



somehow
different

Creating opportunities beyond longevity risk transfer

Cord-Roland Rinke, Managing Director of Hannover Re – Life & Health Data Analytics
Longevity 16
Copenhagen, 14th August 2021

hannover **re**[®]

Agenda

- 1 The big picture
- 2 Challenges
- 3 There is no silver bullet

*somewhat
different*

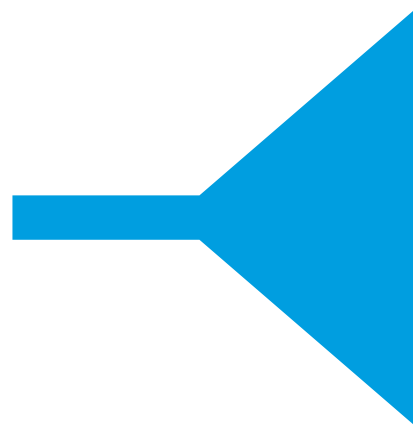
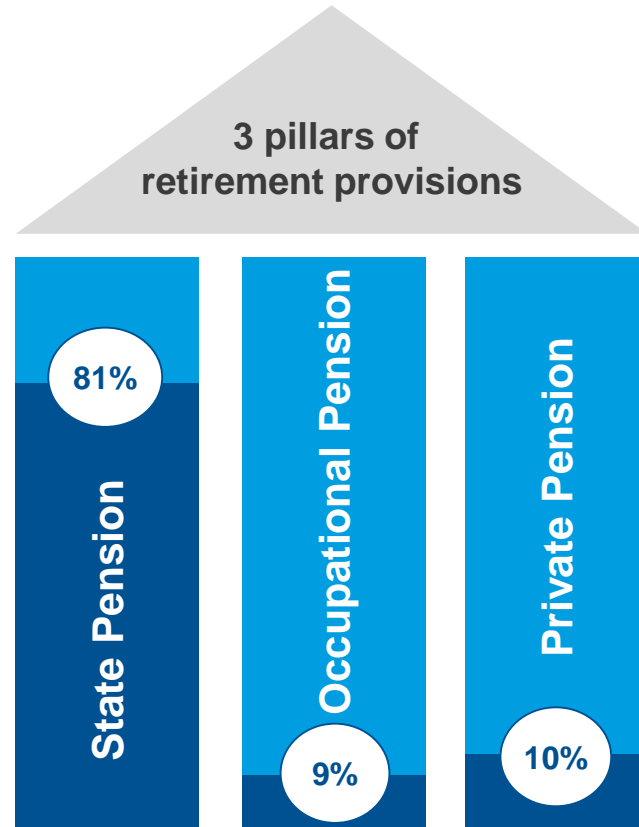
1

The big picture

hannover re[®]

Sources of longevity risk

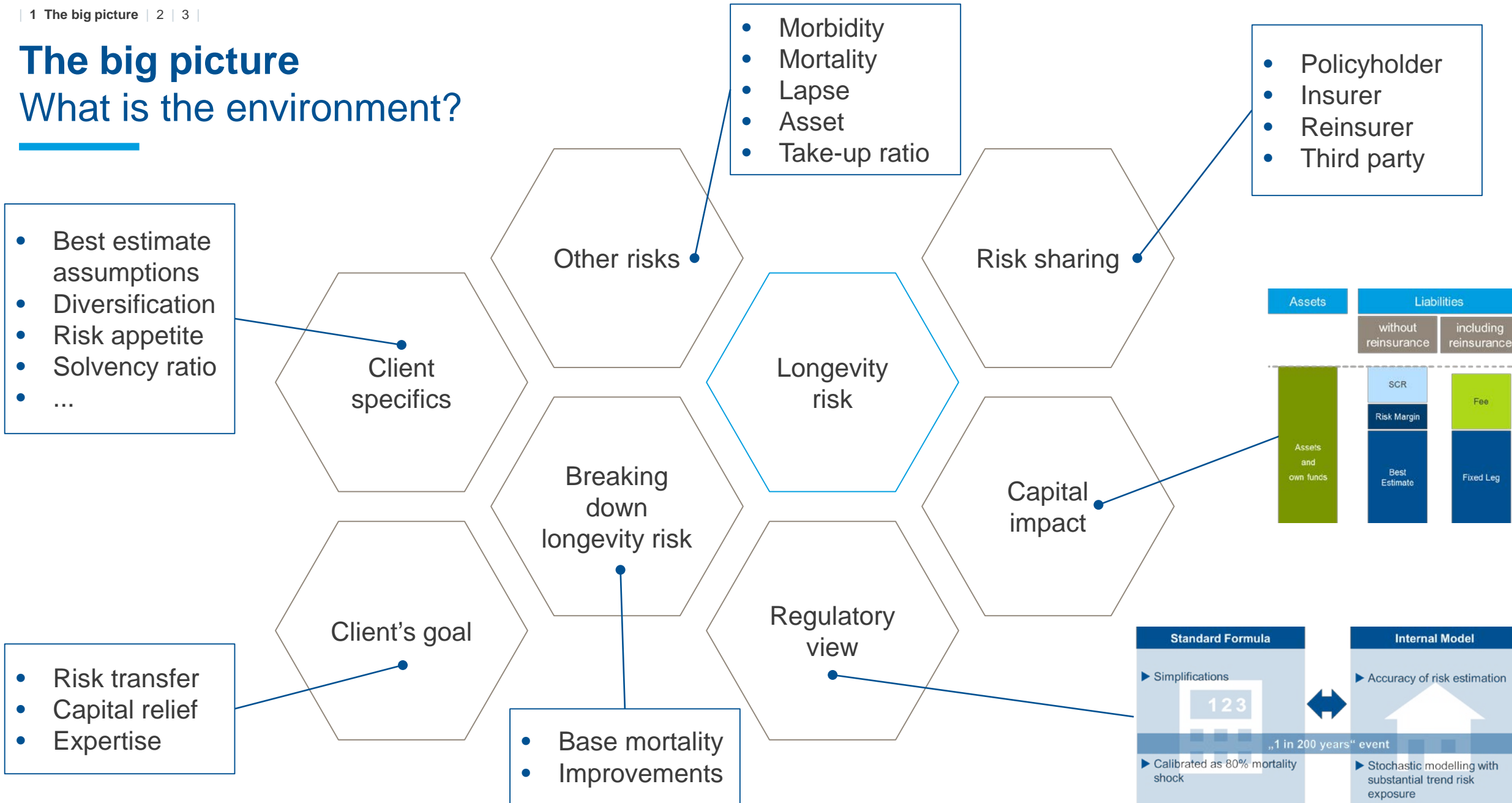
The usual suspects and surprise guests



- Defined Benefit vs Defined Contribution
- Annuities
- Investment-linked annuities
- GMXB
- Care Annuities
- Equity release
- ...

The big picture

What is the environment?



*somewhat
different*

2

Challenges

hannover re[®]

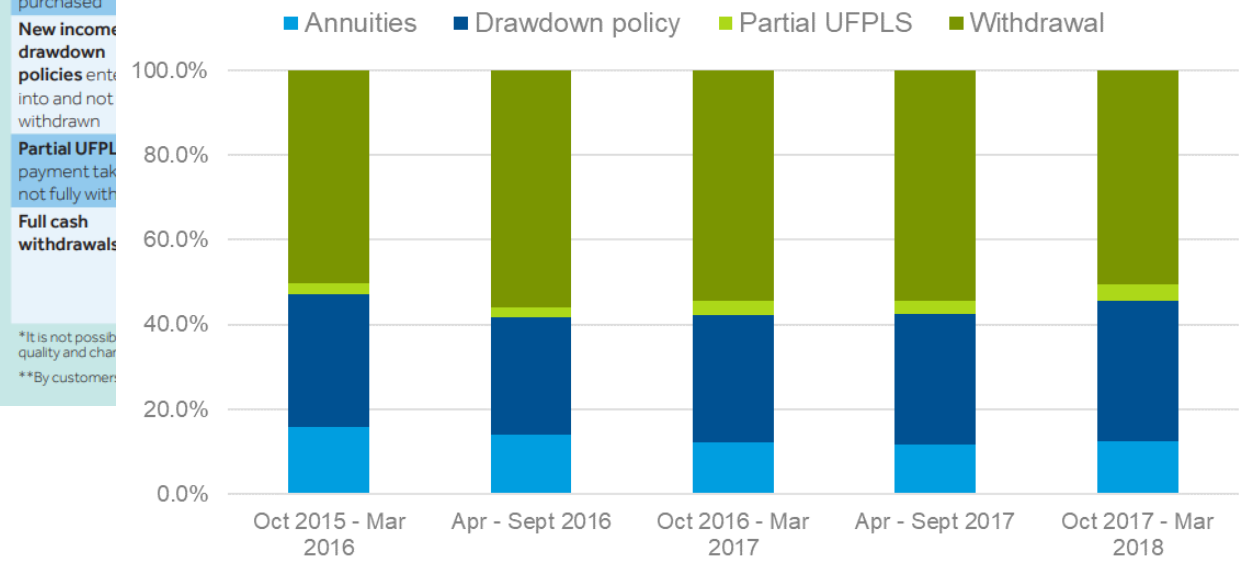
Options and guarantees

Consumers, insurers and reinsurers

1 Take up of retirement income products in the UK since pension freedoms were introduced

Table 1: Retirement income products entered into

	April - Sept 2015	Oct 2015 - Mar 2016	April - Sept 2016	Oct 2016 - Mar 2017	April - Sept 2017	Oct 2017 - Mar 2018	Year-on-year change (Oct-Mar)	Total since Oct 2015
Total pots accessed for the first time*	415,739	254,857	302,107	276,761	317,578	272,752	-1%	1,424,055
Annuities purchased	37,172	40,020	42,371	33,561	36,891	33,975	1%	186,818



<https://www.fca.org.uk/publication/data/data-bulletin-issue-14.pdf>

2 DB to DC transfers

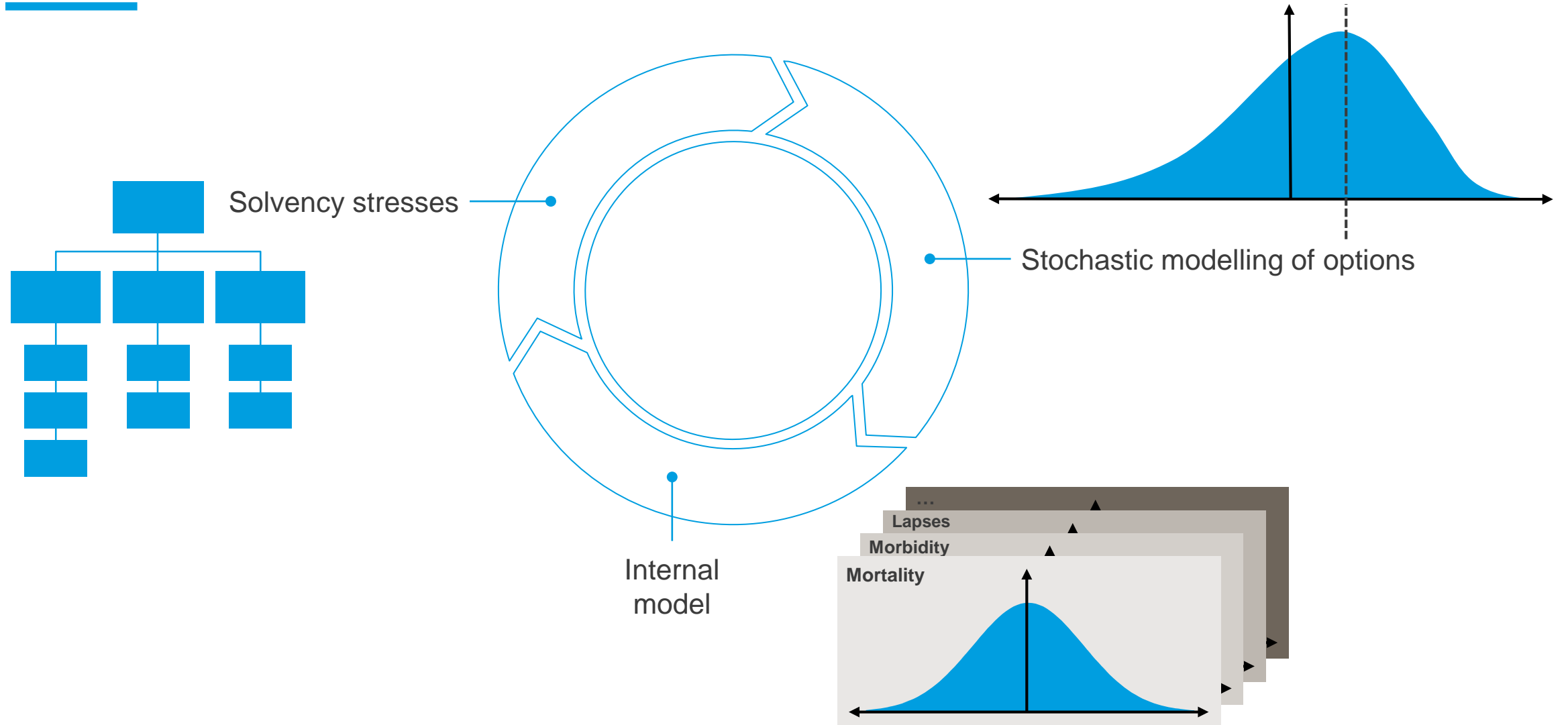
Pensions: don't cash out of defined benefits, warns regulator

Funds offering big buyouts risk their stability while departing members face uncertain income

<https://www.theguardian.com/uk-news/2018/aug/29/pension-schemes-warned-of-double-jeopardy-when-people-cash-out>

Pricing of options and guarantees

Cost of Capital and option costs



*somewhat
different*

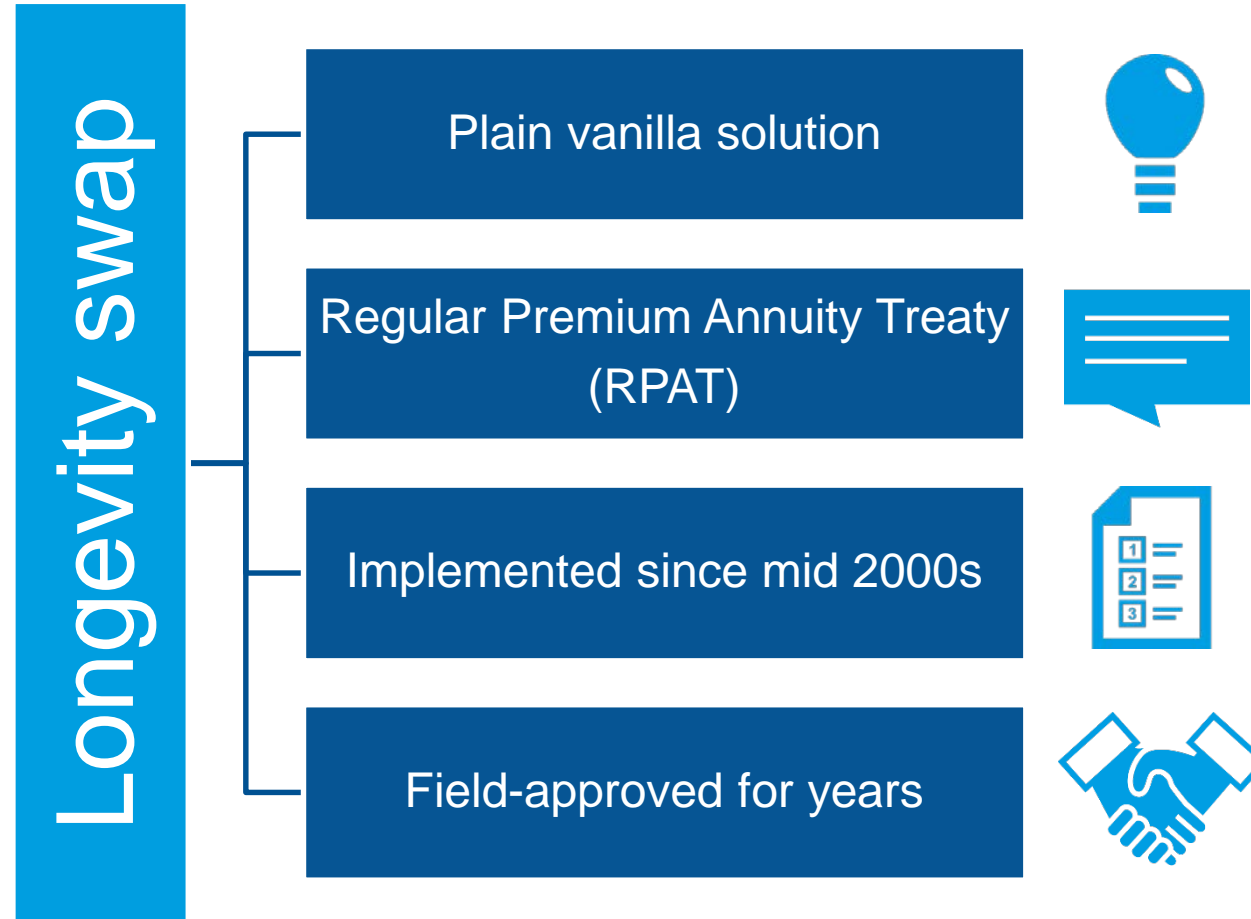
3

There is no silver bullet

hannover re[®]

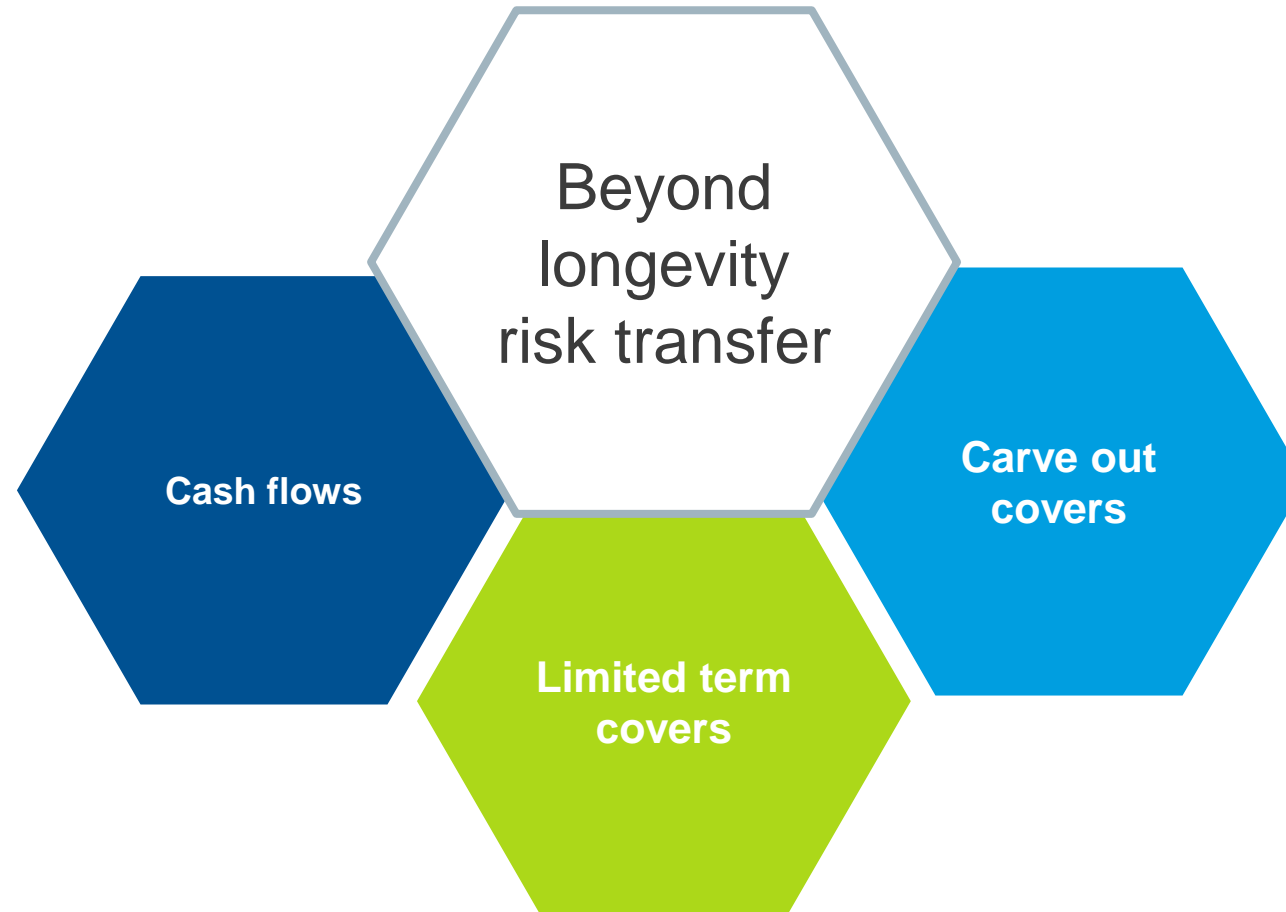
Standard longevity reinsurance solution

Comprehensive, intuitive and field-proven



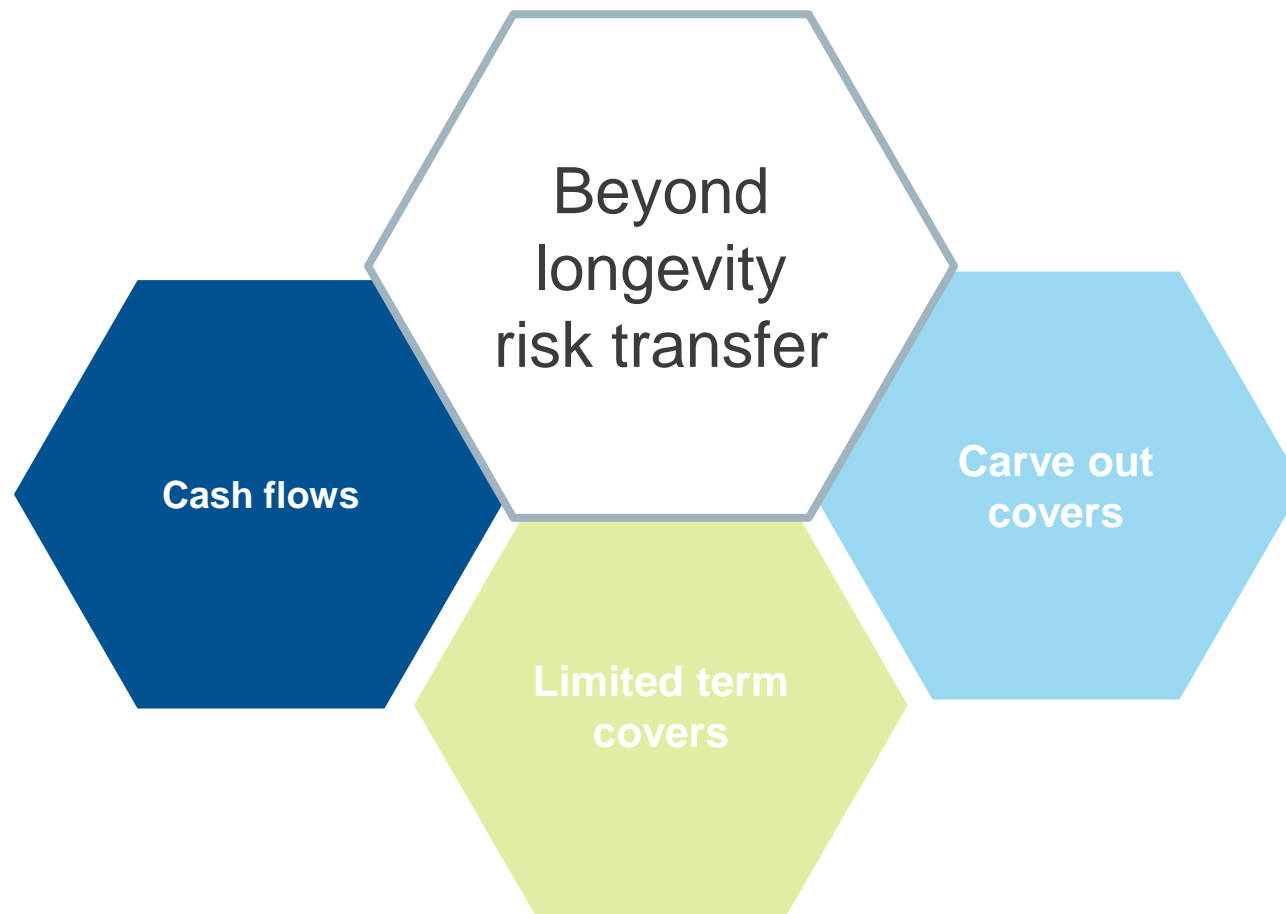
Tailor-made structures

There is no silver bullet



Tailor-made structures

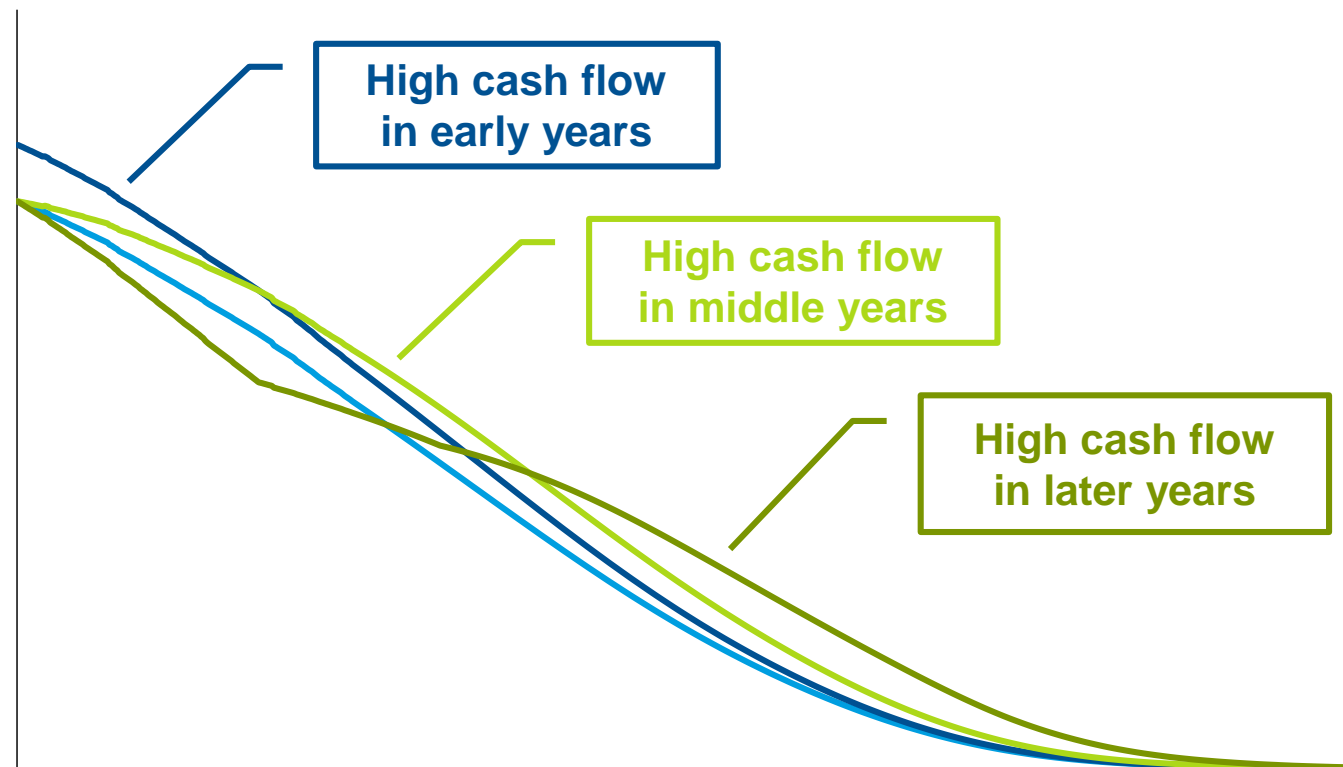
There is no silver bullet



Cash flow optimization

Bespoke RPAT solutions

Basis	Best estimate cash flow of expected payments
Traditional	Scalar fee proportional to fixed leg
Advanced Fee	Exponential fee, increasing percentagewise over time
Designed cash flow	Adjust cash flow to clients' needs



The fixed leg payments can be structured to fit the client's asset mix

Equity release

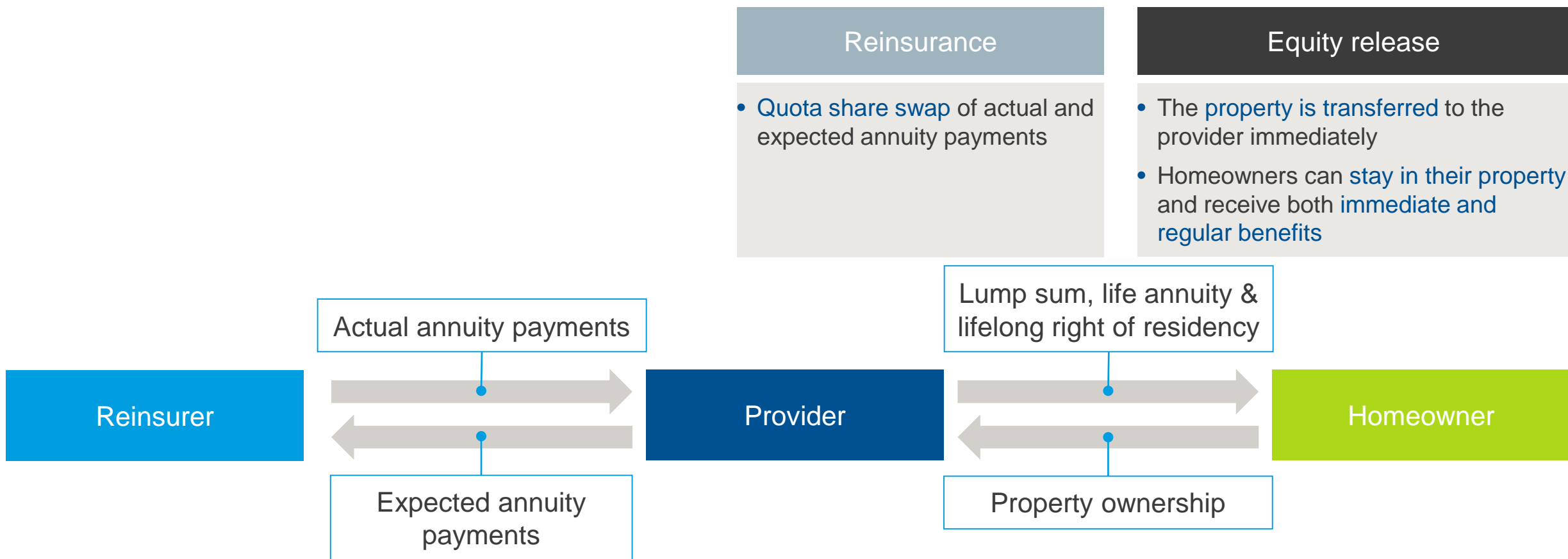
Home reversion



Retirees can stay in their home, the house price risk is fully transferred to the provider.

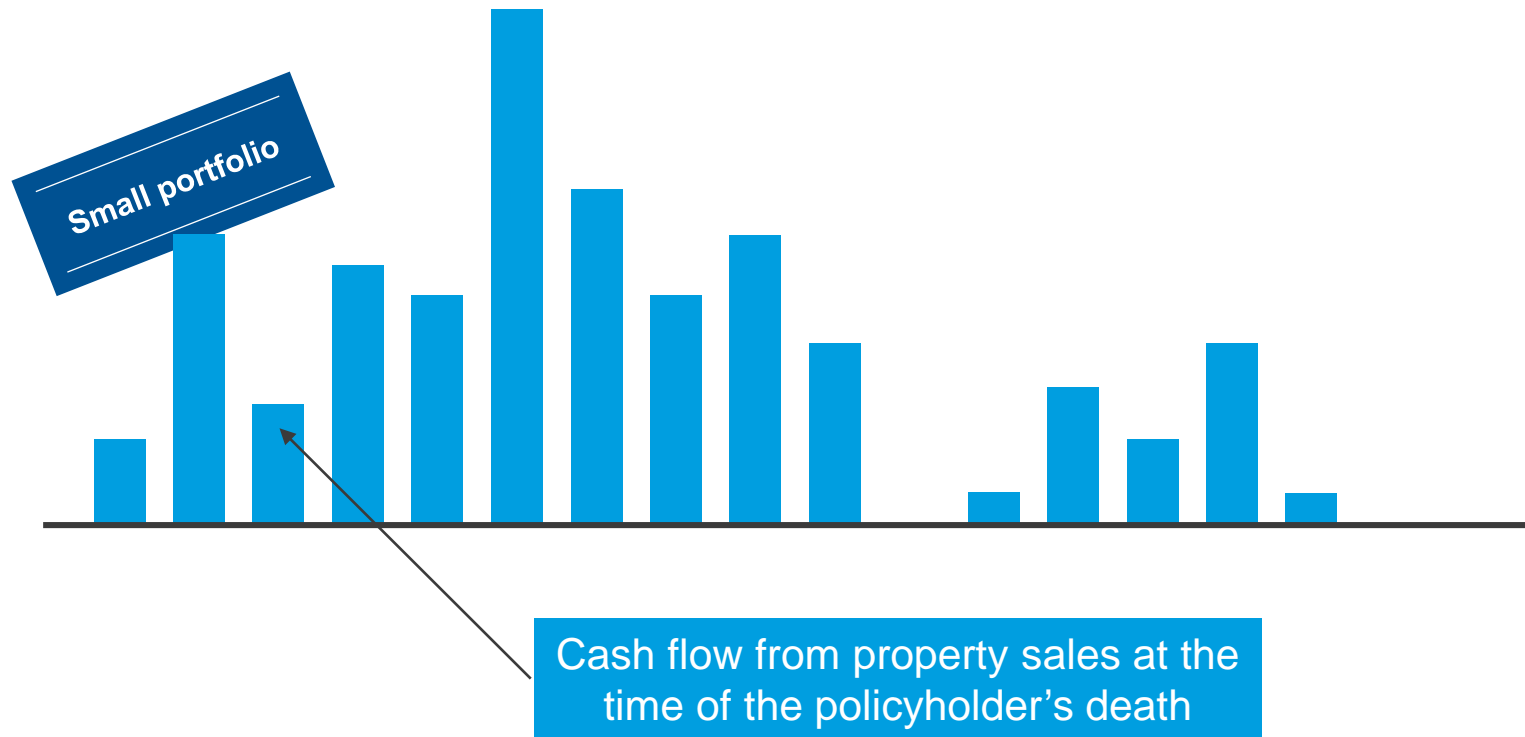
Home reversion RPAT

Stabilisation of cash flows and longevity cover



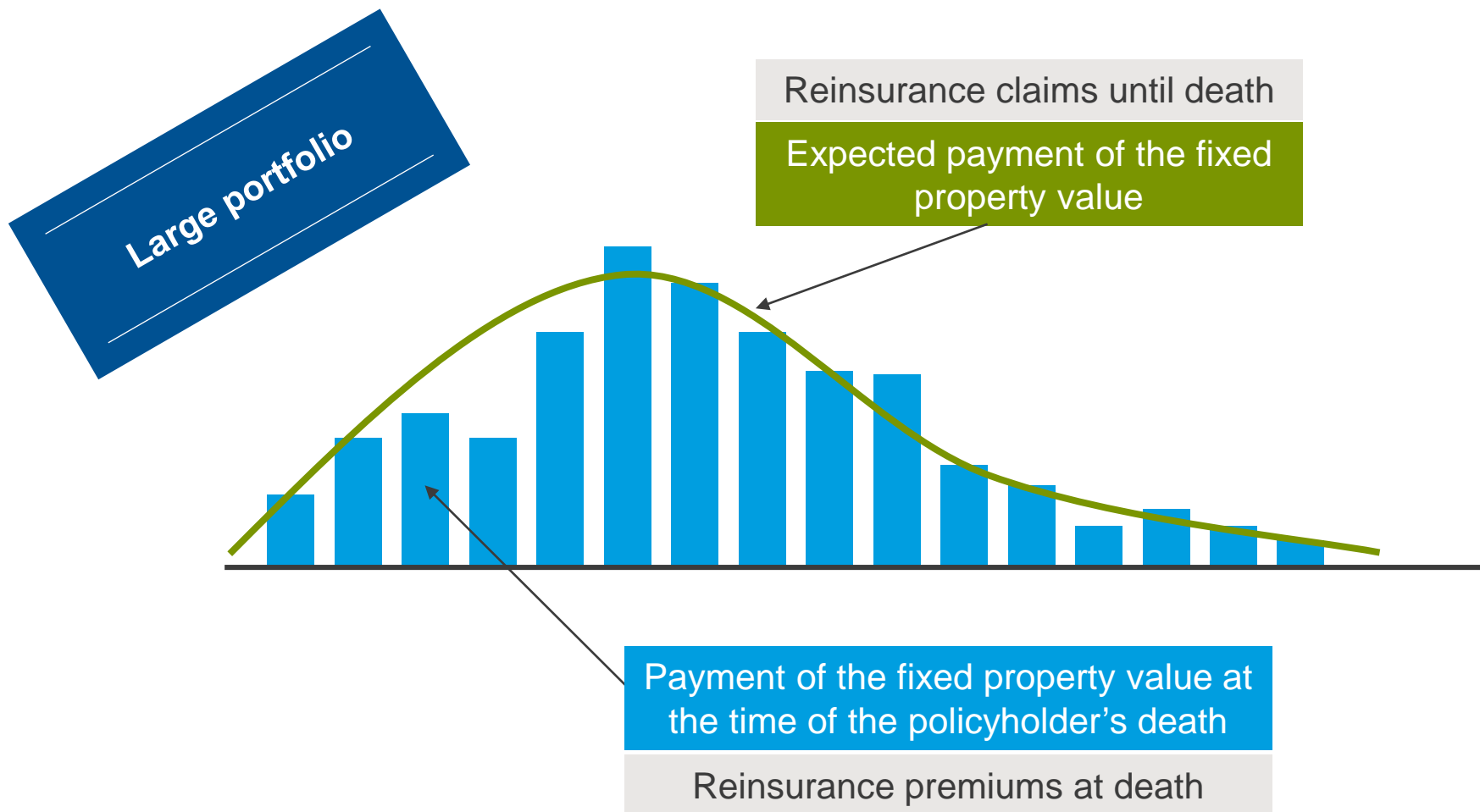
Home Reversion

Stabilization of the cash flow from property sales



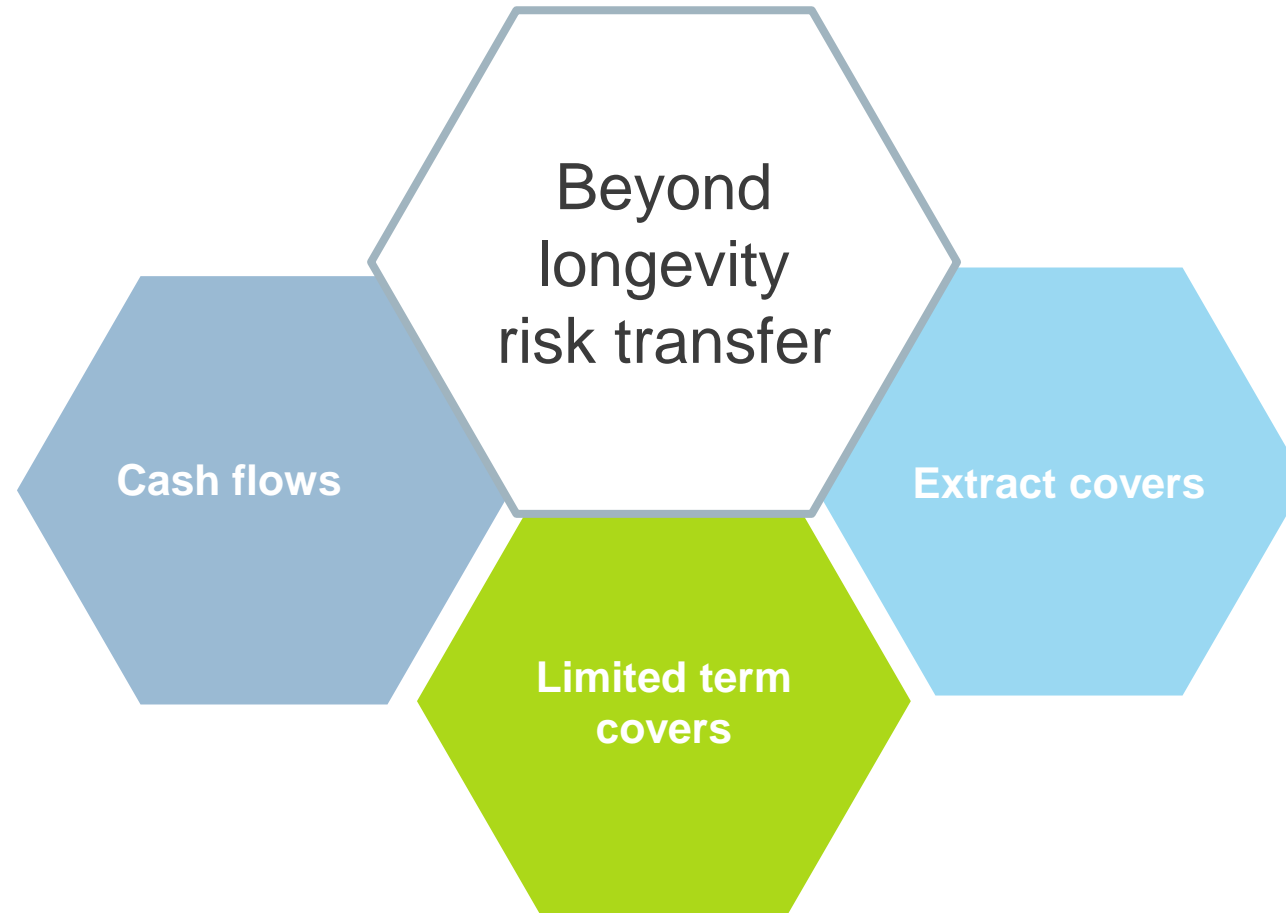
Home Reversion

Stabilization of the cash flow from property sales



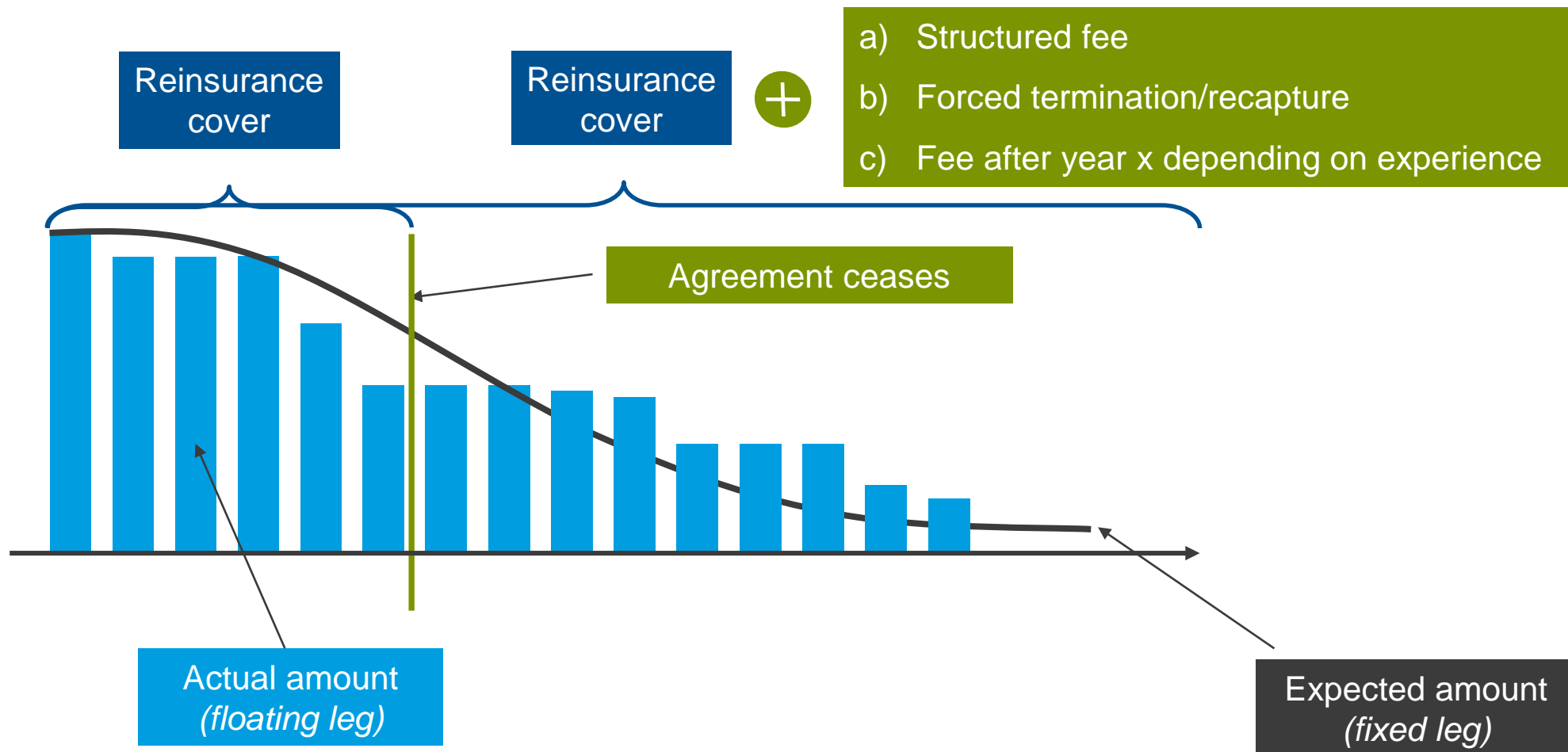
Tailor-made structures

There is no silver bullet



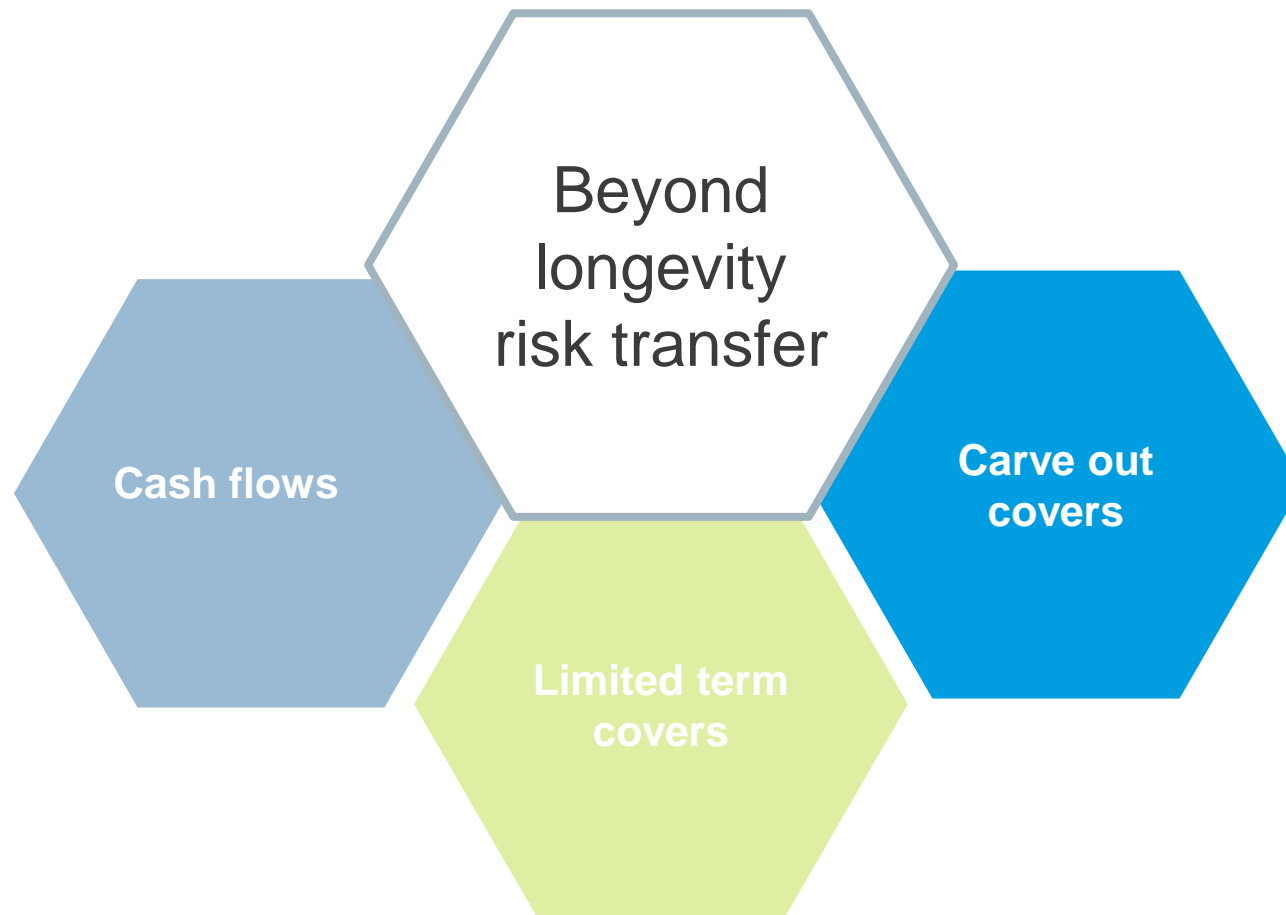
Limited term cover

Cover only initial years



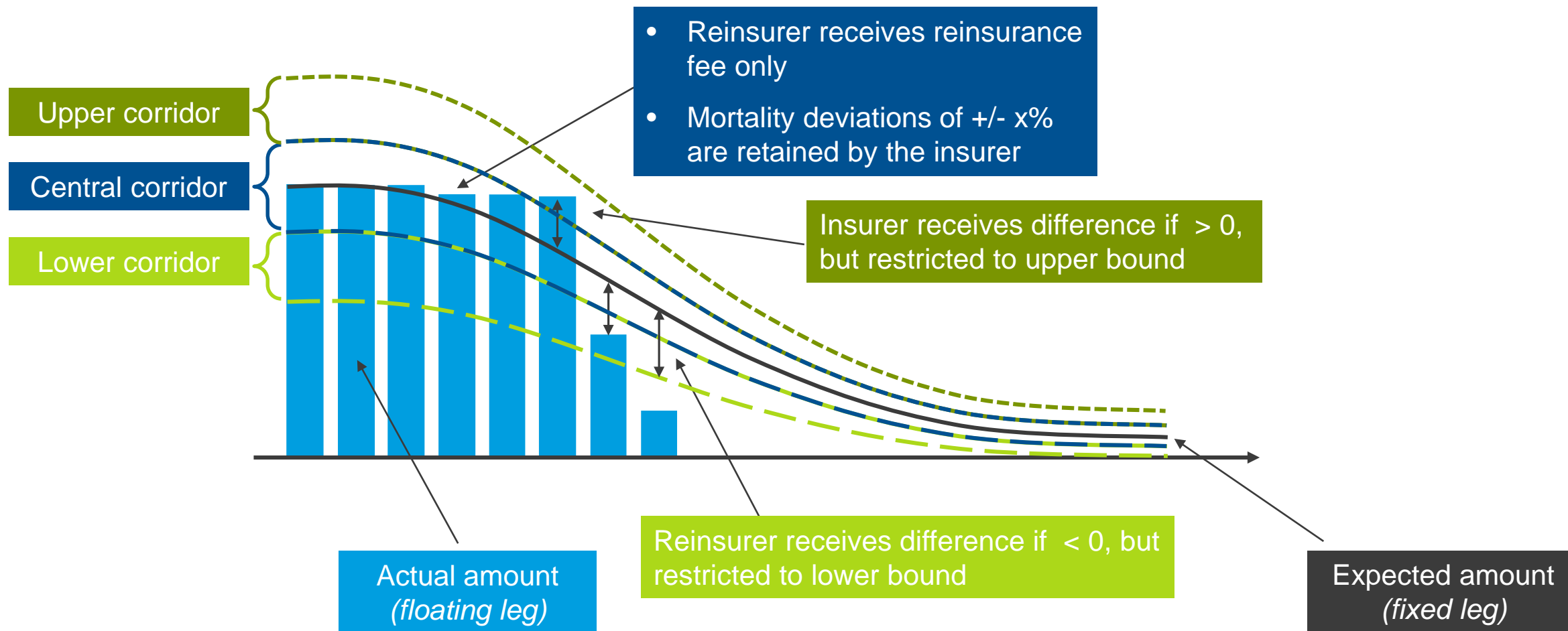
Tailor-made structures

There is no silver bullet



Corridor solution

Carve out cover with symmetric up- and downside

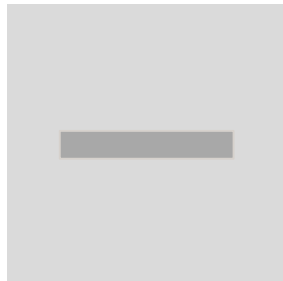


Longevity index cover

Longevity trend protection and capital relief



- No experience data required
- No data cleansing
- Limited duration / acceptable for capital markets



- Termination assumptions
- Regulatory approval
- No perfect portfolio hedging

Ideal solution for deferred blocks

Longevity Index Cover

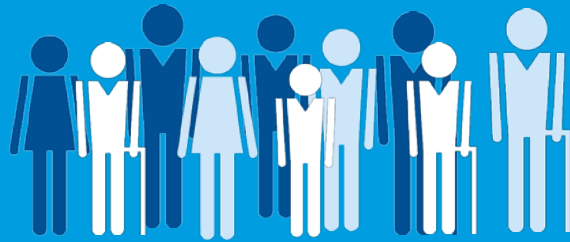
Step 1: Artificial portfolio

Rebuild the actual portfolio via a simplified artificial portfolio

Actual portfolio

Individual information per policy:

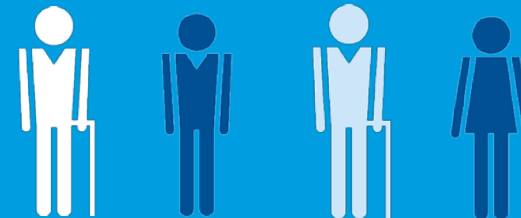
- Age
- Gender
- Retirement Type
- Annuity Amount
- etc.
- Benefit structure
- 2nd life data
- Guarantee
- Escalations



Aggregated & simplified

Artificial portfolio

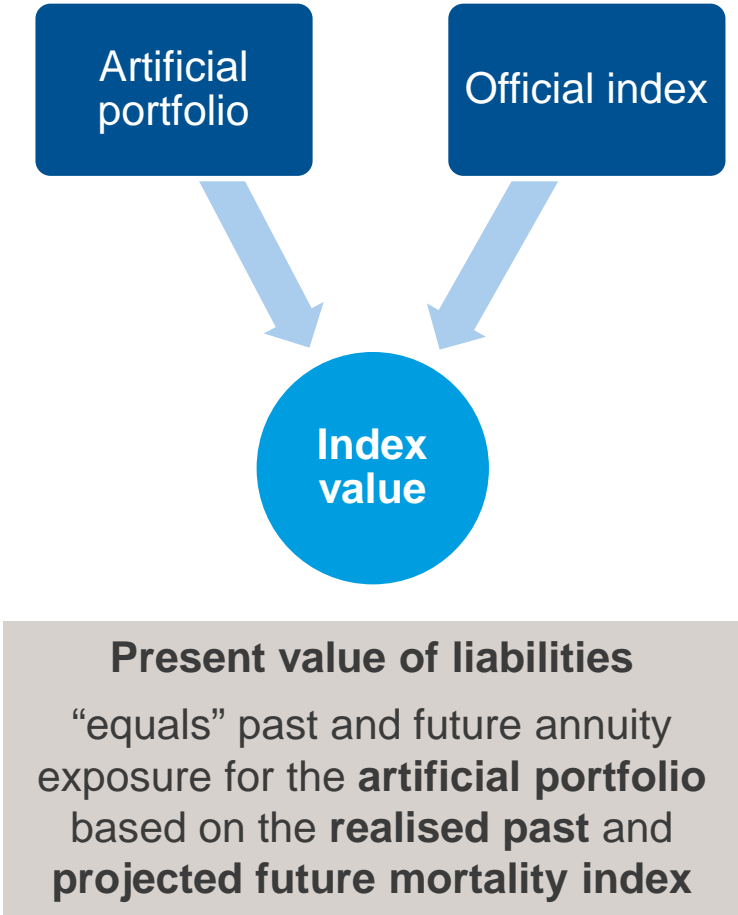
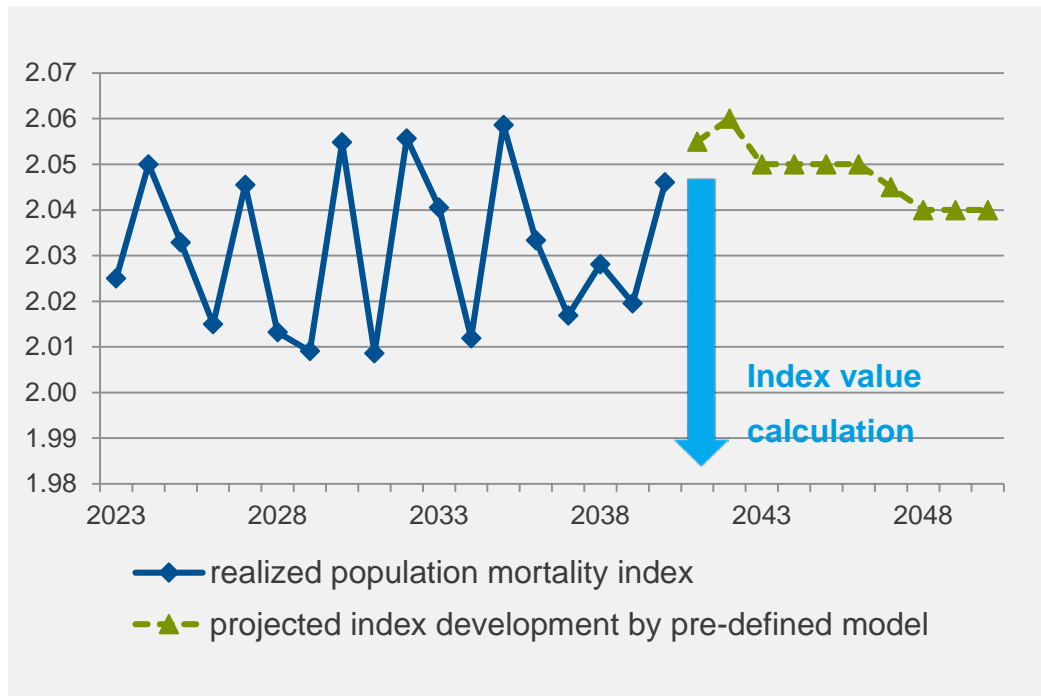
Males		Females	
Age	Total annuities	Age	Total annuities
50	16	50	18
55	20	55	23
...
80	26	80	18
85	15	85	16



Longevity index cover

Step 2 - Public reference

► Use an officially published population mortality index instead of the portfolio mortality

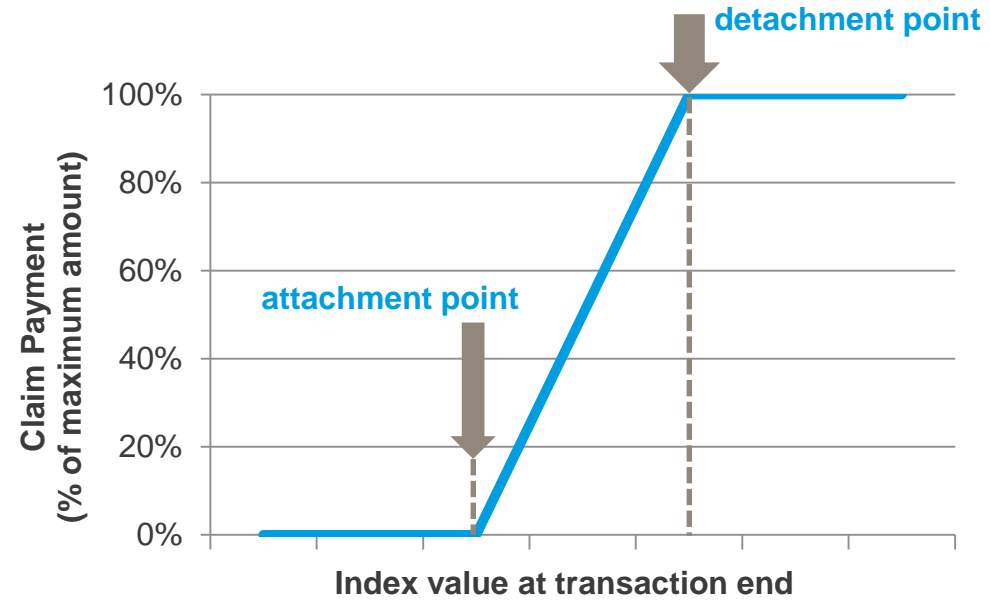


Longevity index cover

Step 3 - Final payment

Excess of loss structure

Claim payment: PV of liabilities exceeding the attachment point capped at the detachment point



Protection for realised and projected future improvement trend

Longevity index cover

Sample structure



- ▶ Treaty duration: 20 years
- ▶ Premium: **Annual payments** during treaty duration
- ▶ Claims: **Single claim payment** at transaction end based on development of index value and choice of attachment and detachment point

Attachment point: EUR 2bn

Detachment point: EUR 2.5bn

Maximum claim payout EUR 500m

hannover **re**[®]