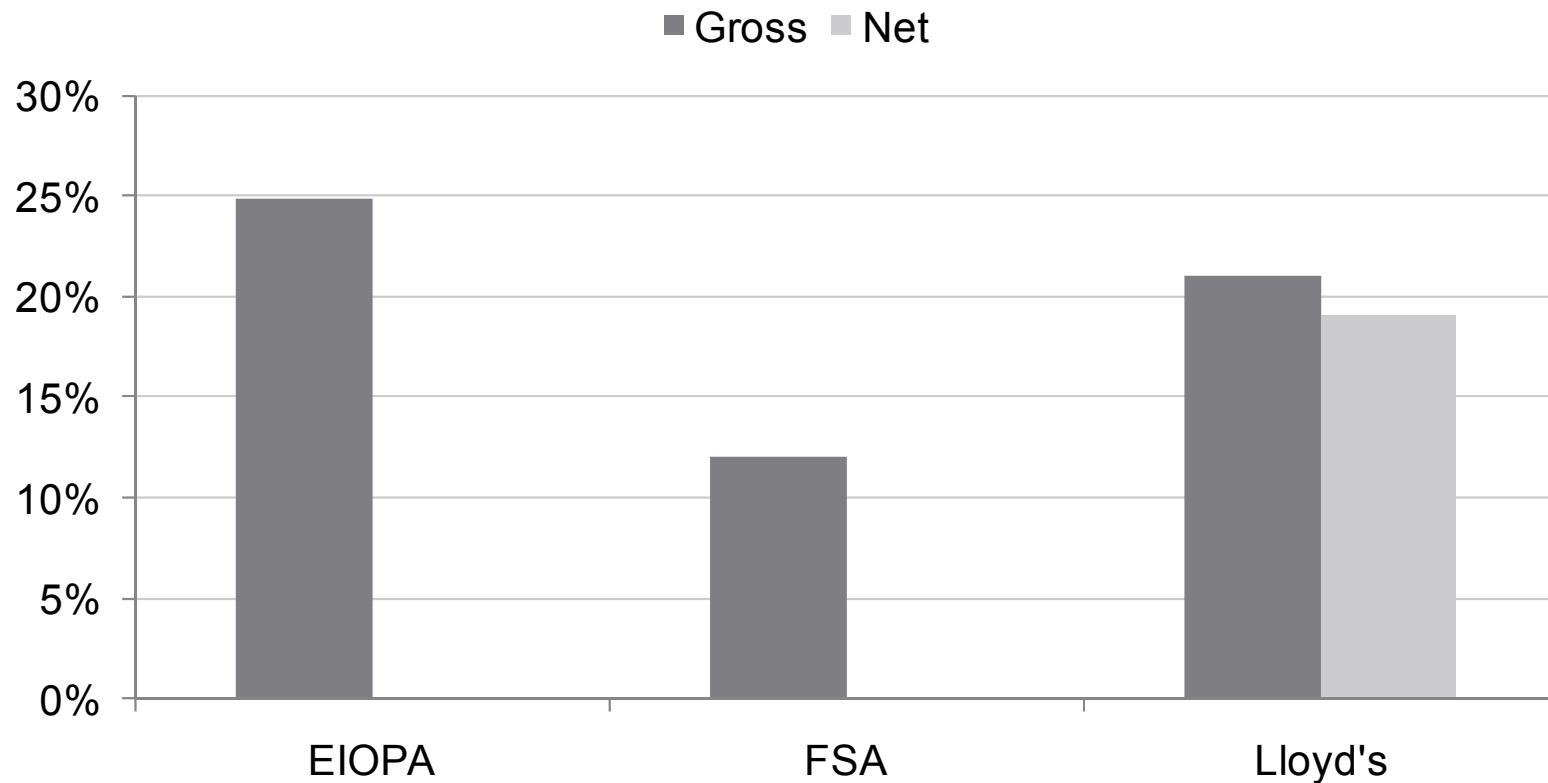
# The basic principle...

- ▶ Under Solvency II the basis for estimating both assets and liabilities will be different.
- ▶ The guidance sets out general principles in determining realistic, market consistent and justifiable assumptions.
- ▶ Solvency II Technical Provisions could be higher or lower than a GAAP basis.
- ▶ Solvency II estimates will need to be produced alongside the current GAAP basis (more work!).
- ▶ Estimating technical provisions on a Solvency II basis is harder than you may think!
- ▶ **"Best" market practice is yet to emerge.**



# Potential impact

The graph below shows the reductions in technical provisions under Solvency II versus the current basis for non-life companies based on the results of QIS5.



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# Which elements are changing under Solvency II?

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Segmentation

Data

Expenses

Lapses

Documentation

Cash Flows

**Almost Everything!**

Contract Boundaries

Guidance

Validation

Discounting

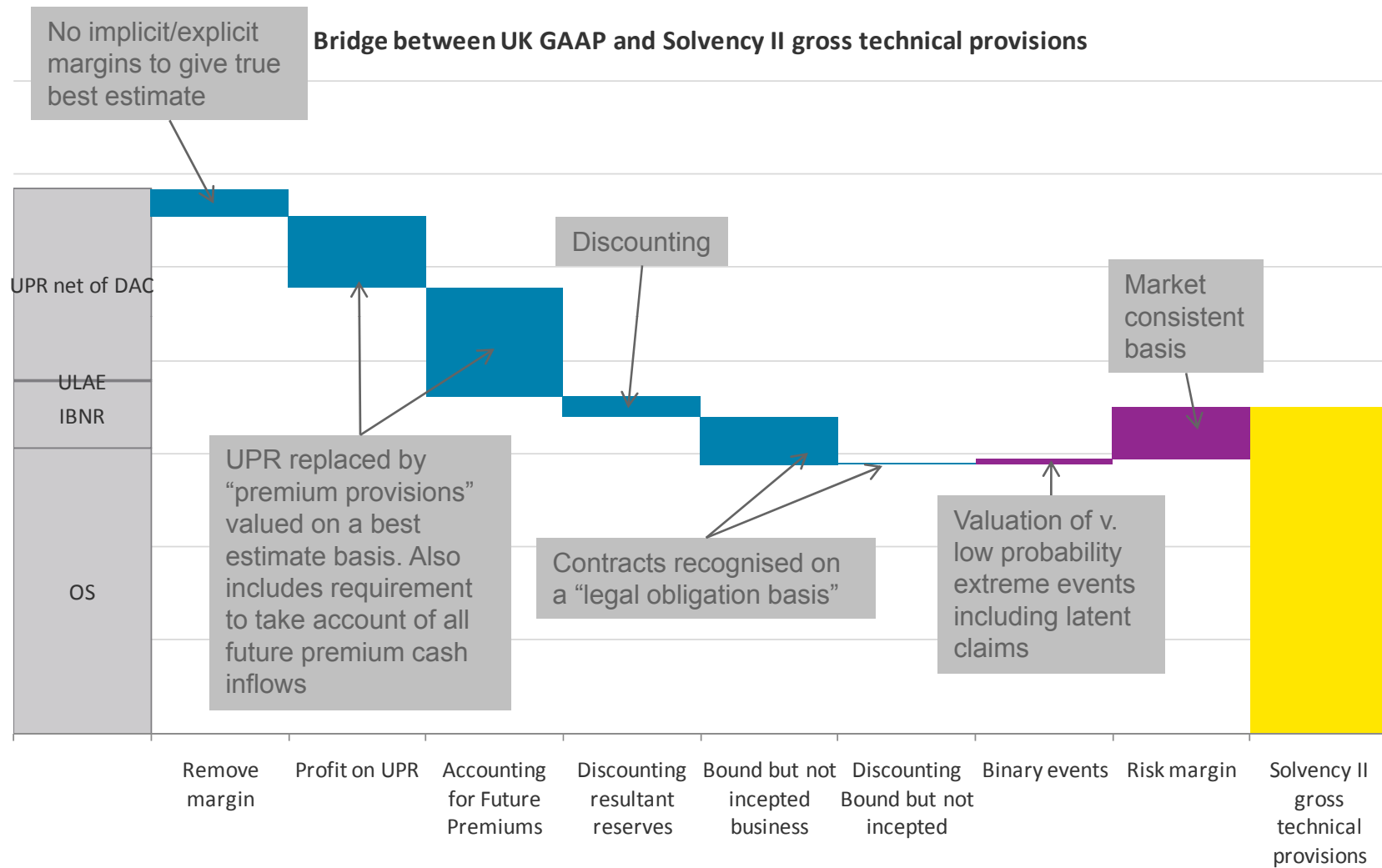
Margins

Risk Margins

# Fundamental Change in Basis

	GAAP	Solvency II
Allow margin for prudence in claims reserve	maybe	no
Discounted	no (some exceptions)	yes
Risk margin	no	yes
“Binary” events	maybe	yes
Liabilities included	incepted / earned business	“legally bound” business
Calculation basis	“as paid”	“cash”
Methods used	usually deterministic	cash flow basis; possibly stochastic

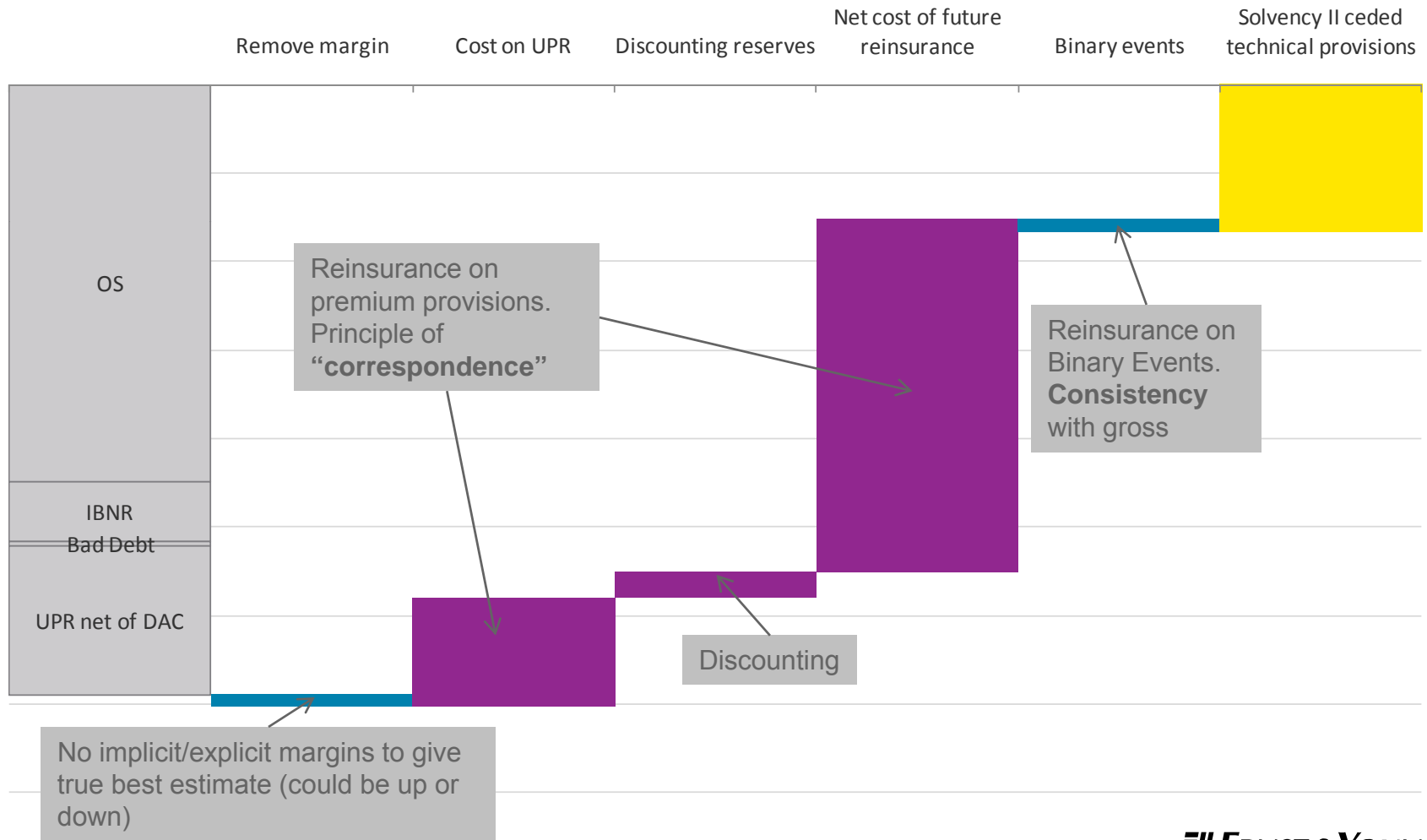
# Bridging the gap – Gross of Reinsurance



# ...but this is more complex in practice

## Ceded reserves

Bridge between UK GAAP and Solvency II ceded technical provisions

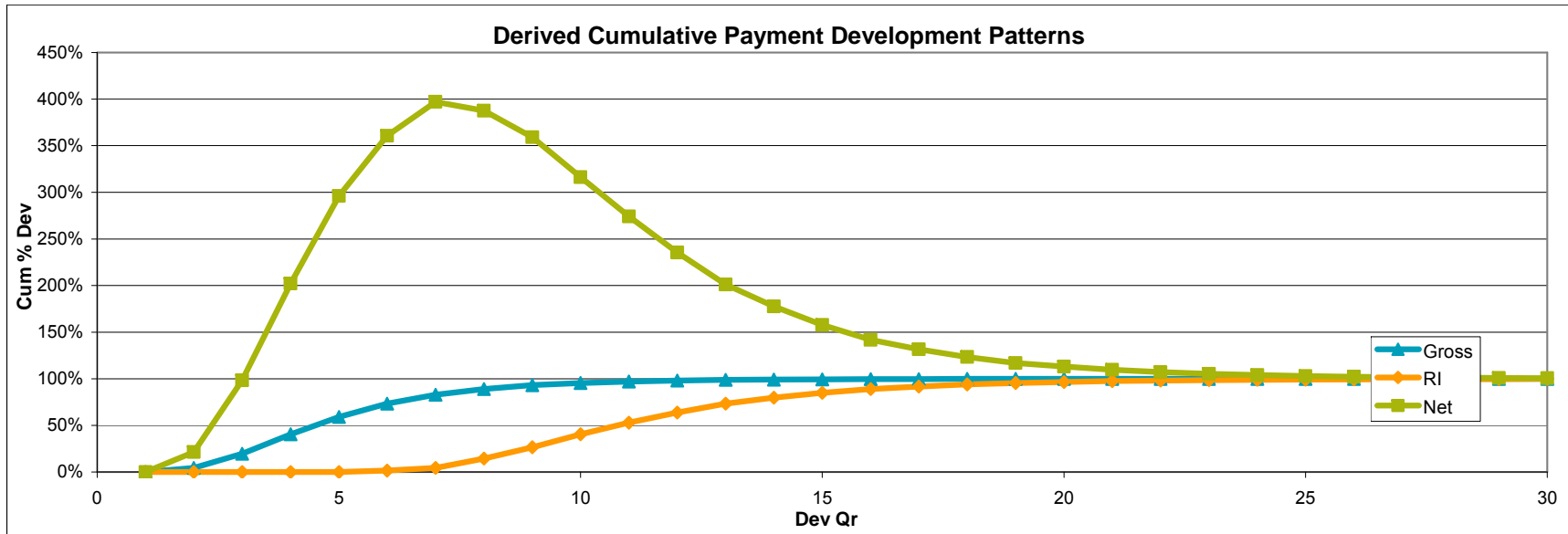




# Timing of payments and recoveries

## Simple approaches might not be appropriate

High reinsurance + large lag = less reason for simple approach



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# Technical Provisions – sum of two parts

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## Technical Provisions

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graph TD; A[Technical Provisions] --> B[Claims Provisions]; A --> C[Premium Provisions];
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### Claims Provisions

The expected present value of cash flows from....

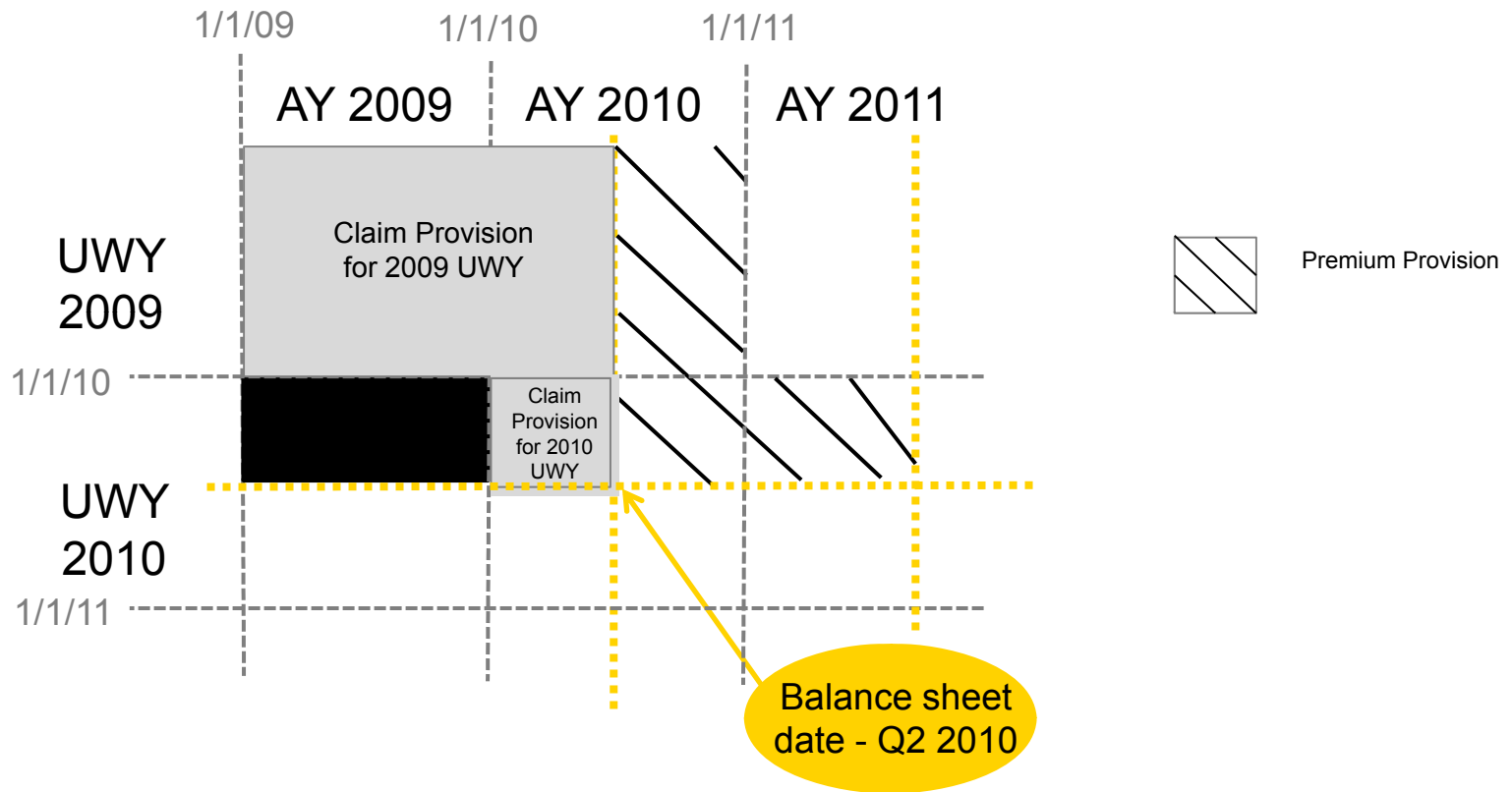
- future claim payments (and admin expenses) arising from claim events that occurred prior to or at the valuation date

### Premium Provisions

The expected present value of cash flows from.....

- future premiums (i.r.o. all “bound” business, adjustment premiums, premium debtors, reinstatement premiums)
- future claim events (i.r.o. all bound business)
- claim handling expenses for future claim events
- ongoing administration of in-force policies

# Premium and claims provisions



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# A simple balance sheet example\*

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- ▶ One policy written on 1/7, with contract duration 12 months.
- ▶ Assume that the risk exposure is evenly spread over the lifetime of the policy.
- ▶ Total premium = £100.
- ▶ £40 of premium is received by the insurer at inception; then three equal premium payments of £20 at beginning of the following quarters.
- ▶ Loss ratio = 72%.
- ▶ Payments are paid in the month following the end of the quarter of occurrence.
- ▶ Assume that claims experience is in line with expectations.
- ▶ Ignore discounting and risk margins in this simple example!

\* Taken from ROC working party presentation given at GIRO in 2009

# A simple balance sheet at 31 December

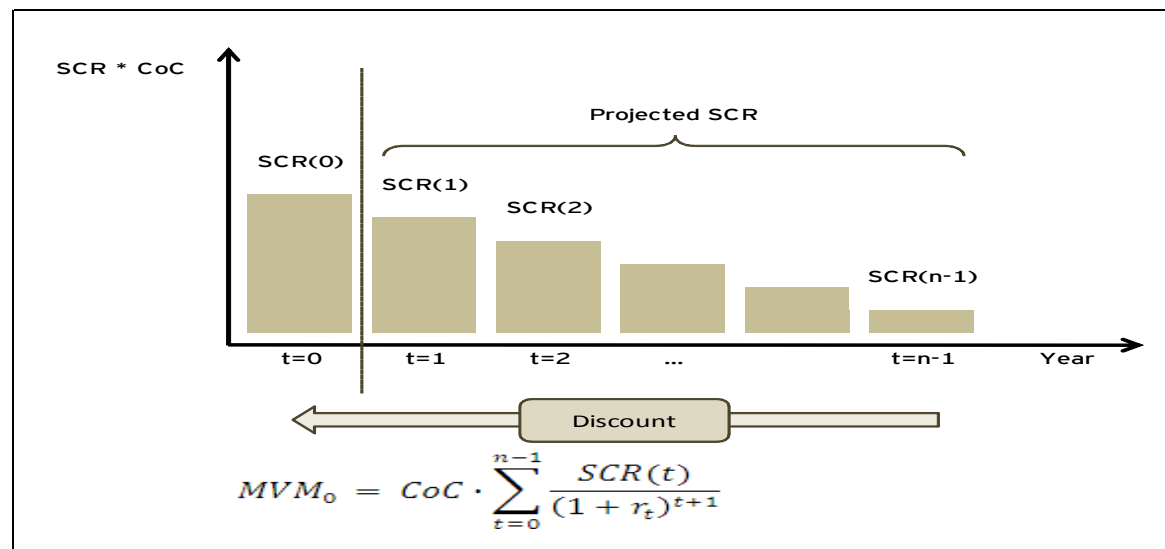
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Total
Premiums	(40)	0	0	(20)	0	0	(20)	0	0	(20)	0	0	0	(100)
Paid Claims	0	0	0	18	0	0	18	0	0	18	0	0	18	72
Cash flow	(40)	0	0	(2)	0	0	(2)	0	0	(2)	0	0	18	(28)
Premium Earning	(8.3)	(8.3)	(8.3)	(8.3)	(8.3)	(8.3)	(8.3)	(8.3)	(8.3)	(8.3)	(8.3)	(8.3)	0	(100)

	GAAP		Solvency II
<b>Assets</b>	<b>82</b>		<b>42</b>
Cash	42	=40+2	42
Receivables	40	=future premium of 40	
<b>Liabilities</b>	<b>68</b>		<b>14</b>
Claims	18	=72*50% -18	18
UPR	50	=100*50%	
Premium Provision			(4) = (40) + 36
<b>Profit</b>	<b>14</b>		<b>28</b>

# Risk margin – Market Value Margin

## ► MVM in Solvency II – Definitions (Level I text)

- *“The value of technical provisions shall be equal to the sum of a best estimate and a risk margin”*
- *“The risk margin shall be such as to ensure that the value of the technical provisions is equivalent to the amount that insurance and reinsurance undertakings would be expected to require in order to take over and meet the insurance and reinsurance obligations”*
- The Risk Margin shall be computed using the Cost of Capital (CoC) method



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# Risk Margin

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- ▶ Avoiding circularity
- ▶ Justification of approximations/proxies
- ▶ Calculation on a quarterly basis
- ▶ Source of SCR: QIS5 or Internal Model
- ▶ Consistency with Internal Model

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# Binary Events

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- ▶ “Latent” or low frequency events not otherwise included in best estimate of reserves.
- ▶ How to calculate?
  - ▶ Truncated distribution.
  - ▶ Percentage load.
  - ▶ Scenario approach.
  - ▶ Justify that they are already included in the best estimate.
- ▶ How to justify?





Thank you

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